WORLD INTELLECTUAL PROPERTY ORGANIZATION

The Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge was adopted at the Diplomatic Conference held under the aegis of the World Intellectual Property Organization (WIPO) at its headquarters in Geneva.

- It is a specialized agency of the United Nations, located in Geneva, Switzerland. It was established by the WIPO Convention **in 1967**.
- **Mission:** Its mission is to lead the development of a balanced and **effective international intellectual property (IP) system** that enables innovation and creativity for the benefit of all.
- **Members:** WIPO currently has **193 member states.**
- It provides a global policy forum, where governments, intergovernmental organizations, industry groups and civil society come together to address evolving IP issues.
- Its member states and observers meet regularly in a variety of standing committees and working groups.
    - In these bodies, members negotiate the changes and new rules needed to ensure that the international IP system keeps pace with the changing world, and continues to serve its fundamental purpose of encouraging innovation and creativity.

Key points about Treaty on Intellectual Property, Genetic Resources and Associated Traditional Knowledge:

- It mandates that, where a patent application **involves genetic resources**, the applicant must **disclose the country of origin** or source.
- If **traditional knowledge** associated with genetic resources is involved, the applicant must disclose the **Indigenous Peoples or local community** that provided it.

- Genetic resources, found in entities such as **medicinal plants and agricultural crops**, are often utilized in patented inventions, although they themselves cannot be patented.
- Once **ratified by 15 contracting parties**, the Treaty will establish an international legal framework requiring patent applicants to disclose the origin of genetic resources and the associated traditional knowledge used in their inventions.

WHAT ARE OMEGA-3 FATTY ACIDS?

A recent study challenges the perceived heart health benefits of fish oil supplements rich in omega-3 fatty acids, raising concerns about their impact on cardiovascular health.

- They are the **building blocks of the fat** in our bodies and in the food we eat. During digestion, the body breaks down fats into fatty acids, which can then be absorbed into the blood.
- Fatty acid molecules are usually **joined together in groups of three**, **forming a molecule** called a **triglyceride**. Triglycerides are also made in our bodies from the carbohydrates that we eat.
- The **two main types** of fatty acids are saturated fat and unsaturated fat.
    - **Saturated fats** are sometimes known as “bad” or “unhealthy” fats because they increase your risk of certain diseases like heart disease and stroke.
    - **Unsaturated fats** (polyunsaturated and monounsaturated) are considered “good” or “healthy” fats because they support your heart health when used in moderation.

About Omega-3 Fatty Acids:

- They are **polyunsaturated fats**that perform important functions in your body. Your body can’t produce the amount of omega-3s you need to survive.
- So, omega-3 fatty acids are **essential nutrients**, meaning you need to get them from the foods you eat.

- They are **found in foods, such as fish and flaxseed**, and in dietary supplements, such as fish oil.

- The **three main** omega-3 fatty acids **are alpha-linolenic acid (ALA**), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA).
  - ALA is found mainly in plant oils such as flaxseed, soybean, and canola oils. DHA and EPA are found in fish and other seafood.
- **Omega-3s** are **important components of the membranes** that surround each cell in your body. DHA levels are especially high in retina (eye), brain, and sperm cells.
- Omega-3s also **provide calories to give your body energy** and have many functions in your heart, blood vessels, lungs, immune system, and endocrine system (the network of hormone-producing glands).
- Omega-3s in fish and fish oil supplements may **help with symptoms of several autoimmune diseases** like rheumatoid arthritis, lupus, and Crohn's disease.

PM-KUSUM (PRADHAN MANTRI KISAN URJA SURAKSHA EVAM UTTHAAN MAHABHIYAN) SCHEME

- It was launched in 2019 **for de-dieselisation of the farm sector** and **enhancing the income of farmers**.
- It is aimed at **ensuring energy security for farmers** in India, along with honouring India's commitment to increase the share of installed capacity of electric power from non-fossil-fuel sources to 40% by 2030 as part of Intended Nationally Determined Contributions (INDCs).
- It **aims to add Solar capacity** of about **34,800 MW by March 2026** with the total Central Financial support of Rs 34,422 crore.

Nodal Ministry: Ministry of New and Renewable Energy (MNRE). It is being **implemented by** the designated **departments of the State Government.**

- Under the Scheme, a central government **subsidy upto 30% or 50% of the total cost** is given for the installation of standalone solar pumps and also for the solarization of existing grid-connected agricultural pumps.
- Further, farmers **can also install grid-connected solar power plants up to 2MW,** under the Scheme on their barren/fallow land.
- The Scheme consists of **three components:**
    - **Component A:**
        - **10,000 MW of solar capacity** through the installation of **small Solar Power Plants** of **individual plants** of **capacity up to 2 MW.**
        - The **power generated** will be **purchased by the local DISCOM** at a pre-fixed tariff determined by the respective State Electricity Regulatory Commission (SERC).
    - **Component B:**
        - **Installation of 20 lakhs of standalone Solar Powered Agriculture Pumps**.
        - The State Government will give at-least **subsidy of 30%** and the remaining will be provided by the farmer.
    - **Component C:**
        - **For Solarisation of 15 Lakh Grid Connected Agriculture Pumps**.
        - The farmer will be able to use the generated solar power to meet the irrigation needs and the excess solar power will be sold to DISCOMs at pre-fixed tariff.
- The **eligible categories** for KUSUM Scheme are:
    - An **individual farmer**.
    - A **group of farmers.**
    - FPO or **Farmer producer organization**.
    - **Panchayat**.
    - **Co-operatives**.
    - **Water User Associations**.

SATHYAMANGALAM TIGER RESERVE

The Tamil Nadu Forest Department recently commenced a three-day-long elephant census at Sathyamangalam Tiger Reserve.

- It is located at the **junction of** the **Eastern and Western Ghats**in the Nilgiri Biosphere Reserve, in the Erode District of **Tamil Nadu.**
- Its area is **contiguous with** the **Mudumalai Tiger Reserve**, **Bandipur Tiger Reserve (Karnataka),** and **Biligiri Rangaswamy Temple Tiger Reserve** and Wildlife Sanctuary (Karnataka). Together, these reserves—forming the **Nilgiris biosphere landscape**— have the **biggest tiger population in the world**, at over 280 tigers.

- It was declared a tiger reserve in 2013. It forms a **vital link between** the **Eastern and Western Ghats**, creating a **continuous habitat for tigers** and other wildlife.
- **Climate**:
  - It is **subtropical and dry.**
  - The **summers are hot** and dry; the **monsoons are wet and cooler**, with river flooding.
- **Rivers**: Some of the prominent rivers in the region include the **Bhavani, Moyar, and Noyyal rivers.**
- **Tribal Communities**: It is home to several indigenous tribal communities, including the **Irula and Kurumba tribes**.
- **Flora**:
  - The vegetation consists of **southern tropical dry thorn forests**, **mixed deciduous** forests, **semi-evergreen** forests, and **Riparian forests**.
  - Around 700 species of flora have been found in the sanctuary, where **bamboos** are the **predominant species** of vegetation.
- **Fauna**:

- The major species are **Elephant, Tiger, Panther,** Sloth bear, Gaur, Black Buck, Spotted deer, **Wild boar**, Black napped hare, Common langur, Striped neck mongoose, and Bonnet macaque.
- It is home to some **rare and endangered species**, such as the **grizzled giant squirrel,** the **Nilgiri tahr**, the **Nilgiri langur**, and the **four-horned antelope.**

COST INFLATION INDEX

Recently, the income tax department has notified the Cost Inflation Index for the current fiscal beginning April 2024.

- The CII number is used to adjust the **purchase price of assets** on the **basis of inflation.** It is notified under the **Income-tax Act, 1961 every year.**
- It helps an individual to ascertain the **inflation-adjusted current price** of an asset. It also helps in **calculating capital gains** from a transfer or sale of capital assets after taking inflation into account.
  - **Capital gain** refers to the profit acquired from the sale/transfer of any capital assets, including land, property, stocks, shares, trademarks, patents, etc.
- Normally, an asset is required to be retained for more than 36 months (24 months for immovable property and unlisted shares, 12 months for listed securities) to qualify as 'long-term capital gains'.
- It helps taxpayers offset the impact of inflation as the difference between the purchase and sale price could be substantial due to rising prices.
- The application of the Cost Inflation Index for capital gain adjusts the purchase price of assets based on their sale price, resulting in smaller earnings and a lower tax amount.
- From FY 2023-24, the indexation benefit on long-term capital gains from **non-equity mutual fund schemes has been removed.**
- A taxpayer will continue to use the CII number to calculate long-term **capital gains from house property, land, and building in the event of a sale.**

GRAPHITE

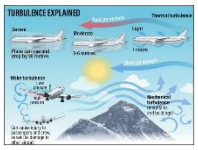
India is in talks with Sri Lanka to acquire a graphite mine block in the island nation, pushing ahead with its plan to forge global alliances to secure critical mineral supplies.

Graphite is an **opaque, non-metallic carbon polymorph** that is blackish silver in colour and metallic to dull in sheen. Since it resembles metal lead, it is also known colloquially as **black lead or plumbago.**

- **Formation:** It is formed by the metamorphosis of sediments containing carbonaceous material.
- **Molecular structure:**
- It consists of a **ring of six carbon atoms** closely bonded together hexagonally in widely spaced layers.
- The bonds within the layers are strong, but the bonds between the layers are less in number and therefore weaker.
- **Properties:**
    - It is a naturally occurring form of **crystalline carbon and** is a stable form of carbon.
    - It is **extremely soft**, cleaves with very light pressure, and has a very low specific gravity.
    - In contrast, it is extremely resistant to heat and nearly inert in contact with almost any other material. These extreme properties give it a wide range of uses in metallurgy and manufacturing.
- **Applications:** It is used in pencils, lubricants, crucibles, foundry facings, polishes, arc lamps, batteries, brushes for electric motors, and cores of nuclear reactors.
- Globally it is mined extensively in China, India, Brazil, North Korea, and Canada.
- Why Sri Lankan Graphite? Sri Lankan graphite is considered among the purest in the world with more **than 98% carbon content.**

WHEN CAN FLIGHT-TURBULENCE BECOME DANGEROUS

What is Turbulence?



- Turbulence is essentially **unstable air that moves in a non-predictable fashion**. Most people associate it with heavy storms.
- However, the most dangerous type - **clear-air turbulence**, happens most often in or near the high-altitude rivers of air called **jet streams**.
    - The main cause of such turbulence is **wind shear**, which **occurs when two huge air masses close to each other move at different speeds**.
    - If the difference in speed is big enough, the atmosphere can't handle the strain, and it **breaks into turbulent patterns like eddies in water**.

When is Turbulence Dangerous for Aircraft?

- **Aircraft undergo some form of turbulence on a regular basis** and pilots are trained to deal with these.
- However, there have been several instances when intense turbulence has brought down modern jetliners.
- **Therefore, on the basis of their nature and intensity,** turbulence becomes dangerous for aircraft.
- **For example**,
    - A SpiceJet-operated Boeing 737-800 aircraft with 189 passengers encountered severe turbulence in 2022.
    - While descending, turbulence was created due to bad weather.
    - The airspeed suddenly dropped by around 100 knots, before rising again.
    - This led the crew and passengers to rise up (similar to a zero-gravity situation) and fall back down.
    - Two passengers were treated for severe head and spine injuries.
- While intense turbulence has been the main cause of an accident, **several other factors have contributed to the accident**, such as

- Lack of proper training,
- Poor dissemination of weather or wind related information, etc.

Have Instances of Turbulence Risen and is Climate Change Responsible?

- According to a study, clear-air turbulence **rose by 55%** over the North Atlantic between 1979 and 2020.
- **Global warming** as a result of greenhouse gas emissions (GHGs) could lead to **higher wind speeds** in the fastest upper-level jet stream.
  - **The speeds will increase by 2% for every degree Celsius** the earth warms.
- The global temperature has increased by at least 1.1 degrees Celsius since the pre-industrial era and it **is expected to increase by 4 degrees Celsius** by the end of the century if GHGs continue to rise at the same level.

What can be Done to Avoid Dangerous Turbulence?

- **Passengers should**
  - Listen to instructions from flight attendants;
  - Pay attention to the safety briefing at the beginning of the flight;
  - Wear a seat belt at all times;
  - Use an approved child safety seat or device if a child is under two; etc.
- **Airlines should**
  - Improve dispatch procedures by keeping communication channels open full-time;
  - Issue Flight Planning Guidance Charts (FPGs) and Significant Meteorological Information (SIGMETs);
  - Include turbulence in weather briefings;
  - Promote real-time information sharing between pilot and dispatcher;
  - Reinforce the carrier's turbulence avoidance policy through dispatcher training;
  - Consider rerouting using atmospheric modelling and all applicable weather data;
  - Using operating procedures and training to prevent turbulence injuries, etc.