International Cooperation: ISRO

Why in News

Recently, **Indian Space Research Organisation (ISRO)** and **Japan Aerospace Exploration Agency (JAXA)** reviewed cooperation in **earth observation, lunar cooperation and satellite navigation.**

Key Points

- **About the Cooperation:**
  - They also agreed to explore opportunities for cooperation in “space situational awareness and professional exchange programme”.
  - Both agencies signed an **Implementing Arrangement** for collaborative activities on **rice crop area** and **air quality monitoring** using satellite data.
  - **India and Japan** are already working on a joint **lunar polar exploration (LUPEX) mission.**
    - LUPEX aims to **send a lander and rover to the Moon’s south pole around 2024.**
- **Agreements with Other Countries:**
  - **India and Italy** have decided to explore opportunities in **earth observation, space science and robotic and human exploration.**
  - **India and Australia** signed an amendment to the MoU which will build on the **Comprehensive Strategic Partnership.**
    - Both countries are also in discussions for **Australia to host vital tracking infrastructure** to support the **Gaganyaan** manned space flight mission.

Few Achievements Through International Cooperation

- **Chandrayaan-1:**
  - ISRO's maiden mission to Moon, the **Chandrayaan-1**, has been an exemplary example of international cooperation with its international payloads.
  - It has also earned several national and international laurels and was instrumental in the **ISRO-NASA joint discovery of water molecules** on the moon surface, unattained by any of the previous missions of such nature.
- **Megha-Tropiques:**

  The **Indo-French joint satellite mission** called **MEGHA-TROPIQUES** was launched in 2011 for the study of the tropical atmosphere and climate related to aspects such as **monsoons**, **cyclones**, etc.
- **Saral:**

  The **Indo-French** joint mission, named **SARAL (Satellite for ALTIKA and ARGOS)** for studying the ocean from space using altimetry was successfully launched in 2013.
- **NISAR:**
  - **ISRO and NASA** are realizing a joint satellite mission called **NISAR (NASA ISRO Synthetic Aperture Radar)** for earth science studies.
  - The mission will observe Earth and measure its changing ecosystem and masses globally.
  - It is the world's most expensive imaging-satellite and the two space agencies intend to launch the satellite by 2022.
- **UNNATI:**

  ISRO has launched capacity building programme on nano satellite development, named as **UNNATI (UNispace Nanosatellite Assembly & Training by ISRO)** as an initiative of **UNISPACE+50** (the 50th Anniversary of the first United Nations conference on the exploration and peaceful uses of outer space).
- **TRISHNA:**

  ISRO and the French space agency **CNES** have partnered in developing advanced upgradation satellites like TRISHNA to **monitor the water cycle** to help in finding out proper ways to utilize it.

Source:TH