Conference Report

AGI GeoResilience Sympoisum 2023

Theme:

Harnessing Geospatial Technologies for Disaster Management

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INDIA HABITAT CENTRE, NEW DELHI

ASSOCIATION OF GEOSPATIAL INDUSTRIES

Conference Proceedings

Inaugural Session: Building GeoResilience

Shri Narendra Singh Bundela, IPS, Inspector General, NDRF, addressing the gathering in the Inaugural Session of the AGI GeoResilience Symposium 2023

Welcome Address	Shri Pramod Kaushik, President AGI and MD, Hexagon India
Special Address	Shri Narendra Singh Bundela, IPS, Inspector General, NDRF
Special Address	Dr. Mrutyunjay Mohapatra, Director General of Meteorology, IMD

AGI President Shri Pramod Kaushik opened the conference by highlighting the critical role of Geospatial technologies in disaster management. Drawing from recent incidents in Sikkim, Himachal Pradesh, and Uttarakhand, he highlighted the integration of Geospatial technologies with various data sources for predicting and preventing disasters. Geotechnical and geodetic sensor data, which detect millimeter-level displacements, can inform Standard Operating Procedures (SOPs) for evacuations or identify vulnerable areas. Closing his address, Shri Kaushik suggested that AGI, as an industry body, can offer comprehensive solutions to organizations like NDRF and IMD by leveraging the expertise of its member-based community focused on Geospatial technologies.

Shri Narendra Singh Bundela, IPS, Inspector General, NDRF, emphasized the importance of collaboration among various stakeholders in disaster management. He highlighted NRDF's role in training, capacity building, planning, and community awareness programmes. He emphasized the importance of funding and long-term viability when for technology adoption. Acknowledging the increasing relevance of Geospatial technology in recent disasters, Shri Bundela praised the NDEM portal by NRSC for its comprehensive information on disasters in India and BISAG's use of Geospatial technologies for effective resource management.

Dr. Mrutyunjay Mohapatra, Director General of Meteorology, IMD, emphasized the critical role of multi-hazard early warning systems and how early warning must be linked to early action. He stressed the importance of high-resolution imagery and georeferencing for effective data utilization by both the public and disaster managers. He highlighted IMD's use of advanced technologies in disasters like Cyclone Fani. He introduced the Dynamic Composite Risk Atlas (DCRA), a joint development by IMD and NDMA, and a hazard-based warning system with village-level risk quantification.

Panel Discussion: Data-Driven Approach to Disaster Management

Moderator	Dr. A.K. Gosain, Emeritus Professor, IIT Delhi
Eminent Contributor	Dr. Surya Prakash, Head, Geo-Meteorological Risks Management Division, NIDM
Panelists	Ms. Srilakshmi P, Head - EDSS, DMSG, NRSC, ISRO
	Dr. Anand Kumar Pandey. Senior Principal Scientist, NGRI
	Mr. Vinaybabu Adimulam, National Head BD & Strategic Accounts, Hexagon India
	Mr. Vijay Kumar, Senior VP and Chief Technology Officer, Esri India

Panel Discussion on A Data-Driven Approach to Disaster Mitigation at the AGI GeoResilience Symposium 2023

Key Takeaways

Current Status and Challenges: Despite government-initiated efforts to bring data to the ground for disaster management, the lack of data visibility is a consistent challenge. Most data is available as metadata only.

Relevance of Geospatial Technologies: Disaster management's planning, response, and recovery phases require Geospatial data from various sensors and technologies. For instance, Geospatial technologies provide crucial hydrological models and rainfall forecasts for riverine flood prediction. Credible information bases and precise, revised, and updated data using Geospatial technologies are crucial, noted NIDM.

Recent and Ongoing Developments: NRSC is working on a National Database for Emergency Management to integrate geospatial databases, decision-support tools, and information dissemination. NGRI, which focuses on subsurface characterization using technologies like SAR interferometry, helped analyse the Joshimath and Chandigarh disasters to help understand subsidence and aquifer behavior.

Industry Involvement: Effective involvement of the industry in disaster management is a must. Data produced with public money should be free for everyone to use,

promoting a collaborative and competitive environment. Industry representatives highlighted the importance of multi-agency coordination in disaster management, domain-specific data requirements, and custom tools for different users.

Open-House Discussions and Closing: The way forward highlighted three critical needs: an integrated platform for disaster databases and training, ensuring affordability of technology, and public awareness of technological advancements. The panel concluded with a focus on industry involvement, improved data accessibility, and the need for continuous improvement in policies and initiatives.

Panel Discussion: Advancing Disaster Response and Recovery with Geospatial Technologies

Moderator	Dr. Ravindra Gavali, Head, CNRM, CCC&DM, National Institute of Rural Development & Panchayati Raj
Panelists	Mr. Ashish Kumar Jena, OAS, Joint Special Relief Commissioner, Government of Odisha
	Dr. Milap Punia, Centre for the Study of Regional Development, School of Social Sciences, Jawaharlal Nehru University
	Mr. Sreeramam GV, CEO, NeoGeoInfo Technologies
	Ms. Mitika Garg, Senior Solutions Engineer, Oracle

Key Takeaways

Technology and Capacity Go Hand-in-Hand: The panel emphasized the critical role of early warning systems and response-related technology in disaster management. Villagers are often the first responders, and building their capacity is essential for effective disaster response.

Need for Community Involvement: Technologies should be adaptable locally by equipping volunteers from disaster-prone and nearby areas. India is making strides with climate-related resilience technologies, such as automated weather stations linked to agro-advisory systems. Government schemes may be further integrated to enhance disaster and climate resilience at the local level.

Panel Discussion on Advancing Disaster Response and Recovery with Geospatial Technologies at the AGI GeoResilience Symposium 2023

State Experiences and Challenges: Odisha's disaster management experience was discussed, especially the transition from the Super Cyclone in 1999 to the improved response in 2019's Cyclone Fani. However, challenges like data possessiveness, lack of interoperability, and accurate positional data continue.

Role of Geospatial Technologies: Various technologies like GNSS, drones, satellites, and LiDAR must be integrated for effective disaster management. An integrated approach can help solve on-the-ground problems and ensure timely and accurate data for managing disasters. A unified GIS system with a legal framework for data democratization is the need of the hour.

The Way Forward and Closing Thoughts: A consortium of Geospatial data holders must be formed to facilitate data democratization and reduce data duplication. Capacity building should be initiated at the grassroots level. Establishing standards in software and data sharing is equally pivotal for seamless collaboration. While the government has a major role, the focus should be local solutions with local involvement. The discussion concluded by underlining the importance of a strong foresight to effective disaster response and recovery.