Space Technology for Disaster Management in Ladakh

Prelims: *Current events of national and international importance | Government policies and interventions*

Why in News?

The Government of India is using satellite and geospatial technologies to monitor glaciers, glacial lakes, snowfall, water resources and landslides in Ladakh.

Satellite-based projects undertaken in Ladakh during the last 5 years

Cryosphere Science and Applications Programme (CAP)	• It is an ongoing ISRO project to monitor snow and glaciers of the Himalaya-Karakoram region, including Ladakh, in collaboration with state agencies, academia and institutes.
Ladakh Specific Modelling and Space Applications (LAMA):	• ISRO/DoS is executing a project for Ladakh UT encompassing the development of a space inputs-based weather forecasting model, heavy rainfall alerts and hydrological simulations for estimating snowmelt, glacial melt runoff and river discharge.
Satellite Integrated Landslide Assessment and Alert System (SILAAS) project (under ISRO-DMSP)	• Undertaken since 2023 to map landslides using satellite data in Ladakh and for generation of village-wise landslide alerts.
National Hydrology Project (2017-2025)	• Sponsored by the Ministry of Jal Shakti, Department of Water Resources, River Development and Ganga Rejuvenation, covering glacial lakes mapping, GLOF risk assessment, snow-cover monitoring, evapotranspiration and hydrological drought assessment.

Geo-Ladakh	• The 'Spatial Data Infrastructure (SDI) Geoportal with Allied Database Development for UT-Ladakh' project has been carried out by ISRO. • It aimed towards the development of the 'Geo-Ladakh' geoportal and generation of a geospatial database of natural resources, energy, infrastructure and administrative boundaries along with capacity building.

Reference

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