

India

Agenda Item – 9

Space system based Disaster Management Support

Madam Chairperson and Distinguished delegates,

The Disaster Management Support (DMS) Programme of ISRO is continuing to provide aero-space based information, communication and navigation support to the country, during the different phases of the disaster cycle and also space based information support to the foreign countries for disaster response. During 2019, the disasters faced by the country were major floods in 14 States, major forest fires in Karnataka State and one cyclone over Odisha State.

Madam Chairperson,

During 2019, India witnessed major floods in 185 districts of 14 states, during June to September. All the major flood affected states like Bihar, Assam and others were monitored using satellite data and about 145 flood maps, progression & recession maps and 110 value added products were disseminated to the concerned departments to support in rehabilitation, in near real time mode. In addition, ISRO activated International Charter and Sentinel Asia and obtained satellite data from various available sources for providing regular updates on the flood situation in the State, which was used for relief operations. During very severe cyclonic storm 'FANI', ISRO supported Odisha State, by providing value added products on damage assessment. Near-real time forest fire detections are done daily 6 to 8 times during February to June every year, and are used as inputs for ground teams managing forest fires. Major Forest fire in Bandipur district, Karnataka State was monitored and inputs were provided.

Madam Chairperson,

Flood early warning alerts were given to Andhra Pradesh State Department located in South India, during floods in the Godavari river through web-enabled flood forecast system of the Godavari River. Similarly, flood early warnings were disseminated to Assam Government, in the North-East India, during floods in Brahmaputra and its tributaries, under the project FLEWS (Flood Early Warning System). Towards disaster preparedness, Flood hazard atlas of Odisha State was prepared using the historic satellite data and released in 2019. Odisha Govt. appreciated the support of ISRO. ISRO has also imparted training to Government officials, on use of space technology for Disaster Risk Reduction.

Madam Chairperson,

To leverage the capability of the fully functional NavIC (Navigation with Indian Constellation) constellation along with its messaging component, ISRO has developed a NavIC Messaging Receiver (NMR) employing the IRNSS-1A spacecraft for broadcasting emergency warning messages related to impending disasters such as high wave, cyclone and tsunami, specifically for fishermen venturing into deep sea (> 200 nautical miles). Towards this, ISRO collaborated with nodal national organisations (INCOIS - Indian National Centre for Ocean Information Services) for providing the warnings in a specific format and developed a mobile-App for the fisherman to know the boat position in geo-spatial map and to receive the messages through the NMR. The App has a feature of providing messages in vernacular languages of Indian coastal states thereby enabling fishermen to read in their local language along with voice alerts. The receiver technology is transferred to six industries for mass production after duly addressing the feedback from the pilot field trials conducted in the Indian state of Kerala during January 2018. The units are under field trials in various coastal states of India. Based on the feedback from the fishermen community, the system has been further updated and ready for operationalisation. India has also developed a Distress Acknowledgement Message system for the fishermen's Safety of Life. This system would shortly operationalised and deployed across the Indian Coast.

Madam Chairperson,

The Satellite Aided Search and Rescue (SASAR) Programme has been providing operational services to the users in India and seven neighbouring countries for the last 23 years with the aid of GEO and LEO ground segment located at Bengaluru & Lucknow, and GEO space segment at 74° E Longitude. The programme has so far supported rescue of 2192 lives in 144 SAR incidents till date and 45 lives out of 9 incidents during the last one year.

ISRO is in the process of establishing MEO-ground segment at Bengaluru.

Madam Chairperson,

ISRO as the signatory of International Charter "Space and Major Disasters" and APRSAF initiative Sentinel Asia, supports the disaster management activities across the globe, by planning acquisition of data from various Indian Remote Sensing Satellites and supplying the data in fastest possible time. In 2019, ISRO has supported management of 21 disasters across 18 countries by providing around 65 sets of Indian satellite data. Through Sentinel Asia

Programme, ISRO responded to 19 disaster events across 12 Asia Pacific countries and provided nearly 36 datasets from Indian satellites.

Madam Chairperson,

ISRO is continuously improving the disaster management support in the Indian region by populating database and developing associated decision support systems. ISRO also constantly upgrades the information being provided to the disaster managers. ISRO responds very positively to the international requests and supports the global initiatives.

ISRO is pursuing collaboration with the space agencies in Germany and United States, so that the best practices can be adopted for improving the services in disaster management.

Thank you Madam Chairperson.