

## **UNISPACE+50 High Level Segment**

**Vienna; June 20, 2018**

Address by **Dr. K. Sivan**, Chairman, Space Commission; Secretary, Department of Space; and Chairman, Indian Space Research Organisation

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*(could address How India is using space inputs for national development and how it shares its expertise with others)*

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*Distinguished Leaders of Delegations, Heads of Space Agencies, Ambassadors, Representatives of Member Nations and Friends.*

It's my pleasure to be amongst you and make a statement on behalf of India at this historic event.

Let me, at the outset, congratulate COPUOS and its secretariat UNOOSA, for successfully hosting "UNISPACE+50 High Level Segment", as part of the 61<sup>st</sup> session of the Committee.

On this occasion, I fondly recall the contribution of late Prof. U.R Rao, former Chairman of ISRO & Secretary, Department of Space, who served as Chairman of COPUOS during 1997-2000 and President of UNISPACE-III.

Since inception, addressing societal issues has been pivotal point of our Space Programme. Currently, India has two operational launch vehicles, for placing satellites in geostationary & polar orbits. It has an operational fleet of (a) 15 Satellites for Communication, (b) 8 for Navigation, (c) 17 for Land; Water and Atmospheric observations and (d) 2 space science missions – The Mars Orbiter Mission and the ASTROSAT providing unique services from space.

Let me bring out some of the examples, where India is constantly driving the utilization of Space Technology, in supporting good governance.

- Space based inputs are used for evaluating the site suitability for expanding crops, assessing the acreage, forecasting crop production, forewarning on incidences of pest infestations etc. Today, crop production forecast is available for 8 major crops and efforts are on to include many more crops. Such production forecast supports decision making process on pricing; import-export policy, etc. a

- Satellite data-derived information are used for forecasting potential zones for fishing. This has substantially reduced the search time, fuel wastage and helped increasing the catch. NavIC based messaging service is enabled for disseminating weather forecast to the fishermen and also to give location based alerts while nearing international maritime jurisdiction.
- We have a National Ground Water Prospects Information System in place, for planning geophysical surveys towards drilling bore-wells for drinking water.
- India has also developed satellite data-based methodology for assessing the irrigation potential of the irrigation projects. Satellite derived measurements are used for generating 16-Day and Seasonal Snow melt runoff forecast, which enables in decision making on irrigation planning and hydropower plant operations.
- A spatial information system for the Water Resources of the country is also implemented.
- Data from geostationary meteorological satellites are used for estimating the solar energy potential in the country; wind climatology over the Indian seas; and wave energy potential along the Indian waters. These inputs help decision making on enhanced utilization of renewable energy sources.
- Towards Urban development and infrastructure planning, high resolution remote sensing data and geospatial tools are used, for developing a National Urban Information System in the country. Currently, the Geospatial components are being generated, for Urban rejuvenation programme for 500 Cities and also for the Smart cities. Urban Master Plans, citizen centric services, waste management, water management, urban mobility etc. are planned based on such inputs.

- Through the telemedicine network in the country, Specialty hospitals are connected with remote hospitals, for providing telemedicine services, in the inaccessible and remote regions of the country, including the pilgrimage locations. Similarly, using satellite based services, the tele-education network in the country, helps knowledge dissemination at various levels.
- Through the Disaster Management Support Programme, ISRO ensures the use of space inputs for six disasters; Flood, Cyclone, Forest Fire, Landslide, Earthquake and Drought. We have implemented a National Database for Emergency Management, for disaster management support.
- Methodology developed for early warning of tropical cyclones using satellite derived inputs, enables disaster relief agencies to evacuate people in time and save lives. Space based inputs are used for flood forecast and in monitoring the floods in real-time.
- Satellite data, Geospatial platform and mobile applications are developed and deployed, to support flagship programmes of the Government. Many Ministries have adopted Space Technology for ensuring transparency in Governance, and are utilizing Bhuvan Platform and mobile applications, for efficient implementation of beneficiary-oriented programmes.
- In order to support the neighboring countries through satellite technology, South Asia Satellite was launched in May 2017, having coverage over south Asian countries. Its onboard Ku-band payload supports applications that have relevance to the neighbouring countries, like Disaster Management, Meteorological Data sharing, Cooperation in scientific research, Tele-education, Tele-medicine, etc.
- As part of India's commitment to support International Disaster Management, Satellite data support is provided under International Charter on Space and Major Disasters, and Sentinel Asia.

- India, as a member of the International COSPAS-SARSAT system, supported rescue of 2080 lives, in 107 SAR incidents, till date.
- India is also providing the required assistance to establish a weather observation network, benefitting Bhutan, Nepal and Bangladesh. The purpose is regional modelling of Severe Thunderstorms, using input from Automatic Weather Station (AWS) and Doppler Weather Radar (DWR).
- Under Regional Cooperative Mechanism of UN-ESCAP, India offered technical support to Sri Lanka on agricultural drought monitoring. Similar support is being extended to Nepal, Myanmar and Cambodia through UN-ESCAP from India.
- India actively participates in developing a Global Earth Observation System of Systems (GEOSS) and is supporting initiatives on Agricultural Monitoring, Forest Observation and data sharing.
- Towards human capacity building in the region, India hosts the Centre for Space Science and Technology Education in Asia and the Pacific. As of now, CSSTE-AP has benefitted more than 1800 officials from 52 countries. Remote Sensing & GIS, Satellite Meteorology, Satellite Communication, Satellite Navigation and Atmospheric Science are covered under the CSSTE-AP training programme.

ISRO also hosts the Training programme on Remote Sensing and Geographic Information Systems, under Indian Technical Economic Cooperation (ITEC), sponsored by Ministry of External Affairs (MEA).

In conclusion, I would like to convey that India has developed necessary expertise to take the benefits of space technology to the grass root level and has demonstrated the same through various application projects for sustainable development in various sectors. India is willing to share this experience with all the member nations.

Thank you.

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