



Information and Communications Technology and Disaster Risk Reduction  
Division  
ICT and Development Section

Regional Workshop on Resilient ICT Connectivity for the Knowledge Economy,  
SDGs and the WSIS Goals

SUMMARY REPORT (DRAFT)

20-22 September 2016, Almaty, Kazakhstan

## **A. Organization of the workshop**

1. The Regional Workshop on “Resilient ICT Connectivity for the Knowledge Economy, SDGs and the WSIS Goals”<sup>1</sup> was jointly organized by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) and the United Nations Economic Commission for Europe (UNECE) in collaboration with the Government of Kazakhstan in Almaty on 20-22 September 2016. In conjunction with the regional workshop, ESCAP and UNECE organized the eighth session of the SPECA Working Group on Knowledge-based Development (WG on KBD)<sup>2</sup> on 22 September 2016. The events were hosted by the Centre for Emergency Situations and Disaster Risk Reduction (CESDRR). The workshop was organized as part of a project funded by the Government of the Russian Federation entitled “Use of ICT for Effective Management of Disaster-Related Information in the Asia-Pacific Region”.

## **B. Objectives**

2. The purpose of the regional workshop was to bring together international and regional Information and Communications Technology (ICT) connectivity and Disaster Risk Reduction (DRR) policy experts to discuss resilient ICT connectivity for developing the knowledge economy and achieving the Sustainable Development Goals (SDGs) and the World Summit on the Information Society (WSIS) goals. In addition, this meeting was the primary venue to initially disseminate and receive feedback on ESCAP’s study on ICT e-resilience in the SPECA subregion.
3. ESCAP Resolution 69/10<sup>3</sup> on “Promoting regional information and communications technology connectivity and building knowledge-networked societies in Asia and the Pacific”, adopted by member States at the 69th session of the ESCAP Commission encourages member States to continuously promote regional cooperation to address the digital divide and to formulate and implement coherent ICT policies that build knowledge-networked societies. Furthermore the workshop also addressed ESCAP Resolution 71/10<sup>4</sup> on “Strengthening regional ICT connectivity through the Asia-Pacific information superhighway”, and ESCAP Resolution 72/10<sup>5</sup> on “Regional review of the implementation of the World Summit on the Information Society action lines”.
4. In order to operationalize the mandate and fulfil the development goals of the project, this workshop was oriented towards policy and decision makers from organizations involved in ICT, DRR development planning, and National Disaster Management Authorities. Participants were encouraged to share lessons learned, identify good practices and build networks to facilitate ongoing interaction and peer learning.

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<sup>1</sup> <http://www.unescap.org/events/regional-workshop-resilient-ict-connectivity-knowledge-economy-sdgs-and-wsis-goals>

<sup>2</sup> <http://www.unescap.org/events/eighth-session-speca-thematic-working-group-knowledge-based-development>

<sup>3</sup> <http://www.unescap.org/resources/escap-resolution-6910-promoting-regional-information-and-communications-technology>

<sup>4</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=E/ESCAP/RES/71/10](http://www.un.org/ga/search/view_doc.asp?symbol=E/ESCAP/RES/71/10)

<sup>5</sup> [http://www.unescap.org/sites/default/files/E72\\_RES10E.pdf](http://www.unescap.org/sites/default/files/E72_RES10E.pdf)

5. The programme of the meeting is attached as Annex 1 and the presentations made during the meeting are made available on the ESCAP website.<sup>6</sup>

## **B. Attendance at the meeting**

6. The workshop was attended by delegations from Azerbaijan, Kazakhstan, Kyrgyzstan, as well as representatives of United Nations Organizations, including UNECE, ESCAP, International Telecommunications Union (ITU), United Nations Office for the Coordination of Humanitarian Affairs (OCHA), United Nations Information Centre (UNIC) of Kazakhstan, UN Women; International and Regional organizations, including the Central-Asian Institute for Applied Geosciences (CAIAG), Asian Disaster Preparedness Centre (ADPC), International Fund for the Aral Sea, Centre for Emergency Situations and DRR (CESDRR); business, academia & other organizations, including the Federal State Unitary Enterprise Radio Research & Development Institute (FSUE NIIR), Pakistan Telecom Authority, Al-Farabi Kazakh National University, International IT University; as well as WSIS prize winners from Belarus, Kazakhstan, Kyrgyzstan and Ukraine.
7. The list of participants is attached as Annex 2.

## **C. Proceedings**

### **Opening**

8. Mr. Arslan Dandybayev, Head of the Representative Office, Ministry of Foreign Affairs, Almaty, Kazakhstan, welcomed all the participants to the regional workshop. Mr. Dandybayev stressed the importance of ICT connectivity, highlighting, in particular, the impact of ICT on socio-economic development in the subregion.
9. Mr. Nikolay Pomoshchnikov, Head of the Joint ESCAP/UNECE SPECA Office in Almaty and Senior Economic Affairs Officer of the ESCAP Subregional Office for North and Central Asia (SONCA), also highlighted the critical role of ICT in development, as well as in disaster management. Mr. Pomoshchnikov further noted that there is a growing digital divide among SPECA countries as well as between urban and rural areas within SPECA member countries. Mr. Pomoshchnikov then pointed out that the SPECA subregion is particularly susceptible to disasters, and that the role of ICTs is crucial in mitigating risks to businesses and governments and developing the knowledge economy. Concluding his speech, Mr. Pomoshchnikov stressed the need for cooperation among policymakers, experts and other stakeholders in addressing the challenges associated with ICT connectivity and promoting the use of ICT for DRR and development of the knowledge economy.
10. Mr. Christopher Athey, UNECE Secretary to the SPECA WG on KBD and Economic Affairs Officer, UNECE Economic Cooperation and Trade Division, thanked colleagues in the ICT and DRR Division at ESCAP for their efforts in putting together

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<sup>6</sup> <http://www.unescap.org/events/regional-workshop-resilient-ict-connectivity-knowledge-economy-sdgs-and-wsis-goals>

such a relevant and interesting agenda. He highlighted in particular the necessity of improved ICT connectivity across all countries if the ambitious goals of Agenda 2030 are to be met. This includes not just SDG9 on industry, innovation and infrastructure, with ICT connectivity and the innovation that it enables being an important driver across all of the SDGs. Without resilient connectivity across the board, there is a risk of countries or certain regions of countries, in particular rural areas, being left behind as we seek progress to achieve Agenda 2030. Mr. Athey thanked delegates and speakers for their attendance and wished the participants a successful event.

11. Mr. Valery Petrov, Director of the Centre for Emergency Situations and Disaster Risk Reduction (CESDRR), welcomed everyone to the event. Mr Petrov noted that ICT for DRR is one of the most important avenues of future development in the current framework of dealing with disasters. He further stated that ICT for DRR is of paramount importance because it in itself influences actions, which have the potential to save lives as well as materials. Mr. Petrov said that he believed that the proceedings of this meeting will also benefit future development of the Centre. He noted that this meeting was the first event hosted by the Centre since the opening the previous week. Mr. Petrov concluded that he was looking forward to and welcomed future collaborations with ESCAP and other partners to promote DRR through the use of ICT.
12. Following welcoming remarks, each workshop participant briefly introduced themselves.
13. Ms. Atsuko Okuda, Chief of ICT and Development Section (IDS) of ICT and Disaster Risk Reduction Division (IDD), ESCAP, introduced the objective of the meeting, namely to strengthen the capacity of the SPECA countries in enhancing e-resilience for the development of knowledge economy and achievement of the goals of the 2030 UN Sustainable Development Agenda and WSIS. In particular, Ms. Okuda highlighted the link between the WSIS Action Lines, SDGs and ESCAP's mandate to support member States in the implementation of the WSIS Action Lines.<sup>7</sup>

## Session 1

14. Mr. Christopher Athey commenced the regional workshop's first session, titled "ICT Connectivity for enhanced e-resilience", which aimed to provide regional and subregional overview of ICT developments, with a focus on connectivity as the basis for a resilient, knowledge-based economy and the achievement of the SDGs. The session also aimed to showcase findings of ESCAP's studies, and how resilient ICT connectivity could be promoted in the region.
15. Ms. Atsuko Atsuko introduced ESCAP in the context of the United Nations, and outlined its functions. She then explained resolution 69/1 on promoting the exchange of best practices and experiences and knowledge related to the development of ICT infrastructure, including in-depth analysis of the policy and regulatory barriers that may impede efforts to synchronize the deployment of infrastructure across the region in a seamless manner. Ms. Okuda highlighted ESCAP's recent technical paper, *The State of ICT in Asia and the Pacific 2016: Uncovering the Widening Broadband*

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<sup>7</sup> For full slides, please see: <http://www.unescap.org/resources/resilient-ict-connectivity-knowledge-economy-sdgs-and-wsis-goals>

*Divide*,<sup>8</sup> and introduced figures relevant to the subregion and the session. Next, Ms. Okuda introduced ESCAP's resolution 71/10, which, as part of it, seeks to provide the necessary support to facilitate the work of the open-ended working group on the Asia-Pacific Information Superhighway<sup>9</sup>. Finally, the AP-IS initiative was briefly introduced, along with its four pillars, as well as characteristics of well-developed and balanced design of backbone connectivity as well as natural hazard risk consideration, regional IXP paucity, and resultant high IP transit costs which affect the SPECA subregion's connectivity development.<sup>10</sup>

16. Mr. Alexey Kravchenko, Associate Economic Affairs Officer at IDS/IDD/ESCAP, provided an overview of broadband connectivity growth within the SPECA subregion. Mr. Kravchenko noted that while GNI per capita could explain some of the disparity in regional broadband penetration rates, it could not be the main reason for all countries. Turkmenistan, in particular, whose GNI is the second highest among the SPECA member countries, has the second lowest fixed broadband penetration rate among not just SPECA member countries, but within the ESCAP region as a whole. Nevertheless, he shared, the Central Asian region has seen some of the best improvements in infrastructure, as measured by telecommunication infrastructure and online service indices, especially when contrasted against South & South West Asia neighboring countries. Finally, Mr. Kravchenko introduced ESCAP's Asia-Pacific Information Superhighway initiative as a way forward to enhance affordability and availability of broadband within the region, and explained the four pillars of AP-IS (connectivity, network management, e-resilience and broadband for all).<sup>11</sup>
17. Ms. Shaina Hasan, consultant at IDS/IDD/ESCAP, and Mr. Jeremy Marand, intern at IDS/IDD/ESCAP, presented findings via a Skype connection of their study on building resilient ICT in the SPECA subregion. First, they outlined the types and magnitudes of disasters in the region. They highlighted that earthquakes have the highest predicted average annual losses (AAL), followed by floods, landslides and droughts, and that Kazakhstan has the highest multi-hazard AAL within the region. Next, Ms. Hasan and Mr. Marand provided an overview of the digital divide in the region, suggesting that affordability may be a major factor in explaining the disparity. Next, they introduced ICTs in the context of SME development in the region, examining its uses and suggesting they are a key growth enabler on macro and micro levels but there still is some scope to further expand the use of ICT. They concluded that it is imperative to protect ICT assets through enhancing e-resilience and increasing cooperation, particularly in times of disasters, which tend to be cross-border.<sup>12</sup>
18. Mr. Alofsat Aliyev, Head of Division, Institute of Information Technologies, Azerbaijan National Academy of Sciences, presented on the issues of resilience of ICT in managing DRR while building information society and knowledge based economy in Azerbaijan. Mr. Aliyev first outlined general state and trends of socio-economic development of the Republic. Next, he discussed the issues pertaining to information society and knowledge-based economy. In particular, Mr. Aliyev highlighted the

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<sup>8</sup> <http://www.unescap.org/resources/state-ict-asia-and-pacific-2016-uncovering-widening-broadband-divide>

<sup>9</sup> <http://www.unescap.org/apis>

<sup>10</sup> For full slides, please see: <http://www.unescap.org/resources/ict-connectivity-and-asia-pacific-information-superhighway>

<sup>11</sup> For full slides, please see: <http://www.unescap.org/resources/ict-connectivity-central-asia>

<sup>12</sup> For full slides, please see: <http://www.unescap.org/resources/building-resilient-icts-speca-region>

National Strategy to Develop Information Society (2014-2020), which among its goals includes wide usage of ICTs, as well as an increase in resilience of ICT infrastructure. He discussed specific steps of the National Strategy, including bridging the digital divide among countries via completion of the TASIM project, rolling out of the 4G infrastructure, among others. Mr. Aliyev then argued that effective e-governance can be a means of DRR, particularly with regard to sharing and disseminating information during and after disasters, including on mass media and social networks. Finally, Mr. Aliyev mentioned specific hazard risks and efforts to reduce them in Azerbaijan.<sup>13</sup>

## Session 2

19. Ms. Okuda introduced the second session titled “DRR through the Use of ICT”, which aimed to add to the discussion of the regional workshop the topics of resilience in expanding ICT connectivity and promoting knowledge-based development among the SPECA countries. Hence, the sessions’ purpose was to examine the framework of ICT use for DRR and some tools which could be considered by SPECA countries. Ms. Okuda noted that when a natural disaster strikes, it disrupts business and government operations, and affects small and medium sized enterprises disproportionately. In this context, the use of ICT for DRR has gained significant attention in recent years.
20. Mr. Puji Pujiono, Regional Adviser on Disaster Risk Reduction of IDD, ESCAP, delivered a presentation on ICT and SMEs Resiliency in Central Asia. He underscored the benefits of leveraging ICTs efficiency for delivering better quality goods and services, enhancing the profitability, and promoting sustainability of SMEs. The peculiar business environment in Central Asia and within the SPECA subregion in terms of the ease of doing business, obtaining credit, the easy of resolving insolvency, etc., requires unique approaches to harness the interconnectedness between ICT and DRR at the different phases of the disaster risk management. This range from risk prevention through reduction, preparedness, response and recovery. Additionally, the specific characteristics of SMEs in Central Asia also pose unique opportunity, and challenges notwithstanding, where the DRR measures in the judicious use of ICT for the SMEs benefits outweigh costs in the long run.<sup>14</sup>
21. Mr. Viliam Sarian, Professor at the Federal State Unitary Enterprise (FSUE) Radio Research & Development Institute (NIIR), discussed a new paradigm to radically reduce losses in the event of disasters and emergencies. He argued that the current methods of disaster responses are ineffective, when combined with the unpredictability of some events, notably earthquakes, and called for a new method of personalized management of disasters leveraging location-aware Internet of Things (Geo-IoT) technologies. Mr. Sarian suggested that such paradigm can help with execution of rescue operations, which could save up to 90% of potential casualties. Such technology, he continued, relies on low-cost sensors and transmitters, and existing mobile devices, enabling users to find the way out of densely populated buildings without assistance. He concluded that his paradigm would firstly improve predictive capacity of existing monitoring systems for natural and man-made disasters,

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<sup>13</sup> For full slides, please see: <http://www.unescap.org/resources/вопросы-устойчивости-использования-икт-в-управлении-снижения-риска-бедствий-в-целях>

<sup>14</sup> For full slides, please see: <http://www.unescap.org/resources/ict-and-smes-resiliency-central-asia>



hence forewarn people about potential risks and forthcoming disasters; and secondly, optimize the behavior of people caught in the emergency area.<sup>15</sup>

22. Ms. Chinara Berbaeva, Head of DRR Department of CESDRR, introduced the Centre with her presentation. She opened that the Centre is based in Almaty, and was established by the Governments of Kazakhstan and Kyrgyzstan, with Afghanistan having formally delegated a representative as an observer. She emphasized that the Center is a permanent intergovernmental body, an international organization established to ensure effective mechanisms to decrease the risk of disasters, to mitigate damage and loss, to organize a joint response through agreed measures of the Parties and to enhance regional and international cooperation. Ms. Chinara subsequently outlined the Centre's objectives and main functions, which include cooperation in Emergency Situations (ES) and DRR; implementation of ES and DRR related joint projects; harmonization of legislation; exchange of experience and best practices, among other functions.<sup>16</sup>
23. Mr. Bill Ho, Head of the Information Technology and Communication Department of the Asian Disaster Preparedness Centre (ADPC), focused on ICT and Risk Governance in his presentation. Mr. Ho started off by stating that the Centre's work involves DRR rather than response. He then defined governance as "the process of decision-making, and the process by which decisions are implemented or not implemented", and noted that risk governance involves decisions associated with natural and technological risks. Next, Mr. Ho explained the importance of the focus on development and risk governance, suggesting that development programmes, if carried out correctly, can decrease vulnerability to disasters. Mr. Ho then outlined ADPC's work in the Asian region, with recent examples on risk portals in Nepal, Lao DPR, Mekong Delta, and Mandalay. Finally, Mr. Ho outlined the challenges and priorities of ADPC, as well as its future focus, and expressed his wish to extend their presence in Central Asia.<sup>17</sup>
24. Mr. Anar Aghayev, Chief Officer, Captain of the Department of Statistics and Information Technologies, Ministry of Emergency Situations (MES) of Azerbaijan, on behalf the leadership of the Ministry conveyed greetings to the organizers and participants of the workshop. He shared that in recent years Azerbaijan provided substantial energy security to Europe, and was involved in international relations and discussion of global issues. He noted that oil and gas industries are the most important components of the economy, and infrastructure development has been largely shaped by investments in these sectors. He then cautioned that this infrastructure is vulnerable to disasters, hence it is important to enhance efforts in monitoring and responding to disasters. Mr. Aghayev revealed that the most important work of the Ministry is using latest ICT for monitoring and responding during ES. Examples of this work include collection and analysis of data during ES; creation of GIS maps of critical infrastructure; improving communications systems used during ES, among others.<sup>18</sup>

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<sup>15</sup> For full slides, please see: <http://www.unescap.org/resources/improving-efficiency-use-ict-radically-reduce-losses-event-emergencies>

<sup>16</sup> For more information on the Centre, please see: <http://www.unescap.org/resources/center-emergency-situations-and-disaster-risk-reduction-about>

<sup>17</sup> For full slides, please see: <http://www.unescap.org/resources/ict-and-risk-governance>

<sup>18</sup> For full slides, please see: <http://www.unescap.org/resources/информационные-технологии-в-системах-мониторинга-и-реагирования-при-чрезвычайных-ситуациях>

### Session 3

25. Ms. Gabrielle Iglesias, Programme Officer at the UN Asian and Pacific Training Centre for Information and Communication Technology for Development (APCICT), ESCAP, introduced the speakers of the session, titled “Knowledge-based Economy, WSIS and SDGs”. The session focused on how ICT connectivity and resilience help develop knowledge-based economy among the SPECA countries. The session also placed the discussion in a larger context of how resilient ICT and accelerated knowledge-based economy will help achieve internationally agreed development goals, such as the WSIS Action Lines and SDGs in the subregion.
26. Mr. Christopher Athey remarked that knowledge-based development and innovation are drivers across all SDGs. He further stated that UNECE’s work on Innovation Performance Reviews is particularly relevant to SDG 9, which promotes building resilient infrastructure, as well as enhancing scientific research, but stressed that knowledge-based development is relevant to all SDGs. UNECE’s country-level policy review methodology has been updated to reflect the adoption of the SDGs and the crosscutting nature of innovation as a driver of 2030 Agenda, with forthcoming reviews now referred to as UNECE Innovation for Sustainable Development Reviews. Such national reviews are demand-driven, upon the request of the country concerned, and subject to the availability of extrabudgetary funding. Mr. Athey then discussed the links between WSIS and the regional commissions, WSIS Action Lines and SDGs, highlighting that the activities of the SPECA WG on KBD are highly relevant to promoting both - the Information Society objectives as well as the SDGs in Central Asia. Mr. Athey concluded by describing actions under consideration, including ensuring effective collection of information on ICT-related projects; effective coordination between regional commissions and other UN agencies; that ICTs are reflected in the UN Development Assistance Framework (UNDAF); and the possibility of regional platforms to share best practices.<sup>19</sup>
27. Mr. Vlastimil Samek, Representative of United Nations Department of Public Information, United Nations Information Office (UNIC), unveiled two new mobile applications to promote SDGs. The first app is a calendar of UN observances which aims to promote awareness of important political, social, cultural, humanitarian and human rights issues.<sup>20</sup> The app not only informs, but also promotes ways to get involved with links provided to related events. The second app, SDGs in Action, has been developed to highlight the SDGs – the world’s to-do list to end poverty, reduce

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