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**ITU Council Contribution to the High-Level Political Forum on Sustainable
Development (HLPF)**

ECOSOC functional commissions and other intergovernmental bodies and forums are invited to provide substantive inputs to the 2017 HLPF showcasing the intergovernmental body's contribution towards the 2030 Agenda in general, and particularly for the Sustainable Development Goals (SDGs) and respective targets that are most relevant to the intergovernmental body's mandate.

The following template, inspired by the report of the Secretary-General on global follow-up and review of the 2030 Agenda for Sustainable Development (A/70/684), could be considered in providing inputs.

Contributions can be sent no later than **28 April 2017** to the Secretariat's e-mail pietracci@un.org

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 ICTs to underserved communities worldwide. ITU is committed to connecting all the world's people – wherever they live and whatever their means. Through ITU's work, we protect and support everyone's fundamental right to communicate.

The Sustainable Development Goals (SDGs) and targets will stimulate action over the next fifteen 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 Internet use have the potential to reduce poverty and create jobs through improved efficiency and transparency, applications and services, such as e-agriculture and digital finance, help end poverty and hunger as well as monitor and mitigate climate change and sustaining our natural resources. All three pillars of sustainable development – economic development, social inclusion and environmental protection – need ICTs as key catalysts. The development potential of ICT as cross-cutting enablers must therefore be fully harnessed for achieving the SDGs.

An in-depth view of the role of ICTs and ITU's contribution to the goals to be reviewed at the 2017 High-Level Political Forum for Sustainable Development (Goals 1,2,3,5,9,14 &17) is provided in Annex 1.

Submission Template

(a) An assessment of the situation regarding the principle of "ensuring that no one is left behind" at the global level:

“Ensuring that no one is left behind” has a specific meaning in telecommunications – that of *universal access and service (UAS)* and leaving no one off-line.

Access to affordable, reliable and secure telecommunication/ICT networks, including broadband, and to related services and applications, can facilitate economic, social and cultural development and implement digital inclusion through these means.

In pursuance of its mission, ITU annually monitors the digital divide, including the gender digital divide (see below), to assess and track who has access to ICTs and telecommunication networks, and where.

Over the last ten years, the mobile sector has continued to grow dynamically, with mobile-cellular penetration increasing from 41.7 per cent in 2006 to almost 100 per cent by the end of 2016. Mobile-broadband subscriptions grew more rapidly than fixed-broadband subscriptions, in the last six years, fixed-broadband penetration increased from 7.6 to almost 12.0 per cent, while mobile-broadband penetration saw a four-fold increase to reach an estimated 49.4 per 100 inhabitants. This indicates that the spread of Internet access has been largely driven by mobile technologies. Around 84 per cent and 53 per cent of the population are now within reach of a 3G and LTE mobile-broadband signal, respectively.

However, a continued and significant divide exists between regions, between developed and developing countries, between the majority of developing countries and LDCs, and within countries, including between rich and poor, rural and urban, young and old, and men and women. While penetration rates for mobile-cellular subscriptions are now high in all regions, and exceed 100 subscriptions per 100 inhabitants in most of them, they are still significantly lower in the Asia-Pacific and Africa regions.

The increasing deployment of wireless-broadband networks in rural areas of developing countries and the replacement of feature phones by smartphones are expected to accelerate the pace of growth and connectivity in developing countries.

Despite the high growth rates, LDCs are starting from a much lower baseline and therefore the progress in absolute terms is smaller – with an estimated 11.1 per cent of households having access to the Internet at the end of 2016 underscoring the importance of SDG9.c which aims, in line with ITU’s Connect 2020 Agenda, for significant progress in the number of people connected in LDCs by 2020.

(b) The identification of gaps, areas requiring urgent attention, risks and challenges:

Access and use of Information and Communication Technologies

The spread of 3G and 4G networks across the world has brought the Internet to more and more people. In 2016, mobile-broadband networks covered 84 per cent of the world’s population, yet with 47.1 per cent Internet user penetration, the number of Internet users remains well below the number of people with network access. While infrastructure deployment is crucial, high prices, poor quality of service and other barriers are serious obstacles to getting more people to

enter the digital world. Affordability is the main barrier to mobile uptake. The mobile device is the main cost barrier along with, to a lesser extent, credit recharge.

Affordability of ICTs

Looking at the evolution of mobile-cellular and fixed-broadband prices at the global level, there was a significant drop in fixed-broadband prices over the period 2008-2015, despite the fact that average fixed-broadband prices are still relatively unaffordable in a number of LDCs.

Mobile-cellular prices continued to fall in 2015, and more steeply than in previous years. For the first time, the average cost of the mobile-cellular basket (which includes 100 SMS and 30 mobile calls per month) in developing countries accounted for less than 5 per cent of GNI per capita. Least developed countries (LDCs) saw a 20 per cent drop in mobile-cellular prices, the strongest decrease in five years.

The gender digital divide

The gender digital divide has been tracked by ITU in developed and developing countries in 2013 and again in 2016. In 2016, female Internet user penetration is 12.2 percent lower than males. The gap is lowest in developed countries (at 2.8 per cent in 2016), significantly higher in developing countries (16.8 per cent in 2016), and highest in LDCs (30.9 per cent in 2016).

Significantly, the global gender digital divide has actually widened by 1.2 per cent since 2013, equivalent to a total gap of some 257 million more men online than women and a significant gap in terms of female empowerment, and everything we know about the correlation between better maternal education and improved education rates and school completion rates for the children in families with better educated mothers.

Cybersecurity

With ICTs increasingly underpinning a broad range of human activities, modern societies have developed a growing dependency on ICTs in their daily operations and management of critical infrastructure. However, this creates risks that need to be addressed at all levels – national, regional and international in collaboration with all stakeholders.

Without ensuring confidence and security in the use of ICTs, the lack of trust can hinder the adoption of ICTs and minimize their positive impact in countries' development process.

This is especially important to protect the vulnerable, especially children as one out of three internet users is below the age of 18. As the sole facilitator of WSIS Action Line C5 "Building Confidence and Security of ICTs", ITU is playing an important global effort to protect children online including through the multistakeholder Child Online Protection (COP) Initiative. The partnership brings together partners from all sectors of the global community to create a safe and empowering online experience for children around the world.

(c) Valuable lessons learned on eradicating poverty and promoting prosperity:

The growth of Internet and broadband technologies highlights the link between ICTs and economic growth and social opportunity and brings into focus the increased importance of universal access to ICTs to achieve the SDGs.

Today, more than 40 countries include broadband in their universal service or universal access definitions, although there are regional differences. In telecommunications, the marginal costs of connecting the last subscribers to be connected escalate quickly, as these include people

living in remote and hard-to-reach areas. The key to unlocking UAS lies in innovative investment and partnership solutions to connect the last 5-10% of subscribers.

Affordable access and availability of communications services requires an interplay between interdependent elements, including cross-sectoral collaboration focusing on supply as well as demand-side measures. According to ITU data, 75 percent of ITU Member States have some kind of UAS policy and regulations in place through: telecom policy and regulatory frameworks; National Broadband Plans; legal rights for citizens; Universal Service Obligations, Universal Access and Service Funds (USFs) or other forms of universal service financing mechanisms (PPPs, etc.); and/or some other combination.

In addition, there are far fewer women than men who study science, technology, engineering and math (STEM) or who work in jobs requiring ICT skills such as computer scientists, computer engineers and software, website and mobile apps developers. Given the global shortage for people with STEM skills, there are unfilled jobs that could be performed by qualified women, but young women and girls are often discouraged from entering these fields. Moreover, given the importance that ICTs play in our daily lives, it is necessary that ICTs be developed by both women and men to address their daily challenges.

Youth and children with access to information and communication technologies (ICTs) are coming of age as digital natives, the early adopters of ICTs and better positioned than their parents to harness the power of digital technologies in new and imaginative ways. Youth can only leverage the transformative power of ICTs when they have access to ICT services and are equipped with a range of digital skills. ICTs can enhance education, reduce youth unemployment and promote social and economic development.

The importance of ICT accessibility to persons with disabilities, as recognized by Article 9 of the United Nations Convention for the Rights of Persons with Disabilities (UNCRPD) and Art. 18 of the Tunis Commitment, under the auspices of the World Summit on the Information Society (2005) which strives “to promote universal, ubiquitous, equitable and affordable access to ICTs, including universal design and assistive technologies, for all people, especially those with disabilities, everywhere, to ensure that the benefits are more evenly distributed between and within societies.” Countries that have adopted ICT accessibility policies and which use government purchasing power by requiring accessible ICTs in their calls for tender have shown the greatest progress in ensuring that accessible ICTs are available for persons with disabilities to ensure that persons with disabilities can live independently and participate fully in all aspects of life.

Supporting Member States in addressing special needs of indigenous people to equitable access, use and knowledge of ICTs, based on the preservation of their heritage and cultural legacy contributes to leverage their social and economic community development and to promote, preserve and protect their indigenous cultural development.

Capacity building also refers to strengthening the human and institutional capacity of developing countries to adapt to an evolving ICT and telecommunication sector. Building broad telecommunication/ICT and digital literacy enables citizens to access and contribute information, ideas and knowledge to create an inclusive and sustainable information society.

(d) Emerging issues likely to affect the realization of poverty eradication and achieving prosperity:

Digital Financial Services

In recent years, ICT has been instrumental to developing new and more affordable digital financial products that better respond to the needs of unbanked people in the world today, most notably rural and remote communities. Significant challenges remain to quickly and effectively leverage ICT to drive full financial inclusion. The full potential of mobile money has not yet been realised, with two billion people in developing countries still lacking a viable alternative to the cash economy and informal financial services, 1.6 billion of whom have access to a mobile phone. Yet, the industry has found it challenging to scale services for the unbanked mostly due to regulatory frameworks being out of step.

Artificial intelligence (AI)

Artificial Intelligence (AI) is growing rapidly with the potential to become truly scalable and capable of solving some of the most pressing challenges to our societies and economies. While it may soon impact hundreds of millions of lives, discussions around the role of AI in society has traditionally been the realm of scientists and futurists. A wide range of voices from Silicon Valley to the European Parliament have been calling for an open debate on AI among governments, industry and civil society. We need a multi-stakeholder approach in designing AI based systems as not only would this help ensure the responsible and beneficial development of AI by allowing additional cross-checks, it would also contribute to dispelling misconceptions and fears surrounding AI. AI can only meet its full potential if its benefits are accessible to people from all socio-economic backgrounds, including disadvantaged communities. Developing countries play a fundamental role in the advancement of AI, both as a source of innovation and as beneficiaries of creative solutions capable of alleviating their most pressing global challenges such as hunger and poverty.

The Internet of Things (IoT)

The Internet of Things (IoT) provides both opportunities and challenges to fulfil the expectations of the new global development agenda. IoT is a core set of emerging technologies which have great potential to improve connectivity by connecting smart devices, applications, services, and even people over the Internet network. IoT is increasingly common to build sustainable and smart cities in developed world: not just as connected smart phones or tablets, but also as extended to a wide range of multiple machines and services, including vehicles, household applications, wearable devices, health-care monitors, energy consumption meters, or security systems. IoT can also greatly benefit populations in regions in developing countries: specifically impactful applications of IoT could facilitate - IoT applications in agricultural fields can check soil conditions, connected thermometers can monitor vaccine delivery and storage in real-time, smart sensors can measure a level of pollution in the air or water, and other smart devices can also provide remote diagnosis of diseases, are as just few examples. The deployment of IoT is expected to connect an estimated 50 billion devices to the network by year 2020. For the effective deployment of IoT, standards are required to enable interoperability of IoT applications and datasets employed by various vertically oriented industry sectors IoT systems.

(f) Policy recommendations on ways to accelerate progress in poverty eradication:

ICT regulators and policy makers as well as industry and the wider community of stakeholders recognize that ICTs play a crucial role in the achievement of the SDGs, and that issues such as affordability and availability, including with regard to creating incentives for innovation and entrepreneurship, must be addressed at the policy level in both a comprehensive and integrated manner. The issues are complex and multi-faceted, but what is clear is that there is an interdependence of targets and goals and that ICTs have a pivotal role to play to achieve the SDGs.

The ITU 2013 GSR Best Practice Guidelines recognized that governments should work collaboratively with all stakeholders and in particular with the industry and regulators to facilitate and support the development of infrastructure and provision of services, particularly in rural, un-served and underserved areas.

A range of policy options are available to maximize access to ICTs, and to capitalize on its benefits. These policy options can broadly be divided into both supply and demand sides' measures, although some policy measures can promote both – for example, the adoption of a National Broadband Plan promoting development of content and human capacities; monitoring; and tax reductions to reduce overall tariffs and promote affordability. From the supply side, predictable and stable regulations are needed to maintain effective competition, stimulate investment in ICT infrastructure such as broadband designed with high-speed backhaul, and drive the development of innovative services; the availability of relevant digital content, including in local languages.

In particular, regulators are encouraged to modernize Universal Service programs to extend broadband to the un-served and underserved, notably through a redefinition of the scope of universal service. From the demand side, measures such as deferring or altogether discouraging heavy or special taxes on ICT equipment and services, encouraging research and development, promote cybersecurity and privacy and endorsing special programs to stimulate e-literacy, will result in higher penetration, increased demand, better social inclusion and contribute to national economic growth.

Governments and regulators have a key role to play in promoting and increasing awareness of the use and benefits of ICTs¹. Focus on STEM skills development such as coding skills where jobs are currently going unfilled due to a lack of qualified workers. Also, for example, to promote ICT accessibility for persons with disabilities, countries should put in place mandatory ICT accessible procurement policies and standards with an enforcement mechanism.

ITU activities across all three sectors of – radiocommunications, standardization and development – can contribute to the achievement of the SDGs, linking these activities closely to the ITU's Strategic Plan; Connect 2020 Agenda, and the WSIS Action Lines, by:

- Providing the necessary spectrum allocations, especially for future mobile services;
- Providing the technical standards for networks and applications;
- Providing the necessary policy and regulatory environment – An enabling environment that facilitates and promotes innovation.

¹ http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/GSRBestPracticeGuidelines_2013.pdf

ANNEX 1: IN-DEPTH VIEW OF THE ROLE OF ICTS AND ITU'S CONTRIBUTIONS TO GOALS 1, 2, 3, 5, 9, 14 & 17 TO BE REVIEWED AT HLPF 2017 ([SDG MAPPING OF ITU'S STRATEGIC AND OPERATIONAL PLANS](#))

Goal 1. End poverty in all its forms everywhere

ICTs are a key enabler to achieve SDG-1, for example, by providing timely and accurate information services which will help ensure equal rights to economic resources, as well as ownership and control over different forms of property, as well as enabling services such as mobile banking for micro-credit, which have already brought direct benefits to millions of people who were previously unbanked.

ITU contributes to SDG1 Targets 1.4, 1.5 and 1.a:

- Target 1.4 - By promoting access to basic ICT services for all men and women, in particular the poor and the vulnerable; by monitoring, collecting and disseminating data on access to basic ICT services, including households with broadband Internet access in urban and rural areas; by ensuring the radio frequency spectrum, a natural resource, is accessed everywhere and by all, equally and at the lowest possible price;
- Target 1.5 - By providing expertise through assistance and technical publications in the development of affordable ICT infrastructure to deal with the challenges and system requirements of fixed and mobile networks for rural and remote areas as well as broadcasting networks; by reducing vulnerability to disasters and to the effects of climate change through the development of National Emergency Telecommunication Plans, the establishment of early warning systems and business continuity plans, among other relevant activities relates to disaster risk reduction; through the management of spectrum resources and the development of standards and best practices on radiocommunications and disseminating the related information and know-how, ensuring more accurate weather predictions, climate change monitoring and mitigation, public protection and disaster relief, as well as search and rescue;
- Target 1.a - By the mobilization of resources through partnerships with various stakeholders from the ICT ecosystem for the implementation of ICT development activities, projects and initiatives in developing countries, including through developing strategies and related tools and services (databases, sponsorship packages, dedicated websites, concept notes, promotional vehicles, etc.).

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

ICTs give farmers new ways of accessing information and services. Extension agents improve their services through mobile access to digital information services, online education, and business planning tools, allowing them to record service delivery events and solicit farmer feedback using mobile devices

Government ministries can remotely monitor extension agent capacity building and service delivery efforts, and evaluate results with an eye to improving services over time. Rural business productivity and effectiveness tend to increase once farmers and smallholders gain access to ICTs, enabling them to access market information, weather forecasts, and availability of fertilizers, as well as many programmes now springing up giving improved access to extension agents.

ITU contributes to SDG2 Targets 2.1, 2.3, 2.4, 2.5 and 2.a:

- By supporting countries to develop their e-agriculture strategy as a framework to identify and develop sustainable ICT in agriculture services and solutions, in close collaboration with FAO. E-agriculture offers a strong potential for driving economic growth and raising incomes among the rural population through increased efficiency of agricultural production, improved livelihoods and value chain development;
- By providing spectrum and standards and the dissemination of the related information and know-how for IoT, drones, radionavigation, meteorology and Earth-exploration satellite systems, for the development and sustainability of e-agriculture.

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Connectivity provided by data and telecommunication networks enable health workers to be connected to information and diagnostic services and allow them to form support networks and communicate with doctors and nurses within clinics and hospitals. Mobile phones allow community health workers to learn and prepare for disease outbreaks, identify patient symptoms, follow established treatment protocols, perform remote diagnostics, access expert support, refer patients to clinics, send patient reminders, record delivery of health services, and receive mobile payments for those services. Social media helps to provide advice and support, and allows health workers and patients alike to benefit from shared best practice, and to obtain important information about disease outbreaks and the availability of health services. Analytics provide the capabilities needed to produce snapshots, analyse trends, and make projections about disease outbreaks, health service usage, and patient knowledge, attitudes, and practices regarding their health – all within time frames critical to eradicating disease and reducing mortality rates.

ITU contributes to SDG3 Targets 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7, 3.8, 3.9, 3.a, 3.d:

- By combating diseases through the establishment of monitoring systems using mobile networks;
- Targets 3.1, 3.2, 3.7 and 3.8 - By sharing information and documenting ICT best practices on how eHealth applications can play an essential role in meeting the SDG targets for women's and children's health. Additionally, ITU contributes by supporting countries through regional capacity building workshops and direct technical assistance, in collaboration with WHO, to develop their national eHealth strategies to better harness ICT for health, particularly for women's and children's health;
- Target 3.3 and 3.d - Through its ongoing project on ICT Applications Against Ebola Disease (being implemented in West Africa);
- ITU contributes to the implementation of broadband networks which provide the underpinnings of optimal service delivery calling for high quality and safety requirements. In addition ITU is providing information about electromagnetic field (EMF) issues for the protection of the population;
- In the framework of the ITU Interactive Transmission Map, ITU is enhancing awareness of developing countries on the existing telecommunication/ICT infrastructure (including broadcasting networks) that are being taken into consideration when designing new networks for early warning and risk reduction;
- Targets 3.4, 3.5, 3.6 and 3.a - Through the joint initiative with WHO "Be Healthy Be

Mobile”, using mobile technology to help member states combat the growing burden of non-communicable diseases (cancer, stroke, heart disease, lung disease and diabetes) and their risk factors (tobacco use, an unhealthy diet, physical inactivity and the harmful use of alcohol). This initiative supports governments who are seeking to bring mobile health services to scale within national health systems, by providing technical expertise on implementing mobile health interventions. It also promotes a highly multisectoral approach to ensure that the programmes are sustainable. The initiative has established partnerships with its target 8 countries from a range of low-, middle- and high-income countries;

- Target 3.6 - By providing spectrum and standards and disseminating the related information and know-how for Intelligent Transport Systems (ITS), radionavigation-satellite systems and IoT;
- Target 3.8, 3.9, 3.d - By providing globally harmonized spectrum and standards and disseminating the related information and know-how, ITU enables the development of mobile broadband and its wider penetration, thus permitting E-medicine to become available throughout the world. By providing spectrum and standards for weather forecasting, Earth Exploration satellites, sound and television broadcasting and mobile networks, ITU contributes to early detection of natural disasters and other health risks, timely information of populations and mitigation decisions;
- Technical standardization of multimedia systems and capabilities for e-health applications.

Goal 5. Achieve gender equality and empower all women and girls

ICTs allow women and girls to access information of importance to their productive, reproductive and community roles and to obtain additional resources. Access to ICTs can enable women to gain a stronger voice in their communities, their government and at the global level. ICTs also offer women flexibility in time and space and can be of particular value to women who face social isolation. There is a growing body of evidence on the benefits of ICTs for women’s empowerment, through increasing their access to health, nutrition, education and other human development opportunities, such as political participation. Women’s sustainable livelihoods can be enhanced through expanded access of women producers and traders to markets, and to education, training and employment opportunities. ICT can provide new opportunities for women’s economic empowerment by: creating business and employment opportunities for women as owners and managers of ICT-accessed projects, as well as employees of new business ventures; creating an environment, including through training, where women feel comfortable participating in community development activities and advocating for their needs and priorities; developing ICT-based tools that address women’s specific needs and are run by women (for example, literacy programmes, business planning courses, ICT training, access to market and trading information services and e-commerce initiatives); and offering economic opportunities in salaried employment and entrepreneurship, as well as in the ICT sector itself and in jobs enabled by ICT.

ITU contributes to SDG5 Targets 5.5 and 5.b:

- By leading the global International Girls in ICT Day campaign to encourage more young women and girls to study and take up ICT careers, by sharing best practices on the recruitment, retention and promotion of women in the ICT sector and by publishing profiles of successful women role models on the Girls in ICT Portal;

- ITU contributes to the monitoring of Target 5.b by collecting and disseminating a number of gender-disaggregated ICT indicators, including on mobile phone ownership and usage, Internet usage and ICT skills;
- By providing globally harmonized spectrum and standards, ITU enables the development of mobile broadband and its wider penetration, thus permitting E-education to become available throughout the world. By disseminating its outputs through on-line publications, seminars and workshops, ITU contributes to capacity building on information and communication technologies throughout the World;
- The annual GEM-TECH Awards, jointly organized by ITU and UN Women, celebrate personal or organizational achievements and innovative strategies to advance Gender Equality and Mainstreaming in the area of ICTs. The GEM-TECH Awards provide a platform for advancing women’s meaningful engagement with ICTs and their role as decision-makers and producers in the technology sector.
- ITU/UN Women EQUALS: The Global Partnership for Gender Equality in the Digital Age, a coalition of programmes dedicated to women and girls in technology with a vision of harnessing the power of modern information and communication technologies (ICTs) to accelerate global progress to bridge the gender digital divide, focusing on three areas of action: access, skills and leadership.

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 Targets 9.1, 9.3, 9.5, 9.a, 9.c:

- The ITU Members States have unanimously adopted the Connect 2020 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 2020 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 standards, ITU enables the development of high quality, reliable, sustainable and resilient infrastructures accessible to all under affordable and equitable conditions;
- 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;

- 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;
- By fostering the development of telecommunication/ICT network through the "ITU Interactive Transmission Map". This project provides a global perspective of broadband connectivity allowing the ICT community 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:
 - IMT 2020/5G, smart and future networks
 - Broadband access and affordable optical networks
 - Tariffs
 - Consideration of Cost of implementation/complexity during development of recommendations
 - Policy/governance: cooperation with WSIS process, ISOC etc.
 - Workshops and tutorial
- The implementation of the Conformity and Interoperability (C&I) programme of 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 (in Burkina Faso, Mali, Rwanda, Swaziland, Lesotho and Djibouti) and Arab countries;
- 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 framework of the ITU Interactive Transmission Map, ITU is makes use of transmission links, together with data related to traffic, exchanged between countries for identifying missing links on regional/subregional basis and developing case studies for planning broadband infrastructures;
- 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 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;
- 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.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

ICTs can play a significant role in the conservation and sustainable use of the oceans – notably through improved monitoring and reporting which leads to increased accountability. Satellite-based monitoring delivers timely and accurate data on a global basis, while local sensors deliver on the spot updates in real-time.

Big data can be used to analyse short- and long-term trends in terms of biodiversity, pollution, weather patterns and ecosystem evolution, and to plan mitigation activities.

Mobile devices – and especially mobile broadband enabled devices – help individuals to access information concerning the oceans, and to take an active role in discussing environmental issues and monitoring adherence to conservation targets.

ITU contributes to SDG14 Targets 14.1, 14.2, 14.a:

- Target 14.1 and 14.2 - Spectrum and standards provided by ITU for Earth observation systems are a key enabler to monitor, conserve and use the oceans, seas and marine resources for sustainable development. In particular, understanding the forces behind changing weather patterns which requires mapping variations in ocean surface conditions worldwide and the use of collected data to develop and run powerful models of ocean behaviour;
- Target 14.a - Spectrum and standards provided by ITU for GNSS, sea drones and satellite oceanic observations, are an essential enabler to Increase scientific knowledge on the state of oceans and marine resources;
- ITU, the Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO/IOC), and the World Meteorological Organization (WMO) established a Joint Task Force (JTF) in late 2012 after Workshops in Rome (2011) and Paris (2012). The JTF is tasked with developing a strategy and roadmap that could lead to enabling the availability of submarine repeaters equipped with scientific sensors for ocean and climate monitoring and disaster risk reduction (tsunamis). It will also analyse the potential renovation and relocation of retired out-of-service cables in this realm. With the installation of new trans-ocean and regional telecommunication cable systems equipped with sensors, a

global network could be established providing decadal real-time data for ocean climate monitoring and disaster mitigation (particularly from tsunamis).

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

ICTs are essential in achieving all of the SDGs, since ICTs integrate and 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.

In terms of specifically strengthening the means of implementation, ICTs have a key role to play through: enhancing international cooperation and coordination; promoting technology transfer; capacity building; forging multi-stakeholder partnerships; and enabling and improving data monitoring and accountability.

ITU contributes to SDG17 Targets 17.3, 17.6, 17.7, 17.8, 17.9, 17.11, 17.16, 17.19:

- By 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;
- ITU contributes to 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.);
- ITU contributes to strengthening the global ICT innovation ecosystem through activities such as know-how sharing and the development of national ICT Broadband rollout plans (e.g. WSIS Forum, Telecom, the ITU/UNESCO Broadband Commission for Sustainable Development) and co-creating grassroots projects based on new global and local partnerships;
- ITU contributes to strengthening the means of implementation and enhancing access to science, technology and innovation by strengthening international cooperation and knowledge sharing on key ICT topics through its dedicated study groups;
- ITU provides a neutral platform for international cooperation towards building a harmonized and coordinated approach to fast-forward the evolution of the information society;
- ITU contributes to the 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;
- ITU contributes to 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;

- ITU contributes to the deployment of broadband technology and network infrastructures for multiple telecommunication services and applications, and to the evolution to all IP-based wireless and wired next-generation networks (NGNs), introducing digital broadcasting, which is opening up opportunities for the dissemination of environmentally sound solutions;
- ITU contributes to the monitoring of Target 17.8 by collecting and disseminating a number of relevant ICT indicators that enable STI capacity building in least developed countries, including on broadband Internet access and usage, international Internet bandwidth and broadband Internet prices. Activities are carried out in close collaboration with the Partnership on Measuring ICT for Development;
- ITU brings together key stakeholders to discuss international cooperation on ICT through its annual Global Symposium for Regulators and the World Telecommunication/ICT Indicators Symposium (WTIS);
- ITU contributes to promoting ICT regulatory policies enhancing policy coherence, notably by building harmonized regulatory framework within and across regions and by establishing a broader dialogue between all stakeholders;
- ITU contributes to 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 through partnerships such as the ITU/UNESCO Broadband Commission for Sustainable Development, to lay the foundation for modern digital economies;
- ITU encourages and promotes 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;
- In line with the UNGA Resolution A/70/125, calling for the alignment of the WSIS and SDG processes, ITU continues to coordinate WSIS-SDG Matrix, elaborated in 2015 by all UN Agencies (playing the role of the facilitator/co-facilitator of the WSIS Action Lines), and showing the linkage between 18 WSIS Action Lines and 17 SDGs as well as providing rationale for each linkage. With the aim of highlighting evidence for proposed linkages, since 2017 the WSIS-SDG Matrix is supported by special heat map, referring to numerous ICT4SDG projects implemented worldwide and reported by all stakeholders through the WSIS Stocktaking process;
- Through its regional presence ITU continuous to implement series of activities at the regional and national level contributing to the implementation of the 2030 Agenda for Sustainable Development, while coordinating with relevant regional organizations/mechanisms (including Regional ICT/Telecommunication Organizations, UN Regional Commissions, UN Regional Development Groups, UN Agencies etc.), seeking the partnerships for implementation of interagency and multistakeholder ICT4SDG projects, strengthening implementation of ICT4SDG actions through Delivering as One UN approach, advocating for taking into account ICTs during the programming of UNDAFs (UN Development Assistance Framework), advancing the alignment of the WSIS and SDG processes as requested by the UNGA Resolution 70/125;
- Through the commemoration of World Telecommunication and Information Society

Day celebrated each 17th of May, ITU raises global awareness of the societal changes brought by the Internet and new technologies and to focus on global, regional and national efforts to help reduce digital divides.