



# 第三届可持续发展大数据国际论坛

The 3rd International Forum on Big Data for Sustainable Development Goals

2023年9月6日-8日 中国 北京

## Session title: New Data Technologies for DRR Early Warning and Early Actions

**Session Co-organizers:** Integrated Research on Disaster Risk (IRDR), CAST-UN Consultative Committee on Disaster Risk Reduction, Digital Belt and Road (DBAR) Programme DRR Working Group

### Short Description

The Report of the Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015 – 2030 indicated that “new technology is helping overcome data gaps to enable better decisions”. This has been reflected in the DRR efforts of Sendai Target G “Increase availability and access to early warning systems and risk information”. The new and emerging technologies, including earth observation techniques, artificial intelligence and open science infrastructure, have the potential to provide more timely and reliable data for early warning. The progress in the development of multi-hazard early warning system (MHEWS) has been slow as one in three people globally is not adequately covered by any early warning systems. There is an increasing recognition on this global challenge and UN therefore has been calling for joint efforts in early warning and early actions.

### Objectives

The overall objective of this session is to provide a platform to share the innovations, insights, knowledge and experiences of new data technology for early warning and early actions. The participants will identify the challenges and opportunities for the intersectoral and interdisciplinary collaboration and practice required. The session will contribute to the Priority 5 “Harness technologies, data and knowledge for risk reduction” and Priority 6 “Support regional and national science and knowledge for policy and action” identified in the [A Framework for Global Science in support of Risk Informed Sustainable Development and Planetary Health](#) (ISC-UNDRR-IRDR, 2021, hereafter as “Research Framework”). The output of this session will be a concrete contribution to the follow-up actions for the Sendai Midterm Review, the implementation of the Research Framework and the inputs toward IRDR 2024 Conference.

### Expected Results

- Recommendations on the use of new data technology for the development of MHEWS.
- Suggestions and proposals on collaborative actions for future integrated research and policy supports.



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## Agenda

Time 17:00-18:30, September 6th, 2023 Room: 201 C

### Moderator:



**Yang Saini**

**Dr. Professor**

**School of National Safety and Emergency Management,**

**Academy of Disaster Reduction and Emergency Management, Beijing Normal University**

**Director, International Cooperative Research Center for Disaster Risk Reduction, Beijing Normal University**

Dr. YANG Saini is a professor at Beijing Normal University. She got her bachelor and master degree from Southeast University and PhD degree from University of Maryland. Her research interests include risk assessment and emergency management. She is the PI of more than twenty research projects and has published more than 100 papers in academic journals, including Nature Climate Change and Nature Communications. She is a member of the expert committee of the National Disaster Reduction Commission and a member of the Asia-Pacific Science and Technology Advisory Group of the United Nations Disaster Risk Reduction. She also serves as the editorial board of several international academic journals.

### Participants:

**Event 1 (17:00-17:05)**

**Brief opening by co-chair**

**Event 2 (17:05-17:15)**

**WMO-IOC efforts in MHEWS (pre-record)**





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**JIANG Long**

**Dr.**

**Technical Coordinator, WMO-IOC in-situ Observations Programme Support Centre (Ocean-OPS)**

Dr JIANG Long, is currently technical coordinator at World Meteorological Organization. Dr Jiang coordinates and provides technical supports to the global ocean observation efforts surface buoys and open ocean fixed stations that observe atmospheric and oceanographic conditions for weather forecasts and climate predictions. Prior to WMO, Dr Jiang was seconded expert at UNESCO's Intergovernmental Oceanographic Commission from China's National Marine Environmental Forecasting Centre on modeling and forecasting of coastal hazards. Mr Jiang holds a doctorate in hydrodynamic modeling at University of Oxford, UK and masters from Tsinghua University, China.

### Event 3 (17:15-17:25)

**Transforming disaster risk reduction: innovations in risk informed action & multi-hazard warning systems**



**Bapon Fakhruddin**

**Dr.**

**Water Sector Lead, Division of Mitigation and Adaptation, Green Climate Fund**

Dr Fakhruddin is the Water Sector Lead of Division of Mitigation and Adaptation, Green Climate Fund. He is an expert climate change risk assessor with 15 years' global experience in working on disaster risk and climate resilience projects. This experience is a major advantage in climate change adaptation and mitigation strategy development. His key areas of expertise are climate and hydrological assessment, early warning and emergency response, climate change adaptation, and capacity building. Dr Fakhruddin designed early warning and emergency response projects more than 25 countries in Asia and the Pacific. Dr Fakhruddin is currently work as a mentor and supervisor for post graduate study in disaster risk management in University of Auckland (UoA). He is a Science Committee Member of IRDR, Co-Chair for the Disaster Loss DATA and Risk Interpretation and Applications (RIA) Working Group of IRDR. He is also Co-Chair CODATA task group Linked Open Data for Global Disaster Risk Research (LODGD) and PSG member of the Coastal Inundation Forecasting Demonstration Project (CIFDP) and Open Panel of Commission for Hydrology Experts (OPACHE) of WMO.

### Event 4 (17:25-17:35)

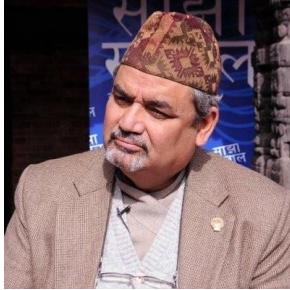
**The use of digital data and remote sensing for natural hazard and risk assessments and development planning in Nepal (tbc)**



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**Amod Dixit**

**Dr.**

**President, National Society for Earthquake Technology - Nepal (NSET), Nepal**

Dr. Amod Mani Dixit (Nepal) is a leading earthquake disaster management professional, involved in this field for the past 25+ years. His work experience includes about 18 years of government service (Department of Mines and Geology, Nepal), 11 years of parallel consulting service to an engineering consulting firm, and 20 years with National Society for Earthquake Technology (NSET), a non-governmental organization established by himself and his team members back in 1993. Dr. Dixit has an authored/co-authored publication record of about 70 papers including national and international conference proceedings, books and book chapters, and renowned international journals. He and his organization NSET have not only contributed to Nepal and Nepalese community but also have made a great name in the world in the field of earthquake disaster risk management.

### Event 5 (17:35-17:45)

**FuXi: the first machine learning forecasting system with comparable performance to ECMWF ensemble mean for 15-day global weather forecast**



**ZHANG Feng**

**Dr. Professor**

**Department of Atmospheric and Oceanic Sciences, Fudan University, China**

Dr. ZHANG Feng received the M.S. degree in atmospheric physics from the Chinese Academy of Meteorological Sciences, Beijing, China, in 2010, and the Ph.D. degree in meteorology from the University of Chinese Academy of Sciences, Beijing, in 2013. From 2016 to 2019, he worked as a Japan Society for the Promotion of Science (JSPS) Fellow with Tohoku University, Sendai, Japan, and a Humboldt Research Fellow with the Remote Sensing Technology Institute, German Aerospace Center, Wessling, Germany. Since 2020, he has been a Professor with the Department of Atmospheric and Oceanic Sciences, Fudan University, Shanghai, China. He is also a Principal Investigator with the Shanghai Qi Zhi Institute, Shanghai. His research interests include radiative transfer theory, remote sensing, and machine learning in atmospheric sciences.



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### Event 6 (17:45-17:55)

#### Early warning in the urban context (tbc)



**Nurfashareena Muhamad**

**Dr.**

**Head, Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM)**

**Institute for Environment and Development**

**Universiti Kebangsaan Malaysia**

Dr. Nurfashareena Muhamad is a Research Fellow in Universiti Kebangsaan Malaysia's Southeast Asia Disaster Prevention Research Initiative (SEADPRI-UKM). Her expertise is on optimizing the use of geospatial technology in decision support systems to facilitate knowledge-based decision making for landuse planning and development control to reduce the risk of disasters. She was a coordinator for a pilot project supported by the Newton-Ungku Omar Fund, which developed a prototype multi-hazard platform for managing and communicating risks to enhance disaster resilience in Kuala Lumpur in collaboration with partners from the UK and Malaysia. She is also involved in an IDRC funded project to develop a multi-hazard open access system for selected local areas in Malaysia and Cambodia, where information from several global databases will be blended with crowd sourced information. The project involves intensive capacity building to mobilize social entrepreneurs in the region.

### Event 7 (17:55-18:05)

#### Some progress of & MHEW system in China



**WANG Tun**

**Dr. Professor**

**Director, Institute of Care-life, China**

Dr. WANG Tun is a National level overseas high-level expert, a prof. of Sichuan University, the director of Multi-Hazard Early Warning Lab. of Sichuan Province, the director of Institute of Care-life, China. After 2008 Wenchuan Earthquake, Dr. Wang



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focusing on earthquake early warning (EEW) and then MHEWS for 15years, and help China establish advanced EEW system and EEW service, and set up a MHEWS in China, which has been triggered by over 1000 natural disasters including destructive earthquakes, landslides, mudslide, flood, wild fires, etc.

**Event 7 (18:05-18:25)**

**Q&A and discussion from the audience**

**Speaker:**

**All**

**Event 8 (18:25-18:30)**

**Q&A and discussion from the audience**

**YANG Saini**

**Secretary-General of UNDRR APSTAG**