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**Asian Ministerial Conference on Disaster Risk Reduction 2016
New Delhi, India
02-05 November 2016**

Concept Note for Thematic Session

Event title	Multi Hazard Early Warning Systems: Increasing Availability of and Access to Multi-Hazard Early Warning Systems
Event code	THEM-10
Date and Time	Thursday, 3 rd November, 13.30-15.00
Venue/ Room no.	Dining Hall, Annexe, Vigyan Bhawan
Organizers	<p>Lead: ESCAP, WMO, WMO/ESCAP Panel on Tropical Cyclones Secretariat, ESCAP/WMO Typhoon Committee Secretariat</p> <p>Collaborators: India Meteorological Department, RSMC-New Delhi, RSMC-Tokyo, RIMES, Christian Aid, Practical Action, UMS</p> <p>Contact Details* (lead):</p> <p>Name: Mr. Sanjay Srivastava Designation: Chief, Disaster Risk Reduction Section Email id and phone number: srivastavas@un.org</p> <p>Organization name and address:</p> <p>UN-ESCAP, 8th Floor, UN Building, Rajadamnern Nok Avenue, Bangkok 10200, Thailand</p>
Session Objectives	<ul style="list-style-type: none"> • To promote regional cooperation in addressing shared disaster risk through sharing of experiences and lessons learnt from regional cooperation in addressing disaster risk; • To identify gaps and needs and to strengthen multi-hazard early warning systems in Asia and the Pacific, as in target (g) of the Sendai Framework; • To promote more accurate forecasting and warning services which are impact-based and in multi-hazard approach; and

	<ul style="list-style-type: none"> • To share best practices of last mile connectivity for multi hazard early warning system for end to end user.
<p>Background and context</p>	<p>The Asia-Pacific is the most disaster prone region in the world. Each year, natural disasters of many types strike a vast swath of the region, affecting millions of people and wreaking massive economic destruction. Many of the disasters in the region are also transboundary. The region hosts the world’s two most seismically active fault lines that cross many national frontiers. It has three major ocean basins where a cyclone developing in one basin can affect multiple countries simultaneously. Countries in the region also share rivers and river basins with floods regularly spreading across national boundaries. It is within this context of increasing impacts of cross-border disasters that Asia-Pacific countries have recognized building resilience to disasters as a priority underpinning sustainable development in the region. Establishing multi-hazard end-to-end early warning systems is one of critical element in building resilience in the region. In this regard, one of the seven global targets of Sendai Framework for DRR is <u>“substantially increase the availability of and access to multi-hazard early warning systems and disaster risk information and assessments to people by 2030”</u>.</p> <p>However, many early warning systems in Asia are operating in isolation or not part of an institutional mechanism with little connection to each other, and the mandate of warning communication is mostly limited within the country. In some of the systems the information is limited to authorities and communities. Nevertheless, effective early warning systems and regional cooperation mechanisms do exist in the region. Among others, the ESCAP/WMO Typhoon Committee (TC) and the WMO/ESCAP Panel on Tropical Cyclones (PTC) have played the roles of an intergovernmental body functioning in disaster risk reduction, fully support and implement the new Sendai Framework on Disaster Risk Reduction through sharing of knowledge and expertise in addressing impacts from tropical cyclones/typhoons and promoting multi-hazard early warning systems.</p> <p>In this regard, the session will give particular attention in promoting multi-hazard early warning systems as specified in target (g) of the Sendai Framework through sharing experiences, knowledge, and tools for early warning and monitoring of disaster risks. Specifically, the session will discuss regional cooperation to address shared disaster risks in Asia learning from over 40 years of experiences in sharing knowledge and expertise in the TC and the PTC. Experiences of early warning systems at the community level will be shared for warning information dissemination, capacity building and effective institutional mechanism at local level. It will also review the status, gaps and needs for effective and timely end-to-end multi-hazard early warning systems and discuss roles of the private sector in increasing the availability and access to multi-hazard early warning systems.</p> <p>Through the session, Asia-Pacific countries will be able to learn from the</p>

	<p>experiences of region in early warning of disasters and in promoting multi-hazard early warning systems. This will encourage constructive engagement among stakeholders and, more importantly, with governments and members of the private sector to support implementation of the Sendai Framework in the region.</p>							
<p>Session format and programme</p>	<table border="1"> <thead> <tr> <th data-bbox="376 465 517 510">Time</th> <th data-bbox="517 465 1350 510">Activity</th> </tr> </thead> <tbody> <tr> <td data-bbox="376 510 517 1144"> <p>25-30 minutes</p> </td> <td data-bbox="517 510 1350 1144"> <ul style="list-style-type: none"> • Opening remarks by H.E. Ms. Shamshad Akhtar, Under-Secretary-General of the United Nations, and Executive Secretary of ESCAP (tbc) • Welcome remarks by Mr. Xu Tang, Head of Water and Disaster Risk Reduction Services Department of the World Meteorological Organization (tbc) • Welcome remarks by Mr. Ghulam Rasul, Director General, Pakistan Meteorological Department, Secretary of WMO/ESCAP Panel on Tropical Cyclones • Welcome remarks by Mr. Yu Jixin, Secretary of the ESCAP/WMO Typhoon Committee • Keynote speech by Mr. Madhavan Nair Rajeevan, Secretary, Ministry of Earth Sciences (or Mr. Shri Kamal Kishore, Member, NDMA) </td> </tr> <tr> <td data-bbox="376 1144 517 2040"> <p>45-50 minutes</p> </td> <td data-bbox="517 1144 1350 2040"> <p>Panel discussions</p> <ul style="list-style-type: none"> • Moderator: ESCAP <p>Panelists</p> <ul style="list-style-type: none"> • Indian Meteorological Department: Mr. M. Mohapatra, Head, RSMC New Delhi, India Meteorological Department • Typhoon Committee: Mr. Shim Jaehyun, Director General, National Disaster Management Research Institute, Republic of Korea (Alternatively, Mr. Tsukasa Fujita, Head, RSMC Tokyo Typhoon Center, Japan Meteorological Agency) • RIMES: Mr. A.R. Subbiah, Director, Program Unit, Regional Integrated Multi-Hazard Early Warning System (RIMES) • Christian Aid: Mr. Ram Kishan, Regional Emergency Manager South Asia • Practical Action: Mr. Gehendra Bahadur Gurung, Head of Programme- DRR and Climate Change, Practical Action South Asia • UMS: Mr. Nagaraj Potti, Director of Product Management </td> </tr> </tbody> </table>		Time	Activity	<p>25-30 minutes</p>	<ul style="list-style-type: none"> • Opening remarks by H.E. Ms. Shamshad Akhtar, Under-Secretary-General of the United Nations, and Executive Secretary of ESCAP (tbc) • Welcome remarks by Mr. Xu Tang, Head of Water and Disaster Risk Reduction Services Department of the World Meteorological Organization (tbc) • Welcome remarks by Mr. Ghulam Rasul, Director General, Pakistan Meteorological Department, Secretary of WMO/ESCAP Panel on Tropical Cyclones • Welcome remarks by Mr. Yu Jixin, Secretary of the ESCAP/WMO Typhoon Committee • Keynote speech by Mr. Madhavan Nair Rajeevan, Secretary, Ministry of Earth Sciences (or Mr. Shri Kamal Kishore, Member, NDMA) 	<p>45-50 minutes</p>	<p>Panel discussions</p> <ul style="list-style-type: none"> • Moderator: ESCAP <p>Panelists</p> <ul style="list-style-type: none"> • Indian Meteorological Department: Mr. M. Mohapatra, Head, RSMC New Delhi, India Meteorological Department • Typhoon Committee: Mr. Shim Jaehyun, Director General, National Disaster Management Research Institute, Republic of Korea (Alternatively, Mr. Tsukasa Fujita, Head, RSMC Tokyo Typhoon Center, Japan Meteorological Agency) • RIMES: Mr. A.R. Subbiah, Director, Program Unit, Regional Integrated Multi-Hazard Early Warning System (RIMES) • Christian Aid: Mr. Ram Kishan, Regional Emergency Manager South Asia • Practical Action: Mr. Gehendra Bahadur Gurung, Head of Programme- DRR and Climate Change, Practical Action South Asia • UMS: Mr. Nagaraj Potti, Director of Product Management
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<p>Intended main outcome and Key messages</p>	<ul style="list-style-type: none"> • Establishing multi-hazard early warning systems is essential considering transboundary nature and cascading effects of hazards, as recommended by the Sendai Framework. • There are important early warning systems established and sound regional cooperation mechanisms in addressing cross-border hazards in Asia. However, gaps remained and regional efforts to establish multi-hazard early warning systems are needed considering cascading effects and transboundary nature of disasters. • Learning from the experience of the TC and the PTC, and from local and community levels, it is critical to promote regional cooperation in addressing 					

	<p>disaster risk shared among countries, in particular, in supporting for low capacity developing countries.</p> <ul style="list-style-type: none"> • More accurate forecasting and warning services is necessary to address shared disaster risk more effectively. In this regard, impact-based forecasting identifying the need of information users (agricultural sectors, disaster management agencies, communities and individuals in disaster prone area, etc.) should be promoted. Recent technological, policy and social developments support more effective and timely multi-hazard early warning systems. • End-to-end early warning systems that connect between space-based technology and the communities and the individuals in risk are critical as learned from regional and community experiences. • Engaging private sector is also needed to develop sound multi-hazard early warning systems in Asia, and communication, coordination and cooperation between the public and private sector are to be promoted. This includes considerations towards interoperability of the early warning platforms (ensuring technology can enable inter-departmental collaborations), last mile messaging using location data and finally understanding and leveraging the new and evolving technologies in early warning systems.
<p>List of Speakers and their interventions</p>	<ul style="list-style-type: none"> • H.E. Ms. Shamshad Akhtar is Under-Secretary-General of the United Nations and Executive Secretary of UN-ESCAP. Ms. Akhtar previously served as Governor of State Bank of Pakistan and Director General of Southeast Asia Department at Asian Development Bank (ADB), looking after the operations of five divisions in the Southeast Asia Department. She also worked as an Economist for 10 years in the World Bank's Resident Mission in Pakistan. She can provide insights on policy aspects of regional cooperation from her rich experience in international platforms. • Mr. Xu Tang is the director of the Water and Disaster Risk Reduction Services Department in the WMO. He previously served as the Director General of Department of Science, Technology and Education of China Meteorological Administration (CMA), member of WMO/CAS Advisory Working Group, and member of the Science Steering Committee for World Weather Research Programme (WWRP), among others. He has extensive experience in urban environmental meteorology and natural disaster prevention. He has published a number of scientific papers and several books on Urban Meteorology and Asian Monsoon. Mr. Tang can provide insights, from the WMO perspectives, on regional level collaboration for addressing tropical cyclones/typhoons, multi-hazard early warning systems, and impact-based forecasting. • Mr. Madhavan Nair Rajeevan is Secretary of the Ministry of Earth Sciences in the Government of India. Mr. Rajeevan previously served as Director in the Indian Institute of Tropical Meteorology in Pune, and as Adviser in the Ministry of Earth Sciences. He holds a Ph.D in Physics from the University of

Pune (1997), and his research specialized in monsoon variability and prediction; climate change and extreme weather events; prediction of mesoscale convective systems; cloud-radiation interaction and satellite applications; and aerosol radiative forcing. He will be able to share India's experience in promoting more accurate forecasting.

- Mr. Ghulam Rasul is Director General of Pakistan Meteorological Department (PMD) and Secretary of WMO/ESCAP Panel on Tropical Cyclones (PTC). He previously served the PMD as the Chief Meteorologist and Chief of Research and Development as well as Board Member in various related organizations including the Group on Earth Observations (GEO) Secretariat. Mr Rasul can share the regional cooperation experiences and lessons learned from the PTC. He can also provide valuable insights on experiences and challenges of building resilience to hydro-meteorological disasters at a national level.
- Mr. Jixin Yu is Secretary of the ESCAP/WMO Typhoon Committee (TC). Previously he served as Director-General of Department of International Cooperation in the China Meteorological Administration (CMA). His area of focus includes international cooperation and collaboration in exchanging knowledge, experience, and sharing results in metrological services. Mr. Yu can share his experiences from both the TC and the CMA to provide insights in international cooperation for improving metrological services.
- Mr. M. Mohapatra is Head of Regional Specialized Meteorological Centre (RSMC) in New Delhi of the India Meteorological Department (IMD). He has 20 years of experience in meteorological services and research. His main research interests include high impact weather events including tropical cyclones. As Head of RSMC New Delhi, he will be able to share his knowledge and experiences in building capacities of the PTC member States and in fostering regional cooperation.
- Mr. Jaehyun Shim is Director General of the National Disaster Management Research Institute (NDMI) of the Republic of Korea. Mr. Shim has, over the past years, highlighted the critical roles of science and technology can play for disaster risk reduction. He has also been active in promoting collaboration on disaster preparedness and mitigation of the TC member States and with academic institutions, and UN agencies including ESCAP. He is in an excellent position to share his experience in the TC, with insights in recent innovations in science and technology.
- Mr. A.R. Subbiah is Director of the Program Unit in the Regional Integrated Multi-Hazard Early Warning System (RIMES). He has 35 years of experience in drought mitigation and management, and more than 15 years of experience in establishing multi-institutional and multi-disciplinary mechanisms and building institutional capacities for generation and application of climate information at different timescales. He served as Reviewer of the IPCC Special Report on Managing Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX). He will be

	<p>able to provide with experiences and knowledge in promoting multi-hazard early warning systems in the region.</p> <ul style="list-style-type: none"> • Mr. Ram Kishan is Regional Emergency Manager- South Asia for Christian Aid. He has 17 years of experience in programme management, monitoring, evaluation and collaborative work with civil society organizations, government, corporate sector and international organizations on disaster risk reduction, climate change (especially linked to disaster risk reduction/agriculture), environments, gender, poverty and development. Mr. Kishan is currently leading Christian Aid Humanitarian work including preparedness, response and recovery linked to resilience building. He contributes to Christian Aid climate change programmatic and advocacy work in India and contributing to Christian Aid global work on the ongoing UN climate change talks. He has also initiated the cross boarder flood early warning project between India and Nepal, and he will be able to share regional experiences on cross-border early warning systems for natural hazards. • Mr. Gehendra B. Gurung is the Head of DRR and Climate Change Programme at Practical Action South Asia Office in Kathmandu. He has been working in development and promotion of community based Flood EWS. Initiating from watch-and-warn system based on the traditional knowledge and practices, currently he is working on localizing the satellite based weather forecasted information to increase the access of the vulnerable communities and individuals to the information. This includes assessment of risk and impacts of regional level forecast at local level and enhance the capacity of the communities. He is also working on cross-border Flood EWS between Nepal and India. His recent publication on “Flood EWS in Practice in Nepal” is in press. • Mr. Nagaraj Potti is Director of Product Management at Unified Messaging Systems (UMS) with over 13 years of experience in product development and management in the IT industry. He is heading the product management of UMS Alert, a multi-hazard, multi-channel early warning system that has seen more global implementations than any other entity, with respect to national population alerting systems. With extensive knowledge on different alerting technologies, risks, implementation challenges and mitigations, Nagaraj has played pivotal role in collaborating with the governments of Sweden, Greece, Cambodia, Netherlands and deploying population alerting systems in these countries. <p><u>Note: This is a tentative list and participation of each speaker is to be confirmed.</u></p>
Technical Equipment	Projector, computer, microphones, others: table for materials