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Sub-Mission on Agricultural Mechanization

- The Sub-Mission on Agricultural Mechanization (SMAM) was launched in April 2014 with an aim to have inclusive growth of farm mechanization to boost productivity.
- Recently union government has released Rs. 553 crore to states under the scheme to promote mechanization in the agriculture sector.
- In the year 2020-21, budget of Rs.1,033 crore has been provided for the scheme, out of which Rs.553 crore has been released to state governments.
- Under the scheme Individual farmers are also provided subsidy for procurement of machinery.
- Agricultural mechanization helps in increasing production through timely farm operations and cut in operations by ensuring better management of inputs.
- Mechanization also enhances the productivity of natural resources and reduces drudgery associated with various farm operations.

FARMS-app

- Union Agriculture ministry has developed a Multi lingual Mobile App, 'CHC (Custom Hiring Centers) - Farm Machinery' which connects farmers with Custom Hiring Service Centers situated in their locality.
- It encourages small and marginal farmers to take machines on rental basis for agriculture practices without them having to purchase such high priced machines.
- The app has been further modified and been given the acronym of FARMS-app (Farm Machinery Solutions-app).

Agri Infra Fund

- Union government has launched a financing facility of Rs.1 lakh crore under the Agriculture Infrastructure Fund.
- The fund will cover

1. Agri-entrepreneurs,

2. Startups,
3. Agri-tech players,
4. Farmer groups for post-harvest management,
5. Nurturing farm assets.

- Agri Infra Fund is a pan India central sector scheme, duration of which will be 10 years till 2029.
- It aims to provide medium - long term debt financing facility for investment in viable projects for post-harvest management Infrastructure and community farming assets.
- The fund will be managed and monitored through an online Management Information System (MIS) platform.

Depsang Plains

- Depsang Plains are located at the Line of Actual Control that separates the Indian and Chinese controlled regions.
- The Chinese Army occupied most of the plains in 1962.
- India controls the western portion of the plains as part of Ladakh, whereas the eastern portion is part of the Aksai Chin region, which is controlled by China and claimed by India.
- Depsang is also close to the Karakoram Pass, overlooking the very strategic Saltoro Ridge and Siachen glacier.
- Daulat Beg Oldie (DBO) is a historic campsite and current military base located in Ladakh, on an ancient trade route connecting Ladakh to the Tarim Basin.
- Recently military level strategic talks were held about the region between India and China at the Daulat Beg Oldie
- This is the first Major General-level talks since the violent clash at Galwan.

Indus Water Treaty

- Indus system comprises of main Indus River, Jhelum, Chenab, Ravi, Beas and Sutlej.

- The basin is mainly shared by India and Pakistan with a small share for China and Afghanistan.
- Under the treaty signed between India and Pakistan in 1960, all the waters of three rivers, namely Ravi, Sutlej and Beas (Eastern Rivers) were allocated to India for exclusive use.
- While, the waters of Western rivers - Indus, Jhelum, and Chenab were

allocated to Pakistan except for specified domestic, non-consumptive and agricultural use permitted to India as provided in the Treaty.

- India has also been given the right to generate hydroelectricity through run of the river (RoR) projects on the Western Rivers which, subject to specific criteria for design and operation is unrestricted.
- Recently India has refused a request by Pakistan to hold a meeting on issues around IWT at the Attari checkpost border.
- This is in concern with the governing the technical aspects of the construction of the Ratle run-of-the-river (RoR) project on the Chenab in the Kishtwar district of Jammu and Kashmir.
- India has called for the appointment of a 'neutral' party while Pakistan favours a Court of Arbitration to agree upon a final resolution for the project.
- IWT meetings are led by Indus Water Commissioners from both countries and discuss a range of issues on construction of dams and hydropower projects concerning the Indus river system.

Indian Dams in Indus River System

- To utilize the waters of the Eastern rivers which have been allocated to India for exclusive use, India has constructed following dams:

1. Bhakra Dam on Satluj,
2. Pong and Pandoh Dam on Beas and
3. Thein (Ranjit Sagar) on Ravi.
4. Beas-Sutlej Link,
5. Madhopur-Beas Link,
6. Indira Gandhi Nahar Project etc,

- These dams have helped India utilize nearly entire share (95 %) of waters of Eastern Rivers.

Coronal Magnetic Field

- International team of solar has measured the global magnetic field of the Sun's corona, or outer atmosphere, for the very first time.
- The team used a technique known as coronal seismology or magneto seismology to measure the coronal magnetic field which has been known for a few decades.
- This method requires the measurement of the properties of magneto hydrodynamic (MHD) waves and the density of the corona simultaneously.
- The team used the improved measurements of the Coronal Multi-channel

Polarimeter (CoMP) and advanced data analysis to measure the coronal magnetic field.

- There are two main puzzles about the Sun which this advancement will help address.
- **Coronal Heating Problem** - Though the core of the Sun is at a temperature of about 15 million degrees, its outer layer, the photosphere is a mere 5700 degrees hot.
- However, its corona or outer atmosphere, which stretches up to several million kilometres beyond its surface, is much, much hotter than the surface.
- It is at a temperature of one million degrees or more, attempts to explain this puzzle invoke the magnetic field of the corona.
- **Mechanisms of Eruptions of the Sun -** Solar flares and coronal mass ejections are driven by magnetic reconnections happening in the Sun's corona.
- Magnetic reconnection is a process where oppositely polarity magnetic field lines connect and some of the magnetic energy is converted to heat energy and also kinetic energy which leads to the generation of heating, solar flares, solar jets, etc.
- **India's Contribution -** India's first solar mission, Aditya-L1 satellite will aim to measure the solar coronal magnetic fields regularly.
- This will help understand the spectacular solar eruptions and predictions of space weather and many more things.

Coronal Multi-channel Polarimeter (CoMP)

- CoMP is an instrument operated by High Altitude Observatory, of the U.S.
- It is located at Mauna Loa Solar Observatory, near the summit of that volcano on the big island of Hawaii.
- It is very important to measure the corneal magnetic fields regularly since the solar corona is highly dynamic and varies within seconds to a minute time scale.
- While photospheric magnetic fields are measured regularly from space.

Source: The Hindu



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