PARLIAMENT QUESTION: Real-Time Data Sharing

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The real-time communication channels that exist between India Meteorological Department (IMD), Indian National Centre for Ocean Information Services (INCOIS), National Centre for Seismology (NCS), National Disaster Management Authority (NDMA), various scientific institutions such as Indian Space Research Organization (ISRO) and State Governments for data sharing. It is also important to mention that IMD and NCS –MoES share real-time meteorological and Earthquake data respectively with ISRO, NDMA and States in 24/7 basis. Information provided by IMD related to disasters, covering observations, forecasts and warnings down to the district level, disseminated through APIs, CAP, email, SMS, WhatsApp and direct coordination. INCOIS provides multi-hazard early warnings for oceanic events like tsunamis and associated storm surges, high waves, etc. INCOIS in coordination with IMD also exchange data and issue joint bulletins during cyclones. Warnings are shared with NDMA and State Governments via multiple channels, Mausam and Samudra App, including NDMA's CAP-based SACHET system. NCS operates the national seismological network round the clock, detecting earthquakes and estimating earthquake parameters and sharing parameters with disaster management authorities using Unified Dissemination system (UDS), including through BHUKAMP APP to different stakeholders in real-time mode.

NDMA and BIS have issued guidelines for Seismic Retrofitting of Deficient Buildings and Structures. The National Program for Capacity Building in Earthquake Risk Mitigation emphasizes safety audits and retrofitting of life-saving buildings such as schools, hospitals and other critical facilities. While guidelines and budget allocations are in place, the pace of implementation has been constrained by factors such as limited financial resources, gaps in technical expertise, lower prioritization at certain levels and inadequate public and institutional awareness. Efforts are, however, underway to address these challenges and the situation is expected to improve with enhanced capacity-building, better coordination and sustained focus on the issue.

INCOIS provides ocean information and multi-hazard early warning services, including alerts for tsunamis, storm surges, high waves, swell surges and strong ocean currents during extreme oceanic conditions and advisory services through multiple communication channels, including SMS, social media, email, website, SACHET platform, WhatsApp groups, Telegram channels and mobile applications etc. to the stakeholders.

Community-Based Disaster Risk Reduction Guidelines (Prime Minister's 10-point Agenda on DRR-2016) focus on regular public education through hazard mapping, regular drills and awareness campaigns by involving IMD, NCS, INCOIS, NCCR, NCPOR and ISRO for technical and scientific feedbacks to public of different age groups as the capacity building programs for disaster-related

preparedness for both Geophysical and Hydro-meteorological and Cryospheric (GLOF) disaster events in the country. NDMA conducts nationwide drills involving all age groups, complemented by educational programs on TV and radio to reach grassroots communities. Disaster-related information including earthquakes, tsunamis and weather alerts is disseminated through institutional websites, mobile apps, SMS alerts, and social media platforms such as X, Instagram and WhatsApp. NCS & INCOIS strengthens Earthquake and tsunami preparedness through workshops, training programs and annual mock drills in coordination with NDMA, Schools, SDMAs and NIDM as well as with coastal State Disaster Management Agencies to reach to the first responder or at grass root level. It also leads the UNESCO-IOC "Tsunami Ready" programme in India, with Odisha achieving recognition for 26 coastal villages, marking a significant milestone in building coastal resilience.

INCOIS is recognized as a Tsunami Service Provider by UNESCO-IOC's Tsunami Warning Network, serving the Indian Ocean region and collaborating with other countries for marine hazard alerts and capacity building. Through the MoES–NOAA partnership, India engages in oceanographic data sharing and joint research, while MoES also strengthens global seismic data cooperation. NCS works with the Global Seismic Network, International Seismological Commission (ISC), Russia and other agencies of Japan and Taiwan and INCOIS for data sharing. Similarly, IMD disseminates data through multiple communication channels, including Application Programming Interfaces (APIs), the Common Alert Protocol (CAP), email, FAX, SMS, WhatsApp groups and attending telephonic discussions/virtual meetings and coordination. Similarly, IMD partners with national and international agencies to enhance disaster forecasting. INCOIS receives real-time data from 17 dedicated broadband seismic stations of NCS, 25 other national stations and about 400 international stations, enabling accurate detection of tsunamigenic earthquakes and the timely issuance of tsunami early warnings.

This information was given by Dr. Jitendra Singh, Union Minister of State (Independent Charge) for Science and Technology, Earth Sciences, MoS PMO, MoS Personnel, Public Grievances & Pensions, Department of Atomic Energy and Department of Space, in an oral reply in the Lok Sabha today.

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