



Summary of FBAS DRR Session 2022

- 1 The Disaster Risk Reduction Session at FBAS 2022, which was held on 8th September 2022 in a hybrid format, was co-organized by Integrated Research on Disaster Risk (IRDR) and the Digital Belt and Road Program (DBAR) Disaster Risk Reduction Working Group. The topic of this session focused on Priority 5 of the Global Risk Research Framework¹ "Harness Technologies, Data and Knowledge for Disaster Risk Reduction".
- 2 The session was co-chaired by Prof. Rajib Shaw from Keio University and Prof. HAN Qunli from IRDR. Seven presentations were delivered, sharing the national experience, regional and global solutions and services. The concept note including the information of presenters is attached as Annex 1.
 - 2.1 Dr. LI Suju elaborated the utilization of satellite-based earth observations for risk element monitoring and early warning network of China national emergency system, by showcasing the applications on urban flood, glacier changes, and wildfires. She underlined that satellite remote sensing will make a greater contribution for better understanding disaster risk along with the undergoing innovative development.
 - 2.2 Dr. Atta-ur-Rahman presented the transboundary hydrology, climate change and its impact on flood factors in the Kabul-Swat floodplain, Hindu Kush region. He called for effective mechanism by using technology innovations of forecasting, early warning, emergency response, adaptation and mitigation to minimize the transboundary flood impacts.
 - 2.3 Dr. Amod Mani Dixit introduced that the DesInventar tool, the open-source database and models for stakeholders applied in Nepal and the contributions toward the national DRM policy and planning. He is proud that such collaboration in the use of digital technology can deliver greatly in understanding risk, in developing mitigative policies and plans, and, most importantly, in enhancing local technical and institutional capacities.
 - 2.4 Prof. Deepthi Wickramasinghe demonstrated the importance of significant role of using geospatial information to understand socio- economic and environmental aspects of disasters in Sri Lanka. She presented a strategy to identify the scopes, scales and mechanisms on how to gather and use data and information

¹ https://www.irdrinternational.org/knowledge_pool/publications/888



towards reducing disaster risk. She also highlighted the importance of integrating citizen science into DRR decision making.

- 2.5 Dr. Nurfashareena Muhamad showed the case on an open access satellite data for flood extent identification in heavily urbanized regions in Malaysia. She illustrated the availability of open access satellite data and satellite images can offer opportunity to enhance real-time situation management, disaster response, and subsequent post-event assessment.
 - 2.6 Dr. Bapon (Shm) Fakhruddin identified the challenges in disaster archives and loss data collection and the barriers to data interoperability. He believes that risk interpretation, with standardized loss data, can be used in improving loss forecasting and historical loss modelling and would provide valuable opportunities to future policy, practice, and investment.
 - 2.7 Prof. Wang Juanle introduced how to retrieve information and knowledge for DRR using data mining technologies. He presented the open data and knowledge services provided by IKCEST of UNESCO to contribute to the DRR and the international cooperation.
- 3 The Co-chairs closed the session and summarized the take-home messages.
 - 3.1 The session emphasized the importance of data and technology in the context of dynamic risk landscape.
 - 3.2 The clients of DRR data service matters greatly. First of all is the people from the communities. They need to get benefit from the data sharing and be involved in the process. Second is the national governance who make the decisions. This requires enhanced technical capacity. Third is the regional sectors who deal with the transboundary risks.
 - 3.3 Data for the remote areas needs to be produced and provided in particular.
 - 3.4 Open data needs the governance sectors to be on board to ensure the legality.
 - 3.5 Citizen science has an important role in DRR and sustainable development.
 - 3.6 Data is not just about numbers. The sound DRR data is the base for reliable DRR information and knowledge for action.
 - 4 The presentations and discussions of this session confirmed that the DRR community needs to further harnessing technology, data and knowledge to achieve an inclusive, safer and sustainable development, especially in the understanding that:
 - 4.1 It is important to increase the use of the big earth data, the open-source and open-access platforms, and the related data technologies to improve understanding of



disaster risks in the dynamic, systemic landscape and strengthen the capacity required.

4.2 Science-policy-social interface in DRR can be enhanced through better access and sharing of data, technologies and knowledge management, with particular attention to the needs and practical solutions at the national and local governance levels and grass-root communities.

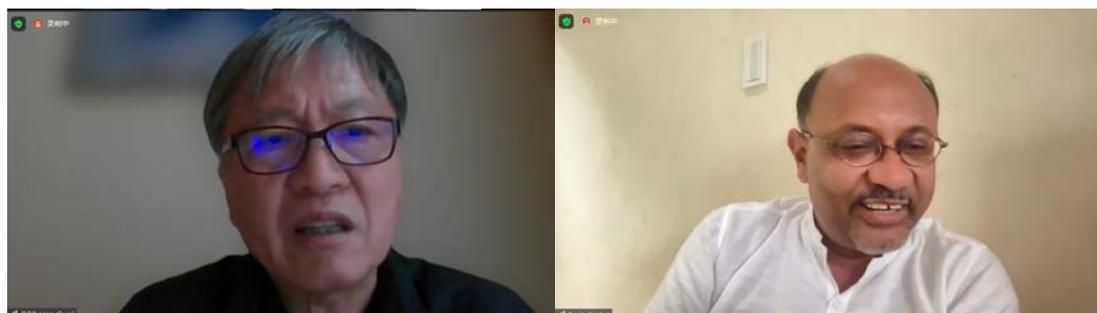
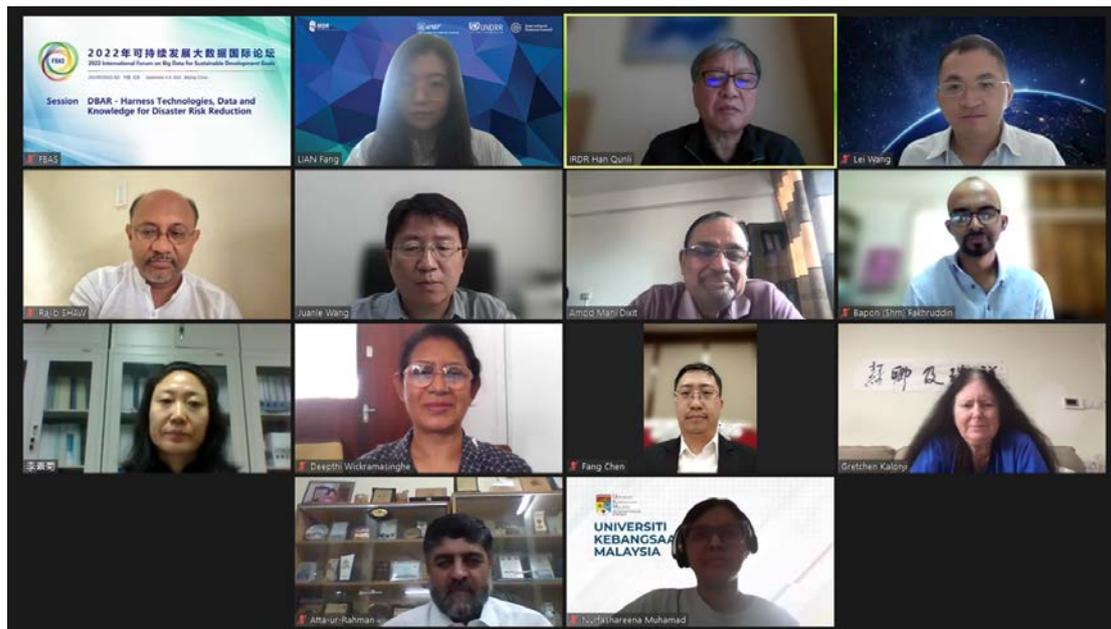
4.3 It is important to accelerate DRR data technology transfers in particular among the young professionals and civil societies to improve the overall DRR capacity. DBAR and IRDR should facilitate such development process by organizing technical training and exchange, in cooperation with other DRR data stake holders.

5 The co-chairs expressed their great appreciations to all the speakers and audiences for this session.

6 The record of this session is available at:

https://www.irdrinternational.org/knowledge_pool/courses/916

7 The photos at the session are as followed.



 **2022年可持续发展大数据国际论坛**
2022 International Forum on Big Data for Sustainable Development Goals
2022年9月6日-8日 中国 北京
September 6-8, 2022 Beijing, China





Annex 1 Concept note

Disaster Risk Reduction session at FBAS 2022

Topic of the session:

Harness technologies, data and knowledge for risk reduction

Date and time:

14:00-15:30 (Beijing Time, UTC+8), September 8, 2022

Background and Rationale:

2022 International Forum on Big Data for Sustainable Development Goals (FBAS) will be held on 6th -8th, September, 2022 in a hybrid format with the main physical venue located in Beijing, China. The theme of the Forum is “Digital Technology Empowers the Achievement of Sustainable Development Goals”, with discussions centering on emerging technology solutions to the implementation of the sustainable development goals. The Forum aims to promote the sharing of big data methods, technologies, and knowledge for sustainable development, and build a global academic exchange platform for the UN Technology Facilitation Mechanism to support sustainable development goals. For more details and registration, please visit at <https://fbas2022.scimeeting.cn/en/web/>.

The Disaster Risk Reduction Session at FBAS 2022 will be co-organized by Integrated Research on Disaster Risk (IRDR) and the Digital Belt and Road Program (DBAR) Disaster Risk Reduction Working Group. The topic will focus on Priority 5 of the Global Risk Research Framework² "Harness Technologies, Data and Knowledge for Disaster Risk Reduction".

Guiding questions:

- How can the technologies be better used to support the SDGs and risk reduction?
- How to develop an open access digital platform to promote transformative action, knowledge sharing and social resilience?
- How can data technology enhance integrated, trans-disciplinary and multi-sector cooperation and decision-making in the diverse development context?

Expected Outcome

The session is expected to bring new insights and recommendations to DRR communities at large regarding harnessing technology, data and knowledge for DRR and SDGs, which has been identified in the Global Risk Research Framework. The outcome of this session will also contribute to the discussions at the Asia-Pacific Ministerial Conference on Disaster Risk Reduction (APMCDRR) to be held in Brisbane (September 2022).

Structure of the Session

8 min for each speaker and 30 min for questions and discussions

² https://www.irdrinternational.org/knowledge_pool/publications/888



Co-Chairs:

Rajib Shaw, Professor, Keio University
HAN Qunli, Executive Director, IRDR

Speakers and presentations:

The order of presentations flows from national experience to regional and global solutions and services.

1. Satellite-based Earth Observations for Integrated Disaster Risk Reduction in China

Suju LI, Director, Satellite Application Department, National Disaster Reduction Center of China, Ministry of Emergency Management of PRC

2. Transboundary hydrology, climate change and its impact on flood factors in the Kabul-Swat floodplain, Pakistan

Atta-ur-Rahman, Chairman, Department of Geography and Geomatics, University of Peshawar-Pakistan

3. Hazard Assessment and Exposure Modeling Using Digital Data in the Himalayas: An Experience of Nepal

Amod Mani Dixit, National Society for Earthquake Technology-Nepal (NSET)

4. When technology and citizen science meet to manage disaster risk: opportunities and challenges

Deepthi Wickramasinghe, Professor, University of Colombo, Sri Lanka

5. Potential of an Open Access Satellite Data for Flood Extent Identification

Nurfashareena Muhamad, SEADPRI-Universiti Kebangsaan Malaysia

6. Disaster Loss Data Accounting to Enhance Impact Based Early Warning and Early Actions

Bapon (Shm) Fakhruddin, Technical Director, Tonkin+Taylor

7. Knowledge Service Approach for Disaster Risk Reduction

Juanle WANG, Professor, The Disaster Risk Reduction Knowledge Service Sub-Platform of International Knowledge Centre for Engineering Sciences and Technology under the Auspices of UNESCO