First of it's kind avalanche Monitoring Radar

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In news– An avalanche monitoring radar, the first of its kind in India, has been installed in North Sikkim by the Army and Defence Geoinformatics and Research Establishment (DGRE).

Key features of the Radar-

- It has the **capability to detect avalanches within three seconds of its trigger** and will assist in saving lives of troops and reducing damage to property in super high altitude areas.
- The **radar was made operational by DGRE**, a laboratory under the DRDO, which is involved in forecasting and mitigation of avalanche hazards faced by the Army in the Himalayan region.
- It **uses a series of short microwave pulses,** which are scattered at the target and can detect an avalanche.
- It **can permanently scan the targeted slope** for avalanche release and track the path of the avalanche and its size in case it is triggered.
- The **radar can see through snow, fog as well as in the night**, making it an all weather solution.
- It **covers an area of two sq.km,** obviating the requirement to place additional instruments in dangerous avalanche-prone areas.
- **The radar is also linked to an alarm system,** enabling automatic control and warning measures in case an avalanche is triggered.
- **Images and videos of the event are automatically recorded for future analysis by experts**.
- Besides being used for detection of avalanches, **this radar can also be employed to detect landslides**

<u>What is an avalanche?</u>

- **An avalanche is a mass of material rapidly moving down a slope.**

- It is typically triggered when the material on a slope breaks loose from its surroundings, and this material quickly collects and carries additional material down the slope.
- The **various kinds of avalanches include snow avalanches, rock avalanches, ice avalanches** (which typically occur in the vicinity of a glacier), and debris avalanches (which contain a variety of unconsolidated materials, such as loose stones and soil).
- The **occurrence of an avalanche depends on the interaction of mountainous terrain,** weather conditions, snowpack conditions, and a trigger.
- The probability of avalanches may be increased or decreased by several other terrain features, such as slope shape, a slope's exposure to sun and wind, and elevation.