Prelim Bits 05-10-2022 & 06-10-2022 | UPSC Daily Current Affairs

India's Sugar Industry

In Sugar Season (Oct-Sep) 2021-22, India emerged as the world's largest producer and consumer of sugar and world's 2nd largest exporter of sugar.

> *Ethanol production capacity of molasses/sugar-based distilleries has increased to 605 crore litres per annum. Sugar mills/distilleries generated ₹ 18,000 crore from sale of ethanol.*

- **Sugarcane** – A highly water intensive crop cultivated of tropical and subtropical areas.
- It grows well in hot and humid climate with a temperature of 21°C to 27°C and an annual rainfall between 75cm and 100cm.
- Sugarcane can be grown on variety of soils.
- It is largely an irrigated crop in India and needs manual labour from sowing to harvesting.
- It is the main source of sugar, jaggary, khandsari and molasses (raw material for ethanol production).
- Maharashtra, Uttar Pradesh, Karnataka, Gujarat, Andhra Pradesh, Tamil Nadu and Telangana are Sugarcane producing states in India.
- The diversion of sugar to ethanol and exports led to unlocking of value chain of the whole industry as well as improved financial conditions of sugar mills

> *Under Ethanol Blending with Petrol (EBP) Programme, India targets for 20% blending by 2025.*

Fair and Remunerative Price

- The Fair and Remunerative Price (FRP) is the minimum price that sugar mills have to pay to sugarcane farmers.
- It is approved by the Cabinet Committee on Economic Affairs (CCEA).
- The FRP has been determined on the basis of recommendations of Commission for Agricultural Costs and Prices (CACP) and after consultation with State Governments and other stake-holders.

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Light Combat Helicopter Prachand

After the approval of Cabinet Committee on Security (CCS) procurement of 10 Light Combat Helicopter (LCH) for IAF and five for the army, the LCH Prachand was inducted into the Indian Air Force (IAF) recently.

> *The HAL has already worked on the Advanced Light Helicopter (ALH) Dhruva and its weaponised version ALH Rudra for IAF.*

- The LCH Prachand, or fierce was designed and developed by state-owned Hindustan Aeronautics Limited (HAL) as a part of self-reliance in defence production.
- It is the lightest fighter helicopter in the world.
- The LCH is 45% indigenous right now.
- The indigenous LCH is capable of
    1. Destroying enemy air defence,
    2. Conducting counter insurgency strikes,
    3. Useful for combat search and rescue, anti-tank, and counter surface force operations.
- **Features of LCH** - LCH is powered by two French-origin Shakti engines manufactured by the HAL.
- LCH has the maximum speed of 268 kmph, and range of 550 km.
- It can operate at altitudes of up to 20,000 ft, higher than any other attack helicopter available to the Indian military
- It uses radar-absorbing material to lower radar signature and has a significantly crash-proof structure and landing gear.
- A pressurised cabin offers protection from nuclear, biological and chemical (NBC) contingencies.
- The helicopter is equipped with a countermeasure dispensing system that protects it from enemy radars or infrared seekers of the enemy missiles.
- The weapons system has turret gun, 70 mm rockets and air-to-air missile systems.

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OPEC+ cuts Oil Production

In light of recent falling gas prices, OPEC+ officials had decided in reduce oil production by 2 million barrels per day.

- Oil prices that skyrocketed after Russia's invasion of Ukraine have begun to soften.
- The oil prices are sharply dropping due to
    1. Fears of a recession in Europe and
    2. Reduced demands from China due to its lockdown measures.
- OPEC+ members are concerned that a faltering global economy would reduce the demand for oil.
- Slashes in reduction and subsequently increased oil prices are seen as a way to protect OPEC+ members' profits.

- This is the largest cut since the beginning of the Covid-19 pandemic.

Organization of Petroleum Exporting Countries

- Organization of Petroleum Exporting Countries (OPEC) is a permanent intergovernmental organization of 13 oil-exporting developing nations.
- The OPEC coordinates and unifies the petroleum policies of its Member Countries.
- They usually meet every month to determine how much oil the member states will produce.

OPEC accounts for roughly 40% of the world's crude oil and 80% of the globe's oil reserves.

- **OPEC+** - The non-OPEC countries which also produce and export crude oil, affiliated with OPEC are termed as OPEC+.
- The 13 OPEC member states, with the addition of another 11 allied major oil-producing countries that include Russia forms OPEC+.

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The Chola Dynasty

The recently released Tamil film Ponniyin Selvan:1 orPS1 gained attention towards the era of the Cholas.

- The Imperial Chola dynasty was founded by the King Vijaylaya, a feudatory of the Pallavas.
- The Chola kingdom stretched across present-day Tamil Nadu, Kerala, and parts of Andhra Pradesh and Karnataka.
- The period of Cholas was around 9th to 12th century AD.
- The Rashtrakutas of the Deccan and the Chalukyas of the Andhra Pradesh were contemporaries to the Cholas.
- The naval supremacy of the Cholas, allowed them to conquest lands as far as Malaysia and the Sumatra islands of Indonesia.
- **Administration** - The king remained the central authority who would make the major decisions and carry out the governance.
- The massive kingdom was divided into provinces which were known as mandalams.
- Separate governors were held in charge for each mandalam.
- These were further divided into districts called nadus which consisted of tehsils.
- The system of rule was such that each village acted as a self-governing unit during the era of the Cholas.
- **Architecture** - They constructed grand trunk roads and public ferries, in addition to grand temples.
- The Cholas are more prominent in making structural temples.
- The **Great Living Chola Temples** have been classified as World Heritage Sites by UNESCO.
- The site includes three great 11th- and 12th-century temples

    - the Brihadisvara temple,
    - the Gangaikondacholisvaram and
    - the Airavatesvara temples
- The grand Brihadeeswara temple of Thanjavur, built by Rajaraja I, was the largest building in India in that period.
- Rajendra Chola, the son of Rajaraja, also known as Gangaikonda Chola (the Chola who conquered Ganga) built the Chola capital at Gangaikondacholapuram.
- The medieval Chola Empire began to decline from 1070 CE, after the death of Virarajendra Chola, the son of Rajendra Chola.
- **Literature -** Several devotional literature took shape during this period.
- Jain and Buddhist writings also got appreciation and recognition during this phase.
- The popular Nalayira Divya Prabandham a compilation of 4000 Tamil verses is from this period

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5G in India

At the India Mobile Congress in Delhi, Prime Minister announced the 5G services will be rolled out in a phased manner. In the first phase, the 5G services is launched in thirteen cities.

> *India Mobile Congress (IMC) is annual event jointly held by the Department of Telecommunications (DoT) and Cellular Operators Association of India (COAI).*

- **5G or fifth generation technology** is the next generation of mobile communication networks, which is supposed to offer much faster speeds and wider use cases than 4G.
- **Differences between 4G and 5G –** The difference lies in the high speeds, superior reliability and negligible latency.
- **Low level of Latency** - The 5G technology promises very low latency of near 5 milliseconds, while 4G latency ranges from 30ms to 100ms.

> *Latency is the time gap between the command and response of the network.*

- **Speed** - 5G services - depending on areas and connectivity - are expected to support speeds of up to 300 Mbps or more, while 4G speed can only offer up to 40-50 Mbps.
- **Spectrum** in the 1GHz – 6GHz range is considered ideal for 5G.
- A high-band spectrum may give you extremely fast speeds but you will have to be in an excellent coverage area.
- On the other hand, low-band may give more coverage but the performance may not be significantly better than 4G.
- **Switching to 5G** - Switching from 4G to 5G does not require new 5G sim, but it needs 5G-enabled phone.

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