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Economic and environmental questions:  
Science and technology for development**

**Progress made in the implementation of and follow-up to the  
outcomes of the World Summit on the Information Society at  
the regional and international levels**

**Report of the Secretary-General**

*Executive summary*

This report has been prepared in response to the request by the Economic and Social Council to the United Nations Secretary-General, in its resolution 2006/46, to inform the Commission on Science and Technology for Development (CSTD) on the implementation of the outcomes of the World Summit on the Information Society (WSIS) as part of his annual reporting to the Commission. It reviews progress in implementation of the outcomes of WSIS at the international and regional levels and identifies obstacles and constraints encountered. The report has been prepared by the United Nations Conference on Trade and Development (UNCTAD) secretariat based on information provided by entities in the United Nations system and elsewhere on their efforts during 2012 to implement the outcomes of WSIS, with a view to sharing effective practices and lessons learned.

\* A/68/50.

\*\* E/2013/1.

## Introduction

1. In 2012, there was continued growth in the availability and use of information and communications technologies (ICTs). Concerns remain, however, about a new digital divide arising between countries which have high broadband capacity and Internet usage and those, particularly least developed countries (LDCs), where broadband investment and Internet adoption are less advanced. This poses a critical challenge for governments, development partners and the private sector.

2. This report includes information provided by 22 United Nations organizations and other international organizations and stakeholders in response to a letter from the Secretary-General of UNCTAD inviting contributions concerning trends, achievements and obstacles in the implementation of WSIS outcomes.<sup>1</sup> It focuses on major initiatives undertaken during 2012, as reported by relevant organizations.<sup>2</sup>

### I. Current trends

3. Mobile phone subscriptions exceed six billion and have continued to increase.<sup>3</sup> More than a third of the world's population now uses the Internet.<sup>4</sup> Broadband networks, already pervasive in developed countries, are being rapidly deployed in emerging markets. Mobile broadband subscriptions exceed one billion and have been growing at 40 per cent per annum.<sup>5</sup> Governments and businesses increasingly use information and communications technology (ICT) applications to deliver public services and meet consumer needs. Social networks have had profound impacts on the ways people interact with one another, as citizens and as consumers.

4. The impact of ICTs on development will be an important theme within the post-2015 development agenda and for the introduction of sustainable development goals. The United Nations and international agencies have begun a 10-year review of WSIS outcomes (WSIS+10) to be completed by the General Assembly in 2015, alongside the review of the Millennium Development Goals. The first WSIS+10 Review event, Towards Knowledge Societies for Peace and Sustainable Development, was organized by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and held in February 2013. The Partnership on Measuring ICT for Development is gathering data and will report progress towards WSIS outcomes in 2014, when WSIS and the impact of ICTs on development will also feature at the World Telecommunication Development Conference of the International Telecommunication Union (ITU). The General Assembly will agree on modalities for its overall review of WSIS during its sixty-eighth session.

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<sup>1</sup> Africa ICT Alliance, APC, Council of Europe, Department of Economic and Social Affairs, Economic Commission for Africa, Economic Commission for Europe, Economic Commission for Latin America and the Caribbean, Economic and Social Commission for Asia and the Pacific, Economic and Social Commission for Western Asia, FAO, the Global Alliance for ICT and Development, ICANN, ICC-BASIS, IGF, ISOC, ITU, Telefonica, UNCTAD, UNEP, UNESCO, UNIDO, UPU, the World Bank, WHO, WIPO, WMO and WTO.

<sup>2</sup> Full submissions from these organizations are published on the CSTD website: [www.unctad.org/cstd](http://www.unctad.org/cstd).

<sup>3</sup> [http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights\\_June\\_2012.pdf](http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights_June_2012.pdf).

<sup>4</sup> <http://www.internetworldstats.com/stats.htm>.

<sup>5</sup> [http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights\\_June\\_2012.pdf](http://www.itu.int/ITU-D/ict/statistics/material/pdf/2011%20Statistical%20highlights_June_2012.pdf).

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## A. Convergence and mobility

5. Liberalization and convergence have been critical drivers of growth in the ICT sector since WSIS. Convergence has removed many distinctions between ICT sectors, including broadcasting, computing and telecommunications, and has fostered innovation in non-ICT sectors such as financial services. As a result, end-users access content, services and applications on multiple platforms, increasing the versatility and sophistication of information access and communications use.

6. Smartphones accounted for almost 40 per cent of new mobile handsets worldwide by mid-2012.<sup>6</sup> Rapidly growing smartphone adoption has accelerated the variety of services provided over mobile networks. Many users rely on them not just for telephony but also Internet access and, especially, social networking, adding audio and video to text communications. Mobile devices are already the dominant mode of Internet access in many developing countries.<sup>7</sup> Smartphones will add new dimensions to their use as prices fall and markets grow.

7. Convergence between different communications media is resulting in the diversification of products and services in communications and adjacent markets. Consumers are buying communications through bundles of converged services. Internet-based companies, such as Google and Facebook, have become critical gateways for access to content and applications. These changes in technology and markets require adaptations in policy and regulation, including restructuring of regulatory bodies, as governments seek to maximize the economic benefits of innovation.

## B. Cloud computing

8. Cloud computing has developed rapidly since WSIS. It enables governments, businesses and individuals to store data and use applications online rather than on users' own hardware. It is central to business models of e-mail and social network services, and increasingly is used by individuals for music and data storage and back-up.

9. The flexibility of cloud applications enables users to rent services as required, rather than owning sufficient facilities for maximum demand. Governments and businesses can derive significant value through savings on equipment procurement and use. They can reduce hardware and software specifications, costs of maintenance and the frequency with which equipment must be provisioned. Back-up and security arrangements of cloud providers may also be more reliable than those governments and businesses can make themselves.

10. There are, however, challenges. Data in the cloud are outside national jurisdictions, raising privacy and security concerns. Large global businesses are best placed to offer savings through economies of scale, which may reduce the scope for local enterprise. Cloud computing also requires high-quality infrastructure, preferably broadband, and an enabling legal framework, which are not yet available in many countries. Addressing these challenges will be critical to cloud computing's evolution.

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<sup>6</sup> <http://www.gartner.com/newsroom/id/2237315>.

<sup>7</sup> Ninety-nine per cent of Internet subscriptions in Kenya are mobile subscriptions ([http://cck.go.ke/resc/downloads/SECTOR\\_STATISTICS\\_REPORT\\_Q1\\_12-13.pdf](http://cck.go.ke/resc/downloads/SECTOR_STATISTICS_REPORT_Q1_12-13.pdf)).

## C. Interactive applications

11. Another major development since WSIS has been that of Web 2.0 services and applications, which have made it cheap and simple for organizations and individuals to publish their own content online and to interact more extensively with one another.

12. Blogs offered the first widely used self-publishing format in the mid-1990s. By 2011, over 150 million were published worldwide, while many media and other organizations now enable interactive content through website blogs. Social networking has added intensive interactivity and sharing of personal information in the new millennium. The leading social network, Facebook, is now visited by more than 40 per cent of daily Internet users. Microblogging, pioneered by Twitter, added another popular format for self-publishing and now has a daily reach of 6–7 per cent. Other popular services such as YouTube and Flickr enable users to share audio, image and video content.

13. Social networks, file-sharing and microblogging have become widely used on mobile phones, with a profound impact on social interactions. They have become tools for free expression and citizen journalism, crowdsourcing information and organization of political protest – but have also raised concerns over privacy, bullying, hate speech and intellectual property.

## II. Implementation and follow-up at the regional level

### A. Africa

14. African countries have continued to make progress in access to ICTs and their application in development. Investment in international and national broadband infrastructure has grown, improving connectivity, increasing bandwidth and enabling services including e-government and development applications. Ownership of mobile telephones and Internet use have grown rapidly, while some countries are positioning themselves to export ICT goods and services. However, broadband deployment has not kept pace with other regions, causing concern that Africa may miss economic opportunities that depend on high-quality communications.

15. The Economic Commission for Africa promotes WSIS objectives by supporting the development of national ICT strategies through its Africa Information Society Initiative. Although 45 African countries have national ICT policies, studies of policy implementation undertaken during 2012 revealed the need for improved capacity-building in policy and regulation including more systematic data gathering and analysis to promote developmental outcomes.

16. The Commission worked with the African Union and regional economic communities to develop a convention on cybersecurity that was agreed upon by ICT ministers. It also supported programmes for ICT access points and tele-innovation centres. The annual eLearning Africa conference held in Benin launched the *eLearning Africa 2012 Report*, based on a survey of education professionals on the continent.<sup>8</sup>

17. The African Development Bank, in conjunction with the World Bank and the African Union, published a series of studies on the application of ICTs in education, health, financial services, public services, the local ICT sector, trade and climate change

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<sup>8</sup> [http://www.elearning-africa.com/pdf/report/ela\\_report\\_2012.pdf](http://www.elearning-africa.com/pdf/report/ela_report_2012.pdf).

adaptation.<sup>9</sup> The studies were launched at the Open Innovation Africa Summit, organized in Nairobi in partnership with the Information for Development Programme, Nokia and Capgemini.<sup>10</sup>

18. The first African Internet Governance Forum (IGF) was held in Egypt, with support from the Economic Commission for Africa and the African Union, to coordinate the outcomes of regional IGFs and provide input to the global Forum.

## B. Asia and the Pacific

19. Rapid growth in ICT access and use has continued in Asia and the Pacific, where the digital economy is a source of innovation and productivity improvements. However, differences among countries have illustrated the emergence of a new digital divide, especially in terms of quality of ICT infrastructure, broadband access and digital content. Of particular concern has been the high price of broadband Internet access in low-income countries, which the Economic and Social Commission for Asia and the Pacific attributes to lack of competition at national and regional levels and to gaps in regional infrastructure.

20. The Commission works with other agencies, including the Association of Southeast Asian Nations, to address connectivity challenges and support regional integration. Member States have mandated the Commission to establish an information base on the status of ICT infrastructure, policy and regulatory constraints, and to map infrastructure gaps in the region in collaboration with ITU.

21. The Asian and Pacific Training Centre for Information and Communication Technology for Development provides training, research and knowledge management, particularly through its Academy of ICT Essentials for Government Leaders programme.<sup>11</sup> The Economic and Social Commission for Asia and the Pacific is developing the Training Centre's work with young people, academic institutions and civil society.

## C. Western Asia

22. Western Asia continued to experience widespread social and political change during 2012. The Economic and Social Commission for Western Asia asserts that political uncertainty has stimulated Internet adoption and use, while mobile phones, the Internet and social media have played a significant part in political dynamics.

23. The growth of ICTs was quantified in the ITU report, *ICT Adoption and Prospects in the Arab Region*.<sup>12</sup> ITU organized the Connect Arab Summit in Qatar, which focused on a regional Arab ICT highway, e-services, empowerment and job creation, and cybersecurity. The Summit was attended by seven Heads of State or Government and saw more than US\$40 billion in new investments announced.<sup>13</sup>

24. The Economic and Social Commission for Western Asia's information society portal provides information and resources for policymakers and other stakeholders.<sup>14</sup> The

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<sup>9</sup> The studies were published under the title *The Transformational Use of Information and Communication Technologies in Africa*.

<sup>10</sup> <http://www.infodev.org/en/Article.845.html>.

<sup>11</sup> <http://www.unapcict.org/academy>.

<sup>12</sup> [http://www.itu.int/dms\\_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-AR-2012-PDF-E.pdf).

<sup>13</sup> <http://www.itu.int/ITU-D/connect/arabstates/>.

<sup>14</sup> <http://isper.escwa.org.lb>.

Commission also launched a set of cyberlegislation directives<sup>15</sup> aimed at guiding the development of national legal frameworks, facilitating electronic transactions and supporting regional integration. It provided capacity-building and advisory services on cyberlegislation and improved data collection. The Commission's Technology Centre<sup>16</sup> supported the identification and development of opportunities for technology investors.

25. The Economic and Social Commission for Western Asia has continued to develop Arabic content and online services following the introduction of multilingual Internet domain names. It published studies on the status of digital content in the region<sup>17</sup> and on business models for digital content,<sup>18</sup> as well as supported applications for regional generic top-level domains in English and Arabic.

#### **D. Latin America and the Caribbean**

26. The Economic Commission for Latin America and the Caribbean serves as the secretariat for the regional 2010–2015 action plan on the information society (known as eLAC2015).<sup>19</sup> The plan contains a strategic guide for digital development and universal broadband access. The Commission also acts as secretariat of the regional dialogue on broadband, which fosters regional infrastructure integration, regulatory consistency and development of indicators to measure broadband deployment and access. It is supported by the Regional Broadband Observatory,<sup>20</sup> which introduced new indicators on diffusion, access, tariffs and service speed during 2012.

27. In 2012, the Economic Commission for Latin America and the Caribbean focused on preparatory discussions for the Fourth Ministerial Conference on the Information Society in Latin America and the Caribbean. This is expected to review eLAC2015 and set new objectives in 2013, when a conference on science, innovation and information and communication technologies will also become operational.

28. ITU organized the Connect Americas Summit in Panama City, attended by seven regional Heads of State or Government, during which projects on access and use of ICTs for economic development, valued at around US\$50 billion, were proposed by stakeholders.<sup>21</sup>

29. The importance of broadband has been growing in the region, facilitated by substantial price falls, but a Commission report found that its economic impact remains constrained by poor diffusion, low connection speeds, affordability and shortages of skills and applications.<sup>22</sup>

30. The Commission's Observatory for the Information Society in Latin America and the Caribbean gathers and publishes evidence from household surveys to enable analysis and support sectoral planning. In 2013, it plans to review the digital economy of Latin

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<sup>15</sup> <http://isper.escwa.un.org/Portals/0/Cyber%20Legislation/Regional%20Harmonisation%20Project/Directives/Directives-Full.pdf>.

<sup>16</sup> <http://etc-un.org/PR/Default.aspx?In=1&pid=1&pvr=6>.

<sup>17</sup> [http://www.escwa.un.org/information/publications/edit/upload/E\\_ESCWA\\_ICTD\\_12\\_TP-4\\_E.pdf](http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA_ICTD_12_TP-4_E.pdf).

<sup>18</sup> <http://css.escwa.org.lb/ictd/1901/2.pdf>.

<sup>19</sup> <http://www.cepal.org/elac/default.asp?idioma=IN>.

<sup>20</sup> <http://www.eclac.cl/socinfo/orba/>.

<sup>21</sup> <http://www.itu.int/ITU-D/connect/americas/?Language=en>.

<sup>22</sup> <http://www.eclac.org/cgi-bin/getProd.asp?xml=/publicaciones/xml/2/48402/P48402.xml&xsl=/tpl/p9f.xsl&base=/socinfo/tpl/top-bottom.xslt>.

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America and publish studies on broadband access and use, e-agriculture, e-education, e-health and ICTs and the environment.

## **E. Europe**

31. The Economic Commission for Europe plays a central role in ICT-enabled automation of international trade and transport. The United Nations Centre for Trade Facilitation and Electronic Business, which it manages, supports the joint development of electronic business standards by the public and private sectors. The interactive Trade Facilitation Implementation Guide was launched during 2012 to help countries simplify cross-border trade through ICT deployment.<sup>23</sup>

32. The Commission unveiled a new strategy package, road map and global goals for intelligent transport systems<sup>24</sup> using ICTs to improve efficiency in transport and freight networks. It also promotes ICT development, capacity-building and legal frameworks in emerging markets in Central Asia.

33. The Council of Europe adopted the Internet Governance 2012–2015 strategy, encouraging governments and non-State actors to work together for an inclusive Internet. It continued to lead global initiatives concerning cybercrime. During 2013, it expects to reach agreement on declarations and instruments on human rights for Internet users, digital surveillance, freedom of expression and access to information.

## **III. Implementation and follow-up at the international level**

### **A. General Assembly**

34. The General Assembly adopted resolution 67/195 which welcomed positive trends in connectivity and affordability, including increased Internet access, rapid diffusion of mobile communications and development of new services and applications. It expressed concern, however, about the continuing gap in digital and broadband access between developing and developed countries, and the potential adverse impact of difficult economic circumstances on ICT investment and diffusion.

35. The Assembly reaffirmed its role in the overall review of implementation of WSIS outcomes and agreed to consider modalities for the review process in 2013. It encouraged United Nations funds, programmes and specialized agencies to provide adequate resources to support implementation of WSIS outcomes.

36. The General Assembly invited the Chair of CSTD to establish a working group to examine the mandate of WSIS regarding enhanced cooperation with respect to the Internet. The Assembly also requested the Secretary-General to submit a report on the implementation and follow-up of resolution 66/184, through the CSTD, to its sixty-eighth session in 2013.

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<sup>23</sup> <http://tfig.unece.org/>.

<sup>24</sup> <http://www.unece.org/fileadmin/DAM/trans/doc/2011/wp24/ECE-TRANS-WP24-54-inf01e.pdf>.

## **B. Economic and Social Council**

37. The Economic and Social Council adopted resolution 2012/5 which noted continuing progress in ICT access and development applications, especially mobile communications, but reiterated concern about inequalities in access, particularly regarding broadband networks.

38. The Council welcomed contributions by United Nations agencies to WSIS outcomes, including the CSTD-published report, *Implementing WSIS Outcomes: Experiences to Date and Prospects for the Future*, on developments since WSIS.<sup>25</sup> It noted the emergence of new technologies and services since WSIS, including social networking and cloud computing, stressed the importance of online privacy and child protection, and emphasized the need to maintain multi-stakeholder coordination in implementing WSIS outcomes. It urged United Nations agencies to incorporate WSIS recommendations into United Nations Development Assistance Frameworks.

39. The Council noted the United Nations Group on the Information Society (UNGIS) consultations on the review of WSIS outcomes. It recommended that an appropriate preparatory process should be launched for the WSIS+10 Review, drawing on experience from the two phases of WSIS, subject to decision by the General Assembly.

## **C. United Nations Group on the Information Society**

40. UNGIS was established in 2006 by the United Nations Chief Executives Board (CEB) as an inter-agency mechanism to coordinate implementation of WSIS outcomes in the United Nations system. Its eighth meeting in May focused on the development of its workplan for 2012–2014.

41. UNGIS supports mapping of United Nations agencies' activities through the WSIS Stocktaking Database, as well as initiatives on scientific information, innovation and mobiles for development. It presented a statement at the side event, "ICTs, the foundation of our sustainable future," at the United Nations Conference on Sustainable Development (Rio+20).<sup>26</sup>

42. At the request of the CEB, UNGIS conducted an open consultation concerning WSIS+10.<sup>27</sup> An action plan prepared by UNGIS was discussed by the CEB during April and at the WSIS Forum, and contributed to the development of resolutions adopted by the Economic and Social Council and the General Assembly.

## **D. Facilitation and coordination of multi-stakeholder implementation of the Geneva Plan of Action**

43. ITU hosted the 2012 WSIS Forum, attracting over 1,300 participants from 140 countries.<sup>28</sup> The Forum featured high-level dialogues on "ICT for Sustainable Development: WSIS beyond 2015", cybersecurity, the green agenda, women and girls in ICTs, and ICTs for post-conflict reconstruction. It marked World Telecommunication and

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<sup>25</sup> UNCTAD/DTL/STICT/2011/3 ([http://unctad.org/en/Docs/dtlstict2011d3\\_en.pdf](http://unctad.org/en/Docs/dtlstict2011d3_en.pdf)).

<sup>26</sup> <http://www.uncsd2012.org/rio20/index.php?page=view&type=510&nr=641&menu=20>;  
[http://www.itu.int/themes/climate/events/rioplus20/17J\\_ITUevent.html](http://www.itu.int/themes/climate/events/rioplus20/17J_ITUevent.html).

<sup>27</sup> [http://www.ungis.org/Portals/0/documents/thematicmeetings/wsis+10/WSIS+10-Presentation\\_of\\_Outcomes-Action\\_Plan.pdf](http://www.ungis.org/Portals/0/documents/thematicmeetings/wsis+10/WSIS+10-Presentation_of_Outcomes-Action_Plan.pdf).

<sup>28</sup> <http://groups.itu.int/LinkClick.aspx?fileticket=3T8l-8df8yw%3d&tabid=2103>.



Information Society Day 2012, under the theme “Women and Girls in ICT”. A ministerial roundtable attended by 35 ministers considered the topic “Achievements, challenges and the way beyond 2015”.

44. The annual meeting of WSIS action-line facilitators was held as an integral part of the Forum.<sup>29</sup> The Forum agreed templates for action-line reports and national self-evaluation within the WSIS+10 Review process, building on a framework set out in *Measuring the WSIS Targets: A Statistical Framework*, published by the Partnership on Measuring ICT for Development.<sup>30</sup> Data collection will be undertaken during 2013 and a quantitative report published in 2014.

45. ITU maintains the WSIS Stocktaking Database which included entries for more than 6,000 ICT and development activities by May 2012, when the biennial stocktaking report was published.<sup>31</sup> The WSIS Platform of Communities portal is managed by UNESCO and has 3,400 participants. It supported online contributions to consultations on the WSIS Forum and WSIS+10 Review.<sup>32</sup>

## E. Civil society, business and multi-stakeholder partnerships

46. Many activities in pursuit of WSIS objectives are implemented by the private sector, civil society organizations and multi-stakeholder partnerships.

47. Business Action to Support the Information Society (BASIS), an initiative of the International Chamber of Commerce (ICC), works with businesses to support WSIS outcomes, including the WSIS Forum and IGF. The ICC Commission on the Digital Economy publishes recommendations for businesses and other stakeholders. In 2012, it supported the European Commission-funded Mobile Inclusion Platform for Europe and Latin America,<sup>33</sup> and the launch of the Africa ICT Alliance, for ICT industry professionals and trade associations.<sup>34</sup>

48. The Internet Society (ISOC) is a global clearinghouse for information and capacity-building about the Internet and the organizational home to the Internet Engineering Task Force. It works internationally and through national chapters. At the 2012 IGF it launched a new framework for assessing national Internet governance environments.<sup>35</sup>

49. The Association for Progressive Communications (APC) works on ICT, development and rights issues. Its 2012 *Global Information Society Watch* report, published with the Humanist Institute for Cooperation with Developing Countries, focused on transparency and accountability.<sup>36</sup> It is conducting a review of civil society perceptions of ICT policy and rights issues for publication in 2013.<sup>37</sup>

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<sup>29</sup> For the action-line meeting outcomes, see ITU (2012), *Identifying Emerging Trends and a Vision Beyond 2015*. The 2012 WSIS Forum also initiated WSIS project prizes to recognize excellence in implementing projects and initiatives that have furthered WSIS goals.

<sup>30</sup> [http://www.itu.int/dms\\_pub/itu-d/opb/ind/D-IND-MEAS\\_WSIS-2011-PDF-E.pdf](http://www.itu.int/dms_pub/itu-d/opb/ind/D-IND-MEAS_WSIS-2011-PDF-E.pdf).

<sup>31</sup> <http://www.itu.int/wsis/stocktaking/docs/reports/S-POL-WSIS.REP-2012-PDF-E.pdf>.

<sup>32</sup> <http://www.wsis-community.org/>.

<sup>33</sup> <http://www.m-inclusion.eu/>.

<sup>34</sup> <http://www.aficta.org>.

<sup>35</sup> [http://www.internetsociety.org/sites/default/files/ISOC%20framework%20for%20IG%20assessments%20-%20D%20Souter%20-%20final\\_0.pdf](http://www.internetsociety.org/sites/default/files/ISOC%20framework%20for%20IG%20assessments%20-%20D%20Souter%20-%20final_0.pdf).

<sup>36</sup> <http://www.giswatch.org/blog-entry/808/2012-giswatch-internet-and-corruption-launched-during-igf>.

<sup>37</sup> APC has also published reports on ICTs and environmental sustainability, women’s rights and the impact of Web 2.0 technologies and services, and focused attention on the relationship between the

## **F. Facilitation of action lines and selected implementation of activities of United Nations entities**

### **1. Implementation of action lines**

#### **(a) The role of public governance authorities and all stakeholders in the promotion of ICTs for development (C1)**

50. A facilitation meeting on WSIS action lines C1, C7 (e-government) and C11 was organized by the Department of Economic and Social Affairs within the WSIS Forum 2012. It focused on the development of e-strategies, access to and use of ICTs, and indicators to measure e-government.

51. The contribution of ICTs to development features in the work of United Nations specialized agencies, multilateral organizations, international financial institutions and other agencies. Governments routinely design and implement national strategies for ICTs in development with the support of United Nations regional commissions, development partners and international financial institutions.

52. The World Bank's ICT sector strategy focuses on broadband deployment, ICT-enabled industry, skills and development applications.<sup>38</sup> As noted earlier, the African Development Bank and the World Bank published studies on the use of ICTs in key development sectors to inform investment decisions and government planning.<sup>39</sup>

#### **(b) Information and communication infrastructure (C2)**

53. ITU works with governments and the private sector to establish international standards and regulations concerning telecommunications and radio spectrum. It organized meetings of the World Radiocommunication Conference<sup>40</sup> and of the World Telecommunication Standardization Assembly.<sup>41</sup> Coordination panels were established to focus on cloud computing standards and on smart grids and home networking.<sup>42</sup>

54. ITU addresses infrastructure development, deployment and regulation through regional conferences, programmes, meetings and publications. During 2012, it organized Connect Arab and Connect Americas Summits to identify market opportunities for ICT access, applications and services in these regions.<sup>43</sup> ITU assisted countries in Africa and Asia to establish Wireless Broadband Master Plans, organized the Pacific Broadband

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Internet and human rights. See <http://www.apc.org/en/system/files/impact2point0-final.pdf> and [http://www.apc.org/en/system/files/HumanRightsAndTheInternet\\_20120627.pdf](http://www.apc.org/en/system/files/HumanRightsAndTheInternet_20120627.pdf).

<sup>38</sup> World Bank (2012), *ICT for Greater Development Impact: World Bank Group Strategy for Information and Communication Technology 2012–2015*.

<sup>39</sup> For details, see

<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONANDTECHNOLOGIES/0,,contentMDK:23262578~pagePK:210058~piPK:210062~theSitePK:282823,00.html>. The World Bank also published the report, *Information and Communications for Development 2012: Maximizing Mobile*, which explored the potential and limitations of mobile communications in development sectors.

<sup>40</sup> <http://www.itu.int/ITU-R/index.asp?category=conferences&rlink=wrc-12&lang=en>.

<sup>41</sup> <http://www.itu.int/en/ITU-T/wtsa12/Pages/default.aspx>.

<sup>42</sup> <http://www.itu.int/en/ITU-T/jca/Cloud/Documents/ToR/ToR%20JCA%20Cloud.pdf>; <http://www.itu.int/en/ITU-T/jca/SGHN/Pages/default.aspx>.

<sup>43</sup> <http://www.itu.int/ITU-D/connect/arabstates/>; <http://www.itu.int/ITU-D/connect/americas/?Language=en>.

Forum in Fiji<sup>44</sup> and a regional forum on broadband for socioeconomic development in Europe. It provided guidelines for the transition to digital terrestrial broadcasting and the introduction of next generation networks.

55. ITU and UNESCO coordinate the Broadband Commission for Digital Development, which published several country case studies to follow up its Broadband Challenge, together with the report, *The State of Broadband 2012: Achieving Digital Inclusion for All*.<sup>45</sup>

56. ISOC collaborated with other stakeholders to promote Internet Exchange Points and interconnectivity in Africa. The International Corporation for Assigned Names and Numbers (ICANN) coordinated an application process for new Internet global top-level domains.<sup>46</sup> The World Intellectual Property Organization (WIPO) works with ICANN and administrators of generic and country top-level domains to resolve disputes in the domain name system.

**(c) Access to information and knowledge (C3)**

57. UNESCO supports many initiatives to promote access to information for educational institutions, professional groups and the community at large.<sup>47</sup> The main focus of the facilitation meeting on action line C3, which it organized in 2012, was on innovative use of ICTs for accessible education, including open educational resources, content creation and educational opportunities for those with disabilities.<sup>48</sup>

58. Access to scientific research and information is a priority for UNESCO and other agencies. The World Health Organization (WHO), Food and Agricultural Organization of the United Nations (FAO), United Nations Environment Programme (UNEP) and WIPO collaborate with academic and publishing partners in the Research4Life partnership. The partnership offers access to peer-reviewed journals for developing countries at little or no cost.<sup>49</sup> WIPO supports Research4Life and its Access to Research for Development and Innovation programme<sup>50</sup> through capacity-building workshops, 32 of which were delivered in developing countries during 2012.

59. WIPO has been working with other intergovernmental organizations<sup>51</sup> to draft open licences for use by intergovernmental organizations. A draft based on the Creative Commons model is at an advanced stage. The WIPO Lex database provides online access to intellectual property legislation and treaties.<sup>52</sup>

**(d) Capacity-building (C4)**

60. The annual facilitation meeting for action lines C4 and C7 (e-learning) reviewed experience with handheld devices for mobile learning, including teacher training, digital

<sup>44</sup> <http://www.itu.int/ITU-D/asp/CMS/Events/2012/pacific-bb/index.asp>.

<sup>45</sup> <http://www.broadbandcommission.org/Documents/bb-annualreport2012.pdf>.

<sup>46</sup> <http://newgtlds.icann.org/en/about>.

<sup>47</sup> [http://portal.unesco.org/ci/en/ev.php-URL\\_ID=19488&URL\\_DO=DO\\_TOPIC&URL\\_SECTION=201.html](http://portal.unesco.org/ci/en/ev.php-URL_ID=19488&URL_DO=DO_TOPIC&URL_SECTION=201.html).

<sup>48</sup> <http://groups.itu.int/LinkClick.aspx?fileticket=3T81-8df8yw%3d&tabid=2103>, p. 75.

<sup>49</sup> <http://www.research4life.org>.

<sup>50</sup> <http://www.wipo.int/ardi/en/>.

<sup>51</sup> This includes the United Nations, FAO, Organization for Economic Cooperation and Development (OECD), the World Bank and the International Monetary Fund.

<sup>52</sup> <http://www.wipo.int/wipolex/en/>.

textbooks and curricula. It emphasized the importance of affordability, appropriate content and creation of a safe ecosystem for mobile education.<sup>53</sup>

61. Many United Nations agencies implemented conferences, workshops and training initiatives aimed at building the capacity of policymakers, officials and others in the ICT sector, especially in developing countries, in technical and management aspects of the information society. Summarized reports are available online.<sup>54</sup>

62. ITU's human capacity-building programme includes workshops, e-learning and experience-sharing. The ITU Academy and Centres of Excellence provide access to ICT training opportunities, delivered face-to-face or through distance learning. A Global ICT Forum on Human Capacity Development was held in South Africa, focusing on digital inclusion and the transition to digital broadcasting.<sup>55</sup>

63. The Economic Commission for Europe's gender and economy programme supports training for women entrepreneurs from Eastern Europe and Central Asia.<sup>56</sup> The Networks for Prosperity initiative of the United Nations Industrial Development Organization (UNIDO) seeks to build understanding of networks as a means to improving access to knowledge and opportunities for economic development.<sup>57</sup>

64. ISOC works with other Internet entities to build technical capacity in the deployment and coordination of the Internet. Its Next Generation Leaders programme develops the potential of young Internet professionals, including e-learning delivered jointly with DiploFoundation.<sup>58</sup>

**(e) Building confidence and security in the use of ICTs (C5)**

65. Cybersecurity was a major theme at ITU Telecom World, while the WSIS Forum included a high-level dialogue on governance of cyberspace and cyberpeace.

66. ITU plays a leading role within the Global Cybersecurity Agenda.<sup>59</sup> It has drafted, with the United Nations Office on Drugs and Crime, policy for a new United Nations Group on Cybercrime and Cybersecurity.

67. More than 140 Governments participate, alongside business stakeholders, in the ITU-International Multilateral Partnership against Cyber Threats initiative, whose Global Response Centre provides early warning of cyber threats and supports incident management. ITU's National Cybersecurity Strategy Guide helps Governments develop national strategies. It has supported development of national Computer Incident Response Teams in implementing technical assessments in 42 countries. Its Cybercrime Legislation Resources and ITU advisory services (supported by the European Commission) help Governments in Africa and the Caribbean and Pacific regions to harmonize legal frameworks for cybersecurity.

68. The Council of Europe and the European Union support information-sharing, technical assistance and analysis through the Global Project on Cybercrime.<sup>60</sup> The

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<sup>53</sup> [http://groups.itu.int/LinkClick.aspx?fileticket=\\_6WjVzmM3oo%3d&tabid=2103](http://groups.itu.int/LinkClick.aspx?fileticket=_6WjVzmM3oo%3d&tabid=2103).

<sup>54</sup> <http://www.unctad.org/cstd>.

<sup>55</sup> <http://academy.itu.int/moodle/course/view.php?id=551>.

<sup>56</sup> <http://www.unece.org/gender/introduction.html>.

<sup>57</sup> <http://www.unido.org/how-we-work/convining-partnerships-and-networks/networks-centres-forums-and-platforms/networks-for-prosperity.html>.

<sup>58</sup> <http://www.internetsociety.org/node/9387>.

<sup>59</sup> <http://www.itu.int/osg/csd/cybersecurity/gca/>.

<sup>60</sup> [http://www.coe.int/t/DGHL/cooperation/economiccrime/cybercrime/cy\\_project\\_Phase3\\_2571/2571\\_Phase3\\_summary\\_V8\\_nov2012.pdf](http://www.coe.int/t/DGHL/cooperation/economiccrime/cybercrime/cy_project_Phase3_2571/2571_Phase3_summary_V8_nov2012.pdf).

Economic Commission for Africa has worked with Africa's regional economic communities to harmonize legislation on electronic transactions, personal data protection and cybercrime. A convention on cybersecurity agreed by African ICT ministers in September will be put to the African Union in 2013.

69. The Universal Postal Union (UPU) is overseeing a .post platform for secure, trusted domestic and cross-border postal services. The UPU is the first United Nations agency to launch and operate a sector-specific top-level domain. The .post top-level domain is the first to be 100 per cent conformant to the latest Domain Name System Security Extensions security standards.

70. The impact of the Internet on children concerns many stakeholders. ITU's global Child Online Protection initiative builds awareness of risks to children, sharing knowledge of tools among practitioners.<sup>61</sup> Working with the Commonwealth Telecommunications Organization, it facilitates national child protection frameworks in pilot countries. The United Nations Children's Fund published the technical report, *Child Safety Online: Global Challenges and Strategies*, during 2012.<sup>62</sup> The Council of Europe adopted a Strategy for the Rights of the Child, which tackles protection and empowerment of children both online and offline.<sup>63</sup>

**(f) The enabling environment (C6)**

71. Three ITU conferences addressed the enabling environment. The World Radiocommunication Conference revised the Radio Regulations which govern use of radio-frequency spectrum and satellite orbits.<sup>64</sup> The World Telecommunication Standardization Assembly developed new standards and recommendations, preceded by a Global Standards Symposium where ministers and regulators discussed the interface between ICTs and other sectors including health care, utilities and transport.<sup>65</sup> The World Conference on International Telecommunications considered revisions to the International Telecommunication Regulations.<sup>66</sup>

72. ITU's annual Global Symposium for Regulators and the Global Regulators-Industry Dialogue<sup>67</sup> focused on regulation in a global network society and approved best practice guidelines for regulating cloud services. Regional regulatory fora were held in Africa and Latin America and the Caribbean.

73. ITU released its 2012 *Trends in Telecommunication Reform: Smart Regulation for a Broadband World*.<sup>68</sup> ITU offers online guidance to policymakers and regulators through the ICT Regulation Toolkit (jointly published with the Information for Development Programme), World Telecommunication Regulatory Database, ICT Regulatory Decisions Clearinghouse and Global Regulators Exchange.

<sup>61</sup> <http://www.itu.int/osg/csd/cybersecurity/gca/cop/>.

<sup>62</sup> <http://www.unicef-irc.org/publications/652>.

<sup>63</sup> [http://www.coe.int/t/dg3/children/MonacoStrategy\\_en.pdf](http://www.coe.int/t/dg3/children/MonacoStrategy_en.pdf).

<sup>64</sup> <http://www.itu.int/ITU-R/index.asp?category=conferences&mlink=wrc-12&lang=en>.

<sup>65</sup> <http://www.itu.int/en/ITU-T/wtsa12/Pages/gss/programme.aspx>.

<sup>66</sup> <http://www.itu.int/en/wcit-12/Pages/default.aspx>.

<sup>67</sup> Both meetings were held in Sri Lanka (<http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/> and <http://www.itu.int/ITU-D/partners/GRID/2012/index.html>).

<sup>68</sup> <http://www.itu.int/ITU-D/treg/publications/trends12.html>. This was complemented by reports on the economic impact of broadband, spectrum, satellite communications, price regulation, public-private partnerships and competition and regulation in a broadband world (<http://www.itu.int/ITU-D/treg/broadband/>).

74. ITU and the Global Initiative for Inclusive ICTs published the report, *Making Mobile Phones and Services Accessible*, together with an e-accessibility toolkit, to share best practices in access for people with disabilities.<sup>69</sup>

**(g) ICT applications (C7)**

*E-government*

75. The Department of Economic and Social Affairs leads United Nations work on e-government. Its 2012 *United Nations E-Government Survey* found that many countries use e-government applications to improve administration and service delivery, and stressed the importance of collaboration among national government institutions, capacity-building and citizen participation in maximizing e-government potential.<sup>70</sup> A thematic workshop on “future government” and the need to balance open government and civic engagement with security of private and governmental data was held during the 2012 WSIS Forum.

76. The Department seeks to underpin public sector reform through access to online information about e-government, including use of ICTs to improve effectiveness and transparency. It has continued to publish United Nations Public Administration Country Studies. Its Measurement and Evaluation Tool for E-Government Readiness<sup>71</sup> has been translated into French and Spanish and expanded to include a pillar on marketing. Another tool on social networking will be developed in 2013.

77. The Department of Economic and Social Affairs undertook more than 15 advisory missions to assist Governments implementing e-government strategies. It has developed partnerships with multilateral development banks concerning e-procurement and with Boston University to support training of senior officials. The United Nations Public Administration Network’s Online Training Centre delivered interactive courses to more than 700 participants.

78. The Global Centre for ICT in Parliament has built a global community of parliamentarians with ICT expertise. It published results from the third Global Survey of ICT in Parliaments at the World e-Parliament Conference,<sup>72</sup> and established a working group on open data and open documents standards.

*E-business*

79. UNCTAD and the International Trade Centre focused the e-business facilitation meeting at the WSIS Forum on promoting local ICT sectors in developing countries so as to create jobs, spur innovation and foster economic growth.

80. UNCTAD’s 2012 *Information Economy Report: The Software Industry and Developing Countries* built on a survey undertaken with the World Information Technology and Services Alliance. It stressed the importance of local software sectors in developing locally adapted applications and facilitating inclusive economic growth. UNCTAD initiated reviews of cyberlegislation in Asia and East Africa, and published a study of mobile money in East Africa. UNCTAD and United Nations regional commissions worked with governments and regional economic associations to modernize and harmonize legal and

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<sup>69</sup> [http://www.itu.int/ITU-D/sis/PwDs/Documents/Mobile\\_Report.pdf](http://www.itu.int/ITU-D/sis/PwDs/Documents/Mobile_Report.pdf) and <http://www.e-accessibilitytoolkit.org/>.

<sup>70</sup> <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan048065.pdf>.

<sup>71</sup> <http://www.unpan.org/DPADM/EGovernment/METERforEGovernment/tabid/1270/language/en-US/Default.aspx>.

<sup>72</sup> <http://www.ictparliament.org/WePReport2012> and <http://www.ictparliament.org/WePC2012>.

regulatory frameworks. Regional commissions continued to promote trade facilitation, including ICT-enabled Single Windows.<sup>73</sup>

81. The International Trade Centre has developed capacity-building modules on enterprise competitiveness, web marketing and e-commerce supported by online diagnostic tools.<sup>74</sup> It upgraded its learning management system and is developing curriculum partnerships with the World Trade Organization (WTO), the United Nations Institute for Training and Research and other agencies. WTO revitalized its work programme on electronic commerce, including mobile applications and cloud computing.

82. UPU organized a conference series on fostering e-commerce for emerging markets and expanded its International Financial System to enable secure, affordable electronic remittance services through national post offices. Its Post\*Net network connects 163 countries to exchange electronic data on postal movements.

#### *E-learning*

83. The action-line facilitation meeting on e-learning focused on the use of mobile devices in education. UNESCO published regional reviews of mobile learning policy, experience and potential, and global overviews in partnership with Nokia.<sup>75</sup> It also launched the Mobiles for Reading project to include a multi-country survey exploring the use of mobile phones for literacy development. UNESCO's Media and Information Literacy Curriculum for Teachers, now available in three languages, was tested in more than 20 countries.<sup>76</sup>

84. Open educational resources enable educators and students to benefit from materials produced for a wide range of audiences. UNESCO and the Commonwealth of Learning organized the World Open Educational Resources Congress, whose declaration urged governments to license openly all educational materials produced with public funds.<sup>77</sup>

85. ITU is working with bilateral donors to implement projects for school connectivity, including community use, in Africa, Asia and the Caribbean. Additionally, the African Development Bank and World Bank published a study of ICTs and education in Africa focused on five areas, including management information systems, national research and education networks, open educational resources, teacher capacity development and use of mobile devices.<sup>78</sup>

#### *E-health*

86. WHO has established a forum on health care standardization and interoperability, involving the public and private sectors, and is preparing a handbook to assist in national standards processes. The Economic Commission for Latin America and the Caribbean published the *E-Health Handbook for Health Services and System Managers* in conjunction

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<sup>73</sup> [http://www.unece.org/fileadmin/DAM/trade/Trade\\_Facilitation\\_Forum/ConferenceConclusions.pdf](http://www.unece.org/fileadmin/DAM/trade/Trade_Facilitation_Forum/ConferenceConclusions.pdf).

<sup>74</sup> <http://learning.intracen.org>.

<sup>75</sup> <http://www.unesco.org/new/en/unesco/themes/icts/m4ed/mobile-learning-resources/unescomobilelearningseries/>.

<sup>76</sup> <http://unesdoc.unesco.org/images/0019/001929/192971e.pdf>.

<sup>77</sup> [http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration\\_01.pdf](http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/Events/Paris%20OER%20Declaration_01.pdf).

<sup>78</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTEDUCATION/0,,contentMDK:22931096~pagePK:148956~piPK:216618~theSitePK:282386,00.html>.

with the Spanish Society of Health Informatics.<sup>79</sup> WHO and ITU published the *National e-Health Strategy Toolkit*, encouraging governments to develop national e-health strategies.<sup>80</sup>

87. WHO published a compendium of innovative technologies for low-resource health contexts alongside reports on legal frameworks for e-health, management of patient information and trends and challenges in member States. Its Global Observatory for e-Health monitors progress on WSIS outcomes, and has identified significant experimentation in e-health applications. WHO supports access to knowledge for health professionals through its HINARI programme and Global Health Library.<sup>81</sup>

88. Earthquakes, cyclones and floods have underscored the importance of ICTs for emergency response. ICTs, including social networking and crowdsourcing applications, are increasingly used for timely local reporting and mapping, rapid information-sharing and validation, and communication with communities affected by emergencies. ITU continued to define recommendations in support of emergency communications.

#### *E-employment*

89. The ICT sector generates employment at many levels, supports industrial sectors such as business process outsourcing, and facilitates the establishment of small enterprises.

90. UNIDO and UNCTAD support enterprise development. UNIDO works with the International Training Centre of the International Labour Organization to stimulate entrepreneurship through e-learning in Latin America. UNCTAD and the International Labour Organization are developing a revised framework and training materials for women's entrepreneurship. UNIDO's Hewlett-Packard Learning Initiative for Entrepreneurs e-learning platform launched in November provides online training modules to assist entrepreneurs in information technology and business skills.<sup>82</sup>

#### *E-environment*

91. Rio+20 reviewed progress towards achieving environmental sustainability, including potential development of a green economy, and highlighted a series of initiatives:

(a) UNEP and UNIDO launched a Green Industry Platform, providing a framework for cooperation to increase environmental quality of goods and services;<sup>83</sup>

(b) The Global Alliance for ICT and Development and the United Nations Office of ICT held an event on "ICT as a Catalyst for Sustainable Development";

(c) UNGIS and ITU contributions reflected the potential of ICTs in environmental protection, sustainable development and mitigation and adaptation to climate change;

(d) ITU, UNEP and the Secretariat of the Basel Convention organized a day of activity on e-environment issues at the WSIS Forum, including the high-level dialogue, "Advancing the Green ICT Agenda". ITU fora on ICTs and climate change led to the Montreal Declaration on ICTs, the environment and climate change.<sup>84</sup> ITU published reports on smart grids, green procurement and climate change mitigation and adaptation,

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<sup>79</sup> <http://www.eclac.org/cgi-bin/getProd.asp?xml=/publicaciones/xml/2/47652/P47652.xml&xsl=/tpl-i/p9f.xsl&base=/socinfo/tpl/top-bottom.xslt>.

<sup>80</sup> <http://who.int/ehealth/en/>.

<sup>81</sup> <http://www.who.int/hinari/en/> and <http://www.globalhealthlibrary.net>.

<sup>82</sup> <http://www.unido.org/index.php?id=866>.

<sup>83</sup> <http://www.greenindustryplatform.org>.

<sup>84</sup> [http://www.itu.int/dms\\_pub/itu-t/oth/06/0F/T060F00602300151PDFE.pdf](http://www.itu.int/dms_pub/itu-t/oth/06/0F/T060F00602300151PDFE.pdf).



and worked with United Nations agencies, businesses and environmental organizations to produce the *Toolkit on Environmental Sustainability for the ICT Sector*;<sup>85</sup>

(e) A Green Standards Week resulted in a Paris Declaration on green growth and climate change, and a call to action on sustainable cities;<sup>86</sup>

(f) The Partnership on Measuring ICT for Development set up a task group to develop indicators, prepare methodologies and collect data on e-waste;

(g) The Broadband Commission published a global overview of environmental sustainability in national broadband policies;<sup>87</sup>

(h) The private-sector Global e-Sustainability Initiative published a study of the impact of broadband on carbon emissions;<sup>88</sup>

(i) The World Meteorological Organization's Severe Weather Forecasting Demonstration Project has been extended to five world regions, helping governments to mitigate severe weather impacts.<sup>89</sup>

#### *E-agriculture*

92. WSIS follow-up is underpinned by the e-Agriculture Community of Practice,<sup>90</sup> for which FAO acts as the secretariat. By December 2012, over 9,300 participants from more than 170 countries were involved, including development practitioners, policymakers, representatives of farmers' organizations, researchers and ICT specialists in agriculture and rural development.

93. During 2012, the Community focused on communication of information essential for agricultural development and food security, particularly mobile technology. The action-line facilitation meeting focused on strengthening the agricultural value chain through mobiles and other ICTs.

94. The World Bank worked with the Community of Practice to publish the *ICT in Agriculture Sourcebook*<sup>91</sup> and the *Agriculture Investment Sourcebook*<sup>92</sup> and support community fora.<sup>93</sup> FAO also facilitated access to agricultural information through its Access to Global Online Research in Agriculture programme.<sup>94</sup>

#### *E-science*

95. The action-line facilitation meeting on e-science focused on access to scientific information and diffusion of scientific knowledge. Attention was drawn to the potential of social networking and peer-to-peer networks for knowledge-sharing.

96. UNESCO has established partnerships with space agencies to help developing countries manage and protect natural and cultural heritage, especially in light of climate

<sup>85</sup> <http://www.itu.int/ITU-T/climatechange/>.

<sup>86</sup> [http://www.itu.int/dms\\_pub/itu-t/oth/4B/04/T4B040000190001PDFE.pdf](http://www.itu.int/dms_pub/itu-t/oth/4B/04/T4B040000190001PDFE.pdf).

<sup>87</sup> [http://www.broadbandcommission.org/documents/BB\\_MDG7\\_Case\\_Study.pdf](http://www.broadbandcommission.org/documents/BB_MDG7_Case_Study.pdf).

<sup>88</sup> <http://gesi.org/files/Reports/Measuring%20the%20Energy%20Reduction%20Impact%20of%20Selected%20Broadband-Enabled%20Activities%20within%20Households.pdf>.

<sup>89</sup> <http://www.wmo.int/pages/prog/www/WIS/>.

<sup>90</sup> <http://www.e-agriculture.org>.

<sup>91</sup> <http://www.ictinagriculture.org>.

<sup>92</sup> <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTARD/EXTAGISOU/0,,menuPK:2502803~pagePK:64168427~piPK:64168435~theSitePK:2502781,00.html>.

<sup>93</sup> <http://www.e-agriculture.org/forums/forum-archive>.

<sup>94</sup> <http://www.aginternetwork.org/en/>.

change. It supports the Sandwatch Foundation, which uses ICTs in managing fragile coastal environments.

**(h) Cultural diversity and identity, linguistic diversity and local content (C8)**

97. UNESCO, OECD and ISOC published the joint study, *The Relationship between Local Content, Internet Development and Access Prices*,<sup>95</sup> demonstrating strong correlation between network infrastructure and local content.

98. Internet stakeholders, including ITU, UNESCO and ICANN, continued to make progress towards a multilingual and inclusive Internet following the introduction of internationalized domain names. UNESCO and the European Registry of Internet Domain Names published a report on lessons learned from the deployment of internationalized domain names.<sup>96</sup> ICANN launched an application process for new global top-level domains: 1,930 applications were received from 60 countries.<sup>97</sup> The Economic and Social Commission for Western Asia published studies on the status of and business models for digital Arabic content,<sup>98</sup> continued to promote adoption of Arabic domain names and supported applications for new regional top-level domains.

99. UNESCO organized the conference, “Memory of the World in the Digital Age” in Canada, to explore preservation of digital heritage.

**(i) Media (C9)**

100. UNESCO’s International Programme for the Development of Communications announced support for 85 projects in 62 countries during 2012.<sup>99</sup> Assessments of media developments based on its *Media Development Indicators: A Framework for Assessing Media Development* were completed in four countries.<sup>100</sup> UNESCO also published *A Road Map to Public Service Broadcasting* in partnership with the Asia-Pacific Broadcasting Union and the Commonwealth Broadcasting Association.<sup>101</sup> Additionally, UNESCO organized a debate at the action-line facilitation meeting on application of freedom of expression to the Internet and social networks as well as traditional media.

101. ITU has continued to support the transition from analogue to digital broadcasting, and the development of standards for Internet Protocol television. The World Radiocommunication Conference addressed issues related to frequency allocation for broadcasting and telecommunications.<sup>102</sup>

**(j) Ethical dimensions of the information society (C10)**

102. The United Nations Human Rights Council affirmed that rights within the international rights regime should be protected equally offline and online, particularly

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<sup>95</sup> <http://www.oecd.org/sti/interneteconomy/48761013.pdf>.

<sup>96</sup> [http://www.eurid.eu/files/publ/insights\\_2012\\_idnreport.pdf](http://www.eurid.eu/files/publ/insights_2012_idnreport.pdf).

<sup>97</sup> <http://newgtlds.icann.org/en/>.

<sup>98</sup> [http://www.escwa.un.org/information/publications/edit/upload/E\\_ESCWA\\_ICTD\\_12\\_TP-4\\_E.pdf](http://www.escwa.un.org/information/publications/edit/upload/E_ESCWA_ICTD_12_TP-4_E.pdf);  
<http://css.escwa.org.lb/ictd/1901/2.pdf>.

<sup>99</sup> <http://www.unesco.org/new/en/communication-and-information/intergovernmental-programmes/ipdc/>.

<sup>100</sup> <http://unesdoc.unesco.org/images/0016/001631/163102e.pdf>.

<sup>101</sup> <http://unesdoc.unesco.org/images/0021/002156/215694e.pdf>.

<sup>102</sup> <http://www.itu.int/ITU-R/index.asp?category=conferences&mlink=wrc-12&lang=en>.

freedom of expression. It recognized the global and open nature of the Internet as a driving force for development, and called on all States to promote and facilitate access.<sup>103</sup>

103. UNESCO organized an event at the 2012 WSIS Forum on Internet freedom and the relationship between online and offline behaviour. At IGF, UNESCO published the results of the *Global Survey on Internet Privacy and Freedom of Expression*, exploring the relationship between these rights online.<sup>104</sup>

104. UNESCO's Executive Board adopted a document entitled "UNESCO and the ethical dimensions of the information society," as part of its strategic policy framework, emphasizing multi-stakeholder participation and capacity-building for future work.<sup>105</sup> It launched a study on current and emerging ethical and societal challenges of the information society, whose outcomes will contribute to work of the World Commission on the Ethics of Scientific Knowledge and Technology and the 2013 World Social Science Forum on the theme of "Social Transformations and the Digital Age".

105. The Council of Europe's Internet governance strategy promotes an open and inclusive Internet. The Council organized a conference on tackling hate speech to promote tolerance and respect for fundamental rights.

**(k) International and regional cooperation (C11)**

106. ITU, UNESCO, UNCTAD, WIPO, United Nations regional commissions and other United Nations entities foster international and regional cooperation and work with other intergovernmental agencies through events, conferences, meetings and joint programmes. Other stakeholders play a prominent part in this coordination. A meeting of regional commissions took place during the WSIS Forum.

107. ITU convened the World Conference on International Telecommunications to consider revisions to the International Telecommunication Regulations, which define general principles on provision and operation of international telecommunications. Amended Regulations resulting from the Conference have been signed by 89 member States. ITU established a Council Working Group on Internet-related public policy issues, the main theme for its 2013 World Telecommunication/ICT Policy Forum.<sup>106</sup>

108. The international Budapest Conference on Cyberspace explored issues around the future development of the Internet, society and security.<sup>107</sup>

**2. Implementation of themes**

**(a) Financing mechanisms**

109. Private sector investment in ICTs has continued through changing economic circumstances, focusing on mobile networks, international and national broadband infrastructure. International financial institutions play a crucial role, providing both investment and technical support in developing policy and regulatory environments that are

<sup>103</sup> [http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session20/A-HRC-20-2\\_en.pdf](http://www.ohchr.org/Documents/HRBodies/HRCouncil/RegularSession/Session20/A-HRC-20-2_en.pdf).

<sup>104</sup> <http://www.unesco.org/new/en/communication-and-information/resources/publications-and-communication-materials/publications/full-list/global-survey-on-internet-privacy-and-freedom-of-expression/>.

<sup>105</sup> <http://unesdoc.unesco.org/images/0021/002173/217316e.pdf>.

<sup>106</sup> <http://www.itu.int/en/wtpf-13/Pages/default.aspx>.

<sup>107</sup> <http://www.cyberbudapest2012.hu/>.

attractive to private investors. The World Bank has invested more than US\$1.2 billion in the ICT sector in 30 countries over the past five years.

110. The development of public–private partnerships has been a recurrent theme within this work. UNGIS agencies have promoted innovative financing mechanisms for infrastructure and applications in their areas of responsibility, through capacity-building activities and technical assistance.

**(b) Internet governance**

*Enhanced cooperation*

111. The Tunis Agenda for the Information Society called for enhanced cooperation on Internet-related international public policy issues among Governments and other stakeholders from the private sector, civil society, the Internet technical community and intergovernmental organizations, in their respective areas of competence and mandates.<sup>108</sup>

112. In accordance with General Assembly resolution 66/184, the Chair of CSTD convened an open meeting involving member States and other stakeholders, with a view to identifying shared understanding of enhanced cooperation.

113. In its resolution 67/195, the General Assembly invited the Chair of CSTD to establish a working group to examine the mandate of WSIS regarding enhanced cooperation, through seeking, compiling and reviewing inputs from all Member States and other stakeholders, and to make recommendations on how to implement that mandate. It requested that the working group, which shall have balanced representation from governments and invitees from all other stakeholder groups, should report to CSTD at its seventeenth session in 2014, as an input to the overall review of WSIS outcomes. The Chair of CSTD established a Working Group on Enhanced Cooperation composed of 22 member States and invited five representatives each from the private sector, civil society, technical and academic communities and intergovernmental and international organizations. Regional and stakeholder groups held consultations on representatives and the Chair will announce the final composition by March 2013.

*Internet Governance Forum*

114. IGF enables all stakeholders to exchange knowledge and ideas about development of the Internet. Its seventh annual meeting was held in Baku, with the theme “Internet governance for sustainable human, social and economic development”. More than 1,600 people from 128 different countries participated. A high-level ministerial meeting, “Addressing the Challenges of a Hyperconnected World,” was organized immediately before IGF.<sup>109</sup>

115. Discussions during IGF’s formal sessions focused on five main themes: Internet governance for development; managing critical Internet resources; security, openness and privacy; access and diversity; and emerging issues related to the Internet. A further main session summarized the work of the meeting and considered principles and frameworks for IGF.<sup>110</sup> An open forum on enhanced cooperation was organized jointly by ISOC, APC and ICC-BASIS alongside the meeting.

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<sup>108</sup> [http://www.itu.int/wsis/documents/doc\\_multi.asp?lang=en&id=2267|0](http://www.itu.int/wsis/documents/doc_multi.asp?lang=en&id=2267|0), paragraph 35.

<sup>109</sup> <http://www.intgovforum.org/cms/2012/Book/Baku%20Declaration%20Final%20version.pdf>.

<sup>110</sup> <http://www.intgovforum.org/cms/2012/Book/Chairs.Summary.IGF.2012.pdf>.

116. The spread of regional and national IGFs continued, with 15 national and 9 regional IGF meetings reportedly held during 2012.<sup>111</sup> The first Arab region IGF was held during the year,<sup>112</sup> while the first African IGF built on experience of the continent's ongoing subregional IGFs.

117. In its resolution 65/141 of 2010, the General Assembly asked the Chair of CSTD to convene a Working Group on Improvements to the IGF. This Working Group reported to the fifteenth session of CSTD.<sup>113</sup> In its resolution 67/195, the General Assembly took note of the Working Group's report and requested the Secretary-General to submit information on progress made in implementing its recommendations, particularly those on enhancing participation by developing countries, in his annual reports on WSIS outcomes.

118. The eighth meeting of IGF will take place in Bali, Indonesia, in October 2013.

**(c) Measuring ICT for development**

119. The Partnership on Measuring ICT for Development is a collaborative forum of United Nations and other agencies, concerned with data collection and analysis on ICT for development and WSIS outcomes. It has 12 member organizations. An extended list of core indicators was endorsed by the United Nations Statistical Commission, which asked the Partnership to continue reviewing indicators in light of technological change.

120. The Partnership presented a road map for the WSIS+10 Review process at the WSIS Forum. It initiated a metadata survey of governments to verify availability of data necessary to measure progress towards WSIS targets. Data collection will be undertaken during 2013, followed by publication of a quantitative assessment of progress in 2014.

121. ITU maintains the World Telecommunication/ICT Indicators Database, which includes more than 100 indicators from over 200 countries, and can be accessed online through the ICT Eye portal.<sup>114</sup> ITU also published the 2012 *Measuring the Information Society* report, featuring two benchmarking instruments – the ICT Development Index and the ICT Price Basket. The report included data on revenue and investment, and proposed a new methodology to measure telecommunications capacity.<sup>115</sup>

122. ITU organized the tenth World Telecommunication/ICT Indicators Meeting. UNCTAD organized a session on measuring e-commerce and has worked with other agencies to improve measurement of e-business. With support from the Swedish International Development Cooperation Agency, it is leading work on indicators for trade in ICT and information technology-enabled services.

## **IV. Findings and suggestions**

123. United Nations agencies and other stakeholders have begun to assess achievements in implementing WSIS outcomes, ahead of the WSIS+10 Review, which the General Assembly will undertake in 2015. The Partnership on Measuring ICT for Development is establishing a comprehensive evidence base quantifying progress towards indicators agreed in the Geneva Plan of Action<sup>116</sup> in 2003. Much has been achieved since WSIS, and some

<sup>111</sup> <http://www.intgovforum.org/cms/component/content/article/114-preparatory-process/1281-igf-initiatives-2012>.

<sup>112</sup> <http://www.igfarab.org/>.

<sup>113</sup> A/67/65-E/2012/48.

<sup>114</sup> <http://www.itu.int/ITU-D/ICTEYE/>.

<sup>115</sup> <http://www.itu.int/ITU-D/ict/publications/idi/index.html>.

<sup>116</sup> Para. 6.

targets have been exceeded, but significant challenges remain, particularly in ensuring the inclusiveness of the information society.

124. ICTs are critical enablers of economic development and investment, with consequential benefits for employment and social welfare. Many innovations have occurred which were not anticipated at the time of WSIS, including the growth of mobile Internet, social networking and cloud computing. These innovations, and the increasing pervasiveness of ICTs within society, have had profound impacts on the ways in which governments deliver services, businesses relate to consumers, and citizens participate in public and private life. The WSIS+10 Review will assess the contribution of ICTs towards achieving the Millennium Development Goals.

125. The review of ongoing initiatives shows that the developmental implications of ICTs can be harnessed through the growth of local ICT sectors in developing countries. However, replicating the successful experiences of some countries, such as India, is not an easy task. The contribution of ICTs needs to be catalysed through the actions of a variety of actors, particularly governments, the private sector and development partners.

126. A range of initiatives from international organizations and development partners are being coordinated, and the trend of increased coordination is leading to greater awareness on issues and actions required for bridging the digital divide.

127. The institutional framework resulting from WSIS outcome documents has made a valuable contribution to their implementation. Multi-stakeholder collaboration in the IGF has deepened the understanding of technical and policy issues relating to the Internet. Renewed attention will focus during 2013 on enhanced cooperation in international public policy issues pertaining to the Internet, as required in the Tunis Agenda for the Information Society.<sup>117</sup> The WSIS Forum has become a valued annual event, focusing the attention of diverse stakeholders on WSIS action lines and important public policy issues such as cybersecurity. It has facilitated multi-stakeholder participation in considering WSIS outcomes.

128. The tenth anniversary of WSIS will be the beginning of a new chapter that builds on the lessons learned over the past decade. ICTs and their markets will continue to develop rapidly, and will have profound impacts on economies, societies and culture. UNESCO has advanced the concept of inclusive “knowledge societies” to describe a broader vision that affects all aspects of human development, reaching beyond connectivity and technology. The potential of ICTs to support the three goals of sustainable development – economic prosperity, inclusive social equity and environmental protection – is increasingly recognized.

129. The WSIS+10 Review should make a powerful contribution to the General Assembly’s consideration of the post-2015 development agenda. ICTs will play a critical role in achieving the sustainable development goals. The participation of all WSIS stakeholders will be critical both in ensuring that ICTs are fully incorporated in these goals and securing the long-term benefits that can be realized through them.

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<sup>117</sup> Paras. 68–71.