



# **World Telecommunication/ICT Indicators Symposium**

**21 to 23 November 2016**

**Gaborone, Botswana**

## **FINAL REPORT**



## INTRODUCTION

1. The 2016 World Telecommunication/ICT Indicators Symposium (WTIS-16) took place in Gaborone, Botswana, from 21 to 23 November 2016. It was organized by the International Telecommunication Union and hosted by the Government of Botswana.
2. The Symposium attracted around 400 participants from 60 countries, representing public and private organizations including ministries, regulators, national statistical offices, universities and research institutions, and regional and international organizations.
3. The work of WTIS-16 was conducted under the chairmanship of Mr Thari G. Pheko, Chief Executive of Botswana Communications Regulatory Authority (BOCRA).
4. The outcomes of the Symposium are expected to provide strategic guidance to the national and international community, including ITU, in the field of ICT statistics, and to strengthen collaboration among the global ICT statistical community.
5. Further information, including the agenda, the presentations delivered, media information, the list of participants, and photos are available at: <http://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2016/default.aspx>.

## Monday, 21 November 2016

### Opening Ceremony

6. The World Telecommunication/ICT Indicators Symposium (WTIS-16) was opened by Dr Omponye Kereteletswe who represented H.E. Mr Onkokame Kitso Mokaila, Minister of Transport and Communications, Botswana. Also participating in the opening ceremony were Mr Thari G. Pheko, Chief Executive, Botswana Communications Regulatory Authority (BOCRA) and Mr Brahima Sanou, Director of the Telecommunication Development Bureau (BDT).
7. The host country representatives both expressed the Government of Botswana's commitment towards harnessing ICTs for development. They acknowledged the key role of measurement in the achievement of ICT development goals and highlighted, for example, how they have incorporated targets for the ICT Development Index (IDI) access and use sub-index in their public sector strategic plans. They also welcomed the opportunity presented by WTIS-16 to exchange experiences and benefit from the success stories of other countries.
8. The BDT Director thanked the Government of Botswana for hosting WTIS-16, and congratulated the country on its 50<sup>th</sup> anniversary. Mr Sanou highlighted the importance of the WTIS, and the importance of ICT indicators to help track progress toward the 2030 Agenda for Sustainable Development.

### Ministerial Roundtable: Leaving no one behind

9. The Ministerial Roundtable emphasized that an inclusive information society is an important prerequisite for the achievement of the 2030 Agenda for Sustainable Development, which pledges to leave no one behind in creating a more peaceful and prosperous planet. ICTs are critical to address some of the most urgent development challenges, including in the area of climate change and environmental degradation, and to create new opportunities for the world's most vulnerable population groups.
10. Ministers recognized that only a fully connected world, which provides all people with affordable access to ICTs, will allow all people equally to benefit from the rights and opportunities that the SDGs voice. The debate also emphasized that the benefits of the Internet were still unavailable to over half the world's population and that ITU and its membership played an important role in tracking and overcoming the digital divide.
11. The Roundtable acknowledged that the most vulnerable population groups – including the illiterate, the unbanked, and those living in disaster-prone and rural areas – could benefit most from ICTs. At the same time, these population groups were most at risk of being left behind and more efforts were required to connect those at the bottom of the pyramid. A number of Ministers provided examples of how targeted policies, innovations, but also technologies and public/ private partnerships can help connect the unconnected to create an inclusive information society. They emphasized the importance of strong backbone infrastructure networks, and the need to develop local and relevant content.

12. Ministers recognized the need to produce more data to understand broader socio-economic inequalities and specific barriers that keep different population groups from using, or fully benefitting, from the Internet. To overcome the lack of data and to produce official statistics to inform policies, ICT policy makers must work together closely and coordinate with data producers, in particular national statistical offices. Better data are also critical to drive and inform investment opportunities.
13. Discussions highlighted that policy makers could work more closely with the private sector, including with big data producers to identify new opportunities of producing relevant and timely information. In this context, and with reference to data gaps, the Symposium invited different stakeholders to take advantage of new (big) data sources to produce additional information on progress on the information society, and to inform other ICT for development areas.

#### **Leaders' Dialogue: Understanding the structural impact of ICTs**

14. The Leaders' Dialogue recognized that ICTs are not only changing the way people communicate, work, and live, but are having profound changes on society, the environment and the global economy. The structural changes triggered by ICTs lead to often entirely new digital ecosystems and present both opportunities and challenges for people and societies. In order to create knowledge economies and benefit from the extensive availability and use of ICTs, a solid backbone infrastructure, and full access to ICTs is required. This will lead to greater innovation and technical advances, greater efficiency and more, better and more sustainable services.
15. The high-level panel discussed a number of current and imminent technological and societal changes, for example in the area of automation, artificial intelligence, and the sharing economy, which will impact labour markets. Increasingly, technologies impact the way even sophisticated services, including such services as creative writing and coding, can be delivered. The debate highlighted some of the consequences of the digitalisation of the economy, including an increase in non-standard work, a rise in job insecurity, and job and work polarization.
16. The Symposium highlighted that these changes require people to learn new skills. Governments play an important role in preparing their citizens for the changes of digitization. They can increase their capacity building efforts, adapt educational models and help deliver lifelong learning skills. In addition, social security systems need to be adjusted, in particular to address growing job insecurities.
17. Discussants highlighted that it was critical to understand and monitor the effects of these structural changes, including on the labour market, for governments and businesses to make the right policy decisions. Better data to monitor a growing ICT sector and shifts in employment requiring ICT skills, are particularly important to be prepared for the future and to protect and promote social and economic cohesion. It is critical to address unemployment caused by technological changes and rising inequalities. ITU plays an important role in discussing new data needs. In addition, ITU should consider looking into the possibility of developing guidelines on how to adapt regulation and develop new indicators to monitor technological and structural changes.

**Tuesday, 22 November 2016**

**ICT Development Index (IDI) award ceremony and presentation of the Measuring the Information Society Report 2016**

18. The Symposium recognized that the IDI is an important and impartial global benchmarking tool recognized widely by countries, which helps to evaluate progress, identify challenges, and set targets. By highlighting not only the top performers but also the most dynamic countries that have made great achievements in terms of ICTs, the IDI helps identify best practices, and provides critical evidence for policy makers and the private sector.
19. The results of the ICT Development Index (IDI) 2016 were presented during an award ceremony. Awards were presented to the country ranked at the top of the IDI 2016 (Republic of Korea) and to the country that made most progress in its IDI performance between 2015 and 2016 (St. Kitts and Nevis), both in term of its IDI rank and IDI value.
20. The IDI award ceremony was followed by the launch of the Measuring the Information Society Report 2016 and a panel discussion on its main finding. Participants welcomed the presentation of the Report, which was described as a key publication in the field of ICT for development.
21. The Symposium took note of the key findings of the Report, in particular with respect to the IDI 2016, the analysis on the price and affordability of ICT services, new metrics on mobile phone uptake, and a comprehensive analysis of Internet usage trends and the main barriers to Internet uptake.
22. Panelists agreed that the data presented in the Report provide useful insights on the development of the global digital divide. The results indicate that while progress is being made in terms of ICT access and usage in most parts of the world, major divides persist. The gap has grown between the majority of high- and middle-income countries on the one hand, and low-income countries on the other hand.
23. The Symposium recognized that while most people in the world are covered by mobile-broadband networks, less than half the world's population uses the Internet. Barriers to Internet uptake go beyond access barriers and include high prices of services and devices, which prevents many people from using the Internet. The offline population is disproportionately female, elderly, has low levels of income and educational attainment, and lives in rural areas. Panelists stressed the importance of governments setting the right policies to make the Internet affordable in order to accelerate progress towards closing the digital divide.
24. The debate recognized the need for improved data to track the ICT-related SDG indicators, and in particular the need for better data on Internet and mobile phone usage, as well as mobile phone ownership. The fast evolution in the ICT sector requires the development of new indicators reflecting current market conditions, including the shift from voice to data use, and the proliferation of price bundles. It is imperative to identify new measures of ICT skills.

25. The Report highlighted that policy makers needed to address broader socio-economic inequalities and help people acquire skills to allow them to take full advantage of the Internet. This conclusion is in line with a more integrated development approach, like that adopted by the 2030 Agenda for Sustainable Development, which highlights that development challenges are linked and cannot be addressed and overcome in isolation.

#### **New data needs for the SDGs: Update on the Expert Group on Household Indicators (EGH)**

26. The Symposium acknowledged the work carried out by the EGH in 2016, and endorsed the outcomes of the 4<sup>th</sup> EGH meeting held on 6-7 October 2016. These include proposals for future work on defining new indicators and collecting data on cross-border e-commerce, improving the measurement of ICT skills and measuring ICT use and intensity by occupation. The EGH discussed data to capture demand-side Wi-Fi-access and use, and the methodology to collect disability statistics through ICT household surveys.
27. The Symposium recognized the importance of improving the collection and disaggregation of ICT statistics, including by disability, to improve data availability and to track progress towards the SDGs which aim to ‘leave no one behind’. The Symposium agreed that regulators and ministries should continue to work closely with National Statistical Offices (NSOs) in increasing the availability of ICT household statistics, particularly those included in the global indicators framework for monitoring the goals and targets of the 2030 Agenda for Sustainable Development.
28. The Symposium recognized the importance and challenges of measuring ICT skills. Tracking the level of ICT proficiency is critical to inform targeted policies to improve people’s digital skills, identify possible barriers, and to develop online applications and services to contribute to a more inclusive information society. The Symposium also agreed on the need for EGH to review the response categories for the ICT skills indicator to reflect ICT skills beyond computer skills.
29. The Symposium highlighted the need to engage all stakeholders in the preparation of national surveys to ensure that the relevant ICT indicators are included in the data collection and emphasized the importance of disseminating ICT household survey results in a timely manner.
30. Discussions emphasized the importance of national cooperation and coordination in the collection of ICT household statistics, in identifying priority areas for data collection, for engaging users of survey results and for pooling resources and overcoming the challenges related to the cost of household surveys.

#### **Technology trends and data: Update on the Expert Group on Telecommunication/ICT Indicators (EGTI)**

31. The Symposium acknowledged the work carried out by EGTI in 2016. Furthermore, the Symposium endorsed the outcomes of the 7<sup>th</sup> EGTI meeting held on 4-5 October 2016, including, *inter alia*: completion of revised guidelines for international Internet bandwidth indicators, creation of sub-groups for the development of fixed-network coverage indicators and revision of the ICT price basket, and continuation of the work on guidelines for digital financial service indicators.



32. The Symposium welcomed the newly created joint EGTI/EGH sub-group to review the indicators included in the ICT Development Index (IDI). The sub-group, in accordance with the Terms of Reference, will draft a document describing in detail the proposals for modifications to the indicators included in the IDI.
33. It is expected that 5G technologies will be deployed sometime in 2020 or earlier, and will bring with it radically higher speeds and lower latencies compared to the current generation of mobile technologies. The Symposium perceived the future importance of developing indicators to monitor the spread and uptake of future 5G mobile technologies. Definitions of 5G continue to differ and panelists highlighted that future indicators to monitor 5G would hinge upon how the technology would actually be implemented. The data collection on future 5G indicators could be facilitated by open data policies that take into account security and privacy concerns.
34. The Symposium recognized the changes in ICT consumption patterns, and in particular, the increasing popularity of bundled ICT services. Country presentations pointed to a significant increase in bundled offerings of mobile voice, SMS and data as well as in bundled offerings of fixed broadband and fixed telephony, where available. Regulatory authorities highlighted that it was important to collect more data on bundled subscriptions and prices in order to understand competitive practices in the telecommunication/ICT markets. Given the challenges in monitoring heterogeneous bundled tariffs, it was recommended to develop internationally harmonized guidelines to track the prices of ICT bundled services and to include them in ITU's price data collection.

#### **Big data for monitoring the information society**

35. The Symposium recognized the importance of exploring the use of big data for official statistics and welcomed the ITU project on 'Big Data for Measuring the Information Society'. The project includes pilot studies in six countries (Colombia, Georgia, Kenya, Philippines, Sweden and the United Arab Emirates) and aims to explore how big data from the ICT industry, particularly from telecommunication operators, can produce new or complement existing indicators to measure the information society.
36. The session welcomed the document developed by ITU describing new big data ICT indicators and methodologies and how these can be produced by operators and service providers. The document was initially developed based on discussions in pilot countries and will be updated based on the final results of the project. The use of the methodology document will ensure international comparability of the ICT indicators that are produced from big data sources.
37. The experiences of Colombia and Kenya, both highly committed to the project, highlighted some of the challenges faced in implementing the project in their respective countries. The challenges include accessing the data due to privacy, confidentiality and data protection issues, lack of resources and lack of skills to analyze big data. The experiences of the pilot countries showed that there are different models and modalities for data access and processing depending on the level of aggregation and anonymization of the data and national data protection, privacy and statistical legislations.

38. National collaboration among public and private stakeholders is crucial to utilize big data, particularly among the following entities: ministries, regulators, national statistics offices, data protection commissions, telecommunication operators and service providers. The Symposium encouraged the different stakeholders to engage actively in the discussions and to work together to take advantage of the potential of big data for official statistics and policy-making.
39. The Symposium highlighted that the lack of skills required to exploit new data sources is a challenge to all stakeholders and countries. Participants emphasized the need to build statistical capacity in the use of big data sources and encouraged broader support from governments and international agencies.
40. The Symposium encouraged ITU and pilot countries to share the results and experiences gained from the pilot project, and to continue the discussions and experience sharing through the EGTI and EGH forums. It further invited countries to engage actively in the discussion of this new area of ICT measurement.

## **Wednesday, 23 November 2016**

### **ICT indicators for disaster risk reduction**

41. The session recognized the devastating effects of disasters on human beings and on economic development, and in particular on the world's most vulnerable population groups. It illustrated the important link between ICTs and disaster risk reduction, as well as monitoring of climate change, which increases the likelihood of weather-related disasters. ICTs provide unprecedented opportunities to effectively assess the impact of climate change and to provide critical tools for disaster monitoring, early warning, and emergency response efforts.
42. The important role of ICTs has been recognized in the recently (2015) adopted Sendai Framework for Disaster Risk Reduction. Panelists highlighted the need to identify specific ICT-related indicators to track progress towards achieving the global targets of the Sendai Framework. ITU, in close cooperation with its Members States and Sector Members, should contribute to the development and promotion of these indicators. While some existing ICT indicators could be used, other areas, including in terms of regulation and last-mile connectivity, may require the development of new indicators.
43. Panelists highlighted a number of areas where indicators should be developed. This includes indicators to measure infrastructure resilience, the impact that disasters have on critical telecommunication infrastructure and to track the disruption of basic ICT services. To track Target G of the Sendai Framework, which is about access to multi-hazard early warning systems and disaster risk information, indicators should be developed to track the availability of communication networks, emergency alert standards and channels, and the dissemination of information to *at-risk* communities.



44. Panelists pointed to the need for high capacity and reliable communication links to effectively mitigate the impact of disasters, and showcased examples of progress made in disaster risk management. National disaster risk reduction strategies should include specific references and strategies in terms of telecommunication/ICTs, including quantitative targets and indicators. In this regard, national coordination between different stakeholders, including ICT policy makers, operators, national meteorological services and others is critical. Governments were encouraged to develop clear coordination mechanisms.
45. The discussion highlighted the opportunities of using new data sources to improve forecasts and emergency response, including utilizing big data from Geographic Information Systems (GIS), mobile telecommunication providers, the transport sector and social media. The Symposium encouraged further development and innovation in this area.

### **Better ICT data for better policy making: Stakeholder perspectives**

46. The session brought together different producers and users of ICT statistics, from both the public and the private sector, research institutions, national statistical offices, as well as ITU. Stakeholders shared their views on how to improve ICT statistics, how to enhance their use and to address some of the key challenges at the national and international level.
47. Panelists highlighted that there are many challenges to improve ICT statistics, such as: improving the quality and availability of data, strengthening resources and capacities within institutions, improving coordination among different stakeholders, putting in place an enabling legal framework, and improving data analysis, dissemination and usage.
48. The session underscored that national coordination among key stakeholders is required to improve the availability and quality of ICT statistics. Key stakeholders involved in the national ICT data ecosystem include national statistical offices, ICT ministries, regulatory authorities, ICT sector companies (including service providers), universities and research institutions, and policy-making bodies using ICT statistics. Governments should set up a coordination mechanism to facilitate stakeholders working together to produce timely and relevant ICT data, taking into consideration data needs and statistical capabilities.
49. NSOs are often overburdened with requests for data collection, including new requests resulting from the SDG indicators framework. ICT policy entities should support statistical offices in the collection of ICT data by providing resources and ICT expertise. NSOs, on the other hand, should collaborate with other government entities wishing to conduct ICT surveys by providing statistical expertise and institutional support.
50. The session highlighted that data quality remains an important issue in the field of ICT statistics. In some countries, ICT data are not meeting international standards and are therefore impacting negatively on the status of a country's ICT performance. This needs to be addressed by all stakeholders involved in the national ICT data ecosystem. Building ICT statistical capacities is essential in this regard.
51. In view of the rapidly changing nature of ICTs, data needs also change frequently. Panelists highlighted that future policies required more data on the impact of ICTs on economic and social structures, including labour markets and related ICT skills requirements. Stakeholders at the

national and international level can work together to facilitate the production, dissemination and analysis of policy-relevant data in these areas.

52. Given that the ICT sector is a key source of big data, the meeting agreed that new data sources should be explored to produce new indicators to measure the information society. Such data could complement or even replace statistical data collections, and provide new policy-relevant insights. NSOs should look into innovative ways to modernize their statistical systems, taking advantage of new technologies, data sources and quantitative tools.

### **Roundup of Symposium: Conclusions and recommendations**

53. The Chairman of the Symposium, Mr Thari Pheko, presented his summary report of the Symposium. The report contained the Chairman's conclusions and recommendations and is available at <http://www.itu.int/en/ITU-D/Statistics/Pages/events/wtis2016/default.aspx>.

### **Closing Ceremony**

54. During this session, the Government of Botswana, was presented with an ITU award for hosting the WTIS-16.
55. ITU, on behalf of the Government of Tunisia, announced that WTIS-2017 will take place in Tunisia in the fourth quarter of 2017.
56. The Symposium closed with a video of the event highlights, and closing remarks by ITU and the host.