

# 2021 JUNE MAGZINE

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## Economy

### 1. Nano Urea Liquid

#### Why in News?

- Recently, the Indian Farmers Fertiliser Cooperative Limited (IFFCO) introduced the world's first Nano Urea Liquid for farmers across the world.

#### About

- What is it? → It is a **nutrient (liquid) to provide nitrogen to plants** as an alternative to the conventional urea.
- It is developed to **replace conventional urea** and it can curtail the requirement of the same by at least 50%.
- It contains **40,000 mg/L of nitrogen in a 500 ml bottle** which is equivalent to the impact of nitrogen nutrient provided by one bag of conventional urea.
- Conventional urea is **effective 30-40%** in **delivering nitrogen to plants**, while the effectiveness of the Nano Urea Liquid is **over 80%**.
- Its effectiveness has been **tested in over 11,000 farmers' fields** for **94 crops** like rice and wheat.
- An **average 8% increase in yield** has been witnessed.
- Developed At →
  - It has been indigenously developed at **Nano Biotechnology Research Centre, Kalol, Gujrat** in line with Atmanirbhar Bharat and Atmanirbhar Krishi.
  - India is **dependent on imports** to meet its urea requirements.
- Significance →
  - It has been **found effective and efficient** for plant nutrition which **increases the production** with improved nutritional quality.
  - It will also have a **huge positive impact** on the **quality of underground water**, a very significant reduction in global warming with an impact on climate change and sustainable development.

#### 🏠 Indian Farmers Fertiliser Cooperative Limited

- It is one of India's biggest cooperative societies which is **wholly owned by Indian Cooperatives**.
- Background → Founded in **1967** with just 57 cooperatives, today it is an **amalgamation of over 36,000 Indian Cooperatives** with diversified business interests ranging from General Insurance to Rural Telecom apart from its core business of manufacturing and selling fertilisers.
- Objective → To enable Indian farmers to **prosper through timely supply of reliable, high quality agricultural inputs** and **services** in an environmentally sustainable manner and to undertake other activities to improve their welfare.

### 2. Horticulture Cluster Development Programme

#### Why in News?

- The Union Minister of Agriculture and Farmers Welfare has launched the Horticulture Cluster Development Programme (CDP).

## About

- What is it? → It is a **central sector programme** aimed at growing and developing **identified horticulture clusters** to make them globally competitive.
- Horticulture cluster is a **regional/ geographical concentration** of targeted horticulture crops.
- Nodal Agency → The nodal agency for the programme will be the **National Horticulture Board(NHB)**.
- Coverage →
  - The Ministry of Agriculture and Farmers' Welfare(MoA&FW) has identified **53 horticulture clusters**. Of which **12** have been **selected for the pilot launch** of the programme.
    - Based on the learnings from the pilot project, the programme will be **scaled up to cover all** the identified clusters.
  - These clusters will be implemented through **Cluster Development Agencies(CDAs)**. CDAs are appointed on the recommendations of the respective State/UT Government.
- Objectives →
  - To **address all major issues** related to the Indian horticulture sector including pre-production, production, post-harvest management, logistics, marketing and branding.
  - To **leverage geographical specialisation** and **promote integrated** and **market-led development** of horticulture clusters.
  - To converge with other initiatives of the Government such as the **Agriculture Infrastructure Fund**.
- Benefit → The programme will **benefit about 10 lakh farmers** and is expected to attract an investment of Rs. 10,000 crore when implemented in all the 53 clusters.

## 3. One Nation One Standard Mission

### Why in News?

- The Research Design and Standards Organisation (RDSO) became the first Institution to be declared Standard Developing Organisation (SDO) under the "One Nation One Standard" mission.

### About

- The 'One Nation One Standard' Mission was **first deliberated** in **September, 2019**.
- The mission was envisioned **on the line of 'one nation, one ration card'** scheme in order to ensure quality products in the country.
- The purpose is to **converge multiple standards** with the BIS which is a recognised national body for standardisation in India.
- The recognition is **valid for 3 years** and will **require renewal** after completion of the validity period.
- Objectives →
  - Aggregating and **integrating the existing capabilities** and **dedicated domain specific expertise** available with various organizations in the country engaged in standards development in their specific sectors.
  - The idea is to develop **one template of standard for one given product** instead of having multiple agencies set it.
  - Enable **convergence of all standard development activities** in the country resulting in One National Standard for One Subject.

- Benefits → This will help in establishing in the **long run Brand India**. This will also **ensure market relevance** for the **Indian standards**.

#### 📁 Bureau of Indian Standards

- It has been established for the **harmonious development of the activities of standardization, marking and quality certification of goods** and for matters connected therewith or incidental thereto.
- It was established by the **Bureau of Indian Standards Act, 1986** which came into effect in December 1986. It works under the aegis of the **Ministry of Consumer Affairs, Food & Public Distribution**.
- A new **Bureau of Indian standard (BIS) Act 2016** has been brought into force with effect from October 2017.
- The Act establishes the Bureau of Indian Standards (BIS) as the **National Standards Body of India**.

#### 📁 Other Initiatives of BIS

- BIS-Care App → Provides a platform to consumers for **grievance redressal and feedback** through the portal.
- Quality Control Orders (QCO) → It is formulating the **standards of manufactured products**.

#### 📁 Research Designs & Standards Organization

- It is the **sole R&D Wing** of the **Ministry of Railways**, is one of India's leading Standard formulating bodies undertaking standardization work for the railway sector situated in **Lucknow, Uttar Pradesh**.

## 4. IPO grey market

### Why in News?

- Paytm's stock has risen from ₹11,500 to ₹21,000 in four days in the grey market.

### About

- IPO → Generally, when companies **wish to raise funds** to fuel their growth, they **sell a part of their stock on the stock market**. This process is called an **initial public offering**, or IPO.
- But, an IPO grey market is an **unofficial market** where IPO shares or applications are bought and sold before they become available for trading on the stock market.
- It is also termed a **parallel market** or an **over-the-counter market**.
- Is it allow? How is it governed? →
  - Since it's unofficial, inevitably, there are **no regulations** that govern it. The Securities and Exchange Board of India (SEBI), stock exchanges, and brokers have **no part to play in it**. These transactions are **undertaken in cash** on a **one-on-one basis**.
- Kostak rate? →
  - It relates to an IPO application. So, the **rate at which an investor buys an IPO application before the listing** is termed the Kostak rate.
- Why do investors trade in the Grey Market? →
  - It's an **excellent opportunity for investors** to purchase a company's shares even **before they are listed**, especially if they feel that the company's stock will increase in value.
  - If an **investor** has **missed the deadline for the IPO application** or wishes to buy more shares then they can **approach the IPO grey market**.
- What is in it for the companies? →

- For companies, the grey market is a great way to **know how the demand for their shares** is and how the company's shares might perform once it is listed.

## 5. World Employment and Social Outlook: Trends 2021

### Why in News?

- Recently, the International Labour Organisation (ILO) has released the World Employment and Social Outlook: Trends (WESO) report 2021.

### About

- The report **analyses key labour market issues** including unemployment, labour underutilisation, working poverty, income inequality, labour income share and factors that exclude people from decent work.
- It highlights **how the COVID-19 crisis had worsened pre-existing inequalities** by hitting vulnerable workers harder.

### 📌 Key Findings

- Covid-19 induced **jobs loss will reach 75 million** in **2021**, before falling to 23 million in 2022.
- **Unemployment** is expected to **stand at 205 million people** in **2022**.
- The quality of newly **created jobs** would likely **deteriorate in developing and emerging economies**.
- Compared to 2019, an additional **108 million workers** worldwide are now **categorized as poor or extremely poor**.

### 📌 International Labour Organisation

- It was **created in 1919**, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it is based on social justice.
- It became a **specialized agency of the United Nations** in 1946.
- It is a **tripartite organization**, the only one of its kind bringing together representatives of governments, employers and workers in its executive bodies.
- Members →
  - **India is a founding member** of the ILO with a total **187 member States**.
  - In 2020 India assumed the Chairmanship of the Governing Body of ILO.
- Headquarter → **Geneva in Switzerland**.
- Awards → In **1969**, ILO received the **Nobel Peace Prize** for improving fraternity and peace among nations, pursuing decent work and justice for workers, and providing technical assistance to other developing nations.

## 6. Seed Minikit Programme

### Why in News?

- The Seed Minikit Programme was launched by Union Agriculture Minister by distributing Seed Minikits (higher yielding varieties of seeds) of Pulses and oilseeds to farmers.

### About

- Launched by → **Ministry of Agriculture**.



- Seed Minikit Programme aims to **distribute high yielding varieties of seeds** of pulses and oilseeds to farmers.
- Funding → The programme is **wholly funded by the Center** through the National Food Security Mission.
- Nodal Agencies → The **seed mini-kits** are being provided by the following central agencies –
  - National Seeds Corporation(NCS)
  - NAFED
  - Gujarat State Seeds Corporation.
- Significance → This programme is a **major tool for introducing new varieties of seeds** in fields and instrumental in increasing the seed replacement rate.
- Seed Replacement Rate (SRR) → Out of the total area of a crop planted in a season, SRR is the **percentage of total area sown using certified/quality seeds** other than the farm-saved seed (the practice of saving seeds to plant in the next season).

## 7. World Energy Investment Report 2021

### Why in News?

- Recently, the International Energy Agency (IEA) published the World Energy Investment Report, 2021.

### About

- The report presents the **latest data** and **analysis of how energy investment flows** are recovering from the shock of the Covid-19 pandemic.
- This includes **full-year outlook estimates for 2021**.

### 📌 Key Findings

- Global energy investments are set to **recover by nearly 10% in 2021** to \$1.9 trillion reversing the decline in 2020.
- Global Power Sector which saw flat investments in 2020 is set to receive the **highest ever funding** i.e. up by about **5% to more than \$820 billion**. Among them, Renewables are forecast to account for 70% of the total.
- The **technologies** like Carbon Capture and Storage(CCS) are **yet to attain commercial success**. So, the investments in oil are expected to grow by about 10%.
- Net Zero Plan: The commitments to the Net Zero plan is **gaining momentum**, but its **transition to actual action is not visible**.

### 📌 International Energy Agency

- It is an **autonomous Intergovernmental Organisation** established in **1974** in Paris, France.
- IEA mainly **focuses on its energy policies** which include economic development, energy security and environmental protection. These policies are also known as the 3 E's of IEA.
- India and IEA →
  - India became an **Associate member of IEA** in **March 2017** but it was in engagement with IEA long before its association with the organization.
  - Recently, India has **inked a Strategic Partnership Agreement** with the IEA to **strengthen cooperation** in global energy security, stability and sustainability.
- IEA Clean Coal Centre → It is dedicated to providing **independent information and analysis** on how coal can become a cleaner source of energy, compatible with the UN Sustainable Development Goals.

- Reports → World Energy Investment Report, World Energy Outlook Report, Global Energy Review.

## 8. G7 corporate tax deal

### Why in News?

- A group of the world's richest nations reached a landmark deal to close cross-border tax loopholes used by some of the world's biggest companies.

### About

- The Group of Seven (G7) would support a minimum global corporation tax rate of **at least 15%**.
- They would put in place measures to **ensure taxes were paid in the countries where businesses operate.**
- How will it work? →
  - Global minimum tax rate would **apply to Overseas profits.**
  - Governments could **set whatever local corporate tax rate** they want, but if companies pay lower rates in a particular country, their home governments could top-up their taxes to the minimum rate, thus eliminating the advantage of shifting profits.
  - The Organisation of Economic, Cooperation and Development (**OECD**) has also been **coordinating tax negotiations** on **rules for taxing cross-border Digital Services** and **curbing tax base erosion**, including a global corporate minimum tax.
  - Also, countries would lose the device used to push policies that suit them once a global minimum rate is put in place.
- Impact on India → The decision is likely to **benefit India** as India has wanted to **keep corporate tax rate artificially lower** to **attract FDI** in comparison to tax havens or low taxation countries.

## 9. Beed Model

### Why in News?

- Maharashtra government has asked for state-wide implementation of the 'Beed model' of the crop insurance scheme Pradhan Mantri Fasal Bhima Yogna (PMFBY).

### About Beed Model of Crop Insurance

- Under this model, the insurance company provides a **cover of 110% of the premium collected.**
- In case the compensation amount **exceeds the 110% mark**, the **state government would pay** the bridge amount.
- But if the compensation was **less than the premium collected**, the **insurance company** would **keep 20%** of the amount as handling charges and reimburse the rest to the state government.

### 📍 Why was the Beed Model of Crop Insurance launched?

- Beed is a **drought-prone district** in Maharashtra. Farmers here have **repeatedly lost crops** either to failure of rains or too heavy rains.
- Due to this, insurance companies have **sustained losses** given high payouts. Moreover, the state government also had a difficult time getting bids for tenders to implement the scheme in Beed.
- Hence, the Maharashtra Government decided to **modify the crop insurance guidelines for the district.**

### 📌 Effects on the state government

- In a normal season where farmers report minimal losses, the **state government is expected to get back money** that can form a corpus to fund the scheme for the following year.
- However, the state government would have to **bear the financial liability in case of losses** due to extreme weather events.

### 📌 Pradhan Mantri Fasal Bhima Yojna

- Launched in **2016**, the flagship PMFBY **insures farm losses against inclement weather events**.
- It is a central scheme **implemented by state agriculture departments** as per central guidelines.
- Coverage of crops → It covers **food crops, oilseed crops, annual commercial/horticultural crops**.
- Premium → The prescribed premium is
  - 2% for Kharif crops
  - 1.5% for Rabi crops
  - 5% for commercial and horticultural crops.
- Completely voluntary → The enrollment under the scheme is **100% voluntary for all farmers**.
  - Earlier, the scheme was compulsory for loanee farmers.

## 10. Global Liveability Index

### Why in News?

- Auckland (New Zealand) has topped the Economist Intelligence Unit's (EIU) Global Liveability Index of 140 cities around the world.

### About

- Released by → **Economist Intelligence Unit** (EIU).
- The index assesses the locations that provide the **best and the worst living conditions** around the world. It **assesses 140 cities** around the world.
- Parameters → The index takes into account more than **30 qualitative and quantitative factors**. These factors are spanning five broad categories: **stability** (25%), **healthcare** (20%), **culture and environment** (25%), **education** (10%), and **infrastructure** (20%).
- However, due to the pandemic, the EIU added **new indicators** to it. It includes **stress on healthcare resources** as well as **restrictions** around local sporting events, theatres, music concerts, restaurants, and schools.
- Scores → Each factor in a city is rated as **acceptable, tolerable, uncomfortable, undesirable, or intolerable**. Factor-wise scores are then compiled and weighted to provide a **score of 1–100 where 1 is considered intolerable and 100 is considered ideal**.

### 📌 Key Takeaways

- Top Five Liveable Cities → **Auckland** (New Zealand), **Osaka** (Japan), **Adelaide** (Australia), **Wellington** (New Zealand), and **Tokyo** (Japan).
- Top Five Least Liveable Cities → **Damascus** (Syria), **Lagos** (Nigeria), **Port Moresby** (Papua New Guinea), **Dhaka** (Bangladesh), and **Algiers** (Algeria).

### 👉 Economist Intelligence Unit

- The Economist Intelligence Unit is the **research and analysis division** of **The Economist Group**, which is the sister company to The Economist newspaper.
- Founded → **1946**.
- Headquarters location → **London, United Kingdom**.

## 11. Sub-Mission on Agricultural Mechanization

### Why in News?

- Recently, the Government of India has released funds for various activities of Farm Mechanization under the Sub-Mission on Agricultural Mechanization (SMAM) scheme.

### About

- SMAM was launched in **2014-15** by the **Ministry of Agriculture and Farmers Welfare**.
- Under it, **subsidy** is provided for **purchase of various types of agricultural equipment and machinery** to the extent of 40-50% for States other than NER (North Eastern Region) States and for NER States it is 100% limited to Rs.1.25 lakhs per beneficiary.
- The agriculture ministry has also developed a **Multilingual Mobile App, 'CHC (Custom Hiring Centres)-Farm Machinery'** which connects farmers with Custom Hiring Service Centres situated in their locality.
- Aim → **Increasing the reach** of farm mechanization **to small and marginal farmers** and to the regions and difficult areas where farm power availability is low.
- Objectives →
  - Promoting '**Custom Hiring Centres**' and '**Hi-tech Hubs of High-Value Machines**' to offset the adverse economies of scale arising due to small and fragmented landholding and high cost of individual ownership.
  - **Creating awareness among** stakeholders through demonstration and capacity building activities.
  - **Ensuring performance testing** and **certification** of agricultural machines at designated testing centres located all over the country.
- Note → Agriculture mechanization is the **process of replacing human and animal labour with machines** in the agriculture sector. The use of tractors, threshers, harvesters, pump sets is a part of farm mechanization.

## 12. Inland Vessels Bill

### Why in News?

- The Union Cabinet gave the nod to the Inland Vessels Bill, 2021.

### About

- Inland Vessels Bill, 2021 will **replace the Inland Vessels Act, 1917**.
- Draft Inland Vessels bill proposes to **streamline and regulate how vessels travel** in the inland water fields of India.

### 👉 Key features of the Bill:

- It provides for a **unified law for the entire country**, instead of separate rules framed by the States.

- The **certificate of registration granted** under the proposed law will be deemed to be **valid in all States and Union Territories**, and there will be no need to seek separate permissions from the States.
- The Bill provides for a **central data base** for recording the details of vessel, vessel registration, crew on an electronic portal.
- It requires all mechanically propelled vessels to be **mandatorily registered**. All non-mechanically propelled vessels will also have to be **enrolled at district, taluk or panchayat or village level**.

#### 📍 **Inland Water Transport (IWT) in India:**

- India has about **14,500 km of navigable waterways** which comprise of rivers, canals, backwaters, creeks, etc.
- IWT is a **fuel-efficient** and **environment-friendly mode**.
- As per the National Waterways Act 2016, **111 waterways** have been declared **as National Waterways** (NWs).
- The Inland Waterways Authority of India (IWAI) is **implementing the Jal Marg Vikas Project (JMVP)** at an estimated **cost of ₹5369.18 crores** for capacity augmentation of navigation on the Haldia-Varanasi stretch of Ganga (part of NW-1) with the technical and financial assistance of the World Bank.

### 13. Corporatisation of OFB (Ordnance Factory Board)

#### Why in News?

- Addressing a long-pending reform, the Union Cabinet has approved a plan to corporatize the Ordnance Factory Board (OFB).

#### About

- Ordnance Factory Board(OFB) **will be dissolved**. It will be replaced by **seven new Defense Public Sector Undertakings** (DPSUs). Each undertaking will have a **specific manufacturing role**.
- The **41 factories** under the OFB will be **subsumed under one** or the other of the seven new companies.
- These all will be **100% government-owned** public sector undertakings(PSU).
- There would be **no change in the service conditions** of the **OFB employees**.
  - All OFB employees (Group A, B, and C) from different production units will be transferred to the corporate entities on deemed deputation for an initial period of two years.
- Significance of Corporatization of OFBs → The restructuring of OFBs is aimed at achieving the following objectives:
  - **Making it a productive** and **profitable asset**;
  - **deepen specialisation** in the product range;
  - **enhance competitiveness**;
  - **improve quality** and **cost-efficiency**

#### 📍 **Ordnance Factory Board(OFB)**

- Ordnance Factory Board(OFB) is an **umbrella body** of **41 Ordnance Factories**.
- Origin → In **1775**, British authorities accepted the establishment of the Board of Ordnance in **Fort William, Kolkata**. This marked the official beginning of the Army Ordnance in India.
- Nodal Ministry → It is currently a **subordinate office** of the **Ministry of Defence** (MoD).
- Mandate → It provides a **major chunk of the weapon, ammunition, and supplies for Indian armed forces**, paramilitary forces, and police forces.

- Headquarters → **Kolkata, West Bengal.**

## 14. World Competitiveness Index 2021

### Why in News?

- According to the World Competitiveness Yearbook (WCY), India maintained 43rd rank on the annual World Competitiveness Index.

### About

- Published by → WCY was first published in **1989** and is compiled by the **Institute for Management Development** (IMD).
- The World Competitiveness Index is a **comprehensive annual report** and **worldwide reference point on the competitiveness of countries.**
- Factors → It measures the prosperity and competitiveness of countries by examining **four factors** (334 competitiveness criteria):
  - Economic performance
  - Government efficiency
  - Business efficiency
  - Infrastructure.

### 📌 Key finding

- The European countries display regional strength in world competitiveness ranking with **Switzerland (1st)**, **Sweden (2nd)**, **Denmark (3rd)**, **the Netherlands (4th)**.
- The top-performing Asian economies are, in order, **Singapore (5th)**, **Hong Kong (7th)**, **Taiwan (8th)** and **China (16th)**.
- In Comparison to BRICS Nations → Among the BRICS nations, **India ranked second (43rd)** after **China (16th)**, followed by **Russia (45th)**, **Brazil (57th)** and **South Africa (62nd)**.

## 15. Integrated Power Development Scheme

### Why in News?

- A 50 kWp Solar roof top was recently inaugurated in Solan, Himachal Pradesh under the Integrated power development scheme of the Ministry of Power, Government of India.

### About

- Launched in → **2014** by **Ministry of Power.**
- Nodal agency → **Power Finance Corporation (PFC)** is the Nodal agency for implementation of the scheme.
- Objectives of →
  - **Strengthening of sub-transmission** and distribution network in the urban areas.
  - **Metering of distribution transformers / feeders** / consumers in the urban areas.
  - **IT enablement** of distribution sector and strengthening of distribution network under R-APDRP.
- Significance of the scheme → The scheme will help in **reduction in AT&C losses**; establishment of **IT enabled energy accounting / auditing system**, improvement in billed energy based on metered consumption and improvement in collection efficiency.

### 📌 **Restructured Accelerated Power Development and Reforms Programme (R-APDRP)**

- Launched in → **July 2008**.
- Focus → focus on **establishment of base line data, fixation of accountability, reduction of AT&C losses upto 15%** level through strengthening & up-gradation of Sub Transmission and Distribution network and adoption of Information Technology during XI Plan.

### 📌 **Power Finance Corporation Ltd. (PFC)**

- It is an Indian financial institution established in **1986** under the **ownership of Ministry of Power**.
- It is a **Schedule-A Navratna** Central Public Sector Enterprise (**CPSE**).
- It is a leading **Non-Banking Financial Corporation** in India.
- It was classified as an **Infrastructure Finance Company** by the RBI in **2010**.

## 16. National Internet Exchange of India (NIXI)

### Why in News?

- Recently, the National Internet Exchange of India (NIXI) had celebrated its 18th Foundation Day.

### About

- It is a **not-for-profit Organization** under section 8 of the Companies Act 2013.
- Nodal Ministry → It is under Ministry of Electronics & Information Technology (**MeitY**).
- Purpose → It was set up for **peering of ISPs among themselves** for the purpose of routing the domestic traffic within the country.
- It is working **since 2003** for spreading the internet technology to the citizens of India through the following activities →
- **Internet Exchanges** through which the internet data is exchanged amongst ISPs and between ISPs and CDNs
- **IN Registry**, managing and operation of IN country code domain and भारत IDN domain for India
- **IRINN**, managing and operating Internet protocol (IPv4/IPv6).
- Objectives →
  - To **Promote Internet**
  - To set up, when needed, in **select location(s)/parts/regions of India** Internet Exchanges/Peering Points
  - To enable **effective and efficient routing, peering, transit** and **exchange** of the Internet traffic within India.

### 📌 **Indian Registry for Internet Names and Numbers (IRINN)**

- It provides **allocation and registration services** of **IP addresses and AS numbers**.
- It contributes to the society by **providing Internet-related information** as a non-profit, affiliation-based organisation, and performing research, education and enlightenment activities.

## 17. World Investment Report 2021

### Why in News?

- As per UN report, India received USD 64 billion in foreign direct investments (FDI) in 2020.

## About

- Released by → United Nations Conference on Trade and Development (**UNCTAD**).
- Focus → The World Investment Report **focuses on trends in Foreign Direct Investment (FDI)** worldwide, at the regional and country levels and emerging **measures to improve its contribution to development**.

### 📌 Key Points

- India →
  - The report says that India is the **fifth largest recipient** of Foreign Direct Investment (**FDI in the world**).
  - In India, the FDI **increased 27% to USD 64 billion** (2020) from USD 51 billion (2019), due to the acquisitions in the Information and Communication Technology (ICT) industry.
- Global →
  - The global FDI flows have been **severely hit by the pandemic** and they **plunged by 35%** in 2020 to USD 1 trillion.
  - COVID-19 led lockdowns around the world **slowed down existing investment projects** and prospects of a recession led multinational enterprises (MNEs) to reassess new projects.

## 18. Tax Inspectors Without Borders

### Why in News?

- Bhutan's Tax Inspectors Without Borders (TIWB) programme launched in partnership with India.

### About

- Agency involved → It is a **joint initiative** of the United Nations Development Programme (**UNDP**) and the Organisation for Economic Cooperation and Development (**OECD**).
- Objective → The objective of the TIWB Initiative is to enable **sharing of tax audit knowledge and skills with tax administrations** in developing countries through a targeted, real time “learning by doing” approach.
- Focused on → TIWB is focused on **promoting hands-on assistance by sending Experts** to build audit and audit-related skills pertaining to specific international tax matters and the development of general audit skills within developing tax administrations.
- Expected Duration → **24 months**.
- Benefits of the programme → Through this **India in collaboration** with the UNDP and the TIWB Secretariat **aims to aid Bhutan in strengthening its tax administration** by transferring technical know-how and skills to its tax auditors, and through sharing of best audit practices.

## 19. Enforcement Directorate

### Why in News?

- The Enforcement Directorate has transferred assets worth ₹8,441.50 crore to public sector banks that suffered losses to the tune of ₹22,585.83 crore due to frauds committed allegedly by Vijay Mallya, Nirav Modi and Mehul Choksi.

### About



- History → The origin of this Directorate goes back to **1st May, 1956**, when an ‘Enforcement Unit’ was formed, **in the Department of Economic Affairs**, for handling Exchange Control Laws violations under Foreign Exchange Regulation Act, 1947 (**FERA ’47**).
- In the year 1957, this Unit was **renamed** as ‘**Enforcement Directorate**’.
- Presently, it is part of the **Department of Revenue, Ministry of Finance**.
- Mandate → The Organization is mandated with the task of **enforcing the provisions of two special fiscal laws** – Foreign Exchange Management Act, 1999 (**FEMA**) and Prevention of Money Laundering Act, 2002 (**PMLA**).
- Composition → Besides directly recruiting personnel, the Directorate also draws **officers from different Investigating Agencies**, viz., Customs & Central Excise, Income Tax, Police, etc. on deputation.
- Other functions →
  - **Processing cases of fugitive/s** from India under Fugitive Economic Offenders Act, 2018.
  - **Sponsor cases of preventive detention** under Conservation of Foreign Exchange and Prevention of Smuggling Activities Act, 1974(COFEPOSA) in regard to contraventions of FEMA.

## 20. Land Banks

### Why in News?

- The Department of Investment and Public Asset Management has finalised the structure of the Land Bank Company that will be tasked with selling land parcels owned by government departments and public sector companies.

### About Land bank

- Land bank is a **governmental entity or non-profit corporation** that helps **manage and dispose of vacant properties**, vacant land, or tax-delinquent properties so that vacant property can be redeveloped for a more productive use.
- State governments began to “**bank**” land in the **1990s**, particularly in the post-liberalisation period.
- Till 2017, most Indian states either already had a sizeable land banks or were in the process of creating them.
- NITI Aayog’s strategy for New India @ 75 suggested to adopt the system of using Geographic Information System (GIS) based maps at all levels to create preapproved land banks for manufacturing facilities.

### Steps towards Land Bank:

- In August 2020, **National GIS-enabled Land Bank system** was launched by integration of **Industrial Information System (IIS)** with GIS Systems of six states in first phase. In the second phase, eight more states joined.
- At present, India Industrial Land Bank (IIS) portal, a **GIS-enabled database of industrial areas**/clusters across the country covers more than 3,350 parks/clusters covering about 475,000-hectare land across 31 States/UTs.
- IIS aims to provide the following:
  - Information on available land for prospective investors.
  - GIS mapping of industrial clusters
  - Links to state GIS portals and state land banks.
  - Information about the existing external and internal infrastructure such as rail, road, connectivity.

## Environment

### 1. Climate Breakthroughs Summit

#### Why in News?

- Recently, world leaders convened at the Climate Breakthroughs Summit to demonstrate progress in critical sectors of the global economy, including steel, shipping, green hydrogen and nature.

#### About

- Agency involved → Climate Breakthroughs Summit is a **collaboration between** World Economic Forum, Mission Possible Partnership, United Nations Climate Champions and the United Kingdom Climate Change Conference (COP26) Presidency.
- Aim → It aims to **demonstrate progress** in **critical sectors of the global economy**. This includes sectors such as steel, shipping, green hydrogen and nature.
- It also aims to discuss the **breakthroughs needed** to **achieve a net-zero world in time**.

#### 📖 Key highlights of the summit:

- During the summit, the United Nations made a call for **coordinated action to secure global net-zero emissions**.
- UN also demands to fulfil the goal of **limiting global warming to 1.5 degrees Celsius compared to pre-industrial levels by 2050**.
- Moreover, **Maersk**, the world's largest container shipping line and vessel operator, **joined the Race to Zero campaign** during the summit.

#### 📖 About Race To Zero Campaign:

- Race to Zero is the **UN-backed global campaign** rallying **non-state actors** – including companies, cities, regions, financial and educational institutions – to take rigorous and immediate action to **halve global emissions by 2030** and deliver a **healthier, fairer, zero-carbon world in time**.
- Race To Zero mobilizes actors outside of national governments to **join the Climate Ambition Alliance**.

#### 📖 Climate Ambition Alliance

- The CAA currently includes **120 nations** and **several other private players** that have committed to achieving **zero net greenhouse gas emissions by 2050**.
- Signatories are responsible for **23%** of **current greenhouse-gas emissions** worldwide and **53% of global GDP**.
- India** is **not part** of this Alliance.

### 2. Litoria mira

#### Why in News?

- They are new frog species discovered recently in the rainforests of New Guinea.

#### About

- The name is **inspired by the Latin adjective mirum**, which means surprised or strange, stemming from the scientist's surprise in discovering an undescribed member of the predominately **Australian Litoria genus of tree frogs**.
- They are **chocolate coloured**.
- Litoria mira can be **distinguished from all other Litoria** by its unique combination of **moderately large size, webbing on hand, relatively short and robust limbs**, and small violet patch of skin on the edge of its eyes.
- Please note that the **island of New Guinea** is separated from the '**horn**' of Queensland by the Torres Strait.



### 3. State of Finance for Nature Report

#### Why in News?

- The State of Finance for Nature Report has been released. The report recommended more investments in “Nature-based solutions”.

#### About

- Released by → **United Nations Environment Programme, World Economic Forum** and the **Economics of Land Degradation**.
- Purpose → The report **tracks the global trends in public and private investment** in nature-based solutions. By this, it aims to improve data quality and identify opportunities for governments, businesses and financiers.
- Nature-based solutions(NbS) refer to **sustainable management** and **the use of nature to tackle socio-environmental challenges**. These challenges range from disaster risk reduction, climate change and biodiversity loss to food and water security as well as human health.

#### 👉 Key Findings

- The current investments in Nature-based solutions amount to **USD 133 billion**. This is about **0.10% of global GDP**.
- The largest proportion of **public investment** is carried out by the **United States**, with approximately **\$36 billion a year** in NbS spending. It is **followed by China, Japan, Germany** and **Australia**.

### 4. Black Carbon

#### Why in News

- The World Bank has released a report titled “Glaciers of the Himalayas, Climate Change, Black Carbon and Regional Resilience”.

#### About Himalaya, Karakoram and Hindu Kush (HKHK) mountain region

- The glaciers in the HKHK mountain ranges, containing **almost 55000 glaciers**. They **store more freshwater** than any region outside the North and South Poles.
- Their ice reserves feed into **three major river** basins in South Asia—**the Indus, Ganges**, and **the Brahmaputra**. These rivers are home to **750 million people**.

### 📌 About Black Carbon (BC):

- Black carbon (BC) is a **short-lived climate pollutant**. It is the **second-largest contributor to warming** the planet after carbon dioxide(CO<sub>2</sub>).
- It **absorbs solar energy** and **warms** the atmosphere. When it falls to earth with precipitation, it **darkens the surface** of snow and ice. Thus **reducing their albedo** (the reflecting power of a surface), and warming the snow, resulting in the faster glacial melting.
- However, unlike other greenhouse gas emissions (GHGs), BC is **quickly washed out** and **can be eliminated** from the atmosphere if emissions stop.
- Source of Black Carbon in HKHK region →
  - **Industry** [primarily brick kilns] **and residential burning of solid fuel** together account for 45–66% of BC emissions; On-Road diesel fuels(7–18%) and Open burning (less than 3% in all seasons).

### 📌 Other types of Carbon:

- Blue Carbon → It refers to **coastal, aquatic and marine carbon sinks** held by vegetation, marine organisms and sediments.
- Green Carbon → It is the carbon that is **stored in terrestrial ecosystems** such as forests, pastures and soils.
- Brown Carbon → It is a **light-absorbing particle** in the **Earth's atmosphere** that has the unique characteristics of both cooling the planet's surface and warming its atmosphere.

### 📌 Key findings

- Black carbon (BC) deposits produced by human activity **accelerate the pace of glacier** and **snow melt** in the Himalayan region.
- The **rate of retreat of HKHK glaciers** is estimated to be **0.3 metres per year** in the west to 1.0 metre per year in the east. BC adds to the impact of climate change.
- Deposits of BC **act in two ways** hastening the pace of glacier melt: by **decreasing surface reflectance of sunlight** and by **raising air temperature**.

## 5. Blue Finned Mahseer

### Why in News?

- Recently, the International Union for Conservation of Nature (IUCN) has moved Blue-finned Mahseer from Endangered to the Least Concern' status on its Red List.

### About

- The Mahseer belongs to the **genus Tor**, of which there are **several subspecies to be found in India** and in other range countries in South Asia.
- The Blue-finned Mahseer or Tor Khudree is **one of the subspecies of the Mahseer**.
- IUCN Status → **Least Concern** (LC).
- Features →
  - It is a **silvery-bluish coloured fish** with **blood-red fins** or fins tipped with a bluish tinge.
  - Indicator species: Blue finned Mahseer is **very sensitive** to **dissolved oxygen levels**, **water temperature** and **sudden climatic changes**. It just cannot bear pollution.

- Hence, it acts as an **indicator of ecosystem health** because its prime requirement is a clean and pure environment.
- Diet → The fish **feeds on plants, fruits, insects, shrimps** and **molluscs** and may be grown in ponds. They are also **predatory and prey on smaller mahseer**.
- Habitat → Blue Finned Mahseer is found in the **Mula-Mutha River** close to the **Indian city of Pune**, a part of the Krishna River basin. It is also found in **other rivers of the Deccan Plateau**.
- The species is **migratory** and **moves upstream** during rains.

#### 📌 Conservation Initiative by Tata power

- Tata Group is involved in the conservation of the blue-finned and golden mahseer for 50 years in an **Artificial Lake** at the **Walvan Hatchery in Lonavala (near Pune), Maharashtra**.
- The company created a huge lake by **damming the Indrayani River**. It is at this artificial lake where Blue-Finned and Golden species of Mahseer congregate. Once the **eggs hatch**, they **remain in the lake for 4-6 months**.
- They are then **handed over to various fisheries departments** across the country, who in turn introduce them to lakes and rivers in their states.

#### 📌 International Union for Conservation of Nature

- IUCN is a membership union uniquely composed of **both government** and **civil society organisations**.
- Created in **1948**, it is the global authority on the **status of the natural world** and the **measures** needed to safeguard it. It is headquartered in **Switzerland**.
- The Red List →
  - The IUCN Red List of **Threatened Species**, is the **world's most comprehensive inventory** of the **global conservation status** of plant and animal species.
  - It divides species into **nine categories**: Not Evaluated, Data Deficient, Least Concern, Near Threatened, Vulnerable, Endangered, Critically Endangered, Extinct in the Wild and Extinct.
  - It is recognized as the **most authoritative guide** to the **status of biological diversity**.

## 6. World Environment Day

### Why in News?

- The Union Education Minister has approved the release of Performance Grading Index (PGI) 2019-20 for States and Union Territories.

### About

- The United Nations Assembly established World Environment Day in **1972**, which was the **first day** of the **Stockholm Conference on the human environment**.
- However, it was first observed in the United States in **1974** with the theme- '**Only one earth**'.
- The **theme** of World Environment Day 2021 is '**Reimagine. Recreate. Restore.**' The theme is based on the UN Decade on Ecosystem Restoration, which will be launched by the United Nations this year.
- Host Country → It is being **hosted by Pakistan**.

#### Initiatives by India on World Environment Day:

- Indian Government has declared the theme for World Environment Day, 2021 as “**Promotion of biofuels for a better environment**”.
- ‘**Report of the expert committee on the road map for ethanol blending in India 2020-2025**’ was released
- An **E-100 pilot project** has been launched in Pune for the production and distribution of ethanol across the country.
- Stats: In 2020, the Government of India had set a target of reaching **10% ethanol blending in petrol** (10% of ethanol mixed with 90% of diesel) **by 2022 & 20% ethanol blending by 2030**.
  - However, the target date for achieving 20% ethanol-blending with petrol has been brought **forward by five years to 2025 from the earlier target of 2030**. This is to cut pollution and reduce import dependence.

## 7. Saltwater Crocodile

### Why in News?

- Recently, a saltwater or estuarine crocodile has been found dead in the Patasala river near Silapokhari village within the Bhitarkanika National Park (BNP) in Odisha (only State in India with all crocodiles species: Gharial, Mugger and Saltwater crocodiles).

### About

- Scientific Name → **Crocodylus porosus**.
- It is considered as the **Earth’s largest living crocodile species**.
- The estuarine crocodile is **infamous globally** as a known **maneater**.
- Habitat →
  - It is found in **Odisha’s Bhitarkanika National Park**, the **Sundarbans in West Bengal** and the **Andamans and Nicobar Islands**.
  - It is also found across **Southeast Asia** and **northern Australia**.
- Protection Status →
  - IUCN Red List: **Least Concern**
  - Wild Life (Protection) Act, 1972: **Schedule I**
  - CITES: **Appendix I** (except the populations of Australia, Indonesia and Papua New Guinea, which are included in Appendix II).
- Threats → **Illegal hunting, habitat loss**, and **antipathy toward the species** because of its reputation as a man-eater continue to put pressure on the population.
- Conservation Efforts →
  - In 1975, the Ministry of Environment, Forest and Climate Change and the **United Nations Development Programme (UNDP)** started a **crocodile breeding and rearing project**.
  - Efforts have **increased** the number of crocodiles in BNP to **1,768 in January 2021** from just 96 in 1974.

## 8. Sea Snot

### Why in News?

- There has been growing environmental concern in Turkey over the accumulation of ‘sea snot’, a slimy layer of grey or green sludge in the country’s seas, which can cause considerable damage to the marine ecosystem.

### About

- It is a **slimy layer of grey or green sludge**, which can cause considerable damage to the marine ecosystem.
- It is formed when **algae are overloaded with nutrients**.
- A ‘sea snot’ outbreak was **first recorded in the country in 2007**. Back then, it was also spotted in the Aegean Sea near Greece.
- Overloading of nutrients happens **because of warm weather** caused by global warming, water pollution, uncontrolled dumping of household and industrial waste into the seas etc.

#### 👉 Where has it been found?

- Turkey’s **Sea of Marmara**, which **connects the Black Sea to the Aegean Sea**, has witnessed the largest outbreak of ‘sea snot’.
- The sludge has also been **spotted** in the **adjoining Black and Aegean seas**.



#### 👉 How badly can the crisis affect the marine ecosystem?

- The **growth of the mucilage**, which floats upon the surface of the sea like brown phlegm, is posing a **severe threat to the marine ecosystem** of the country.
- Divers have said that it has **caused mass deaths** among the **fish population**, and also killed other aquatic organisms such as corals and sponges.
- The mucilage is now **covering the surface** of the sea and has also **spread to 80-100 feet below the surface**.
- If unchecked, this can **collapse to the bottom** and **cover the sea floor**, causing **major damage** to the marine ecosystem.
- Over a period of time, it could **end up poisoning all aquatic life**, including fishes, crabs, oysters, mussels and sea stars.

## 9. UN’s CEO Water Mandate

### Why in News?

- NTPC Ltd. has become a signatory to the United Nations’ Global Compact’s CEO Water Mandate.

### About

- It is a special initiative of the **UN Secretary-General** and **the UN Global Compact**, implemented in partnership with the **Pacific Institute**.
- Established in → **2007**.
- Aim → It aims to **demonstrate commitment** and **efforts of companies** to better their water and sanitation agendas as part of long term Sustainable Development Goals.
- It is a **global commitment platform** for **corporate water stewardship**. Water stewardship is the use of water in ways that are socially equitable, environmentally sustainable, and economically beneficial.
- It has six commitment areas →

- Direct operations (i.e. Measuring and Reducing water use).
  - Supply chain and watershed management.
  - Collective action.
  - Public policy.
  - Community engagement.
  - Transparency.

#### 📌 United Nations Global Compact Initiative:

- United Nations Global Compact is a **non-binding United Nations Initiative**.
- Purpose → It aims to **encourage companies worldwide** to **adopt sustainable and socially responsible policies**. For that, the UN categorised 10 principles range from human rights, anti-corruption, environment, labour, etc.
- Launched in → The initiative was announced by the then **UN Secretary-General in 1999**. It was **officially launched** at UN Headquarters in **New York City in 2000**.

## 10. Srivilliputhur-Megamalai Tiger Reserve

### Why in News?

- The recently declared Srivilliputhur-Megamalai Tiger Reserve in Tamil Nadu will provide protection to Megamalai, the Vaigai's primary catchment, in turn helping water levels to rise in the river.

### About

- Establishment → Srivilliputhur-Megamalai Tiger Reserve is the **fifth Tiger Reserve of Tamil Nadu** and the **51st tiger reserve of India**.
- It was jointly declared as a Tiger Reserve by the Centre and Tamil Nadu governments in **February 2021**.
- For this, the **Megamalai WLS** and the **adjoining Srivilliputhur WLS** were clubbed together.
- Vegetation → It has a mix of **tropical evergreen forests** and **semi-evergreen forests, dry deciduous forests** and **moist mixed deciduous forests, grassland**.
- Fauna →
- Meghamalai has a large population of **ungulates** (hoofed mammals), **spotted deer, Indian gaurs, wild boars** and **other carnivores**.
- The adjoining Srivilliputhur hosts **grizzled giant squirrels, flying squirrels, leopards, Nilgiri tars, jungle cats, Sambars, elephants, lion-tailed macaques** and many species of birds.
- Srivilliputhur-Megamalai Tiger Reserve will be the **5th tiger reserve** of Tamil Nadu. The **other four** are →
  - Mudumalai (MTR)
  - Anamalai (ATR)
  - Sathyamangalam (STR)
  - Kalakkad Mundanthurai Tiger Reserve (KMTR)

#### 📌 Vaigai River

- Vaigai is a river in **Tamil Nadu**. The river is also referred to as **Shiva Ganga** in many places.
- It is also called **Kritamaala**, for it runs around the **city of Madurai** like a garland
- It travels through the **Pandiya Nadu** region of Tamil Nadu.



- Heritage River → The Vaigai was the river that flowed through the **city of Madurai**, the **capital of the ancient and prosperous Pandya kingdom** located in southern Tamil Nadu.
  - The river also finds a mention in **Sangam literature dated to 300 before** the Common Era (**BCE**).
  - The story of Vaigai is told in **Thiruvilayadal Puranam**
- Origin → The river originates in the **Varusanadu Hills**, the **Periyar Plateau of the Western Ghats range**.
- Empties into → The river finally **empties into the Palk Strait** near the Pamban Bridge in Ramanathapuram district.
- Tributaries → Its main tributaries are **Suruliyaru, Mullaiyaru, Varaaga Nadhi, Manjalaru, Kottagudi, Kridhumaal** and **Upparu**.
- The Vattaparai Falls are also located on this river.
- Significance → The river fulfils the **drinking water** requirement of five districts of Tamil Nadu namely Theni, Madurai, Ramanathapuram, Sivagangai and Dindigul.

## 11. Argostemma quarantena

### Why in News?

- A new plant species belonging to the coffee family has been spotted in the Wagamon hills in Kerala.

### About

- It has been named **Argostemma quarantena** to **commemorate the millions** who have died in the pandemic.
- It is a herbaceous species from the **family Rubiaceae**.
- Herbaceous plants are plants that have **no persistent woody stem** above ground.
- It was found along the **Idukki-Kottayam border**.

## 12. Dehing Patkai

### Why in News?

- Researchers at the Zoological Survey of India (ZSI), Kolkata have developed tools to differentiate the scales of Indian pangolin (*Manis crassicaudata*) and Chinese pangolin (*Manis pentadactyla*).

### About Dehing Patkai

- It is located within the **larger Dehing Patkai Elephant Reserve**, which spreads across the coal- and oil-rich districts of **Upper Assam** (Dibrugarh and Tinsukia districts).
- The **oldest refinery of Asia** in Digboi and '**open cast**' **coal mining at Lido** are located near the sanctuary.
- The Dehing Patkai Wildlife Sanctuary is also known as the **Jeypore Rainforest**.
- Naming → Dehing is the **name of the river** that flows through this forest and Patkai is the hill at the foot of which the sanctuary lies.
- Flora → It is believed to be the **last remaining contiguous patch** of **lowland rainforest area in Assam**.
- Fauna →
  - Rare fauna found in the region include **Chinese pangolin, flying fox, wild pig, sambar, barking deer, gaur, serow** and **Malayan giant squirrels**.
  - It is the only sanctuary in India which is home to seven different species of wild cats - **tiger, leopard, clouded leopard, leopard cat, golden cat, jungle cat** and **marbled cat**.

- **Assamese macaque**, a primate found in the forest, is in the red list of Near Threatened species.
- It has the highest concentration of the rare endangered **White Winged Wood Duck**.
- National Parks in Assam →
  - **Kaziranga, Manas, Nameri, Orang, Dibru-Saikhowa** and **Raimona National Park**.
  - **Kaziranga** and **Manas** are **UNESCO World Heritage Sites**. They are also tiger reserves along with Nameri and Orang.

### 13. Gharial

#### Why in News?

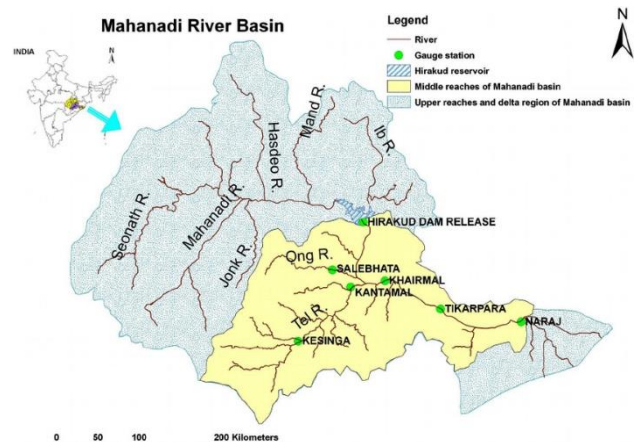
- Odisha has announced a cash reward of Rs 1,000 for rescuing gharials, a critically endangered crocodile species, and informing wildlife personnel.

#### About

- It is a species of Asian crocodylian distinguished by their **long, thin snouts** which **resembles a pot** (ghara in Hindi).
- Habitat → They prefer to **live in riverine habitats** with deep, clear, fast-moving water and steep, sandy banks.
- Distribution → It was **once found across Bangladesh, Bhutan, India, Myanmar, Nepal** and **Pakistan**. However, currently it survives in several severely fragmented populations in India and Nepal.
- In India, Gharials are **present in Son River, Girwa River, the Ganges, Mahanadi River** and **the Chambal River**.
- Protected areas → **National Chambal Sanctuary** and **Katarniaghat Wildlife Sanctuary**.
- Protection Status →
  - IUCN Red list: **Critically Endangered**
  - Wild Life (Protection) Act, 1972: **Schedule I**
  - CITES: **Appendix I**.
- Threat → **Construction of Dam, barrages, and water abstraction**, entanglement in fishing nets, River bed cultivation and sand mining.
- Conservation Efforts → Breeding Centres of **Kukrail Gharial Rehabilitation Centre in Lucknow, Uttar Pradesh, National Chambal Sanctuary** (Gharial Eco Park, Madhya Pradesh).

#### 📍 Mahanadi River

- The Mahanadi River system is the **third largest of peninsular India** after Godavari and Krishna, and the largest river of Odisha state.
- The catchment area of the river extends to **Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand** and **Maharashtra**.
- Source → It rises from a place **near Sihawa in Bastar hills** in the **state of Chhattisgarh** to the **south of Amarkantak**.
- Major Tributaries → **Seonath River, Hasdeo river, Mand river, Ib river, Jonking river, Tel river**



- Mahanadi River Dispute → The Central Government constituted **Mahanadi Water Disputes Tribunal** in **2018**.
- Major Dams/Projects on Mahanadi →
  - Hirakud Dam: This is the **longest dam** of India.
  - **Ravishankar Sagar, Dudhawa Reservoir, Sondur Reservoir, Hasdeo Bango and Tandula** are other major projects.

## 14. Pakke tiger reserve

### Why in News?

- More than 200 contingency workers of the Pakke Tiger Reserve in Arunachal Pradesh went on an indefinite strike over non-payment of wages since December 2020.

### About

- Location → It is located in the **Pakke Kessang district of Arunachal Pradesh**.
- Names → Pakke Tiger Reserve, also known as **Pakhui Tiger Reserve**, is a Project Tiger reserve.
- Biodiversity → It falls within the **Eastern Himalaya Biodiversity Hotspot**.
- This Tiger Reserve has **won India Biodiversity Award 2016** in the category of '**Conservation of threatened species**' for its Hornbill Nest Adoption Programme.
- It is bounded by **Bhareli** or **Kameng River** in the west and north, and by **Pakke River** in the east.
- Neighbours → **Papum Reserve Forest** in Arunachal Pradesh, Assam's **Nameri National Park, Doimara Reserve Forest** and **Eaglenest Wildlife Sanctuary**.
- The main perennial streams in the area are the **Nameri, Khari** and **Upper Dikorai**. West of Kameng River is **Sessa Orchid Sanctuary**.

## 15. Brood X Cicadas

### Why in News?

- Recently, a swarm of cicadas 'Brood X' bombarded the plane Air Force One which led to delay of US President Joe Biden's first trip abroad.

### About Brood X

- The term 'brood' refers to a **population of cicadas** that is **isolated from other populations** because of differences in their year of emergence or locality.
- It is the **largest brood of 17-year cicadas**.
- It is found in **Pennsylvania, northern Virginia, Indiana** and **eastern Tennessee**.

### 👉 Cicadas

- They are **members of the superfamily Cicadoidea** and are **physically distinguished** by their stout bodies, broad heads, clear-membraned wings, and large compound eyes.
- Cicadas live underground for extended periods of time, typically **13 or 17 years**, and **feed on roots of trees** both underground and above it.
- Among periodical cicadas, there are **seven species** and there are **also some annual cicadas**, which come out every year.

- They do **not bite or sting**, but when the **males sing**, their **collective chorus** can reach up to 100 decibels.
- The only harm cicadas can cause is **during egg laying** when small twigs may be **damaged by deep slits cut** by the female when she deposits her rows of eggs.
- What do cicadas do underground?
  - The cicada nymphs go through **five stages of development** when they are underground.
  - The males emerge from underground once they become adults, which take about **17 years for some periodical cicadas**.

## 16. Heritage Trees

### Why in News?

- The Maharashtra government has proposed amendments to the Maharashtra (Urban Areas) Protection and Preservation of Trees Act of 1975, to introduce provisions for the protection of 'heritage trees'.

### About

- A tree with an **estimated age of 50 years** or **more** shall be defined as a heritage tree. It may **belong to specific species** which will be notified from time to time.
- Method to determine the age of the tree: The environment department in **consultation with the forest department** will **issue guidelines** to determine the age of the tree.
- Compensatory Plantation →
  - Compensatory plantation will include **planting the number of trees equivalent to the age of trees to be cut**.
  - The saplings need to be **six to eight feet in height** while planting, and they will **undergo geo-tagging** with **seven years** of caring period.
  - The option of **monetary compensation** has also been given, instead of the compensatory plantation.
- Tree Authority →
  - As per amendments, **tree Authority** will be formed in **local civic bodies and councils** which will take all decisions regarding the protection of trees.
  - It will have to **ensure tree census** to be carried out **every five years** along with counting of heritage trees.
  - The Tree Authority is tasked with "**increasing the tree cover in urban areas and protecting the existing ones**."
  - A proposal to cut more than 200 trees of age 5 years or more, will be **referred** to the state tree authority.
- Tree Cess → The State authority will **issue directions** for the **use of tree cess**. The fine amount cannot be more than ₹1 lakh per tree in case of violations.

## 17. Pyrostria Laljii

### Why in News?

- A 15-meter-tall tree that belongs to the genus of the coffee family has recently been discovered from the Andaman Islands by a team of researchers from India and the Philippines.

### About

- The new species *Pyrostria laljii*, is also the **first record of the genus *Pyrostria* in India**. Trees belonging to these species are usually found in Madagascar.
- Conservation Status → **Critically endangered** as per IUCN status.
- Physical features →
  - The tree is distinguished by a **long stem** with a **whitish coating on the trunk**, and oblong-ovate leaves with a cuneate base.
  - Other physical features that distinguish the tree from other species of the genus is its **umbellate inflorescence** with **8-12 flowers**.
  - The **colour of the flowers** varies from **white to cream**, and turns brown after pollination.
  - The fruit drupes of the tree are **obovoid** or **subglobose**, **green to yellow or white**, when mature turning pale yellow to brown.
- Named after → The tree has been named *Pyrostria laljii* **after Lal Ji Singh, Joint Director**, Andaman and Nicobar Regional Centre, Botanical Survey of India.
- Where was the tree found? →
  - It was **first** reported from **South Andaman's Wandoor forest**.
  - The **other places** in the Andaman and Nicobar Islands where the tree could be located are the **Tirur forest** near the **Jarawa Reserve Forest** and **the Chidia Tapu (Munda Pahar) forest**.

#### 👉 New species Pokeweed Species

- Researchers have also discovered a new species of pokeweed named ***Rivina andamanensis***.
- It was found growing **under large trees, shaded and rocky areas**, along with **herbs and shrubby plants**.
- This discovery of new species, representing the **first record of the pokeweed family Petiveriaceae** in the **Andaman and Nicobar Islands**, adds one more family to the islands' flora.

## 18. Operation Olivia

### Why in News?

- Recently, the Indian Coast Guard has pressed into service an aircraft for 'Operation Oliva' to protect Olive Ridley turtles.

### About Operation Olivia

- Operation Olivia was launched **by the Indian Coast Guard** in the **early 1980s**.
- Purpose → The operation aims to **protect Olive Ridley turtles** when they arrive at the Odisha coast for breeding and nesting from November to December.
- Indian Coast Guards (**ICGs**) **execute** this operation. As part of the operation, ICGs conducts **round-the-clock surveillance**. **Assets of Indian Coast Guards** such as fast patrol vessels, air cushion vessels, interceptor craft, and Dornier aircraft are **used in this operation** to enforce laws near the rookeries (colony of breeding animals).

#### 👉 Olive Ridley Turtles:

- Features →
  - The Olive ridley turtles are the **smallest** and **most abundant** of all sea turtles found in the world.
  - These turtles are **carnivores** and get their name from their **olive colored carapace**.
  - They **migrate thousands of kilometers** between feeding and mating grounds in the course of a year.

- They are best known for their **unique mass nesting** called **Arribada**, where thousands of females come together on the same beach to lay eggs.
- Habitat →
  - They are found in **warm waters of the Pacific, Atlantic** and **Indian oceans**.
  - The Odisha's **Gahirmatha Marine Sanctuary** is known as the world's largest rookery of sea turtles.
- Protection Status →
  - IUCN Red List: **Vulnerable**
  - CITES: **Appendix I**
  - Wildlife (Protection) Act, 1972: **Schedule I**.

#### 📌 Other Initiatives

- To reduce accidental killing in India, the Odisha government has made it mandatory for trawls to use **Turtle Excluder Devices (TEDs)**, a net specially **designed with an exit cover** which allows the turtles to escape while retaining the catch.

#### 📌 Indian Coast Guard

- It is an Armed Force, Search and Rescue and Maritime Law Enforcement agency **under the Ministry of Defence**.
- It was **established in 1978**.
- It has a **wide range of task capabilities** for both **surface and air operations**. It is one of the largest coast guards in the world.

## 19. Rosewood

### Why in News?

- Recently, steep demand in the international market for musical instruments and furniture fashioned out of rosewood has increased its widespread illegal felling.

### About

- Scientific Name → **Dalbergia latifolia**.
- Habitat and Distribution →
  - It occurs in **evergreen or deciduous tropical** or **subtropical forests** with deep, well-drained and moist soils, within an elevational range of 300 to 1,000 m above sea level.
  - It is native to **India, Nepal, Bangladesh, Myanmar, Java** and **Indonesia**.
- Features →
  - It is a **large hardwood tree** that can grow up to **40 meter tall**.
  - It is highly utilised as a timber species and is **renowned for the colour and fragrance** of its wood.
  - It is particularly prized for making **musical instruments** (e.g. guitars), furniture, veneer, flooring, plywood, carvings, and moulding.
- Conservation Efforts →
  - It is **protected under the Indian Forest Act, 1927** with the export of logs or sawn timber being banned.
  - The **Kerala Restriction on Cutting and Destruction of Valuable Trees Rules, 1974**, does not allow cutting of rosewood that has not attained a girth at breast height (GBH) of 2.5 metres.

- Protection Status →
  - IUCN Red List: **Vulnerable**
  - CITES: **Appendix II**
- Threats →
  - Timber is of **high commercial value** and **wild subpopulations** are widely overexploited.
  - **Continued deforestation** across its range due to human settlement and agriculture.

## 20. UN High-Level Dialogue on Desertification, Land Degradation and Drought

### Why in News?

- The Prime Minister of India has delivered a keynote address at the United Nations (UN) High-Level Dialogue on Desertification, Land Degradation, and Drought.

### About

- The dialogue has been organized by the **President of the United Nations(UN) General Assembly**.
- Aim → It aims to **focus the international community's attention on land issues**. So that it can generate political will for implementing land solutions within COVID-19 adaptation and recovery strategies.
- The dialogue encourages all Member States to **adopt and implement Land Degradation Neutrality targets** and **National Drought Plans**.
  - Indian Prime Minister(PM) **presided over the 14th Session** of the Conference of Parties to the United Nations Convention to Combat Desertification (**UNCCD**). Thus, he spoke at the opening segment of the dialogue, which is part of UNCCD.

### 📖 UNCCD (United Nations Convention to Combat Desertification)

- Established in **1994**.
- It is the sole **legally binding international agreement** linking environment and **development to sustainable land management**.
- It is the only convention stemming from a direct recommendation of the **Rio Conference's Agenda 21**.
- Focus areas → The Convention addresses specifically the **arid, semi-arid** and **dry sub-humid areas**, known as the drylands, where some of the most vulnerable ecosystems and peoples can be found.

### 📖 14th Session of COP-14 of UNCCD:

- India had for the **first time** hosted the 14th session of the Conference of Parties(COP-14) of the UNCCD **at Greater Noida in 2019**.
- The theme of the Conference was '**Restore land, Sustain future**'.
- During the conference, the **Delhi Declaration** was issued. The declaration called for **better access over land** and **emphasised gender-sensitive transformative projects**.

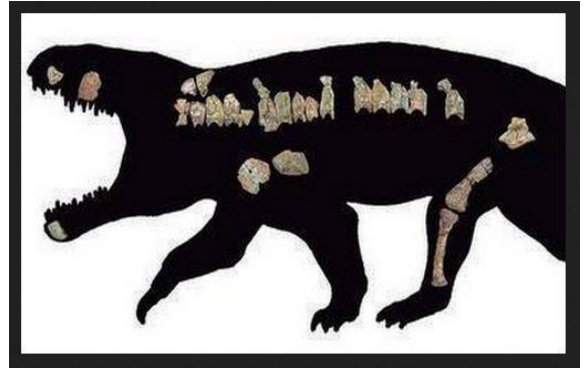
## 21. Bharitalasuchus tapani

### Why in News?

- In the mid-20th century, researchers from the Indian Statistical Institute, Kolkata, carried out extensive studies on rocks of the Yerrapalli Formation in what is now Telangana, uncovering several fossils.

### About

- By studying some of these specimens stored at the Institute, an international team has now thrown light on a carnivorous reptile that **lived 240 million years ago**.
- They named it **Bharitalasuchus tapani**.
- In the Telugu language, **Bhari means huge, Tala means head**, and Suchus is the name of the Egyptian crocodile-headed deity.
- Named after → The species is named after **paleontologist Tapan Roy Chowdhury** in honour of his extensive work on the Yerrapalli Formation tetrapod fauna.
- Genus → This reptile belonged to a **family of extinct reptiles** named **Erythrosuchidae**.
- Key Features →
  - Bharitalasuchus tapani were robust animals with **big heads and large teeth**, and these probably predated other smaller reptiles.
  - They were approximately the **size of an adult male lion** and might have been the **largest predators** in their ecosystems.



### 👉 Erythrosuchidae

- Erythrosuchidae (meaning red crocodiles) are a family of large basal **archosauriform carnivores**. They lived from the later **Early Triassic** to the early Middle Triassic.
- The Triassic is a **geologic period** and system which **spans 50.6 million years** from the end of the Permian Period to the beginning of the Jurassic Period. It is the **first and shortest period** of the **Mesozoic Era**.
- The first Erythrosuchidae remains were discovered in **South Africa in 1905** and more were **found in China and Russia**.
- The South African one is about **245 million years old**, while the ones from China and Russia are around 240 million years old.

### 👉 Yerrapalli Formation

- Yerrapalli Formation is located primarily in the **Pranhita–Godavari Basin in Telangana**.
- It is a Triassic rock formation consisting **primarily of red mudstones**. The area **preserves fossils of freshwater** and **terrestrial vertebrates**, as well as trace fossils of invertebrates.

## 22. Mangroves

### Why in News?

- The Odisha government has proposed to raise mangrove and casuarinas plantation in the coastal belt.

### About

- Location → Mangroves **occur worldwide** in the **tropics and subtropics**, mainly between **latitudes 30° N and 30° S**, with the greatest mangrove area with 5° of the equator.
- A mangrove is a **shrub** or **small tree** that **grows in coastal saline** or **brackish water**.
- Mangroves are **salt-tolerant trees**, also called **halophytes**, and are adapted to live in harsh coastal conditions.



- They contain a **complex salt filtration system** and **complex root system** to cope with salt water immersion and wave action.
- They have **blind roots** which are called These roots help these trees to **respire in anaerobic soils**.
- The **seeds** of Mangrove Forests trees **germinate in the trees itself** before falling – This is called **Viviparity** mode of reproduction.
- Mangrove Forests trees project different types of roots →
  - **Prop** – They are down into the water
  - **Air** – They are vertically configured up from the mud
  - **Stilt** – These roots emerge from the main trunk of the tree; also called adventitious roots
- The major mangroves in India are found at → **Sundarban Groves, Mahanadi Mangroves, Krishna Godavari Mangroves, Mangroves of Gujarat, Ratnagiri Mangroves, Goa Mangroves, Cauvery Deltaic Mangroves, Andaman Nicobar Mangroves.**
- Importance of Mangroves →
  - Mangrove roots help to **impede water flow** and thereby **enhance the deposition of sediment** in areas (where it is already occurring), **stabilise the coastal shores**, provide a breeding ground for fishes.
  - Mangroves **moderate monsoonal tidal floods** and **reduce inundation** of coastal lowlands.
  - They **prevent coastal soil erosion**.
  - They **protect coastal lands** from tsunami, hurricanes and floods.
  - Mangroves **enhance** the **natural recycling of nutrients**.

### 23. Stygarctus Keralensis

#### Why in News?

- Recently, New tardigrade species named Stygarctus keralensis were discovered from Vada-kara. They are tiny, they are tough, and the latest of their ilk to be identified has been named after Kerala .

#### About

- The new tardigrade is a species of the **genus Stygarctus**.
  - It is the **eighth species** named under the genus Stygarctus, which grows up to a length of 130 micrometres (0.13 mm).
- Stygarctus keralensis is the **first taxonomically described marine tardigrade** from the Indian waters, which makes the discovery a **significant one**.
- The present discovery is an outcome of an ongoing **Ministry of Earth Sciences-National Centre for Earth Science Studies** study on the ecology and diversity of submarine groundwater habitats of Kerala.

#### 📖 Tardigrades

- Tardigrades are so **small** and a **high-end microscope** is required to study them.
- Commonly called ‘**water bears**’ and ‘**moss piglets**’, they also rank among the **hardest animals** on planet earth despite their **minuscule size**.
- They are very **tough animals** and are **found everywhere** on earth, from mountain tops to the deep sea.
- They have **survived five mass extinctions**.
- They are also related to **insects, spiders, and crustaceans** and are the lesser-known **taxa of invertebrates**.

- They employ a curious process to deal with environmental stress. Called '**cryptobiosis**', it brings their **metabolic activities** to a **reversible standstill**. A death-like state, more or less.
- Certain tardigrade species can withstand **extreme temperatures, pressures, radiation, and dehydration**.

## 24. Global Assessment Report (GAR) on Drought 2021

### Why in News?

- The UN Office for Disaster Risk Reduction (UNDRR) has released a report titled "Global Assessment Report (GAR) on Drought 2021".

### About

- Released by → UN Office for Disaster Risk Reduction (**UNDRR**).
- Objective → The report **explores the systemic nature of drought** and **its impacts** on the achievement of the Sendai Framework for Disaster Risk Reduction, the SDGs, and human and ecosystem, health and wellbeing.

### 📖 Key Findings

- Globally →
  - Around **700 million people** are **at risk** of being displaced as a result of drought by 2030.
  - Two-third of the world will be under water-stressed conditions by 2025.
- India →
  - The effect of severe droughts on India's gross domestic product (**GDP**) is **estimated at 2-5%**.
  - The **Deccan region** sees the **highest frequency (>6%)** of **severe droughts** in all of India

### 📖 United Nations Office for Disaster Risk Reduction (UNISDR)

- The UNISDR was established in **1999** as a dedicated secretariat to **facilitate the implementation of** the International Strategy for Disaster Reduction (**ISDR**).
- Headquartered → **Geneva, Switzerland**.
- Mandate → It is mandated to **serve as the focal point** in the **United Nations system** for the coordination of disaster reduction and to ensure synergies among the disaster reduction activities.
- It is an **organisational unit of the UN Secretariat** and is **led by the UN Special Representative** of the Secretary General for Disaster Risk Reduction (SRSG).

## 25. Land for Life Award

### Why in News?

- Recently, Shyam Sundar Jyani, a Rajasthan-based climate activist, has won the prestigious United Nations' Land for Life Award for his environment conservation concept, Familial Forestry.

### About award

- Background → The Land for Life Award was **launched in 2011** at the UNCCD Conference of Parties (COP)10 in the Republic of Korea as **part of the Changwon Initiative**.
- Organizes by → Every two years, the United Nations Convention to Combat Desertification (**UNCCD**) **organizes the Land for Life Award**.
- The Award **recognizes excellence and innovation** in efforts **towards land in balance**.

- The past editions **shed light** on **inspiring initiatives of recovery** and **restoration** of degraded landscapes worldwide.
- They all made a significant contribution **towards achieving** Sustainable Development Goal (SDG) 15: "**Life on Land**", in particular Target 15.3 Land Degradation Neutrality (LDN).
- This year the award will put the **spotlight on individuals/organizations** that made an **outstanding contribution** to land degradation neutrality on a large scale.
  - Which means with **long-term changes** and **dedicated actions for 25 years** or longer and remarkable positive impacts on land, people, communities, and society.
- 2021 Theme → **Healthy Land, Healthy Lives.**

### 📌 Changwon Initiative

- The Changwon Initiative intends to **complement activities** being undertaken in **line with The Strategy (for 2008-18)** and in **accordance with COP 10 decisions.**
- The main components of the Changwon Initiative include:
  - **Enhancing the scientific process** of the UNCCD.
  - Mobilizing additional resources and facilitating partnership arrangements.
  - **Supporting a global framework** for the promotion of best practices.

## 26. Pygmy Hog

### Why in News?

- Release of captive-bred pygmy hogs into Manas National Park of western Assam.

### About

- Scientific Name → **Porcula Salvania.**
- It is one of the very few mammals that **build its own home**, or **nest**, complete with a 'roof'.
- It is also an **indicator species**. Its presence **reflects the health** of its primary habitat, the tall, wet grasslands of the region.
- Habitat →
  - It thrives in **wet grassland.**
  - Once found along a **narrow strip of tall and wet grassland plains** on the Himalayan foothills – from Uttar Pradesh to Assam, through **Nepal's terai areas** and **Bengal's duars**. Today found mainly in a small population in Assam.
- Protection Status →
  - IUCN Red List: **Endangered**
  - CITES: **Appendix I**
  - Wildlife (Protection) Act, 1972: **Schedule I.**
- Threats → **Habitat (grassland) loss** and **degradation**, and **illegal hunting.**

### 📌 Pygmy Hog Conservation Programme (PHCP)

- The PHCP is a **collaboration among** Durrell Wildlife Conservation Trust of UK, Assam Forest Department, Wild Pig Specialist Group of International Union for Conservation of Nature (IUCN) and Ministry of Environment, Forest and Climate Change.

- It is currently being implemented by **NGOs - Aaranyak** and **EcoSystems India**.
  - Conservation of pygmy hog was initiated by noted naturalist Gerald Durrell and his trust in 1971.
- The pygmy hog was **brought back from near-extinction by the partnership effort**, and now moving towards the establishment of a population across the entire range.
- By **2025**, the PHCP plans to **release 60 pygmy hogs in Manas**.

## 27. Ramgarh Vishdhari wildlife sanctuary

### Why in News?

- Rajasthan is poised to get its fourth tiger reserve after Ramgarh Vishdhari wildlife sanctuary received a nod from the National Tiger Conservation Authority (NTCA)'s technical committee.

### About

- Location → This Sanctuary is located at a distance of 45 Km from Bundi City on **Bundi-Nainwa Road near Village Ramgarh, District Bundi, Rajasthan**.
- Established → It was notified in the **Year 1982** and is spread over an **area of 252.79 Sq. Km**.
- Biodiversity →
  - Its flora consists of **Dhok, Khair, Salar, Khirni trees** with **some Mango** and **Ber trees**.
  - The Fauna consists of birds and animals like **Leopard, Sambhar, Wild boar, Chinkara, Sloth bear, Indian Wolf, Hyena, Jackal, Fox, deer** and **Crocodile**.
- Other Three Tiger Reserves → Rajasthan has three tiger reserves with over 90 big cats at **Ranthambore Tiger Reserve** (RTR) in Sawai Madhopur, **Sariska Tiger Reserve** (STR) in Alwar, and **Mukundra Hills Tiger Reserve** (MHTR) in Kota.

### Other Protected Areas in Rajasthan:

- Desert National Park, Jaisalmer
- Keoladeo National Park, Bharatpur
- Sajjangerh wildlife sanctuary, Udaipur
- National Chambal Sanctuary (on tri-junction of Rajasthan, Madhya Pradesh and Uttar Pradesh).

## 28. Great Barrier Reef

### Why in News?

- Recently, the UNESCO World Heritage Committee has recommended that the Australia's Great Barrier Reef should be added to a list of "in danger" World Heritage Sites.

### About Great Barrier Reef

- The Great Barrier Reef is unique as it extends over **14 degrees of latitude, from shallow estuarine areas to deep oceanic waters**.

- Within this **vast expanse** are a **unique range of ecological communities, habitats and species** – all of which make the Reef one of the most complex natural ecosystems in the world.
- The reef is located in the Coral Sea, **off the coast of Queensland, Australia.**
- It was selected as a **World Heritage Site in 1981.**



### **🏠 Coral Reefs**

- A coral reef is an **underwater ecosystem** characterized by reef-building corals.
- Reefs are formed of **colonies of coral polyps held together by calcium carbonate.**
- The coral polyps live in an **endosymbiotic relationship with algae.** Algae provides up to 90 percent of the coral's energy.
- Temperature →
  - The temperature of the water should **not be below 20°C.**
  - The most favourable temperature for the growth of the coral reefs is **between 23°C to 25°C.**
  - The temperature should **not exceed 35°C.**
- Salinity → Corals can survive only under saline conditions with an **average salinity between 27% to 40%.**
- Shallow Water → Coral reefs **grow better in shallow water** having a depth less than 50 m. The depth of the water should **not exceed 200m.**
- Coral reefs are divided into four classes → **fringing reefs, barrier reefs, atolls, and patch reefs.**
- **Fringing** reefs are the **most common type** of reef that we see.
- Coral Reef Areas in India → India has four coral reef areas: **Gulf of Mannar, Andaman and Nicobar Islands, Lakshadweep islands** and **the Gulf of Kutch.**
- More than one-third of the world's coral reefs are **located in the territories of Australia, Indonesia and Philippines.**
- Benefits →
  - **Protect humanity** from natural calamities.
  - Provide **revenue and employment** through tourism and recreation.
  - **Provide habitats** for fishes, starfish and sea anemones.

## **29. Barnadi Wildlife Sanctuary**

### **Why in News?**

- Recently, the World Wide Fund for Nature-India (WWF) found a few tigers inhabiting the Barnadi Wildlife Sanctuary in Assam.

### **About**

- Location → Northern Assam's Baksa and Udalguri districts bordering Bhutan.
- The Sanctuary is bordered by the **Barnadi river** and **Nalapara river** to the west and east respectively.
- Status → It was affirmed as the **WS in 1980** by the Government of Assam.

- Barnadi was established specifically to **protect the Pygmy Hog** (*Sus salvanius*) and **Hispid Hare** (*Caprolagus hispidus*).
- Biodiversity →
  - This is important for threatened species such as the **Asian Elephant** (*Elephas maximus*), **Tiger** (*Panthera tigris*) and **Gaur Bos frontalis**.
  - About **60%** of the BWS is reported to be **grassland**, most of it is **now grassy woodland**.
  - The main Forest types are **Tropical Moist Deciduous** along the northern edge of the Sanctuary, and **mixed scrub** and **grassland** in the southern part with few trees.
- Vegetation →
  - The vegetation has been **drastically modified** by human activity.
  - Most of the natural vegetation has been cleared and replaced by commercial plantations of **Bombax ceiba**, **Tectona grandis** and **Eucalyptus** and **by thatch grasses** (mostly *Saccharum*, with some *Phragmites* and *Themeda*).
- Other Protected Areas in Assam →
  - Dibru-Saikhowa National Park,
  - Manas National Park,
  - Nameri National Park,
  - Rajiv Gandhi Orang National Park.
  - Kaziranga National Park.

### 30. Bengal Monitor Lizard

#### Why in News?

- The forest department of Odisha has recently busted an organized trafficking racket and seized seven Bengal monitor lizards.

#### About

- The Bengal monitor or common Indian monitor (*Varanus bengalensis*) is a **large lizard that is mainly terrestrial**.
- The monitors are **carnivorous** and **non-poisonous**.
- The monitor lizard is protected under **Schedule I of WPA** but is regularly killed for its meat, blood and oil.
- The **species is listed** under the '**Least Concern**' category on the International Union for Conservation of Nature Red List.
- Threat → Its population is dwindling due to **rampant poaching**.

### 31. Ambergris

#### Why in News?

- In the past few weeks, there have been two cases where the Mumbai Police has arrested five persons trying to sell Ambergris or whale vomit.

#### About

- Ambergris, French for grey amber, is generally referred to as **whale vomit**.

- It is a **solid waxy substance** that **floats around the surface** of the water body and at times settles on the coast.
- A **sperm whale eats** several thousand **squid beaks** a day.
- Occasionally, a beak makes its way to the whale's stomach and into its looping convoluted intestines where it becomes ambergris **through a complex process**, and may ultimately be **excreted by the whale**.
- Chemically, ambergris contains **alkaloids, acids**, and a specific compound called **ambreine**, which is **similar to cholesterol**.
- Is it Ambergris valuable? →
  - This excretion is so valuable it is referred to as **floating gold**.
  - As per the latest estimates given by Mumbai Police, **1 kg** of ambergris is **worth Rs 1 crore** in the international market.
  - The reason for its high cost is its **use in the perfume market**, especially to create fragrances like musk.
  - It is believed to be in high demand in countries like Dubai that have a large perfume market. **Ancient Egyptians used it as incense**.
  - It is also believed to be **used in some traditional medicines**.

### 📖 Sperm Whale

- Sperm whale, (*Physeter catodon*), also called **cachalot**, the **largest of the toothed whales**, easily recognized by its enormous square head and narrow lower jaw.
- The sperm whale is **dark blue-gray or brownish, with white patches** on the belly. It is thickset and has small paddle-like flippers and a series of rounded humps on its back.
- Habitat → They are **found in temperate and tropical waters** throughout the world.
- Protection Status →
  - IUCN Red List: **Vulnerable**
  - CITES: **Appendix I**
  - Wildlife (Protection) Act, 1972: **schedule I**.

## 32. LiDAR Based Survey of Forest Areas

### Why in News?

- Recently, the Union Environment Minister in a virtual event released the Detailed Project Reports (DPRs) of LiDAR (Light Detection and Ranging) based survey of forest areas in ten states.

### About

- Conducted by → The project was **awarded to WAPCOS** in July 2020 at a cost of over Rs. 18 crore for implementation in 26 states over 261897 hectares.
- WAPCOS is a **Mini Ratna Public Sector Undertaking** (PSU) under the Jal Shakti Ministry.
- Coverage → The 10 mapped states are **Assam, Bihar, Chhattisgarh, Goa, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Nagaland, and Tripura**.
- Method → The survey has **used the LiDAR** (light detection and ranging) technology to **create 3-D images** of the forest areas to recommend soil and water conservation structures.
  - These structures will help in **catching the rain water** and **prevent stream run off** which will help in recharging of Groundwater.

- Implementation of Projects by States → The Government of India will provide **funds from Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** to states so that they can **enhance water resources** within the forests to meet the needs of flora and fauna as well as fodder augmentation.

### 📌 LiDAR

- It is a **remote sensing method** that **uses light in the form of a pulsed laser** to measure ranges & variable distances.
- These light pulses—combined with other data recorded by the airborne system— **generate precise, three-dimensional information** about the shape of the Earth and its surface characteristics.
- A LiDAR instrument principally **consists of a laser, a scanner**, and a **specialized Global Positioning System (GPS)** receiver.
  - Airplanes and helicopters are the most commonly used platforms for acquiring LiDAR data over broad areas.
- LiDAR follows a simple principle — **throw laser light at an object** on the earth surface and **calculate the time it takes to return** to the LiDAR source.
- Applications → Lidar is commonly used to **make high-resolution maps**, with applications in **surveying, geodesy, geomatics, archaeology, geography, geology, geomorphology, seismology, forestry, atmospheric physics, laser guidance**, airborne laser swath mapping (**ALSM**), and **laser altimetry**.

## 33. New fly ash utilization rules

### Why in News?

- The Ministry of Environment, Forests and Climate Change (MoEFCC) has extended fly ash utilization deadline for thermal power plants with the introduction of penalties for non-compliance.

### About

- **Composition, Generation and Utilization of Fly Ash in India**
- Fly ash is a **byproduct of coal-based power generation**.
  - It is a fine powder with substantial amounts of **oxides of silica, aluminum and calcium**.
  - It also contains traces of **Arsenic, Boron, Chromium, lead** etc. which leads to air and water pollution if disposed on land.
- With **low grade of Indian coal**, its **ash content is as high** as 30-45% in comparison to imported coal with 10-15%.
- With nearly 55% of our total power production through coal and lignite based Thermal Power Plants (TPP), the fly ash generation in India is very high (226 million tonnes in 2018-19).
- Out of these 226 million tonnes, about **83% of Fly Ash is utilized**. (Refer infographic for the sectoral utilization of Fly Ash).

### Key Highlights of the New Notification:

- First fly ash notification was **issued in 1999** to **ensure 100% fly ash utilization in India by 2009**. This was followed by a similar notification in 2016. The current notification aims to achieve the objective of 100% utilization in 3 to 5 years.
  - Shorter Fly-ash utilization cycle → Existing provisions allow TPPs to fully utilize fly ash in a **four-year cycle in a staggered manner**. The new policy will follow a **three-year cycle for 100% utilization**



**of Fly-ash** with a grace period of a year if the percentage of ash utilization is between 60-80% and two years if it is below 60%.

- Legacy Fly Ash Utilization → The progressive utilization of legacy fly ash has been **extended by another 10 years**.
  - Fly ash which remains unutilized and consequently gets accumulated is referred to as **legacy ash**.
- Introduction of Polluter Pays Principle → A **fine of Rs 1,000 per tonne** of unutilized ash has been introduced if the plant does not achieve at least 80% ash utilization annually or in three years.
- Construction and Transportation → The non-complying power plants will **provide ash free-of-cost to agencies engaged in construction activities within a 300 km radius** with all transportation cost to be borne by TPPs.
- Role of Central Pollution Control Board → A committee under the chairmanship of **CPCB chairman will examine**, review and recommend eco-friendly ways on fly ash utilization. Also, CPCB will have real-time data on ash availability.

# Science and Technology

## 1. DaVinci Plus and Veritas

### Why in News?

- NASA has announced two new Venus Missions. It will examine the planet's atmosphere and geological features.

### About

- Aim → The two sister missions aim to understand **how Venus became an inferno-like world** capable of melting lead at the surface.
- The new missions will **give fresh views of the planet's atmosphere**, made up mostly of **carbon dioxide**, down to the core.
- **DaVinci Plus** →
  - Davinci+ stands for **Deep Atmosphere Venus Investigation of Noble gases, Chemistry, and Imaging**.
  - Aim → The mission will **measure the planet's atmosphere** to gain insight into how it formed and evolved. It will also aim to **determine whether** Venus ever **had an ocean** and **was possibly habitable**.
  - Significance → This would be the **first U.S.-led mission** to Venus' atmosphere **since 1978**. The results from the mission could reshape our understanding of terrestrial planet formation in our solar system and beyond.
- **Veritas** →
  - VERITAS stands for **Venus Emissivity, Radio Science, InSAR, Topography, and Spectroscopy**.
  - Aim → The mission will **map the planet's surface** to understand its geologic history and investigate how it developed so differently than Earth.
  - **The mission will use a form** of radar to chart surface elevations and **discover** whether volcanoes and earthquakes are still happening.

### 👉 Previous Missions

- US → **Mariner series** 1962-1974, **Pioneer Venus 1** and **Pioneer Venus 2** in 1978, **Magellan** in 1989.
- Russia → **Venera series** of space crafts 1967-1983, **Vegas 1** and **2** in 1985.
- Japan → **Akatsuki** in 2015.
- Europe → **Venus Express** in 2005.
- Indian Initiative → India plans to launch a new orbiter named **Shukrayaan** to Venus in 2024.

### 👉 Venus

- It is named after the **Roman goddess of love and beauty**. It is the second planet from the Sun and **sixth in the solar system** in size and mass.
- It is the **second brightest natural object** in the night sky after the Moon, probably that is the reason why it was the first planet to have its motions plotted across the sky, as early as the second millennium BC.
- Unlike the other planets in our solar system, **Venus and Uranus spin clockwise** on their axis.

- It is the **hottest planet** in the solar system because of the **high concentration of carbon dioxide** which works to produce an intense greenhouse effect.
- A day on Venus is **longer than a year**. It takes Venus longer to rotate once on its axis than to complete one orbit of the Sun.

## 2. H10N3 strain of Bird Flu

### Why in News?

- China has reported the world's first case of a human infected with H10N3 avian influenza in its eastern province of Jiangsu.

### About

- H10N3 strain of bird flu is a **subtype of the Influenza A virus** which is commonly known as the bird flu virus.
- The virus is normally **fatal to wild birds and poultry** because among animals it can be spread through respiratory droplets.
- Risk → H10N3 is a **low pathogenic** or **relatively less severe strain** of the avian flu in poultry. Its risk of spreading on a large scale is very low.
- Human-Human Transmission → There was **no indication** or **cases of human-to-human transmission** of the H10N3 virus.
- Is it a Common Virus? → H10N3 is **not a very common virus** and only around 160 isolates of the virus were reported in the 40 years to 2018.
  - However, still, flu viruses can **mutate rapidly** and **mix with other strains** circulating on farms or among migratory birds. This is known as **reassortment**. This reassortment can make genetic changes that pose a transmission threat to humans.

## 3. CIBER-2: Counting of Stars

### Why in News?

- A NASA-funded rocket's launch window will open at the White Sands Missile Range in New Mexico, USA on 6th June.

### About

- The **European Space Agency** (ESA) infrared space observatory Herschel **also counted the number of galaxies** in infrared and measured their luminosity previously.
- The **Cosmic Infrared Background Experiment-2**, or **CIBER-2**, the mission is the **latest in a series** of sounding rocket launches that began in 2009.
- This instrument will launch **aboard a sounding rocket**, a **small suborbital rocket** that will **carry scientific instruments** on brief trips into space before it falls back to Earth for recovery.
- Once above Earth's atmosphere, CIBER-2 will **survey a patch of sky** about 4 square degrees, for reference, the full Moon takes up about half a degree, which includes dozens of galaxy clusters.
- It will **not count stars**, but it will **detect the diffuse, cosmos-filling glow** known as the **extragalactic background light**.

- From all of this extragalactic background light, the CIBER-2 will focus on a portion of this called **cosmic infrared background**, which is **emitted by some of the most common stars**.
- Aim: To count the number of stars that **exist in the Universe**.

#### 4. Aducanumab

##### Why in News?

- Aducanumab (Aduhelm), from the company Biogen, is the new drug approved by the US Food and Drug Administration (FDA) for treating Alzheimer's disease.

##### About

- Aduhelm is **not a cure**, but it **slows down cognitive decline**.
- Alzheimer's disease causes the **accumulation of the debris** caused by the breakdown of neurons in the brain, leading to **plaque formation**.
- So, Aducanumab is a **monoclonal antibody** that is designed to **reduce** the **presence of amyloid beta**, a protein that forms plaques in the brain.
- Aducanumab aims at **altering the course of the disease** by slowing the deterioration of brain function by reducing plaque formation.
- Significance → Since there is no treatment so far, the drug that can **slow down Alzheimer's disease** holds much promise and is a ray of hope.

##### 📌 Alzheimer's Disease

- Alzheimer's disease is a **progressive neurologic disorder** that causes the **brain to shrink** (atrophy) and **brain cells to die**.
- The disease is the most common **cause of dementia** — a continuous decline in thinking, behavioural and social skills that affect a person's ability to function independently.
- Caused by → Alzheimer's disease is thought to be caused by the **abnormal build-up of proteins in and around brain cells**.
- One of the proteins involved is called **amyloid**, deposits of which form **plaques around brain cells**.
  - The other protein is called **tau**, deposits of which form tangles within brain cells.
- Vulnerability → Alzheimer disease **most commonly affects older adults**, but it can also affect people in their 30s or 40s.

#### 5. Inflammatory bowel disease

##### Why in News?

- According to a study published in the American Journal of Gastroenterology, Pfizer or Moderna Covid-19 vaccines are safe for patients with inflammatory bowel diseases (IBD). They do not appear to have an increased risk of side effects from Covid vaccines.

##### About

- Inflammatory bowel disease (IBD) represents a **group of intestinal disorders** that cause prolonged inflammation of the digestive tract.

- Types → The two most common IBDs are **ulcerative colitis** (UC) and **Crohn's disease**:
  - Ulcerative Colitis(UC) involves **inflammation of the large intestine**.
  - Crohn's disease can cause inflammation in **any part of the digestive tract**. However, it mostly **affects the tail end of the small intestine**.
- Causes of IBDs → **Family history and genetics, Weak Immune System, Smoking, Ethnicity, Age** and Environmental Factors among others.
- Treatment → Treatment may include **immunosuppressive drugs to control the inflammation**.

## 6. Fast Radio Bursts

### Why in News?

- Recently, researchers from the Pune-based Tata Institute for Fundamental Research (TIFR) and the National Centre for Radio Astrophysics (NCRA), have assembled the largest collection of Fast Radio Bursts (FRBs) catalogue.

### About FRBs

- FRBs are **bright bursts of radio waves** (radio waves can be **produced by astronomical objects** with changing magnetic fields) that blaze for a few milliseconds before vanishing without a trace.
- They are **spotted in various and distant parts of the universe** as well as in our own galaxy. However, their **origins are still unknown**, and their appearance is highly unpredictable.
- The **first FRB** was **spotted in 2007**. Since then, scientists had only caught sight of around 140 bursts in their telescopes.
- Source → **Magnetars** could be the **source of some fast radio bursts**(FRBs).
- Magnetar → It is a **type of neutron star**. The magnetic field of such a star is **very powerful**. It can be over a **thousand times stronger** than a typical neutron star's magnetic field.
- Neutron → The formation of a neutron star occurs when the **core of a massive star undergoes gravitational collapse at the end of its life**.

### CHIME Telescope

- It is a **novel radio telescope** that has **no moving parts**. Originally conceived to map the most abundant element in the universe - hydrogen - over a good fraction of the observable universe, this unusual telescope is optimized to have a **high mapping speed**.
- It is located **at the Dominion Radio Astrophysical Observatory**, operated by the National Research Council of Canada in British Columbia, Canada.
- The telescope **receives radio signals each day** from half of the sky as the Earth rotates.

### Significance of Studying FRBs

- The unique properties of fast radio bursts and their host galaxies combined with recent technological advancements have given researchers hope that these phenomena can be **used to answer some long-standing questions about the universe**.
- It can be used to understand the **three-dimensional structure of matter** in the universe and to learn about poorly understood early moments in the evolution of the universe.

## 7. EnVision mission

## Why in News?

- Following NASA's footsteps, the European Space Agency (ESA) announced that it has selected EnVision as its next orbiter that will visit Venus sometime in the 2030s.

## About

- It is an **European Space Agency (ESA) led mission** with contributions from NASA.
- The earliest launch opportunity for EnVision is **2031, followed by 2032 and 2033**.
- The spacecraft will take about **15 months to reach Venus** and will **take 16 more months** to achieve orbit circularisation.
- The spacecraft will carry a **range of instruments** to **study the planet's atmosphere and surface, monitor trace gases** in the atmosphere and analyse its surface composition.
- A **radar provided by NASA** will help to image and map the surface.
- Significance → It will follow another ESA-led mission to Venus called '**Venus Express**' (2005-2014) that **focussed on atmospheric research** and **pointed to volcanic hotspots** on the planet's surface.

## 📁 Other Missions

- US →
  - NASA has announced two new robotic missions to Venus - **DAVINCI+** and **VERITAS**. It will be launched between 2028-2030.
  - Mariner series 1962-1974, **Pioneer Venus 1** and **Pioneer Venus 2** in 1978, Magellan in 1989.
- Russia → Venera series of space crafts 1967-1983, **Vegas 1** and **2** in 1985.
- Japan → **Akatsuki spacecraft** has been studying the planet's atmosphere since 2015.
- Indian Initiative → India plans to launch a new orbiter named **Shukrayaan to Venus in 2024**.

## 8. PASIPHAE Survey

### Why in News?

- The Wide Area Linear Optical Polarimeter (WALOP), a vital instrument for the PASIPHAE Project, is being developed at Inter-University Centre for Astronomy and Astrophysics (IUCAA), India.

### About

- Polar-Areas Stellar-Imaging in Polarisation High-Accuracy Experiment (PASIPHAE) is **an international collaborative sky surveying project**.
- The project has been **funded by the world's leading institutions** from USA, Norway, South Africa and Private foundations.
- Scientists aim to **study the polarisation in the light coming from millions of stars**.
- The survey will use **two high-tech optical polarimeters** to observe the northern and southern skies, simultaneously.
- It will focus on **capturing starlight polarisation** of **very faint stars** that are so far away that polarisation signals from there have not been systematically studied.
- The distances to these stars will be obtained from measurements of the **GAIA satellite** (of European Space Agency)

- By combining these data, astronomers can create a **3-Dimensional model** of the **distribution of the dust and magnetic field structure** of the galaxy using a novel polarimeter instrument known as WALOP (Wide Area Linear Optical Polarimeter).
- Importance of the Project →
  - Since its birth about **14 billion years ago**, the universe has been **constantly expanding**, as evidenced by the **presence of Cosmic Microwave Background (CMB) radiation** which fills the universe.
  - The PASIPHAE polarimetric map will be used to **perform magnetic tomography** of the Milky Way Galaxy.

### 👉 WALOP

- Wide Area Linear Optical Polarimeter (WALOP) is an **instrument**, when mounted on **two small optical telescopes**, that will be **used to detect polarised light signals** emerging from the stars along high galactic latitudes.
- A WALOP each will be mounted **on the 1.3-metre Skinakas Observatory, Crete** (Greek islands), and on the **1-metre telescope** of the South African Astronomical Observatory located in Sutherland.
- Once built, they will be **unique instruments** offering the **widest ever field of view of the sky** in polarimetry. In simple terms, the images will simultaneously have the **finest of details of a star** along with its panoramic background.
- 200 kg weighing WALOP will be capable of **observing hundreds of stars concurrently present** both in the northern and the southern skies

## 9. New Shephard Rocket System

### Why in News?

- Amazon founder and billionaire Jeff Bezos's space company called Blue Origin recently concluded the online auction for the first seat on New Shephard, a rocket system meant to take tourists to space.

### About

- New Shephard is a **reusable rocket system** that has been designed to **take astronauts and research payloads past the Karman line** – the internationally recognized boundary of space.
- Built by → The rocket system has been built by **Blue Origin**, space company of Amazon founder Jeff Bezos.
- Named after → The rocket system has been named after **astronaut Alan Shephard** – the first American to go to space.
- Significance → The idea is to **provide easier and more cost-effective access to space** meant for purposes such as academic research, corporate technology development and entrepreneurial ventures among others.
- Moreover, apart from academic and research-oriented goals, the rocket will also **allow space tourists to experience microgravity** by taking them 100 km above the Earth.
  - Microgravity is the condition in which people or objects **appear to be weightless**. The effects of microgravity can be seen when **astronauts and objects float in space**.

### 👉 Karman Line

- The Karman line is the **internationally recognized boundary of space**.
- The line is named after **Theodore von Kármán**, a Hungarian American engineer and physicist.

- He was the first person to **determine the altitude** at which the **atmosphere becomes too thin** to support aeronautical flight.
- The Fédération Aéronautique Internationale (FAI) defines the Kármán line as the **altitude of 100 kilometres** (62 miles) above Earth's mean sea level.
  - FAI is an **international standard-setting** and **record-keeping body** for aeronautics and astronautics.

## 10. Shenzhou-12

### Why in News?

- China, which aims to become a major space faring power by 2030, became the second country to put a rover on Mars, two years after landing the first spacecraft on the far side of the moon.

### About

- What is it? → Shenzhou-12 is a **manned mission**.
- It is the **third of the 11 missions** that needed to complete China's first Permanent space station, named **Tiangong Space Station**. Among these missions, four will be manned missions.
- Working →
  - Shenzhou-12 is made up of three sections—**an orbiter module, a return module** and **a propelling module**.
  - It will carry **three astronauts to the orbiting Tianhe core module**. The astronauts will test the module's technologies, including its life-support system.
  - Moreover, the men will also be monitored for **how they fare in space physically and psychologically** for an extended period of time.
- Significance → Shenzhou-12 is **China's seventh manned mission** to space and the first during the construction of China's space station.
- It is also the **first in nearly five years** after China's manned mission in 2016.

### 📍 Tiangong Space Station

- Tiangong is a planned **Chinese Permanent space station** to be placed in **Low Earth orbit**.
- The operations of the station will be **controlled by the Beijing Aerospace Command and Control Center** in China.
- Significance → The Space Station roughly will be **one-fifth the mass of the International Space Station**.

## 11. UNESCO Science Report

### Why in News?

- Latest edition of UNESCO Science Report (USR) was published on June 11, 2021 which is entitled as "race against time for smarter development".

### About

- What is it? → UNESCO Science Report is a **global monitoring report**.



- It is published **every five years by** the United Nations Educational, Scientific, and Cultural Organization (UNESCO).
- Objective → The report **monitors trends in science governance worldwide** to identify which development path countries are following.
- Latest Report → The latest edition was published with the title '**The race against time for smarter development**'. The report has an **exclusive chapter on India**.

#### 📌 Key outcomes

- India's Investment in Research → The gross domestic expenditure on research (GERD) has been **stagnant at 0.7% of the GDP** for years. However, in absolute terms, the research expenditure has increased.
- Density of Scientists and Engineers → In **1990**, the density of scientists/engineers engaged in R&D in India **per 10,000 of the labour force stood at 10**. This has now **marginally increased to just 11 in 2018**.
- R&D by Government and Private Sector → R&D in the government sector has been **declining steadily since 2015**. On the other hand, the **share of private business** enterprises in R&D has **increased to 42%**.

## 12. Neutrinos

### Why in News?

- Scientists have shown that the geometry of space-time can cause neutrinos to oscillate.

### About

- Detected for the first time in **1959**, neutrinos are the **second most abundant particles in the world, after photons**, or the light particle.
- Neutrinos are **mysterious particles**, produced copiously in nuclear reactions in the Sun, stars, and elsewhere.
- They also "**oscillate**" – meaning that different types of neutrinos change into one another.
- Probing of oscillations of neutrinos and their relations with mass are **crucial in studying the origin of the universe**.
- Sources → Neutrinos are created by **various radioactive decays; during a supernova**, by cosmic rays striking atoms etc.
- Features of neutrinos →
  - Neutrinos **interact very weakly with everything else** – trillions of them pass through every human being every second without anyone noticing.
  - A neutrino's **spin always points in the opposite direction of its motion**.
  - It is now generally believed that the **phenomenon of neutrino oscillations** require neutrinos to have **tiny masses**.

## 13. Sickle cell disease

### Why in News?

- Union Minister of Tribal Affairs flagged off mobile vans under the Unmukt project for strengthening screening and timely management of Sickle Cell Disease (SCD) in Khunti district of Jharkhand and Kanker in Chhattisgarh.

### About

- What is it? → It is an **inherited blood disease** which is most common among people of African, Arabian and Indian origin.
- It is a **group of disorders** that **affects hemoglobin**, the molecule in red blood cells that delivers oxygen to cells throughout the body.
- People with this disease have **atypical hemoglobin molecules** called **hemoglobin S**, which can distort red blood cells into a sickle, or crescent shape.
- This **blocks blood flow** and **oxygen** from reaching all parts of the body.
- Symptoms →
  - It can cause **severe pain**, referred to as **sickle cell crises**.
  - Over time, people with sickle cell disorders can experience **damage to organs** including the liver, kidney, lungs, heart and spleen. **Death can also result** from complications of the disorder.
- Treatment → **Medication**, **blood transfusions** and rarely a bone-marrow transplant.

### 📌 Initiatives by India

- Initiative by the Ministry of Tribal Affairs →
  - **SCD Support Corner**, a **portal** to collect real time data and provide relevant information related to Sickle Cell.
  - It will help in making a Central Repository of data.
  - An '**Action Research**' **project** under which Yoga dependent lifestyle is promoted **to reduce the complications** in the patient suffering from this disease.
- Disability Certificate → The Ministry of Social Justice and empowerment has **increased** the **validity of disability certificates** for SCD patients **from 1 year to 3 year**.

### 📌 World Sickle Cell Day

- It is recognised by the United Nations and celebrated every year on **June 19**.
- The United Nations General Assembly adopted a resolution **recognising** sickle cell disease as a **public health problem** on **December 22, 2008**.
- AIM → It aims to **increase awareness** of sickle cell disorders at the national and international level.

## 14. Nipah virus

### Why in News?

- A recent survey has found the presence of antibodies against the Nipah virus (NiV) in some bat species from a cave in Mahabaleshwar, a popular hill station in Maharashtra.

### About

- What is it? → It is a **zoonotic virus** (it is transmitted from animals to humans).
- Caused by → The organism which causes Nipah Virus encephalitis is an **RNA** or **Ribonucleic acid virus of the family Paramyxoviridae, genus Henipavirus**, and is closely related to Hendra virus.
  - Hendra virus (HeV) infection is a **rare emerging zoonosis** that causes severe and often fatal disease in both infected horses and humans.
- It **first broke out** in **Malaysia and Singapore** in 1998 and 1999.

- It **first appeared in domestic pigs** and has been found among several species of domestic animals including dogs, cats, goats, horses and sheep.
  - Transmission →
  - The disease spreads **through fruit bats** or '**flying foxes**,' of the genus Pteropus, who are natural reservoir hosts of the Nipah and Hendra viruses.
  - The virus is **present in bat urine** and potentially, **bat faeces**, **saliva**, and **birthing fluids**.
- Symptoms → The human infection presents as an **encephalitic syndrome** marked by fever, headache, drowsiness, disorientation, mental confusion, coma, and potentially death.
- Prevention → Currently, there are **no vaccines** for both humans and animals. Intensive supportive care is given to humans infected by Nipah virus.

## 15. Gain-of-function Research

### Why in News?

- The Wuhan Institute of Virology was said to have conducted gain-of-function research on coronaviruses which may possibly have caused the lab-leak origin of the SARS-CoV-2 (Covid-19 pandemic).

### About

- 'Gain of function' is a field of research **focused on growing generations of microorganisms**, under conditions that cause mutations in a virus.
- These experiments are termed '**gain of function**' because they **involve manipulating pathogens** in a way that they gain an advantage in or through a function, such as **increased transmissibility**.
- Such experiments allow scientists to **better predict emerging infectious diseases**, and **to develop vaccines** and therapeutics.
- How is it carried out? →
  - It involves **deliberately altering an organism** in the lab, altering a gene, or **introducing a mutation** in a pathogen to study its transmissibility, virulence and immunogenicity.
  - This is done **by genetically engineering** the virus and by allowing them to grow in different growth mediums, a technique called **serial passage**.
- Issues related to the research →
  - Gain-of-function research **involves manipulations** that make certain pathogenic microbes more **deadly** or **more transmissible**.
  - There is also '**loss-of-function**' research, which involves **inactivating mutations**, resulting in a **significant loss of original function**, or no function to the pathogen.
  - Gain-of-function research reportedly **carries inherent biosafety** and **biosecurity risks** and is thus referred to as '**dual-use research of concern**' (DURC).
- Serial passaging involves **allowing the pathogen to grow** under **different circumstances** and then observing the changes.

### 📍 Situation in India

- All activities related to genetically engineered organisms or cells and hazardous microorganisms and products are **regulated** as per the "**Manufacture, Use, Import, Export and Storage of Hazardous Microorganisms/Genetically Engineered Organisms or Cells Rules, 1989**".

- In 2020, the Department of Biotechnology **issued guidelines** for the establishment of containment facilities, called '**Biosafety labs**'.
- The notification provides **operational guidance** on the containment of biohazards and levels of biosafety that all institutions involved in research, development and handling of these microorganisms must comply with.

## 16. Delta Plus variant

### Why in News?

- The Health Ministry has categorised Delta Plus variant of coronavirus as a 'variant of concern'. It has been detected in many states.

### About

- The Delta variant formerly known as **B.1.617.2** is believed to be the **most transmissible variant of Covid -19 yet**. It has been initially detected in India.
- The Delta plus variant (B.1.617.2.1 or AY.1) has been formed due to a **mutation in the Delta variant**.

### How do variants of a virus emerge and why?

- Variants of a virus have **one** or **more mutations** that differentiate it from the other variants that **are in circulation**.
- Essentially, the goal of the virus is to **reach a stage** where **it can cohabit with humans** because it needs a host to survive.
- **Errors in the viral RNA** are called **mutations**, and viruses with these mutations are called **variants**. Variants could **differ by a single** or **many mutations**.

### Mutation

- A mutation means a **change** in the **genetic sequence of the virus**.
- In the case of SARS-CoV-2, which is an Ribonucleic acid (**RNA**) **virus**, a mutation means a **change in the sequence in which its molecules are arranged**.
- A mutation in an RNA virus often happens when the **virus makes a mistake while it is making copies of itself**.

### What is a Variant of Concern (VOC)?

- WHO (World Health Organisation) classifies a variant as a VOC when it is associated with:
  - An **increase in transmissibility** or detrimental change in Covid-19 epidemiology
  - **Increase in virulence** (Ability to cause severe/life-threatening disease)
  - **Decrease** in the **effectiveness of public health measures** or available diagnostics, vaccines and therapeutics.

## 17. Digital Millennium Copyright Act

### Why in News?

- The union minister for Electronics and Information Technology was locked out of his Twitter account for an hour allegedly over a notice received for violation of the Digital Millennium Copyright Act (DMCA).

### About

- It is a **law passed in the US** and is among the world's **first laws** recognising Intellectual Property (IP) on the internet.
- The DMCA oversees the **implementation of two 1996 treaties** signed by World Intellectual Property Organisation (WIPO) member nations.
- Which are those two treaties of WIPO?
  - In 1996, WIPO member countries agreed upon two treaties namely the **WIPO Copyright Treaty** and **the WIPO Performances and Phonograms Treaty**.
  - Both the treaties require member nations and signatories to **provide in their respective jurisdictions, protection to intellectual property** that may have been created by citizens of different nations who are also co-signatories to the treaty.
  - The said protection accorded by each member state **must not be any less in any way than the one being given to a domestic copyright holder**.
  - Further, the signatory countries should **ensure ways to prevent circumvention** of the technical measures used to protect copyrighted work.

### World Intellectual Property Organization(WIPO)

- World Intellectual Property Organization(WIPO) is one of the 15 **specialized agencies of the United Nations** (UN).
- Purpose → It was created to **promote and protect intellectual property** (IP) across the world by cooperating with countries as well as international organizations.
- WIPO Convention → It's mandate of **governing bodies** and **procedures** are **set out** in the WIPO Convention which had established WIPO in 1967.
- Headquarters → **Geneva, Switzerland**.
- Members → As of date, **193 nations** across the world, including **India, are members of WIPO**.

## 18. Artemis Accords

### Why in News?

- New Zealand became the eleventh signatory to the Artemis Accords, a blueprint for space cooperation and supporting the U.S. space agency's plans to return humans to the moon by 2024 and to launch a historic human mission to Mars.

### About

- This accord ensures that **space exploration is conducted in a safe, sustainable** and **transparent manner** and in full compliance with international law.
- As **more countries establish a presence in outer space**, via research stations, satellites, or even rocket launches, these accords provide a set of principles to create a safe and transparent environment that inspires exploration, science, and commercial activities.
- The other signatories to the accords are **the U.S., Australia, Britain, Canada, Italy, Japan, Luxembourg, South Korea, the United Arab Emirates**, and **Ukraine**. Brazil also said it plans to sign.

## Geography

### 1. Cali

#### Why in News?

- The Colombian Army has tightened its control over Cali following the latest anti-government protests.

#### About

- Cali is the **second-largest city in Colombia** by area and the third most populous.
- It is the only major Colombian city with **access to the Pacific Coast**.
- Cali is located in the **Cauca Valley** to the **west of the Cauca River**.



### 2. Devika Project of Udhampur

#### Why in News?

- Recently, the Ministry of Personnel, Public Grievances & Pensions has said that Devika Project is for all and therefore suggestions are welcome from every Party.

#### About

- It is **North India's first-of-its-kind project** located in Udhampur, Jammu & Kashmir.
- It is **Rs.190 Crore project** under the National River Conservation Plan (NRCP) which started in March 2019.
- The activities involved under the project are →
- Bathing "ghats"** (places) on the banks of the Devika River will be developed;
- Encroachments will be removed**; and
- Natural water bodies** will be restored and catchment areas will be developed along with cremation ground.
- The project includes the construction of **three sewage treatment plants** of 8 MLD, 4 MLD and 1.6 MLD capacities.

#### 🏠 About Devika River

- It holds **great religious significance** as it is **revered by Hindus** as the sister of river Ganga.
- In the **Nilmat Puran** that was written in the **7th century by Nela Muni**, it is mentioned that the Devika River is a manifestation of the mother Goddess Parwati herself to benefit the people of Mader Desha.
- It originates from the **hilly Suddha Mahadev temple** in **Udhampur district of Jammu & Kashmir** and flows down towards western Punjab (now in Pakistan) where it **merges with the Ravi River**.

### 3. Anti-hail gun

#### Why in News?

- To help out horticulturists who face crop damage due to hailstorms, the Himachal Pradesh government will be testing the use of indigenously developed 'anti-hail guns'.

### About

- What is it? → An anti-hail gun is a **machine** that **generates shock waves** to disrupt the growth of hailstones in clouds.
- Developed by → developed indigenously by **IIT Bombay** along with **Dr Y S Parmar University of Horticulture and Forestry** at Nauni (Solan). They are likely to be much cheaper than the imported ones.
- How do anti-hail guns prevent a hail storm? →
  - Anti-hail gun comprises a **tall, fixed structure** somewhat resembling an inverted tower, **several meters high with a long and narrow cone** opening towards the sky.
  - The gun is "fired" by feeding an **explosive mixture of acetylene gas & air** into its lower chamber. This **releases a shock wave** (waves that travel faster than the speed of sound, such as those produced by supersonic aircraft).
  - These shock waves supposedly **stop water droplets** in clouds from **turning into hailstones**, so that they fall simply as raindrops.
- What are Hailstorms? → A hailstorm is an **unusual weather phenomenon** in which **balls of ice**, called hail, fall from the sky. The ice balls are nothing more than **solid precipitation** that **forms under certain conditions**.
- How are Hails formed? →
  - Hails are formed **by cumulonimbus clouds** which are generally large and dark and may cause thunder and lightning.
  - In such clouds, winds can **blow up the water droplets to heights** where they **freeze into ice**.
  - The frozen droplets **begin to fall** but are soon **pushed back up by the winds** and **more droplets freeze** onto them, resulting in **multiple layers of ice** on the hailstones.
  - This fall and rise are **repeated several times**, till the hailstones become too heavy and fall down.
- But, what is the need? Why is hail a big issue in HP? →
  - Every summer from **March to May**, **frequent hailstorms** in the fruit-growing areas of **Himachal** destroy apples, pears and other crops, causing massive losses to farmers.
  - In some hail-prone areas such as **Narkanda and Theog**, the **entire apple crop in an orchard** may sometimes get **destroyed** during such storms.

## 4. Lamu port

### Why in News?

- Kenya recently launched its newest mega infrastructure project, the Lamu port, which is a part of an ambitious transport corridor between Lamu (a small archipelago north of Mombasa in Kenya), South Sudan and Ethiopia.

### About

- The Lamu port is going to be **Kenya's second deep-water port** after Mombasa.



- The port is **part of the wider US \$23 billion Lamu Port South Sudan-Ethiopia Transport (LAPSSET) corridor** and has been constructed by China Communications Construction Company, with the first three of the planned 32 berths coming at a cost of US \$367 million.
- This transport corridor is touted to comprise a **standard gauge railway line**; an **oil pipeline and refinery**; **road network**; **international airports at Isiolo**, Lamu, Lokichogio; the port of Lamu at Manda Bay; and resort cities.

## 5. Burkina Faso

### Why in News?

- Indonesia's Mount Sinabung, located in the North Sumatra province, erupted in May 2021 belching a massive column of volcanic ash and smoke 3,000 metres (3 km) into the sky.

### About

- Burkina Faso is a **landlocked country in western Africa**.
- Location → It is bounded by **Mali** to the north and west, **Niger** to the northeast, **Benin** to the southeast, and **Côte d'Ivoire**, **Ghana**, and **Togo** to the south.
- It is a **low-income Sahelian country** with limited natural resources.
- Its economy is largely **based on agriculture**, which employs 80% of the workforce, although gold exports have increased.
- The country occupies an **extensive plateau**, and its geography is characterized by a **savanna** that is grassy in the north and gradually gives way to sparse forests in the south.



## 6. Lynetteholm Island

### Why in News?

- Recently, Denmark has approved the building of Lynetteholm, an artificial island off the coast of Copenhagen (capital of Denmark, located near Baltic Sea).

### About

- The **275-hectare project** was designed as a housing and business district for around 35,000 people.
- It will be **built using soil** from construction projects in Copenhagen and the surrounding area.
- The artificial island will be located **between Nordhavn and Refshaleøen**.
- It will **protect the city's harbour** from rising water masses and from more frequent storm surges.
- Concerns Raised →
  - Include a **dam system** around the perimeter.
  - **Transportation of materials by road** will involve a **large number of vehicles**.
  - **Movement of sediment at sea** and the possible impact on water quality, ecosystems of the Baltic Sea environment.

## 7. Sardar Sarovar Dam



## Why in News?

- In the ongoing summer, the Sardar Sarovar Narmada dam released about 1.3 Million Acre Feet (MAF) water for irrigation between April 1 and May 31 in its command area of 21.29 lakh hectares.

## About

- The Sardar Sarovar Narmada Dam or Sardar Sarovar Project (SSP) is a **terminal dam** and **gravity dam built on the Narmada River** at Kevadia in Narmada district of Gujarat.
- It is the **second biggest dam** in **terms of volume** of concrete used in it. It is the third highest concrete dam in India.
- The Sardar Sarovar Project (SSP) involves a **series of large irrigation** and **hydroelectric multi-purpose dams**.
- It took form in **1979** as part of a development scheme to **increase irrigation** and **produce hydroelectricity**.
- The SSP includes two powerhouses - **River Bed Power House** (RBPH; 1,200 MW) and **Canal Head Power House** (250 MW).
- The power benefits from the project are to be shared thus: **Madhya Pradesh at 57%**, **Maharashtra at 27%** and **Gujarat at 16%**



### 📍 Narmada River

- Narmada is the **largest west flowing river** of the **peninsular region** flowing through a rift valley **between the Vindhya Range on the north** and the **Satpura Range on the south**.
- It rises from **Maikala range** near Amarkantak in Madhya Pradesh.
- It drains a **large area in Madhya Pradesh** besides some areas in the states of **Maharashtra** and **Gujarat**.
- The river near Jabalpur (Madhya Pradesh) forms the **DhuanDhar Falls**.
- There are several islands in the estuary of the Narmada of which **Aliabet** is the largest.
- Major Tributaries: **Hiran, Orsang, the Barna** and **the Kolar**.
- The major Hydro Power Projects in the basin are **Indira Sagar, Sardar Sarovar** etc.

## 8. Addu Atoll

### Why in News?

- President Ibrahim Mohamed Solih has said that the Maldives has made no decision on opening an Indian consulate in its southern Addu Atoll.

### About

- Addu Atoll, also known as **Seenu Atoll**, is the **southernmost atoll of the Maldives**.
- Apart from **its strategic location in the Indian Ocean**, Addu is the second largest city in the archipelago, home to **over 30,000 people**.



- Addu Atoll, together with **Fuvahmulah**, **extend the Maldives** into the **Southern Hemisphere**.

## 9. Dagmara Hydro-Electric Project

### Why in News?

- Fighting between the Taliban and Afghan government forces resumed in the restive southern province of Helmand, ending a three-day ceasefire agreed by the warring sides to mark the Id-ul-Fitr holiday.

### About

- The project is located near **village Dagmara on the right bank and Simri on the left bank**, about 22.5 km downstream of Bhimnagar barrage **on Kosi river**.
- It is a **Run-of-the-River scheme**. Run-of-river hydro projects use the **natural downward flow of rivers** and **micro turbine generators** to capture the kinetic energy carried by water.
  - Typically water is taken from the **river at a high point** and **diverted to a channel, pipeline, or pressurised pipeline** (or penstock).
- The project will have the total capacity of generating **130 MW energy**, in which **17 units of 7.65 MW** will be installed for power generation.
- The estimated cost of construction of this project is at **Rs. 2478.24 crore**.
- Significance →
  - It will be a **landmark project in the power sector** scenario of Bihar as far as green power is concerned.
  - Apart from **generating clean and green power**, the execution will boost the socio-economic and infrastructure development in the area and shall also create employment opportunities.



### 📍 Kosi River

- The Kosi is a **trans-boundary river** which flows through **Tibet, Nepal and India**.
- It has its **source in Tibet**.
- Major tributaries → **Sun Kosi, Arun and Tamur**.
- Its **unstable nature** causes course changes.
- The Kosi carries the **maximum amount of silt and sand** after the Brahmaputra in India.
- It is also known as the “**Sorrow of Bihar**” due to the extreme flooding that it causes.

### 📍 National Hydro Power Corporation (NHPC)

- NHPC is a **Category-A Miniratna Company** under the **Ministry of Power**, in the field of Hydropower.
- It is the largest organisation for hydropower development in India, currently, NHPC has **24 operational power stations** with a total **installed capacity of 7071 Mega Watt (MW)**.

## 10. Jalgaon banana

### Why in News?

- Recently, a consignment of Geographical Indication (GI) certified ‘Jalgaon banana’ has been exported to Dubai.

## About Jalgaon banana

- Jalgaon District is located in the **north-west region of the state of Maharashtra**.
- It is bounded by **Satpura mountain ranges** in the north, **Ajanta mountain ranges** in the south.
- Jalgaon is **rich in volcanic soil** which is well suited for cotton production.
- It is a major business center for **tea, gold, pulses, cotton** and **bananas**
- The principal natural feature is the **Tapti River**.
  - Unlike the rest of the Deccan, whose rivers rise in the Western Ghats and flow eastward to the Bay of Bengal, the Tapti **flows westward** from **headwaters in eastern Maharashtra to empty into the Arabian Sea**.
  - The Tapti receives **thirteen principal tributaries** in its course.
- India is the **world's leading producer of bananas** with a share of around 25% in total output.

### 📍 Geographical Indication Tag

- It is a sign used on products that have a **specific geographical origin** and **possess qualities** or a **reputation** that are due to that origin.
- It is a **part of the intellectual property rights** that comes under the **Paris Convention** for the Protection of Industrial Property.
- In India, GI registration is administered by the **Geographical Indications of Goods (Registration and Protection) Act of 1999**.
- Items Covered → **Agricultural products, foodstuffs, wine and spirit drinks, handicrafts, and industrial products**.

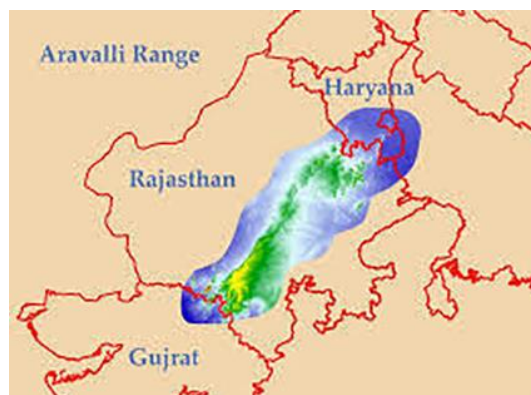
## 11. Aravalli Range

### Why in News?

- The Supreme Court of India has refused to stop the demolition of over 10,000 settlements encroaching on forests in the Aravalli range in Haryana's Faridabad district.

### About Aravalli Range

- Location → They stretch for a distance of about **720 km from Himmatnagar in Gujarat to Delhi**, spanning Haryana, Rajasthan, Gujarat, and Delhi.
- Formation → The Aravallis date back to millions of years when a **pre-Indian subcontinent collided with the mainland Eurasian Plate**.
- Aravalli Range is the **oldest mountain range** in India and one of the oldest mountain systems in the world.
- Age → Carbon dating has shown that **copper and other metals mined** in the ranges date back to at least the **5th century BC**.
- Rivers → The three major rivers and their tributaries flow from the Aravalli. Namely **Banas** and **Sahibi rivers** which are tributaries of Yamuna, as well as **Luni River** which flows into the Rann of Kutch.
- Highest Peak → **Guru Shikhar Peak** on Mount Abu is the highest peak in the Aravalli Range (1,722 m).



## 12. Deep Ocean Mission

### Why in News?

- Recently, the Cabinet Committee on Economic Affairs has approved the proposal of the Ministry of Earth Sciences (MoES) on the Deep Ocean Mission (DOM).

### About

- Deep Ocean Mission aims to **explore the deep ocean for resources**. Also, for sustainable use of ocean resources, it aims to **develop deep-sea technologies**.
- Nodal Ministry → **Ministry of Earth Sciences**(MoES) will be the nodal Ministry for implementing this mission.
- Duration of the mission → The mission will be implemented over a period of **5 years** in a **phased manner**. Its 1st phase will be of 3 years.
- Key Components of the mission →
  - A **manned submersible** will be developed to **carry three people** to a depth of 6,000 metres in the ocean with a suite of **scientific sensors and tools**. An **Integrated Mining System** will be developed for mining polymetallic nodules at those depths in the central Indian Ocean.
  - Development of **Ocean Climate Change Advisory Services**.
  - Development of a **component for searching deep sea flora and fauna**, including microbes, and studying ways to sustainably utilise them.
  - The next component is to **explore and identify potential sources of hydrothermal minerals** that are sources of precious metals formed from the earth's crust along the Indian Ocean mid-oceanic ridges.
  - It has a component for **studying and preparing detailed engineering design** for offshore Ocean Thermal Energy Conversion (**OTEC**) powered desalination plants.
  - The final component is aimed at **grooming experts** in the **field of ocean biology and engineering**. This component aims to translate research into industrial applications and product development through on-site business incubator facilities.
- Significance →
  - The mission will give a **boost to efforts** to **explore India's vast Exclusive Economic Zone** and Continental Shelf.
  - The plan will enable India to develop capabilities to **exploit resources** in the Central Indian Ocean Basin (**CIOB**).

### 📌 Also Remember

- The United Nations(UN) has declared the **decade 2021-2030** as the **Decade of Ocean Science for Sustainable Development**.
- The Government of India's Vision of New India by 2030 announced in 2019 highlighted the **Blue Economy** as **one of the ten core dimensions of growth**.

### 📌 PMN

- Polymetallic nodules (also known as manganese nodules) are **potato-shaped, largely porous nodules** found in abundance carpeting the sea floor of world oceans in deep sea.

- Composition → Besides **manganese and iron**, they contain **nickel, copper, cobalt, lead, molybdenum, cadmium, vanadium, titanium**, of which nickel, cobalt and copper are considered to be of economic and strategic importance.

### 13. Summer Solstice

#### Why in News?

- The summer solstice will happen today around 9:02 am on Monday (Indian Standard Time).

#### About Solstice

- It is a Latin word that means '**stalled sun**'.
- It is a **natural phenomenon** that **occurs twice every year**, once in the summer and again during winter, in each hemisphere of the earth - Summer and Winter Solstice.
- Solstice is an astronomical event, **caused by Earth's tilt on its axis** and **its motion in orbit around the sun**.
- At the **June solstice**, Earth is positioned in its orbit so that **our world's North Pole** is **leaning most toward the sun**.
- As seen from Earth, the sun is **directly overhead** at **noon 23 1/2 degrees north of the equator**, at an imaginary line encircling the globe known as the Tropic of Cancer – named after the constellation Cancer the Crab. This is as far north as the sun ever gets.
- Implications →
  - All locations **north** of the equator have **days longer than 12 hours** at the June solstice. Meanwhile, all locations **south** of the equator have **days shorter than 12 hours**.
  - This day is characterised by a **greater amount of energy received** from the sun. According to NASA, the amount of incoming energy the Earth received from the sun on this day is **30 per cent higher** at the **North Pole than at the Equator**.

#### What is the winter solstice?

- **21st December** or the Winter Solstice marks the **shortest day** of the year in the **Northern Hemisphere**.
- It is the shortest day and longest night of the year in the Northern Hemisphere and is also known as the '**first day of winter**' in the Northern Hemisphere as well as '**Hiemal solstice** or **Hibernal solstice**'.
- During this, countries in the Northern Hemisphere are **farthest from the Sun** and the **Sun shines overhead** on the **Tropic of Capricorn** (23.5° south).

### 14. World's First GM Rubber Sapling

#### Why in News?

- Recently, the world's first Genetically Modified (GM) rubber sapling has been planted in Guwahati, Assam.

#### About

- It has been **tailored for the climatic conditions in the Northeast**.
- It has **additional copies of the gene MnSOD**, or manganese-containing superoxide dismutase.
- It was developed at the **Kerala-based Rubber Research Institute of India (RRII)**.

- Natural rubber is a **native of warm humid Amazon forests** and is **not naturally suited** for the **colder conditions in the Northeast**, which is one of the largest producers of rubber in India.
- Growth of young rubber plants **remains suspended during the winter** months, which are also characterised by progressive drying of the soil. This is the reason for the **long immaturity period** of this crop in the region.
- The MnSOD gene has the ability to **protect plants from the adverse effects** of severe environmental stresses **such as cold and drought**. The plant is thus expected to establish well and grow fast in the region.
- The planting had been done at an **experimental level** following all mandatory biosafety measures applicable to field trials involving GM crops.
- There was **no risk of genes flowing from the GM rubber** into any other native species, a concern often raised by environmental groups against GM plants.

## 15. Yellow Gold 48

### Why in News?

- Recently, Bayer (German agrochemicals major) has launched the first-ever yellow watermelon variety Yellow Gold 48 under Seminis brand in India.

### About

- It has been **developed from superior germplasm** as part of Bayer's global research and development efforts.
- It is best **suited for cultivation from October to February** and for harvest from April onwards and will be available in the market until mid-July.
- It has been **commercially introduced in India** following two years of local trials.
- The company is also creating **market linkages for growers** by connecting them directly to large buyers and food retail stores.
- Significance →
  - It has **high yield** and **income potential** and **will empower watermelon growers** to diversify into new categories and meet the growing demand for exotic fruits.
  - Watermelon growers can benefit from **enhanced yield potential**, **better disease** and **pest tolerance**, and **higher returns**.

## 16. Suez Canal

### Why in News?

- Ever Given could resume voyage 3 months after Suez Canal grounding.

### About

- The Suez Canal is an **artificial sea-level waterway** running north to south across the Isthmus of Suez in Egypt, **to connect the Mediterranean Sea and the Red Sea**.
- The canal **separates the African continent from Asia**.
- Constructed by the **Suez Canal Company between 1859 and 1869**, it officially opened on 17 November 1869.



- The canal is owned and maintained by the **Suez Canal Authority (SCA) of Egypt**.
- Under the **Convention of Constantinople**, it may be used "in time of war as in time of peace, by every vessel of commerce or of war, without distinction of flag".
- Significance →
  - It provides the **shortest maritime route** between Europe and the lands lying around the Indian and western Pacific oceans.
  - It is one of the **world's most heavily used shipping lanes**, carrying over **12%** of world trade by volume.

## 17. Saint Vincent and the Grenadines

### Why in News?

- Cabinet approved the agreement between India and Saint Vincent and The Grenadines for the Exchange of Information and Assistance in Collection with respect to Taxes.

### About

- It is an **island country in the Caribbean**.
- It is located in the **southeast Windward Islands of the Lesser Antilles**, which lie in the West Indies at the southern end of the eastern border of the Caribbean Sea where the latter meets the Atlantic Ocean.

### Details of the Agreement:

- It mainly proposes to **facilitate exchange of information** between the two countries and to **provide assistance to each other in collection of tax claims**.
- Benefits → The Agreement will help in facilitating the exchange of information between the two countries including **sharing of information held by the banks and other financial institutions** encompassing the information regarding the **legal and beneficial ownership**.



## 18. Black Sea

### Why in News?

- In a recent event, Russia alleged that the British warship had breached its territorial waters in Black Sea which Britain and most of the world say belong to Ukraine.

### About

- Location → Black Sea is an **inland sea** located **between far-southeastern Europe** and **the far-western edges of the continent of Asia** and the **country of Turkey**.
- Bordering Countries → **Romania, Bulgaria, Ukraine, Russia, Georgia, and Turkey**.
- It is surrounded by the **Pontic, Caucasus, and Crimean Mountains** in the south, east and north respectively.

- The Turkish straits system - **the Dardanelles, Bosphorus** and **Marmara Sea** - forms a transitional zone between the Mediterranean and the Black Sea.
- The Black Sea is also **connected to the Sea of Azov by the Strait of Kerch**.



### Anoxic Water:

- There is a **significant absence of oxygen** in the water.
- The Black Sea happens to be the **largest water body** with a **meromictic basin**, which means the **movement of water** between the lower and upper layers of the sea is a **rare phenomenon** to find anywhere in the world.
- The **anoxic condition** is also caused due to the presence of the **process of Eutrophication** in the sea.

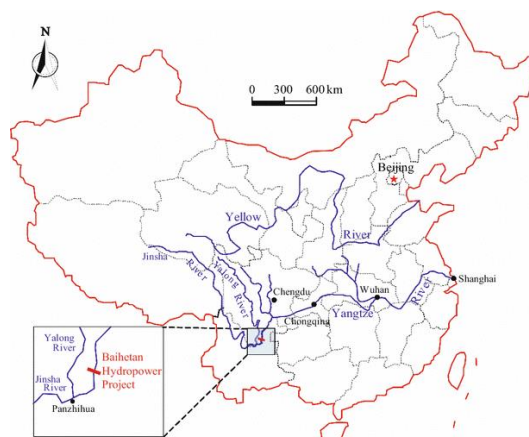
## 19. Baihetan Dam

### Why in News?

- China operationalises Baihetan hydro project of 16GW capacity, biggest since Three Gorges.

### About

- Location → Border of **southwestern provinces of Yunnan and Sichuan**.
- Constructed on → **Jinsha**, the upstream section of the Yangtze river.
  - Yangtze is the **longest in Asia** and the third-longest river in the world.
  - It **risers in the northern part of the Tibetan Plateau** and flows in a generally easterly direction to the East China Sea.
- Three Gorges Dam → It is also a **hydroelectric gravity dam** that **spans the Yangtze River**.
  - It has been the **world's largest power station** in terms of installed capacity of 22,500 MW or 22.5 GW.
  - The **Three Gorges** are three adjacent gorges along the middle reaches of the Yangtze River.



## 20. World's Fifth Ocean

### Why in News?

- The National Geographic magazine has recognised the 'Southern Ocean' as the world's fifth ocean hoping others will soon follow suit.

### About

- Usually, the magazine has **followed the** International Hydrographic Organization (**IHO**) **on marine names**.
- The change in name is in **alignment with** the **National Geographic Society's initiative** to conserve the world's oceans.



- The Southern Ocean is the only ocean to **touch three other oceans** and to **completely embrace a continent** rather than being embraced by them.
- Its northern limit is a **latitude of 60 degrees south**. It is also defined by its Antarctic Circumpolar Current that was formed 34 million years ago. The current flows from west to east around Antarctica.
- By officially changing the name of the waterbody, the National Geographic hoped to **draw attention to the following issues**,
  - Rapid warming of the Southern Ocean due to global warming,
  - Industrial fishing on species like krill and Patagonian toothfish.
- Recognition →
  - The **IHO too** had **recognised ‘Southern Ocean’** as a distinct body of water surrounding Antarctica **in 1937** but had repealed the same in 1953.
  - However, the **US Board on Geographic Names** and the National Oceanic and Atmospheric Administration **recognize** the term ‘Southern Ocean’.



### 📍 International Hydrographic Organization

- It is an **intergovernmental organization** that works to ensure all the world's seas, oceans and navigable waters are surveyed and charted.
- Established in **1921**, it coordinates the activities of national hydrographic offices and promotes uniformity in nautical charts and documents.
- It issues **survey best practices, provides guidelines to maximize the use of hydrographic survey data** and develops hydrographic capabilities in Member States.
- **India is also a member** of IHO.

## Polity

### 1. National Human Rights Commission

#### Why in News?

- The President of India appointed Justice Arun Kumar Mishra as the Chairman of the National Human Rights Commission (NHRC).

#### About

- NHRC, established in **1993**, is an **independent statutory body** as per the provisions of the Protection of Human Rights Act of 1993.
- Objective → To **protect and promote human rights** related to life, liberty, equality and dignity of individuals.
- Composition →
  - The National Human Rights Commission (NHRC) is composed of a **Chairperson** and **eight other members**.
  - The chairperson is **retired chief justice of India** or a **judge of the Supreme Court**.
  - Those **eight members** are:
    - Four full-time members.
    - Four deemed members.
- Appointment → A **Selection Committee** will recommend the candidates to the President. The Selection Committee **includes**:
  - Prime Minister (Chairman)
  - Speaker of Lok Sabha
  - Union Home Minister
  - Deputy Chairman of Rajya Sabha
  - Leaders of the Opposition in both Houses of the Parliament.
- Term and removal →
  - They hold office for a term of **three years** or **until they attain the age of 70 years**, whichever is earlier.
  - The **President can remove them** from the office under specific circumstances.
- Power → The Commission shall have all the **powers of a civil court** namely:
  - **Summoning and enforcing** the attendance of witnesses and examining them on oath;
  - **Discovery and production of any document**;
  - **Receiving evidence** on affidavits.

### 2. National Commission for Protection of Child Rights

#### Why in News?

- The National Commission for Protection of Child Rights (NCPCR) has informed the Supreme Court that nearly 10,000 children need immediate care and protection due to the impact of Covid-19.

#### About

- NCPCR is a **statutory body** established in **2007** under the Commission for Protection of Child Rights Act (CPCR), 2005.
- Nodal Ministry → It is under the administrative control of the **Ministry of Women & Child Development**.
- Mandate → The Commission's Mandate is to **ensure that all Laws, Policies, Programmes, and Administrative Mechanisms** are in **consonance with the Child Rights** perspective as enshrined in the Constitution of India and also the UN Convention on the Rights of the Child.
- Composition →
  - This commission has a **chairperson** and **six members** of which at least **two should be women**.
  - All of them are **appointed by Central Government** for **three years**.
  - The maximum age to serve in commission is **65 years for Chairman** and **60 years for members**.

### 🏠 Bal Swaraj Portal

- It was **launched by** the National Commission for Protection of Child Rights (**NCPCR**).
- Purpose → The portal has been created with a **purpose for online tracking** and **digital real-time monitoring mechanism** of children who are in need of care and protection.
- Bal Swaraj Covid-Care → The Commission has **extended the use of this portal** for tracking children who have lost both their parents or either of the parents during COVID-19.
  - It has **provided a link** under the name of "**COVID-Care**" for uploading data of such children by the concerned department on the portal.

## 3. Model Tenancy Act

### Why in News?

- The Union Cabinet has approved the Model Tenancy Act for circulation to all States / Union Territories for adaptation by way of enacting fresh legislation or amending existing rental laws suitably. It will help overhaul the legal framework with respect to rental housing across the country.

### About

- The government had **first released** the draft of the MTA **in 2019**.
- The Act aims to **bridge the trust deficit** between tenants and landlords by clearly delineating their obligations.

### 🏠 Highlights of the Model Law

- **Applicable prospectively** and will **not affect** the **existing tenancies**.
- **Written agreement** is a must for all new tenancies. The agreement will have to be submitted to the concerned district '**Rent Authority**'.
- The law also speaks about **roles and responsibilities of landlord and tenants**.
- **No landlord or property manager can withhold any essential supply** to the premises occupied by the tenant.
- **If tenancy has not been renewed**, the tenancy shall be deemed to be renewed on a month-to-month basis on the same terms and conditions as were in the expired tenancy agreement, for a maximum period of six months.
- **Compensation in case of non-vacancy**: On the expiry of extended period of six months of agreed tenancy period or the termination of tenancy by order or notice, the tenant shall be a tenant in default and liable to pay

**compensation of double of the monthly rent for two months and four times of the monthly rent thereafter.**

- A landowner or property manager may **enter a premise** in **accordance with written notice** or **notice through electronic medium** served to the tenant at least twenty-four hours before the time of entry.
- Significance → It is an **important piece of legislation** that promises to **ease the burden on civil courts**, unlock rental properties stuck in legal disputes, and prevent future tangles by balancing the interests of tenants and landlords.

#### 4. SDG India Index 2020-21

##### Why in News?

- Recently, the third edition of the Sustainable Development Goals (SDG) India Index and Dashboard 2020–21 was released by NITI Aayog.

##### About

- The SDG India Index was **launched in 2018 by NITI Aayog**. It was developed in collaboration with the United Nations.
- Aim → As the States, progress will determine **India's progress towards achieving the Sustainable Development Goals (SDGs) by 2030**.
- The index aims to **instil competition among States** to improve their performance across social indices.
- Indicators Covered → The third edition of the index covered **16 SDG Goals** on **115 quantitative indicators**.
- In **2018**, around **13 SDG goals** with **62 indicators** were covered.
- Methodology →
  - Scoring: A composite score for SDG Index is computed in the **range of 0–100** for each State/UT based on its aggregate performance across 16 SDGs.
  - The **higher the score** of a State/UT, the **closer it is towards achieving the 2030 national targets**.
  - Classification: States/UTs are classified based on the SDG India Index Score as follows:
    - **Aspirant**: 0–49
    - **Performer**: 50–64
    - **Front Runner**: 65–99
    - **Achiever**: 100.

##### Key Findings

- India's overall SDG score **improved by 6 points** — from 60 in 2019 to **66 in 2020-21**.
- This is due to **improvement in providing facilities** including clean water and sanitation, affordable and clean energy among others.
- Categories → Currently, there are **no states in the aspirant and achiever category**. Around 15 states/UTs are in the performer category and 22 states/UTs in the front runner category.
- State Wise Performance →
  - **Kerala has topped** the index with a score of 75.
  - It was **followed by Himachal Pradesh** and **Tamil Nadu** with a score of 74.
  - **Bihar, Jharkhand** and **Assam** were the **worst-performing states** in the SDG India index.
- UTs → **Chandigarh** maintained its **top spot** among the UTs with a score of 79, followed by **Delhi** (68).

- Top Gainers → **Mizoram, Haryana** and **Uttarakhand** are the **top gainers** in 2020-21 in terms of improvement in score from 2019.

## 5. Public Accounts Committee

### Why in News?

- The Public Accounts Committee (PAC) of Parliament has decided its agenda for the following year.

### About PAC

- Origin → Public Accounts Committee was **introduced in 1921** after its first mention in the Government of India Act, 1919 also called Montford Reforms.
- The PAC is formed **every year** with a **strength of not more than 22 members** of which 15 are from Lok Sabha and 7 from Rajya Sabha.
- The term of office of the members is **one year**.
- Chairman → The Chairman is **appointed by the Speaker** of Lok Sabha. **Since 1967**, the chairman of the committee is **selected from the opposition**.
- Function → Its chief function is to **examine the audit report** of Comptroller and Auditor General (**CAG**) after it is laid in the Parliament.
  - Note: CAG submits three reports – a report on appropriation accounts, an audit report on finance accounts, and an audit report on public undertakings.
- Limitations of the Public Accounts Committee:
  - Broadly, it **cannot intervene** in the **questions of policy**.
  - It can keep a tab on the expenses only after they are incurred. It has **no power to limit expenses**.
  - It **cannot intervene** in **matters of day-to-day administration**.
  - Any recommendation that the committee makes is **only advisory**. They can be ignored by the ministries.
  - It is **not** vested with the **power of disallowance of expenditures** by the departments.
  - **Being only an executive body**; it cannot issue an order. Only the Parliament can take a final decision on its findings.

## 6. Election Petition

### Why in News?

- Recently, the West Bengal Chief Minister has filed an election petition in the Calcutta High Court challenging the Assembly election result of Nandigram constituency.

### About Election Petition

- Post results, an election petition is the **only legal remedy available** to a voter or a candidate who believes there has been **malpractice in an election**.
- An election petition **submitted to the High Court of the state** in which the constituency is located.
- Although the **Representative of the People Act of 1951 suggests** that the **High Court** should try to conclude the **trial within six months**, it usually drags on for much longer, even years.
- Under Section 100 of the RP Act, an election petition can be filed on the grounds that →

- Section 123 of the RP Act has a **detailed list of what amounts to corrupt practice**, including bribery, use of force or coercion, appeal to vote or refrain from voting on grounds of religion, race, community, and language.
- **Improper acceptance of the nomination** of the winning candidate or improper rejection of a nomination.
- **Malpractice in the counting process**, which includes improper reception, refusal or rejection of any vote, or the reception of any vote which is void.
- **Non-compliance with the provisions** of the Constitution or the RP Act or any rules or orders made under the RP Act.
- What happens if the court finds that a contention of malpractice is correct? → The verdict on an election petition, if found in favour of the petitioner, may result in a **fresh election** or **the court announcing a new winner**.

## 7. Global Peace Index

### Why in News?

- The 15th edition of Global Peace Index 2021 has been released.

### About

- Released by → **the Institute for Economics & Peace** (IEP), an international think tank.
- Aim → The index presents the **most comprehensive analysis of trends in peace**. It ranks countries according to their levels of peacefulness and identifies potential determinants of peace.
- Coverage → The index measures the peacefulness of **163 countries** and territories. It covers **99.7% of the world's population**.
- Parameters → The index is composed of **23 qualitative and quantitative indicators** from highly respected sources. These indicators are grouped into three key domains:
  - ongoing conflict
  - safety and security and
  - Militarization.

### 📌 Key Highlights

- **Iceland** has **topped** the peace index. It was followed by **New Zealand, Denmark, and Portugal**.
- **India** has been **ranked 135th** in the 2021 Global Peace Index.

## 8. Recusal of Judges

### Why in News?

- Recently, two Supreme Court judges have recused themselves from hearing cases relating to West Bengal.

### About

- When there is a **conflict of interest**, a judge can **withdraw from hearing** a case to prevent creating a perception that s/he carried a bias while deciding the case.
- The practice stems from the **cardinal principle of due process of law** that nobody can be a judge in his/her own case.

- Another instance for recusal is when an **appeal is filed in the Supreme Court** against a judgement of a High Court that may have been delivered by the SC judge when she was in the HC.
- Process for recusal →
  - The decision to recuse generally comes **from the judge herself** as it **rests on the conscience and discretion** of the judge to disclose any potential conflict of interest.
  - In some circumstances, lawyers or parties in the case bring it up before the judge. If a judge recuses, the case is **listed before the Chief Justice for allotment to a fresh Bench.**
- Rules →
  - There are **no formal rules** governing recusals, although **several Supreme Court judgments** have dealt with the issue.
  - In **Ranjit Thakur v Union of India (1987)**, the Supreme Court held that the tests of the likelihood of bias are the reasonableness of the apprehension in the mind of the party.
  - The 1999 charter '**Restatement of Values in Judicial Life**' is a code of ethics adopted by the Supreme Court.
  - It states, "**A Judge shall not hear and decide a matter** in a company in which he **holds shares**, unless he has **disclosed his interest** and **no objection to his hearing** and deciding the matter is raised."
- Decision → Once a request is made for recusal, the decision to recuse or not **rests with the judge.**
- The judges can recuse **even if** they do **not see a conflict** but only because such an apprehension was cast. They can **refuse to withdraw from a case.**
- Record → Since there are **no formal rules** governing the process, it is **often left to individual judges to record reasons** for recusal.
  - Some judges disclose the reasons in open court; in some cases, the reasons are apparent.

## 9. Delimitation

### Why in News?

- Delimitation of constituencies is being carried out in union territory of Jammu and Kashmir. Recently, Prime Minister of India chaired a meeting with political parties of Jammu and Kashmir.

### About

- Delimitation is the **act of fixing** or **redrawing the limits** or **boundaries of territorial constituencies** (Assembly or Lok Sabha seat) in a country or a province having a legislative body, **as per the Election Commission.**
- Conducted by → The Parliament enacts a **Delimitation Act** under Article 82 of the Constitution and an independent high-powered panel known as the **Delimitation Commission** is **constituted by the President of India** to carry out the exercise.
- Composition → **Retired Supreme Court judge**, **Chief Election Commissioner** and **Respective State Election Commissioners.**
- Associate members → **Members of Parliament** and **Legislative of states** for which the Delimitation Commission is set up, are nominated as associate members to help the commission in its task.

- Powers → The Delimitation Commission is a **high power body** whose orders have the force of law and **cannot** be called in **question before any court**.

### Delimitation in Jammu and Kashmir

- The delimitation exercise in J&K in the past has been **slightly different** from those in the rest of the country **because of the region's special status**.
- The delimitation of Lok Sabha seats was then **governed by the Indian Constitution in J&K**, but the delimitation of Assembly seats was governed separately by the **Jammu and Kashmir Constitution** and **Jammu and Kashmir Representation of the People Act, 1957**.
- However, Jammu and Kashmir **lost its special status** and was **divided into two Union Territories** (J&K and Ladakh) after the abrogation of its special status under Article 370, on 5th August, 2019.
- Following this, a special delimitation commission was **constituted on 6th March, 2020** to carve out Assembly and Parliament seats in the UT.

## 10. Task force for Mission Karmayogi

### Why in News?

- Recently, a three-member task force has been formed to help the government in bringing major bureaucratic reforms through its ambitious “Mission Karmayogi”.

### About

- Chairperson → **Former Infosys CEO S D Shibu Lal** has been appointed chairperson of a three-member task force.
- The task force has been constituted to **draw a clear road map** for the guidance and operationalisation of the ‘**Karmayogi Bharat**’ and the **constitution of a Special Purpose Vehicle** (SPV).

### 📌 Mission Karmayogi

- Aim and Objectives →
  - It is aimed at **building a future-ready civil service** with the right attitude, skills and knowledge, aligned to the vision of New India.
  - It aims to **prepare Indian civil servants for the future** by making them **more creative, constructive, imaginative, proactive, innovative**, progressive, professional, energetic, transparent, and technology-enabled.
- The core guiding principles of the Programme will be →
  - To emphasize on ‘**on-site learning**’ to complement the ‘**off-site**’ learning,
  - To create an **ecosystem of shared training infrastructure** including that of learning materials, institutions and personnel,
  - To calibrate all Civil Service positions to a **Framework of Roles, Activities and Competencies (FRACs) approach** and to create and deliver learning content relevant to the identified FRACs in every Government entity.
  - To make available to all civil servants, an **opportunity to continuously build and strengthen** their Behavioral, Functional and Domain Competencies in their **self-driven** and **mandated learning paths**.
- Institutional framework and implementation of the programme →



- PM led **Public Human Resources (HR) Council** to approve and monitor Civil Service Capacity Building Plans.
- **Capacity Building Commission** to harmonize training standards, create shared faculty and resources, and have supervisory role over all Central Training Institutions.
- Wholly owned **Special Purpose Vehicle** to own and operate the online learning platform and facilitate world-class learning content market-place.
- **Coordination Unit** headed by the Cabinet Secretary.

## 11. Attorney General Of India

### Why in News?

- The tenure of Attorney General K.K. Venugopal is extended by the government for a period of one more year with effect from July 1.

### About

- S/he is the **top legal officer** in the country & part of Union Executive.
- S/he is **not considered** as a **government servant**.
- Assisted by **2 Solicitor Generals & 4 Additional Solicitor Generals**.
- Under the Constitution of India, **Article 76 deals** with for Attorney General of India & **Article 165** for Advocate General of States.
- Eligibility → Qualified to be **appointed as Supreme Court judge, Citizen of India, Judge of High Court (HC)** for 5 years/advocate HC for 10 years/eminant jurist President's opinion.
- Tenure → **Not fixed**.
- Appointment → **By President** on Government advice.
- Functions →
  - **Advise Government** on legal matters.
  - **Perform legal duties** assigned by President.
  - **Appear on behalf of Government** in all cases in SC or HC.
  - **Represent Government** under Article 143 (Power of President to consult SC).
  - Discharge functions **conferred by Constitution** or **law**.
- Rights →
  - **Right to Speak & take part in proceedings** of both Houses of Parliament/joint sitting/any committee of Parliament of which he/she may be named a member.
  - Enjoys **privileges & immunities** of a member of Parliament.
  - Not a Government servant & **not debarred** from **private legal practice**.
- Limitations →
  - **No Right to Vote** in House proceedings/committees.
  - Should **not advise against** or **hold a brief against Government**.
  - Should not defend accused persons in criminal prosecutions without the permission of the Government of India.
  - Should **not accept appointment** as a **director in any company** or corporation without the permission of the Government of India.

- Removal →
  - Holds office during **President's pleasure** & can be **removed by President** at any time.
  - **No grounds** for removal or procedure mentioned in Constitution.

## 12. Island development strategy

### Why in News?

- Recently, some developmental changes were opposed in the islands of Lakshadweep and Andaman & Nicobar.

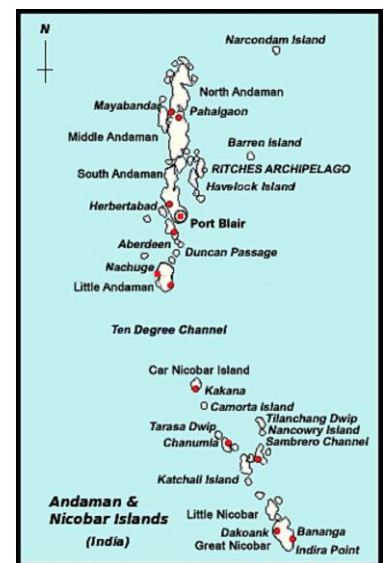
### About

- There has been considerable opposition to these legislations. The reasons cited for this opposition include poor precedence of the **two-child policy**, need for a strong legislation like **Prevention of Anti-social activities** and on the broader level on grounds of lack of sustainability and interference.
- List of Regulations →

Regulation	What it does?
The Lakshadweep Animal Preservation Regulation, 2021	It prohibits slaughtering or causing any animal to be slaughtered without a certificate issued by the authorities.
The Lakshadweep Panchayat Regulation, 2021	It proposed a new panchayat regulation that makes any person with <b>more than two children</b> ineligible to contest panchayat elections or continue as a member.
	<ul style="list-style-type: none"> <li>• The regulation states that it provides for the preservation of animals suitable for milch, breeding or for agricultural purposes. For this purpose, no certificate will be given to slaughter cows, calves, bull or bullocks in the island.</li> </ul>
The Lakshadweep Development Authority Regulation 2021	It allows the government to evict, alter and/or occupy any land owned by any common man in the island for development purposes.
The Lakshadweep Prevention of Anti-Social Activities Regulation	It provides for the administrator to order the detention of a person for a period of up to one year if the offender's actions adversely affect the maintenance of public order.

### National importance of Islands:

- Strategic Importance → The **Nine Degree Channel**, located near **Lakshadweep** Islands and **Six Degree and Ten Degree Channels in the Andaman Sea**, are an important sea lane of communication.
- India can counter China's misadventures in the Indian Ocean with a blockade of cargo, especially from the Nine Degree Channel near Lakshadweep.
- According to Strategic analyst Robert Kaplan, India due to Indian Ocean, **fuses the geopolitics of the West Asia** with the geopolitics of **East Asia** by acting as a link for megaships carrying hydrocarbons from West Asia to the consumers in the burgeoning middle-class concentrations of East Asia.
- Economic Importance →
  - Island development can be central to our vision of blue economy which encompass environmental sustainability and Coastal Economy (**SDG 14**: Sustainable use of the Oceans and maritime resources).
  - There are valuable **fisheries and mineral resources** in the lagoons and Economic Zone Exclusive (EEZ) around the Lakshadweep Islands.



- Lakshadweep Islands has provided India with **20,000 sq.km. of territorial waters** and **~400,000 sq.km. of EEZ.**

**Also Remember:**

- Island Development Agency (IDA) → IDA was **constituted in June 2017** for the holistic development of islands.
  - It is chaired by **Union Home Minister** and includes **secretaries of various ministries.**
- Exclusive Economic Zone (EEZ) → The United Nations Convention on the Law of the Sea (**UNCLOS**) defines an EEZ as generally extending **200 nautical miles from shore**, within which the coastal state has the rights over exploration, exploitation, conservation, and management of natural resources and other economic activities, such as the production of wind or tidal power.

# International Relations

## 1. Economic Community of West African States

### Why in News?

- The Economic Community of West African States (ECOWAS) is attempting to mediate to solve the crisis in Mali.

### About

- What is it? → It is a **regional political and economic union** of fifteen countries located in West Africa.
- Established in → **1975**, with the signing of the **Treaty of Lagos**.
- The goal of ECOWAS is to achieve “**collective self-sufficiency**” for its member states by creating a **single large trade bloc** by building a full economic and trading union.
- It also serves as a **peacekeeping force** in the region.
- Considered one of the **pillar regional blocs** of the continent-wide **African Economic Community** (AEC).
- ECOWAS includes two sub-regional blocs →
  - The West African Economic and Monetary Union** is an organisation of eight, mainly French-speaking states.
  - The West African Monetary Zone (WAMZ)**, established in 2000, comprises six mainly English-speaking countries.

## 2. Resolution to End Malaria

### Why in News?

- Recently, the 74th World Health Assembly (WHA) has adopted a new resolution to accelerate efforts to end malaria.

### About

- The resolution is led by the **United States of America** and **Zambia**.
- Aim → The aim of the resolution is to **urge the Member States** to **step up progress** on containing the disease. It is in **line with WHO’s updated global malaria strategy** and the **WHO Guidelines for malaria**.
- The resolution called on countries to **expand investment, scale-up funding for a global response**. Also, it will boost investment in the research and development of new tools.

#### 📌 WHO’s Global Malaria Program:

- The WHO Global Malaria Program is responsible for **coordinating WHO’s global efforts** to **control and eliminate malaria**.
- The work of the program is guided by the “**Global technical strategy for malaria 2016–2030**”.

#### 📌 Global Technical Strategy for malaria 2016–2030

- The WHO’s global technical strategy was **adopted by the World Health Assembly** in **2015**.
- Aim → The strategy **provides a technical framework** for all malaria-endemic countries working towards malaria control and elimination.
- Targets → Its **global targets for 2030 include:**

- Reducing malaria case incidence by at least 90%.
- Reducing malaria mortality rates by at least 90%.
- Eliminating malaria in at least 35 countries.
- Preventing a resurgence of malaria in all countries that are malaria-free.

### Malaria

- Malaria is a life threatening **mosquito borne blood disease** caused by **plasmodium parasites**. It is predominantly found in the **tropical and subtropical areas** of Africa, South America as well as Asia.
- The parasites spread through the **bites of infected female Anopheles mosquitoes**.
  - After entering the human body, parasites initially multiply within the liver cells and then attack the Red Blood Cells (RBCs) resulting in their rupture.
- There are **5 parasite species** that cause malaria in humans, and 2 of these species – **Plasmodium falciparum** and **Plasmodium vivax** – pose the greatest threat.
- Symptoms of malaria include **fever and flu-like illness**, including shaking chills, headache, muscle aches, and tiredness.
- It is **preventable** as well as **curable**.

## 3. Shanghai Cooperation Organisation

### Why in News?

- The Union Cabinet of India has approved the ratification of an Agreement on “Cooperation in the field of Mass Media” between all the Member States of Shanghai Cooperation Organisation. The Agreement was signed in June, 2019.

### About

- What is it? → The SCO is a **permanent intergovernmental international organisation**. It is a Eurasian political, economic, and security alliance and has been the primary security pillar of the region.
- History → It was established in **2001**. It was preceded by the **Shanghai Five mechanism**.
- The Heads of State Council (**HSC**) is the **supreme decision-making body** in the SCO. It **meets once a year** and adopts decisions and guidelines on all important matters of the organisation.
- The SCO's official languages are **Russian** and **Chinese**.
- The organisation has two permanent bodies →
  - the **SCO Secretariat** based in **Beijing**.
  - the Executive Committee of the Regional Anti-Terrorist Structure (**RATS**) based **in Tashkent**.
- Membership →
  - Eight member states: **India, Kazakhstan, China, Kyrgyzstan, Pakistan, Russia, Tajikistan**, and **Uzbekistan**.
  - Four observer states: **Afghanistan, Belarus, Iran** and **Mongolia**.

## 4. Industrial Deep Decarbonisation Initiative

### Why in News?

- India along with Govt. of United Kingdom has recently launched a new workstream to promote industrial energy efficiency under the Industrial Deep Decarbonization Initiative (IDDI) at the 12th Chief Energy Ministerial (CEM).

### About IDDI

- It is a **Clean Energy Ministerial's (CEM's) initiative**.
- It is a **global coalition of public and private organisations** who are working to stimulate demand for low carbon industrial materials.
- In **collaboration with national governments, IDDI works to standardise carbon assessments**, establish ambitious public and private sector procurement targets, incentivise investment into low-carbon product development and design industry guidelines.
- Supporting Countries → Coordinated by **UN Industrial Development Organization** (UNIDO), the IDDI is **co-led by the UK and India** and current members include **Germany and Canada**.
- The initiative brings together a **strong coalition** of related initiatives and organizations including the Mission Possible Platform, the Leadership Group for the Industry Transition, the International Renewable Energy Agency (IRENA) and the World Bank to **tackle carbon intensive construction materials such as steel and cement**.

### 📌 Clean Energy Ministerial

- It was established in **December 2009** at the **UN's Framework Convention on Climate Change conference** of parties in Copenhagen.
- Purpose → CEM is a **high-level global forum** to **promote policies and programs** that advance clean energy technology, to share lessons learned and best practices, and to encourage the transition to a global clean energy economy.
- Members →
  - **29 countries** are part of CEM.
  - **India** is also a member country.

### 📌 United Nations Development Industrial Organisation

- UNIDO is the **specialized agency** of the United Nations that promotes industrial development for poverty reduction, inclusive globalization and environmental sustainability.
- Members →
  - There are **170 Member** countries as of 1st April 2019.
  - **India** is **also a member** country.
- Mandate → UNIDO's mandate is **fully recognized in SDG-9**, which calls to "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation".
- Headquarters → **Vienna, Austria**.

## 5. United Nations General Assembly

### Why in News?

- In a first for the Maldives, Foreign Minister Abdulla Shahid was elected the President of the UN General Assembly for 2021-22. This time the UNGA head will be chosen from the Asia-Pacific grouping.

### About

- The General Assembly is the **main deliberative, policymaking and representative organ of the UN**.
- All **193 Member States** of the UN are represented in the General Assembly, making it the only UN body with **universal representation**.
- The **President** of the General Assembly is **elected each year** by assembly to **serve a one-year term** of office.
- The presidency **rotates annually** between the **five geographic groups**: African, Asia-Pacific, Eastern European, Latin American and Caribbean, and Western European and other States.
- How are the decisions taken?
  - **Decisions on important questions**, such as those on peace and security, admission of new members and budgetary matters, require a two-thirds majority of the General Assembly.
  - **Decisions on other questions** are by simple majority.
  - The Assembly has **no binding votes** or **veto powers** like the UN Security Council.
- According to the Charter of the United Nations, the General Assembly may:
  - **Consider and approve the United Nations budget** and establish the financial assessments of Member States.
  - **Elect the non-permanent members** of the **Security Council** and the members of other United Nations councils and organs and, on the recommendation of the Security Council, appoint the Secretary-General.
  - **Consider and make recommendations** on the **general principles of cooperation** for maintaining international peace and security, including disarmament.
  - Discuss any question relating to **international peace and security** and, except where a dispute or situation is currently being discussed by the Security Council, make recommendations on it.

## 6. ASEAN

### Why in News?

- China is hosting Foreign Ministers from the 10 ASEAN countries. The event also marks the 30-year anniversary of relations.

### About

- The Association of Southeast Asian Nations is a **regional organization** which was established to **promote political and social stability** amid rising tensions among the Asia-Pacific's post-colonial states.
- Motto → The motto of ASEAN is "**One Vision, One Identity, One Community**".
- ASEAN Secretariat → **Indonesia, Jakarta**.
- Formation → Established in **1967** with the signing of the ASEAN Declaration (**Bangkok Declaration**) by its founding fathers.
- Founding Fathers of ASEAN are → **Indonesia, Malaysia, Philippines, Singapore and Thailand**.
- Ten Members → **Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam**.
- Significance of ASEAN for India →
  - Against the backdrop of aggressive moves by China, including the Ladakh standoff, India **placed the ASEAN at the centre** of **India's Act East policy** and held that a cohesive and responsive ASEAN is essential for security and growth for all in the region.

## 7. Organization for the Prohibition of Chemical Weapons

### Why in News?

- The Chemical Weapons Convention (international chemical weapons watchdog) told the U.N. Security Council that Syria had likely or definitely used chemical weapons in 17 cases.

### About OPCW

- OPCW is an **intergovernmental organization** and the implementing body for the Chemical Weapons Convention.
- This convention has been in **force since 1997** and **193 members**.
- Aim → To achieve the **vision of a world free of chemical weapons** by implementing the provisions of the Chemical Weapons Convention.
- Functions →
  - The OPCW is authorized to **perform inspections** to verify that signatory states are complying with the convention.
  - It can also **perform testing of sites** and **victims of suspected** chemical weapons attacks.
- Headquarters → **The Hague, Netherlands**.
- Significance → The OPCW was awarded the **Nobel Peace Prize in 2013**.

### 📖 Chemical Weapons Convention

- Chemical Weapons Convention (CWC) is a **multilateral treaty** that **bans chemical weapons** and **requires their destruction** within a specified period of time.
- History → The negotiations for the convention **started in 1980** at the **UN Conference on Disarmament**. The convention opened for **signature in 1993** and entered into **force in 1997**.
- Purpose → The convention **prohibits the large-scale use, development, production, stockpiling and transfer of chemical weapons** and **their precursors**, except for very limited purposes (research, medical, pharmaceutical or protective).
- Implemented by → the **Organization for the Prohibition of Chemical Weapons** (OPCW).
- Members → The convention is **open to all nations** and currently has **193 states-parties**. **India signed** the treaty in 1993.
- **Israel** has **signed but has yet to ratify** the convention.
  - Three states have neither signed nor ratified the convention are Egypt, North Korea and South Sudan.
- Significance → A unique feature of the Convention is its incorporation of the '**challenge inspection**'. Under this, any State Party in doubt about another State Party's compliance can **request a surprise inspection**.

## 8. UN Secretary-General

### Why in News?

- The United Nations Security Council (UNSC) approved ninth UN Secretary-General António Guterres for a second term for five more years starting January 1, 2022.

### About



- The Secretary-General is appointed **by the UN General Assembly** (UNGA) on the **recommendation of the UNSC**.
- The five permanent members of the **15-nation-strong UNSC** are the **most powerful players** in the process of selection of Secretary-General, as **any one of them can eliminate a candidature by a veto**.
- [Five permanent members of the UNSC - **China, France, Russia, the United Kingdom, and the United States**.]
- The **10 elected non-permanent members** of the UNSC, of which **India is currently a part**, do **not have veto powers**.
- But their backing is still crucial as a candidate requires **at least nine out of 15 votes** to be recommended for the top job.

#### Functions of UN Secretary-General:

- The UN Charter refers to the Secretary-General as the **UN chief administrative officer**.
- Mandate → UN Secretary-General shall **act and perform such functions as given to him** by the UN Security Council, General Assembly, Economic and Social Council and other United Nations organs.
- Functions → The Secretary-General's day-to-day work includes:
  - **attendance at sessions** of United Nations bodies;
  - **consultations** with world leaders, government officials and
  - **worldwide travel** intended to keep the Secretary-General in touch with the peoples of the UN member states.

## 9. Atlantic Charter

### Why in News?

- US President Joe Biden and British Prime Minister Boris Johnson seeks to sign a new Atlantic Charter.

### About

- The Atlantic Charter was a statement **issued on 14 August 1941** that set out **American and British goals for the world** after the end of World War II.
- The charter's adherents **signed the Declaration by United Nations** on **1 January 1942**, which was the basis for the modern United Nations.
- The charter inspired several **other international agreements** and **events** that followed the end of the war.
- The **dismantling of the British Empire**, the **formation of NATO**, and the General Agreement on Tariffs and Trade (**GATT**) all derived from the Atlantic Charter.

### 📖 Why sign new charter?

- At their meeting, the two leaders plan to sign what they're calling a **new Atlantic Charter**, pledging to "**defend the principles, values, and institutions of democracy and open societies**."
- US hopes to **reassure European allies** that the US had shed the transactional tendencies of Donald Trump's term and is a reliable partner again.
- The **US staunchly opposed the Brexit movement**, the British exodus from the European Union that Mr. Johnson championed, and has **expressed great concern** with the future of Northern Ireland.
- Biden once called the British leader a "**physical and emotional clone**" of Trump.

## 10. NATO Summit

### Why in News?

- NATO Summit was held recently in Brussels. It brought together the leaders of all 30 Allied nations.

### About

- Origin → The alliance is based on the **North Atlantic Treaty** that was **signed in 1949**. It was formed as an **alliance of European and North American countries** after World War II as a bulwark against Russian aggression.
- HQ → **Brussels, Belgium**.
- Objective → It is an **intergovernmental military alliance** between North American and European countries. It constitutes a **system of collective defence** whereby its independent member states agree to mutual defence in response to an attack by any external party.
- Supreme Headquarters Allied Powers Europe (**SHAPE**) is the **headquarters of the NATO's Allied Command Operations** (ACO). Since 1967 it has been located in Casteau, north of the Belgian city of Mons.
- Member Countries →
  - It consists of **30 members**. **Montenegro joined it in 2017** and North Macedonia in 2020.
  - Of the 30 member countries, **two are located in North America** (Canada and the United States), **28 are in Europe**, one of which (Turkey) is in both Europe and Asia.
  - Three former Soviet states (**Estonia, Latvia and Lithuania**) **are members** of NATO.

## 11. Antarctic Treaty

### Why in News?

- The 1959 Antarctic Treaty celebrates its 60th anniversary. This Treaty is the only example of a single treaty that governs a whole continent.

### About

- The Antarctic Treaty was **signed between 12 countries in Washington** on 1st December 1959 for making the Antarctic Continent a **demilitarized zone** to be preserved for scientific research only.
- Headquartered in **Buenos Aires, Argentina**, it entered into **force in 1961** and has since been acceded by many other nations.
- Members → Twelve original signatories are **Argentina, Australia, Belgium, Chile, France, Japan, New Zealand, Norway, South Africa, the Union of Soviet Socialist Republics, the UK and the US**.
- Currently, the treaty has **54 parties**. **India** became a **member in 1983**.
- Definition → Antarctica is defined as all of the **land and ice shelves south of 60°S latitude**.
- Some important provisions of the Treaty are →
  - Antarctica shall be **used for peaceful purposes only**
  - **Freedom of scientific investigation** in Antarctica and cooperation.
  - **Scientific observations** and **results** from Antarctica **shall be exchanged** and made freely available
  - **Prohibition of military activities, nuclear tests** and the disposal of radioactive waste.
  - **Neutralising territorial sovereignty**, this means a limit was placed on making any new claim or enlargement of an existing claim.

- It put a **freeze on any disputes** between claimants over their territories on the continent.

#### 📁 **Antarctic Treaty System:**

- As **disputes have arisen over the years**, many have been **addressed through the expansion of the treaty framework** with these agreements. This framework is now referred to as the “**Antarctic Treaty System**”.
- The Antarctic Treaty system is made up of **four major international agreements** →
  - The 1959 Antarctic Treaty.
  - The 1972 Convention for the Conservation of Antarctic Seals.
  - The 1980 Convention on the Conservation of Antarctic Marine Living Resources.
  - The 1991 Protocol on Environmental Protection to the Antarctic Treaty.

## 12. International Labour Organisation

### Why in News?

- India's term as chair of the Governing Body of the International Labour Organisation (ILO) ended recently (October 2020- June 2021).

### About ILO

- It is the **United Nations agency** for the world of work. It is also a **member of** the United Nations Development Group (**UNDP**).
- Mandate → It **sets international labour standards, promotes rights at work** and encourages decent employment opportunities, the enhancement of social protection and the strengthening of dialogue on work-related issues.
  - Structure →
    - It is the **only tripartite U.N. agency**, that brings together governments, employers and workers' representatives of 187-member States.
    - The 187-member states of ILO **comprise 186 of the 193 UN member states** plus the **Cook Islands** are members of the ILO.
    - **India** is one of the **founding members of ILO**.
- HQ → **Geneva, Switzerland**.
- Parent organization → **Economic and Social Council of the United Nations**.
- History →
  - It was **created in 1919**, as part of the **Treaty of Versailles** that ended World War I, to reflect the belief that universal and lasting peace can be accomplished only if it is based on social justice.
  - In 1946, the ILO **became a specialized agency** of the newly formed United Nations.
  - The Organization won the **Nobel Peace Prize** on its **50th anniversary in 1969**.
- Governing Body → It is the **apex executive body of the ILO** which decides policies, programmes, agenda, budget and elects the Director-General. It meets in Geneva.
- Key reports →
  - World Employment and Social Outlook.
  - Global Wage Report.

## 13. Financial Action Task Force

## Why in News?

- The Financial Action Task Force (FATF) has decided to keep Pakistan in its “grey list”.

## About FATF

- What is it? → It is an inter-governmental body established in **1989 during the G7 Summit in Paris**.
- The FATF **assesses the strength of a country’s anti-money laundering and anti-terror financing frameworks**, however it does not go by individual cases.
- Objectives → To **set standards and promote effective implementation** of legal, regulatory and operational measures for combating money laundering, terrorist financing and other related threats to the integrity of the international financial system.
- Headquarters → Its Secretariat is located at the Organisation for Economic Cooperation and Development (OECD) **headquarters in Paris**.
- Member Countries → The FATF currently has **39 members** including two regional organisations — the European Commission and Gulf Cooperation Council.
  - **India is a member** of the FATF.
- Sessions → The **FATF Plenary** is the decision making body of the FATF. It **meets three times per year**.

## 📁 Listing by FATF

- Grey List → Countries that are considered a **safe haven for supporting terror funding** and **money laundering** are put in the grey list.
  - This inclusion serves as a **warning to the country** that it may enter the blacklist.
  - The greylisting carries **no legal sanctions**. But it attracts economic sanctions and restricts a country’s access to international loans
- Black List → Countries known as **Non-Cooperative** are put in the blacklist. These countries support terror funding and money laundering activities.

## Society

### 1. PM-CARES for Children Scheme

#### Why in News?

- The Prime Minister has announced a special PM-CARES for Children scheme. The scheme includes a comprehensive financial aid package for children orphaned during the pandemic.

#### About

- Eligibility → All children who have **lost both parents** or **surviving parent** or **legal guardian/adoptive parents** due to Covid 19 will be supported under the scheme.
- Need for these measures → As India **battles a raging second wave**, cases of children losing their parents to Covid-19 are also mounting.
- Features of the scheme →
  - Fixed Deposit in the name of the child → **A corpus of Rs 10 lakh for each child** when he or she reaches 18 years of age.
  - School Education: For children under 10 years → Admission will be given in the **nearest Kendriya Vidyalaya** or **in a private school** as a day scholar.
  - School Education: for children between 11-18 years → The child will be given **admission in any Central Government residential school** such as Sainik School, Navodaya Vidyalaya etc.
  - Support for Higher Education → The child will be **assisted** in **obtaining an education loan** for Professional courses / Higher Education in India as per the existing Education Loan norms.
  - Health Insurance → All children will be enrolled as a beneficiary under Ayushman Bharat Scheme (**PM-JAY**) with a **health insurance cover** of **Rs 5 lakhs**.

### 2. YUVA (Young, Upcoming and Versatile Authors) Scheme

#### Why in News?

- Ministry Of Education has launched YUVA To Mentor Young Authors.

#### About

- Launched by → the **Department of Higher Education** under the Ministry of Education.
- Purpose → It is an **Author Mentorship scheme** that aims to mentor authors under the age of 30. It will train them to **promote reading, writing, and book culture** in the country.
- This will allow India to **project its writings globally**.
- This scheme is in line with **PM's vision to encourage young writers** to write about India's freedom struggle.
- Implementation → **National Book Trust of India** under the Ministry of Education as the **Implementing Agency** will ensure execution of the Scheme.
- Part of → The scheme is a **part of the India@75 Project** (Azadi Ka Amrit Mahotsav). The project aims to bring out the perspectives of the young generation of writers on themes like unsung heroes, freedom fighters, and others in an innovative and creative manner.
- Key Features of the YUVA Scheme →

- Under the Scheme, a total of **75 authors** will be selected **through the All India Contest**.
- The themes of the contest are **unsung heroes, freedom fighters, National Movement among others**.
- The young authors will be **trained by eminent authors/mentors**. The books by these authors will be published by National Book Trust, India.
- The books will also be **translated into other Indian languages**. It will ensure the exchange of culture and literature thereby promoting '**Ek Bharat Shreshtha Bharat**'.
- Moreover, a consolidated **scholarship of Rs.50,000 per month** for a period of six months per author will be paid under the Mentorship Scheme.

### National Book Trust

- National Book Trust(NBT) is an **Indian publishing house**.
- It was **founded in 1957** as an **autonomous body** under the **Ministry of Education** of the Government of India.
- Mandate → The **activities of the Trust include** publishing, promotion of books and reading, promotion of Indian books abroad, assistance to authors and publishers, and promotion of children's literature.

## 3. Bell of Faith Scheme

### Why in News?

- Kerala's 'Bell of Faith' scheme will be expanded to the villages to reach senior citizens staying alone. Earlier, the scheme was successfully implemented in a number of urban households in Kerala.

### About

- Bell of Faith Scheme was **launched by the Kerala Police** in **2018**.
- It aims to provide **security to senior citizens staying alone** as part of Kerala's Community Policing Scheme.
- Under the Scheme, police have **installed a bell** in the senior citizens' houses.
- The **neighbour will get an alert** with an alarm when the senior citizen rings the bell during an emergency.
- The neighbour can **immediately rush to the house** or **contact the police** or **hospital**.
- **Significance of the Scheme** →
  - The Bell of Faith scheme sets an **example for community participation** to ensure the well-being and safety of the elderly.
  - Moreover, this scheme can be of **great support for the senior citizens** during the COVID-19 pandemic as many live in fear for their health.

## 4. SAGE initiative and SAGE portal

### Why in News?

- The Minister of Social Justice and Empowerment, launched the SAGE (Seniorcare Aging Growth Engine) initiative and SAGE portal to support India's elderly persons.

### About

- SAGE Initiative and SAGE Portal have been launched with an aim to **provide “one-stop access” for elderly care**. The portal will provide access to **all elderly care products and services** developed by credible start-ups.
- The **Ministry of Social Justice & Empowerment** will act as a **facilitator** for this scheme.

#### 📌 Key Features of the Initiative

- Helping start-ups → The initiative aims to **help startups** that are **interested in the field of providing services for elderly care**.
- Selection of start-ups → Start-ups will be selected **by an independent screening committee of experts**.
- Basis of selection → The committee will select the startups on the **basis of their innovative products and services across sectors**. Such as health, housing, care centres and technological access linked to finances, food, wealth management and legal guidance.
- Fund → A fund of up to **Rs 1 crore** as **one-time equity** will be granted to each selected start-up.

## 5. Performance Grading Index

### Why in News?

- The Union Education Minister has approved the release of Performance Grading Index (PGI) 2019-20 for States and Union Territories.

### About

- Released by → **Department of School Education and Literacy** (DoSEL), Ministry of Education.
- Performance Grading Index (PGI) is a **tool to provide insights** on the **status of school education in States and UTs**. This includes key levers that drive their performance and critical areas for improvement.
- Parameters → The index is structured in **two categories** namely: **Outcomes** and **Governance & Management**. These categories comprise a set of **70 indicators** aggregate with a **total weightage of 1000**. These indicators are related to:
  - Learning outcomes
  - Access
  - Infrastructure and facilities
  - Equity and
  - Governance and management.
- Data → The index is based on the data drawn from the **Unified District Information System for Education, National Achievement Survey** (conducted by NCERT in 2017), **Mid-Day Meal, Public Financial Management System**, and **the Shagun portal** – all maintained by the department of school education.
- First Released in → The Index was **first published** in **2019** with the reference year 2017-18.

#### 📌 Important Findings

- Punjab scored highest: **Punjab** has recorded the **highest score** in the index with a **total of 929 out of 1,000**. This is a huge improvement from 769 in 2020.
- **Punjab, Tamil Nadu** and **Kerala** have **all scored higher than 90%** in the Index for 2019-20.
- **Gujarat drops** from **second to 8th place**.
- **Madhya Pradesh** and **Chhattisgarh** also saw a **severe drop** in their scores. Thus pushing both States to an overall performance that was worse than in the previous edition of the index.

## 6. QS World University Rankings 2022

### Why in News?

- Jawaharlal Nehru University (JNU) has entered the top 1,000 of the QS World University rankings for the first time, as its new undergraduate engineering programme now makes it eligible for the rating.

### About

- Released by → **Quacquarelli Symonds (QS)**, a British company specialising in the analysis of higher education institutions around the world.
- Purpose → It is an **annual publication** of university rankings which **comprises the global overall and subject rankings**.

### 📌 Key Findings

- Top 5 universities in World → Massachusetts Institute of Technology (**MIT**), **Cambridge**, USA; **University of Oxford**, UK; **Stanford University**, USA; **Cambridge University**, UK; **Harvard University**, USA.
- Indian scenario → Only three educational institutes from India, the **IIT Bombay (177)**, **IIT Delhi (185)** and **IISc Bengaluru (186)** feature in the top 200 list.

## 7. Central Adoption Resource Authority

### Why in News?

- The Supreme Court has directed the States/UTs to take stringent action against private individuals and NGOs who invite people to illegally adopt children orphaned by the COVID-19 pandemic.

### About

- Central Adoption Resource Authority (CARA) is the **nodal body for adoption of Indian children**.
- CARA primarily deals with **adoption of orphan**, **abandoned** and **surrendered children** through its associated /recognised adoption agencies.
- Working → It regulates **in-country** and **inter-country adoptions** (in accordance with the provisions of **The Hague Convention** on Inter-Country Adoption, 1993, ratified by Government of India in 2003).
- Status → It is an **autonomous** and a **statutory body** of the **Union Women and Child Development Ministry**.
- The **mandatory registration** of CCIs and linking to CARA has been provided in Juvenile Justice (Care and Protection of Children) Act, 2015.
- Set up in → **1990**.
- In 2018, CARA has **allowed** individuals in a **live-in relationship** to **adopt children** from and within India.
- HQ → **New Delhi**.

## 8. Surakshit Hum Surakshit Tum Abhiyan

### Why in News?



- NITI Aayog and Piramal Foundation launched Surakshit Hum Surakshit Tum Abhiyaan in 112 Aspirational Districts.

## About

- Purpose → Campaign Will **Provide Covid Home-Care Support to 20 Lakh Citizens**.
- The Abhiyaan is being **part of a special initiative, Aspirational Districts Collaborative**, in which local leaders, civil societies and volunteers work with district administrations to address emerging problems across key focus areas of the Aspirational Districts Programme.
- It will be **led by district magistrates** in partnership **with over 1000 local NGOs**, which will enlist and train over 1 lakh volunteers to connect with patients through inbound/outbound calls.

### 📌 Aspirational Districts Programme

- It was launched in **January 2018**, the **“Transformation of Aspirational Districts’ Programme** (TADP).
- Objective → To **transform some of the most underdeveloped districts** of the country.
- Ministry → At the Government of India level, the programme is **anchored by NITI Aayog**. In addition, **individual Ministries** have assumed responsibility to drive the progress of districts.
- Focus Areas →
  - ADP is based on **49 indicators** from the **5 identified thematic areas**, which focuses closely on improving people’s Health & Nutrition, Education, Agriculture & Water Resources, Financial Inclusion & Skill Development, and Basic Infrastructure.
  - With States as the main drivers, ADP seeks to **focus on the strength of each district, identify low-hanging fruits for immediate improvement, measure progress, and rank districts**.

## 9. PENCIL Portal

### Why in News?

- Union Minister of Women and Child Development and Textiles, has appealed to citizens to report the instances of Child Labour on PENCIL Portal or by calling on Childline-1098.

### About

- PENCIL Portal stands for **Platform for Effective Enforcement for No Child Labour**.
- Purpose → It is an electronic platform that aims at **achieving the target of a child labour free society**. For this aim, it coordinates actions of the Centre, State, District, Governments, civil society, and the public.
- Nodal Ministry → The portal is administered by the **Ministry of Labour & Employment**.
- Components of the platform → The PENCIL Portal has the following components.
  - **Child Tracking System**
  - **Complaint Corner**
  - **State Government**
  - **National Child Labour Project and Convergence**.
- Significance → The portal has been launched for the **effective implementation of the Child Labour Act** and the **National Child Labour Project (NCLP) Scheme**.
- NCLP aims to eliminate all forms of child labour and rehabilitate them through education in Special Training Centres.

### 📞 CHILDLINE 1098

- CHILDLINE 1098 is a **free, emergency phone service for children** in need of aid and assistance.
- The helpline responds to the **emergency needs of children**. Further, it also links them to relevant services for their long-term care and rehabilitation.
- The helpline is managed and monitored by the **CHILDLINE India Foundation(CIF)**.

### 📅 World Day Against Child Labour

- World Day Against Child Labour is observed on **12 June every year**.
- It was **started in 2002** by International Labour Organization(ILO) to raise awareness and prevent child labour.
- Theme → **“Act now: End child labour”**.

## 10. World Giving Index

### Why in News?

- India is now ranked as the 14th most charitable country in the world as per a report released by the World Giving Index 2021 (WGI).

### About

- The World Giving Index (WGI) is an annual report published **by the Charities Aid Foundation** and **ranks over 140 countries** in the world according to how charitable they are.
- The **first edition** was released in **September 2010**.
- The WGI is a global survey, which **asks people three questions**: In the last month have you...
  - Helped a stranger, or someone you didn't know who needed help?
  - Donated money to a charity?
  - Volunteered your time to an organisation?
- The index **measures countries by proportion of population giving rather than how much they give**.

**THE WORLD'S MOST GENEROUS COUNTRIES**

Ranking	COUNTRY	Index Score	Ranking	COUNTRY	Index Score
1	Indonesia	69%	9	Kosovo	46%
2	Kenya	58%	10	Thailand	46%
3	Nigeria	52%	11	Tajikistan	45%
4	Myanmar	51%	12	Bahrain	45%
5	Australia	49%	13	United Arab Emirates	44%
6	Ghana	47%	14	India	44%
7	New Zealand	47%	15	Ethiopia	44%
8	Uganda	46%			

Source: CAF world giving index report

### 📞 Charities Aid Foundation

- The Charities Aid Foundation (CAF) is a **leading international charity registered in the United Kingdom**.
- It was founded in **1974**.

## 11. NISHTHA Programme

### Why in News?

- Ministry of Tribal Affairs and NCERT come together on a joint mission for NISHTHA Capacity Building Programme for Eklavya Model Residential Schools (EMRSs) Teachers and Principals.

### About

- What is it? → National Initiative for School Heads and Teachers Holistic Advancement (NISHTHA) is a national mission **to improve learning outcomes at the elementary level**. This is done **through integrated teacher training**.
- It is the **largest** teachers' training programme of its kind in the world.
- It has been launched under the **Centrally Sponsored Scheme** of **Samagra Shiksha** in 2019-20.
- Objective → To **motivate and equip teachers** to encourage and foster critical thinking in students and also teachers will get awareness and develop their skills on various aspects.
- Implementation → Training will be **conducted directly by 33120 Key Resource Persons (KRPs)** and **State Resource Persons (SRP)** identified by the State and UTs, who will in turn be **trained by 120 National Resource Persons** identified from National Council of Educational Research and Training (**NCERT**), National Institute of Educational Planning and Administration (**NIEPA**).

## 12. Peter Pan Syndrome

### Why in News?

- A special court in Mumbai has granted bail to a 23-year-old accused of sexually assaulting a minor. The accused had told the court he suffered from "Peter Pan Syndrome".

### About

- What is it? → PPS is a psychological condition that is used to describe **an adult who is socially immature**.
- People who develop similar behaviours of **living life carefree, finding responsibilities challenging in adulthood**, and basically never growing up suffer from PPS.
- Term coined by → The term was coined by **psychologist Dan Kiley** to explain the behaviour of such men who '**refuse to grow**' and behave their age in 1983.
  - Dan Kiley got the idea of PPS **after noticing Peter Pan**, a fictional character created by Scottish novelist James Matthew Barrie.
  - Peter Pan was a **care-free young boy, who never grew up**.
- While the WHO (World Health Organization) does not recognise Peter Pan Syndrome as a health disorder, many experts believe it is a **mental health condition** that **can affect one's quality of life**.
- The symptoms and impact →
  - As Peter Pan Syndrome **hasn't officially been diagnosed** as a health disorder, there **aren't clearly defined symptoms** or characteristics or even reasons which cause it.
  - But it could **affect one's daily routine, relationships, work ethic**, and **result** in attitudinal changes.

### 📖 Wendy Syndrome

- The Psychologist who defined PPS also used the term Wendy Syndrome (WS) to describe **women who act like mothers with their partners** or **people close to them**.
- People suffering from WS are **often seen making decisions, tidying up messes**, and offering one-sided emotional support.

# Security

## 1. ICGS Sajag

### Why in News?

- The National Security Advisor(NSA) has commissioned the Offshore Patrol Vessel(OPV) ICGS Sajag. (ICGS-Indian Coast Guard ship).

### About

- Goa Shipyard Limited has **indigenously designed and built** the Indian Coast Guard Ship Vessel "Sajag".
- Features → The ship is fitted **with advanced technology equipment, weapons** and **sensors**. It is also capable of **carrying a twin-engine helicopter** and **four high-speed boats**.
- Significance → The ICGS Sajag is the **third in a series** of five offshore patrol vessels under **Samarth Class**.

#### 👉 Offshore Patrol Vehicles (OPVs)

- Offshore Patrol Vehicles (OPVs) are **long-range surface ships**. They are capable of **operation in maritime zones** of India including island territories with helicopter operation capabilities.

#### 👉 Indian Coast Guard (ICG)

- The Indian Coast Guard was formally established through an **Act of Parliament in 1978**. It operates under the **Ministry of Defence**.
- Purpose → It is the **maritime law enforcement and search and rescue agency** of India. They have jurisdiction over territorial waters including its contiguous zone and exclusive economic zone.
- Origin → The concept of forming the Coast Guard was conceived **after the 1971 war** when it was assessed that maritime borders are equally vital as land borders.
- Committee → The blueprint for the formation of the Indian Coast Guard was conceived by the **Rustamji Committee**.
- Significance → Indian Coast Guard has emerged as the **fourth largest in the world** with almost 160 ships and 62 aircraft.

## 2. INS Sandhayak

### Why in News?

- Recently, INS Sandhayak decommissioned 04 Jun 21 after serving the nation for 40 years.

### About

- INS Sandhayak, the first of its class indigenously designed and built **Hydrographic Survey Ship** of Indian Navy.
- It was conceptualised by then Chief Hydrographer to the Govt. of India, **Rear Admiral FL Fraser**.
- The construction of the ship **began at GRSE Kolkata** (then Calcutta) by laying the keel in 1978.
- The ship was **commissioned to the Indian Navy in 1981**
- The ship has conducted **surveys in shallow coastal waters** and in **deep seas**, besides serving as alma-mater for numerous hydrographers of the Navy.

- The ship, during her commissioned service, has undertaken approximately **200 major Hydrographic Surveys** and **numerous minor surveys** in both East and West coasts of the country, the Andaman seas and the neighbouring countries too.
- Significant operations:
  - **Operation Pawan**, assisting Indian peacekeeping forces in Sri Lanka in 1987.
  - **Operation Rainbow**, when India helped the Sri Lankan Government search for and rescue fishermen and boats lost at sea.
  - It was also part of humanitarian missions after the 2004 Tsunami and the maiden Indo-U.S. Humanitarian Assistance and Disaster Relief Exercise – '**Tiger Triumph**'.

### 3. I-Familia

#### Why in News?

- Recently, the Indian Navy hosted Goa Maritime Symposium (GMS) – 2021 under the aegis of Naval War College, Goa.

#### About

- What is it? → I-Familia is a **global database** launched to **identify missing persons through family DNA**. It will help the police to solve cases in member countries.
- Interpol applies **cutting-edge scientific research** and **uses the DNA** of relatives to identify missing persons or unidentified human remains around the world.
- DNA kinship matching is used mostly in cases where a direct sample of the missing person is not available.
- Components → I-Familia has three components:
  - **Dedicated global database** to host the DNA profiles provided by relatives. It is held separately from any criminal data;
  - **DNA matching software** called **Bonaparte** developed by Dutch company Smart Research; and
  - **Interpretation guidelines** developed by Interpol.

### 4. Indo-Thai CORPAT

#### Why in News?

- Recently, the 31st edition of India-Thailand Coordinated Patrol (Indo-Thai CORPAT) between the Indian Navy and the Royal Thai Navy is being conducted.

#### About

- The two navies have been carrying out CORPAT along their International Maritime Boundary Line **twice a year since 2005**.
- The aim of the Indo-Thai CORPAT exercise is to keep the vital part of the **Indian Ocean safe and secure for commercial shipping and international trade**.
- It builds up the **understanding and interoperability between navies**.
- The **Indian Naval Ship (INS) Saryu**, and **His Majesty's Thailand Ship** (HTMS) Krabi, along with Dornier Maritime Patrol Aircraft from both navies are participating in the CORPAT.

### 📌 Other Military Exercises between India and Thailand:

- Exercise MAITREE (Army).
- Exercise SIAM BHARAT (Air Force).

### 📌 INS Saryu

- It is an indigenously built **Naval Offshore Patrol Vessel** (NOPV)
- It is designed and built by **Goa Shipyard Limited**.
- It is aimed at meeting the increasing **ocean surveillance** and **patrolling requirements** of the Indian Navy.

## 5. iDEX-DIO

### Why in News?

- The Defence Minister has approved the budgetary support of Rs 498.8 crore for iDEX-DIO (Innovations for Defence Excellence – Defence Innovation Organisation) for the next five years.

### About

- It was launched by the Government in April 2018.
- Aim → iDEX aims to **promote innovation and technology development** in Defence and Aerospace by **engaging Industries** (which includes MSMEs, start-ups, individual innovators, R&D institutes & academia).
  - It will also **provide grants/funding** and **other support to them** to carry out R&D. However, R&D should have a good potential for future adoption for Indian defence and aerospace needs.
- Objectives of iDEX →
  - **Facilitate rapid development** of new, indigenized, and innovative technologies for the Indian defence and aerospace sector in shorter timelines.
  - **Create a culture of engagement** with innovative startups, to encourage co-creation for defence and aerospace sectors.
  - **Empower a culture of technology co-creation** and co-innovation within the defence and aerospace sectors.
- Nodal Body → iDEX will be funded and managed by **Defence Innovation Organisation** (DIO).

### 📌 Defence Innovation Organization (DIO)

- Defence Innovation Organisation(DIO) is a **not-for-profit Organisation**, incorporated under Section 8 of the Companies Act.
- Founding Members → Its **two founding members** are Hindustan Aeronautics Limited (**HAL**) & Bharat Electronics Limited (**BEL**) – **Defence Public Sector Undertakings** (DPSUs).
- Functions → DIO will **provide high-level policy guidance** to iDEX. However, iDEX will be **functionally autonomous**. The CEO of both DIO and iDEX will be the same. It will **facilitate coordination** and **separation of functions** also without any conflicts.

### 📌 Other Related Initiatives

- Defence Industrial Corridors → To **support the growth of the Defence sector and enhance manufacturing capacity** in the sector, two Defence Industrial Corridors are being set up in India, one in Uttar Pradesh and another in Tamil Nadu.

- Artificial Intelligence in Defence →
  - **N Chandrasekaran Task Force** was set up in **2018** to study implications of AI in national security.
  - Defence Artificial Intelligence Project Agency (DAIPA) was created in March, 2019.
  - DAIPA aims for **greater thrust on Artificial Intelligence** (AI) in Defence, formulation of an AI roadmap for each Defence PSU and Ordnance Factory Board to develop AI-enable products.

## 6. SIPRI Year Book 2021

### Why in News?

- Swedish think tank Stockholm International Peace Research Institute (SIPRI) has released its Year Book 2021.

### About

- **India possessed** an estimated **156 nuclear warheads** at the **start of 2021**, compared with 150 at the start of last year, while Pakistan had 165 warheads, up from 160 in 2020.
- **China's nuclear arsenal** consisted of **350 warheads**, up from 320 at the start of 2020.
- The nine nuclear armed states — **the U.S., Russia, the U.K., France, China, India, Pakistan, Israel** and **North Korea** — together possessed an estimated **13,080 nuclear weapons** at the start of 2021.
- Russia and the **U.S.** together **possessed over 90%** of global nuclear weapons.

#### World nuclear forces, January 2021

Country	Deployed warheads*	Other warheads**	Total 2021	Total 2020
USA	1 800	3 750	5 550	5 800
Russia	1 625	4 630	6 255	6 375
UK***	120	105	225	215
France	280	10	290	290
China		350	350	320
India		156	156	150
Pakistan		165	165	160
Israel		90	90	90
North Korea****	...	[40-50]	[40-50]	[30-40]
Total	3 825	9 255	13 080	13 400

### 📍 Stockholm International Peace Research Institute

- It is an **independent international institute** dedicated to research into conflict, armaments, arms control and disarmament.
- It was established in **1966 at Stockholm** (Sweden).
- It provides **data, analysis and recommendations**, based on open sources, to policymakers, researchers, media and the interested public.

## 7. ASEAN Defence Ministers' Meeting Plus (ADMM-Plus)

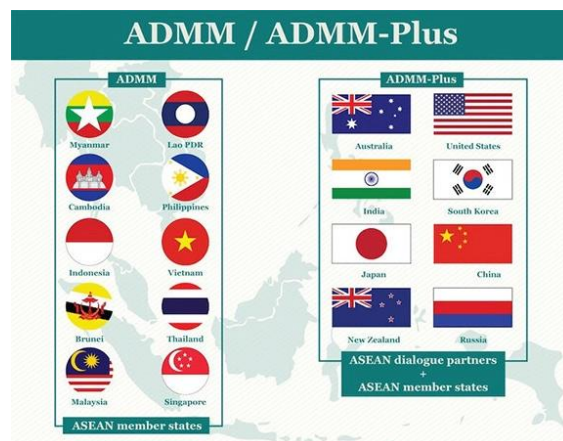
### Why in News?

- Recently, the defence minister addressed the 8th ASEAN Defence Ministers Meeting (ADMM) Plus. It is being hosted by Brunei as it is the chair of the ASEAN grouping this year.

### About

- Consistent with the ADMM guiding principles of open and outward looking, the **2nd ADMM in Singapore in 2007** adopted the Concept Paper to establish the **ADMM-Plus**.
- The ADMM-Plus is a **platform for ASEAN and its eight Dialogue Partners** to strengthen security and defence cooperation for peace, stability, and development in the region.

- Membership → Eight Dialogue Partners are Australia, China, India, Japan, New Zealand, Republic of Korea, Russia and the USA (collectively referred to as the “Plus Countries”).
- Aim → It aims to promote mutual trust and confidence between defence establishments through greater dialogue and transparency.
- Agreed five areas of practical cooperation under this mechanism are:
  - Maritime security, counter-terrorism, humanitarian assistance and disaster relief, peacekeeping operations and military medicine.
  - In 2013, a new priority area of humanitarian mine action was agreed.



## 8. EUNAVFOR Exercise

### Why in News?

- Recently, the maiden Indian Navy and European Union Naval Force (EUNAVFOR) exercise began in the Gulf of Aden.

### About

- What is it? → It is the first joint naval exercise between the Indian Navy and European Union Naval Force (EUNAVFOR).
- European Union Naval Force Somalia (EUNAVFOR) is the EU’s counter-piracy mission off the coast of Somalia.
- Participants → Countries participating in the exercise are India, Italy, Spain and France.
- Aim → To enhance and hone their war-fighting skills and their ability as an integrated force to promote peace, security and stability in the maritime domain.
- Significance →
  - Ships of the four navies will endeavour to enhance and hone their war-fighting skills and their ability as an integrated force to promote, peace, security and stability in the maritime domain
  - It also underscores the shared values as partner navies, in ensuring freedom of seas and commitment to an open, inclusive and a rules-based international order.

### 📍 Gulf of Aden

- Gulf of Aden, also known as the Gulf of Berbera, is a deepwater gulf between Yemen to the north, the Arabian Sea to the east, Djibouti to the west, and the Guardafui Channel, Socotra (Yemen), and Somalia to the south.
- In the northwest, it connects with the Red Sea through the Bab-el-Mandeb strait, and it connects with the Arabian Sea to the east. To the west, it narrows into the Gulf of Tadjoura in Djibouti.

## 9. Integrated Theatre Command

### Why in News?



- A high-level committee consisting of representatives from the services and the Ministries concerned has been formed for wider consultations on the creation of integrated triservice theatre commands.

### About

- What is it? → An integrated theatre command envisages a **unified command of the three Services**, under a single commander, for geographical areas that are of strategic and security concern.
- The commander of such a force will be **able to bear all resources at his disposal** – from the Army, the Indian Air Force, and the Navy – with seamless efficacy.
- The integrated theatre commander will **not be answerable to individual Services**.
- The **Shekatkar committee** has recommended the creation of 3 integrated theatre commands – northern for the China border, western for the Pakistan border, and southern for the maritime role.
- Significance → Integration and jointness of the three forces will **avoid duplication of resources**. The **resources available under each service** will be available to other services too.

## 10. Krivak or Talwar stealth frigates

### Why in News?

- The keel of the second frigate, of additional Krivak class stealth ships, being built with technology transfer from Russia by the Goa Shipyard Limited (GSL) was laid.

### About

- Krivak or Talwar stealth frigates are a **series of frigates and guard ships** (patrol boats) built in the Soviet Union, primarily for the Soviet Navy since 1970.
- Purpose → They are primarily used to accomplish a wide variety of naval missions. Such as **finding and eliminating enemy submarines** and **large surface ships**.
- Indian Navy currently operates **six Krivak class frigates** weighing around **4,000 tonnes** in two different batches. Such as
  - **The Talwar class**
  - **The upgraded Teg class**.

#### 📌 New Procurement of Krivak class stealth Frigates:

- In 2016, India and Russia had signed an **Inter-Governmental Agreement**(IGA) for **four Krivak or Talwar stealth ships**.
- Among four, two are to be procured directly from Russia and the other **two** will be **built by the Goa Shipyard Ltd**(GSL).
- Features → The four ships to be built will **weigh 300 tonnes more than the earlier ones**. Apart from that, it will also be **armed with BrahMos supersonic cruise missiles**.

#### 📌 Russia's Military Equipment Deployed by India:

- Navy → The Navy's only active aircraft carrier **INS Vikramaditya** is from Russia. A nuclear attack submarine **Chakra II** is also in service.
- Army →
  - **Army's T-90** and **T-72** main battle tanks.
  - **S-400 Triumph missile system**.

- Air Force → IAF's **Su30 MKI fighter**.

## 11. Information Fusion Centre for Indian Ocean Region

### Why in News?

- The United Kingdom has appointed a liaison officer to the Indian Navy's Information Fusion Centre for Indian Ocean Region (IFC-IOR), which is meant for maritime domain awareness.

### About

- Set up in → **2018**.
- Purpose → To **coordinate with regional countries** on maritime issues and act as a **regional repository of maritime data**.
- Partner countries → It presently has linkages with **21 partner countries** and **22 multi-national agencies across the globe**.
- Located in → **Gurugram, India**.
- Working →
  - Through this Centre, **information on "white shipping"**, or **commercial shipping**, will be **exchanged with countries** in the region to improve maritime domain awareness in the Indian Ocean.
  - It will also **impart training in maritime information collection** and **sharing**.
  - At present, data will be **shared by virtual means** – **telephone calls, Faxes, emails** and **video conferencing**. The centre will in future host liaison officers from foreign countries for quicker analysis of information and timely inputs.
- Significance → The IFC-IOR will **strengthen maritime security** in the region and beyond by building a common coherent maritime situation picture.
- Roles and functions of a liaison officer →
- The liaison officer will be based full-time at the centre, **working directly with the Indian armed forces** and fellow liaison officers from partner nations to enhance maritime domain awareness in the region.
- International Liaison Officers (**ILO**) **from 13 countries** have been **invited**, and ILOs from countries had joined earlier- Australia, France, Japan and the U.S.. The U.K. is the **5th country to post an ILO**.

## 12. Agni P Missile

### Why in News?

- Recently, a new generation nuclear capable ballistic missile Agni-P (Prime) was successfully test-fired by DRDO from Dr. APJ Abdul Kalam island off the coast of Odisha, Balasore.

### About

- Agni-P is a new generation **advanced variant of the Agni class** (under IGMDP - Integrated Guided Missile Development Program).
- Canister Based Missile → Agni P is a **canisters based missile**. Canisterisation of missiles **reduces the time required to launch** the missile while improving its storage and mobility,
- This means that it can be **launched from rail** and **road** and **stored for a longer period**. It can also be transported across the length and breadth of the country.

- Weight → The missile **weighs 50% less than Agni III** and has new guidance and a new generation of propulsion.
- Range → The missile has a range **between 1000km to 2000km**. It has been developed specifically to **strike targets in Pakistan**. Its range is too short to reach targets in the Chinese mainland.
- Replaced by → The Agni-P will **replace the Prithvi, Agni-1 and Agni-2 missiles** that were built two decades ago with technologies that are now considered outdated.

#### 📌 About Agni Missiles

- Agni Missiles trace **their origins** back to the **Integrated Guided Missile Development Programme (IGMDP)**.
- IGMDP was conceived **by APJ. Abdul Kalam in the 1980s** to enable India to attain self-sufficiency in the field of missile technology.
- The 5 missiles (**P-A-T-N-A**) developed under this program are:
  - **Prithvi**: Short range surface to surface ballistic missile.
  - **Agni**: Ballistic missiles with different ranges, i.e. Agni (1,2,3,4,5)
  - **Trishul**: Short range low level surface to air missile.
  - **Nag**: 3rd generation anti-tank missile.
  - **Akash**: Medium range surface to air missile..

## 13. INS Tabar

### Why in News?

- INS Tabar deployed to participate in joint exercises with friendly navies in Africa and Europe.

### About

- INS Tabar is a **Talwar-class stealth Frigate** built for Indian Navy in Russia.
- The ship is equipped with a **versatile range of weapons and sensors** and is among the earliest stealth frigates of the Indian Navy.
- The ship is **part of the Indian Navy's Western Fleet** which is based at Mumbai under Western Naval Command.

#### 📌 What will INS Tabar do?

- INS Tabar will **transit across the Gulf of Aden, Red Sea, Suez Canal, Mediterranean Sea, North Sea and Baltic Sea**.
- During port visits, the ship is scheduled to participate in bilateral exercises like
  - **Exercise Konkan** with the UK Royal Navy
  - **Exercise Varuna** with French Navy and
  - **Exercise Indra** with Russian Federation Navy.
- These engagements are aimed to **further strengthen maritime security** in the region and to consolidate combined operations against maritime threats.

## 14. Project Seabird

### Why in News?

- The Union Defence Minister has reviewed the status of the Indian Navy's Project Seabird at the Karwar Naval Base.

### About

- Project Seabird is the **largest naval infrastructure project** at **Karwar, Karnataka**.
- The project involves creation of a **naval base at Karwar** on the west coast of India.
- Upon completion, the project will provide the Indian Navy with its **largest naval base on the west coast** and also the **largest naval base east of the Suez Canal**.
- Benefits → This would further **bolster the operational readiness of the Armed Forces** and help in **augmenting trade**, economy & humanitarian aid operations.

## History and Culture

### 1. Tulsa Race Massacre of May-June 1921

#### Why in News?

- The U.S. President Joe Biden officially recognised one of the worst incidents of violent racial hate in the country's modern history — the Tulsa Race Massacre of May-June 1921.

#### About

- It is one of the **worst incidents of violent racial hate** in the US' modern history.
- It involved **widespread killings in Tulsa, Oklahoma**, targeting relatively well-to-do African Americans, and the extensive damage to their property by white mobs.
- Tulsa was especially known for being an **unofficial sanctuary city for African Americans** suffering the consequences of **harsh segregation** or **Jim Crow laws** in pre-civil rights America. It was also called as the "Black Wall Street" of the U.S.

### 2. Rengma

#### Why in News?

- The Rengma Nagas in Assam have written to Union Home Minister Amit Shah demanding an autonomous district council amid a decision by the Central and the State governments to upgrade the Karbi Anglong Autonomous Council (KAAC) into a territorial council by the name of Karbi-Anglong Autonomous Territorial Council (KAATC).

#### About

- Rengma is a **Naga tribe** found in **Nagaland and Assam states** of India.
- According to the 2011 Population Census of India, Rengma population stands at **62,951**.
- Ngada festival → The **harvest festival of the Rengmas** is called **Ngada**. It is an eight-day Ngada festival that marks the **end of the agricultural season**. Ngadah is celebrated just after the harvest, towards the end of November.

#### 📍 Autonomous District Council

- As per the **Sixth Schedule**, the **four states** viz. **Assam, Meghalaya, Tripura** and **Mizoram** contain the Tribal Areas which are technically different from the Scheduled Areas.
- Though these areas **fall within the executive authority of the state**, provision has been made for the creation of the District Councils and regional councils for the exercise of the certain legislative and judicial powers.
- Each district** is an **autonomous district** and **Governor can modify / divide the boundaries** of the said Tribal areas by notification.

### 3. Ram Prasad Bismil

#### Why in News?

- Recently, the Ministry of Culture has paid tribute to Shaheed Ram Prasad Bismil on his birth anniversary at Shahjahanpur (UP) as a part of Azadi Ka Amrit Mahotsav.

#### About

- Birth → He was born on **11th June, 1897** in **Shahjahanpur** (Uttar Pradesh).
- He was **associated with the Arya Samaj** from an early age.
- He wrote **powerful patriotic poems** in Urdu and Hindi under the pen name of names of '**Bismil**', '**Ram**' and '**Agyat**'.
- The **ideals of freedom and revolution** got first ingrained in his mind **after** he read the **death sentence passed on Bhai Parmanand**, an Indian nationalist and Arya Samaj missionary.
- Organisations against British Rule →
  - He organised **Matrivedi and Shivaji Samiti** along with **Genda Lal Dixit** and youths from Etawah, Mainpuri, Agra and Shahjahanpur districts.
  - He formed the **Hindustan Republican Association** with leaders like Bhagat Singh and Chandrasekhar Azad.
  - He participated in the **Mainpuri conspiracy of 1918** and **the Kakori conspiracy of 1925** with Ashfaq Ullah Khan and Roshan Singh to protest against the British Rule.
- Famous writings and poems → He gave vent to his anger over death of Bhai Parmanand in the form of his poem '**Mera Janm**'.
- He published a pamphlet titled '**Deshwasiyon ke Naam**' and distributed it along with his poem '**Mainpuri ki Pratigya**' in 1918.
- He wrote '**Mera Rang De Basanti Chola**' and '**Sarfarooshi Ki Tamanna**' which became the anthem for freedom fighters.

## 4. Tulu Language

### Why in News?

- The Tulu speakers, mainly in Karnataka and Kerala, have been requesting the governments to give it official language status and include it in the eighth schedule to the Constitution.

### About

- Tulu is a **Dravidian language**. It is mainly spoken in two coastal districts, **Dakshina Kannada and Udupi of Karnataka** and **Kasaragod district of Kerala**.
- Kasaragod district is called the '**Sapta bhasha Samgama Bhumi** (the confluence of seven languages)' and Tulu is **one among the seven**.
- Thus, the Tulu speakers mainly from Karnataka and Kerala are **requesting an official language status** for Tulu by its **inclusion in the Eighth Schedule** to the Constitution.
- Tulu Art and Culture:
- Tulu has a **rich oral literature tradition** with folk-song forms like **paddana** and traditional folk theatre **yakshagana**.
- Tulu also has an **active tradition of cinema**, with around 5 to 7 Tulu language movies produced a year.
- Moreover, Tulu films are **screened every day** in Mangalore and Udupi in at least one theater.

### 📖 Advantages of including Tulu in Eight Schedule

- Recognition from the Sahitya Akademi.
- Translation of Tulu literary works into other languages.

- Members of Parliament (MP) and Member of the Legislative Assembly (MLA) could speak Tulu in Parliament and State Assemblies, respectively.
- Option to take competitive exams in Tulu including all-India competitive examinations like the Civil Services exam.

### 📖 Eighth Schedule of the Constitution

- The Constitutional provisions relating to the Eighth Schedule occur in **Article 344 (1) and 351 of the Constitution**.
- The languages listed under Eighth Schedule are:
  - (1) **Assamese**, (2) **Bengali**, (3) **Gujarati**, (4) **Hindi**, (5) **Kannada**, (6) **Kashmiri**, (7) **Konkani**, (8) **Malayalam**, (9) **Manipuri**, (10) **Marathi**, (11) **Nepali**, (12) **Oriya**, (13) **Punjabi**, (14) **Sanskrit**, (15) **Sindhi**, (16) **Tamil**, (17) **Telugu**, (18) **Urdu** (19) **Bodo**, (20) **Santhali**, (21) **Maithili** and (22) **Dogri**.
- Languages are added through **Constitutional Amendments**.

## 5. Raja Parba festival of Odisha

### Why in News?

- PM extends best wishes to people of Odisha on Raja Parba.

### About

- Raja or Raja Parba or Mithuna Sankranti is a **three-day-long festival of womanhood celebrated in Odisha, India**.
- The second day of the festival signifies beginning of the **solar month of Mithuna from**, which the **season of rains starts**.
- To **celebrate the advent of monsoon**, the joyous festival is arranged for three days by the villagers.
- The first day is called "**Pahili Raja**", second is "**Raja Sankranti**" and third is "**Bhumi Dahana or Basi Raja**".
- It is **similar to Ambubachi Mela of Assam**.

## 6. Ekambaranathar Temple

### Why in News?

- Recently, the Ekambaranathar temple in Kancheepuram (Tamil Nadu) has taken control of the Seetha Kingston School, located on the temple's property in Poonamallee High Road.

### About

- It is a **Hindu temple** dedicated to the deity Shiva, located in **Kanchipuram, Tamil Nadu**.
- It is significant to the **Hindu sect of Saivism** as one of the temples associated with the five elements, the **Pancha Bhoota Stalas**, and specifically the element of Earth, or Prithvi.
- Shiva is worshiped as **Ekambareswarar** or **Ekambaranathar**, and is represented by the lingam, with his idol referred to as **Prithvi lingam**.
- The present masonry structure was **built during the Chola dynasty** in the **9th century**, while later expansions are attributed to Vijayanagar rulers.
- It is **maintained** and **administered by the Hindu Religious and Charitable Endowments Department** of the Government of Tamil Nadu.

## 7. National Maritime Heritage Complex

### Why in News?

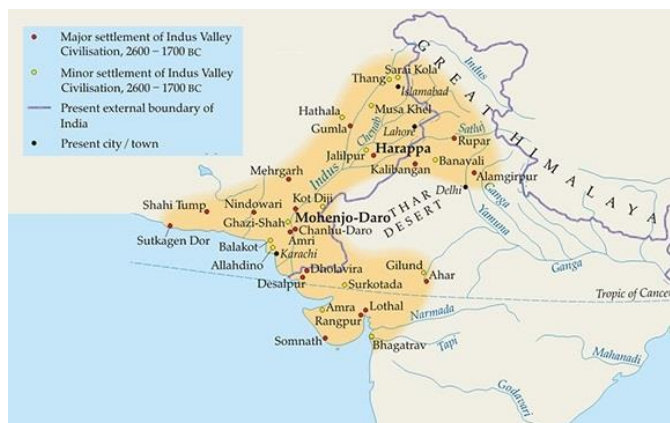
- The Ministry of Culture (MoC) and Ministry of Ports, Shipping and Waterways (MoPSW) signed a MoU for Cooperation in Development of National Maritime Heritage Complex (NMHC) at Lothal, Gujarat’.

### About

- Timeline → The foundation stone for the project was laid by Prime Minister Narendra Modi in **March 2019**.
- Location → National Maritime Heritage Complex, a **world-class facility** is to be developed in the **vicinity of the ASI site of Lothal**, located about 80 kms away from Ahmedabad, Gujarat.
- Objective → It will **showcase and preserve India’s rich and diverse maritime heritage**. It will display objects relating to ships and travel on large bodies of water. It also intends to **highlight the ancient shipbuilding and navigational technologies** developed by India.
- Implementing agencies →
  - The project is being implemented by the **Ministry of Shipping** through its **Sagarmala programme**, with the involvement of the Archaeological Survey of India (ASI), the State government and other stakeholders.
  - India and Portugal will cooperate** in the setting up of a national maritime heritage museum at Lothal in Gujarat. The **Portuguese Navy** has **agreed to assist** with their experience of administering the maritime museum in Lisbon.

### 📍 Lothal Site

- The city of Lothal stood **beside a Bhogava river**, a tributary of Sabarmati, **in Gujarat**, close to the Gulf of Khambhat.
- It was situated near areas where **raw materials** such as **semi-precious stones** were **easily available**.
- This was an important centre for **making objects out of stone, shell and metal**.
- There was also a **storehouse in the city**.
  - Many seals** and **sealings** (the impression of seals on clay) were found in this storehouse.
- A building that was found here was probably a workshop for making beads: **pieces of stone, half made beads, tools for bead making**, and **finished beads** have all been found here
- The excavated site of Lothal is the **only port-town of the Indus Valley Civilisation**.
- A metropolis with an **upper and a lower town** had in on its northern side a basin with vertical wall, inlet and outlet channels has been identified as a **tidal dockyard**.
- The site provides evidence of Harappa culture between **2400 BCE to 1600 BCE**.



## 8. Flag Satyagraha/Jhanda Satyagraha

### Why in News?



- The anniversary of the 'Jhanda Satyagraha' was celebrated in Jabalpur in Madhya Pradesh.

### About Flag Satyagraha

- The Flag Satyagraha movement by the freedom fighters **shook the British government** and it infused a new life into the freedom movement.
- It was held in **Jabalpur and Nagpur** in **1923**.
- The news of flag hoisting in Jabalpur **spread like fire in the country** and after flags were hoisted at several places across the country.
- Significance → It is a **campaign of peaceful civil disobedience** that focused on **exercising the right and freedom to hoist the nationalist flag** and challenge the legitimacy of the British Rule in India through the defiance of laws prohibiting the hoisting of nationalist flags and restricting civil freedoms.
- Outcomes →
  - The arrest of nationalist protestors demanding the **right to hoist the flag caused an outcry** across India especially as Gandhi had recently been arrested.
  - Nationalist leaders such as **Sardar Vallabhbhai Patel, Jamnalal Bajaj, Chakravarti Rajagopalachari, Dr. Rajendra Prasad** and **Vinoba Bhave organised the revolt** and thousands of people from different regions traveled to Nagpur and other parts of the Central Provinces to participate in civil disobedience.
  - In the end, the British **negotiated an agreement** with Patel and other Congress leaders permitting the protestors to conduct their march unhindered and obtaining the **release of all those arrested**.

## 9. Dr. Syama Prasad Mookerjee

### Why in News?

- PM Modi has paid tributes to Dr. Syama Prasad Mookerjee on his Punya Tithi.

### About

- Syama Prasad Mukherjee (1901 – 1953) was an **Indian politician**.
- In **1934**, at the age of 33, he became the **youngest Vice-Chancellor of the University of Calcutta**; he held the office until 1938.
- Mukherjee **joined the Hindu Mahasabha** in Bengal in 1939 and became its acting president that same year.
- He was also the **president** of **Akhil Bharatiya Hindu Mahasabha** from **1943** to 1946. He died in the custody of Jammu and Kashmir Police in 1953.
- In **1946**, he was elected as a **member of the Constituent Assembly** of India in the same year.
- He served as the **Minister for Industry and Supply** in Prime Minister Jawaharlal Nehru's cabinet.
- He **quit Congress** because of **differences of opinion** with Nehru led government on the issue of Jammu & Kashmir.
- He **founded the Bharatiya Jana Sangh**, the predecessor to the Bharatiya Janata Party, in 1951.

## 10. Sant Kabirdas

### Why in News?

- Recently, the Prime Minister has paid tribute to Sant Kabir Das ji on his Jayanti on 24th June.

## About

- He was a **15th-century Indian mystic, social reformer, poet and saint** who had a significant role among the people in India.
- He was one of the **most influential saints**.
- He was brought up in a **family of Muslim julahas orweavers** settled in or near the city of Benares (Varanasi).
- He was best known for his two-line couplets, known as '**Kabir Ke Dohe**'.
- He is a **widely revered poet** whose works had a **tremendous influence on the Bhakti movement**.
- Kabir's legacy is still going on throu Kabir believed in a **formless Supreme God** and **preached that the only path to salvation** was through **bhakti** or **devotion**. Kabir drew his followers from among both Hindus and Muslims.
- His Teaching →
  - Kabir's teachings were based on a **complete, indeed vehement, rejection of the major religious traditions**.
  - His teachings **openly ridiculed all forms of external worship** of both Brahmanical Hinduism and Islam, the pre-eminence of the priestly classes and the caste system.
  - The language of his poetry was a **form of spoken Hindi** widely understood by ordinary people.
  - Kabir believed in a **formless Supreme God** and **preached that the only path to salvation** was through **bhakti** or **devotion**. Kabir drew his followers from among both Hindus and Muslims
  - According to him every life has a **relationship with two spiritual principles** (Jivatma and Paramatma). His view about the moksha is that it is the **process of uniting these two divine principles**.
  - He also sometimes used **cryptic language**, which is difficult to follow.
  - His popular verses and dohas continue to **inspire generations** even in the 21st century.
- Writings/Works →
  - Kabir Das' writings had a **great influence on the Bhakti movement** and includes titles like **Kabir Granthawali, Anurag Sagar, Bijak**, and **Sakhi Granth, Panch Vani**
  - The major part of his work was **collected by the fifth Sikh guru--Guru Arjan Dev**.
  - He **fought against social evils** and **taught the lesson of humanity and love** to the world.

## 11. Bankim Chandra Chattopadhyay

### Why in News?

- Indian Prime Minister paid homage to Rishi Bankim Chandra Chattopadhyay on his Jayanti on 27th June.

### About

- He was one of the **greatest novelists** and **poets of India**.
- He composed the song **Vande Mataram in Sanskrit**, which was a source of inspiration to the people in their freedom struggle.
- He was in **Government service for thirty-two years** and retired in 1891.
- His epic Novel **Anandamath** - set in the **background of the Sanyasi Rebellion (1770-1820)**, when Bengal was facing a famine too - made Bankim Chandra Chattopadhyay an influential figure on the Bengali renaissance.

- He also founded a monthly literary magazine, **Bangadarshan**, in 1872, through which Bankim is credited with influencing the emergence of a Bengali identity and nationalism.
- He had **studied Sanskrit** and was very interested in the subject, but later took on the responsibility to **make Bengali the language of the masses**. However, his **first published work** - a novel - was **in English**.
- His famous novels include **Kapalkundala** (1866), **Debi Choudhurani**, **Bishabriksha** (The Poison Tree), **Chandrasekhar** (1877), **Rajmohan's wife** and **Krishnakanter Will**.

### 🏠 Sanyasi Rebellion

- The Sanyasi Uprisings **took place in Bengal** between the periods of 1770- 1820s.
- The Sanyasis rose in rebellion **after the great famine of 1770** in Bengal which **caused acute chaos and misery**.
- However, the immediate cause of the rebellion was the **restrictions imposed by the British upon pilgrims visiting** holy places among both Hindus and Muslims.

## 12. Homo longi

### Why in News?

- Chinese researchers have unveiled an ancient skull that could belong to a completely new species of human.

### About

- Name → The researchers have named the new species **Homo longi**. It has been nicknamed "**Dragon Man**" for the **Dragon River region of northeast China** where the skull was found.
- History → The skull was **discovered in 1933** but only came to the attention recently after a labourer came across it at a construction site in China.
- Characteristics →
  - The Dragon man is **at least 140,000 years old** but no older than 309,000 years.
  - It belonged to a **mature male** who had a **huge brain, massive brow ridges, deep set eyes** and a **bulbous nose**.
  - The **skull is huge** compared with the average skulls belonging to other human species including our own. Its brain was comparable in size to those from our species.
- Importance of this discovery →
  - The discovery of Dragon Man has the **potential to rewrite the history of Human Evolution**.
  - It is said that Homo longi could **replace Neanderthals** as the closest relative to our own species, **Homo sapiens**.

## 13. Reclining Buddha

### Why in News?

- India's largest statue of the Reclining Buddha is being installed at the Buddha International Welfare Mission temple in Bodh Gaya.

### About

- A reclining Buddha statue represents The Buddha during his last illness, about to enter **Parinirvana** - the stage of great salvation after death that can only be attained by enlightened souls.

- Statues of Reclining Buddha show him lying on his right side, his head resting on a cushion or on his right elbow. It is meant to show that all beings have the potential to be awakened and be **released from the cycle of death and rebirth.**

### Reclining Buddha in India

- **Cave No. 26 of Ajanta** contains a 24-foot-long and nine-foot-tall sculpture of the Reclining Buddha, believed to have been carved in the 5th century AD.
- **Kushinagar** (present day Uttar Pradesh – where **Buddha attained parinirvana**) has a 6-metre-long **red sandstone monolith** statue of the Reclining Buddha **inside the Parinirvana Stupa.**

### Reclining Buddha outside India

- In Sri Lanka and India, the Buddha is mostly shown in sitting postures, while the reclining postures are more prevalent in **Thailand and other parts of South East Asia.**
- The **largest** Reclining Buddha in the world is the **600-foot** Winsein Tawya Buddha built in 1992 in Mawlamyine, **Myanmar.**
- The **Bhamala Buddha** Parinirvana in Pakistan's **Khyber Pakhtunkhwa** province is considered the oldest statue of its kind in the world. It is over 1800 years old.
- In the late 15th century, a 70-metre statue of the Reclining Buddha was built at the Hindu temple site of Baphuon in **Cambodia's Angkor.**

## Miscellaneous

### 1. Begum Sultan Jahan

#### Why in News?

- Recently, the death anniversary of Begum Sultan Jahan was observed.

#### About

- Born in 1858, Begum Sultan Jahan **ascended the throne in 1901**.
- She was the **first female Chancellor of Aligarh Muslim University**, which she had nurtured during its nascent stage.
- She was a **pioneer** in the **field of education** and **even authored a book, Dars-e-Hayat**, about the education and parenting of young girls.
- To **encourage women and promote handicrafts**, she organised an exhibition called '**Numaish Masunuaat e Hind**' in Bhopal, where she displayed her own creations.
- Queens from **other kingdoms**, such as Gwalior, Jhanjhar, Sultanpur, Narsingharh and Gulburgah **also participated** and **displayed their handiwork**.

### 2. AmbiTag

#### Why in News?

- Indian Institute of Technology, Ropar has developed a first-of-its-kind IoT device called AmbiTag (Available at the production cost of Rs. 400).

#### About

- What is it? → AmbiTag is the **first-of-its-kind Internet of Things (IoT) device**.
- Purpose → The device will be **helpful in the secure transportation of vaccines, blood and body organs**, perishable products (food and dairy) among others.
- How does the device work? →
  - It generates an **alert** when the **temperature goes beyond a pre-set limit**.
  - That recorded temperature further **helps** to know **whether that particular item transported from anywhere** in the world is **still usable** or perished because of temperature variation.
  - Shaped as USB device, AmbiTag continuously records the temperature of its immediate surroundings **from -40 to +80 degrees in any time zone for a full 90 days** on a **single charge**.
- Developed under → **AWaDH** (Agriculture and Water Technology Development Hub) and its Startup **ScratchNest** developed the device.
- Significance →
  - AmbiTAg is India's **first indigenous temperature data logger** for the cold chain management
  - Moreover, the device is also particularly **critical for vaccines** including the Covid-19 vaccine, organs, and blood transportation.

 **AWaDH**

- AWaDH is a **research center at IIT Ropar**.
- Established with support from the Department of Science and Technology(DST) and the Science and Engineering Research Board (SERB).
- It **carries out extensive research** in the **field of agriculture and water**.

### 3. World Neglected Tropical Diseases (NTD) Day

#### Why in News?

- Delegates at the 74th World Health Assembly unanimously adopted a proposal by the United Arab Emirates. to declare January 30 as “World Neglected Tropical Diseases (NTD) Day”.

#### About Neglected Tropical Diseases

- Neglected Tropical Diseases (NTD) are a **group of infections**. These diseases are **most common in the tropical regions of Africa, Asia, and the Americas** among marginalized communities.
- The basic reason behind them is **no access to clean water** or **safe ways** to dispose of human waste.
- Caused by → A **variety of pathogens** such as viruses, bacteria, protozoa, and parasitic worms.
- These diseases generally receive **less funding for research** and **treatment** than diseases like tuberculosis, HIV-AIDS, and malaria.
- Some examples of NTDs include snakebite **envenomation**, **scabies**, **yaws**, **trachoma**, **Leishmaniasis**, and **Chagas disease**.
- Cases → NTDs **affect more than a billion people globally**. However, the diseases are **preventable** and **treatable**.
- The WHO’s new road map for 2021–2030 calls for three strategic shifts to end NTDs →
  - From measuring process to measuring impact.
  - From **disease-specific planning** and programming to collaborative work across sectors.
  - From **externally driven agendas reliant** to programmes that are country-owned and country-financed.
- Why was January 30 chosen? →
  - It was on this day that the **London Declaration on NTDs** was adopted, January 30, 2012.
  - The first World NTD Day was celebrated informally in 2020.

### 4. World No Tobacco Day

#### Why in News?

- Every year, on 31st May, the World Health Organization (WHO) and global partners celebrate World No Tobacco Day (WNTD).

#### About

- World No Tobacco Day is an **annual event** organised by the World Health Organisation (WHO) on **May 31st**.
- Objective → The day aims to **raise awareness** about the **harmful and deadly effects of tobacco use**. Thereby, discouraging the use of tobacco in any form.
- Theme → **“Commit to Quit”**. This theme aims to support 100 million people worldwide to give up tobacco through a range of initiatives and digital solutions.

### 📌 Initiatives taken by India to Control Tobacco Consumption:

- **Cigarettes Act, 1975** → The act mandated the display of **statutory health warnings in advertisement and on cartons** and **cigarette packages**.
- **Cigarettes and other Tobacco Products Act (COTPA), 2003** → The act replaced the Cigarettes Act of 1975. It aims to provide **smoke-free public places** and **also placed restrictions** on tobacco advertising and promotion.
- **Prohibition of Electronic Cigarettes Bill, 2019** → It aims to **prohibit the Production, Manufacture, Import, Export, Transport, Sale, Distribution, Storage and Advertisement of e-Cigarettes**.
- **National Health Policy 2017** → It has set an **ambitious target** of reducing tobacco use by 30% by 2025.
- **Tobacco Quit line service -1800-112-356** → It was **initiated in 2016** to reach a large number of tobacco users. It aims to **provide telephone-based information, advice, support, and referrals for tobacco cessation**.
- India has also **signed** the **tobacco control provisions** under the WHO Framework Convention on Tobacco Control (WHO FCTC).

## 5. XraySetu Service

### Why in News?

- The government has launched XraySetu service for rapid screening of COVID 19. with the help of Chest X-ray interpretation over WhatsApp for doctors who have access to X-ray machines.

### About

- What is it? → XraySetu is an **Artificial Intelligence (AI) driven Xray interpretation platform**.
- Purpose → It has been developed to **identify COVID-19 positive patients** even from low-resolution Chest X-Ray images sent over WhatsApp.
- Developed by → **ARTPARK** (AI & Robotics Technology Park) in **collaboration with** Bangalore-based **HealthTech startup Niramai** and **Indian Institute of Science (IISc)**.
- How does XraySetu work? →
  - A doctor takes a **phone picture of the Chest X-Ray** of a suspected patient.
  - Then the doctor **sends the X-Ray pic** over to a **Whatsapp number of XraySetu** via chatbot.
  - At XraySetu end, image review is **done for anonymization**, and then it is **sent to the XraySetu AI service**.
  - XraySetu AI Service then **analyses the X-ray** using **specialized machine learning and deep learning algorithms** built for detecting unique Covid features in the lungs.
  - After analysing, a **full report** with a probability of COVID, pneumonia, markings on the lung image is **automatically generated**.
  - The doctor then receives the report from the same WhatsApp number on his phone. The **doctor then reads the report** and **appropriately advises the patient**.

### 📌 About ARTPARK

- ARTPARK (AI & Robotics Technology Park) is a **not-for-profit foundation**. It was **established by** the Indian Institute of Science (**IISc**), **Bengaluru**, with support from the Department of Science & Technology (**DST**).

- Purpose → To **promote technology innovation missions** in AI (Artificial Intelligence) and Robotics. These missions should have a **societal impact in sectors** such as healthcare, education, mobility, infrastructure, agriculture, retail, and cyber-security.
- Nodal Mission → The park was established under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)**.

## 6. Red Tourism

### Why in News?

- As the Chinese Communist Party celebrates its 100th anniversary this year, the popularity of ‘red tourism’ is at an all-time high in the country and is bringing in huge revenues for China.

### About

- Launched in **2004**, Red Tourism **involves visiting places** that are of **historical and cultural importance to the Communist Party’s history**, while also providing an impetus to tourism and local businesses.
- It **reminds people of the sacrifices** made by the leaders of the Communist party to forge a modern China.

## 7. YounTab scheme

### Why in News?

- Ladakh Lt Governor has launched the YounTab scheme for students in the Union Territory to encourage digital learning.

### About

- Objective → YounTab scheme formulated to **encourage digital learning, bridge the digital divide** between connected and unconnected and mitigate the Covid pandemic disruptions.
- Under the scheme, **12,300 tablets** with **pre-loaded online and offline content**, including textbooks, video lectures and online class applications, would be distributed to government school students from **Class 6th to 12th**.

## 8. Operation Pangea XIV

### Why in News?

- Recently, the International Criminal Police Organization (Interpol) through its Operation Pangea XIV targeted the sale of fake medicines and products online.

### About

- Operation Pangea, is a well-established international effort of Interpol to **disrupt the online sale of counterfeit and illicit health products**.
- Just as importantly, Pangea works **to raise awareness of the risks** associated with buying medicines from unregulated websites.
- The first Operation Pangea was **conducted in 2008**.
- The current operation (14th) involved the **police, customs** and **health regulatory authorities** of 92 countries. It was **coordinated by Interpol**. Indian agencies also participated in the operation.
  - Central Bureau of Investigation (**CBI**) that is the **nodal body** for the Interpol in the country.



- It resulted in **113,020 web links** including websites and online marketplaces being **closed down** or **removed**, the highest number since the first Operation Pangea in 2008.

## 9. PRENA, VaU, SVASTA

### Why in News?

- ISRO has developed three types of ventilators(PRENA, VaU, SVASTA). These three ventilators have been developed at Vikram Sarabhai Space Centre(VSSC), a major space research centre of ISRO in Kerala.

### About VaU (Ventilation assist Unit)

- VaU is an **ICU grade positive pressure mechanical ventilator**.
- It can **assist** or **replace spontaneous breathing problems** in patients under respiratory distress.
- Working → The ventilator is based on a **centrifugal blower** that **draws in filtered ambient air**, compresses it and delivers it to the patient to achieve ventilation. It can therefore **operate without a compressed pneumatic source**.
- The ventilator has been configured to operate in a **variety of patient/ventilator triggered invasive and non-invasive ventilation modes**. It also has provisions to detect fault conditions and raise alarms.

#### 📌 Space Ventilator Aided System for Trauma Assistance (SVASTA)

- SVASTA is a **gas-powered ventilator**. It can be used for **non-invasive ventilation**. Hence, it is well-suited for **emergency use** for first-line treatment and as transit ventilators inside vehicles.
- Working → The ventilator **runs on compressed air**. It is able to **perform various ventilation conditions** using manual mechanical settings.
- Significance → The basic design of the ventilator is simple as the components of it can be **easily mass-produced for emergency use** in **pandemic like situations**.

#### 📌 PRANA (Programmable Respiratory Assistance for the Needy Aid)

- PRANA is a **low-cost** and **portable critical care ventilator**. The ventilator is based on the automated compression of an AMBU (Artificial Manual Breathing Unit) bag.
- Features → The ventilator has a **control system** that includes an **airway pressure sensor, flow sensor, oxygen sensor** as well as expiration and PEEP (Positive End Expiratory Pressure) control valve.
- The ventilator supports both **invasive** and **non-invasive ventilation modes**.
- It is capable of giving **mandatory breaths** (controlled by a ventilator) as well as spontaneous breaths (controlled by the patient).

## 10. Overture supersonic Aircraft

### Why in News?

- Plans to buy 15 new Overture supersonic Aircraft have been announced by US-based United Airlines. These aircrafts are planned to be open for passengers by 2029.

### About

- Supersonic aircraft are planes that **can fly faster than the speed of sound**.
- Usually, supersonic planes can travel at the speed of **around 900 kmph, twice the speed of normal aircraft**.

- First Supersonic Aircraft →
  - **Concorde**, the British-French turbojet-powered commercial airliner, was the first aircraft to **carry passengers at supersonic speed**.
  - But eventually, the aircraft had to be **discontinued due to cost and other concerns**.

### Overture supersonic aircraft

- The Overture supersonic aircraft would travel at the **speed of Mach 1.7** or **1,805 kmph**. In a **single flight**, it could **carry 65 to 88 passengers**.
- The aircraft will also **not be noisy**, as supersonic planes in the past were, as it aims for “**zero overland noise**.”
- Zero overland noise essentially means that the aircraft **will fly at supersonic speeds only overwater**. Thereby ensuring **no sonic boom** or excessive noise reaches the surfaces where people live.

## 11. Fastly

### Why in News?

- On 8 June 2021, Fastly reported problems with their CDN service which caused many major websites, such as Reddit, gov.uk, Twitch, Spotify and Amazon, along with major news sources such as The New York Times, The Guardian, CNN and the BBC, to become unavailable.

### About

- Fastly is an **American cloud computing services provider**.
- It describes its network as an ‘**edge cloud platform**’, which is designed to help developers extend their core cloud infrastructure to the edge of the network, closer to users.
- The Fastly edge cloud platform includes their **content delivery network (CDN)**, **image optimization**, **video and streaming**, **cloud security**, and **load balancing services**.
- A content delivery network is an arrangement that **allows customer websites to store data** such as images and videos on various mirror servers across countries so that the data is closer to users, and thus shows up faster.
- Customers rely on Fastly and its rivals to **host and protect their website data** from denial-of-service attacks and disruption from spikes in traffic.

## 12. SilverLine Project

### Why in News?

- Last week, the Kerala cabinet gave the green light to begin acquiring land for SilverLine, its flagship semi high-speed railway project.

### About

- SilverLine Project is **Kerala’s semi high-speed railway project**.
- Aims → to **reduce travel time** between Kerala’s northern and southern ends.
- Distance → The railway line will be around **529 kms long**, **covering 11 districts** through 11 stations.
- It will **link the southern end** and **state capital Thiruvananthapuram** with its northern end of Kasaragod.
- Implementation → The **Kerala Rail Development Corporation Limited (KRDC)** will execute this project.
  - KRDC is a joint venture between the Kerala government and the Union Ministry of Railways.

- Significance of the Project → Once the project is completed, one can travel from Kasaragod to Thiruvananthapuram in **less than four hours** on trains traveling **at 200 km/hr**. The current travel time on the existing Indian Railways network is 12 hours.
- Duration of the Project → The deadline for the project is **2025**.

### 13. Jivan Vayu

#### Why in News?

- IIT Ropar has developed nation's first power-free CPAP device 'Jivan Vayu'. This substitute of CPAP machine can function even without electricity.

#### About

- It is India's first such device which **functions even without electricity**.
- It is adapted to both kinds of oxygen generation units like O<sub>2</sub> cylinders and oxygen pipelines in hospitals.
- It is a **leak-proof, low-cost CPAP delivery system**.
- It is designed for a **22mm CPAP closed circuit tube**.
- It can **deliver high flow oxygen** (20–60 LPM) while maintaining a continuous positive pressure of up to 20 cm H<sub>2</sub>O.
- It is designed to **maintain FiO<sub>2</sub> of above 40%** with a PEEP (positive end-expiratory pressure) of 5-20 cm H<sub>2</sub>O.

#### 📖 What is CPAP?

- The Continuous Positive Airway Pressure (CPAP) is a **treatment method** for patients **having breathing problems during sleep** called sleep apnea.
- The machine **uses mild air pressure** to keep the airways open for easy breathing.
- It is also **used to treat infants** whose lungs have not fully developed.
- The treatment is all the **more necessary** during **early stages of the Covid-19 infection**.
- It **reduces lung damage** and allows patients to recover from the inflammatory effects.

### 14. AdiPrashikshan Portal

#### Why in News?

- Minister of Tribal Affairs, launched ADI PRASHIKSHAN portal and inaugurated a three-day training programme on “Capacity Building Training of Master Trainers for ST PRI Members”.

#### About

- Developed by → the **Ministry of Tribal Affairs**.
- Purpose → It would act as a **Central Repository of all training programs** conducted by Tribal Research Institutes (TRIs), different divisions of Ministry, National Society for Education of Tribal Students (NESTS), Centre of Excellences funded by Ministry of Tribal Affairs and National Tribal Research Institute.
- Adi Prashikshan will **transform the various ongoing training initiatives** under **different units of the Ministry** like TRIs, COEs and converge the initiatives for better skill and knowledge building.

- It will also **catalyze and improve the processes** of **conducting training** by making it online and accessible to all.
- Unified open platform will give users access to **authentic knowledge products**.

## 15. Juneteenth

### Why in News?

- US President Joe Biden is soon expected to sign a law making June 19, or “Juneteenth”, a national holiday recognised by the federal government, commemorating the end of slavery after the American Civil War (1861-65).

### About

- The day is the oldest nationally celebrated commemoration of the **ending of slavery in the US** and is observed **on June 19**.
- It is also known as **Emancipation Day** or **Juneteenth Independence Day**.
- Background → On June 19, 1865, Major General **Gordon Granger arrived in Galveston, Texas** and announced the **end of both the Civil War and slavery**. Since then, Juneteenth has become a largely symbolic date representing freedom for African Americans.

## 16. VivaTech

### Why in News?

- Recently, the Prime Minister of India has delivered the keynote address at the 5th edition of VivaTech.

### About

- What is it? → VivaTech is **one of the largest digital and startup events in Europe**.
- It has been **held in Paris every** year since 2016.
- Organised by → It is jointly organised by **Publicis Groupe** and **Les Echos**.
  - Publicis Groupe is a prominent advertising and marketing conglomerate.
  - Les Echos is a leading French media group.
- The event **brings together stakeholders** in **technology innovation** and the **startup ecosystem**.
- It includes **exhibitions, awards, panel discussions** and **startup contests**.
- It witnessed the **participation of various ministers** from European nations along with corporate leaders like that of Apple, Facebook, Microsoft, etc.
- At the event, the **PM highlighted India's strides** in the world of tech and start-up.

## 17. Zambia

### Why in News?

- Zambia's founding president Kenneth Kaunda died at the age of 97. Popularly known by his initials KK, Kaunda was nicknamed by some "Africa's Gandhi" for his non-violent, independence-related activism in the 1960s.

### About

- Zambia is a **landlocked country** at the crossroads of **Central, Southern** and **East Africa**.
- Its neighbors are **the Democratic Republic of the Congo** to the north, **Tanzania** to the north-east, **Malawi** to the east, **Mozambique** to the southeast, **Zimbabwe** and **Botswana** to the south, **Namibia** to the southwest, and **Angola** to the west.
- The capital city of Zambia is **Lusaka**.
- The Common Market for Eastern and Southern Africa (**COMESA**) is **headquartered in Lusaka**.
- Zambia is drained by two major river basins:
  - the **Zambezi/Kafue basin** in the center, west, and south covering about three-quarters of the country; and
  - the **Congo basin** in the north covering about one-quarter of the country.



## 18. Full Ship Shock Trial (FSST)

### Why in News?

- The US Navy Friday carried out a ‘full ship shock trial’ on its newest and most advanced nuclear-powered aircraft carrier to ensure its hardness was capable of withstanding battle conditions.

### About

- During World War II, American warships **suffered severe damage from enemy mines** and torpedoes that had **actually missed their target**, but **exploded** underwater in close proximity.
- The US Navy has since worked to **improve the shockproofing of their ship systems** to minimize damage from such “near miss” explosions.
- In FSSTs, an underwater explosive charge is **set off near an operational ship**, and **system and component failures** are **documented**.
- The FSST **probes whether the components survive shock** in their environment on the ship; it **probes the possibilities of system failures**, and large components that could not be otherwise tested.

## 19. Toycathon 2021

### Why in News?

- Recently, the Prime Minister of India urged people to be “vocal for local toys”, while interacting with the participants at the Toycathon 2021.

### About

- Joint initiative of → **the Ministry of Education, WCD (Women and Child Development) Ministry, Ministry of Micro, Small and Medium Enterprises, Textile Ministry, Ministry of Information and Broadcasting** and **All India Council for Technical Education**.
- Background → It was launched on **5th January 2021** to crowd-source innovative toys and games ideas.
- Focus on →
  - It was focused on **conceptualize innovative toys based on the Indian value system** which will inculcate positive behaviour and good value among the children.

- To **promote India** as a **global toy manufacturing hub** (Atmanirbhar Bharat).
- Key Features →
  - Based on → Indian culture and ethos, local folklore and heroes, and Indian value systems.
  - Themes → Nine themes, including fitness and sport and rediscovering traditional Indian toys.
  - Participants → Students, teachers, start-ups and toy experts.
  - Prize → Participants can get prizes upto Rs. 50 lakhs.
- Significance →
  - Toys can **play a big role in highlighting India's capabilities, art and culture and society** to the world.
  - Toycathon can prove to be **effective** in **making India a Production Hub of Toys** and hence can be the creation of 'Toyoconomy'.

## 20. National Statistics Day

### Why in News?

- Every year, the Statistics Day is celebrated on 29th June, the birth anniversary of Prof. Prasanta Chandra Mahalanobis, to recognise his invaluable contribution in establishing the National Statistical System

### About

- Aim → To **popularise the use of statistics in everyday life** and **sensitise the public** as to how statistics help in shaping and framing policies.
- Theme for 2021 → **Sustainable Development Goal (SDG)- 2** (End Hunger, Achieve Food Security and Improved Nutrition and Promote Sustainable Agriculture).

### 👉 PC Mahalanobis

- He is referred to as the **chief architect of Indian statistical system** as well as father of statistical science in India.
- He established the **Indian Statistical Institute (ISI)** in **1931 in Kolkata**. The institute founded the **journal Sankhya**, along the lines of Karl Pearson's Biometrika. In 1959 it was made an autonomous body of Ministry of Statistics & Programme Implementation.
- He also helped in the establishment of **Central Statistical Organisation (CSO)**, **the National Sample Survey (NSS)** and **the Annual Survey of Industries (ASI)**.
- He introduced **three key concepts** to the theory and practice of sample surveys which are: **Pilot surveys**, **Optimum survey design** and **Inter Penetrating Network of sub-samples technique (IPNS)**.
- In 1936 he introduced a **statistical measure** named **the Mahalanobis distance**. It is widely used in cluster analysis and classification techniques.
- The Mahalanobis model, was **employed in the Second Five Year Plan**, which worked towards the **rapid industrialisation** of India.

## 21. Fukuoka Grand Prize

### Why in News?

- Noted journalist P. Sainath has been selected as one of the three recipients of the Fukuoka Prize for 2021.

## About

- The Fukuoka Prize is **given annually** to distinguished people to **foster and increase awareness of Asian cultures**, and to create a broad framework of exchange and mutual learning among the Asian people.
- **Eleven Indians** have received the Fukuoka Prize so far.
- The prize was **established in 1990**.
- Citation for the award →
  - In a statement issued Mr. Sainath was described as a “**very deserving recipient of the Grand Prize of Fukuoka Prize**”.
  - The Secretariat noted his work for creating a new form of knowledge through his writings and commentaries on rural India and for “**promoting civil cooperation**”.

## 22. India Smart Cities Awards 2020

### Why in News?

- The Union ministry of housing and urban affairs has released the list of India smart cities awards (ISCA) 2020.

### About

- ISAC 2020 awards were presented by the **Ministry of Housing and Urban Affairs**.
- The awards were announced on the **occasion of the sixth anniversary** of **Smart Cities Mission**(SCM), Atal Mission for Urban Rejuvenation and Urban Transformation(**AMRUT**) and Pradhan Mantri Awas Yojana-Urban (**PMAY-U**).
- Parameters → The rankings were announced on the basis of several parameters such as **social aspects, governance, culture, urban environment, sanitation, economy, built environment, water and urban mobility**.
- For the year of the pandemic, additional parameters of **sustainable business model of Integrated Command and Control Centres** and innovation in Covid-19 management were **also counted**.

#### 📌 Performance of various States and cities:

- **Uttar Pradesh** emerged on the **top among all states**, followed by **Madhya Pradesh** and **Tamil Nadu**.
- **Indore** (Madhya Pradesh) and **Surat** (Gujarat) won the **award jointly** for their overall development.
- **Ahmedabad** bagged the ‘**Smart Cities Leadership Award**’ and **Chandigarh**, the award for union territories, while Indore won the “**Innovative Idea Award**”.

#### 📌 Smart Cities mission

- GoI launched the smart cities mission in **2015**.
- The objective is to **integrate city functions**, utilize scarce resources more efficiently, and improve the quality of life of citizens.
- It is a **Centrally Sponsored Scheme**.
- Smart city is envisaged to have **four pillars**:
  1. Social Infrastructure.
  2. Physical Infrastructure.
  3. Institutional Infrastructure (including Governance).
  4. Economic Infrastructure.

## 23. Sick-building syndrome

### About

- SBS is a situation in which **building occupants experience acute health and comfort effects** that appear to be linked **to time spent in a building**, but no specific illness or cause can be identified.
- India's new buildings don't get adequate ventilation due to poor architecture planning.
  - **Aerosols could be carried in the air for up to 10 metres** and improving the ventilation of indoor spaces would reduce transmission, a government advisory on stopping the spread of COVID-19 said recently.

## 24. Dried blood spot (DBS) testing technique

### Why in News?

- World Anti-Doping Agency (WADA) has approved dried blood spot (DBS) testing technique for the Tokyo Olympics.

### About

- DBS is an innovative method of **screening for banned substances** in which few drops of blood is taken and put on a kind of blotting paper (dry matrix).
- The sample is analysed using an appropriate solvent which extracts the biological material that is required for the test.
- It is less invasive methods than current urine and blood collection and therefore, a better athlete experience.

### About Doping:

- It refers to **use of banned substances**/ Performance enhancing drugs (PEDs) in competitive sports.
- These drugs are used by athletes to **improve their athletic performance**.
- Many of these substances have **harmful side effects** effectively shortening life-span of athletes. These include:
  - **Cardiovascular**: Irregular heart rhythm, elevated blood pressure, heart attack, sudden death.
  - **Central Nervous System**: Insomnia, anxiousness, aggressive behaviour, tremor, dizziness, stroke etc.
  - **Respiratory**: nose bleeds, sinusitis
  - **Hormonal**: Infertility, gynecomastia (enlarged breasts), acromegaly (coarse bones in face, hands, and feet), cancer.

### World Anti-Doping Agency (WADA):

- WADA was established as an international independent agency composed and **funded equally by the sport movement** and governments of the world.
- It was established in 1999 under **Lausanne Declaration** in Switzerland.
- Its key activities include
  - Scientific research,
  - Education,
  - Development of anti-doping capacities, and
  - Monitoring of the World Anti-Doping Code– the document harmonizing anti-doping policies in all sports and all countries.



## 25. Infrastructure Status for Exhibition and convention centres

### Why in News?

- Benefits available as 'infrastructure' projects would only be available for projects with a minimum built-up floor area of 1,00,000 square metres of exclusive exhibition space or convention space or both combined.

### About

- Significance of Infrastructure status Gives industries access to cheaper **foreign currency funding** through the external commercial **borrowing route**.
- The sector gets **credit at competitive rates** and on long-term basis with enhanced limits.
- Infrastructure tag **no longer involves significant tax breaks**.

## Quick revision (True/False)



1	<b>Bell of Faith Scheme</b> -> launched by the Kerala Police. provide security to senior citizens staying alone.	
2	<b>AmbiTag</b> -> helps to know whether a particular soil in a region is suitable for a particular vegetable or fruits.	
3	<b>Horticulture Cluster Development Programme</b> -> is a Centrally Sponsored Scheme implemented by the National Horticulture Board.	
4	<b>London Declaration</b> -> on Neglected Tropical Diseases.	
5	<b>Litoria mira</b> -> discovered recently in the rainforests of Western ghat.	
6	<b>National Human Rights Commission</b> -> is a Constitutional body.	
7	<b>Bureau of Indian Standards</b> -> works under the aegis of the Ministry of Commerce and Industry.	
8	<b>IPO grey market</b> -> there are no regulations that govern it.	
9	<b>State of Finance for Nature Report</b> -> Released by Reserve Bank of India.	
10	<b>Malaria</b> -> mosquito borne blood disease caused by plasmodium parasites.	
11	<b>DaVinci Plus</b> -> designed to better understand the geology of Mars and seek signs of ancient life.	
12	<b>Model Tenancy Act</b> -> Under the act, written agreement is not necessary for new tenancies.	
13	<b>Regional Anti-Terrorist Structure (RATS) of SCO</b> -> based in Beijing, China.	
14	<b>XraySetu Service</b> -> developed to identify COVID-19 positive patients even from low-resolution Chest X-Ray images sent over WhatsApp.	
15	<b>Venus</b> -> It is the hottest planet in the solar system.	
16	<b>SDG India Index</b> -> launched in 2018 by NITI Aayog.	
17	<b>International Labour Organisation</b> -> not a specialized agency of the United Nations.	
18	<b>Seed Minikit Programme</b> -> aims to distribute high yielding varieties of seeds of pulses and oilseeds to farmers.	

19	<b>INS Sandhayak</b> -> Offshore Patrol Vessels.	
20	<b>Devika River</b> -> The river originates in Himachal Pradesh and flows along Punjab to finally merge with River Ravi.	
21	<b>Anti-hail gun</b> -> developed indigenously by DRDO.	
22	<b>SAGE initiative</b> -> aims to help startups that are interested in the field of providing services for elderly care.	
23	<b>Project-75I</b> -> six submarines under Project-75I will be built under the strategic partnership model.	
24	<b>Blue Finned Mahseer</b> -> IUCN: Endangered.	
25	<b>Black Carbon</b> -> is a long-lived climate pollutant.	
26	<b>I-Familia</b> -> is a global database launched to identify missing persons through family DNA.	
27	<b>International Energy Agency</b> -> established in 1957 in Vienna, Austria.	
28	<b>Burkina Faso</b> -> is a landlocked country in western Africa.	
29	<b>Performance Grading Index</b> -> Launched by Niti Aayog.	
30	<b>Sea Snot</b> -> formed when algae are overloaded with nutrients.	
31	<b>Sea of Marmara</b> -> connects the Black Sea to the Caspian Sea.	
32	<b>ASEAN</b> -> Established in 1967. Secretariat - Indonesia, Jakarta.	
33	<b>Lynetteholm Island</b> -> In Indian ocean.	
34	<b>UN Secretary-General</b> -> appointed by the UN General Assembly (UNGA) on the recommendation of the UNSC.	
35	<b>Argostemma quarantena</b> -> spotted in the Wagamon hills in Kerala.	
36	<b>Sardar Sarovar Dam</b> -> is a terminal dam and gravity dam built on the Tapi River.	
37	<b>CORPAT exercise</b> -> between the Indian Navy and French Navy.	
38	<b>PM Fasal Bhima Yojna</b> -> Under this scheme, farmers will have to pay a uniform premium of two percent for any crop they cultivate in any season of the year.	

39	<b>Atlantic Charter</b> -> statement issued on 14 August 1941 that set out American and British goals for the world after the end of World War II.	
40	<b>CHIME is an interferometric radio telescope located in</b> -> Atacama Desert, Chile.	
41	<b>Pakke tiger reserve</b> -> Assam.	
42	<b>Mahanadi River</b> -> Major Tributaries: Seonath River, Hasdeo river, Mand river, Ib river, Jonking river, Tel river.	
43	<b>Global Liveability Index</b> -> Released by UN-Habitat.	
44	<b>EnVision mission</b> -> ISRO led mission. will visit Venus sometime in the 2030s.	
45	<b>Brood X</b> -> an anti-aircraft weapon system.	
46	<b>Ram Prasad Bismil</b> -> formed the Hindustan Republican Association with leaders like Bhagat Singh and Chandrasekhar Azad.	
47	<b>Sub-Mission on Agricultural Mechanization</b> -> launched in 2014-15 by the Ministry of Agriculture and Farmers Welfare.	
48	<b>Pyrostria Laljii</b> -> genus of the coffee family has recently been discovered from the Western Ghat.	
49	<b>iDEX-DIO</b> -> funded and managed by Defence Research and Development Organisation.	
50	<b>PASIPHAE Survey</b> -> aim to study the polarisation in the light coming from millions of stars.	
51	<b>PENCIL Portal</b> -> an electronic platform that aims at achieving the target of a child labour free society.	
52	<b>N Chandrasekaran Task Force was set up in 2018</b> -> to Revise and Strengthen the monetary policy.	
53	<b>Operation Olivia</b> -> launched by the Indian Coast Guard aims to protect Olive Ridley turtles.	
54	<b>Tulu Language</b> -> listed under Eighth Schedule.	
55	<b>World Giving Index</b> -> released by Amnesty International.	
56	<b>Rosewood</b> -> IUCN Red List: Vulnerable.	
57	<b>New Shephard Rocket System</b> -> is a reusable rocket system. built by SpaceX.	

58	<b>Karman Line</b> -> determine the altitude at which the atmosphere becomes too thin to support aeronautical flight.	
59	<b>UNCCD (United Nations Convention to Combat Desertification)</b> -> is the sole non-legally binding international agreement.	
60	<b>SilverLine Project</b> -> The Indian Navy aims to procure new nuclear-powered attack submarines under this Project.	
61	<b>Bharitalasuchus tapani</b> -> reptile belonged to a family of extinct reptiles named Erythrosuchidae.	
62	<b>Shenzhou-12</b> -> China's manned mission.	
66	<b>The Sulawesi cave art</b> is much older than the prehistoric cave art of Europe.	
67	<b>Public Accounts Committee</b> -> strength of not more than 30 members of which 22 are from Lok Sabha and 8 from Rajya Sabha.	
68	<b>ADMM-Plus</b> -> Platform for ASEAN and its eight Dialogue Partners to strengthen security and defence cooperation.	
69	<b>Jalgaon banana</b> -> north-west region of the state of Maharashtra.	
70	<b>World Competitiveness Index 2021</b> -> Published by World Economic Forum.	
71	<b>Neutrinos</b> -> second most abundant particles in the world, after photons, or the light particle.	
72	<b>Polymetallic nodules</b> -> found only in Indian Ocean.	
73	<b>Aravalli Range</b> -> Guru Shikhar Peak on Mount Abu is the highest peak.	
74	<b>Deep Ocean Mission</b> -> Ministry of Science and Technology will be the nodal Ministry for implementing this mission.	
75	<b>Sickle cell disease</b> -> is a group of disorders that affects hemoglobin, the molecule in white blood cells.	
76	<b>Black Softshell Turtle</b> -> IUCN Red List: Endangered.	
77	<b>Summer Solstice</b> -> countries in the Northern Hemisphere are farthest from the Sun and the Sun shines overhead on the Tropic of Capricorn.	
78	<b>Integrated Power Development Scheme</b> -> Launched in 2014 by Ministry of Power.	
79	<b>National Internet Exchange of India (NIXI)</b> -> under Ministry of Electronics & Information Technology.	

80	<b>Krivak or Talwar stealth frigates</b> -> series of frigates and guard ships (patrol boats) built in the Soviet Union.	
81	<b>Nipah virus</b> -> caused by the variola virus.	
82	<b>Land for Life Award</b> -> launched in 2011 at the UNCCD COP10 in the Republic of Korea as part of the Changwon Initiative.	
83	<b>World Investment Report</b> -> released by World Economic Forum.	
84	<b>United Nations Office for Disaster Risk Reduction</b> -> established in 1999. HQ: Paris, France.	
85	<b>Suez Canal</b> -> connect the Arabian Sea and the Red Sea.	
86	<b>Peter Pan Syndrome</b> -> is a psychological condition that is used to describe an adult who is socially immature.	
87	<b>Tax Inspectors Without Borders</b> -> is a joint initiative of UNDP and Asia-Pacific Economic Cooperation (APEC).	
88	<b>Ambergris</b> -> referred to as floating gold. use in the perfume market.	
89	<b>India is the largest producer of litchi (Litchi chin) in the world.</b>	
90	<b>Homo longi</b> -> discovered in 1933. from north east region of Nigeria.	
91	<b>Enforcement Directorate</b> -> Under Ministry of Home Affairs.	
92	<b>Smart Cities mission</b> -> is a Central Sector Schemes.	
93	<b>World Intellectual Property Organization</b> -> specialized agencies of the United Nations.	
94	<b>Bankim Chandra Chattopadhyay</b> -> He composed the song Amar Sonar Bangla.	
95	<b>INS Tabar</b> -> is a class of nuclear-powered ballistic missile submarines.	
96	<b>Southern Ocean</b> -> only ocean to touch three other oceans and to completely embrace a continent rather than being embraced by them.	
97	<b>Agni P Missile</b> -> range between 4000km to 5000km.	
98	<b>Baihetan Dam</b> -> Constructed on Jinsha, the upstream section of the Yangtze river.	
99	<b>Attorney General Of India</b> -> is the top legal officer in the country & not a part of Union Executive.	

100	<b>Barnadi Wildlife Sanctuary</b> -> Madhya Pradesh.	
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