SUMMARY REPORT

A. Organization of the meeting

1. The Regional Workshop on "Knowledge and Policy Gaps in Disaster Risk Reduction and Development Planning" was organized from 14-15 May 2015 by the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) in partnership with the International Think Tank for Land Locked Developing Countries which co-organized the event. This workshop was organized as part of a United Nations Development Account project entitled "Strengthening information and communications technology capacities for disaster risk reduction and development: addressing information, knowledge and policy gaps in Asia" and focused on Expected Accomplishment 1 of that project: the increased knowledge and awareness among policy makers of the importance of ICT for promoting inclusive and disaster resilient development. This meeting was the primary venue to initially disseminate and receive feedback on ESCAP-commissioned studies on ICT e-resilience at the Regional Level, as well as country specific case studies, including Sri Lanka, China, Mongolia and Philippines.

B. Objectives

2. ESCAP Resolution 69/10 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.

3. In order to operationalize the mandate and fulfil the development goals of the project, this workshop was oriented for the policy and decision makers from organizations involved in Information and Communication Technology (ICT), Disaster Risk Reduction (DRR) and 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.

4. The agenda of the meeting is attached as Annex 1 and the presentations made during the meeting are made available on the ESCAP website¹.

B. Attendance at the meeting

5. The workshop was attended by participants from Australia, Bangladesh, Bhutan, Cambodia, China, Germany, India, Kyrgyz Republic, Lao People's Democratic Republic, Mongolia, Myanmar, Pakistan, Philippines, Sri Lanka, and Thailand.

6. Sessions of the Workshop were moderated by Mr. Matthew Perkin of ESCAP and Mr. Odbayar Erdenetsogt of the International Think Tank for Land Locked Developing Countries.

¹ http://www.unescap.org/events/workshop-ict-promoting-inclusive-and-disaster-resilient-development

7. The list of participants is attached as Annex 2.

C. Proceedings

Opening

8. Mr. Matthew Perkins began this session by highlighting the importance of ICT infrastructure as a critical component of disaster planning and response. Particular emphasis was given to specific examples of areas for enhancement in the regional telecommunications backbone network and the usefulness of the Asia Pacific Information Superhighway (AP-IS) in addressing these issues.

9. Mr. Odbayar Erdenetsogt welcomed participants to the meeting, and stressed the importance of the topic particularly for the countries in the room. Mr. Odbayar Erdenetsogt also emphasized the value of the research undertaken both through the ESCAP partnership and through the project activities in general. His remarks set the stage for the presentations of these research products, experience-sharing, and peer learning for the session.

Session 1

10. Mr. Sriganesh Lokanathan contributed to the meeting by sharing a presentation based on regional level research undertaken as a component of the project, which focused on three main issues. First issue addressed the value of new data sources of relevance, such as big data - specifically big data collected through mobile networks and devices. Second issue addressed the importance of thinking about infrastructure holistically. Third issue addressed the emerging value of smart grids and their usefulness in promoting "Antifragility" – building back better after a disaster event.

11. Mr. Christian Wilk presented the results of a research study on ICT for DRR initiatives in the Asia Pacific region. As part of his presentation, he emphasized the paramount importance of reliable ICT infrastructure for disaster planning and response. He also identified a general need for awareness raising, capacity building and technology transfer to actively promote open-source and freely available ICT solutions in disaster management. Mr. Christian Wilk also gave some examples of where innovative ICT technologies were able to add value to disaster recovery efforts, for examples, drones were used in the aftermath of the Nepal 2015 earthquake and the Philippine typhoon Haiyan, etc. Following that, he emphasized the need for streamlined and harmonized regulations and legal provisions which address the use of automated platforms like UAVs and disaster robotics. The need for additional support for regional research and development projects and initiatives was highlighted. Finally, he recommended the collection, consolidation and sharing of best practices and lessons learned among countries and stakeholders.

Session 2

12. Mr. Peter Lange provided an extensive presentation sourced from the study he conducted as part of the project activities on the uses of ICT in China, with focus on telecommunications infrastructure. As part of his analysis, he recommended specific steps to improve the resilience of the backbone network, such as strengthening terrestrial fibre links to Europe and India, and the further development of redundancy through additional cable landing stations on

China's east coast. The provision of additional bandwidth for empowering underdeveloped western parts of the country and narrowing of the digital divide was also recommended.

Session 3

13. Mr. Ranjit Singh Rye provided a presentation based on the research material generated as part of project activities, focusing on the use of ICT for DRR in the Philippines. As part of that effort, recommendations were made, including the need for the Philippine disaster risk reduction and management plan to better reflect a more integrative definition of DRR. For example, the existing approach exhibited bias towards natural and climate related disasters and needed to include the development of capacities and systems for other types of disasters (e.g. conflict, health, terrorism, and financial). In this regard, rationalization of the various DRR plans was required, together with an examination of the mandates of the responsible agencies to ensure programs' convergence and synchronize in accordance with legislative intent and with the overall agenda for national development.

14. Mr. Sriganesh Lokanathan presented a summary of country-level research on Sri Lanka, which he undertook as part of the project. Among his recommendations was the need to utilize technological innovations for disaster mitigation and warning and to introduce ICT-based elements into the electricity grid to enhance resilience. Furthermore, Mr. Sriganesh Lokanathan suggested that it was necessary to take further steps, including open data policies, to ensure that agencies responsible for resilience and disaster response had access to the data they require. Furthermore, Sri Lanka needed to ensure adequate redundancy in international segments of the ICT infrastructure (e.g. diversified cable landing station (CLS) locations) and to define "conditions of exception" that could trigger mandatory national roaming under specified terms.

Session 4

15. Mr. Kanchana Thudugala provided a presentation which focused on specific examples of ICT applications at the national level in Sri Lanka. These examples included the Lanka Government Network, a communications system linking government offices throughout the country. A systemic overview of the architecture of the Multi-Hazard Warning Dissemination System, as well as the use of Geo-portals in Sri Lanka were also provided. Mr. Kanchana Thudugala emphasized the importance of data sharing and proper communication for holistic DRR implementation.

16. Mr. Guoyu Wang presented a case study of a proposed disaster warning broadcast system. This system sought to address common shortfalls in existing technological options by relying on pre-installed terminals to provide disaster related messaging to the population. The existing prototype was able to cover a university campus area of approximately 730 acres, and 700,000 square meters of building space including a population of approximately 30,000 students and staff using a single transmitter operating a 5W of power. He advocated that the proposed system, by utilizing digital broadcasting, had inherent advantages for alarm and rescue management, including reliability, cost effectiveness, efficiency and easy use. He concluded by expressing his wish to work for the development of e-resilience in the existing disaster management structures and a desire to participate in collaboration with other stakeholders in building regional and international networks.

Session 4, cont.

17. After brief remarks by the moderator, Mr. Matthew Perkins, Session 4 continued with a presentation by Mr. Jashim Uddin Ahmed, who provided an overview of the uses of ICT in DRM in Bangladesh. As part of his presentation he described the national ICT policies addressing disaster management, including the use of remote sensing technologies for disaster management and mitigation; the promotion of cell phone/SMS-based disaster warning systems targeting portions of the population likely to be affected by an adverse event; the utilization of geographic information system (GIS)-based systems to monitor floods and cyclone shelters as well as to ensure equitable distribution of relief goods with special focus on hard-to-reach areas. Among his recommendations, he cited the Asia Pacific Information Superhighway (AP-IS) as a mechanism for the promotion of a grid networking for Bangladesh and the region in general.

18. Mr. Pema Thinley addressed the meeting with a presentation on disaster management in Bhutan with a focus on the application of ICT for DRR. He provided an overview of the institutional structures in place to deal with disaster management at the local, ministerial and national levels. He also described Bhutan's approach to multi-hazard risk assessment, including risk identification, reduction, retention/transfer and disaster management. As part of his presentation he emphasized some of the risks faced by Bhutan, such as glacial lake outburst floods.

19. Mr. Sopheap Seng provided an overview of the national context and disaster risks facing Cambodia, with an emphasis on hydrological events. His presentation also contained a review of the government structure and related business processes associated with the dissemination of forecasting and early warning information. Mr. Sopheap Seng asserted that Cambodia was one of the most disaster prone countries in Asia, with floods and drought being the primary natural hazards affecting the country. In his view, the government structure for disaster management was well organized and there was a significant progress in the development of telecoms infrastructure and policy in the country. However, he advocated that the role of ICTs for DRM must be further strengthened.

Session 5

20. Under the administration of the session moderator, Mr. Odbayar Erdenetsogt, the session began with a presentation by Ms. Renu Bhudhiraja. Her remarks focused on a country case study for India in ICT for disaster management. Her presentation contained a wide array of information on the policy and technical aspects of ICT for DRR in India, including the India Disaster Resource Network (DRN). DRN is a web based platform for managing the inventory of equipment, skilled human resources and critical supplies for emergency response. It aims to enable decision makers to find the availability of equipment and human resources, as well as to assess the level of preparedness for specific disasters. Ms. Renu Bhudhiraja also reviewed a number of applicable national databases and mobile applications for addressing DRR-related issues in the country.

21. Mr. Almaz Bakenov contributed a presentation on the ICT for DRR context in Kyrgyz Republic. As part of his presentation he described the work of the National Information Technology Centre, which has been operational since 2004. This centre contributed to enhancing the resilience of critical ICT infrastructure through a variety of mechanisms, including improving the network monitoring infrastructure, the introduction of new services (IPv6 and Eduroam) and handling network security incidents. Mr. Almaz Bakenov also provided the context for some of the disaster risks facing the country such as seismic events. In relation to this, he described the Central Asian Geodatabase Infrastructure, and the organizational components necessary for its success.

22. Mr. Silap Boupha addressed the meeting with a presentation focusing on the national context of Lao People's Democratic Republic. He recommended that steps should be taken to insure a holistic approach towards disaster management where emphasis has been given to working together with all stakeholders (government agencies, other key NGOs, academic and technical institutions, the private sector, donors, etc.) to encourage strategic implementation of development plans. In addition, he called for the empowerment of grass-roots communities to support disaster preparedness and building a sufficient level of resilience. In addition, the enhancement and promotion of regional and international cooperation on DRR/DRM in the country was advised. Finally, he recommended that the country upgrade related IT systems and share functional data, information and early warning systems through access to basic ICT services.

Session 6

23. Ms. Nwe Ni Soe Yin provided a summary of the ICT initiatives for disaster management in Myanmar. In addition to the national context generally, she described the current challenges facing the country, such as slow infrastructure development and coverage. She related that Myanmar was at that time struggling with inadequate IT infrastructure and Internet access, insufficient online public services, lack of supporting programs for digitization, absence of system integration and a lack of end user utilization and awareness of services. To address these issues, the government was taking action on several fronts, including the issuance of updated regulations, such as the E-Government Master Plan of 2015. Among the goals of these efforts, the government was seeking to widely and effectively use ICT in every sector as an essential factor for socio-economic development, to develop the national telecommunication network for high speed communication, and to increase Internet penetration. Through these and other efforts the government sought to use ICTs in national disaster resilience and saw these efforts as an essential factor to build a resilient nation and through preventive measures to save lives and property.

24. Mr. Kohlak Charoenrook presented to the meeting aspects of the approach to ICT in DRR in Thailand. His presentation included description of the National Disaster Warning Centre, and national preparedness efforts generally. He also described technological tools used, such as geospatial intelligence and disaster warning systems. A specific example was the use of DisasterAWARE, which functioned as an early warning and decision support platform continually monitoring reliable scientific data sources for events deemed potentially hazardous to people, property, or assets. The resulting analysis of DisasterAWARE was made accessible to decision makers and to the public through early warning and decision support tools.

25. Ms. Suchada Inluksana also provided additional insight into the efforts of Thailand to effectively utilize ICT for DRR. Her presentation focused on the digital economy aspects of disaster preparedness and the recognition that ICT can play an important role in helping disaster managers quickly access, contextualize, and apply near real-time information. Furthermore, she highlighted the usefulness of ICTs to improve the speed and effectiveness of critical actions, such as warning populations at risk of disaster events. She also related the flood events experienced by Thailand in 2011 which had a severe impact on the country's economy, industrial sector and society. In order to learn from this experience, she noted that in trying to cope with this problem in the future, many countries have upgraded their infrastructure to promote disaster preparedness.

D. Main conclusions and recommendations

26. At the conclusion of the meeting, the participants discussed and agreed that Big Data may offer significant benefits to ICT for DRR, such as being able to map the location of displaced persons in the aftermath of a disaster impact.

27. In addition, because of issues such as availability, cost savings, resilience to cloud cover and potentials for community ownership, emerging technologies such as UAVs could be considered as supplements to existing satellite technologies for gathering information in DRR. Participants requested that ESCAP hold a further workshop on sustainable development and GIS technologies within the context of ICT for DRR.

28. Further, because of the importance of communication in providing the right information at the right time, Universal Access Funds should be considered as a mechanism for funding rural connectivity and reducing the digital divide. As part of these efforts, diversifying the fibre optic backbone infrastructure should be considered a key priority in disaster preparedness.

29. Participants also expressed a desire for further application of ICT programmes to support national disaster management, within the context of regional cooperation mechanisms.

30. Finally, workshop participants requested that the outcomes of the meeting be followed up in the remaining meetings and activities of the Development Account project and ESCAP's broader approach to these themes.

Workshop on ICT for Promoting Inclusive and Disaster Resilient Development Ulaanbaatar, Mongolia 14-15 May 2015 Annex 1

DRAFT PROGRAMME

First Day (Thursday, 14 May 2014)

09.00-09.30 hrs.	Registration
09.30-10.00 hrs.	Welcoming Remarks
	 Mr. Matthew Perkins Economic Affairs Officer, ICT and Development Section ICT and Disaster Risk Reduction Division, UN Economic and Social Commission for Asia and the Pacific (ESCAP)
	Opening Statements
	 Mr. Odbayar Erdenetsogt Interim Director International Think Tank for Landlocked Developing Countries
10.00 – 10.30 hrs.	Coffee break
10.30 - 11.30 hrs.	Session 1: Building e-Resilience: Enhancing the Role of ICTs for Disaster Risk Management at the Regional Level
	• Presentation
	 Mr. Sriganesh Lokanathan Team Leader - Big Data Research LIRNEasia
	 Mr. Christian Wilk ICT Expert Metacognition Consulting Thailand
11:30 – 12:15 hrs.	Session 2: Building e-Resilience: Enhancing the Role of ICTs for Disaster Risk Management in China
	• Presentation
	 Mr. Peter Lange Senior Analyst

	BuddeComm
12:15 – 13:30 hrs.	Lunch Break
13:30 – 14:30 hrs.	Session 3: Building e-Resilience: Enhancing the Role of ICTs for Disaster Risk Management in the Philippines and Sri Lanka
	• Presentation
	 Mr. Ranjit Singh Rye Assistant Professor, Department of Political Science, University of the Philippines Mr. Srigenesh Lekenethen
	 Mr. Sriganesh Lokanathan, Team Leader – Big Data Research, LIRNEasia
14:30-15:00 hrs	Coffee break
15:00-16:00 hrs	Session 4: Building e-Resilience: Enhancing the Role of ICTs for Disaster Risk Management, Country Case Studies
	• Presentation
	 Mr. Kanchana Thudugala, Programme Head E-services, Re-engineering Government Programme, Information & Communication Technology Agency of Sri Lanka, Sri Lanka
	 Prof. Guoyu Wang Chongqing University of Posts and Telecommunications, Chongqing, China





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