

Note: These concept notes are as received from partner organizations



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

Concept Note for Thematic session

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| Event title | Strengthening the contribution of science and technology for disaster risk reduction: Emphasising the role of climate science, earth observation and information technologies for building resilience |
| Event code | THEM-18 |
| Date and Time | Friday, 4 th November, 13.00-14.30 |
| Venue/ Room no. | Annexe A, Ground Floor, Vigyan Bhawan |
| Organizers | <p>Lead: Shirish Ravan, United Nations Office for Outer Space Affairs</p> <p>Co-leads:</p> <ol style="list-style-type: none"> 1. Ali Ardalan, , Tehran University of Medical Sciences and Takako Izumi, APRU Multi-Hazards Program representing UNISDR Asia Science, Technology and Academia Advisory Group (UNISDR/ASTAAG); 2. Young-Jai Lee, Dongguk University, Korea 3. Emma Lovell, ODI - representing Climate and Development Knowledge Network (CDKN) <p>Contact Details* (lead): Name: Shirish Ravan Designation: Head, UN-SPIDER Beijing Office Email id and phone number: shirish.ravan@unoosa.org, +8613810922015 Organization name and address: UN-SPIDER Beijing Office, Guangbai road, Beijing, China</p> |
| Session Objectives | <ol style="list-style-type: none"> 1. Share the current initiatives/good practices of the involvement and contribution of science, technology and academia in DRR in the region 2. Highlight the importance of communicating science information, and |

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| | <p>the attribution of climate change to the occurrence of extreme weather events and its impacts (including a case study of the 2016 Indian heat wave and highlights from the Ahmedabad Heat Action Plan).</p> <ol style="list-style-type: none"> 3. Provide a summary of the role of earth observation in supporting the implementation of the Sendai Framework, through the use of practical examples 4. Showcase an online DRR platform for the global community of practice on resilience |
| <p>Background and context</p> | <p>The Sendai Framework calls for <i>“Academia, scientific and research entities and networks to: focus on the disaster risk factors and scenarios, including emerging disaster risks, in the medium and long term; increase research for regional, national and local application; support action by local communities and authorities; and support the interface between policy and science for decision-making.”</i></p> <p>Science and technology, including earth observation, geospatial and information technologies, have a lot to contribute to supporting the implementation of the Sendai Framework and the achievement of its targets. The UNISDR Science and Technology Conference on Disaster Risk Reduction was held in Geneva on 27-29 January 2016 during which participants discussed the roadmap, emerging needs, and key actions required to meet the expected outcomes of the Sendai Framework and ways of monitoring progress against the targets and indicators. The Asian Science and Technology Conference on Disaster Risk Reduction will be held on 23-24 August 2016 to discuss the regional roadmap for the Sendai Framework implementation in Asia. The working session organized on Earth observation at WCDRR in Sendai and the 5th UN-SPIDER conference organized in Beijing in 2015 focused on the role of Earth observation in supporting the Sendai Framework. The Office for Outer Space Affairs, through its UN-SPIDER programme, is promoting implementation of the Sendai Framework by offering technical advisory services, capacity building programmes and conducting outreach activities with a focus on the use of earth observation.</p> <p>A recent project called ‘Raising Risk Awareness’, is bringing together climate science, development, policy, planning and communications expertise from a range of countries to understand the contribution of climate change to the occurrence of extreme weather events in South Asia.</p> <p>In addition, the establishment of a web-based platform for collecting dispersed data and technology on climate change adaptation (CCA) and disaster risk reduction (DRR) was initiated based on the key agenda of the 4th AMCDRR: “strengthening capacities for DRR and CCA,” “sharing technology and information” and “integrating of DRR and CCA into development.” The technology sharing platform for the global network on disaster risk reduction defines a foundation that provides various case studies and its objective is to allow demanders, suppliers and experts to</p> |

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| | <p>share DRR technology. With this background, the session focuses on the following:</p> <ul style="list-style-type: none"> • Current practices and challenges in innovation, partnership, capacity development/higher education. Innovation does not include only high-technology and advanced science, but rather it also includes understanding the governance of disaster risks such as the social, political and economic aspects of risk creation and response; • Highlight the contribution of climate change to the occurrence of extreme weather events and their impacts by identifying how such information could help to bridge the science-communications-policy gap, and enable these countries/communities to become more climate resilient. • Highlight the experiences of a CDKN initiative which aims to tackle the heat threat in India, working with city level authorities in Ahmedabad. Science and communication have been central to the initiative’s success. • Key initiatives to promote the contribution of the role of earth observation, geospatial information and other space technologies in supporting the Sendai Framework, alongside a discussion about the role of Earth observation in monitoring indicators against the global targets of the Sendai Framework, which is a current concern for many countries; • Share good practice on the use of technology in disaster risk management and also feature some of the latest technologies in building resilience. |
| <p>Session format and programme</p> | <ol style="list-style-type: none"> 1. Introductory remarks - 5 minutes 2. Presentation: 1 hour <i>Due to large number of panellists, the co-leads will prepare consolidated presentation taking inputs from their panellists. So totally there will be 4 presentations. While presenting, co-leads may invite intervention from the concerned panellists, wherever necessary.</i> 3. Open discussion (based on questions to the panel) - 20 Minutes 4. Concluding remarks - 5 minutes <p>Panellists:</p> <ul style="list-style-type: none"> • Shirish Ravan, Head, UN-SPIDER Beijing Office, United Nations Office for Outer Space Affairs • Joy Pereira, AUEDM/SEADPRI-UKM • Rajib Shaw, Executive Director, the IRDR International Project Office • Fumihiko Imamura, Director/Professor, International Research |

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| | <p>Institute of Disaster Science (IRIDeS), Tohoku University</p> <ul style="list-style-type: none"> • Krishna Achuta Rao, Associate Professor, Centre for Atmospheric Sciences • Ms Emma Lovell, Senior Research Officer, ODI • Giriraj Amarnath, International Water Management Institute • Deo Raj Gurung, International Centre for Integrated Mountain Development • G S Rao, National Remote Sensing Centre, Indian Space Research Organisation • Young-Jai Lee, Dongguk University, Korea • Byung-Su -Baek, Climate Change Countermeasures Division, Ministry of Public Safety and Security, Korea • National Disaster Reduction Centre of China • Suhas Diwase, Director, Disaster Management, Maharashtra State, India. |
| <p>Intended main outcome and Key messages</p> | <ul style="list-style-type: none"> • Recommendations and commitment to strengthening the involvement of science and technology as well as academic community into the implementation of the Sendai Framework to be identified; • Demonstrate utility of earth observation technology in providing evidence based information to understand disaster risks and support decision making for DRR measures such as risk transfer; • Showcase integrated technological solutions, including earth observation, to complement efforts to enhance emergency response. Highlight the need for climate information and the impacts of climate extremes to be communicated effectively and in a timely manner to a range of audiences in order to raise risk awareness • Highlight the impacts of climate extremes on poverty and development options, and highlight a successful project tackling the risk of extreme heat • Promotion of the platform (www.pr4gdm.org) to share case studies, technologies and other expertise in DRR field to highlight contribution of science and technology involvement in DRR in Asian countries, and also to promote DRR investment and raise awareness on the importance of Science and Technology. |
| <p>List of Speakers and their</p> | <ol style="list-style-type: none"> 1. Shirish Ravan is Head of UN-SPIDER Beijing Office, the United Nations Office for Outer Space Affairs. shirish.ravan@unoosa.org |

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| <p>interventions</p> | <p>He promotes use of space based and geospatial information in all stages of disasters by offering technical advisory support and capacity building programmes to several countries in Asia, Pacific and Africa. He brings in vast experience in earth observation and geo-spatial technology applications in the areas of disaster, natural re-sources, biodiversity and ecosystem management etc. He was also stationed in Afghanistan to lead the Illicit Crop Monitoring Programme of United Nations Office on Drugs and Crime where he used earth observation technology to counter opium cultivation.</p> <p>Topic: Role of UN-SPIDER in supporting implementation of Sendai Framework.</p> <p>2. Giriraj Amarnath is Sub-theme leader for Water-related Disaster Risk Management at the International Water Management Institute, Sri Lanka. A.Giriraj@cgiar.org</p> <p>He is also the programme coordinator for IWMI’s UN-SPIDER RSO. His expertise is in flood and drought risk mapping and modelling, advance remote sensing data processing, hydrological modelling and water resources management with extensive research experience in Asia and Africa. Relevant past research include the statistical evaluation of local and regional trends in agriculturally-relevant rainfall indices, the prediction of flow in ungauged catchments, the assessment of environmental disturbance (land cover/land-use changes) effects on regional and local river discharges. He has over 13 years’ experience in research including 3 years in academic at University of Bayreuth, Germany.</p> <p>Topic: Harnessing the potential of earth observation data: Index-based insurance in flood proofing livelihoods and enhancing agriculture resilience in South Asia.</p> <p>3. Deo Raj Gurung, a Bhutanese national working as Remote Sensing Specialist for ICIMOD, is Disaster Lead for SERVIR Hindu Kush Himalaya Hub. deoraj.gurung@icimod.org</p> <p>He has been actively promoting space based tools and techniques to support disaster risk reduction in the region by developing case studies, trainings, coordinating cross-learning opportunities, and rapid response mapping. He and his team with support from external network like UN-SPIDER, SERVIR, and others provided rapid response mapping support during floods in Pakistan, Nepal, Myanmar, and India, and earthquake in Nepal. He functions as UN-SPIDER RSO coordinator, and Sentinel Asia focal point at ICIMOD.</p> <p>Topic: Space based application for DRR - lesson learned and challenges in Hindu Kush Himalaya (HKH) region.</p> <p>4. G S Rao is Head of Disaster Management Support Division of National Remote Sensing Centre (NRSC / ISRO) and also ISRO Executive</p> |
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Secretariat member in International Charter 'Space and Major Disasters'. srinivasarao_g@nrsc.gov.in

He provides space based disaster monitoring and management support to various Central and State Govt departments, particularly on floods and cyclones, since 1991. He has carried out several studies related to major floods and cyclones in the country like Uttarakhand, Jammu & Kashmir, Kosi breach, Odisha Super Cyclone, Cyclone Phailin, Cyclone Hudhud, tsunami-2004, river blockades on trans-boundary rivers, etc. He has taken up the lead responsibility of International Charter during 2015. He works closely with UN-SPIDER and organized UN/India Workshop in 2016.

Topic: Space based Disaster Management Support in India.

5. Prof. Joy Pereira, Principal Research Fellow, Southern Asia Disaster Prebention Research Initiative (SDEADPRI-UKM), Universiti Kebangsaan Malaysia.

She led the team that developed the National Policy on Climate change 2009 under the aegis of the Ministry of Natural Resources and Environment Malaysia. She is also actively involved in the Science to Action Initiative under the aegis of the Office of the Science Advisor to the Prime Minister of Malaysia and was Lead Author for the IPCC-AR5 Synthesis Report released in November 2014.

Topic: "Linking with DRR and Climate Change Adaptation at the local level"

6. Dr. Rajib Shaw, Executive Director of the Integrated Research on Disaster Risk program, IRDR. rajib.shaw@gmail.com

Previously, he was a Professor in the Graduate School of Global Environmental Studies of Kyoto University, Japan. He worked closely with the local communities, NGOs, governments and international organizations in the Asian countries. His research expertise includes community-based disaster risk management, climate change adaptation, urban risk management, and disaster and environmental education.

Topic: "Linking innovation to higher education for DRR"

7. Dr. Fumihiko Imamura, Director/Professor of Tsunami Engineering and director of the International Research Institute of Disaster Science(IRIDeS), Tohoku University.

He is an expert of tsunami modeling, mitigation planning and education/awareness. He is a secretary, international TIME-project (Tsunami Inundation Modeling Exchange) supported by IOC and IUGG Tsunami commission. His current research encompasses numerical tsunami simulation, warning systems, disaster prevention and evacuation systems. In addition to studying modern and ancient

tsunamis through field surveys and analysis of historical documents, the engineering simulation project is used to develop highly accurate quantitative tsunami warnings and assess characteristics of waterfront structures.

Topic: Effective collaboration among a science community, governments and the private sector: Lessons-learnt from the 2011 Great East Japan Earthquake and Tsunami

8. Krishna AchutaRao, Associate Professor, Centre for Atmospheric Sciences. akrishna@cas.iitd.ac.in

He is an Associate Professor at the Centre for Atmospheric Sciences, Indian Institute of Technology Delhi. His research has focused on using climate models to understand how earth's climate is affected by natural as well as anthropogenic factors and how it will impact natural and human systems. He has been associated with the Intergovernmental Panel on Climate Change (IPCC) since 2001 – most recently as a lead author on the Fifth Assessment Report. He also serves as a member of the CLIVAR Scientific Steering Group as well as on numerous national and international review panels.

Topic: Krishna will discuss the scientific basis for the attribution work and to provide the meteorological explanations of the events we focus on.

9. Emma Lovell, Senior Research Officer, ODI. e.lovell@odi.org

Emma Lovell is a Senior Research Officer in the Risk and Resilience Programme, ODI. She has an MA in Disasters, Adaptation and Development from King's College London. Her areas of expertise include disaster risk reduction, climate change, resilience, and work on post-2015 processes. She has advised and supported a range of UN agencies, civil society organisations, multilateral and regional organisations, and national governments on resilience and disaster risk management policies and strategies. Before ODI, Emma worked for United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) and the Asian Disaster Preparedness Center (ADPC), both in Bangkok, Thailand.

Topic: Emma will be introducing the Raising Risk Awareness project in Asia, an initiative which uses science to support different societies to understand the role of climate change in extreme weather events and prepare for future ones. She will also highlight the actions and initiatives implemented under the ground-breaking Ahmedabad Heat Action Plan (the first of its kind in South Asia), and the lessons learnt for other cities interested in replicating Ahmedabad's success.

10. Prof. Young-Jai Lee, Dongguk University koreaocm@gmail.com

He is a Professor in Dongguk University's Department of Management Information Systems in Korea. His research interest focuses primarily on

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| | <p>information management for national disaster risk management framework. As an expert in disaster information management, he served as the President of the Korea Business Continuity Planning Association (2008), Korean Society of Societal Security (2012), the vice president of The International Emergency Management Society (2005); and initiated various research projects with the Ministry of Public Safety and Security (MPSS), Korea to strengthen institutional and technical aspects of DRM in the country. Development framework model of the DRR technology and case study platform has been first introduced in the academic journal, Developing a Web-based platform for Sharing DRR Technology. Based on several consultative meetings with DRR experts and DRM practitioners, the research outcomes have been published as an academic paper titled, DRR Technology sharing and transfer through web-based platforms: Lessons Learned from Korean Studies.</p> <p>Topic: Introduction to DRR Technology Sharing Platform.</p> <p>11. Mr. Byung-Su Baek, Climate Change Countermeasures Division, Ministry of Public Safety and Security, Korea baekbysu@korea.kr</p> <p>Topic: Collect the participant's opinions.</p> |
| <p>Background document</p> | <p>Using climate science to inform post disaster Policy & practice in developing countries - http://cdkn.org/wp-content/uploads/2016/05/Raising-Risk-Awareness-briefing-note.pdf</p> <p>Addressing heat-related health risks in urban India: Ahmedabad's Heat Action Plan - http://cdkn.org/wp-content/uploads/2014/05/Ahmedabad_Inside_Story_final_web-res1.pdf</p> <p>Climate extremes and resilient poverty reduction - https://www.odi.org/publications/9609-climate-extremes-and-resilient-poverty-reduction</p> <p>Conference paper: United Nations International Conference on Space-based Technologies for Disaster Management - "Disaster Risk Identification, Assessment and Monitoring", Beijing, China, 23-25 October 2013 http://www.unoosa.org/res/oosadoc/data/documents/2016/aac_105/aac_1051102_0_html/AC105_1102E.pdf</p> |
| <p>Technical Equipment</p> | <p>Projector, computer, microphones, audio (for showing a video)</p> |