WSIS+15: EVOLUTION OF WSIS ACTION LINES
15 years Implementation of the
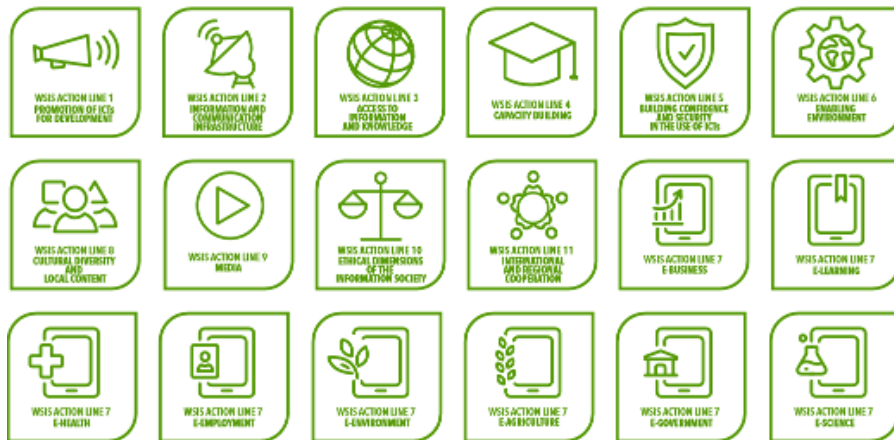# WSIS Action Lines

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WSIS Action Lines – C1: The role of public governance authorities and all stakeholders in the promotion of ICTs for development, C7: ICT Applications: E-government, C11: International and regional cooperation
Lead Facilitator: UN DESA

Introduction

The United Nations Department of Economic and Social Affairs (UN DESA) through the Division for Public Institutions and Digital Government (DPIDG) serves as facilitator for the implementation of and follow-up to the action lines:

● C1 - The role of public governance authorities and all stakeholders in the promotion of ICTs for development
● C7 - ICT Applications: E-government
● C11 - International and regional cooperation

UN DESA supports regional, national, and global efforts in exploring ways to utilize Information and Communication Technologies (ICTs) and new technologies to achieve the 2030 Agenda.

Opportunities

The year 2020 marked 20 years of benchmarking the e-government development of the Member States of the United Nations. Since its inception in 2001, the United Nations E-Government Survey has become an indispensable "ranking, mapping and measuring" tool for policymakers and analysts engaged in comparative analysis and contemporary research on e-government.

The year 2020 also witnessed a transformational change in the global development agenda as United Nations Secretary-General António Guterres announced the launch of the Decade of Action for Sustainable Development to bolster efforts to achieve the Sustainable Development Goals (SDGs) by 2030. The Decade of Action is central to global efforts to eradicate poverty and to improve economic growth, social protection, health (including pandemic response), education, energy, water and sanitation, sustainable transport and infrastructure, and Internet access. Digital government supports the Decade of Action through sustainable, inclusive and equitable public service provision for all people everywhere, leaving no one behind—and more broadly through its growing role in driving innovation, strengthening efficacy, and generating solutions.

Challenges

Governments around the world are using digital technologies to innovatively transform the way they operate, share information, make decisions and deliver services, as well as to engage and partner with people to solve policy challenges of public concern. However, many countries still lack the capacity to effectively leverage digital technologies to provide accessible, reliable, fast, personalized, secure and inclusive services and empower people through open and participatory mechanisms. Developing multiple capacities for e-government development is essential, as digital government transformation involves far more than the integration of technology in

governance. Fundamental changes in the mindsets of public servants and in the way public institutions collaborate are also critical.

Impact on SDGs

UN DESA works also together with UN regional commissions in preparation of the UN E-Government Surveys. Illustrative case studies on innovative practices and solutions within each region are collected, including national, regional and other partnership efforts. Such case studies help countries to learn from others on how to tackle common challenges and resource constraints in leveraging e-government to achieve the Sustainable Development Goals (SDGs) and national development objectives.

As a development tool, the United Nations E-Government Survey provides policymakers with evidence-based information and policy options that help governments understand their relative and contextual strengths and challenges, and to consider options on the way forward in mobilizing e-government for implementing the 2030 Agenda.

WSIS Action Line – C2: Information and communication infrastructure
Lead Facilitator: ITU

About half of the world population lacks access to the Internet connectivity, mostly in rural and remote areas, across developing economies. Identifying the unconnected population and mapping the connectivity infrastructure and solutions is still a challenge.

Infrastructure is the key element for providing access to internet.

In order to connect the unconnected several technical innovations can be considered: the existing and new broadband technologies and infrastructure based on new mobile technologies, Cubesat for rural connectivity, Drone-based communications, Community networks, Satellite Communications, and others, e.g., Loon (transmitter on balloon)

For Connectivity ALC2

- gives overview on Infrastructure projects for increased connectivity
- provides Challenges and Best practices on infrastructure implementation
- summarizes procedures, methods for maintaining/upgrading the networks/infrastructure
- investigating possible solutions for Financing the infrastructure

For developing countries and/or rural communities summarizes

- Affordability and accessibility of various projects (e.g., rural communities)
- What cost can make them more attractive for developing countries
- What user personal devices are required

For Usage and applications

- Collects Local application development

Important tasks within ALC2 are information gathering and validation to increase accuracy and advance development

The ALC2 is focusing now on how to identify the unconnected. More specifically, it focuses on the challenges of collecting, sharing and using reliable data. Finally, it discusses how to ease the process of collecting and using data for connecting the unconnected.

For providing solutions for ALC2 methods and tools to identify unconnected populations especially the Last Mile Connectivity Toolkit. For the toolkit data collection models and the value of open source data tools data reliability, privacy and security are important.

Contributions are important from the countries on challenges and the lessons learned and how they can be overcome to enhance the process and usage of collecting data? Examples of mapping

solutions will be used for successful deployments last mile connectivity projects. Important to ensure collaboration for better for data collection and analysis at national, regional and international levels.

Impact on SDGs

The ALC2 has a close link the SDG9, Infrastructure. SDG9 implementation can be supported by case studies on innovative practices and solutions within each region on data collection and maintenance and tools for deciding on possible connectivity solutions.

WSIS Action Line – C3: Access to information and knowledge
Lead Facilitator: UNESCO

In Inclusive Knowledge Societies, people have ready access to information and communications resources in multiple languages and formats, as well as the skills to interpret and make use of them. Within this framework, promoting strategies for enhancing access to scientific scholarship on a global level has remained a central challenge in many Member States. UNESCO, with its partners, continued to pursue this objective through its programmes on Access to Information (C3), as well as in partnership with other organizations and UN agencies.

In 2019, UNESCO brought together several Open Science platforms to join forces to improve the democratization of scientific knowledge, adopting a multicultural, multi-thematic and multi-lingual approach. The *'Global Alliance of Open Access to Scholarly Communication Platforms'* *(GLOALL)* was launched during the WSIS Forum 2019 in order to ensure the democratization of scientific knowledge and access to information. The platform is based on the convictions that 1) scientific knowledge generated with public funds is a public good and access to it is a human right; 2) public economic investment in open access to science must be consistent with its benefit to society and its contribution to the Sustainable Development Goals, and; 3) Open science depends on collaboration and cooperation, and must remain focused on sustainability in its research processes.

UNESCO advocated for a human-rights based, open, accessible and multi-stakeholder driven development of artificial intelligence as outlined in its study "Steering AI for Knowledge Society: A ROAM Perspective." The publication analyzes challenges and opportunities related to access to information in the digital age, and provides a strategic summary on how AI will influence the sphere of human rights, openness, and access to information, and why a multi-stakeholder approach is necessary in order to ensure inclusive digital policies and programmes in this sphere.

In line with the standard-setting role of the Organization, UNESCO's Member States, at its General Conference in November 2019, adopted a resolution inviting UNESCO to develop, over a two year period, a new international instrument in the form of a **UNESCO Recommendation on Open Science.** This recommendation will ensure that scientific research and data are accessible and open. The implementation of this recommendation will rely on the convening power of UNESCO to build a global common vision to ensure that open science is harnessed to close ongoing gaps in science technology and innovation. The consultative, participatory, inclusive and geographically balanced process that will lead to the adoption of the Recommendation reflects UNESCO's ongoing commitment to multi-stakeholder and participatory public policy development.

From the normative perspective, the elaboration of this Recommendation will build on the 2017 UNESCO Recommendation on Science and Scientific Researchers and the overall Strategy on UNESCO's contribution to the promotion of Open Access to Scientific Information and Research, adopted by the General Conference in 2011.

In order to strengthen the capability of the technical community in Africa to use AI for human-centred information management, UNESCO organized two workshops on Artificial Intelligence and Fairness at the Deep Learning Indaba 2019, which is the annual gathering of the African Machine Learning Community at Kenyatta University in Kenya.

As it concerns science policy, Open Science policy instruments are incorporated into the UNESCO GO-SPIN Platform and Open Science has remained a priority on the agenda of the international Forums co-organized by UNESCO, such as the World Summit on the Information Society, the World Science Forum and the United Nations Multi-stakeholder Science Technology and Innovation Forum.

In line with Action line C3 and C7, UNESCO partnered with Redalyc and CLACSO to initiate Amelica, which is a dedicated community-driven sustainable framework for Open Knowledge for Latin America and the Global South. It is a new configuration of strategies, in response to the international, regional, national and institutional context, which seeks a collaborative, sustainable, protected and non-commercial Open Access solution for Latin America and the Global South.

WSIS Action Line – C4: Capacity Building
Lead Facilitator: ITU

Introduction

Since 2005, WSIS has emphasized that "each person should have the opportunity to acquire the necessary skills and knowledge in order to understand, participate actively in, and benefit fully from, the Information Society and the knowledge economy." Action line 4 focuses on capacity building and ICTs. Digital skills have been at the very core of advancing universal education worldwide, offering improved conditions for lifelong learning, encompassing people that are outside the formal education process, and improving professional skills by reskilling and upskilling employees. Technological innovation has had a particularly remarkable impact on digital educational resources and social networking tools. Teachers have recognized changes in approaches in the traditional classroom environment and the impact of lack of digital skills for the youth. A great effort has been invested in equipping the youth with digital skills, which will provide them with better professional opportunities. Young entrepreneurs have been able to develop innovative techniques aimed at solving social, cultural, and environmental problems. However, along with the opportunities, technological innovations have brought, there have been some challenges as well.

Challenges

Over the years, ALC4 discussed a number of topics relating to capacity development, including the rise of the young entrepreneurs and the digital skills required to be one, the new teaching approaches and what the youth needs to fit in this new digital society. From these discussions' challenges were observed which showed that illiteracy is an impediment to learning of new skills. The limited internet penetration and IT infrastructure and the lack of economic power to access ICTs affect disproportionately the vulnerable and marginalized groups., Teachers in developing countries are not empowered or remunerated appropriately to be competitive with teachers in the developed world. In addition, global pandemic such as COVID-19 has had negative impact on the most vulnerable populations and their access to digital services and capacity building activities in ICTs. It has also been observed that the digital skills divide, and job-skills mismatch are increasing and with Covid-19 lockdown programs on digital skills for young people have closed and they can no longer access ICT centres.

Opportunities

Opportunities that emerge due to digital technologies relating to skills development were also highlighted over the years. Universities are now introducing information theory and coding in their curriculum which can better prepare students for the digital world and more girls are trained in programming. There is greater awareness of the digital skills needed for the youth, particularly for career development. There is an increase in the use of ICTs to provide solutions to social problems. Global crises such as COVID-19 have pressured organizations and governments to speed up capacity development activities and strategies for digital skills and as a result Internet connectivity has become an absolute priority particularly in 2020. This has further pushed the private sector to recognize the need for reskilling and upskilling of the workforce.

Impact on SDGs

Action line C4 has impacted nearly all SDGs through various activities, initiatives, and trainings. Regional and international capacity building activities have enhanced the ability of leaders and operational staff to apply ICTs effectively in the whole range of educational activities but also to create new policies and strategies, positively advancing the realization of all SDGs. SDGs related to health, agriculture, government, and economy, have been positively impacted by the advancement of ICTs and the availability of educational programs on basic and advanced digital skills. These sectors have also become more accessible for the vulnerable and marginalized populations. Another successful impact story are the capacity development programs that aim at removing gender barriers to ICT education and training and promoting equal training opportunities in ICT-related fields for women and girls and youth in general. Undoubtedly, AL C4 can be crowned as one of the most influential and impactful WSIS action lines due to its cross-cutting and essential role for the advancement of all SDGs.

WSIS Action Line – C5: Building confidence and security in the use of ICTs
Lead Facilitator: ITU

Introduction

International Telecommunication Union (ITU), the specialized UN agency for information and communication technologies (ICT), is the facilitator for Action Line C5 of the World Summit on the Information Society (WSIS).

In this capacity, ITU brings different stakeholders together to forge meaningful partnerships to help countries address the risks associated with digital technologies. This includes supporting cross-sector collaboration among all stakeholders by leveraging its wide membership of 193 governments as well as some 900 sector members from industry, academia, other international and regional organizations for this purpose.

Opportunities

Building trust and confidence in new and existing ICT paradigms is crucial to advance sustainable development and ensure that the world benefits from the digital economy. This holds even more true as the world combats the COVID-19 pandemic.

Recognizing the urgent need for international cooperation to address the critical challenges posed by cybersecurity to the world community, ITU provides a platform for global dialogue that reflects the rapidly changing nature of today's digital ecosystem. Over the course of 15 years of WSIS implementation, ITU has been setting security-related international standards, helping countries define cybersecurity strategies and establish computer incident response teams (CIRTs), building human capacity and facilitating policy dialogue. ITU also plays a very active facilitating role to improve the UN's internal coordination of activities on cybersecurity.

Looking forward, with the rise of new and emerging technologies and the opportunities and challenges that they pose for cybersecurity, ITU has been working increasingly with all stakeholders to delve into the security-related aspects of technologies such as Artificial Intelligence, Internet of Things, Quantum Information Technologies and so on.

Challenges

Building confidence and security in the use of ICTs is a global issue that requires a global dialogue. Now more than ever, collaboration and multi-stakeholder partnerships between the government, industry, academia and civil society are essential for developing a transformative but also a safe, accessible, trusted and inclusive cyberspace.

Broadening and deepening cooperation among governments, the private sector and other stakeholders is needed for a reliable, interoperable, and secure ICT environment. In light of this, ITU launched the Global Cybersecurity Agenda (GCA) in 2008 as a framework for international cooperation in enhancing the confidence and security in the information society. In this past year, a review exercise of the GCA has taken place and draft guidelines on the utilization of the framework are being developed through an open consultation process involving all WSIS stakeholders.

It is also essential to ensure that the progress made in the use of ICTs as enablers for social and economic development is not disrupted by emerging threats to the information society. Cybersecurity holds paramount importance for sustaining a technologically-sound existence, therefore ITU developed the Global Cybersecurity Index to measure the commitment of countries to cybersecurity, to boost global awareness about the importance of securing cyberspace and the need for global cooperation.

Further, in a bid to facilitate more secure network infrastructure, services and applications, over 200 standards (ITU-T Recommendations and Supplements) focusing on security have been published.

Certain members in today's society are often most vulnerable to cyber incidents and threats; some of the most at risk being children. This year, new 2020 ITU Guidelines on Child Online Protection (COP) have been launched aimed at creating a safe and empowering online experience for children around the world.

Impact on SDGs

ICTs hold the potential to drive progress across all the 17 Sustainable Development Goals (SDGs). However, a universally available, open, secure and trustworthy ICT ecosystem is essential to enable them to deliver on this promise. Building trust in cyberspace, and strengthening access, security and confidence, will help drive progress in this SDG Decade of Action towards achieving the 2030 Agenda for Sustainable Development.

WSIS Action Line – C6: Enabling Environment
Lead Facilitator: ITU

Introduction

The International Telecommunication Union, Telecommunication Development Bureau (ITU-D) through the Regulatory and Market Environment Division (RME) serves as facilitator for the follow up and implementation of Action Line C4 on Enabling Environment.

The work done by ITU-D on policy and regulation focuses on supporting collaborative ICT policy and regulation frameworks for digital market development and user well-being. Information and tools are available at the ITU Regulatory and Market Environment website (www.itu.int/treg).

Opportunities

Flexible, forward-looking and light-handed ICT policy and regulatory approaches are very important to speed up connectivity and allow society to benefit from digital technologies and services. Adding to that, and considering the urgent need for connectivity during the recent COVID-19 crisis, now, more than ever, there is an urgent need to create an enabling policy and regulatory environment to meet current challenges. Concerted action by policy makers and regulators in consultation with the ICT industry, is needed to achieve universal, affordable and quality broadband access, and to mobilize private financing to invest in digital inclusion. [One example is the Global Network Resiliency Platform (#REG4COVID) developed by ITU in March 2020, to help the work of regulators and policymakers in the outbreak of the COVID-19 emergency, by presenting experiences, ongoing initiatives, and innovative policy and regulatory measures designed to help ensure communities remain connected, to harness the full power and potential of ICTs during this crisis and to prepare for the medium and long-term recovery.]

Impact on SDGs

To assist Governments to have a supportive, transparent, pro-competitive and predictable policy and regulatory frameworks, which provide the appropriate incentives for ICT investment and community development in the Information Society and to further contribute to the achievement of SDGs, two impact pathways had been identified:

1. Digital Policy and Regulation Engagement and Awareness: exchange platforms and training enhancing collaborative policy and regulatory capability for digital transformation: this includes the Global Symposium for Regulators (GSR) as well as strategic dialogues on policy, legal, regulatory, and economic and financial issues and market developments, as well as capacity building through the organization of trainings and workshops.

2. Digital Policy and Regulation Tools Enhancement: tools and processes and implementation support to strengthen agile and inclusive policy and regulatory frameworks and approaches

-such as the development of research, reports and studies focusing on policy and regulatory trends in the ICT sector; to provide high-quality data, research, analyses, and tools to support membership in implementing and reviewing strategies, policies and regulatory frameworks as well as in moving towards evidence-based decision-making, and finally, the provision of direct assistance to many countries in the above-mentioned fields.

Challenges

ICTs have moved far beyond the realm of simple 'communications' and have become the foundation for every economic sector and a *sine-qua-non* of business performance and national and individual growth. Telecommunication/ICT Policy Makers and Regulators need to focus on driving inclusive and cross-sectoral approaches and collaboration, so that, ALL players have their voice in decision-making based on current and granular evidence and market data. In this sense, ICT regulatory process and tools must be adapted to create a virtuous dynamic for investment, innovation and inclusion, leading towards digital transformation.

WSIS Action Lines – C7: ICT Applications: E-learning and E-science
Lead Facilitator: UNESCO

As it concerns **E-learning**, and in follow-up to two International Conferences on ICT and Education 2030 and the release of the Qingdao Declaration (2015) on leveraging ICT for Achieving Education 2030, UNESCO convened a third International Conference with a focus on "Artificial Intelligence and Education" in China in May 2019. 50 government Ministers and Vice-Ministers, as well as around 500 international representatives from more than 100 Member States, United Nations agencies, academic institutions, civil society and the private sector attended the conference. During the event, Member States adopted the "Beijing Consensus on Artificial Intelligence and Education," which offers guidance and recommendations on how best to harness AI technologies for achieving the Education 2030 Agenda. The Beijing Consensus is available in the six official languages of the United Nations.

The 2019 edition of the Mobile Learning Week focused on "Artificial Intelligence for Sustainable Development." More than 1,500 participants from 140 countries, including Ministers of Education and ICT, other representatives from Member States, the private sector, academia and international organizations, engaged in capacity building workshops, symposiums, policy forums and strategy labs aimed at exploring ways to harness the power of widely available mobile technology and other technological advances including Artificial Intelligence. Following the event, UNESCO published a "Synthesis Report" and a "Compendium of promising initiatives." In 2020, Mobile Learning Week will dive into the question of inclusive education in the era of artificial intelligence.

Through the UNESCO King Hamad Bin Isa Al-Khalifa Prize for the use of ICT in Education", UNESCO has identified and brought attention to innovative approaches around the world in e-learning. The most recent prize-winning laureates (2018), from Finland and the Netherlands, addressed the theme of "The use of innovative ICT to ensure education for the most vulnerable groups." The theme of the 2019 edition of the Prize is "The use of artificial intelligence to innovate education, teaching and learning." It will reward projects that use AI-powered solutions to enhance education, improve learning outcomes and empower teachers.

UNESCO continues to maintain the Global ICT in Education Policy Platform (launched in 2016) to facilitate the ongoing policy debates on leveraging e-learning to promote quality education and to advance inclusion, equity and gender equality. More than 50 countries have developed or updated their national ICT in education policies and master plans with a view to promote e-learning for all with the direct support of UNESCO.

Following its launch in 2018, UNESCO continues to operate the Gender Assessment Tools for Teacher Education to identify and address gender gaps and biases in teacher education policies, teaching-learning materials and practices. The results yielded from applying the six gender assessment tools helped to reveal areas that need to be addressed to make teacher education more gender-sensitive and gender-responsive.

In follow up to the 2nd World OER Congress in Ljubljana, Slovenia, which adopted the 2017 Ljubljana OER Action Plan and the accompanying Ministerial Statement, and further to the adoption of 39 C/Resolution 44 'Desirability of a standard-setting instrument on international collaboration in the field of Open Educational Resources (OER)', the 2019 UNESCO General Conference in November 2019 adopted the **"UNESCO Recommendation on Open Educational Resources".** In 2018-19, UNESCO provided assistance to more than 20 countries in supporting the development of national policies and strategies for adopting OER.

In 2019, UNESCO published the Guidelines on the Development of Open Educational Resources (OER) Policies, a guidebook on how to develop an OER policy from conception to implementation. Each chapter provides in-depth contextual information, real policy examples, and guiding questions to help facilitate the process of adopting an OER policy. The book is also intended to engage stakeholders to review and assess existing OER policies as well as provide direction on the monitoring and evaluation of the implementation of OER activities.

A framework for an online monitoring resource for the implementation of the Ljubljana OER Action Plan in five strategic areas was developed with major OER networks during this period. The Ljubljana OER Action Plan five strategic areas are: building the capacity of users to find, re-use, create and share OER; language and cultural issues; ensuring inclusive and equitable access to quality OER; developing sustainability models; and developing supportive policy environments.

Throughout 2019, UNESCO also supported countries in planning and implementing projects on how to use mobile learning for literacy education and supporting teachers with mobile technology. UNESCO published 13 case studies on best practices of school-wide mobile learning initiatives and finalized the first phase of the project ICT Transforming Education in Africa, which supported Mozambique, Rwanda and Zimbabwe to pilot e-school models and e-assessment, expand open and distance learning and develop ICT in education policies. At the end of 2019, implementation of the second phase of the project will start in Cote d'Ivoire, Ghana and Senegal, focusing on education sector-wide pedagogical transformation, digital skills provision, inclusion, and ICT policy development.

As it concerns **E-science,** UNESCO harnessed artificial intelligence and deep learning to develop an observatory that improves weather forecasting and the prediction of environmental disasters. Recent ICT-led innovations in environmental sensing, data processing, and interactive visualization show promise for participatory knowledge generation. UNESCO and its partners are implementing Landslide-Environmental Virtual Observatories (Landslide EVO) to support this approach to e-science.

Within this context, ICTs play a catalytic role by enhancing linkages between science and various socio-economic and natural processes. Improved access to ICTs secures citizens' role as a partner in scientific inquiry rather than simply as beneficiaries of scientific studies. ICTs provide enhanced learning opportunities by offering flexible learning pathways, and address uneven access to

scientific information that can help in achieving sustainable development. The L-EVO project brings together scientists from Nepal, UK, the Netherlands, Switzerland and Austria, with other partners including UNESCO. Through partnership, the project is developing a science driven and ICT supported methods and tools to generate information about climate induced landslides and flood risks. The project explores ways to use this information to enhance disaster resilience at various policy levels, from local village committees to national and international fora. ICT-enabled citizen science is a key element of the programme, which supports active incorporation of local communities in the knowledge co-creation process.

AI can also improve current forecasting of global and local climates, through better construction and testing of mathematical models. UNESCO has teamed up with the Indian Institute of Sciences to develop a capacity building initiative on Technology Assisted Disaster Risk Reduction, with a particular emphasis on floods. As part of the project, UNESCO developed a portal for down-scaled information, which provides technological solutions to downscale GCMs at the urban scale and empowers cities to deal with Climate Change.

UNESCO is involved in the implementation of the OPERANDUM (OPEn-air laboRAtories for Nature baseD solUtions to Manage environmental risks) project, which is developing nature-based solutions (NBS) to mitigate the impact of hydro-meteorological phenomena in risk-prone areas. This project, which received support from the European Union's Horizon 2020 research and innovation programme, reflects the recognition by the COP22 that NBS is one of the key mechanisms to address climate change.

WSIS Action Line – C7: ICT Applications: E-health
Lead Facilitator: WHO

WSIS Action Line – C7: ICT Applications: E-agriculture
Lead Facilitator: FAO

Introduction

The Food and Agriculture Organization of the United Nations (FAO) and International Telecommunication Union (ITU) served as facilitators for the implementation of and follow-up on the action line: C7 - ICT Applications: E-Agriculture

E-agriculture has been a WSIS action line led by FAO through joint-efforts with ITU since the Geneva 2003 and Tunis 2005 Summits. These last 15 years have witnessed a remarkable growth in the use of digital technologies in agri-food system, transforming people's lives around the globe with specific examples below.

- Towards the establishment of International Platform for Digital Food and Agriculture as an multi-stakeholder forum for discussing the potential risks and benefits of digitalization of the agri-food sector with scientific evidence on the impact of digital technologies; promote coordination and bridge the gap between international fora; provide policy recommendations to governments

- FAO initiate the Hand-in-Hand initiative, is an evidence-based, country-led and country-owned initiative of the FAO to accelerate agricultural transformation and sustainable rural development to eradicate poverty (SDG1) and end hunger and all forms of malnutrition (SDG2).

- FAO initiate Hand-in-Hand Geospatial Platform to support all stakeholders with rich, shareable data while respecting the proper protocols of data confidentiality; to serve as a digital public good to create interactive data maps to analyze trends and identify real-time gaps and opportunities to strengthen evidence-based decision-making in food and agriculture and create data-driven impact stories.

- Toward the establishment of Global Network of Digital Agriculture and Innovation Hubs to enhance innovation ecosystem and culture to empower agripreneurs, especially youth and women.

- To assist countries to develop National E-Agriculture Strategy, including Afghanistan, Bhutan, Fiji, Mongolia, Papua New Guinea, Pakistan, Philippines, Sri Lanka and Benin.

- Publish series of E-Agriculture reports to highlight the use of ICT for agriculture and promote successful, scalable and sustainable 'ICT for agriculture' solutions.

- Formulate Smart Villages as a whole-of-government approach for digital transformation in rural communities.

- Organize International Digital Agriculture fora worldwide, like in Italy, Thailand and China.

Challenges

Global food systems are in dire need for innovative solutions to address interlinked challenges such as ensuring food security and nutrition for all, contributing to inclusive growth, and managing natural resources sustainably.

Currently, out of the 7.7 billion people in the world, 588 million live in extreme poverty, 820 million suffer from hunger, and 2.5 billion suffer from some form of micronutrient deficiency. The population is also growing, aging and migrating to cities, affecting agricultural production and increasing the demand for food. By 2050, the agricultural sector is going to face enormous challenges to feed the 9.6 billion people who will inhabit the planet, and to cover those needs, food production will have to increase by 60%.

There are increasing challenges to tackle in the agri-food system, such as policymaking and regulation, economic and gender issues, the definition of clear skill sets and the 'digital divide'. The overexploitation of natural resources and a potentially catastrophic degradation of land, alongside the effects of climate change on the world's food security have also made the situation more delicate. Furthermore, inequalities, discrimination, and violations of human rights, including the right to adequate and safe nutrition, increase the negative impacts on vulnerable populations, especially on smallholder farmers.

Opportunities

Digitalization can play an increasingly important role in addressing these challenges by boosting connectivity and reducing inefficiencies and information costs. Digital technologies can have a tremendous impact, making agriculture more productive, sustainable, and efficient. The opportunities offered by digital technologies are vast and profoundly transformative. Digital technologies affect all sectors of the economy, and society as a whole, however their impacts on agriculture are specific and can give rise to economic, social and ethical challenges that should be addressed by policymakers.

To continue covering the needs of a world with an increasing population, FAO and ITU recognize and highlight the crucial role of Innovation in finding sustainable solutions in the field of food and agriculture and address in a global perspective these new challenges successfully to achieve the SDGs to their best efficiency and in line with the WSIS Action Lines. FAO and ITU support and coordinate national, regional and global efforts in harnessing Information and Communication Technologies (ICTs) and digital technologies in agri-food systems to achieve the 2030 Agenda.

In 2020, E-Agriculture focuses on 'fostering an enabling ecosystem for food and agriculture through digital innovation' to propose a framework for systematically integrating e-Agriculture through the creation of a digital innovation ecosystem that would support the creation and adequate use of ICTs to empower the most vulnerable, including smallholder and family farmers and consequently improve productivity in food systems as a whole and worldwide.

The session also focused on youth entrepreneurship, capacity development and multi-stakeholder partnerships, which are key enablers to establish business models to produce new

ideas and products, shape better policy recommendations, better use of data, better knowledge transferring, and better digital solutions aimed at contributing and achieving all the SDGs.

Impact on SDGs

Digital innovation has revealed to have a true potential to transform the approach to all 17 SDGs. The development of an enabling ecosystem for food and agriculture will provide a systematic process and sustainable business model for creating, accelerating and scaling new digital solutions to achieve several SDGs, particularly SDG 1 (eradication of poverty), SDG 2 (end hunger), SDG 8 (decent work and economic growth), and SDG 13 (climate action).

WSIS Action Line – C7: ICT Applications: E-business
Lead and Co-Facilitators: UNCTAD, ITC, and UPU

Introduction

The United Nations Conference on Trade and Development (UNCTAD), the Universal Postal Union (UPU) and the International Trade Centre (ITC) serve as co-facilitators for the follow up and implementation of Action Line C7 ICT Applications: E-business. The action line aims to enhance the involvement of all stakeholders in promoting the benefits of e-business and e-commerce, and stimulating the development of new e-business applications, content and services across all ICT channels

Challenges

ICTs have moved far beyond the realm of communication and are now the foundation for e-business growth and it's contribution to the economy. Digital Economy Policymakers and Regulators need to focus on driving inclusive and cross-sectoral and "whole of government" approaches towards digital transformation of the economy.

Significant barriers remain for small firms from developing countries to access and profit from these tools: the first being affordable and reliable internet, followed by availability of payment solutions and, perhaps not least, the skills to understand and use the tools. Equally the rise of the platforms in the last 15 years poses many challenges for policymakers including equitable access and effects on competition.

Other challenges include:
o An adequate legal and regulatory framework is needed to enable e-commerce stakeholders to mitigate transaction risks, provide transparency and ensure a level-playing field to address issues related to big-data, cloud computing, platforms, digital payments and data privacy.
o Cost-effective and digitally enabled logistics and transport infrastructure to move goods remains a hurdle for cross-border e-commerce.
o Enhanced availability and use of digital payment systems are important for e-business transactions.
o Access to reliable authentication processes that include developing countries.
o Silo based digital economy policy and strategy development is hampering the sustainable development of the digital economy.
o E-business and e-commerce statistics are missing in most developing countries, hampering the ability of governments to formulate and monitor related policies and strategies.

Opportunities

In 2005 e-commerce already existed – and most of the multinational marketplaces that dominate e-commerce trade today had already made their mark. Outside of the marketplaces we have seen exponential growth in the use of social media – by individuals and by enterprises for

marketing communications and to drive e-commerce in developing countries. Internet Cloud services have also expanded in number and usage in the last 15 years: pioneered by subscription models (such as the CRM tool, Salesforce.com) In 2020 there is a vast array of services from accounting to project management and regular office software which has easily accessible and has free-to-use service tiers.

The e-business dimension remains highly relevant for WSIS-related in work beyond 2020. Firstly, a vibrant ICT sector underpins productive use of ICTs and stimulates sustainable growth, job creation, trade and innovation as part of strategies for sustainable development. Secondly, a globalized digital economy driven by affordable access to ICTs and adequate skills enables enterprises to digitally transform, connect with value chains and to compete.

Governments and other stakeholders should facilitate and encourage both an effective use of the technologies by enterprises in all sectors and a thriving ICT producing sector in itself and adopt regulations consistent with the cross-border nature of e-commerce.

Impact on SDGs

The COVID-19 pandemic has shown the importance of a working digital economy ecosystem to strengthen countries' economic and social resilience, powered by inclusive e-commerce business models and functionality of digital platforms. It has reminded the global community that more needs to be done to bridge the global digital divides in line with SDG targets, as urban/rural and gender-based disparities in access to ICTs remain significant.

E-business has shown that it can lead to improved access to trade on the part of women, and has supported growth of entrepreneurial activity in poor communities (SDG 5, SDG1). E-business can support productive activities, decent job creation, entrepreneurship, creativity and innovation. It can facilitate the formalization and growth of micro, small and medium enterprises, which are a significant component of most economies (SDG 8). E-business enhances the integration of firms into value chains and markets (SDG 9). And finally, e-business can help to significantly increase the exports of developing countries, and the least developed countries' share of global exports (SDG 17).

WSIS Action Line – C7: ICT Applications: E-environment
Lead and Co-Facilitators: WMO, UNEP, and ITU

WSIS Action Line – C7: ICT Applications: E-employment
Lead Facilitator: ILO

Introduction

The International Labour Organization (ILO) supports action line C7 on e-employment.

Since 2003 significant progress has been achieved and several emerging trends and challenges have been identified and (in some cases) addressed. Some of the trends are:

- Telework, although always a "possibility" mainly for middle management and above, COVID19 has accelerated its implementation. (The ILO has thus increased its work on the topic.)
- Employment services (including job matching) have become increasingly digital, many countries have, are in the process, or planning a digitalisation of their public employment services. Digital private employment services have also significantly increased. (The ILO works on this topic.)
- Platform work (the gig economy), although still a fraction of the labour force, is increasing. (The ILO is intensifying its work on this topic.)
- The use of digital tools in many jobs is increasing.

The world is debating, in a number of forums and in the media, the future of work, where e-employment occupies an important role. The ILO hosted the Global Commission on the Future of Work that produced recommendations. In it its' centenary year, the ILO adopted the 2019 Centenary Declaration on the future of work. Also in 2019, the UN General Assembly adopted resolution 73/342, recognizing the particular relevance of the Centenary Declaration in informing the work of the UN system to shape a human-centred approach to the future of work

Challenges

In the context of employment, the negative effects of digitalization are associated with income and job insecurity, work intensification, the deterioration of (mental) well-being, etc. For instance, digital labour platforms provide new sources of jobs and income (which is very positive), but raise serious challenges for workers' protection, representation and fair treatment. Another example is the generation of large amounts of data on workers that can pose risks for workers' privacy.

A few years ago, the main challenge that was considered was a possible "job destruction" as a consequence of digitalization. It was then disputed that rapid technological progress had an overall positive impact with some winners and some losers. However, with time, it is becoming more frequent to consider that the trend is not job destruction or job creation but rather a change of the way we work and the tools we use that constitute the challenge.

An important challenge is to find a way to regulate the different emerging forms of digital work without hampering job creation. With the objective of improving labour conditions in terms of

social benefits, job stability, training and working conditions, among others. The right to disconnect (in the context of work) is also an area where regulations are evolving.

Equal access to connectivity and digital tools is an important challenge for e-employment. As there are vast differences between nations and between populations (old/young/rural/urban, etc.) and between men and women, where women are often less connected. This inequality is an important barrier for SGD achievement. The COVID-19 crisis has further exposed the problems of access, as one can work remotely (and be safe form the Pandemic) or be part of the digital economy only if you have digital skills and access to the necessary infrastructure.

Opportunities

The ILO supports its member States to develop and implement national employment policies that are negotiated through social dialogue. Increasingly, the issue of digitalization of work is highlighted by Governments, employers and workers organisations as crucial in policy development and implementation.

Examples of (other) opportunities, in the area of e-employment, include:
- digital youth employment initiatives to meet the global youth employment challenge.
- targeting female connectivity for employment.
- digitalisation of entrepreneurship training.
- social protection including for platform work.
- training in ICT related technologies to enhance employment credentials.
- job matching through digital employment portals.
- addressing emerging issues, including telework, digital training, etc. through social dialogue.
- portability of rights and skills certification that can support migrant workers in finding decent work.
- an increasing number of governments are promoting the application of new technologies to simplify and facilitate the transition from the informal to the formal economy. These policy innovations ("e formality") will transform the way formalization policies will be implemented in the future
- …

Impact on SDGs

This action line contributes to all SDGs, however, in particular, it is directly linked to SDG 8 "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all". The "digital revolution" in the labour market is unprecedented in terms of speed, scope and scale. It is diffusing much faster than before, affecting all dimensions of the labour market and it has taken on new energy during the COVID 19 Pandemic. Managing this process for everyone's benefit is crucial in achieving the SDG 8. However, it is important to consider that the COVID-19 crisis is going to make achieving the SDGs much harder.

Matching jobs and skills has always been challenging, the digital transformation of skills and jobs affects SDG 4 "Ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all".

The ILO Centenary Declaration called for all relevant stakeholders to ensure policy coherence in the multilateral system and thus contributing to SDG 17 "Strengthen the means of implementation and revitalize the global partnership for sustainable development". This means examining and considering all international economic and financial policies and measures in light of the fundamental objective of achieving social justice. Such coordinated actions within the system will contribute to help both workers and employers to benefit fully from the digital revolution and thus achieve full and productive employment and decent work for all.

WSIS Action Line – C8: Cultural diversity and identity, linguistic diversity and local content
Lead Facilitator: UNESCO

UNESCO has continued to incorporate ICTs in its Culture programme, particularly in the protection and promotion of cultural heritage and the diversity of cultural expressions, in line with Action Line 8.

The United Nations declared 2019 the **International Year of Indigenous Languages** in order to raise awareness, not only to benefit the people who speak these languages, but also for others to appreciate the important contribution they make to our world's rich cultural diversity. UNESCO Headquarters and Field Offices have accordingly prioritized the theme of indigenous languages in several digital initiatives.

Despite technological progress, many indigenous peoples experience a variety of barriers to access information in own languages in cyberspace, access websites and e-content, use mobile phones and applications, television, personal computers, tables and other.

Although the commitment of the UN to the rights of indigenous peoples and their inclusion are implied in all aspects of the SDGs and articulated in other international documents such as WSIS, this does not automatically result in their inclusion in either general or targeted efforts to meet SDGs and integration into the national information and technology-related policies, practices and processes.

Existing development mechanisms do not adequately reflect the needs of Indigenous language users, who are at risk of being left behind or even excluded. It is in this context that the proclamation of a decade of indigenous languages, strongly supported by many stakeholders involved in the International Year, became a global priority, with only 10 years to go to achieve the set targets of the 2030 Agenda.

Joint efforts are required from all stakeholders, from indigenous language users themselves, to the public and the private sector, academia, and civil society organizations. Policy collaboration and continuity of action are essential for promoting, protecting and strengthening Indigenous languages as well as empowering their users around the world. This approach implies capitalizing on the full range of international, regional and national normative instruments and existing tools from previous years as well as from the lessons learned of the International Year of Indigenous Languages.

In the framework of the International Year, UNESCO has carried out a series of regional consultations that aim to identify recommendations for future actions through policy making, to be integrated in the Global Strategic Outcome Document for IYIL2019, submitted to UNESCO's General Conference in November 2019. The Strategic Outcome Document represents one of the main outcomes of the 2019 International Year, and contributes to the development of long-term

plans in the area of indigenous languages. It was prepared based on the contributions and recommendations provided during regional consultative meetings. The set of conclusions, defined goals and suggested recommendations identified in the meetings provide a solid basis for action-oriented responses at different levels.

Article 15 of the WSIS Declaration of The World Summit on the Information Society states "In the evolution of the Information Society, particular attention must be given to the special situation of indigenous peoples, as well as to the preservation of their heritage and their cultural legacy". Since the adoption of the WSIS Declaration in 2003, and of the Tunis Declaration in 2005, various stakeholders addressed the issues of access to information and knowledge for marginalized groups. Numerous examples of effective usage of ICTs proved to be good practices and important means capable of improving the lives of indigenous peoples. The adoption of the UN Declaration on the Rights of Indigenous Peoples in 2006 provided a comprehensive normative framework for the indigenous issues inclusive development.

One of the main priorities of the 2019 International Year of Indigenous Languages is capacity-building activities that promote application of latest technological solutions to address lack of accessibility to ICTs as well as ICT literacy for indigenous language users. In this respect, UNESCO has promoted the setting up of indigenous community media and radio worldwide.

There is a clear need for new research directions and business strategies to reduce the cost for developing indigenous language technologies, and to encourage knowledge-sharing practices and their mainstreaming at the international level to enhance profit as well as contribute to global development. One way forward is the organization of international conferences, workshops, as well as the out-sourcing of source-codes from tech companies to indigenous people so that they can be developed and integrated in new technologies.

In this framework, UNESCO organized a hackathon for the promotion of indigenous languages through mobile technology and free and open source software (FOSS), during FOSSASIA's Open Tech Summit in March 2019 in Singapore. Eleven innovative solutions for oral indigenous languages were proposed by the IT specialists working in cooperation with young indigenous peoples from Asia.

The UNESCO Mexico Office and INPI (National Institute of Indigenous Peoples) signed an agreement in September 2019 to orient the development of communication technologies - such as telephone and internet - to the needs and contexts of indigenous peoples; to develop media and information literacy projects; and to promote the creation of digital content for the safeguarding of national indigenous languages. To those ends, INPI launched the platform 'Codex Mexico' to present to the public linguistic, geographical, historical, and statistical information on the 68 languages of Mexico through interactive maps, audiovisual content, and other tools that allow a deeper understanding of each language and the town to which it belongs. The UNESCO Mexico Office has developed a series of digital publications and audiobooks in indigenous languages.

The UNESCO Yaounde Office created and/or refurbished some 20 community radios with an eye to promote national languages and culture through radio programmes.

In December 2019, during the 14th session of the Intergovernmental Committee for the Safeguarding of Intangible Cultural Heritage that took place in Bogotá, Colombia, UNESCO organized an itinerant audio exhibition on indigenous languages to highlight their vital contribution to safeguarding the intangible cultural heritage of indigenous peoples. The exhibition proposed an immersive sensorial experience that allowed the public to discover how languages relate to the creation of knowledge and cultural practices that evolve in response to our environment.

A major conference was organized at UNESCO Headquarters on 5-6 December 2019 on the theme of language technology ("Language Technology 4ALL"). The International Conference programme of three days, consisted of plenary oral and poster sessions, introductory presentations and thematic discussions in each session, as well as the exhibition on innovative language technologies and supporting events (such as welcome receptions). The Conference approved a forward-looking Outcome Document, which seeks to capture concrete recommendations for international cooperation, research and development. The document captured main debates, discussions and solutions for informed decision making, and will be globally distributed among various stakeholders and integrated into new follow-up activities.

Other relevant initiatives have been carried out in cooperation UN-agencies such as UNDESA, WIPO, ITU, FAO, as well as other partners, including the high-level dialogue 'ICT for all: indigenous languages matter for peace, innovation and development' organized during the World Summit on the Information Society (WSIS) Forum 2019 in Geneva. The panelists addressed key issues related to the growing digital divide between speakers of dominant and minority languages, caused by the limited availability of, as well as lack of access to, indigenous language technologies. The High-Level panel discussion provided space for open consultations and encouraged a shift of paradigm on the role that indigenous languages could play if ICTs are made accessible, inclusive and affordable for all users, including indigenous language users.

A key message to draw from the panel is that promoting multilingualism through ICTs contributes to the preservation of the invaluable traditional knowledge imbued in languages that would otherwise undergo digital extinction, but also to the application and harnessing of this very knowledge for development and innovation in different fields.

The Latin American Gathering of Digital Activists on indigenous languages was organized by the Guatemala Office (22-23 October 2019, Guatemala City); There are ongoing discussions to develop a toolkit on digital language activism for the capacity building work next year. Other similar activities have been organized by other UNESCO Field Offices.

It is critical to think collectively and concretely about how to adjust technological developments and AI to serve all languages. Multi-stakeholder partnership is one of the key pillars on which the Action Plan for IYIL2019 is based.

In 2020, UNESCO is planning to launch an online platform for the World Atlas of Languages, a repository for linguistic diversity and multilingualism. UNESCO initiated a global data collection "Survey of World Languages" in close cooperation with the UNESCO Institute of Statistics (UIS) and leading experts. It is expected that the online platform will be launched in April 2020.

The World Report will provide a situation analysis of linguistic diversity, measures taken to support, access and promote linguistic diversity and multilingualism, geopolitical impact on development, inclusion, knowledge production, rights and technological development related issues, as well as a revised strategic and methodological invitations.

In the framework of the **UNESCO Convention for the Safeguarding of the Intangible Cultural Heritage (2003),** a new online toolbox was created to demonstrate the linkages between safeguarding living heritage and sustainable development. It includes more than 30 case studies to show how communities transmit their intangible cultural heritage and, in turn, how safeguarding intangible heritage can contribute to achieving the Sustainable Development Goals.

The UNESCO Yaounde Office produced a DVD series in collaboration with local communities on the country's festivals. It particularly targets youth to increase their awareness of the importance of safeguarding intangible cultural heritage.

As it concerns the **UNESCO Convention for the Protection and Promotion of the Diversity of Cultural Expressions (2005),** the convention has integrated ICTs throughout its programmatic work in 2019, especially through collecting data, raising awareness and funding projects.

An Open Roadmap to support the Operational Guidelines on the Implementation of the Convention in the Digital Environment was approved by the 7th session of the Conference of Parties in June 2019. It provides States with a strategic framework that they can adapt in order to develop a national roadmap to protect and promote the diversity of cultural expressions in the digital environment. Within this framework, UNESCO has begun to collect examples of good practice from around the world to promote knowledge exchange and peer-to-peer learning in the field of ICTs and culture.

Moreover, UNESCO has developed an innovative and interactive open-access digital tool, the 'Policy Monitoring Platform', to monitor Parties' implementation of the 2005 Convention. The platform currently hosts 2065 policies and measures for the promotion of the diversity of cultural expressions, which derive from Parties' periodic reports between 2012 and 2018.

Several public debates on the subject of ICTs and culture were organized in 2019, bringing together artists, technology specialists and academics. For example, on the occasion of Mobile Learning Week in March 2019, a debate titled "Artificial Intelligence for Creativity?" addressed the impact of AI on global societal issues, including the fair remuneration of artists, intellectual property rights, and artistic freedom.

Within the project "Retina Latina", funded by UNESCO's International Fund for Cultural Diversity (IFCD), young creators from Latin America and the Caribbean were trained in developing innovative strategies for the circulation of cinematographic works on traditional and digital screens.

With regards to the **UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage (1972),** The World Heritage Youth Fora serve as a platform for bringing young professionals involved in the field of World Heritage together, to foster intercultural learning and exchange, to debate common concerns and to discover new roles for themselves in heritage conservation. The Fora are organized internationally in conjunction with the annual sessions of the World Heritage Committee and regionally in collaboration with various stakeholders. The preparation and the outcomes of the Fora (declarations/statements, videos etc.) are shared on the World Heritage Centre website and the engagement and follow-up among the participants are pushed on social media, especially by the participants.

The European Young Heritage Professionals Forum (organized as a part of the UNESCO-EU project 'Engaging Youth for an Inclusive and Sustainable Europe') that took place in May 2019 in Zadar, Croatia, provided training to young professionals on communication strategies for promoting tangible and intangible heritage. It involved various methods and tools for ICTs, including social media campaigning, in order to encourage the participants to become 'Cultural Heritage Messengers'.

In the framework of UNESCO's work on **Culture and Emergencies**, and under the Memorandum of Understanding between UNESCO and the Operational Satellite Applications Programme (UNOSAT) of the UN Institute for Training and Research (UNITAR) for the monitoring of heritage sites via satellite imagery, the UNESCO Apia Office requested a satellite-image based damage assessment of the February 2019 oil spill near the East Rennell World Heritage site in the Solomon Islands. The assessment was valuable for the UNESCO-IUCN Reactive Monitoring Mission in May 2019.

With support from UNESCO's Heritage Emergency Fund, the UNESCO Jakarta Office introduced digital capacity building for traditional weaver women in the two villages of Lombok, Indonesia, affected by the earthquake and tsunami in August 2018. In collaboration with the Digital Empowerment Foundation, India, the project taught the weavers how to use graphic design software to document and digitize traditional motifs so to maintain communities' collective memory, while easily experimenting with new designs to appeal to contemporary demand. The women also learnt how to use social media for marketing purposes.

As it concerns the **UNESCO Convention on the Means of Prohibiting and Preventing Illicit Import, Export and Transfer of Ownership of Cultural Property (1970),** the Organization has continuously worked on raising awareness of illicit trafficking through online campaigns, for instance by producing 13 audiovisual clips to target the public, tourists and youth, and by providing the publicly available Database of National Cultural Heritage Laws. In 2019 UNESCO launched two e-learning programmes targeting the art market and the judiciary respectively,

aiming to reinforce their capacities in the fight against the illicit trafficking of cultural property. Both tools were developed in the framework of projects funded by the European Union.

With regards to the integration of ICTs in **museums,** the UNESCO Apia Office provided Papua New Guinea National Museum and Arts Gallery (NMAG) with assistance to develop a mobile visitor app. The project aims to allow users to interact directly with NMAG's collections by featuring interactive curated tours including digital maps and tagged exhibits, the history of NMAG, as well as information on events. The app aims to strengthen community engagement with the museum, contributing to its vision of becoming a dynamic educational and cultural hub under its Corporate Plan (2019-2023).

The UNESCO Yaounde Office led a training workshop in Bangui in October 2019 to equip the team of the National Museum Barthélémy Bogranda with technical skills to digitize their collections using the software 'Collective Access'. This resulted in the creation of a database of 3500 objects from the museum's storage, which, apart from providing the staff with a means of efficiently managing their objects and loans, will be used to produce a documentary on the history of the museum and its collections.

Lastly, as it concerns the **UNESCO Convention on the Protection of the Underwater Cultural Heritage (2001),** and in order to foster capacity-building, the Organization has ensured the development and diffusion of online tools and training manuals. Digital tools and the virtualization of underwater archaeological sites are also used for practical trainings, such as those in 2019 in Campeche (Mexico) and in Mozambique Island (Mozambique). UNESCO is also working with its associated UNITWIN Network on Underwater Archaeology to develop digital training materials for academics.

WSIS Action Line – C9: Media
Lead Facilitator: UNESCO

Following the approval, in November 2018, of the **Internet Universality Indicators** by the 31st Council session of the International Programme for the Development of Communication (IPDC), implementation of the Indicators worldwide has been initiated and is progressing. As of October 2019, 10 countries are expected to complete an assessment of national Internet development using these Indicators, while assessments are under consideration in another 15 countries, in 5 regions. These indicators serve as an internationally recognized toolkit to help stakeholders to assess their own national environment and develop Internet policies that will effectively advance human rights and contribute to achieving the 2030 SDGs.

To assist Member States in tracking progress on their commitments to guarantee public access to information, the monitoring mechanism developed in 2018 was implemented in 43 countries preparing Voluntary National Reviews for the UNHLPF in July 2019. Two side events were organized at the UNHLPF to present results on both target 16.10 indicators.

The 5th World Journalism Education Congress (Paris, July 2019) was supported, with 2 publications launched on this occasion: "Gender, Media and ICTs: New syllabi for media, communication and journalism," and "Setting the Gender Agenda for Communication Policy." These were compiled by UNESCO partners in the Global Alliance for Media and Gender, and the UNITWIN Network on Gender, Media and ICTs.

Media and information literacy, and support for gender equality in media continued, with research, capacity-building and convening of stakeholders in regional and international fora.

UNESCO has continued its lead role in coordinating and promoting activities aimed at creating a safer working environment for journalists and media workers. Since 2018, As coordinator of the **UN Plan of Action on Safety of Journalists and the issue of Impunity**, UNESCO chaired, together with OHCHR, the UN Network of Focal Points on Safety of Journalists. In this framework, UNESCO organized activities tackling the harassment of women journalists and specific threats faced by women journalists in over 10 countries, liaised with the CSO Coalition on Safety of Journalists and with the IFEX Network, and implemented field activities on safety in more than 30 countries (with at least 15 in Africa), including trainings and support to the creation of relevant national mechanisms.

On and around 3 May 2019, UNESCO led the celebrations of the 26th anniversary of **World Press Freedom Day**, with around 100 national events around the world. The global theme was 'Media for Democracy – Journalism and Elections in Times of Disinformation'. The main celebration, organized jointly by UNESCO, the Government of Ethiopia and the African Union, took place in the city of Addis Ababa (Ethiopia).

Since 2018, implementation of **Right to Information** laws was supported in over 10 countries, with the support of a global network of Information Commissioners. Monitoring and advocacy around RTI under the SDG 16.10.2 indicator led to 28 Member States referencing the issues in their Voluntary National Reports during 2019.

In Latin America, Africa and the Arab regions, over 12,000 judges have completed a UNESCO online training course since 2018, and have thereby been empowered to integrate international standards in their decision-making on cases related to access to information, freedom of expression and the safety of journalists, with impact on jurisprudence evident in a number of cases. Schools for judges now incorporate tools developed under a UNESCO project in their curricula for **training judges**, prosecutors and other judicial operators.

In November 2019, UNESCO marked **the International Day to End Impunity for Crimes against Journalists (IDEI)**, with several events around the world. The 2019 IDEI main event was an international seminar organized in Mexico City (Mexico) by UNESCO in collaboration with Mexican authorities. The seminar analyzed the mechanisms of prevention, protection and prosecution to bring justice to murdered journalists and reviewed the challenges and achievements of the fight against impunity in Mexico.

UNESCO's **IPDC** continues to support an extensive range of media development activities in developing countries and countries in transition worldwide. On 19-20 June 2019, the 63rd Bureau of the IPDC approved 36 new media development projects, allocating 700 000 USD in more than 22 countries. The efforts of the IPDC have had an important impact on a broad range of fields covering, among others, protecting safety of journalists, the promotion of media independence and pluralism, development of community media, radio and television organizations, modernization of national and regional news agencies, and training of journalists and media professionals. IPDC has also supported UNESCO's work in monitoring SDG 16.10.2 on access to information, and supported Member States to sustainably cover this issue in their self-assessments.

As it concerns **Media Development Indicators (MDIs),** MDI assessments in Ghana, Bosnia & Herzegovina, Haiti, Malawi, Morocco and Uruguay are being finalized following assessments in 2018. MDI assessments were started in 2019 in Ethiopia and Viet Nam. With regard to **Journalists' Safety Indicators** (JSIs), JSI assessments in Iraq and Afghanistan were completed and are currently being finalized, while JSI assessments are currently ongoing in Uganda, Colombia, Mali and Viet Nam.

On 13 February 2019, the 8th edition of the **World Radio Day** was commemorated all over the world under the theme "Dialogue, Tolerance and Peace." A total of over 474 events were registered in 100 Member States, including 22 Member States in Africa.

UNESCO participated in the 2019 edition of the **Internet Governance Forum** (25-29 November, Berlin) through the organization of two dedicated events on implementation of the Internet Universality Indicators and on issues of Artificial intelligence, specifically linked to the ROAM principles of UNESCO.

Additional significant contributions were made to various international meetings, such as the Open Government Partnership Forum 2019 and Rights Con 2019.

WSIS Action Line – C10: Ethical dimensions of the Information Society
Lead Facilitator: UNESCO

UNESCO's work on Action Line C10 has focused on the ethical dimensions of disruptive technologies, with particular emphasis on artificial intelligence and the Internet of Things (IoT). Within the framework of its work programme for 2018-2019, the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) decided to address the topic of the Internet of Things (IoT), reflecting on the ethical considerations of IoT in relation to society, science and sustainability. This work builds on the COMEST Report on Robotics Ethics (2017). A full report on this issue will be completed during the 2020-2021 biennium.

Building on COMEST's previous and ongoing work, the Commission completed a preliminary study on the ethics of artificial intelligence to inform UNESCO's reflection in this area. The preliminary study highlighted that current debates tend to show that today, at the global level, there is a need for a general universal ethical guidance in terms of core values that must underpin the development of AI systems. Due to their transnational character, durable solutions can be found only at the global level. This study led to the adoption, by UNESCO Member States at its General Conference in November 2019, to develop a **standard-setting instrument in the form of a recommendation on ethics of AI**.

The Organization is therefore embarking on a two-year formal process in order to elaborate this international standard-setting instrument that will advise governments on policies and practices related to the ethics of AI.
In this process, UNESCO will call upon not only its Member States and an Ad Hoc Expert Group, but stakeholders from the public and private sector, technical community, media and academia, civil society and international organizations, to come together to discuss the elaboration of this instrument. The discussion will include civic forums and multi-stakeholder consultations that are at the heart of UNESCO's deliberative work.

Furthermore, a series or regional events have occurred to raise awareness of Member States on the role of artificial intelligence in meeting the SDGs, notably 1) the Forum on Artificial Intelligence in Africa that took place in December 2018 in Benguérir, Morocco ; 2) the Global conference "Principles for Artificial Intelligence: Towards a Humanistic Approach?" that took place in March 2019 at UNESCO Headquarters in Paris, France ; 3) The "International Conference on Artificial Intelligence and Education" that took place in May 2019 in Beijing, China, and; 4) the Regional Forum on Artificial Intelligence in Latin America and the Caribbean that took place in Sao Paulo, Brazil in December 2019.

At the national level, National IFAP (Information for All Programme) Committees organized national events such as the one in Pretoria, South Africa on 28 August 2019 to sensitize multiple actors on the ethical principles of artificial intelligence and its impact on countries.

Given its normative mandate, UNESCO will continue to raise awareness of different stakeholders about the ethical impact of AI on the various social, cultural and scientific aspects of society by working on the elaboration of this standard-setting instrument on the ethics of AI and capacity-building of all stakeholder groups in this field. This instrument will provide a global mechanism to document the social-cultural changes brought about by the rapid development of AI and related ethical issues. It will also serve as a means of mainstreaming universal values into AI systems, which must be compatible with internationally agreed human rights and standards.

Considering the recent increase in the number of declarations of ethical principles on AI at the national or regional levels, the elaboration of this instrument by UNESCO is particularly timely for as the Organization will adopt a global, pluralistic, multidisciplinary, multicultural and multi-stakeholder approach, drawing from all of the Organization's areas of competence and diversity of networks.

In countering online violent extremism, capacity development initiatives have been carried out at regional level (Latin America) and national level (Albania, Burkina Faso, Ghana, Kyrgyzstan, Mali, Niger, North Macedonia, Pakistan and Palestine) addressing online violent extremism through Media and Information Literacy initiatives. Following the implementation of these pilot projects, recommendations are formulated towards innovative inclusive knowledge society policies.