

### WHAT IS THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC)?

The Intergovernmental Panel on Climate Change (IPCC) will soon release its latest Synthesis Report under the Sixth Assessment Cycle, which will have a comprehensive review of global knowledge of the climate.



About Intergovernmental Panel on Climate Change (IPCC):

- The IPCC is the **United Nations body** for assessing the science **related to climate change**.
- It was **established** by the **World Meteorological Organization (WMO)** and the **United Nations Environment Programme (UNEP)** in **1988**.
- **Membership:** It has **195 Member countries**.
- **Objective:** To assess **scientific, technical, and socio-economic** information relevant to the **understanding of human-induced climate change**, potential **impacts** of climate change, and options for **mitigation and adaptation**.
- The **main activity** of the IPCC is the **preparation of reports** assessing the state of knowledge of **climate change**. These include assessment reports, special reports and methodology reports.
- The assessment reports are a **key input** into the international **negotiations to tackle climate change**.
- The **IPCC does not itself engage in scientific research**. Instead, it asks **scientists from around the world** to go through all the relevant scientific literature related to climate change and **draw up logical conclusions**.
- **What are the IPCC working groups?** It comprises **three working groups**, which focus on **different aspects** of climate science and climate change response.
  - **Working Group I:** looks at the **physics of climate change**;
  - **Working Group II:** examines climate change **impacts and adaptation**;
  - **Working Group III:** focuses on climate change **mitigation**;
  - The three working groups **release separate reports**, which are then **compiled into a synthesis report**.

## PM MODI AND SHEIKH HASINA LAUNCH 'INDIA-BANGLADESH FRIENDSHIP PIPELINE'

### Why in News?

- Prime Minister Narendra Modi and Bangladesh Prime Minister Sheikh Hasina jointly inaugurated the India – Bangladesh Friendship Pipeline via video-conferencing.

### India-Bangladesh Friendship Pipeline (IBFPL):



The IBFPL is a **5-kilometre-long oil pipeline** connecting **Siliguri** in North Bengal to **Parbatipur** in Bangladesh's Dinajpur province.

- The construction of the project started in 2018 with the help of India's grant funding.
- The pipeline will carry **one million tonnes of high-speed diesel** from Numaligarh refinery in Assam to Bangladesh Petroleum Corporation's Parbatipur depot.
- The pipeline, built at a cost of **377 crore**, is part of energy sector cooperation between the two neighbouring countries through which **Bangladesh will import petroleum, especially diesel from India**.
- The supply will start on an experimental basis in June this year.
- The fuel transport deal will be effective for **15 years with an option for further extension**.

### Significance of IBFPL:

- **Bangladesh's rising energy demands –**
  - Bangladesh faces a major energy crisis that threatens to hobble its growth.
  - In early October last year, **Bangladesh suffered a grid failure that left nearly 80 per cent of the country without power**.
  - Due to daily power outages, many industrial units in Bangladesh reported a fall in production by up to 50 per cent last year.

- The energy crisis in Bangladesh, which is an energy-deficit country, was intensified by the **conflict between Russia and Ukraine**, and the consequent exponential increase in oil and gas prices.
- Given this scenario, the **IBFP will mark an important milestone in Bangladesh's quest to fully meet its energy needs.**
- **India's efforts to curtail China's influence –**
  - India's help to Bangladesh in meeting its energy needs is also **aimed at offsetting that country's dependence on China, whose investments in Bangladesh's energy sector stand at US \$ 8.31 billion.**
  - Beijing has offered to help Bangladesh's transition to renewable sources of energy. But Dhaka is wary of taking loans from China to set up power-generating plants.
  - India has also **promised to export power generated from its upcoming hydro-power projects in Sikkim and Arunachal Pradesh once these are commissioned.**
- **Economic Benefits –**
  - India will send 2 lakh tonnes of oil annually in the first three years, 3 lakh tonnes per annum in the next three years, 5 lakh tonnes annually in the next four years and 10 lakh tonnes annually afterwards
  - The pipeline with India will cut the transportation cost of fuel oil for Bangladesh by 50%.

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## VISIT OF PRIME MINISTER OF JAPAN TO INDIA

### Why in news?

- Prime Minister of Japan, Mr. Kishida Fumio, arrived India on an Official Visit. During this visit, he will be holding bilateral talks with Prime Minister Narendra Modi.
- This meeting is being held at a significant time when India and Japan are holding the presidencies of the G20 and G7, respectively.

### India - Japan: Imperatives for better ties

- **Strategic**
  - **China** remains an unspoken factor in India – Japan relation. Japan has a boundary dispute with China over Senkaku island in East China Sea.

- India has been at the receiving end of China's attitude since Independence particularly in Ladakh and Arunachal Pradesh.
- Both country's insistence on increased engagement between India's 'Act East Policy' and Japan's 'Open Indo-Pacific Strategy' further makes them a natural partner.
- **Security**
  - India and Japan have large Exclusive Economic Zones and share maritime interests.
  - This includes safe passage of Japanese oil tankers plying from the Persian Gulf to Strait of Malacca through Arabian Sea, Indian Ocean and Bay of Bengal under protection from Indian Navy and the Coast Guard.
- **Economic**
  - Japan is trying to **jump-start a Japanese economy** which badly needs new sources of exports and revenue for ailing Japan Inc.
  - India, with its 1.2 billion increasingly wealthy consumers and investment opportunities, can provide just what Japan requires.
  - India has **significant reserve of rare earth metal** which is badly needed for the Japanese economy which uses these minerals to manufacture different products.
  - **Japanese workforce is ageing.** In this case, it is looking towards India for the supply of young workforce to revive its economy.
- **Multilateral imperatives**
  - Both countries need their mutual support on crucial global issues including the issue of climate change, countering terrorism, reform of the United Nations Security Council (UNSC).

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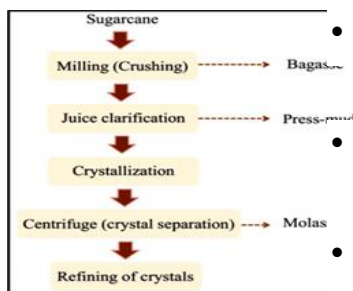
## SUGAR INDUSTRY IN INDIA: HOW INDIA'S SUGAR SHIPMENTS TO THE WORLD ARE SURGING?

### Why in News?

- The export of sugar from India has recently been a success story that has received attention.
- Between 2017-18 and 2021-22, these have soared from \$810.9 million [6.2 lakh tonnes (lt)] to \$4.6 billion (110 lt) and could cross \$5.5 billion/Rs 45,000 crore in the fiscal year ending March 31.

## The Sugar Industry in India:

- Sugar industry is an important **agro-based industry** that **impacts rural livelihood** of about 50 million sugarcane farmers and around 5 lakh workers directly employed in sugar mills.
- **In Sugar Season (Oct-Sep) 2021-22**, a record 359 Lakh Metric Tons (LMT) sugar was produced by sugar mills.
- With this, **India has emerged as the world's largest producer** (unseating Brazil) and **consumer** of sugar as well as the world's 2nd largest exporter of sugar.



## Where the Sugar Industries are Located in India?

- The base of the sugar industry is **sugarcane**, which is a **bulky and perishable crop**.
- Since the **sucrose content degrades over time**, sugarcane cannot be kept for a long period of time.
- In order to provide a **consistent supply** of sugarcane and **reduce transportation expenses**, the sugar mills are situated near to the areas where the sugarcane is grown.
- In India, there are **two distinct agro climatic areas** where sugarcane is mostly grown -
  - The states of Maharashtra, Andhra Pradesh, Tamil Nadu, Karnataka, Gujarat, Madhya Pradesh, Goa, Pondicherry, and Kerala are included in the **tropical sugarcane region**.
  - UP, Bihar, Haryana, and Punjab are included in the **subtropical sugarcane growing region**.
- In 2022, **Maharashtra overtook UP** to retake first place in India for sugar production.

YEAR (OCT-SEP)	TOP SUGAR PRODUCING STATES (IN LAKH TONNES)				
	MAHARASHTRA	UTTAR PRADESH	KARNATAKA	GUJARAT	ALL-INDL.
2013-14	76.85	64.87	41.77	11.77	243.60
2014-15	105.07	71.01	49.35	11.54	283.13
2015-16	84.24	68.55	40.49	11.68	251.25
2016-17	42.38	87.73	21.44	8.85	202.62
2017-18	107.05	120.50	36.58	10.67	323.28
2018-19	107.21	118.22	44.29	11.23	331.62
2019-20	61.70	126.37	35.00	9.30	273.85
2020-21	106.30	110.59	44.65	10.50	311.20
2021-22*	138.00	104.00	60.00	12.00	355.50

\*Projected

## What Explains the Surge in Sugar Exports?

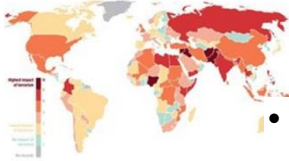
- **Grades of sugar:**
  - **Raw sugar** (rough and brownish in colour) is what mills produce after the first crystallisation of juice obtained from crushing of cane.
  - Raw sugar is processed in **refineries for removal of impurities and de-colourisation**.
  - **The end product** is refined white cane sugar having a standard ICUMSA value of 45.

- The International Commission for Uniform Methods of Sugar Analysis (ICUMSA) is a **measure of the purity of sugar based on colour.**
- The lower the ICUMSA value, the more the whiteness. The sugar used by industries such as pharmaceuticals has ICUMSA of less than 20.
- Much of the world sugar trade is in ‘**raws**’ that are transported in bulk vessels of 40,000-70,000 tonnes capacity.
- ‘**Whites**’, on the other hand, are usually packed in 50-kg polypropylene bags and shipped in 12,500-27,000-tonne container cargoes over shorter distances.
- Raw sugar requires no bagging or containerisation and can be loaded in bulk and the **buyer here is the refiner, not the end-consumer.**
- **Where India was lagging?**
- Building export markets takes effort since foreign customers must be persuaded of the **price competitiveness, product quality and reliability of supplies.**
- Till 2017-18, India mainly shipped plantation white sugar - **referred to as low-quality whites (LQW)** in international markets.
- The Ministry of Consumer Affairs, Food & Public Distribution officials visited Indonesia, Malaysia, South Korea, China and Bangladesh, **creating awareness about the quality of Indian raw sugar.**
- **Comparative advantage to India:**
- The refineries in those countries mostly **imported raws from Brazil.** Brazilian mills operate from April to November, whereas our crushing is from October to April.
- Therefore, India told them **to source Indian raw sugar during Brazil’s off-season.**
- Also, **the voyage time** from Kandla, Mundra or JNPT to Ciwandan Port of Indonesia is 13-15 days, compared to 43-45 days from Brazil’s Port of Santos.

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## [GLOBAL TERRORISM INDEX 2023](#)

The Institute for Economics and Peace (IEP) recently corrected its report related to Global Terrorism Index (GTI) 2023 after the Communist Party of India (CPI) was wrongly included in the list of deadliest terror groups of 2022.



## About Global Terrorism Index:

- It is published annually by the Institute for Economics and Peace (IEP), a global think tank headquartered in Sydney, Australia
- The index provides a **comprehensive summary** of the key global trends and **patterns in terrorism** over the past 15 years.
- The report **ranks 163 countries** (99.7% of the world's population) on the impact of terrorism.
- **Indicators:** Include the number of **terrorist incidents, fatalities, injuries, and hostages**.
- The index is produced **using data from Terrorism Tracker of Dragonfly**-- which provides event records on terrorist attacks since January 1, 2007 -- and other sources.
- **Highlights of Global Terrorism Index 2023:**
  - **Afghanistan retains the top spot** on the list of the country impacted by terrorism. Afghanistan has topped for the fourth consecutive year.
  - **India ranked 13th on the index**, marking **only a marginal** decrease from the previous year.
  - **Pakistan saw the second-largest increase in terror-related fatalities globally** last year, with a total of 643 dead.
  - **Military people made up at least 55% of all casualties** of terrorism.

## SAND BATTERY

Finland has installed the world's first sand battery that can store heat from renewable energy sources for months



## About Sand Battery:

- The battery, made of sand collected from construction sites, can solve the problem of round-the-year energy supply, a known limitation of renewable energy sources that can be harnessed intermittently.
- Sand can be **heated up to 600 degrees Celsius (°C)**, whereas water starts to boil at 100°C. It also has low heat conductivity, which reduces energy loss.

- The storage system has three **main components**: the **sand silo**, an **electrical air heater** and an **air-to-water heat exchanger**.
- For charging the sand silo, the air is heated to 600°C in the electric air heater.
- The hot air is then circulated inside the silo using a heat-exchange pipe and blowers to raise the temperature of the sand at the silo's core to 600°C.
- When the storage enters the discharging stage, the blowers are used to pump air into the pipe inside the sand silo.
- Once the air reaches 200°C, it is transferred to the air-to-water heat exchanger, where it is used to boil water. It is then sent to the heating network.
- The **storage system requires electricity at all times**.
- It is needed to charge the battery, monitor the temperature during standby and run the blowers when the battery is used.
- 1,000 times more power is discharged as heat than is used as electricity.

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## RACCOON DOGS LINKED TO CORONAVIRUS PANDEMIC

### Why in news?

- A new analysis of genetic data collected from the Huanan Seafood Market in Wuhan, China, has linked coronavirus to raccoon dogs.
- The new findings have further added evidence to the belief that the pandemic might have originated from the infected animals sold at the site.

### News Summary: Raccoon dogs linked to coronavirus pandemic

- An international team of virus experts found genetic data from a market in Wuhan, China, linking the coronavirus with raccoon dogs for sale there.

### What are raccoon dogs?

- Raccoon dogs are neither dogs nor raccoons. They belong to the **canid family** and are closely related to foxes. They are the only canids that hibernate during the winter.
- The Canid family, also known as Canidae, is a biological family of carnivorous mammals that includes domestic dogs, wolves, foxes, coyotes, jackals, and several other species.



- As per the experts, there are two species of raccoon dogs:
  - “Nyctereutes procyonoides, the common raccoon dog (the species that was in the Wuhan market) and
  - Nyctereutes p. viverrinus, the Japanese raccoon dog.”
- These animals are omnivores and relish food sources such as rodents and berries.

### Where are raccoon dogs found?

- Raccoon dogs are originally from East Asia and are commonly found in parts of China, Korea and Japan, where they are known as tanuki.
- They are also found in Europe, where they were first brought in by fur traders in the 1920s.

### Why were raccoon dogs being sold in Wuhan?

- For decades, these animals have been farmed for their fur. Every year, millions of them are killed in China, which is a leading producer of raccoon dog pelts.
- To meet this huge demand, sellers raise raccoon dogs in small and crowded facilities while transporting them in small cages, often stacked with those of other animals.
- This serves as a perfect breeding ground for the spread of different diseases.

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## WHAT IS PARKINSON'S DISEASE?

**Findings of a recent scientific review found that physical exercise can help to improve the severity of movement-related symptoms and the quality of life in people with Parkinson's Disease.**



### About Parkinson's Disease:

- It is a **progressive neurological disorder** that affects the **nervous system** and the parts of the body controlled by the nerves.
- It is a **condition** in which a **patient holds limited or no control over his movements and body balance**.
- It occurs and **progresses with ageing**, but in rare cases, it is also witnessed among children and teenagers as well.
- It has **no cure**.

- Many studies have suggested that **men are more likely to be affected** by Parkinson's than women.
  - **Cause:**
    - It is caused by the **degeneration of nerve cells** in the part of the brain called the **substantia nigra, which controls movement**.
    - These nerve cells die or become impaired, **losing the ability to produce** an important chemical called **dopamine**.
    - **Dopamine** operates with other neurotransmitters to help **coordinate the millions of nerve and muscle cells involved in the movement**.
  - **Symptoms:**
    - **Tremors** (trembling in the hands, arms, legs, and jaw); **rigidity** (stiffness of the limbs); **slowness** of movement; and **impaired balance** and coordination.
    - Parkinson's patients **may also experience** other symptoms such as **difficulty in swallowing**, chewing, and **speaking**, urinary problems, constipation, skin problems, **depression**, emotional changes, and **sleep disruption**.
  - Currently, **no blood laboratory or radiological tests are available to diagnose** Parkinson's disease.
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