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TATHASTU

Institute of Civil Services

Daily Current Affairs

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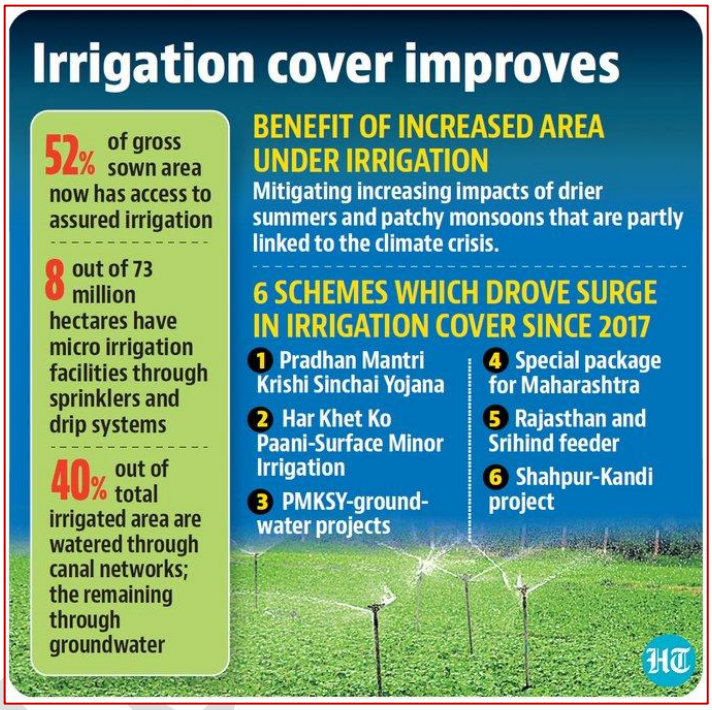
Assured Irrigation

News: In 2022-23, of the 210 million hectares of gross sown area, about 115 million hectares (55%), had irrigation access, up from 47.8% in 2013-14, according to state-run think-tank Niti Aayog member Ramesh Chand.



What is assured irrigation?

- Assured irrigation refers to the provision of reliable and guaranteed water supply for agricultural purposes. It includes canals, drip irrigation, sprinklers, and other methods that efficiently deliver water to crops.
- It ensures that cultivated land has access to a sufficient and regular water source, reducing dependence on rainfall and minimizing the risk of crop failure due to water scarcity.

What are factors that augment assured Irrigation in India?

- Expansion of land under agriculture, especially in the dryland farm zones of Telangana, Gujarat, Madhya Pradesh and Karnataka.
- Increased provision of micro-irrigation facilities such as sprinklers, and drip irrigation systems. They provide for efficient utilization of water.
- Several government initiatives such as Pradhan Mantri Krishi Sinchayee Yojana, Har Khat Ko Paani, Micro Irrigation Fund (created by NABARD) and Accelerated Irrigation Benefit Program.
- Above mentioned government initiatives have focused on creating sources for assured irrigation, reducing water wastage, and improving water use efficiency. It has facilitated the construction of small-scale irrigation structures like check dams, farm ponds, and percolation tanks to capture and store rainwater.

Limitations:

- < UNK> Due to geographical and hydrological limitations, • About 40% of the cultivable area will still depend on rainfall.
- Over-dependence on groundwater has led to the depletion of the water table in 64% district of India
- Uneven rainfall distribution and the increasing gap between created and utilized irrigation potential.

Way Forward

- Assured irrigation plays a crucial role in reducing dependence on rainfall, improving water use efficiency, and enhancing agricultural productivity.
- Support towards assured irrigation will help in sustainable agriculture and mitigate the impact of water scarcity on crop production in India.

Source – Hindustan Times

Oil reserves in salt caverns

News: Recently, a Government-owned engineering consultancy firm Engineers India (EIL) is studying the prospects and feasibility of developing salt cavern-based strategic oil reserves in Rajasthan.

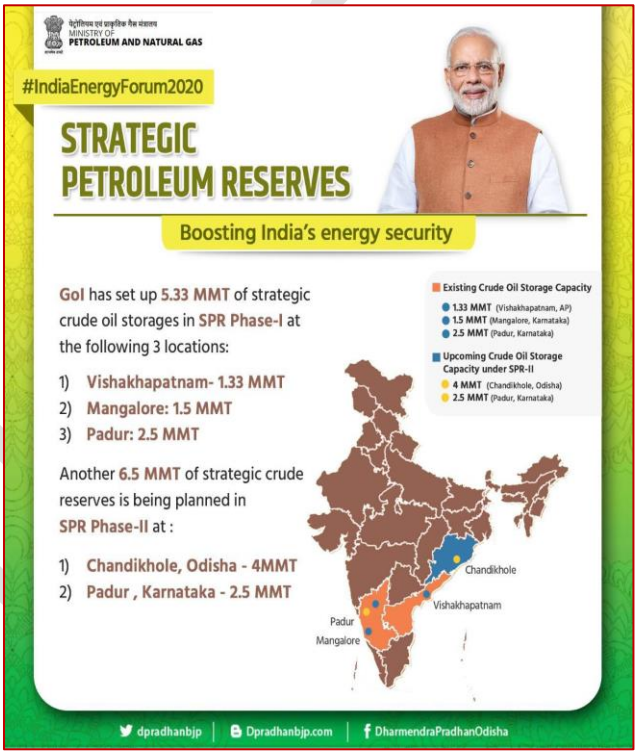
What are Salt Cavern-based oil reserves?

- Underground storage caverns are used to store very large quantities of unrefined petroleum and natural gas. These underground caverns are cavities that have been "mined" out of naturally occurring salt domes.
- Approximately 7% of the total underground natural gas storage capacity is in Salt Caverns.

- Salt caverns are developed by the process of solution mining, which involves pumping water into geological formations with large salt deposits to dissolve the salt.

Rock Cavern-based storage vs Salt Cavern-based storage:

- Rock caverns are large man-made spaces in the rock and are considered the safest means of storing hydrocarbons. While salt caverns are considered cheaper and less labour- and cost-intensive.
- Salt cavern-based oil storage facilities are also naturally well-sealed, and engineered for rapid injection and extraction of oil. This makes them a more attractive option than storing oil in other geological formations.
- The entire strategic petroleum reserve programme of the United States has so far been based on salt cavern-based storage facilities.
- In comparison, India's all 3 strategic petroleum reserves are made up of excavated rock caverns.



India's Potential in Salt Cavern-based oil reserves:

- Rajasthan, which has the bulk of requisite salt formations in India, is seen as the most conducive for developing salt cavern-based strategic storage facilities.
- A refinery is coming up in Barmer, and Rajasthan also has crude pipelines; such infrastructure is conducive to building strategic oil reserves. However, no Indian company, including EIL, had the requisite technical know-how to build salt cavern-based strategic hydrocarbon storage.
- Now, EIL's recent partnership with Germany's DEEP.KBB GmbH, a company specialising in cavern storage and solution mining technology, will bridge the technical gap.

About India's strategic oil reserves:

- A strategic reserve is the reserve of a commodity or items that is held back from normal use by governments, in pursuance of a particular strategy or to cope with unexpected events.
- Government of India through **Indian Strategic Petroleum Reserve Ltd**. (ISPRL) under Phase–1 has setup Strategic Petroleum Reserves (SPR) at three locations with a capacity of 5.33 MMT (million metric ton) – Vishakhapatnam (1.33 MMT), Mangaluru (1.50 MMT) and Padur (2.5 MMT)

Source – Indian Express

NEW Start arms control Treaty

News: The United States (US) has mentioned that they will stop providing Russia with some notifications required under the New START arms control treaty, including updates on its missile and launcher locations, to retaliate for Moscow's "ongoing violations" of the accord.

What is the NEW start treaty?

- Under the New START (Strategic Arms Reduction Treaty), there exist the following agreements:
- Russia and the U.S. **exchange data** twice a year on the ballistic missiles under the treaty's purview, on bombers, test sites, nuclear bases and so on.
- The treaty also mandates the two parties to send notifications within five days if they change or updates something in their stockpile, like moving missiles to a new base or deploying a new warhead to the system.
- It allows each side to carry out up to **18 short-notice** (32 hours) **on-site inspections** of strategic nuclear weapons sites **annually** to ensure the other has not crossed the limits of the treaty.

- Under the Treaty, America and Russia cannot deploy more than 1,550 strategic nuclear warheads and more than 700 long-range missiles and bombers.
- It also limits each country to 800 deployed and non-deployed launchers and delivery vehicles.

What is the point of contentions?

- As per Russia, NATO and the U.S. wanted to **inflict strategic defeat** on Russia and try to get to their nuclear facilities at the same time.
- In its New START annual implementation report 2023, the U.S. State Department stated that Moscow was **not complying with the pact** as it had not let Washington carry out on-site inspections.

Impact of Russia not complying with the Treaty:

- The two largest nuclear powers could get an opportunity to other nuclear-armed countries, especially China and others like Pakistan, Iran, Israel, and India among others, to **increase their arsenals**.
- The arms treaty was aimed at holding **global peace** and **no use of nuclear weapons**. However, Russia's decision to suspend it causes concerns for developing countries.

Source – Indian Express

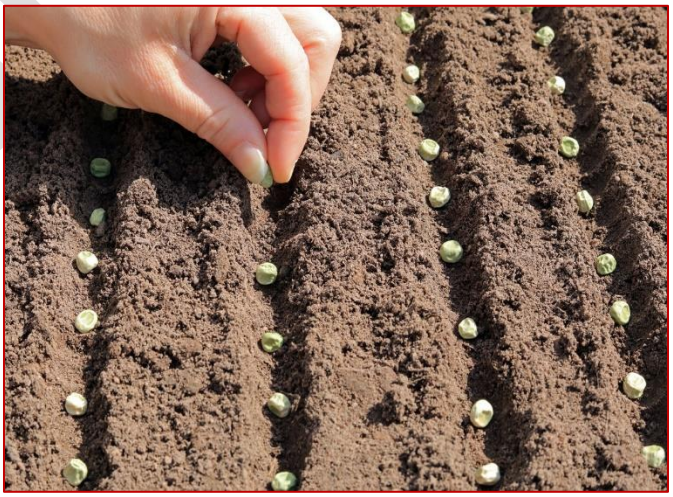
Direct Seeding Method

News: Farmers in several leading rice-growing States are shifting to the direct-seeding method with rains getting delayed and the availability of labour becoming a challenge.

What is Direct Seeding Method?

- Direct Seeded Rice (DSR), also known as the '**broadcasting seed technique**,' is a **water-saving method of sowing paddy**.
- In this method, seeds are **directly drilled into the fields**, eliminating the need for nursery preparation and transplantation.

What are the advantages of the Direct-seeding method?



- By eliminating the need for nursery cultivation, farmers save approximately 30 days in the crop cycle. Further, this will also help farmers to start Rabi crops early.
- Using drum seeders, two labourers can complete sowing on one acre in a day. In the traditional method of sowing seedlings, farmers will need at least 25-30 labourers.
- The yield under this method is one to two quintals per acre higher than puddled transplanted rice.
- The method can help reduce water consumption over the traditional method of transplanting rice seedlings.
- Eliminates methane pollution by using a shorter flooding cycle and less soil disruption than transplanting rice seedlings.
- Improved soil conditions and more profitability under assured irrigation facilities.

Challenges:

- The government has also not been able to **tackle the issue of weeds** and **rodents**, which has been a problem in the DSR method.
- **Weed management** plays a big role in harvesting a successful crop in DSR. This is because the technique doesn't require flood irrigation for three weeks after sowing, and weeds tend to grow easily, unlike the conventional method.
- **Sudden rain** immediately after immediately after seeding may hurt crop establishment.
- The DSR method **gained traction in 2020** during the lockdown period as the availability of labour was an issue, it will require **additional effort by the government on the ground to succeed every year**.

- **High temperatures** and **deficient rainfall** can affect seed germination and crop growth.
- **Transition to DSR** is not easy and many farmers continue to rely on traditional methods of transplantation.

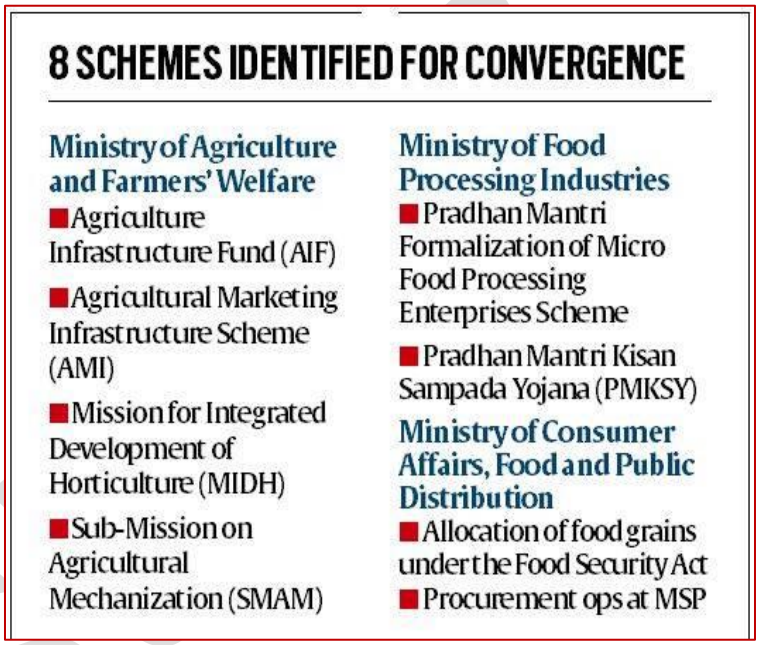
Source – Times Agriculture

World's largest grain storage plan in the Co-operative sector

News: The Union Cabinet has given its approval for the establishment of the "world's largest grain storage plan in the cooperative sector" with an outlay of around Rs 1 lakh crore.

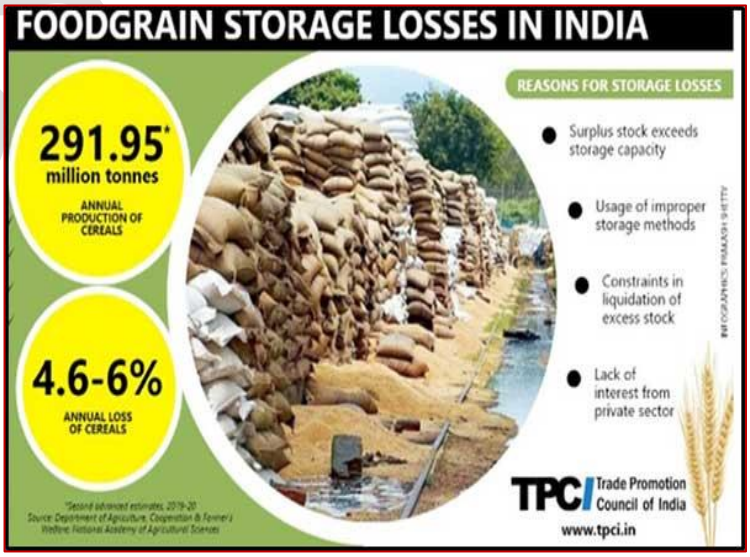
Key Highlights:

- The plan focuses on the creation of godowns and other agricultural infrastructure at the level of Primary Agricultural Credit Societies (PACS) to strengthen **food security**, **reduce wastage**, and **empower farmers**.
- This ambitious project aims to **converge eight ongoing schemes of three ministries** to address the shortage of agricultural storage infrastructure in India.
- **Ministry of Cooperation** will implement a pilot project in **at least 10 selected districts**.
- An **Inter-Ministerial Committee** (IMC) will be constituted under the **chairmanship of the Minister of Cooperation** with the Minister of Agriculture and Farmer's Welfare, Minister of Consumer Affairs, Food and Public Distribution, Minister of Food Processing Industries and Secretaries concerned as members.



What are the benefits of the plan?

- The plan aims to address the agricultural storage infrastructure shortage and enable the Primary Agriculture Credit Society to function as procurement centres, fair price shops, custom hiring centres, and processing units.
- By creating decentralised storage capacity at the local level, the plan aims to reduce grain wastage, contributing to improved food security.
- It will prevent distress sales of crops, the establishment of the storage facility at the PACS level will reduce transportation costs of food grains.



Challenges:

- **Inefficient storage structures** that are unsuitable for long-term grain storage, lead to spoilage and quality degradation.
- **Lack of proper warehouses** and **godowns at the farm level**, leading to the damage of grains by pests and insects.
- The **lack of well-established transportation networks** resulted in prolonged transit times and exposure to unfavourable environmental conditions.
- **Limited financial resources** are allocated for the construction, maintenance, and modernization of storage infrastructure, hindering the improvement of storage facilities.

What is PACS?

- PACS are **village-level cooperative credit societies** that serve as the last link in a three-tier cooperative credit structure headed by the **State Cooperative Banks** (SCB) at the state level.
- Credit from the SCBs is transferred to the **district central cooperative banks**, or DCCBs, that operate at the district level. The DCCBs work with PACS, which deals directly with farmers.
- For farmers, timely access to capital is necessary at the start of their agricultural activities. PACS have the capacity to extend credit with minimal paperwork within a short time.

Source – PIB

Facts for Prelims

Planet TOI 4603b

News: An international team of scientists led by Professor Abhijit Chakraborty of the Physical Research Laboratory (PRL), Ahmedabad has discovered the **densest alien planet**, which is 13 times bigger than Jupiter.

Background:

- They used the indigenous **PRL Advanced Radial-velocity Abu-sky Search spectrograph** (PARAS) at the Gurushikhar Observatory in Mt. Abu to measure the mass of the planet precisely.

About:

- The exoplanet has a mass of 14 g/cm3.
- The newly discovered planet orbits a star called TOI4603 or HD 245134, and NASA's Transiting Exoplanet Survey Satellite (TESS) had initially declared the star as a possible candidate to host a secondary body of unknown nature.
- The planet is raging hot with a temperature of 1396 degrees Celsius.

Electronics Repair Servicing Outsourcing (ERSO)

News: Recently, MeitY launched a pilot project on Electronics Repair Services Outsourcing (ERSO) to make India Global Repair Capital.

About:

- Over the next 5 years, India's ERSO industry is likely to fetch India up to $20 billion in revenue and also generate millions of jobs. Right now India's revenue from repair services is about $350 million.
- India's e-waste policy will be modified to enable repair companies to domestically recycle 5% of imported goods by weight on a trial basis.
- The repaired goods will not be permitted to be sold in the domestic market.
- New provisions will be made to allow their exportation to regions other than their country of origin.

Significance:

- The initiative will help India become a world leader in what is an unexplored area.
- It will be a game-changer for Global environmental sustainability and reiterates India's commitment to the environment and our planet.
- It will promote the extension of device life and promote a circular economy.
- Boost to domestic manufacturing and increased employment opportunities.

Places in News

Senegal

News: Social media and messaging platforms have been blocked in Senegal after unrest erupted over the sentencing of opposition leader Ousmane Sonko.

About:

- Senegal is a country on the **coast of West Africa**, bordering the North Atlantic Ocean in the west.
- It is bordered by **Mauritania** along the Senegal River in the north, by **Mali** in the east, by **Guinea** and **Guinea-Bissau** in the south, and it encloses **The Gambia**, a narrow nation along both banks of the Gambia River.
- Senegal shares also **maritime borders** with the island country of **Cape Verde** in the west.
- Averaging less than 650 feet in elevation, Senegal is **mostly flat** or **rolling plains** with savanna-type vegetation.
- In the southeast, however, plateaus 1640 feet high form the foothills of the **Fouta-Djallon Mountains**. Marshy swamps interspersed with tropical rainforests are common in the southwest.

Important cities

- Dakar (Capital), Saint Louis, Touba, Thies, Rufisque, Ziguinchor.