ITU COUNCIL CONTRIBUTION TO THE HIGH-LEVEL POLITICAL FORUM ON SUSTAINABLE DEVELOPMENT (HLPF) 2023

2023 THEME: *"Accelerating the recovery from the coronavirus disease (COVID-19) and the full implementation of the 2030 Agenda for Sustainable Development at all levels"*

Review in-depth Goals: SDG 6 on clean water and sanitation, SDG 7 on affordable and clean energy, SDG 9 on industry, innovation and infrastructure, SDG 11 on sustainable cities and communities, and SDG 17 on partnerships for the Goals.

General Introduction

The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies (ICTs). ITU allocates global radio spectrum and satellite orbits, develops the technical standards that ensure networks and technologies seamlessly interconnect, and strive to improve access to and use of ICTs to underserved communities worldwide. ITU is committed to connecting all the world's people - ensuring that everyone, regardless of age, gender, ability, location, or financial means have available, accessible and affordable access to ICTs.

Through ITU's work, we support everyone's fundamental right to communicate. The Sustainable Development Goals (SDGs) and Targets stimulate global action in the coming years in areas of critical importance for humanity and the planet. As acknowledged by the 2030 Agenda for Sustainable Development, "The spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies, as does scientific and technological innovation across areas as diverse as medicine and energy".

Increased connectivity, trust, digital technologies, information systems, digital skills and Internet use have the potential to reduce poverty and create jobs through applications and services, such as e-agriculture and digital finance; help end poverty and hunger; ensure inclusive and equitable quality education and promote lifelong learning opportunities; monitor and mitigate climate change and sustain our natural resources; as well as improved efficiency and transparency. All three pillars of sustainable development – economic development, social inclusion and environmental protection – need ICTs as key catalysts. The development potential of ICT as crosscutting enablers must therefore be fully harnessed for achieving the SDGs.

To enable this vision, ITU and its members have adopted the ITU Strategic Plan for 2024-2027 and the Connect 2030 Agenda which are based on 5 ITU strategic Goals. Each Goal has its own indicators that measure the progress towards this shared vision.

In line with UN Resolution A/70/1 and Resolution A/70/125, ITU, in collaboration with more than 30 UN agencies, is continuously working towards strengthening the alignment of the World Summit of the Information Society (WSIS) Process implementation activities with the 2030 Agenda for Sustainable Development, thereby highlighting the direct linkages between WSIS Action Lines and SDGs. The ITU lead WSIS Forum, Stocktaking and related activities contribute towards this alignment and reinforcement.

(a) Progress, experience, lessons learned, challenges and impacts of the COVID-19 pandemic on the implementation of SDGs 6, 7, 9, 11 and 17 from the vantage point of your intergovernmental body, bearing in mind the three dimensions of sustainable development and the interlinkages across the SDGs and targets, including policy implications of their synergies and trade-offs:

With the advent of COVID-19, the implementation of the UN-SDGs was largely impaired with rising inequalities, burden on the health-care sector and pressure on existing resources and infrastructure. The pandemic generated a huge demand for more ICT services and more advanced technologies such as 5G, AI, and cloud computing – technologies that promise to improve people's lives and address the social and economic challenges posed by COVID-19 but bring with them significant challenges as well.

Global experiences of the pandemic have only underscored the need to continue connecting the unconnected, keep boosting confidence and security in the use of ICTs, and invest wisely and ambitiously in our collective digital future. ICTs must address people's needs meaningfully, as well as become more intuitive for everyday users. As the last two years have shown, security and access to reliable information are nothing less than matters of public safety – hindering access to the full benefits of digitalization, deterring universal connectivity, stifling the rise of the digital economy and posing significant implications for achieving the SDGs

As stated in the ITU Report Pandemic in the Internet age[1], it is clear that ICTs have an enormous role to play in helping society adapt to the dislocations of the pandemic – a role, it must be emphasized, that comes in addition to the already central part that digital technologies have assumed in driving wellbeing, education, innovation, digital disruption and economic growth and development, particularly in emerging economies. This makes critical for national governments, regional associations and non-governmental organizations (NGOs) to collaborate with industry stakeholders to ensure that digital technologies are used as effectively as possible. It is important that these technologies be used in the best possible way to soften the economic burden caused by the pandemic and ease, to the maximum extent possible, the social dislocations associated with it.

The digital divide was a big social and economic problem pre-COVID, but post-COVID it has become a bigger one. The shift to online working, the delivery of education and other government services online and the new emphasis on e-commerce all mean that the socio-economic penalty of not being connected has risen significantly.

Responding to digital divide problems typically entails emphasizing geographic and population coverage of areas either not serviced or serviced inadequately. While the pandemic created additional pressures and challenges, it also fosters a sense of urgency during which rapid changes can be made, such as allocating spectrum for emergency use in rural and underserviced areas.

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[1] ITU Global Network Resiliency Platform (#REG4COVID) available at: https://reg4covid.itu.int/

In addition, innovative applications of ICTs across a growing array of industries and sectors call for continually updated technical standards, purpose-built or adapted to meet the latest requirements. The COVID-19 pandemic has accelerated this trend, linking global hopes for the future to successful, sustainable digital transformation. In tackling today's challenges, technical standards can support sustainable development, whether in the realm of climate and environmental action, energy efficiency, health, financial inclusion, road safety, or smart cities and communities.

During the COVID-19 period, ITU continued its standards developing activities in relation to digital transformation, smart cities, digital innovation, smart energy and overall collaboration for the SDGs, by moving its meetings to the digital space to ensure business continuity. Additionally, initiatives such as the United for Smart Sustainable Cities (U4SSC), supported by 19 United Nations entities, continued its work through its various and even established new Thematic Group on "Enabling People-Centred Cities through Digital Transformation", co-led by ITU, Digital Dubai and UN-HABITAT. One of the key lessons learnt during this journey was that standards-making capabilities and awareness of the impact of standards greatly improved and more efforts were directed towards driving digital transformation and leveraging emerging technologies such as AI and IoT for managing health related emergencies.

One of the impacts of COVID-19 was on the implementation of the ITU-T Standards and related indicators. While the implementation of the U4SSC-Key Performance Indicators (based on ITU standard Y.4903) continued throughout this period, the overall adoption of standards worldwide witnessed decreased activity owing to the lockdowns and restrictions put in place during COVID.

The COVID-19 crisis illustrated the power and promise of ICTs for continued functioning of societies. Considering the global health crisis and extensive travel restrictions due to the COVID-19 pandemic, as the lead organizer of the World Summit on Information Society (WSIS) Forum ITU, in collaboration with stakeholders, initiated several activities to highlight the full power of ICTs to respond to and recover from COVID-19 pandemic by organizing Virtual Workshops at WSIS Forum 2020 and 2022; WSIS&SDG TalkX Sessions; WSIS Stocktaking Coronavirus (COVID-19) Response ; and an ICT Case Repository.

(b) **Three key areas where transformative actions for accelerated progress have been successful, and three key areas where support is most urgently needed, with regard to the cluster of SDGs under review in July 2023:**

SDG 9 & 17

Over the past two years of the COVID-19 pandemic, there was a "COVID-bump" that brought greater than expected numbers online. While the ITU Facts and Figures 2022[2]

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[2] ITU's Facts and Figures series features estimates for key connectivity indicators for the world, regions, and selected country groups. The assessment provides context on the evolving digital divide while also reviewing progress towards closing it.

report indicates that that acceleration in uptake has eased, figures show a generally positive trend overall, but highlight stalled progress in hardest-to-reach communities.

As the world welcomes its 8 billionth inhabitant, an estimated 5.3 billion people – roughly 66 per cent of the global population – are using the Internet. Yet some 2.7 billion people worldwide remain totally offline, with universal connectivity still a distant prospect in least developed countries and landlocked developing countries, where, on average, only 36 per cent of the population is online.

At the same time, three quarters of the population aged 10 years and over own a mobile phone. On average, in almost all regions the percentage of individuals owning a mobile phone is higher than the percentage of Internet users, but the gap has been shrinking. This is mirrored by the fact that mobile-broadband subscriptions continue to grow fast, approaching mobile-cellular subscriptions, which is plateauing.

According to ITU's "Facts and Figures 2022 ", the annual worldwide overview on the state of digital connectivity shows the following:

- Access to the Internet is increasing, but not as quickly and evenly across the world as it needs to. Too many people still live in digital darkness. The global challenge is to commit the resources that would allow everyone to benefit in a meaningful way from being connected.

- Global median price of mobile-broadband services dropped from 1.9 per cent to 1.5 per cent of average gross national income (GNI) per capita. The Internet has become more affordable in all regions of the world and among all income groups.

  Cost, however, remains a major obstacle to Internet access, especially in low-income economies. The current global economic situation – with high inflation, rising interest rates, and deep uncertainty – could add to the challenge of extending Internet reach in lower-income areas. For an average consumer in a typical low-income economy, the cheapest mobile broadband basket still costs more than 9 per cent of his or her income – over six times the global average. Fixed-broadband service costs over 30 per cent, compared with less than 2 per cent in the world's high-income countries.

  There is a need to keep Internet affordability moving in the right direction even as the global downturn cuts deeper into the economic prospects of many countries.

- The global gender gap within the digital divide has moved overall closer toward gender parity over the last three years. Gender parity is defined as when the female percentage of Internet users divided by the male percentage stands between 0.98 and 1.02. The gender parity score improved from 0.90 in 2019 to 0.92 in 2022.

  However, although women account for close to half the world's population, 259 million fewer women have access to the Internet than men. Only 63 per cent of women are using the Internet in 2022 compared to 69 per cent of men.

  The gender gap is even more concerning in lower-income nations in which 21 per cent of women are online compared to 32 per cent of men, a figure that has not

improved since 2019. Generally, regions with the highest Internet use also have the highest gender parity scores. Conversely, many of the world's least developed and vulnerable economies feature low Internet use, a low gender parity score, and limited progress toward gender parity over the last three years.

- Mobile phone ownership continues to rise. Almost three-quarters of the global population aged 10 and over now own a mobile phone. Youth aged 15-24 years are the driving force of connectivity, with 75 per cent of young people worldwide now able to use the Internet.

  Mobile phones are the most common gateway to Internet use, with the percentage of ownership serving as an indicator of Internet availability and access. Ownership of mobile phones, however, remains higher than Internet use, especially in lower-income countries, where wireline connections can be scarce and costly, notably for those living outside of major urban centres.

  Universality, defined as more than 95 per cent Internet use, has already been reached among the youth 15-24 age group in high- and upper-middle-income economies. Low-income economies feature the biggest generation gap, with 39 per cent of young people using the Internet, compared to only 23 per cent of the rest of the population.

- Low digital skills remain an obstacle that keeps individuals from fully realizing the benefits of being online, as well as limiting their ability to avoid its dangers. The lack of digital awareness and skills, combined with other issues such as lack of content in local languages and low literacy levels, are conspiring to prevent many who could connect from doing so.

  As platforms and services become ever-more sophisticated, the digital divide is increasingly being defined by people's ability to make meaningful use of connectivity – defined as the possibility for everyone to enjoy a safe, satisfying, enriching, productive and affordable online experience.

SDG 6

Water Management: Digital water use by leveraging technologies such as AI, IoT, should be viewed as an enabler within SDG6 not only for drinking purposes but also for other sectors including agriculture, manufacturing to ensure the judicious use of water.

SDG 11

It is essential for stakeholders to be provided with the required guidance on driving digital transformation in the urban context. In this regard, instruments such as the Toolkit on Digital Transformation for People-Oriented Cities and Communities, developed by the ITU together with other partners including UNDESA, UNU-EGOV, UNECE, UNIDO, UN-HABITAT, UNDP, WMO, International Water Resources Association, UNEP-DTU, U4E, and Copenhagen Centre on Energy Efficiency, are ideal for strategizing and planning the digital transformation of cities and communities to promote sustainable, inclusive, resilient and improved quality of life for residents in cities and communities.

International collaborative platform such the United for Smart Sustainable Cities (U4SSC), can be leveraged for global dialogue on smart city transitions oriented towards the attainment of the targets contained in SDG11.

ITU-T Study Group 20 on IoT, Smart Cities and Communities have continued to develop ITU-T Recommendations (or international standards) on relevant topics related to IoT applications, smart cities and digital transformation in the urban context. Additionally, the U4SSC-KPI have also been implemented in over 100 cities worldwide. The U4SSC-KPIs embed the targets and indicators of the SDGs in them. Therefore, when cities adopt/implement these KPIs, they are simultaneously also able to monitor their progress towards the SDGs in keeping with their smart city targets.

While the importance of technologies and innovation is highlighted above mainly within SDG9, the cross-cutting impact that technologies can have across sectors and other SDG targets has been largely excluded from the current SDG cluster. It would be beneficial to highlight the impact that emerging technologies have in driving digital transformation for alleviating the inequalities, providing medical care, improving agricultural production, supporting water management, ensuring the use of renewable energies, facilitating sustainable urban development, protecting biodiversity and promoting collaboration between different stakeholders for the overall achievement of the SDGs.

For example, with respect to SDG4, regarding smart education, the world has transition to embracing digital learning to ensured continuity of education. This has strengthened the distance learning systems in different regions. Similarly, the COVID-19 pandemic underscored the shortcomings of the healthcare systems. The importance of leveraging technologies in the health sectors for the diagnosis and treatment triage is essential and should be considered a vital tool to reaching the targets of SDG3.

(c) Examples of specific actions taken to recover from the COVID-19 pandemic that also accelerate progress towards multiple SDG targets, including actions identified by your intergovernmental body, building on interlinkages and transformative pathways for achieving SDGs:

ITU, with the support of the governments of Japan and Saudi Arabia, launched the Connect2Recover initiative[3] at the time of the COVID-19 pandemic to assist beneficiary countries, in particular least developed countries (LDCs), landlocked developing countries (LLDCs), and small island developing states (SIDS), to build back better during the recovery period. In addition to Japan and Saudi Arabia, the initiative has since received support from the governments of Australia, Lithuania and Czech Republic. In addition, there is also support provided by Vodafone and Huawei. Connect2Recover, which focuses on the pillars of education, health care and job creation, supports the UN Sustainable Development Goal (SDG) 3 on good health and well-being, SDG 4 on quality education, SDG 8 on decent work and economic growth, SDG 9 on industry innovation and infrastructure, and SDG 10 on reduced inequalities.

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[3] https://www.itu.int/itu-d/sites/connect2recover/

Since COVID-19, ITU shifted its training activities online through the ITU Academy in order to ensure continuity and provide timely courses on pressing issues related to ICTs and digital transformation. Courses provided equip decision-makers and professionals with the latest skills and knowledge to facilitate implementation of initiatives designed to achieve SDG targets. The range of courses delivered during this period include courses on digital infrastructure, emerging technologies, policy and regulation, digital inclusion, e-waste, innovation and digital services.

In 2020, the ITU's Child Online Protection (COP) Initiative released the fully revised and internationally validated ITU COP Guidelines for policymakers, ICT industry, parents and caretakers, educators and children of different age groups. Complementing these with a special focus on COVID-19 and its Implications for Protecting Children Online, a policy brief provided short recommendations in the context of COVID-19.

Building on ITU's Guidelines, the ITU Global Programme "Creating a Safe and Prosperous Cyberspace for Children," (2021-2024) was launched in collaboration of the National Cybersecurity Authority (NCA) of the Kingdom of Saudi Arabia. It provides a global collaborative response to the risks and potential harms children face online, bringing together international partners from all sectors to create a safe and empowering online experience for children around the world. Assisting member states in all ITU regions, the programme aims to support countries in developing and improving relevant frameworks, raising awareness, and building capacity and engaging all relevant stakeholders, including children themselves.

Children are using the Internet to access help and protection: according to a recent report by Child Helpline International, the number of children contacting helplines increased by 25% from 2019 to 2020, also due to COVID-19, including an increase in those using digital means to make contact. Moreover, young people are increasingly finding their own innovative online solutions to support their mental health and wellbeing and that of other young people. In light of this evidence, ITU and the Office of the UN Special Representative of the Secretary General on Violence Against Children have initiated a collaboration named POP: Protection through online Participation, with international governmental and non-governmental organisations, academia and the private sector, to identify online functioning support systems for children and young people building the relevant evidence to make recommendations on how online referrals can be improved or implemented.

The rapid increase in demand for digital services experienced at the onset of the COVID-19 pandemic means that additional capacity and resilience have to be built into telecommunication/ICT infrastructure systems and services. In a period of uncertainty, the returns for building additional "headroom" are increased. Building digital resilience is not limited to access networks; backhaul, cloud infrastructure, international submarine/satellite capacity and ICT systems, it must be properly dimensioned for present and future crises and disasters.

During the pandemic, ITU offered cities to have the implementation and verification the U4SSC KPIs to be done remotely. Daegu (The Republic of Korea) is the latest city to share

its experience in adopting U4SSC-KPIs for smart sustainable cities in line with ensuring a better global future. The related Case Study was prepared accordingly The application of these KPIs also help cities accelerate towards the achievement of the SDGs.

For full list of examples of specific actions taken by ITU accelerate progress towards the cluster of SDG targets in review this year see Annex 1 below.

(d) **Assessment of the situation in the mid-point of the implementation of the 2030 Agenda and the SDGs, against the background of the COVID-19 pandemic and within the respective areas addressed by your intergovernmental body, and policy recommendations, commitments and cooperation measures for promoting a sustainable, resilient and inclusive recovery from the pandemic while advancing the full implementation of the 2030 Agenda:**

The benefits of driving digital transformation can have a transcending impact on the achievement of all SDGs, including the cluster in review this year. Digital transformation forms an integral pillar of the Strategic Plan of ITU, the United Nations specialized agency for ICTs.

The COVID-19 pandemic showed us that universal affordable access to broadband Internet is foundational to building resilient learning environments and to ensuring inclusive and equitable quality education. Yet only about half of the world's schools are connected to the Internet and 1.3 billion children have no access to the Internet at home. During the recent COVID-19 crisis, the global school shutdowns and health crisis have exacerbated already challenging realities for lower-income countries: with limited or non-existent infrastructure to connect to distance learning and essential services, their current education and economic stability as well as future opportunities and welfare are significantly set back. This current situation proves how critical it is to now accelerate connectivity, online learning and other initiatives for children and their communities, and drive economic stimulus.

In terms of education, through Giga, ITU is partnering with UNICEF to connect every school in the world to the Internet by 2030. Leveraging the convening power of ITU and UNICEF, Giga brings ministries of education, ICT and finance together with the private sector and civil society in a collaborative process to sustainably connect schools. Giga's work includes: 1) mapping the location of schools and monitoring connectivity status in real time, 2) planning the infrastructure, policies, regulations, and investments needed to deliver sustainable school connectivity, 3) designing solutions to finance the capital and operational costs of connecting schools, and 4) supporting governments to contract connectivity for schools. By the end of 2022, Giga has helped connect more than 5,700 schools and 2.2 million children across 19 countries. Giga has also mapped 2.1 million schools across 137 countries.

From the policy, regulatory and economic perspective[4], the pandemic has highlighted critical existing policy shortfalls, such as the failure to enable critical infrastructure

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[4] https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/Events2021/EconomicRoundTable09.aspx

deployment. It has also exposed the importance of digital infrastructure and the costs of the digital divide. It is recommended that governments use the experience provided by the pandemic to digitalize their economies as follows:

- Support the development of a digital economy through short-term measures by addressing immediate sector needs (e.g. release emergency spectrum, defer licence fee payments or issue technology-neutral licences).
- Support development through longer term measures (e.g. new regulatory frameworks, emerging shared ICT infrastructure models and digital resilience plans) to address future pandemic disruptions.
- Governments should take a much broader, holistic view of investment in high-speed broadband networks, given the economic, social and environmental benefits.
- Prioritize bridging the digital divide by, for example, investing in bankable rural business models and broadband connectivity.

ITU is also cooperating with the UN system to enhance efforts around digital development. Building upon the UNSG's Roadmap on Digital Cooperation, ITU with UNDP have been operating the Joint Facility for Digital Capacity Development. The Joint Facility and its Database of Digital Capacity Providers has been used by over 2200 people since its launch in over 100 countries. ITU and UNDP are also leading efforts to establish a Joint SDG Fund Window for Digital Transformation, which would seek to pool funding for catalytic projects advancing digital transformation.

In 2022, ITU and the Office of the United Nations Secretary-General's Envoy on Technology announced a set of ambitious new targets for universal and meaningful connectivity to be achieved by 2030. These 15 aspirational targets, developed in response to the United Nations Secretary-General's Roadmap for Digital Cooperation, provide concrete benchmarks and position sustainable, inclusive and meaningful connectivity as an essential driver of global development. With the 2030 deadline of delivering on the Sustainable Development Goals fast approaching, identifying new strategies to achieve full digital inclusion has become a matter of utmost urgency if we are to have any hope of meeting our Global Goals. That means working more collaboratively to solve chronic gaps in rural access, access at home and at school, digital skills training, quality and speed of connection, and equal digital opportunities for marginalized groups including women and girls, as well as striving to ensure that every country meets the affordability target set by the Broadband Commission for Sustainable Development of less than 2 per cent of monthly gross national income per capita.

The ITU Partner2Connect Digital Coalition is one response to this pressing challenge, and has already mobilized an unprecedented USD 29.2 billion for connectivity projects around the world.

The WSIS Action Lines allow ITU to monitor and measure their progress towards certain targets in the WSIS Action Lines themselves which have been mapped to the SDGs.

Additionally, the UN AI Actions developed by ITU together with 46 other partners, maps AI use-cases employed within the UN system, covering all 17 Sustainable Development Goals (SDGs) ranging from smart agriculture and food systems to transportation, financial services, smart cities, healthcare and AI solutions to combat COVID-19.

(e) Key messages for inclusion into the Political Declaration of the September 2023 SDG Summit:

The COVID-19 pandemic has shown that connectivity for all is essential for economic activity and citizen welfare, and key digital challenges cannot be overcome by one stakeholder group alone. As highlighted by the UN Secretary General António Guterres, in his launch of the Roadmap for Digital Cooperation, "Effective digital cooperation is instrumental in achieving the future we want and the ambitious goals of the 2030 Agenda for Sustainable Development". The increasing reliance on digital infrastructure by national economies and citizens combined with the probability of new global emergencies means regulators will need to switch focus beyond regulating within traditional sectoral frameworks to regulatory frameworks which are adaptive, collaborative, outcomes-based and technology neutral.

In the aftermath of the COVID-19 global crisis, public and social policy realignment and regulatory repatterning may need to take place. It is important that digital regulation can boost the readiness of digital markets to face unexpected events and emergencies and deliver up to the expectations despite the odds, notably through targeted reforms. Increasing globalization of markets and blurring of traditional sectoral boundaries will mean that international and inter-governmental cooperation and collaboration are integral in ensuring ICT regulatory frameworks can adapt and respond to new and emerging regulatory challenges.

The post-COVID digital world needs a new take on digital policy and regulation. New approaches may be needed to enhance regulatory foresight, collaboration and cooperation with other sectors, harness data to target interventions and create space for regulators and industry to experiment together. This is key in finding market solutions to new challenges as new technologies, business models and players continue to test existing regulatory paradigms. Such new approaches will build sound solutions that protects consumers while encouraging market growth and innovation[5].

Access to the Internet is increasing, but not as quickly and evenly across the world as it needs to. Too many people still live in digital darkness. The global challenge is to commit the resources that would allow everyone to benefit in a meaningful way from being connected.

With the 2030 deadline of delivering on the Sustainable Development Goals fast approaching, identifying new strategies to achieve full digital inclusion has become a matter of utmost urgency if we are to have any hope of meeting our Global Goals.

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[5] ITU Global Symposium for Regulators (GSR) Best Practices Guidelines (https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/bestpractices.aspx)

That means working more collaboratively to solve chronic gaps in rural access, access at home and at school, digital skills training, quality and speed of connection, and equal digital opportunities for marginalized groups including women and girls, as well as striving to ensure that every country meets the affordability target set by the Broadband Commission for Sustainable Development of less than 2 per cent of monthly gross national income per capita.

ANNEX 1: IN-DEPTH VIEW OF THE ROLE OF ICTS AND ITU'S CONTRIBUTIONS TO GOALS 6 (on clean water and sanitation), 7 (on affordable and clean energy), 9 (on industry, innovation and infrastructure), 11 (on sustainable cities and communities), and 17 (on partnerships for the Goals)

Goal 6: Ensure availability and sustainability management of water and sanitation for all

ICTs are particularly important for smart water management, facilitating the measurement and monitoring of water supplies as well as necessary interventions, and enabling practitioners at the local level to ensure the equitable and sustainable extension of water, sanitation and hygiene (WASH) services. As the costs of ICTs continues to fall, governments will be able to better integrate ICTs into monitoring and evaluation frameworks to optimize operations and improve the quality of service.

ITU contributes to SDG6:

- ITU contributes to targets 6.1, 6.4 and 6.5 through the work of study groups on creating the Smart Society, which raises awareness and examines best practices for fostering and enabling the deployment and use of smart devices, including management and control of drinking water supplies, water pumps, among others. This is especially important in developing countries;

- ITU contributes to target 6.4, recognizing the need to develop 'smart' water-management systems; one that incorporates the views of irrigation, agriculture, environment and communications ministries as well as those of the ICT industry and relevant intergovernmental and non-governmental organizations. A number of relevant texts were developed;

- ITU also contributes to SGD target 6.4 by studying smart water management in the context of IoT and smart cities;

- Radiocommunication systems, as enabled by ITU activities, are fundamental for Target 6.6, to monitor the water cycle and groundwater and help to efficiently monitor, protect and restore water resources and associated ecosystems;

- ITU-R has published a Report on smart grid utility management systems that explains how smart grid connectivity and communications help to reduce the overall electricity demand through system optimization as well as to integrate renewable energy resources. Similar developments are taking place in gas and water infrastructure (including clean water, wastewater and sewerage, and hot water);

- ITU contributes to Target 6.3 through its Waste Electrical and Electronic Equipment (WEEE) Policy Support for the Dominican Republic in supporting the government in developing a dedicated Regulation on E-waste Management and Final Disposal in its efforts to reduce pollution, eliminate dumping, and minimize release of hazardous chemicals and materials.

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

ICTs and energy efficiency can be connected in two ways: 'Greening of ICTs' and 'Greening through ICTs'. In the first case, ICTs are being transformed and developed to be more environmentally sound and less carbon-intensive. In the second case, ICT-enabled solutions (for example smart grids, smart buildings, smart logistics and industrial processes) are helping to transform the world towards a more sustainable and energy efficient future. These green technologies and processes have the potential to play a significant role in significantly reducing global greenhouse gas emissions.

ITU contributes to SDG7:

-   ITU contributes to targets 7.1, 7.2 and 7.3 through the work of the study groups on creating the Smart Society, which raises awareness and examines best practices for fostering and enabling the deployment and use of smart devices, including mobile devices, that can contribute to saving electrical energy; measuring the effects of environmental pollution; and solving the challenges facing cities and rural areas, among others. ITU contributes to target 7b through helping countries develop and establish green telecenters that will provide connectivity to LDCs, SIDS and LLDCs;

-   ITU studies methodologies for assessing the environmental impact of ICT, published guidelines for using ICTs in an eco-friendly way, tackling e-waste issues, and energy efficiency of the power feeding system. For SDG target 7a, a number of Recommendations elaborate on energy efficiency of networks and green data centres, and on energy efficiency of universal power adapter solutions. ITU collected and documented information and concepts that would be helpful for developing Recommendations to support smart grids from a telecommunication/ICT perspective (SDG targets 7a and 17.6);

-   ITU contributed to SDG target 7a having developed several Recommendations on home energy management systems, and a framework of energy saving for future networks, on requirements, scenarios and functional architecture for user-side energy Management Service, and on requirements and architecture of the home energy management system and home network services;

-   Radio systems such as Wireless avionics, smart grids, and Internet of Things- IoT, enabled by ITU activities, help ensure reliable and modern energy services, improve energy efficiency, and decrease energy consumption;

-   ITU-R Study Group 6 continues to carry out research that contributes to the reduction of the environmental impact of terrestrial broadcasting systems. Like all industries, the broadcasting community has a responsibility to improve its environmental performance. The transition from analogue to digital television has led to a dramatic reduction in energy consumption needed for the terrestrial television service. Recently, a Webinar on Energy Aware Broadcasting, organised by ITU in March 2022, reunited experts from major broadcasting companies to discuss the current work being undertaken by broadcasting organisations and partners to minimise the environmental impact of content creation, exchange and delivery;

-   ITU monitors the Greenhouse Gas emissions (GHG), energy use and climate commitments of over 150 leading tech companies via an annual industry assessment report. In addition, ITU is supporting countries to monitor and track their ICT sector GHG emissions and

energy use by collecting data and developing a database. The report found that digital companies accounted for 7 of the top 10 largest corporate purchasers of renewable energy in 2020. However, only 13 of the 150 companies reviewed purchased all their electricity from renewable sources. The 150 companies' electricity consumption was 1.6 per cent of the global total consumption in 2020;

- ITU is developing a 'Greening Government Data Centre Guide' which aims to showcase the best international sustainability practices and assist data center practitioners in identifying and implementing measures to improve the energy efficiency and environmental performance of their data centers.

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Global and local infrastructure in the 21st century is controlled, managed and optimized by ICTs – whether power networks, water supplies, transportation systems, or indeed communications networks themselves. Industrialization – and notably the increases in productivity it enables – is highly-dependent on the effective use of ICTs. And nowhere has innovation been more clearly fostered than in the emerging information and knowledge societies, which depend on open access to academic research and the power of online collaboration.

ITU contributes to SDG9:

- The ITU Members States have unanimously adopted the Connect 2030 Agenda, setting out the shared vision, goals and targets that Member States have committed to achieve in collaboration with all stakeholders across the ICT ecosystem. The Connect 2030 goals and targets aim to bridge the digital divide and provide broadband for all, enabling and fostering access to and increased use of ICTs worldwide, and in particular in the LDCs –as well as ensuring that telecommunication/ICTs are a key enabler and a mean to accelerate the implementation of the 2030 Agenda for Sustainable Development;

- Target 9.1 and 9.3 - By providing globally harmonized spectrum and technical standards, ITU enables the development of high quality, reliable, sustainable and resilient infrastructures accessible to all under affordable and equitable conditions;

- The ITU Policy and Regulation Initiative for Digital Africa (PRIDA) is implementing several activities, such as: a) the Harmonized Calculation Method for Africa (HCM4A) agreement. It builds on strong partnerships with the African Union and the European Union to accelerate digital transformation and improve lives in Africa. b) the implementation of the National Table of Frequency Attribution (NTFA) technical assistance for South Sudan. c) the implementation of the Digital Dividend Evaluations for Madagascar and Djibouti;

- ITU contributes to building resilient ICT infrastructure by assisting Member States in elaborating both holistic and targeted ICT policies and regulations that can contribute to reducing barriers to broadband deployment, actively facilitating build-out of national fibre-optic networks and international connectivity links, including across sectors. ITU also promotes the deployment of ICT services in unserved and underserved areas, including

emergency and accessibility-enhanced services;

- In Asia and the Pacific, supported by the Governments of Australia and Japan, ITU is implementing initiatives to enhance resilient infrastructure as the region is prone to natural disasters. ITU's support includes assessment of existing digital connectivity and infrastructure as well as development of the National Emergency Telecommunication Plan (NETP);

- By developing guidelines and recommendations for the elaboration, implementation and enforcement of a wide array of ICT regulatory policies and other legal instruments to stimulate the deployment of broadband networks, particularly in developing countries;

- One of the examples of ITU's support in Asia and the Pacific is the assessment conducted on school connectivity in Thailand and regional study in the region, as part of the measures to mitigate the negative impacts of COVID pandemic;

- By fostering the development of telecommunication/ICT network through enhanced understanding of ICT Infrastructure, such as the "ITU Broadband Map". This project provides a perspective of broadband connectivity, geospatial capabilities, and training event to support capacity of ITU Members to identify broadband investment opportunities;

- Target 9.5. and 9.c - Space, mobile, transport industries benefit from ITU activities, which encourage investments by maintaining a stable and predictable regulatory environment, and promoting an efficient and sustainable use of spectrum resources;

- ITU is constantly promoting affordable access to ICT and Internet, through the development of standards and also within the following contexts:

    o IMT 2020/5G, smart and future networks
    o Broadband access and affordable optical networks, deployment of Internet exchange points (IXPs)
    o ICT services costs and tariffs methodologies
    o Consideration of implementation/complexity cost during development of recommendations
    o Policy/governance: cooperation with WSIS process, ISOC, etc.
    o Workshops and tutorials;

  - The implementation of the Conformity and Interoperability (C&I) programme, which includes a capacity development component in the form of trainings in C&I, ITU helps to increase interoperable products and systems, contributing to the availability of universal and affordable ICT solutions;

  - The ITU and the Craig and Susan McCaw Broadband Wireless Network project is providing low-cost broadband connectivity and developing ICT applications for schools and hospitals with implementation in several African and Arab countries (including Burkina Faso, Mali, Rwanda, Swaziland, Lesotho and Djibouti);

- Through the establishment of telecentres that will provide connectivity to remote and rural areas, which will also serve to reduce vulnerability to disasters;

- ITU is supporting the adaptation to new ICT infrastructures by developing guidelines for implementing regional IXPs, taking into account the drop of Internet interconnection rates and the legal and regulatory framework of each country assisted. In the Americas Region, ITU in coordination with Regional Organizations, implemented three national IXPs;

- ITU is contributing to bridging the standardization gap needed to ensure that countries experience the economic benefits associated with technological development, and to better reflect requirements related to universal and affordable access to the Internet;

- ITU initiated the Connect2Recover initiative to strengthen resilient infrastructure of countries, particularly for least developed countries, landlocked developing countries, and small island developing states, as they recover from COVID-19 pandemic and to remain resilient in times of hazards;

- Target 9.1, 9.2 and 9.3 – Through Connect2Recover's research competition where ITU provided grants to 15 research teams, mostly from academia, to develop research on building back better with broadband post-COVID 19 to enhance digital resilience and digital inclusion in areas of education, healthcare, for small enterprises and vulnerable groups;

- ITU along with co-chairs UN-OHRLLS and Vodafone led the Broadband Commission Working Group on Smartphone Access, which produced the final report on action plans to promote affordability and ownership of smartphone devices for economic growth and social development;

- ITU contributes to promoting building confidence and security in the use of ICTs as an integral part of resilient infrastructures, through programmes aimed at building capacity and facilitating the establishment of cybersecurity capabilities in Member States. In the Americas Region, ITU developed a Child Online Protection (COP) Policy and Strategic Framework for the Organization of Eastern Caribbean States (OECS), the deployment of National Computer Incident Response Teams (CIRT), and the deployment of specialized cybersecurity capacity building, among other activities;

- In Asia and the Pacific, ITU has been partnering with UNICEF and other UN agencies to localize ITU's COP guidelines in Thailand, Mongolia, Indonesia, Cambodia and Bhutan, while organizing awareness raising sessions at the Girls in ICT Day celebrations across the region. One of the latest examples of such awareness raising took place in Pakistan during the Digital Innovation Week in December 2022. In the area of cybersecurity, ITU has been assisting member countries to conduct cyberdrills and build technical capacity of cybersecurity professionals;

- Target 9.a - Through the project "National Broadband Policies and Applications", implemented by ITU and the Ministry of Science, ICT and Future Planning (MSIP) of the Republic of Korea, ITU is providing technical assistance to developing countries;

- Target 9.1 and 9.c - ITU also contributes to the monitoring of these targets by collecting and disseminating a number of relevant ICT indicators, including on broadband Internet access in urban and rural areas, mobile population coverage, and broadband Internet prices;

- ITU is developing a 'Greening Government Data Centre Guide' which aims to showcase the best international sustainability practices and assist data center practitioners in identifying and implementing measures to improve the environmental performance and climate resilience of their data centre infrastructure;

- By developing international regulations and standards, radiocommunication systems such as mobile systems (4G, 5G) and geostationary and non-geostationary satellite systems have enabled significant increase in access to affordable and universal broadband communication services.

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

With more than half the world's population already living in urban environments, ICTs will be essential in offering innovative approaches to managing cities more effectively and holistically – through applications such as smart buildings, smart water management, intelligent transport systems, and new efficiencies in energy consumption and waste management.
Using ICTs to make cities more eco-friendly and sustainable is vital – not just for the well-being of urban inhabitants, but also for the sustainability of the planet.

ITU contributes to SDG11:

- ITU contributes to the achievement of this goal through developing and delivering training programmes on smart, inclusive and sustainable cities. ITU contributes by providing guidelines to ensure that public digital services are accessible to all persons, with a special attention to persons with specific needs such as persons with disabilities and older persons. ITU is addressing the topic by promoting accessible ICTs/smart technologies and by promoting ICT/digital accessibility policies and strategies including those applicable to public services, products and systems, including by promoting the public procurement of accessible ICTs for public transport systems;

- ITU contributes to promoting the protection of ICT systems governing critical infrastructures and services (including transport) in order to avoid and prevent the disruption of services and ensure business continuity;

- To guarantee that all their citizens can benefit from smart cities development and that everyone can access the digital information, products and services equally and equitably ITU is supporting members' efforts in mainstreaming ICT/ digital accessibility also in this topic. To strengthen capacity of ITU members and stakeholders ITU made freely available an online self-paced training strengthen Beyond smart cities = "Smart for all" : Towards building inclusive and digitally accessible environments and communities to meet the needs of present and future generations. The training is available in English, French and Spanish and delivered in digitally accessible format. Video tutorials are also available in English with captioning in: English; French and Spanish;

- ITU, in support of SDG target 11.3, has been working with UNECE to develop an internationally accepted definition for Smart Sustainable Cities (SSC). An extensive list of key performance indicators (KPIs) for cities wishing to transition into SSC were developed;

- ITU contributes to target 11.6 through work of on creating the Smart Society, which raises awareness and examines best practices for fostering and enabling deployment and use of smart devices, including mobile devices, contributing to the protection of property and persons; smart management of motor vehicle traffic; saving electrical energy; measuring the effects of environmental pollution; improving agricultural yield; management of healthcare and education; management and control of drinking water supplies; and solving the problems facing cities and rural areas, etc. ;

- ITU contributes to target 11.5 and 11.b by implementing national emergency telecommunication plans that will help countries reduce vulnerability and enhance resilience when disasters strike, as well as the establishment of early warning and monitoring systems to mitigate the effects of climate change.

- ITU is contributing to the UN's newly launched Early Warnings for All (EW4A) Initiative, which stipulates that every person in the world should be protected by an early warning system by 2027. The initiative's Action Plan puts the ITU in the leading role on 'Warning Dissemination and Communication' – a critical component of early warning systems that ensures alerts reach the people at risk in time to take action . Improved capacity in Emergency Telecommunications Infrastructure by installing a WINLINK Emergency Network in the Americas (Latin America & the Caribbean) with training on utilizing the network. Workshops have been held to improve the capacity of the Member States, as well as coordination between the different entities within the countries;

- ITU studies telecommunications for disaster relief/early warning, network resilience and recovery, and in support of SDG target 11.5, developed a Recommendation with requirements for safety confirmation and broadcast message service for disaster relief, which can realize public organizations' business continuity plans (BCP) and can, to the best of their ability, help protect lives and property during a disaster;

- ITU, in support of SDG target 11.5, studies appropriate ways to improve network resilience and recovery against disasters;

- In support of SDG target 11.5, the Common Alerting Protocol (CAP) was standardized as a simple but general format for exchanging all-hazard emergency alerts and public warnings over all kinds of networks;

- ITU contributes to target 11.6 and indicator 11.6.1, including through the Global E-waste Statistics Partnership, by helping countries to improve the quality, collection and interpretation of e-waste data using an internationally adopted methodology. ITU is also supporting Member States in the development of environmentally sound national e-waste management regulation. This allows the management of e-waste in urban areas, improve collection and recycling rates, and overall reduce the amount of e-waste being generated;

- As most e-waste will be generated in cities, it is particularly important to properly manage e-waste in urban areas, improve collection and recycling rates, and to reduce the amount of e-waste that ends up in dumpsites. In contribution to Target 11.6, ITU has been working together with the Dominican Republic to support the development a national regulation for E-waste Management and Final Disposal in its efforts to reduce the adverse per capita environmental impact of cities.

- ITU standards supporting the Internet of Things (IoT) will assist both developed and developing countries in transforming city infrastructure, benefiting from the efficiencies of intelligent buildings and transportation systems. In support of SDG target 11.2, ITU is involved in several smart city pilot projects (with cities including Wuxi, Manizales, Dubai, Singapore, Santiago de Chile, Montevideo, and Rimini) to measure the smartness and sustainability of the participating city. The pilot projects are also expected to generate inputs for the refinement of these key performance indicators (KPIs);

- Policy and strategy advice in building inclusive digital environments were also included in the face-to-face executive training in ICT/digital accessibility delivered to ITU members and policy and decision makers within the Accessible – ICT for all regional knowledge development platforms. (e.g. last year in ASP and AMS);

- ITU studies telecommunication/ICT accessibility for persons with disabilities, and in support of SDG target 11.2, has developed a Recommendation which explains how audio-based network navigation systems can be designed to ensure that they are inclusive and meet the needs of persons with visual impairments;

- ITU's Radiocommunication Sector (ITU-R) promotes accessible wireless technological development to improve the accessibility of ICTs and to reduce the digital disabilities divide. It supports the advancement of a global disability-inclusive agenda for radiocommunication and broadcasting matters;

- A wide number of publications aiming at improving the accessibility for people with disabilities and specific needs have been published and they address several accessible matters, including hearing disabilities; sight impairment; aging audience and receiver user-friendliness;

- The potential of using artificial intelligence (AI) for accessibility, for example, automation of content recognition, including speech to text and text to speech; dialogue tools for audio description; object and scene recognition are also addressed in some ITU-R Recommendations and ITU-R Reports;

- Short-range device (SDR) applications include bands designated for industrial, scientific and medical (ISM) applications and bands not designated for ISM applications. SRDs may create the potential for harmful interference to radiocommunication services, and some of them can be carried by individuals across national boundaries. ITU-R Study Groups have produced Recommendations that provide frequency ranges to be used as recommended ranges for SRD applications requiring operation on a global or regional harmonized basis, including a new harmonized band for "Telecoil Replacement Systems (TRS) for persons with hearing disabilities. They have also published ITU-R Reports that set out common technical and non-technical parameters for short-range radiocommunication devices including wireless applications in healthcare, such as hearing aid, guiding system for the blind and medical implant communications systems (MICS);

- ITU in support of SDG target 11.2 has developed a number of Recommendations on Internet of things (IoT), ubiquitous sensor networks, IoT-based web-of-things, key performance indicators for smart sustainable cities, inter alia, giving general guidance to cities and provides KPIs for smart sustainable cities to help cities achieve Sustainable Development Goals (SDGs), as well as on infrastructure and services for smart sustainable cities;

- Similarly, responsible for IoT security and in support of SDG target 11.2, ITU has developed a Recommendation on a simple encryption procedure for Internet of things (IoT) environments;

- ITU, in support of SDG target 11b, is developing Recommendations to reduce the environmental impact of ICT and how Internet of Things can be applied for the sustainable growth of communities. In the area of emergency communications, a number of Recommendations have been developed for call priority schemes that ensure that relief workers can get communication lines when they need to, whether using traditional or next generation communication networks. Complementary to the need to provide call priority during emergencies is the ability to deliver warnings to users, and standards are fundamental to ensure that warnings are delivered in a timely way, uncorrupted from the source to the end users – no matter how they can be reached;

- In support of SDG target 11.b, is developing Recommendations to reduce the environmental impact of ICT and how Internet of Things can be applied for the sustainable growth of communities. In the area of emergency communications, several Recommendations have been developed for call priority schemes that ensure that relief workers can get communication lines when they need to, whether using traditional or next generation communication networks. Complementary to the need to provide call priority during emergencies is the ability to deliver warnings to users, and standards are fundamental to ensure that warnings are delivered in a timely way, uncorrupted from the source to the end users – no matter how they can be reached;

- ITS- GNSS, radars, IoT for road, railway, aviation and maritime transport are all enabled by the activities of ITU on spectrum regulations and standards and their promotion. Earth Exploration satellites, Sound and Television broadcasting and broadband mobile, as enabled by ITU, contribute to the protection of the world's cultural and natural heritage;

- By managing spectrum resources and developing standards and best practices on radiocommunications, ITU contributes to ensure more accurate weather predictions, climate change monitoring and mitigation, public protection and disaster relief, as well as search and rescue, thus increasing resilience to disasters and reducing the losses caused by disasters;

- ITU-R Study Groups keep carrying out studies about the current and possible future use of International Mobile Telecommunications (IMT) in support of broadband public protection and disaster relief (PPDR) communications. Some ITU-R Reports also provide examples for deploying IMT for PPDR applications and related case studies;

- For many decades, terrestrial and satellite broadcasting systems have been the primary source of critical information to the public in the event of disasters, playing a critically important role in disseminating information to the public in times of emergencies. Hence, ITU-R Study Groups continue to develop ITU-R Reports and ITU R Recommendations that show how the existing broadcast infrastructure is used to support emergency communications. They also describe new broadcasting techniques and systems for distributing emergency information as well as the role of international broadcasting for disaster relief;

- SMART Seas -This project sets out to preserve the lives of highly vulnerable small-scale fishers in the Caribbean through improved emergency communications at sea;

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

ICTs are specifically mentioned as a means of implementation under SDG17, highlighting the cross-cutting transformative potential of ICTs. Indeed, ICTs are crucial in achieving all of the SDGs, since ICTs are catalysts that accelerate all three pillars of sustainable development – economic growth, social inclusion and environmental sustainability – as well as providing an innovative and effective means of implementation in today's inter-connected world. Paragraph 15 of the 2030 Agenda for Sustainable Development highlights that "the spread of information and communication technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies…"

ITU contributes to Goal 17:

- The ITU World Telecommunication Development Conference (WTDC) in June 2022 provided a unique opportunity to develop innovative approaches and new models of

collaboration for connectivity and digital solutions in this final Decade of Action to achieve the SDGs. WTDC mobilized the global community around the power of digital transformation and reshape the connectivity agenda to achieve the SDGs;

- The implementation of ITU Strategic Plan, linked to the ITU Connect 2030 Agenda, and WTDC Action Plan will contribute in achieving the SDGs. Based on key policy and regulatory developments which impact innovation and investment, including and in particular through implementation of the Regional Initiatives and to implement the SDGs where ICTs can play a decisive role, including health, education, gender equality, agriculture, governance, e-waste and emergency telecommunications. Mapping of activities between other Sectors is conducted and calendar of events which facilitates collaboration and coordination between Sectors is developed;

- The "World Telecommunication and Information Society Day" celebrated annually on 17 May, to raise awareness of the possibilities that the use of the Internet and other ICTs can bring to societies and economies, as well as ways to bridge the digital divide. Since 2020, aligned with the Decade of Action, themes are focused on promoting the Connect 2030 Agenda to follow the progress of ITU membership to deliver on its goals and targets (in line with the SDGs), and to share the guidance of ITU and the contribution of the membership towards connecting the world;

- ITU provides a neutral platform for ITU members from government, industry and academia to share experiences, present ideas, exchange views and achieve consensus on appropriate strategies to address ICT priorities, as well as strengthening the means of implementation and enhancing access to science, technology and innovation by strengthening international cooperation and knowledge sharing on key ICT topics;

- Open platforms, such as ITU Focus Groups, help determine the way forward, while membership-driven ITU Study Groups develop the international standards that give everyone the opportunity to move forward together. Partnerships also receive key support from collaborative frameworks like AI for Good, United for Smart Sustainable Cities, the Digital Currency Global Initiative, and the AI for Road Safety initiative;

- Strengthening digital skills development in the America region through the implementation of the Americas Girls Can Code Project, in partnership with Meta for Latin American countries. Through this project countries are assisted on topics related to promotion of gender digital inclusion policies and strategies;

- Promoting ICT capacity development training activities in benefit of youth from local communities in the Americas Region, more specifically in the Gran Chaco region, through the project entitled "Youth Digital Skills" in line with the needs of the ICT labour market/ecosystem. This project represents a cooperation between ITU and the Gran Chaco Foundation and also provides support to countries for the development of national strategies for enabling innovation and entrepreneurship oriented to youth;

- Promoting a regional platform on ICT accessibility that brings together stakeholders from the Americas region for participating in the event "Accessible Americas: ICT for ALL" as an opportunity for the development of strategic

cooperation and collaboration in the field of digital accessibility and inclusion in the region. This platform also provides ITU executive trainings on the topic of ICT accessibility, promotes tools, resources, solutions and good practices to foster national policies toward achieving digital inclusion of everyone, including persons with disabilities;

- Mobilizing in-cash and in-kind resources through partnership with various stakeholders from the ICT ecosystem for the implementation of ICT activities, projects and initiatives in developing countries at national and regional levels, including by developing strategies and related tools and services (databases sponsorship packages, dedicated websites, concept notes, promotional vehicles, etc.);

- Strengthening the global ICT innovation ecosystem through activities such as know-how sharing (e.g. Global Innovation Forum, WSIS, Digital World, Broadband Commission for Sustainable Development), and co-creating grassroots projects based on new global and local partnerships. In addition, the established International Centre of Digital Innovation (I-CoDI), provides assistance to the Member States facilitation integration of telecommunication/ICT innovation into their national development agendas. Within the framework of the activities under I-CoDI, a Regional Hub for Africa has been established with dedicated physical space in the ITU Regional Office that aims to bring together different partners and create synergies around ongoing activities using different innovative approaches, tools and processes that can solve complex connectivity challenges for meaningful connectivity. It also aims to foster collaboration across governments, UN country teams, development partners, private sector, academia, and other stakeholders to implement joint initiatives to advance digital transformation in the region;

- ITU has launched the empowering Africa young leaders to solve regional digital challenges: Africa's youth (ITU youth envoys, community workers, entrepreneurs, researchers, students and young professionals) from various backgrounds shared best practices on youth-led digital innovations at the Generation Connect Global Youth Summit in Kigali. ITU in collaboration with partners such as ILO, UNHCR and ATU convened young leaders from around the Africa region to lead and participate in partner sessions that provided youth organizations and youth leaders a forum to present and discuss their innovations and projects to empower youth to contribute to the digital transformation of their societies, in support of joint programmes and initiatives. In partnership with UNFPA, ITU helped rethink the Tech4Youth platform, which addresses a range of issues related to the empowerment and resilience of Youth for SDGs 3 and 5, and developed a new initiative called Tech4Girls, an innovative training and mentoring project to improve creativity and problem-solving, and communication and entrepreneurial skills of young girls. In addition, ITU partnered with UNFPA and WIPO to run an Innovation Challenge to seek and support "Innovation to Empower Women and Girls";

- Promoting and scaling up actions at the global level aiming at 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;

- ITU, together with the governments of Germany and Estonia, and the Digital Impact Alliance, launched an initiative to assist national governments in establishing interoperable, secure and reusable IT infrastructure in support of their national development objectives. The "GovStack" is a set of digital building blocks that allow national public agencies to harness the power of emerging IT technologies, while minimizing costs and dependence on external contractors. The building blocks can be stacked together to easily build need-tailored, yet technically standardized solutions and services for citizen-oriented use cases in administration, health care, agriculture, education, and more. In this framework, the following activities were launched:

    o Two Building Block (BB) technical specifications were published.
    o The Horn of Africa GovStack implementation in Djibouti and Kenya started in June with a series of digital service co-design workshops to prioritize and rank five government services to be digitized in 2023 using a GovStack Service Design & Building Blocks Approach.
    o Technical specifications for geographic information systems, e-signature, cloud & infrastructure, UX/UI, and e-marketplace started their co-design process in September.
    o The GovStack CIO Digital Leaders Forum was launched at WSIS Forum 2022 with the participation of Egypt, Estonia, India, Peru, Rwanda and Ukraine.

- ITU is promoting ICT regulatory policies enhancing policy coherence, notably by making knowledge exchange tools and platforms available, raising awareness about the importance of an enabling environment; organizing global and regional forums and seminars to discuss global trends in digital regulation for Sector Members and other national and international ICT and intersectoral stakeholders, through events such as the Global Symposium for Regulators (GSR) as well as strategic dialogues on topical policy, legal, regulatory, as well as on economic and financial issues and market developments, and the World Telecommunication/ICT Indicators Symposium (WTIS);

- ITU is proposing guidelines and recommendations addressed to the regulatory community and industry stakeholders (policy-makers, national regulatory authorities (NRAs), network operators/service providers, equipment manufacturers, digital players, governments, academics, international and regional associations, civil society) to promote and encourage cooperation and collaboration at regional and global level on policy, regulatory and economic issues notably through ITU Research publications, the Global Symposium for Regulators (GSR) Best Practices Guidelines, REG4COVID platform, ITU Datahub, ITU-World Bank digital regulation platform,G5 Accelerator, etc.;

- Providing a neutral platform for international cooperation towards building a harmonized and coordinated approach to fast-forward the evolution of the information society;

- Monitoring of Target 17.6 by collecting and disseminating data on Internet access and usage, in particular fixed broadband access, which is a key requirement for enhanced access to science, technology and innovation networks;

- The establishment of Mutual Recognition Agreements for a common and harmonized Conformance and Interoperability (C&I) programme at international and regional levels. Through the share and efficient use of C&I infrastructures – as laboratories, accreditation bodies and regulatory practices – technical requirements can be harmonized and the transit of ICT goods and services can be facilitated, increasing trade and regional development;

- The monitoring of Target 17.8 by collecting and disseminating a number of relevant ICT indicators that enable assessment of progress made by countries, including on Internet access and usage by households and individuals, international bandwidth and ICT prices. Activities are carried out in close collaboration with the Partnership on Measuring ICT for Development;

- Promoting ICT regulatory policies enhancing policy coherence, notably by making knowledge exchange tools and platforms available, raising awareness about the importance of an enabling environment;

- Building harmonized regulatory frameworks within and across regions, and establishing a broader and inclusive dialogue and enhanced cooperation among all stakeholders;

- Enhancing the global partnership for sustainable development by working with governments, through their policy making and development of institutional frameworks for the ICT sector as well as with the private sector, to lay the foundation of modern digital economies;

- ITU with the support of the governments of Japan and Saudi Arabia launched the Connect2Recover initiative at the time of the COVID-19 pandemic to assist beneficiary countries, in particular LDCs, LLDCs, and SIDS, to build back better during the recovery period, and to remain resilient in times of hazards. In addition to Japan and Saudi Arabia, the initiative has since received support from the governments of Australia, Lithuania and Czech Republic. In addition, there is also support provided by Vodafone (to support the work of the Broadband Commission Working Group on Smartphone Access) and Huawei (to support the research competition). With the support of the partners, Connect2Recover has an impact on 43 countries around the world;

- Further scaling up a series of strategic initiatives aiming at acceleration of achievement of diverse SDGs thanks to ICTs, such as Connecting Every School to the Internet (Giga), Child Online Protection (COP), International Center of Digital Innovation (I-CoDI), Connect2Recover, Digital Transformation Centres, EQUALS, Africa and American Girls can Code, Be He@lthy Be Mobile, Big Data for Measuring the Information Society, Financial Inclusion Global Initiative (FIGI);

- The ITU and United Kingdom's FCDO partnership around four streams of work to support digital inclusion in Digital Access Partnership countries in Kenya, Nigeria, South Africa, Indonesia and Brazil, namely support toward a strengthened enabling policy and regulatory environment, sustainable connectivity models, partnerships, and digital skills, saw stakeholders engaged through the work in each of the five countries. The platform provided for stakeholders in the national ecosystem to engage, share, and tap into each other's expertise and insights for future joint work. The coordination and bringing

together of initiatives also saw the crystallization of gaps, opportunities, and co-creation of guidance that could inform further interventions;

- Fostering the use of Artificial Intelligence and other digital technologies in the health sector: During the Seventy-second session of the WHO Regional Committee meeting for Africa, ITU and WHO with support from USAID organized a Ministerial meeting on the use of Artificial Intelligence for Health as a side event on 25 August 2022. The event brought together Ministers of Health and Ministers of ICT who shared country experiences and emphasized the critical role of integrating digital technologies such as Artificial Intelligence to advance digital transformation in the health sector. Different strategies to strengthen institutional capacity and enable cross-sectoral collaboration for enhanced health care in Africa were highlighted;

- Launch of the second phase of the African Girls Can Code Initiative (AGCCI) in collaboration with the African Union Commission, UN Women, UNECA, UNICEF, UNESCO and other partners with financial support from the Government of Belgium. The second phase will aim to equip young girls with digital skills through national programmes in eleven selected countries delivered through ITU Academy platform;

- Enhancing the digital ecosystem and digital skills for the economic empowerment of women through the ITU-EIF project activities have been undertaken that include the Hub of Africa Addis Fashion Week, product development workshops, digital market webinar series and workshops which have enabled women entrepreneurs to show-case their products, receive training and mentoring, gain in-depth understanding of the information and digital tools needed to improve their readiness and competitiveness in the international market. During the webinar series and workshops, the women entrepreneurs have been equipped with knowledge on; how to understand customers using digital tools, how to build an online brand identity, introduction to pricing, wholesale marketing, design and digital photography;

- The ITU and International Labour Organization (ILO)'s partnership and programme in Africa to boost decent jobs and enhance skills for youth in the digital economy organized online and face-to-face events, activities and challenges, engaging youth, Government agencies, private sector and civil society. From the 'Creating decent jobs for youth through digital transformation' webinar during the Africa-Europe Week of Partnerships 2022, to a youth led session on 'Decent jobs in Africa's digital economy' at the Generation Connect Youth Summit in Kigali, Rwanda and to progress made on country projects (South Africa, Kenya, Rwanda, Côte d'Ivoire, Senegal, Nigeria, Ethiopia) that align with national priorities under the ITU-ILO joint programme in Africa, as a result of the work youth are getting more empowered and able to benefit from opportunities in the digital economy. Such efforts further allow strides to be made towards the goal of 25 million youth digitally skilled through the global ILO-ITU Digital Skills for Jobs Campaign;

- Creating a circular economy for electronic waste in Africa, ITU in partnership with UNEP is supporting Governments to develop policies, regulations and strategies including the implementing the Extended Producer Responsibility (EPR) concept to set the basis for a future implementation of the sound management and measurement of electronic waste with support extended 8 countries in sub- Saharan Africa in 2022;

- To scale up the impact and sustainability of the #Tech4Youth initiative and Task force Innov COVID-19 for local youth resilience and digital innovation in Benin established by UNFPA and to create lasting impact for beneficiary populations, there is a need strengthen the specialized technical assistance to develop and nurture digital innovation ecosystems through an open innovation approach. In 2022 ITU and UNFPA teamed up to assist, nurture and support the local digital innovation ecosystem in Benin and develop uses cases that can be applied for other countries in the region for the development of a sustainable and inclusive initiatives to accelerate inclusive digital transformation;

- Encouraging and promoting effective public, public-private and civil society partnerships by partnering with a range of stakeholders to empower women, girls, youth, children, indigenous peoples and persons with disabilities(e.g. for example by leading the Thematic Area on Digital Skills of the Global Initiative for Decent Jobs for Youth, and through the ITU-ILO Digital Skills Campaign for Decent Jobs for Youth; by leading the global Child Online Protection (COP) Initiative, by leading the International Girls in ICT Campaign; by hosting EQUALS: the global partnership to bridge the gender digital divide or by contributing to the regional initiatives and events in ICT accessibility – ICT for all);

- ITU's Child Online Protection (COP) Initiative joining forces with its network of partners, released in 2020 a brief on COVID-19 and its Implications for Protecting Children Online.pdf (itu.int) main product a revised version of the ITU COP Guidelines;

- ITU and the Office of the UN Special Representative of the Secretary General on Violence Against Children have initiated a collaboration named POP: Protection through online Participation, with international governmental and non-governmental organisations, academia and the private sector;

- An ongoing track record of inviting experts from developing countries to ITU meetings, workshops etc. Also, the Focus Group on Innovation studied cases of ICT innovations for developing countries and developed proposals for new standardization activities for ITU study groups and the ICT Innovation Panel;

- Developing and disseminating best practices on the use of radiocommunications and organizing seminars and workshops, ITU contributes to enhance the use of enabling technologies, in particular information and communications technologies;

- Cooperation and coordination with other standards developing organizations, such as through ITU Focus Groups, workshops and seminars, liaison activities etc.;

- ITU has contributed to the development of capacities in regulatory and economic matters, and in the generation of digital skills for digital transformation, both to governments, regulators, and civil society, with an inclusion approach, through strategic alliances with subregional organizations such as COMTELCA, in the case of Central America, and in coordination with other United Nations agencies such as UN Women, UNDP, WFP, among others. In the framework of the ITU Policy and Economic Colloquium for the Americas, Regional Economic Dialogues have been organized together with different specialized training to seek partnership with UN agencies, government and private sector, academia and civil society. The objective of these dialogues is to discuss on modernization of regulation and economic approaches in the telecommunications/ICT market;

- In November 2022, and in preparation for the World Radiocommunication Conference in 2023 (WRC-23), the Network of Women for WRC-23 (NOW4WRC23) was launched with the objective to implement the concrete actions in the WRC-19 Gender Declaration. The NOW4WRC Mentoring Programme aims at increasing the number of women participating in and taking on leading roles, such as committee chairs and conference chairs, in the technical conferences of ITU's Radiocommunication Sector. A key component of the initiative is mentoring;

- The annual WSIS Forum continues to be a key platform for multistakeholder networking and collaboration to develop inclusive and development-oriented information and knowledge societies. The Forum brings together high-level officials, academics, practitioners, ICTs experts, youth, business, and civil society leaders to engage in addressing issues on ICTs for development. The WSIS Forum 2021 began in January and culminated in the final week from 17 to 21 May 2021. The agenda and outcome of the Forum are strategically aligned to the WSIS Action Lines and the SDGs (www.wsis.org/forum);

- Creation of the WSIS Action Lines and SDG matrix, coordinated by ITU and developed by a number of United Nations agencies at the WSIS Forum 2015, and ever since used as a tool to map how ICTs may contribute to the implementation of SDGs. The Matrix serves as an easy reference for stakeholders engaged in shaping the future of both, the SDGs and the WSIS processes (www.wsis.org/sdg).

- ITU-R cooperates with the relevant international and regional organizations dealing with the use of spectrum, including the Regional Telecommunication Organizations recognized by the ITU for regional coordination (APT, ASMG, ATU, CEPT, CITEL and RCC); broadcasting organizations (ABU, ASBU, EBU and HFCC); and those focused on the use of specific radiocommunication systems and services (e.g., ITSO, ESOA, GVF, GSMA) by organizing, promoting and participating in events to build capacity on the use of the Radio Regulations, including World Radiocommunication Seminars and Regional Radiocommunication Seminars;

- ITU-R continues to participate in the activities of other international and regional standardization organizations, such as Global Standards Collaboration (GSC), 3GPP and IEEE. Other organizations we liaise with include the World Health Organization (WHO), ISO and IEC (including CISPR), Space Frequency Coordination Group;

- The ITU-R also cooperates with the UN Committee on the Peaceful Uses of Outer Space (UN-COPUOS), the International Maritime Organization (IMO), , the International Civil Aviation Organization (ICAO), the International Mobile Satellite Organization (IMSO), the Bureau International des Poids et Mesures (BIPM), the International Telecommunications Satellite Organization (ITSO), COSPAS-SARSAT, the World Meteorological Organization (WMO) and the International Committee of the Red Cross (CICR) with regards to the application of ITU treaty texts and in some cases to deliver capacity-building/training;

- In the Americas region more than seven National CIRT Readiness Assessments were deployed and more than 10 specialized cybersecurity capacity building workshops and

raising awareness were deployed in coordination with the main regional organizations and cybersecurity stakeholders;

-   ITU contributes to the development of the ICT Campaign to Combat COVID-19 Misinformation in Antigua and Barbuda, Grenada, St. Lucia, Dominica, and St. Vincent & the Grenadines;

-   In the framework of Infrastructure and Network development, identifying connectivity gaps to ICT infrastructure is key, the ITU Broadband Mapping activities (www.itu.int/go/maps) makes use of geospatial tools related to telecom infrastructure, together with relevant data for identifying missing links on regional/subregional basis. This allows the development of projects and case studies for planning broadband infrastructure deployment. Examples of ITU activities and partnerships on this includes: the digital mapping of all schools connectivity in different countries in collaboration with UNICEF under the Giga project; Financial Inclusion; and development of ICT Business Planning for sustainable network development toolkit and training.