Space System based Disaster Management Support

Madam Chair and Distinguished delegates,

Indian Space Research Organisation (ISRO) has implemented a Disaster Management Support Programme (DMSP) for ensuring space based inputs for management of disasters such as Cyclones, Floods, Landslides, Earthquakes, Forest Fire and Drought, by respective nodal Ministries/ Departments in India.

Remote sensing data, Satellite Communication & Navigation services, and in-situ observation network contribute for disaster management support. These inputs are used for Hazard; Vulnerability & Risk assessment, development of early warning models, monitoring & damage assessment, relief; rescue & rehabilitation, etc.

As part of the DMSP, a Decision Support Centre (DSC) is established for dissemination of space based products and services. The National Database for Emergency Management (NDEM) is a suite of multi-scale database & associated decision support tools, and web-portals such as Bhuvan, MOSDAC i.e. Meteorological and Oceanographic Satellite Data Archival Centre and North East Region Disaster Risk Reduction [NER-DRR] are also being used for disaster management support.

Madam Chair,

ISRO prepared the Flood Affected Area Atlas of India using satellite data, depicting cumulative flood inundation information during the last 25 years. In 2023, 14 States witnessed major floods, and were monitored & mapped near-real time using satellite data. About 260 flood inundation maps & value added products were disseminated to the disaster management departments. Flood alerts were provided for the concerned State Disaster management organisations during the flood season in 2023 for Godawari, Tapi and Brahmaputra basins.

Madam Chair,

ISRO released the landslide Atlas of India covering about 80,000 landslide records over the last 25 years. The experimental landslide early warning system for rainfall triggered landslides is being upgraded by integrating slope movement captured through SAR Interferometry.

Satellite-based, near-real time active forest fire detections were done 6 to 8 times daily from February to June, and were disseminated to the central & state nodal organizations for validation and management. Forest fire vulnerability mapping and burnt area mapping were also carried out.

Cyclogenesis prediction, cyclone monitoring, and forecasting of track; intensity and landfall were done for the Topical Cyclones such as Biparjoy and Michaung.

The monitoring of the cloud-to-ground lightning is being carried out through the lightning detection sensor network. Numerical weather prediction based lightning nowcast system is developed for the NER [North Eastern Region], assimilating the ground based lightning data.

Madam Chair,

ISRO contributes to the Satellite Aided Search and Rescue (SASAR) Programme, which provides operational services to the users in India and seven neighbouring countries. During 2023, a total of 604 alerts were received and search & rescue (SAR) supports were provided to 9 distress incidents in Indian service area which contributed in saving 22 human lives.

Madam Chair,

During 2023, ISRO responded to 19 Emergency Observation requests from 11 countries in South East Asia Pacific region with 48 IRS satellite datasets.

ISRO conducted a webinar on Space Technology for Disaster Risk Management for participants of IORA [Indian Ocean Rim Association] member countries for creating awareness on the potential of space based inputs for disaster risk management.

Madam Chair,

India will continue to extend its support and cooperation on the use of Space Technology for Disaster Management at Global level.

Thank you Madam Chair and distinguished delegates.