

# 2021 OCTOBER MAGZINE

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# Economy

## 1. National Export Insurance Account Scheme

### Why in News?

The Government will infuse a capital of Rs. 1,650 Crore (Grant-in-aid) to National Export Insurance Account (NEIA) for 5 years (FY 2021-22 to FY 2025-2026).

### About

- National Export Insurance Account (NEIA) Trust was **set up in 2006**.
- Aim → The trust aims to **promote Medium and Long-Term (MLT) project exports** by extending (partial/full) support to covers issued by ECGC to MLT/project export.
- These projects should also be **commercially viable** and **also strategically important**.
- Since its inception, NEIA has **extended 213 covers** with a **consolidated project value of Rs. 53,000 crores**, to 52 countries as of August 2021.
- Its impact in **enabling project exports** has been **most significant in Africa and South Asia**.

### 👉 How will the capital infusion help the NEIA?

- The capital infusion in NEIA Trust will help the Indian Project Exporters (IPE) to **tap the huge potential of project exports in the focus market**.
- Moreover, support to project exports with Indian content sourced from across the country will also **enhance the manufacturing in India**.

## 2. Renewable Energy Certificate

### Why in News?

Ministry of Power has redesigned the existing Renewable Energy Certificate (REC) mechanism, which was introduced in 2010.

### About

- What is it? → It is a **market-based instrument** to **promote renewable energy** and facilitate the compliance of renewable purchase obligations (RPO).
- Aim → It is aimed at **addressing the mismatch** between the availability of RE resources in the state and the requirement of the obligated entities to meet the renewable purchase obligation (RPO).

### 👉 Important changes

- From now on, the **validity** of the Renewable Energy Certificate (REC) **would be perpetual**, that is **till it is sold**.
- The Central Electricity Regulatory Commission (CERC) **will have a monitoring and surveillance mechanism** to ensure that there is no hoarding of RECs.
- The renewable energy (RE) generators **eligible for RECs** will be **eligible for the period of the power purchase agreement** (PPA) as per the prevailing guidelines.
- The RECs can be **issued to obligated entities** (including discoms and open access consumers) which purchase RE power beyond their renewable purchase obligation (RPO) compliance notified by the Centre.
- No REC will be issued to the **beneficiary of subsidies/concessions** or **waiver of any other charges**.

## 3. DigiSaksham programme

### Why in News?



The minister for Labour and Employment has launched a digital skills programme (DigiSaksham) to enhance the employability of youth by imparting digital skills that are required in an increasingly technology-driven era.

### About

- Agencies Involved → The programme is a joint initiative of **Microsoft India** and the **Ministry of Labour & Employment**.
- Nearly one crore active job seekers will be able to **access training at free of cost** training in **digital skills** including basic skills as well as advanced computing.
- Under the DigiSaksham initiative, there will be basically three types of training viz.
  - **Digital Skills** – Self paced learning,
  - **VILT mode training** (Virtual Instructor-led) and
  - **ILT mode training** (Instructor led).
- The job seekers can get **training in areas like** JavaScript, Data Visualisation, Advance Excel, HTML, Programming languages, Introduction to coding, etc. They can equip themselves with the skills required in a digital economy.
- The Jobseekers can access the training through **National Career Service (NCS) Portal**. It is an **extension** of the **Government's ongoing programs** to support the youth from rural and semi-urban areas.
- Implemented by → **Aga Khan Rural Support Programme India (AKRSP-I)**.
  - AKRSP-I is a **non-denominational, non-government development organization**. It works as a catalyst for the betterment of rural communities by providing direct support to local communities.

### 📍 National Career Service (NCS) Project

- It is a **Mission Mode Project** for the transformation of the National Employment Service to **provide a variety of employment-related services** like job matching, career counselling, vocational guidance, apprenticeship, internships etc.
- The services under NCS are available **online** through a **dedicated NCS Portal**. The NCS portals can be **accessed directly** or **from Career Centres** (Employment Exchanges), **Common Service Centres, post offices, mobile devices, cyber cafes** etc. The NCS Portal is now being integrated with other Ministries/ departments like MSDE, MHRD, AICTE, etc.
- Implemented by → the **Ministry of Labour and Employment**.

## 4. Jal Jeevan Mission

### Why in News?

Prime Minister Narendra Modi launched a newly designed Jal Jeevan Mission (JJM) mobile application on October 2, 2021, Gandhi Jayanti. The app would enable anyone to fund provision of tap water in rural parts of India.

### About

- JJM envisages **supply of 55 litres of water per person per day** to every rural household through Functional Household Tap Connections (FHTC) **by 2024**.
- It is under the **Ministry of Jal Shakti**.
- It was launched in **2019**.
- The mission ensures →
- The mission ensures **functionality of existing** water supply systems and water connections; **water quality monitoring** and **testing** as well as **sustainable agriculture**.
- It also ensures **conjunctive use of conserved water**; drinking water source augmentation, drinking water supply system, grey water treatment and its reuse.
- Features →
  - JJM focuses on **integrated demand and supply-side management** of water at the local level.

- Creation of **local infrastructure for source sustainability measures** as **mandatory elements**, like rainwater harvesting, groundwater recharge and management of household wastewater for reuse, is undertaken in convergence with other government programmes/schemes.
- The Mission is based on a **community approach** to water and includes extensive Information, Education and Communication as a key component of the mission.
- Implementation →
  - **Paani Samitis** plan, implement, manage, operate and maintain village water supply systems.
  - These consist of 10-15 members, with at least 50% women members and other members from Self-Help Groups, Accredited Social and Health Workers, Anganwadi teachers, etc.
  - The committees prepare a **one-time village action plan**, merging all available village resources. The plan is **approved in a Gram Sabha before implementation**.
- Funding Pattern → The fund sharing pattern between the Centre and states is **90:10 for Himalayan and North-Eastern States, 50:50 for other states**, and **100% for Union Territories**.

## 5. Tax Inspectors Without Borders Programme

### Why in News?

Recently, the United Nations Development Programme (UNDP) and the Organisation for Economic Cooperation and Development (OECD), have launched the Tax Inspectors Without Borders (TIWB) Programme in Seychelles.

### About TIWB

- What is it? → It is a **capacity-building programme**.
- Agency Involved → It is a **joint OECD/UNDP initiative** launched in July 2015
- Purpose → To **strengthen developing countries' auditing capacity** and **multinationals'** compliance worldwide.
- Features → It **deploys qualified experts in developing countries** across Africa, Asia, Eastern Europe, Latin America and the Caribbean **to help build tax capacity** in the areas of audit, criminal tax investigations and the effective use of automatically exchanged information.
- TIWB assistance has led to **increased domestic resource mobilisation** in some of the least developed countries in the world.

### 📍 TIWB Programme in Seychelles

- India has been chosen as the **Partner Administration** and has **provided Tax Expert** for this programme.
- It is expected to be of **12 months duration** where India **aims to aid Seychelles in strengthening its tax administration** by transferring technical know-how and skills to its tax auditors through sharing of best audit practices.
- It focuses on **Transfer Pricing cases** of tourism and financial services sectors.
- Background → It is the **sixth TIWB programme** which India has supported by providing Tax Expert. **Fifth** TIWB programme with India was launched in **Bhutan in June 2021**.

## 6. National Road Safety Board

### Why in News?

Ministry of Road Transport & Highways has notified constitution of the National Road Safety Board, along with Rules thereof.

### About

- Purpose → The Board shall **promote road safety, innovation** and **adoption of new technology**, and regulate traffic and motor vehicles.
- For this purposes, inter alia, the Board shall **formulate specific standards** for road safety; **guidelines for capacity building** and **development of skills**, etc for consideration by the Central Government.

- The Board shall provide **technical advice and assistance** to the Central Government, State Governments and local authorities on road safety and traffic management.
- Location → The Head Office of the Board shall be in the **National Capital Region** and the Board may **establish offices at other places** in India.
- Composition → It shall consist of the **Chairman** and **not less than 3, but not exceeding seven Members**, to be appointed by the Central Government.
- It will promote →
  - **Good practices** in road safety and traffic management; new vehicle technology in the field of vehicular engineering;
  - **Co-ordination** with international organizations; and
  - **Consistency** between international technical standards and domestic technical standards, conduct research to improve road safety, traffic management, crash investigation.

## 7. Industrial Park Ratings System (IPRS) Report

### Why in News?

The Department for Promotion of Industry and Internal Trade (DPIIT) has released the Industrial Park Ratings System Report.

### About

- Aim → IPRS Report aims to **provide important information** regarding **all Special Economic Zones, Industrial Clusters and Parks**.
- It will **enhance India's industrial competitiveness** and attract investment.
- It categorizes into 3 categories → **Leaders, Challengers and Aspirers**.
- These ratings are assigned on the basis of 4 pillars → **internal infrastructure, external infrastructure, business support services, and environment and safety management**.
- The Report is an extension of the India Industrial Land Bank which features **more than 4,400 industrial parks** in a **GIS-enabled database** to help investors identify their preferred location for investment.

### 👉 Highlights of the report

Categories of IPRS 2.0	Number of Industrial Parks
Leaders	41
Challengers	90
Aspirers	185

### 👉 India Industrial Land Bank

- India Industrial Land Bank (IILB) is a **Geographic Information System (GIS)-based portal** that was **developed by the DPIIT**.
- The system was developed by **integrating the Industrial Information System (IIS) with state GIS**.
- It serves as a **one-stop repository** of all industrial infrastructure-related information such as connectivity, infra, natural resources and terrain, plot-level information, etc.
- It has GIS-enabled database of industrial areas or clusters across the country, which will **help investors to get free real-time information** about the availability of industrial land and resources.

## 8. The Draft Electricity (Rights of Consumers) Amendment Rules, 2021

### Why in News?



The Draft Electricity (Rights of Consumers) Amendment Rules, 2021 were recently published September 30, 2021.

### About Overview of the new rules

- **Distribution licences** should **ensure 24x7 uninterrupted power supply** to all consumers so that there is no requirement of running Diesel Generating (DG) sets.
- The **electricity regulatory commission** could consider a **separate reliability charge** for the distribution company, if it required funds for investment in infrastructure.
- The **state electricity regulatory commission** should also make a **provision of penalty** in case the standards laid down are not met by the distribution company.

### 📁 Electricity (Rights of Consumers) Rules, 2020

- These rules serve to **“empower” consumers with rights** that would allow them to access continuous supply of quality, reliable electricity.
- The areas covered under the rules include **metering arrangement; billing and payment; reliability of supply**, etc.
- Key Provisions →
  - **States** will have to **implement these rules** and **discoms** will be **held more accountable for issues** like delays in providing and renewing connections of electricity.
  - They are also **obligated** to provide **round-the-clock electricity to consumers**, as per the Ministry of Power.
  - To **ensure compliance**, the government will **apply penalties** that will be credited to the consumer’s account.
  - There are **certain exceptions** to these rules, especially where use for agricultural purposes is concerned.
- **Note:-** Electricity is a Concurrent List (Seventh Schedule) subject and the central government has the authority and the power to make laws on it.

## 9. PM MITRA Parks

### Why in News?

The government has approved the setting up of seven PM MITRA textiles parks, following the “Union Budget for 2021-22” commitments, with a total outlay of Rs. 4,445 crores in a period of 5 years.

### About

- Aim → The MITRA park aims to **integrate the entire textile value chain** from spinning, weaving, processing/dyeing, printing to garment manufacturing at one location.
- It is inspired by the **5F vision** of Hon’ble Prime Minister –**Farm to Fibre to Factory to Fashion to Foreign**.
- Developed by → a **Special Purpose Vehicle** which will be owned by the Central and State Government and in a Public Private Partnership (**PPP**) **Mode**.
- Component → Each MITRA Park will have an **incubation centre**, **common processing house** and a **common effluent treatment plant** and other textile related facilities such as design centres and testing centres.
  - The **Master Developer** will not only develop the Industrial Park but also maintain it during the concession period.
- Sites Selection → Sites for the scheme will be selected by a **Challenge Method**, based on objective criteria for Greenfield / Brownfield sites. The Centre is **receiving proposals from states for the ready availability of contiguous and encumbrance-free land parcels of 1,000+ acres** along with other textiles related facilities & ecosystems.
- Various supports provided by the government →
  - Competitiveness Incentive Support (**CIS**)– The government will provide a fund of **₹ 300 Crore** to ‘investors’ **setting up production facilities** to incentivize manufacturing units to get established.
  - For a **Greenfield Park** ‘developer’, the centre will provide **30% of Capital Support from the Project Cost**, with a cap of **₹ 500 Cr.**
  - For a **Brownfield sites** ‘developer’, the centre will provide **30% of Capital Support** from the Project Cost, with a **cap of ₹ 200 Cr.**

- Advantages →
  - The scheme intended to generate approximately **1 lakh direct and 2 lakh indirect employment** per park.
  - It will **reduce logistics cost** and **strengthen the value chain** of the textile sector to make it globally competitive.

## 10. National Digital Livestock Mission

### Why in News?

Union Minister of Fisheries, Animal Husbandry & Dairying unveiled the National Digital Livestock Mission Blueprint at National Dairy Development Board (NDDB), at Anand.

### About

- What is it? → It is a **digital platform** developed **jointly by** the Department of Animal Husbandry and Dairying (DAHD) and NDDB on the foundation of the existing Information Network for Animal Productivity and Health (INAPH).
- Aim of NDLM → The aim is to create a **farmer-centric, technology-enabled ecosystem** where the farmers are able to realize better income through livestock activities with the right information.
- The bedrock of NDLM will be the **unique identification of all livestock**, which will be the foundation for all the state and national level programmes, including domestic and international trade.
- Benefit → Through NDLM, the farmers will be able to **effortlessly access the markets, irrespective of their location** or **holdings through this digital platform** as a wide range of stakeholders will be connected in this ecosystem.

### 📌 National Dairy Development Board (NDDB)

- The NDDB is a **statutory body** and an **institute of national importance**, established by an act of the Indian Parliament in 1965.
- It was founded by → **Dr Verghese Kurien**, often called '**India's milkman**'.
- Purpose → The NDDB was created to **boost, finance** and **support producer-owned and controlled organisations** in the dairy industry.
- Headquartered → Anand, Gujarat.
- NDDB's efforts **transformed India's rural economy** by **making dairying a viable and profitable economic activity** for millions of milk producers while addressing the country's need for self-sufficiency in milk production.

### 📌 Information Network for Animal Productivity & Health (INAPH)

- Information Network for Animal Productivity & Health (INAPH), is an **application** that facilitates that facilitates **capturing of real time reliable data** on Breeding, Nutrition and Health Services delivered at Farmer's Doorstep.
- It helps to **asses and monitor progress of the projects**.

## 11. River Ranching Programme

### Why in News?

The Union Minister for Fisheries, Animal Husbandry & Dairying has launched a national level River Ranching program in UP.

### About River Ranching

- River Ranching is a **form of aquaculture** in which a population of a fish species (such as salmon) is held in captivity for the first stage of their lives.
- They are **then released**, and **later harvested as adults** when they return from the sea to their freshwater birthplace to spawn.

### 📌 River ranching programme

- “River ranching programme” is introduced as **special activity under PMMSY** (Pradhan Mantri Matsya Sampada Yojana) scheme for augmenting and **enhancing the fish production and productivity** through expansion, intensification, diversification and productive utilization of land and water.
- Nodal Agency → Department of Fisheries has designated **National Fisheries Development Board (NFDB), Hyderabad** as the Nodal Agency
- This program is under **Central Sector component** of **PMMSY** for implementing River Ranching across the Country.
- Phase –I → As a Phase –I programme NFDB during 2020-21 has targeted **three major river systems** namely **Ganges and its tributaries, Brahmaputra & Barak river tributaries** and **Mahanadi & other rivers**.
- Significance →
  - With growing human population, the **requirement of high-quality protein**, the demand of fish is gradually increasing.
  - This programme will help in **achieving sustainable fisheries, conserving biodiversity, assessing ecosystem services, reducing habitat degradation** and maximizing social-economic benefits.

### 📌 Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme

- It is a scheme for **focused and sustainable development of fisheries sector** in the country.
- **20,050 crores** has been sanctioned for its implementation during a period of **5 years from FY 2020-21 to FY 2024-25** in all States/Union Territories, as a part of AatmaNirbhar Bharat Package.
- The scheme focuses on **beneficiary-oriented activities in Marine, Inland fisheries** and **Aquaculture**.
- It seeks to adopt '**Cluster or Area based approaches**'.

## 12. Nobel prize in Economics 2021

### Why in News?

The 2021 Nobel Prize in Economic Sciences has been awarded in one half to Canadian-born David Card and the other half jointly to Israeli-American Joshua D Angrist and Dutch-American Guido W Imbens.

### About

- David Card →
  - Awarded for his **empirical contributions to labour economics**.
  - He has analysed **how minimum wages, immigration** and **education impact the labour market**.
  - One of the significant findings of this research was that **“increasing the minimum wage does not necessarily lead to fewer jobs”**.
  - It also led to the **understanding that** “people who were born in a country can benefit from new immigration, while people who immigrated at an earlier time risk being negatively affected”.
  - It also **illuminated the role of resources** available in school in shaping the future of students in the labour market.
- Joshua Angrist and Guido Imbens →
  - Award **“for their methodological contributions to the analysis of causal relationships.”**
  - Their work demonstrated **“how precise conclusions about cause and effect can be drawn from natural experiments”**.
- Also Remember → The **2020** Nobel Prize in Economic Sciences was awarded to **Paul R Milgrom and Robert B Wilson** **“for improvements to auction theory and inventions of new auction formats”**.

## 13. One Sun One World One Grid

### Why in News?

The Union Minister for Power and New and Renewable Energy (MNRE) has addressed the Ministerial session of the Green Grids Initiative-One Sun One World One Grid (OSOWOG) Northwest Europe Cooperative Event.

## About

- The mega plan of OSOWOG calls for **trans-national electricity grid** supplying solar power across the globe.
- It will **connect 140 countries** through a **common grid** that will be used to transfer solar power.
- The idea was **first floated by PM Modi in 2018** during the first assembly of the International Solar Alliance (ISA).
- The vision behind the OSOWOG mantra is "**the Sun never sets**" and is a **constant at some geographical location**, globally, at any given point of time.
- With India at the fulcrum, the solar spectrum can easily be **divided into two broad zones** viz:
  - **Far East**: It would include countries like Myanmar, Vietnam, Thailand, Lao, Cambodia and
  - **Far West**: It would cover the Middle East and the Africa Region.
- Implementation phases of the plan → The plan is **divided into three phases**:
  - Phase 1: It will **connect the Indian grid with the Middle East, South Asia** and **South-East Asian grids** to share solar and other renewable energy resources
  - Phase 2: It will connect the **first phase nations with the African pool** of renewable sources
  - Phase 3: It will be the concluding step of **global interconnection**.
- Note → In May 2021, the **United Kingdom and India** have agreed to **jointly launch** the **Green Grids-One Sun One World One Grid** initiative at the COP26 summit being hosted by the UK at Glasgow in November 2021. The concept of OSOWOG is what the UK has called a **green grid**.

## 14. Power Finance Corporation

### Why in News?

Recently, the government has accorded the 'Maharatna' status to state-owned Power Finance Corporation (PFC).

### About PFC

- PFC is the **largest infrastructure finance company** dedicated to the power sector.
- Incorporated in → **1986**.
- Ministry → Under the administrative control of the **Ministry of Power**.

### 👉 Maharatna Status

- The Maharatna dispensation was ushered in by the Union government for mega Central Public Sector Enterprises (CPSEs) **to become global giants** (introduced in 2010).
  - CPSEs are those companies in which the **direct holding of the Central Government** or **other CPSEs is 51% or more**.
- "Maharatna" status is granted to a company which has **recorded more than Rs. 5,000 crore of net profit for three consecutive years**, an average annual turnover of Rs. 25,000 crore for three years or should have an average annual net worth of Rs. 15,000 crore for three years. It should also have global operations or footprints.
  - A CPSE should **also have a Navratna status**, be listed on an Indian stock exchange.
  - The Government has **laid down criteria** for grant of Maharatna, Navratna and Miniratna status to CPSEs.

### 👉 Significance of the Recognition

- Greater Financial and Operational Efficiency
- Offer Competitive Financing
- Push Government Agenda.

## 15. PM Gati Shakti Scheme

### Why in News?

In a historic event for the infrastructure landscape of the country, Prime Minister launched PM GatiShakti - National Master Plan for multi-modal connectivity.

### About

- PM Gati Shakti will **institutionalize the holistic planning** for stakeholders for major infrastructure projects.
- Instead of planning & designing separately in silos, the projects will be **designed and executed with a common vision**.
- PM GatiShakti is the result of Prime Minister's constant endeavour to **build Next Generation Infrastructure** which **improves Ease of Living** as well as **Ease of Doing Business**.
- Coverage → PM GatiShakti will **incorporate the infrastructure schemes of various Ministries** and **State Governments** like UDAN, Bharatmala, Sagarmala, inland waterways, dry/land ports, etc.
- **Economic Zones** like textile clusters, pharmaceutical clusters, defence corridors, electronic parks, industrial corridors, fishing clusters, agri zones will also be covered.
- PM GatiShakti will also **leverage technology extensively** including spatial planning tools with ISRO imagery developed by Bhaskaracharya National Institute for Space Applications & Geoinformatics (BISAG-N).
- Six pillars of PM GatiShakti →
  - **Comprehensiveness in coverage** of all the existing departments and ministries, and projects,
  - **Prioritization of projects** through cross-sectoral interactions,
  - **Optimization of projects** by identification of critical gap,
  - **Synchronization of the activities** of each department, as well as of different layers of governance,
  - **Analytical** - The plan will provide the entire data at one place with GIS based spatial planning and analytical tools having 200+ layers, enabling better visibility to the executing agency.
  - **Dynamic** - All Ministries and Departments would visualize, review and monitor the progress of cross-sectoral projects, through the GIS platform.
- Significance → The **multi-modal connectivity** will provide **integrated connectivity for movement of people, goods** and **services** from one mode of transport to another.
  - It will facilitate the **last mile connectivity** of infrastructure and also reduce travel time for people.

## 16. UFill

### Why in News?

Bharat Petroleum Corporation Limited (BPCL) – a PSU under the Ministry of Petroleum and Natural Gas has announced the launch of "UFill".

### About

- What is it? → It is a **digital customer experience** which ensures that their customers have **complete control over Time, Technology** and **Transparency** as part of their fuelling experience.
- The UFill proposition has been launched in **65 cities** across India and will soon be launched across the country.
- The technology provides the customer with **control of fuel** as well as **touch less pre-payment solution**.
- The dispensing unit can be **automatically preset for the value of fuel paid** for by him/her in advance and eliminates any manual intervention at the point of sale.

## 17. PLI Scheme for Promoting Telecom and Networking Products Manufacturing in India

### Why in News?

The Minister of State for Communications has launched the Production Linked Incentive (PLI) Scheme for Telecom and Networking Products.

### About

- Objective →

- To **boost domestic manufacturing** in the telecom and networking products by incentivising incremental investments.
- Will help in **reducing India's dependence on other countries for import** of telecom and networking products with incentives and support to promote world class manufacturing in the country.
- Would **boost research and development (R&D) activities** locally with companies committed to spend 15% of their revenues for the development of new products.
- Target segments →
  - **Core Transmission Equipment**
  - **4G/5G, Next-Generation Radio Access Network** and **Wireless Equipment**
  - Access and Customer Premises Equipment (CPE), **Internet of Things (IoT) Access Devices**, and **Other Wireless Equipment**
  - Enterprise equipment: **Switches, Routers**
- Eligibility criteria →
  - MSMEs – **Minimum Threshold of Investment ₹ 10 Crores**
  - Other than MSMEs – **Minimum Threshold of Investment ₹ 100 Crores**
  - Further, for MSMEs, the scheme has a **1% higher incentive in the first three years**.
- Incentives under the scheme →
  - An incentive of **7% to 4% on incremental sales** (over base year) of goods manufactured in India
  - Tenure: Support under the scheme shall be provided for a **period of five (5) years from 1st April 2021**.

## 18. Bio-Economy

### Why in News?

Union Minister Dr Jitendra Singh said that Northeast will be developed as India's Bio-Economic Hub. The Eastern Himalayan Region is one of the mega-biodiversity rich zones and is among the 34 biodiversity Hotspots of the world.

### About

- Bio-Economy is the **production, utilization** and **conservation of biological resources** to provide information, products, processes and services across all economic sectors.
- These resources include **biological related knowledge, science, technology** and **innovation**.
- **Bio-Economy and India**
  - The Bio-Economy's contribution to the national GDP in 2020 is **at 2.7% of the GDP in 2020**.
  - It is estimated that India's bio-economy is on its way to **achieve a 150-billion dollar target from the current 70 billion dollars by 2025**.

### 🏠 Government initiatives - Biotech KISAN

- Launched in **2017**.
- Biotech-KISAN is a **scientist-farmer partnership scheme** launched by the Department of Biotechnology (DBT).
- Aim → To **connect science laboratories with the farmers** to find out innovative solutions and technologies to be applied at the farm level.
- Under this scheme, so far **146 Biotech-KISAN Hubs** have been established covering all 15 agroclimatic zones and 110 Aspirational Districts in the country.

### Institute of Bioresources and Sustainable Development (IBSD)

- Set up in **2001 at Imphal, Manipur**.
- IBSD is an **autonomous institute** under the **Department of Biotechnology (DBT)**.
- Objective → To **develop and utilize rich bioresources of the North-East Region** of the country through the application of modern tools of biology and biotechnology.



## 19. Global Food Security Index 2021

### Why in News?

GFSI 2021 ranked India 71st out of 113 countries with a score of 57.2 points.

### About

- Released by → London-based **Economist Impact** and is **sponsored by Corteva Agriscience**.
- The 2021 GFSI is the **tenth edition** of the index.
- It is published **every year**.
- Calculation → It **measures the underlying drivers** of food security based on the following factors:
  - Affordability
  - Availability
  - Quality and Safety
  - Natural Resources and Resilience
- Indicators → It considers **58 unique food security indicators** including income and economic inequality - calling attention to systemic gaps and actions needed to accelerate progress toward United Nations Sustainable Development Goal of Zero Hunger by 2030.

### 📌 Key Findings

- Ireland, Australia, the UK, Finland, Switzerland, the Netherlands, Canada, Japan, France** and **the US** shared the **top rank** with the overall GFS score in the range of 77.8 and 80 points on the index.
- India held 71st position** with an overall score of 57.2 points on the GFS Index 2021 of 113 countries.

## 20. Secured Overnight Financing Rate

### Why in News?

Rural Electrification Corporation Limited (REC Ltd.) raised a US\$75 million 5-year Secured Overnight Financing Rate (SOFR) linked Syndicated Term Loan with Sumitomo Mitsui Banking Corporation (SMBC).

### About

- What is it? → It is **a benchmark interest rate for dollar-denominated derivatives and loans** that is replacing the London interbank offered rate (LIBOR).
  - Interest rate swaps on **more than \$80 trillion** in notional debt **switched to the SOFR** in 2020.
  - This transition is expected to **increase long-term liquidity** but also result in substantial short-term trading volatility in derivatives.
- The daily SOFR is based on transactions in the **Treasury repurchase market**, where investors offer banks overnight loans backed by their bond assets.
- SOFR is seen as **preferable to LIBOR** since it is **based on data from observable transactions** rather than on estimated borrowing rates.
- Benchmark rates such as the **SOFR** are **essential in the trading of derivatives**, particularly interest-rate swaps.
- [Corporations & other parties used interest-rate swaps to manage interest-rate risk and to speculate on changes in borrowing costs.]
- While SOFR is becoming the benchmark rate for dollar-denominated derivatives and loans, other countries have **sought their own alternative rates**, such as **SONIA** and **EONIA**.

### 📌 REC Limited

- REC Limited is a **Navratna NBFC focusing on Power Sector Financing and Development** across India.
- Established in **1969**, REC Limited has **completed over fifty years** in the area of its operations.

- It provides **financial assistance** to state electricity boards, state governments, central/state power utilities, independent power producers, rural electric cooperatives and private sector utilities.

## 21. Mahatma Gandhi National Fellowship Programme

### Why in News?

Recently, the government has launched the phase-II of Mahatma Gandhi National Fellowship under SANKALP (Skill Acquisition and Knowledge Awareness for Livelihood Promotion) programme.

### About

- What is it? → It is a **two-year-long fellowship programme** conceived to create opportunities for young, dynamic individuals to contribute **to enhancing skill development at the grassroots**.
- Objective → The Programme seeks to **combine classroom sessions by academic partner IIMs**, with an intensive field immersion at the district level (District Immersion) to create **credible plans and identify barriers** in raising employment, economic output and promoting livelihoods in rural areas.
- Eligibility → Fellows have to be in the **21-30 years age group**, have a **graduation degree** from a recognized university and be citizens of India.
  - **Three years of work experience** after secondary schooling in the social/non-profit sector with an interest in working in rural areas is preferred. However, individuals with no work experience and a strong motivation to work in this area may apply.
  - Proficiency in the **official language of the state** of fieldwork will be **mandatory**.
- Phases →
  - MGNF Phase-I (Pilot) → Launched in **2019** with **IIM Bangalore as Academic Partner**. Under this, 69 Fellows are currently deployed in 69 districts across 6 States.
  - MGNF Phase-II (National Roll Out) → Being launched in **October 2021 with 661 MGNFs** who will be deployed across all districts of the country. 8 more IIMs have been boarded, taking the total to 9 IIMs.

### 👉 SANKALP Programme

- SANKALP, a **Centrally sponsored scheme**, is a World Bank loan assisted program, launched by the Ministry of Skill Development and Entrepreneurship in January 2018.
- SANKALP engages with District Skill Committees (DSCs) to effectively **reduce the mismatch between the supply and demand of skilled manpower** in the country, thereby creating decent opportunities for the youth to work and earn.

## 22. SAMBHAV Awareness Programme

### Why in News?

“SAMBHAV”, a National Level Awareness Programme-2021, being organised by Ministry of Micro, Small & Medium Enterprises.

### About

- The mass outreach program is a **one-month long initiative** under the **Ministry of MSME** in which students from different colleges/ITIs from all parts of the country will be encouraged by 130 field offices of the Ministry **to take up entrepreneurship**.
- During the campaign the college students will be **made aware of the various schemes** being implemented by the Ministry of MSME through Audio/Video film presentations.
- Awareness programs will be conducted in **more than 1,300 colleges** across the country in which **1,50,000 students** are expected to participate.
- SAMBHAV calls for engagement of the youth in **promoting entrepreneurship, leading to the economic development of the country**.

- Benefits → Enhancing the MSME's contribution to GDP from present **30% to 50%**, and **employment generation** in MSME sector **from 11 crore to 15 crore**.

## 23. Economic Advisory Council

### Why in News?

Government has reconstituted the Economic Advisory Council to the Prime Minister (EAC-PM) under the leadership of Dr. Bibek Debroy for a period of two years after its term came to an end in September 2021.

### About

- It is a **non-constitutional, non-statutory, independent body** constituted to give advice on economic and related issues to the Government of India, specifically to the Prime Minister.
- Purpose → The council serves to **highlight key economic issues** to the government of India from a neutral viewpoint.
- It advises the Prime Minister on economic issues like inflation, microfinance, and industrial output.
- For administrative, logistic, planning and budgeting purposes, **the NITI Aayog serves** as the Nodal Agency for the EAC-PM.
- Functions →
  - **Analyzing any issue**, economic or otherwise, referred to it by the Prime Minister and advising him thereon,
  - **Addressing issues of macroeconomic importance** and presenting views thereon to the Prime Minister.
    - These could be either suo-motu or on reference from the Prime Minister or anyone else.
    - It also includes attending to any other task as may be desired by the Prime Minister from time to time.
- Periodic Reports → **Annual Economic Outlook, Review of the Economy**.

## 24. Krishi UDAN 2.0 Scheme

### Why in News?

Recently, the Union Minister of Civil Aviation released Krishi UDAN 2.0. to facilitate and incentivize the movement of Agri-produce by air transportation.

### About

- Krishi UDAN Scheme → launched in **2020 on international and national routes** to assist farmers in transporting agricultural products so that it improves their value realisation.
- Krishi UDAN 2.0 → focus on **transporting perishable food products** from the hilly areas, northeastern states and tribal areas.
- The scheme will be implemented at **53 airports across the country**, mainly focusing on **Northeast and tribal regions**, and is likely to benefit farmers, freight forwarders and Airlines.
- key features of Krishi UDAN 2.0 →
  - The scheme will provide a **full waiver of landing, parking, Terminal Navigation and Landing Charges** and Route Navigation Facilities Charges for domestic airlines.
  - The Ministry will facilitate the development of a **hub and spoke model** and freight to transport perishable products.
  - The Ministry has asked states to **reduce sales tax on Aviation Turbine Fuel (ATF) to 1 percent** for airlines under Krishi UDAN 2.0.
  - **Resources-Pooling** through establishing convergence mechanism.
  - **Seven focus routes** and the agro products to be flown from there have been identified under the scheme.
  - Development of **E-KUSHAL** (Krishi UDAN for Sustainable Holistic Agri-Logistics).

 **E-KUSHAL**

- E-KUSHAL is a platform that will **facilitate information dissemination** to all the stakeholders.
- This will be a **single platform** that will provide **relevant information at the same time** will also assist in coordination, monitoring and evaluation of the scheme.

## 25. Neo-Banks

### Why in News?

Recently, Fintech platforms, which sometimes refer to themselves as neo-banks, are increasingly making inroads into the Indian market.

### About

- Neo-bank is a term for **'fintech firms'** with only a digital presence and **no physical branches**.
- They provide banking services use such as **savings accounts, instant loans, credit cards, mutual funds, and fixed deposits**.
- They do this **via tie-ups** with Reserve Bank of India (RBI)-licensed banks.
- In the case of products such as wealth management, neo-banks generally get investment adviser licenses. Usually, they tie-ups are with small finance banks or small scheduled commercial banks.
- Some countries such as the UK have a **formal regulatory license** for neo-banks, but that is **not the case in India**.
- There is **no such category of banks under the RBI rules**.

TRADITIONAL BANK		NEOBANK	
Physical banking establishment	Service platform	Web & Mobile services	
Up to 100 years ago	Market entry	Up to 10 years ago	
Long-term, in-person, with minor changes	Client relation	Flexible, virtual, easy to modify	
In-person, phone, online	Customer support	Phone, online	
High, complex	Fees	Low, transparent	
Entire	Banking licence	None, partial, or entire	
Yes	Bank offices	No	
Long	Confirmation process	Instant	

# Environment

## 1. Mumba Eels

### Why in News?

A new species of swamp eel belonging to the genus *Rakthamichthys* that is endemic to India was discovered in a well in Mumbai.

### About

- This blind eel was named ***Rakthamichthys mumba***. It is a new species of **Hypogean eel** (Teleostei: Synbranchidae).
- Unlike other species of its genus, the mumba **lacks eyes, fins** and **scales**, has jaws equal in forward extent, **different gill aperture, crescentic-shaped cephalic**.
- It is a **completely blind** subterranean freshwater fish species.
- Its body is **pinkish-red** with numerous blood vessels all over.
- Difference → *Rakthamichthys mumba* differs from its congener from Western Ghats of India by the **possession of jaws-projecting forward equally, absence of eyes** and **having more vertebrae**.

### 👉 Family Synbranchidae

- Members of this family are **very peculiar, relict lineages of percomorphs**, consisting of freshwater eel-like fishes of the tropics and subtropics.
- They are distributed across **all countries except Antarctica**.
- Presently, this family consists of **26 valid species** and are unique among teleosts by lacking paired, median and caudal fins.

## 2. Weddell Sea as Marine Protected Area

### Why in News?

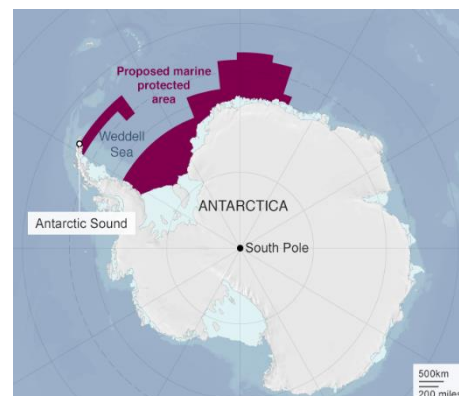
Ministry of Earth Sciences said that India is co-sponsoring a proposal of the European Union for designating East Antarctica & Weddell Sea as Marine Protected Areas (MPAs).

### About Weddell Sea

- What is it? → It is an **embayment of the Antarctic coastline** that forms a southward extension of the Southern Ocean. It has the **Weddell Gyre**.
- It is bounded on the west by the **Antarctic Peninsula of West Antarctica**, on the east by **Coats Land of East Antarctica**, and on the extreme south by **ice frontal barriers of the Filchner** and **Ronne ice shelves**.

### 👉 Marine Protected Area

- A marine protected area provides **protection for all** or **part of its natural resources**.
- **Certain activities** within an MPA are **limited** or **prohibited** to meet specific conservation, habitat protection, ecosystem monitoring, or fisheries management objectives.



### 👉 Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)

- It is an **international treaty to manage Antarctic fisheries** to preserve species diversity and stability of the entire Antarctic marine ecosystem.
- It came into force in **April 1982**.
- It is responsible for the **formulation, adaptation** and **implementation mechanisms of the MPAs**.
- Since 2009, CCAMLR members have developed **proposals for MPAs for various regions** of the **Southern Ocean**.

- CCAMLR's **scientific committee examines** these proposals.
- After CCAMLR members agree upon them, **elaborate conservation measures** are set out by the commission.
- **India** has been a **permanent member** of CCAMLR **since 1986**.
- Work pertaining to CCAMLR is coordinated in India by the **Ministry of Earth Sciences** through its attached office, the **Centre for Marine Living Resources and Ecology (CMLRE) in Kochi, Kerala**.

### 3. American Bumblebee

#### Why in News?

According to US Fish and Wildlife Services, the American bumblebee population has decreased by 89% in the past 20 years, and it could be declared as an "endangered species".

#### About

- This species is scientifically called **Bombus pensylvanicus**.
- The species live and nest in **open farmland & fields**.
- It feeds on **food plants like sunflowers & clovers**.
- It is a threatened species of bumblebee and is **native to North America**. It is also found in **eastern Canada, eastern United States, and Mexico**.
- Reasons for Decline → According to CBD, the population of American bumblebees has declined due to **habitat destruction, climate change, exposure to disease & pesticides, loss of genetic diversity** along **competition with non-native bees**.

### 4. Indian Peafowl

#### Why in News?

In an incident, a man was hit by a peafowl (pavocristatus) while driving a bike, which has turned the spotlight on the increasing population of peafowls in the Kerela state.

#### About

- The term "peacock" is commonly used to **refer to birds of both sexes**. Technically, only males are peacocks. Females are peahens, and together, they are called peafowl.
- Peafowl (Pavo cristatus) belongs to the **Phasianidae family**. They are among the **largest of all birds that fly**.
- The **Indian peacock** is also the **National Bird of India**.
- The two most-recognizable species of peafowl are →
  - The **blue, or Indian, peacock of India** and **Sri Lanka**.
  - The **green or Javanese, peacock** (P. muticus) found from **Myanmar (Burma) to Java**.
- Habitat →
  - The Indian peafowl is a **native of India** and **some parts of Pakistan** and **Sri Lanka**.
  - The species are currently **habituated more in central Kerala**, followed by southeast and northwest parts of the state.
  - At **least 19%** of the states' area is **suitable habitat** for this species and this may **increase by 40-50% by 2050**.
  - They are well adapted to **living in forest edges** and **cultivated areas**.
- Protection Status →
  - They are protected under **Schedule I of the Indian Wildlife Act, 1972**.
  - IUCN: Indian peafowl (**Least Concern**)
  - Green peacock (**Endangered**).
- Threats → **Habitat loss, smuggling, hunting and predation**.

### 5. Coral Reefs



## Why in News?

Recently, Global Coral Reef Monitoring Network (GCRMN) has released a report on the status of coral reefs across the world.

## About 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 provide up to 90 per cent of the coral's energy.
- Temperature → 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 →
  1. fringing reefs,
  2. barrier reefs,
  3. atolls, and
  4. patch reefs.
- Largest Coral Reef Area →
  - **Indonesia** has the **largest coral reef area** in the world.
  - **India, Maldives, Sri Lanka** and **Chagos** have the maximum coral reefs in **South Asia**.
  - The **Great Barrier Reef** of the Queensland coast of Australia is the **largest aggregation of coral reefs**.
  - Most of the world's coral reefs are in **tropical waters**.
- 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**.

## 👉 Key Highlights of the report

- The report underlined the **catastrophic consequences of global warming** but said that some coral reefs can be **saved by arresting greenhouse gases**.
- Rising ocean temperatures **killed about 14%** of the world's coral reefs between 2009 and 2018.
- Threats → **Ocean-acidification, warmer sea temperatures** and **local stressors** such as overfishing, pollution, unsustainable tourism and poor coastal management.

## 6. Corbett National Park

### Why in News?

Union Minister of State for Environment, Forest and Climate Change Ashwini Kumar Choubey has proposed to change the name of Corbett National Park to Ramganga National Park.

### About

- Location → Located in the **Himalayan foothills of Uttarakhand**, the park encompasses the Patli Dun valley formed by the Ramganga River.
- It has **sub-Himalayan belt ecological characteristics**, as it falls in the Shivalik and Outer Himalaya geological provinces.
- It has **dense moist deciduous forest**.
- Name →
  - Set up in **1936** as India's - and Asia's - **first national park**, the national park was called **Hailey National Park**.

- It was **renamed Ramganga** National Park (after the river that flows through it) **shortly after Independence**.
- In **1956**, it was **rechristened yet again** as Corbett National Park.
- Ideal Tiger Territory → Corbett National Park was the place from **where Project Tiger** was **launched in 1973**.
  - It is **part of the Corbett Tiger Reserve**. It has the single largest tiger population in a tiger reserve in the country.
  - The national park along with the neighbouring **Sonanadi Wildlife Sanctuary** makes the **critical tiger habitat** of the Corbett Tiger Reserve.
- Other Fauna → **Indian Leopards, Barking Deer, Spotted Deer, Sambar Deer, Jungle Cats, sloth**, etc.

#### 👉 Other Major Protected Areas of Uttarakhand:

- Nanda Devi National Park.
- Valley of Flowers National Park.
- Valley of Flowers National Park and Nanda Devi National Park together are a UNESCO World Heritage Site.
- Rajaji National Park.
- Gangotri National Park.
- Govind National Park.

## 7. India's newest Tiger Reserve

### Why in News?

National Tiger Conservation Authority (NTCA) approved the Chhattisgarh's proposal to declare the combined areas of the Guru Ghasidas National Park & Tamor Pingla Wildlife Sanctuary as a Tiger Reserve.

### About

- The new Reserve is located in the **northern part of the state, bordering Madhya Pradesh and Jharkhand**.
- This will be the **fourth Tiger Reserve** in Chhattisgarh, after the **Udanti-Sitanadi, Achanakmar, and Indravati Reserves**.
- How is a tiger reserve created? →
- The approval is **granted by NTCA** under **Section 38V(1) of The Wildlife (Protection) Act, 1972**.
- The **State Government shall**, on the recommendation of the Tiger Conservation Authority, **notify an area** as a tiger reserve.

#### 👉 Guru Ghasidas National Park

- Named after the **Satnami reformist hero of the place, Guru Ghasidas**, is the result of the carving of Chhattisgarh from Madhya Pradesh in the year of 2000. It is located in the **Koriya district of Chhattisgarh**.
- The Park has **undulating topography** and it falls under the **Tropical climate zone**.
- Flora → The vegetation consists mainly of **mixed deciduous forest with teak, sal and bamboo trees**.
- Fauna → **Tiger, Leopard, Chital, Nilgai, Chinkara, Jackal, Sambar, Four-horned Antelope** etc.
- Please note that the Guru Ghasidas National Park was the **last known habitat** of the **Asiatic cheetah** in the country.

#### 👉 Tamor Pingla Wildlife Sanctuary:

- It is located in the **Surajpur district of Chhattisgarh** bordering Uttar Pradesh. It is named **after Tamor hill and Pingla Nalla**.
- **Tamor hill and Pingla Nalla** are considered to be the old and prominent features of the sanctuary area.
- Flora → **Mixed deciduous forests** dominate the sanctuary. **Sal** and **bamboo** forests are seen all through.
- Fauna → **Tigers, Elephants, leopards, bears, sambar deer, blue bulls, chital, bison** and many such animals are found here.

## 8. High Ambition Coalition for Nature and People

### Why in News?

At a ceremony held between the French and Indian governments, India officially joined the High Ambition Coalition for Nature and People.

### About

- What is it? → It is an **intergovernmental group championing a global deal for nature and people** that can halt the accelerating loss of species, and protect vital ecosystems that are the source of our economic security.
- It was initiated at the “**One Planet Summit**” in Paris in **January 2021**.
- It is **co-chaired by Costa Rica and France** and by the United Kingdom as Ocean co-chair.
- Aim →
  - To promote an **international agreement** to **protect at least 30% of the world's land and ocean by 2030** (Global 30×30 target).
  - To manage the **planet sustainably with no net loss** of natural habitats, supported by a circular economy, and strives for the sustainable and equitable sharing of benefits from nature.
- Members → It has **more than 70 countries** which are a mix of countries in the global north and south, European, Latin American, Africa and Asia countries are among the members.
- Significance →
  - Currently, an estimated **15% of the world's land** and **7% of the ocean are protected**.
  - In order to achieve the goal of protecting **at least 30% by 2030**, we'll need to **double the current land protections** and more than quadruple current ocean protections.

## 9. Javan Gibbon

### Why in News?

Recently, Indonesia is taking steps to protect the habitat of Javan Gibbon (*Hylobates moloch*), which is endangered by climate change and human encroachment.

### About

- The **silvery gibbon**, also known as the Javan gibbon, is a primate.
- They are **found in groups only**, usually in a pair of two.
- It is endemic to the **Indonesian island of Java**, where it inhabits undisturbed rainforests up to an altitude of 2,450 m.
- It helps in **regenerating forest vegetation** by dispersing seeds.
- There are around **4,000** Javan gibbons left.
- Habitat →
  - The Javan Gibbon wild population is only found in **Java, Indonesia**.
  - It is **not found in India** (The hoolock gibbon is the only gibbon found in India).
- Conservation Status →
  - IUCN: **Endangered**.
  - CITES: **Appendix I**.
- Threat → It was declared **Critically Endangered in 2004** but since has recovered to **status of Endangered** as per IUCN criterion. However, the latest IUCN estimate shows that their **population is decreasing**.
  - Unfortunately, **amid climate change** and **human encroachment**, the small pocket of forest on the heavily populated island of Java as the habitat of the Javan gibbon is in grave danger of disappearing.
  - The species is also **hunted for both meat and pet trade**.

## 10. National Green Tribunal

## Why in News?

The Supreme Court has empowered the National Green Tribunal (NGT) with suo motu (on its own) power to initiate proceedings on its own in case of environmental exigencies.

## About

- It is a **specialised body** set up under the **National Green Tribunal Act (2010)**.
- Purpose → For **effective and expeditious disposal of cases** relating to environmental protection and conservation of forests and other natural resources.
- Background → It was formed by **replacing** the **National Environment Appellate Authority**. It also draws inspiration from **Article 21 of the India Constitution** which assures to provide a healthy environment to the citizens of India.
- Structure of NGT → The National Green Tribunal (NGT) comprises three major bodies namely:
  - **The Chairperson**
  - **The Judicial Members**, and
  - **The Expert Members**.
  - Also, there should be a **minimum of 10** and a **maximum of 20 fulltime** Judicial as well as Expert members in the NGT.
- Term of NGT Members → All these members are required to hold the office for **five years** and are **not eligible for reappointment**.
- Who appoints NGT Chairman and NGT members? →
  - The Chairperson of the National Green Tribunal (NGT) is **appointed by the Central Government of India** in accordance with the Chief Justice of India.
  - A **Selection Committee** is formed by the central government of India for the appointment of Judicial Members and Expert Members.
- Powers & Jurisdiction →
  - The Tribunal has jurisdiction **over all civil cases involving substantial question relating to environment** (including enforcement of any legal right relating to environment).
  - Being a statutory adjudicatory body like Courts, apart from original jurisdiction side on filing of an application, NGT also has **appellate jurisdiction to hear appeal as a Court** (Tribunal).
  - The Tribunal is **not bound** by the procedure laid down **under the Code of Civil Procedure 1908**, but shall be guided by **principles of 'natural justice'**.
  - While passing any order/decision/ award, it shall **apply the principles of sustainable development, the precautionary principle** and **the polluter pays principle**.
  - An appeal against order/decision/ award of the NGT **lies to the Supreme Court**, generally **within ninety days** from the date of communication.
- HQ → The NGT has five places of sittings, **New Delhi** is the Principal place of sitting and **Chennai, Kolkata, Pune, Bhopal** are the other four.

## 11. Clean, Healthy and Sustainable Environment - A Universal Right

### Why in News?

The United Nations Human Rights Council has unanimously voted for recognising a clean, healthy and sustainable environment as a universal right in Geneva, Switzerland.

### About

- If formally recognised by all, this right would be the **first of its kind** in **more than 70 years since** the Universal Declaration of Human Rights was adopted by the UN General Assembly in 1948.
- The resolution emphasises the **rights to life, liberty** and **security of Environmental Human Rights Defenders** (EHRDs).
- This resolution was adopted by a **vote of 43 in favour, none against** and **4 abstentions**.

- **China, India, Japan** and **Russian Federation**, **abstained** from voting on the resolution.
- Right to a clean environment was **rooted in the 1972 Stockholm Declaration**.

### Environmental Human Rights Defenders

- EHRDs are the human rights defenders working in environmental matters.
- Environmental defenders across the globe are subject to constant physical attacks, detentions, arrests, legal action and smear campaigns.

### United Nations Human Rights Council

- It is an **inter-governmental body** within the United Nations system responsible for strengthening the promotion and protection of human rights around the world.
- Formation → In **2006**.
- Headquartered → **Geneva, Switzerland**.
- Members → It is made up of **47 United Nations Member States** which are elected by the UNGA.
  - India was elected in **January 2019** for a **period of three years**.
- Procedures and Mechanisms →
  - Universal Periodic Review → UPR serves to **assess the human rights situations** in all United Nations Member States.
  - UN Special Procedures → These are made up of **special rapporteurs, special representatives, independent experts** and **working groups** that monitor, examine, advise and publicly report on thematic issues or human rights situations in specific countries.

## 12. Ecological Threat Report 2021

### Why in News?

The 'Ecological Threat Report (ETR) 2021: Understanding ecological threats, resilience and peace' was released by the Institute of Economics and Peace.

### About

- Released by → **the Institute of Economics and Peace**, which produces indexes such as the Global peace Index and Global Terrorism Index.
- It **assessed the data from sub-national administrative units in 178 countries** for threats relating to food risk, water risk, rapid population growth, temperature anomalies & natural disasters.

### Key Findings

- Of the 178 countries in the ETR,
  - **30** were identified as hotspots for having **low levels of resilience** and a medium to extremely high catastrophic threat score.
  - **13** faced **extremely high ecological threats** and
  - **34** others faced **high ecological threats**.
- The **30 hotspot countries** are least likely to be **able to mitigate and adapt to new ecological threats**, leading to **mass displacement**.
- The most vulnerable countries are clustered in the **Middle East** and **North Africa, sub-Saharan Africa** and **South Asia**.

## 13. Hydroponics

### Why in News?

As part of Green Action Week (GAW), observed annually in the first week of October as part of a global campaign to promote sustainable consumption, the Madurai chapter focused on hydroponics.

## About

- What is it? → It is a **type of horticulture**, a **subset of hydroculture** and the art of gardening in water without soil.
- [Geoponics is the method of growing plants in normal soil.]
- Hydroponics (Latin word meaning 'working water') involves **growing plants without soil**, by using nutrient-rich solutions, oxygen, and water.
- Disadvantages → **Expensive**, **Vulnerable to power outages** and **water-borne diseases**, Requires constant monitoring and maintenance, Problems affect plants quicker.
- Advantages -----→

### WHY HYDROPONICS?

Hydroponics is the method of growing plants in a nutrient-rich water-based environment. It comes with many incredible benefits over traditional gardening.



Zero soil



2x growth rate



80% Less water



No weeds



Nutrient efficiency



Fewer pesticides

## 👉 Green Action Week Campaign

- It is an initiative of **Swedish Society for Nature Conservation**.
- It is run by **60 organisations** across 40 countries.
- **India co-ordinator**, **CUTS International**, is partnering with organisations across 12 States to collectively work to change consumption patterns among people for a sustainable living in the future.

## 14. Red Sanders

### Why in News?

Recently, Personnel of the Special Enforcement Bureau (SEB) nabbed one of the most wanted red sanders smuggling operatives allegedly having links with global syndicates.

### About

- Red sanders (*Pterocarpus santalinus*) is **endemic to South India**.
- They are found in the **Tropical Dry Deciduous forest** of the Palakonda and Seshachalam hill ranges of **Andhra Pradesh** and also found in **Kerala, Tamil Nadu** and **Karnataka**.
- Red Sanders usually grow in the **rocky, degraded** and **fallow lands with Red Soil and hot and dry climate**.
- Conservation Status →
  - IUCN: **Near Threatened**.
  - CITES: **Appendix II**.
- Significance → It is known for its **rich hue and therapeutic properties**, is high in demand across Asia, particularly in China and Japan, for cosmetics and medicinal products, wood-works and musical instruments.

## 👉 Sandalwood Spike Disease

- It is an infectious disease which is **caused by phytoplasma**.
- Phytoplasmas are **bacterial parasites** of plant tissues — which are transmitted by insect vectors and involved in plant-to-plant transmission.
- There is **no cure** as of now for the infection.
- Presently, there is no option but to **cut down and remove** the infected tree to prevent the spread of the disease.
- The disease was first reported in **Kodagu, Karnataka in 1899**.

## 15. 2021 State of Climate Services Report

### Why in News?



The World Meteorological Organization (WMO) has released a report titled 2021 State of Climate Services Report. It focuses on Terrestrial Water Storage.

### About Terrestrial Water Storage

- TWS is the **sum of all water on the land surface and in the subsurface**, i.e. surface water, soil moisture, snow and ice and groundwater.
- Water resources across the world are **under tremendous pressure** due to human and naturally-induced stressors.
- These include **population growth, urbanisation and decreasing availability** of freshwater.
- **Extreme weather events** too have been responsible for the pressure on water resources realised across sectors and regions.

### 📌 key findings

- Global Scenario →
  - TWS dropped at a **rate of 1 cm per year in 20 years** (2002-2021).
  - The **biggest losses** have occurred in **Antarctica and Greenland**. But many highly populated, lower latitude locations have also experienced TWS losses.
- Indian Scenario →
  - The TWS has been lost at a rate of **at least 3 cm per year**. In some regions, the **loss** has been **over 4 cm per year too**.
  - India has recorded the **highest loss in terrestrial water storage** if the loss of water storage in Antarctica and Greenland is excluded. The northern part of India has experienced the maximum loss within the country.

### 📌 World Meteorological Organization (WMO)

- WMO is an **intergovernmental organization** with a **membership of 192** Member States and Territories.
- It originated from the International Meteorological Organization (IMO), which was established **after the 1873 Vienna International Meteorological Congress**.
- Established by the **ratification of the WMO Convention on 23 March 1950**, WMO became the **specialized agency of the United Nations for meteorology** (weather and climate), operational hydrology and related geophysical sciences.'
- Headquartered → **Geneva, Switzerland**.

## 16. New Cicada Species

### Why in News?

Recently a new Cicada species *Platyomia kohimaensis* was discovered in the Naga Hills. The species was found near the village of Mitelphe within the Kohima district.

### About Cicadas

- Cicadas are **hemipteran insects**. They are known for their **loud, complex** and **species-specific acoustic signals** or **songs**.
- Habitat → Most cicadas are **canopy dwellers** and are **found in natural forests** with large trees. They act as **indicators of a healthy forest ecosystem**. They occur more in areas around undisturbed bamboo groves.
- Threats → Loss of natural habitat because of **clearing of forest land, wildfires, agricultural land** and **other similar activities**.
- *Platyomia kohimaensis* → According to the researchers, it **sings only in the dusk for a few hours**. While most cicadas call during the day.
  - This discovery has been made **after almost a century**. No new cicada was discovered after those found by British entomologists in the Naga Hills in the early 1900s.
- Distribution of other cicada species →

- Savazana mirabilis and Salvazana Imperialis → They were **discovered in Meghalaya**. They prefer only certain tree species **found in undisturbed forests**.
- Chremistica ribhoi (locally called niangtaserand popular as 'world cup cicada') → They also **belong to Meghalaya**, surrounding the areas of Nongkhylllem Wildlife Sanctuary.

## 17. Central Zoo Authority

### Why in News?

Vision Plan (2021-2031) for Indian Zoos was recently released. The vision plan is aimed at upgrading Indian zoos and strengthening the Central Zoo Authority (CZA).

### About

- The CZA is a **statutory body** under the Ministry of Environment, Forest and Climate Change.
- Formation → It was constituted in **1992 under the Wildlife (Protection) Act, 1972**.
- Members → It is **chaired by the Environment Minister** and has 10 members and a member-secretary.
- Objective → The main objective of the Authority is to **complement and strengthen the national effort** in conservation of the rich biodiversity of the country, particularly the fauna as per the National Zoo Policy, 1998.
- Important functions →
  - It **enforces minimum standards and norms** for the upkeep and healthcare of animals in Indian zoos.
  - Every zoo in the country is required to obtain **recognition from CZA for its operation**.
  - It can also **de-recognise zoos**.

## 18. Dhole

### Why in News?

A recent study has identified 114 priority talukas/tehsils where habitats can be consolidated to enhance population connectivity for the Dholes.

### About

- It is also known as the **Asiatic wild dog**, **red dog**, and **whistling dog**. It is about the size of a German shepherd, but looks more like a long-legged fox.
- Furthermore, it is a **highly social animal**, **living in large clans** without rigid dominance hierarchies and containing multiple breeding females.
- They are native to **Central, South, East Asia**, and **Southeast Asia**.
- Ecological role: Dholes play an **important role as apex predators in forest ecosystems**.
- Habitat: Dholes occupy a **wide variety of climates and habitats**, including dense forests, scrub, steppes, and alpine regions. They **vary in colour** from charcoal grey to rust-red to sandy beige, depending on their habitat.
- India: They are found in **Western and Eastern Ghats**, **Central Indian landscape** and **North East India**.
- Conservation Status →
  - **Schedule II** species under the Wildlife Protection Act, 1972.
  - **Endangered** by the International Union for Conservation (**IUCN**).
  - Under **Appendix II** of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (**CITES**) list.
- Threats → **Depletion of prey base, Habitat loss and transformation, Retaliatory killings** due to livestock predation etc.

### About Study

- Conducted by → **Scientists from** the Non-profit Wildlife Conservation Society–India (WCS-India), National Centre for Biological Sciences, Bengaluru, University of Florida, United States, Non-profit Conservation Initiatives and Centre for Wildlife Studies, Bengaluru.
- key findings → The study found that the **Western and Eastern Ghats is a stronghold region** for dholes. On the other hand, **Central India** appeared to be **weak in terms of connectivity**.

## 19. Plastic Waste Recycling Targets

### Why in News?

Recently the Environment Ministry has issued draft guidelines for controlling the use of plastic. The notification was expected to come into force by December 6 and, as of now, was open to public feedback.

### About

- It has also specified a system whereby **makers and users** of plastic packaging could collect certificates — called **Extended Producer Responsibility (EPR) certificates** — and trade in them.
- Only a **fraction of plastic that cannot be recycled** — such as multi-layered multi-material plastics — would be **eligible to be sent for end-of-life disposals** such as road construction, waste to energy, waste to oil and cement kilns.
- Only **methods prescribed by the Central Pollution Control Board (CPCB)** would be permitted for their disposal.

### New Draft Rules:

- Plastic packaging, as per the rules made public on October 6, **fall into three categories**.
  - Category 1: **“Rigid” plastic**
  - Category 2: **“Flexible plastic packaging** of a single layer or multilayer (more than one layer with different types of plastic), plastic sheets and covers made of plastic sheet, carry bags (including carrying bags made of compostable plastics), plastic sachet or pouches.
  - Category 3: It is called **multilayered plastic packaging**, which has at least one layer of plastic and at least one layer of material other than plastic.
- Producers of plastic would be obliged to declare to the government, via a **centralised website**, how much plastic they produce annually.
- Companies would have to **collect at least 35% of the target in 2021-22, 70% by 2022-23 and 100% by 2024**.
- In **2024**, a **minimum of 50% of their rigid plastic** (category 1) would have to be **recycled** as would 30% of their category 2 and 3 plastic.
- Every year would see **progressively higher targets** and after 2026-27, 80% of their category 1 and 60% of the other two categories would need to be recycled.
- If entities **cannot fulfil their obligations**, they would on a **“case by case basis”** be permitted to buy certificates making up for their shortfall from organisations that have used recycled content in excess of their obligation.
- The CPCB would develop a **“mechanism”** for such **exchanges on an online portal**.
- Non-compliance would **not invite a traditional fine**. Instead an **“environmental compensation”** would be levied, though the rules do not specify how much this compensation would be.

## 20. Hoplosebastes Armatus

### Why in News?

Hoplosebastes Armatus, also known as the flower scorpionfish, is a unique, lesser-known fish species that was till now thought to be found only in the Pacific Ocean has been found in the Indian Ocean too.

### About

- It belongs to the **order of ray-finned fish** that are also known **Scorpaeniforme**.
- It was discovered in **the Pacific Ocean off Japan** almost a century ago in **1929**.

- The species had **not been found in the Indian Ocean**.
- That is till **two specimens** of Hoplosebastes were collected by scientists from the **harbour of Digha in West Bengal's Purba Medinipur** in **2019**.
- Two years after that discovery, scientists **collected 22 other specimens** from the **waters off Paradip in Odisha's Jagatsinghpur** district in 2021.
- The length of the species **ranged from 75-127 mm**, while its **body width was from 14-22 mm**.
- The head of the species was **comparatively large** and **greater than the body**.
- The fresh specimen of the species, caught from the sea, **was faint red**. But alcohol specimens were **pale yellow colour** and **formalin specimens were brownish**.
- The specimen found from the Indian Ocean **resembles PJ Schmidt's specimen** that was **found in 1929**.
- But it **differs** in the **presence of tentacles on the head, extensive spots on the fins, scale-less maxilla**, number of spines on sub-orbital stray, etc.
- The rise in the temperature of sea water due to **global warming might induce the migration** of this species from different regions.

## 21. Kunming Declaration on biodiversity conservation

### Why in News?

The "Kunming Declaration" was adopted by over 100 countries in the ongoing virtual 15th meeting of the Conference of the Parties (COP) to the United Nations Convention on Biological Diversity (UNCBD).

### About

- The theme of the COP-15 is "**Ecological Civilization: Building a Shared Future for All Life on Earth**".
- COP15 is being held to **review the achievement and delivery** of the CBD's Strategic Plan for Biodiversity 2011-2020.

### 📌 Key points in Kunming Declaration

- It calls upon the parties to "**mainstream**" **biodiversity protection in decision-making** and recognise the importance of conservation in protecting human health.
- They should ensure that the **post-pandemic recovery plans contribute to the conservation** and sustainable use of biodiversity, promoting sustainable and inclusive development.
- The declaration expects signatory nations to **synchronize Biodiversity plans with the three UN decades program** which are on 'Sustainable Development', 'Ecosystem Restoration', Ecosystem Restoration.

### 📌 30 by 30 Target

- The declaration made a reference to the '30 by 30' target which is a key proposal being debated at the COP15, that would afford **30% of the Earth's land and oceans protected status by 2030**.

### 📌 Kunming Biodiversity Fund

- **China** has also pledged to **inject USD 233 million** into a **new fund to protect biodiversity** in developing countries. The fund is being referred to by China as Kunming Biodiversity Fund.
- It is the **right step in this direction**. However, some countries have reservations regarding this fund.

## 22. COP26 climate conference

### Why in News?

The UK will host the COP 26 UN Climate Change Conference from October 31 to November 12. It will be held in the Scottish Event Campus in Glasgow.

### About

- Background → COP comes under the United Nations Climate Change Framework Convention (**UNFCCC**) which was **formed in 1994**.
- Purpose → The UNFCCC was established to work towards “**stabilisation of greenhouse gas concentrations in the atmosphere**.”
- COP members have been **meeting every year since 1995** (COP1 was held in 1995 in Berlin).
- It laid out a list of responsibilities for the member states which included →
  - **Formulating measures** to mitigate climate change.
  - **Cooperating in preparing for adaptation** to the impact of climate change.
  - **Promoting education, training and public awareness** related to climate change.
- COP26 will work towards four goals →
  - Secure **global net-zero by mid-century** and **keep 1.5 degrees within reach**.
  - Adapt to **protect communities and natural habitats**.
  - Mobilise finance: To deliver on our first two goals, developed countries must make good on their promise to **mobilise at least \$100bn in climate finance per year by 2020**.
  - ‘Finalise the Paris Rulebook’: Leaders will **work together to frame a list of detailed rules** that will help fulfil the Paris Agreement.
- India’s Actions →
  - It is time for India to **update its Nationally Determined Contributions**.
    - NDCs detail the various efforts taken by each country to reduce the national emissions.
  - Aggressively **figure out how to transition our coal sector**
  - **Sector by sector plans** to bring about development - Decarbonise the electricity, transport sector and start looking at carbon per passenger mile.

## 23. Bengal Florican

### Why in News?

Environmentalists have recently written to the Assam government on the urgent need to prevent land-use changes at Kokilabari Seed Farm in the state to protect Bengal floricans and other species.

### About

- Bengal floricans (*Houbaropsis bengalensis*) are also called **Bengal bustards**.
- They inhabit **lowland dry, or seasonally inundated, natural and semi-natural grasslands** often interspersed with scattered scrub or patchy open forest.
- Distribution → The species is found in very small numbers in **India** and **Cambodia**. About a hundred of them are **present in Nepal**, and the species is **extinct in Bangladesh**.
  - India: In India, the species habitat lies in the floodplains of the country’s two largest rivers, **the Ganga and the Brahmaputra**.
  - In the **Ganga floodplains**, Bengal floricans are found in the **state of Uttar Pradesh** at places like the **Dudhwa and Pilibhit Tiger Reserve**.
  - In the **Brahmaputra delta**, the species is found in **Jaldapara National Park in West Bengal, Kaziranga and Manas National Parks** in Assam and **the D’Ering Wildlife Sanctuary** in Arunachal Pradesh.
- Conservation status →
  - IUCN Status: **Critically Endangered**
  - Indian Wildlife Protection Act, 1972: **Schedule-I**.
  - Convention on Migratory Species (CMS): **Appendix 1**
- Threats → The populations are in decline and threatened by **habitat loss through drainage**, conversion to agricultural land and plantations, the **invasion of alien species**, and **dam construction**.

### Kokilabari Seed Farm

- located in **Assam**.
- The farm is **only nine square kilometres** in area and about one-hundredth of the size of Manas. Yet as many as **25 Bengal floricans** have been seen there at one time.
- However, Land-use changes at the site and the plan to **convert the farm into a university campus** is posing a threat to the Bengal Florican.

## 24. Allium Negianum

### Why in News?

A plant discovered in Uttarakhand in 2019 has been newly confirmed as a new species of Allium.

### About

- The plant, called Allium Negianum is a **new species of onion**.
- It was discovered in the **Indo-Tibetan border area of Malari village**, Niti valley of Chamoli district in **Uttarakhand**.
- It is restricted to the **region of Western Himalayas** in India and hasn't yet been reported from anywhere else in the world.
- Condition of Growth →
  - It grows at **3000 to 4800 m above** sea level.
  - It can be found along **open grassy meadows, sandy soils along rivers**, and streams forming in snow pasture lands along alpine meadows.
    - The alpine meadows are locally known as "**Bugyal/Bugial**", where the **melting snow actually helps carry the seed** to more favourable areas.
- It has long been **known to local communities** and the onion from Niti Valley deemed the **best on the market**.

### 👉 Allium

- Allium is **one of the largest genera in Amaryllidaceae**, a family of herbaceous, mainly perennial and bulbous flowering plants.
- The genus has about **1,100 species** distributed worldwide, including **onion, garlic, scallion, shallot** and **chives**.
- It naturally occurs in **dry seasons** in the **northern hemisphere and South Africa**.
- Indian Himalayan region has two distinct centers of Allium diversity
  - The **western Himalaya** (over 85% of total diversity) and
  - The **eastern Himalaya** (6%), covering the alpine-sub temperate region.

## 25. Production Gap Report 2021

### Why in News?

The 2021 Production Gap Report was released by the leading research institutes and the United Nations Environment Programme (UNEP).

### About Report

- PGR was first introduced in **2019**.
- The report **tracks how governments worldwide are supporting fossil fuel production** through their policies, investments, and other measures.
- The released document is the **3rd assessment** of the production gap report.
- This report **highlights the discrepancy** between countries' planned fossil fuel production levels and the global levels necessary to limit warming to 1.5°C.

### 👉 Key findings



- All the world governments are **still planning to produce more than double the fossil fuels** than what the world requires to limit global warming to 1.5 °C.
- These projections would lead to around **240% more coal, 57% more oil, and 71% more gas in 2030** than global levels consistent with limiting warming to 1.5 °C.

### **United Nations Environment Programme**

- The UNEP is a leading **global environmental authority** established on **5th June 1972**.
- Functions → It **sets the global environmental agenda, promotes the sustainable development** within the United Nations system, and serves as an authoritative advocate for global environment protection.
- Major Reports → **Emission Gap Report, Adaptation Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.**
- Major Campaigns → **Beat Pollution, UN75, World Environment Day, Wild for Life.**
- Headquarters → **Nairobi, Kenya.**

## 26. Debrigarh Wildlife Sanctuary

### Why in News?

Odisha Government has decided to relocate around 420 families from four zero-connectivity villages in Debrigarh wildlife sanctuary.

### About

- Location → **Bargarh district of Odisha** near Hirakud dam (Mahanadi River).
- Background → It was **declared** as a wildlife sanctuary on **8th February 1985**.
- It is an important site for **in situ conservation of wildlife** and its habitat in the state of Odisha.
- Flora → **Dry deciduous forests**
- Fauna → **Four-horned antelope, Indian leopard, Indian elephant, sambar, chital, gaur,** etc.

### **Major Protected Areas in Odisha**

- National Parks → **Bhitarkanika National Park, Simlipal National Park.**
- Wildlife Sanctuaries → **Badrama WLS, Chilika (Nalaban island) WLS, Hadgarh WLS, Baisipalli WLS, Kotagarh WLS, Nandankanan WLS, Lakhari Valley WLS Gahirmatha (Marine) WLS.**

## 27. Amur Falcons

### Why in News?

Recently, Amur Falcons have reached the Tamenglong district of Manipur – the annual stopover.

### About

- Amur falcons(*Falco amurensis*) are the **world's longest travelling migratory raptors**.
- The Amur falcon is a **small raptor of the falcon family**.
- Distribution and Migration → They **breed in Siberia and Northern China** and migrate to winter in Southern Africa.
  - **Migrates west through India** and **across the Arabian Sea** to Southern Africa.
  - **Doyang Lake in Nagaland** is known as a stopover for the Amur falcons during their annual migration.
- Food → Feeds on **dragonflies and insects**.
- Conservation Status →
  - IUCN Status: **Least Concern**.
  - It is also protected under the **Indian Wildlife Protection Act, 1972** and the **Convention on Migratory Species(CMS)** to which India is a signatory.

- Threats → **illegal trapping and killing during migration**, prone to habitat loss from agricultural practices and land reclamation.

## 28. Hornbills

### Why in News?

Scientists from two organisations studied how fruiting plants and hornbills influenced each other’s distribution in the Namdapha Tiger Reserve.

### About

- Hornbills are of prime importance since they have a **symbiotic relationship** with several canopy trees in tropical forests.
- They are **attracted to such trees for food** and in turn, they scatter their seeds, creating orchards.
- The study shows that **forest patches** that have **rare trees like Canarium**, **attract hornbills in large numbers** (for food). In turn, hornbills end up dispersing seeds of a diverse array of plant species in higher numbers in these patches.

### 👉 Hornbills

- Hornbills get their name from the **horn-like structure on the top of their beak—the casque**.
- Habitat and Range → Hornbill distribution is globally **limited to Sub-Saharan Africa, Indian-Subcontinent, Philippines, Indonesia** and **the Solomon Islands**. In India, they are found in the Western Ghats and the northeastern states.
- Diet → Hornbills are **one of the biggest frugivores** (fruit-eating birds) in the Asian rainforest. Around 40-70% of their diet consists of **large ficus fruits, figs, drupes** and **berries, usually red or black in colour**.
- Types of Hornbills: India is home to **nine species of Hornbill**. These species are →

<p><b>The Great Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Western Ghats and Himalayas. <b>Largest of all hornbills in India, state bird of Arunachal Pradesh and Kerala.</b></li> <li>• <b>IUCN Red List</b> → Vulnerable</li> <li>• <b>CITES</b> → Appendix I</li> <li>• <b>Wildlife Protection Act (WPA), 1972</b> → Schedule I</li> </ul>	<p><b>Rufous-necked Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → It has the Northernmost extent. Whole of North-East India to Mahananda Wildlife Sanctuary in West Bengal.</li> <li>• <b>IUCN Red List</b> → Vulnerable</li> <li>• <b>CITES</b> → Appendix I</li> </ul>	<p><b>Wreathed Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → North-East India.</li> <li>• <b>IUCN Red List</b> → Vulnerable</li> <li>• <b>CITES</b> → Appendix II</li> </ul>
<p><b>Narcondam Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Endemic to the Indian island of Narcondam in Andamans.</li> <li>• <b>IUCN Red List</b> → Vulnerable</li> <li>• <b>CITES</b> → Appendix II</li> <li>• <b>WPA, 1972</b> → Schedule I</li> </ul>	<p><b>Malabar Pied Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Evergreen and moist deciduous forests in India and Sri Lanka.</li> <li>• <b>IUCN Red List</b> → Near Threatened</li> <li>• <b>CITES</b> → Appendix II.</li> </ul>	<p><b>Oriental Pied Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b>: Subtropical or tropical moist lowland forests.</li> <li>• <b>IUCN Red List</b>: Least Concern</li> <li>• <b>CITES</b>: Appendix II</li> </ul>
<p><b>Austen’s Brown Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Forests of North East India, majorly in Namdapha National Park, Arunachal Pradesh.</li> <li>• <b>IUCN Red List</b> → Near Threatened</li> </ul>	<p><b>Malabar Grey Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Western Ghats.</li> <li>• <b>IUCN Red List</b> → Least Concern</li> </ul>	<p><b>Indian Grey Hornbill</b></p> <ul style="list-style-type: none"> <li>• <b>Habitat</b> → Foothills of Southern Himalayas.</li> <li>• <b>IUCN Red List</b> → Least Concern.</li> </ul>

## 29. 3 new fish species

### Why in News?

Recently, Department of Zoology of Dera Natung Government College of Itanagar in Arunachal Pradesh has discovered three new species of fish of genus *Aborichthys* of family Nemachelidae.

### About

- Named → The three fish species discovered have been named as ***Aborichthys uniobarensis***, ***Aborichthys barapensis*** and ***Aborichthys palinensis***.

- These fish species are **distributed in streams** like **Senki**, **Barap** and **Palin**, which are the tributaries of Brahmaputra river system.

#### **Aborichthys**

- Aborichthys is an **elongate and slender-bodied bottom-dwelling freshwater stone loach fish** that inhabits the moderate-to-fast flowing water of mountain rivers, streams and drainages of the Brahmaputra river basin. These fishes are **endemic to the eastern Himalayas**.
- The fishes of this species are characterised by **narrow oblique bars on the body, with a black ocellus** at the upper extremity of the caudal-fin base and a rounded or truncated caudal fin.

## 30. Snow Leopard

### Why in News?

International Snow Leopard Day is observed on 23rd October.

### About

- Scientific Name → **Panthera uncia**.
- Habitat → **Cold High Mountains**.
- These are found in 12 countries including China, Bhutan, Nepal, India, Pakistan, Afghanistan, Russia & Mongolia.
- Diet → Carnivore & hunt blue sheep, **Argali wild sheep**, **ibex**, **marmots**, **pikas**, **hares**, etc.
- Features →
  - One of the world's **most elusive cats** & are **perfectly equipped to thrive in extreme**, high-elevation habitats.
  - Insulated with thick **white-grey coats** spotted with **large black rosettes & wide, fur-covered feet act** as natural snowshoes. The tail helps in balancing and also covers the body while sleeping.
  - Shy & rarely seen in the wild.
- Protection Status →
  - IUCN Red List: **Vulnerable**.
  - Wildlife Protection Act, 1972: **Schedule I**.
  - **Appendix I** of the Convention on International Trade of Endangered Species (**CITES**).

#### **Conservation Efforts by India:**

- The Government of India has identified the snow leopard as a **flagship species** for the high altitude Himalayas.
- India is also **party to the Global Snow Leopard and Ecosystem Protection (GSLEP) Programme** since 2013.
- HimalSanrakshak → It is a **community volunteer programme**, to protect snow leopards, launched in October 2020.
- In 2019, First National Protocol was also launched on **Snow Leopard Population Assessment** which has been very useful for monitoring populations.
- Project Snow Leopard (PSL) → It was launched in **2009** to **promote an inclusive and participatory approach** to conserve snow leopards and their habitat.
- SECURE Himalaya → Global Environment Facility (**GEF**)-United Nations Development Programme (**UNDP**) **funded** the **project on conservation of high altitude biodiversity** and reducing the dependency of local communities on the natural ecosystem.

## 31. Stockholm+50

### Why in News?

The United Nations General Assembly has agreed on the way forward for plans to host Stockholm+50 at the highest possible level in Stockholm, Sweden in June 2022.

### About

- What is it? → Stockholm+50 is an **international meeting** to be **hosted by the Government of Sweden** and convened by the United Nations General Assembly in Stockholm, Sweden.
- Theme → **A healthy planet for the prosperity of all — our responsibility, our opportunity.**
- The meeting will commemorate **50 years since the 1972 UN Conference on the Human Environment**, which made the environment a pressing global issue for the first time.
- Objectives →
  - To reflect on the **urgent need for actions** towards a healthy planet and prosperity of all,
  - To achieve a **sustainable and inclusive recovery** from the COVID-19 pandemic,
  - To accelerate the **implementation** of the **environmental dimension of Sustainable Development** in the context of the Decade of Action.

### 📁 Stockholm Conference

- The 1972 United Nations Conference on the Environment in Stockholm was the **first world conference to make the environment a major issue.**
- During the conference, participants adopted the **Stockholm Declaration**, which placed environmental issues at the forefront of international concerns. The conference also marked the **start of a dialogue between industrialized and developing countries** on the link between economic growth, the pollution of the air, water and oceans and the well-being of people around the world.
- One of the major results of the Stockholm conference was the **creation of the United Nations Environment Programme (UNEP).**

## 32. Greenhouse Gas Bulletin Report

### Why in News?

The World Meteorological Organization (WMO) has released its Greenhouse Gas Bulletin Report ahead of COP26 in Glasgow, UK.

### About key findings

- The **increase in CO<sub>2</sub> from 2019 to 2020** was **slightly lower** than that observed from 2018 to 2019 but higher than the average annual growth rate over the past decade.
- This is despite the approximately **5.6% drop in fossil fuel CO<sub>2</sub> emissions in 2020** due to restrictions related to the pandemic.
- For **methane**, the **increase from 2019 to 2020** was higher than that observed from 2018 to 2019 and also higher than the average annual growth rate over the past decade.
- For **nitrous oxides**, the **increase was higher** and **also than the average** annual growth rate over the past 10 years.
- Roughly **half of the CO<sub>2</sub> emitted by human activities** today remains in the atmosphere. The other half is taken up by oceans and land ecosystems.

### 📁 World Meteorological Organization (WMO)

- WMO is a **specialized agency of the United Nations.**
- The World Meteorological Organization (WMO) is an **intergovernmental organization** with a membership of **192 Member States and Territories.**
- Functions → Dedicated to **meteorology** (weather), **climatology** (climate), **operational hydrology** (water) and **other related geophysical sciences** such as oceanography and atmospheric chemistry.
- Predecessor organization — International Meteorological Organization (**IMO**) — **founded in 1873.**
- Headquartered → **Geneva, Switzerland.**
- Other Reports → **Status of the World Climate.**

## 33. Trigonopterus corona

## Why in News?

Scientists have discovered a new species of beetle named *Trigonopterus corona* on the Indonesian island of Sulawesi.

## About

- The naming reflects the **large impact of the Covid-19 pandemic** on this project, Pensoft Publishers, which brings out the journal.
- *Trigonopterus* is a **hyperdiverse genus of flightless hidden-snout weevils** (Cryptorhynchinae) ranging over the Indo-Australian-Melanesian archipelago.
- Weevils are often called **flour bugs** because that is where they are **frequently found**, they are a **type of beetle with an elongated snout**.
- The genus *Trigonopterus* **originated in Northern Australia** and rapidly **diversified in New Guinea** before colonizing Sulawesi and dispersing further west to Sundaland (a bio-geographical area of south-eastern Asia).
- Note → It is not the only insect species to be named after the pandemic. In **April 2021**, a new species of caddisfly (a moth-like insect) was collected near a stream in Kosovo, and named ***Potamophylax coronavirus***.



## 👉 Island of Sulawesi

- It is **one of the four Greater Sunda Islands of Indonesia**.
- It is a curiously **shaped island** with four distinct peninsulas that form three major gulfs, **Tomini (the largest)** on the northeast, **Tolo** on the east, and **Bone** on the south.
- The highest peak is **Mount Rantekombola**, or **Mario**, at 11,335 feet.

## 34. Bugun Liocichla

### Why in News?

A five-day Bugun Liocichla Utsav is being organized at Eaglenest wildlife sanctuary in Arunachal Pradesh. The festival was held to commemorate 15 years of the bird's discovery.

### About

- Bugun liocichla (*Liocichla bugunorum*) is a **bird species**.
- History → It was **first spotted in 1995 in Arunachal Pradesh**.
- However, the bird was **first described in 2006** after being **discovered in Eaglenest Wildlife Sanctuary** in Arunachal Pradesh by an astrophysicist, Ramana Athreya.
- Named After → The bird has been named in **honour of the efforts** of the **Bugun community of Singchung village** in West Kameng district in conserving the wildlife and forest of the area.
- Significance → Bugun liocichla was the **first bird discovered** since India's Independence.
- Habitat → The bird occupies a **3-4 square kilometre area** in the **temperate forest** within the traditional lands of Singchung village in Arunachal Pradesh.
  - It is mostly seen in select pockets of **Eaglenest Wildlife Sanctuary** and **Singchung Bugun Village Community Reserve (SBVCR)**.
- Conservation Status → The International Union for the Conservation of Nature(IUCN) has classified this species as **critically endangered**.
- Note → SBVCR won the **India Biodiversity Award 2018** in the '**Conservation of wildlife species**' category for its efforts to conserve Bugun Liocichla.

## 35. Climate Vulnerability Index

### Why in News?

A report titled “Mapping India’s Climate Vulnerability – A District-level Assessment” has been released.

### About

- Released by → **Council on Energy, Environment and Water (CEEW)** (not-for-profit policy research institution).
- The index has **analyzed 640 districts** in India and found that 463 of these are vulnerable to extreme floods, droughts and cyclones etc.

#### States with highest vulnerability index rank

- ▶ Assam
- ▶ Andhra Pradesh
- ▶ Maharashtra
- ▶ Karnataka
- ▶ Bihar
- ▶ Manipur
- ▶ Rajasthan
- ▶ Arunachal Pradesh
- ▶ Sikkim
- ▶ Odisha

#### The findings

- ▶ 27 of 35 states and UTs are highly vulnerable to extreme hydro-met disasters and their compounded impacts
- ▶ 463 of 640 districts are vulnerable to extreme floods, droughts, and cyclones
- ▶ Over 45% of these

districts have undergone unsustainable landscape and infrastructure changes

- ▶ 59% of districts located in the eastern zone are highly vulnerable to extreme cyclone events
- ▶ In the western zone, more than 41% of districts are cyclone hotspots

### 📌 key findings

- There are **183 hotspot districts** that are highly vulnerable to more than one extreme climate event. **Assam, Andhra Pradesh, Maharashtra, Karnataka** and **Bihar** are **most vulnerable** to extreme climate events such as floods, droughts and cyclones in India.
- North-eastern states** are more **vulnerable to floods**
- South and Central Indian states** are most vulnerable to **extreme droughts**.
- “Unsustainable landscape and infrastructure changes”** are the prime reasons for vulnerability to climate risks.

## 36. Gray or Hanuman Langur

### Why in News?

A troop of Gray langurs (*Semnopithecus entellus*) with their pelage (fur or hair) coloured blue was spotted in an industrial neighbourhood of Ankleshwar in Gujarat.

### About

- Also called **Hanuman**, Langur, named after the Hindu god, Hanuman.
- Distribution → They are **found across South Asia**. Its 16 subspecies’ range extends **from the Himalayas in the north to peninsular India** in the south. The bulk of the gray langur distribution is **within India**.
- In the Indian Subcontinent, their distribution is reported in **Bhutan, northern India** and **Nepal**.
- Presence in India → Hanuman Langurs are found in **almost all the parts of India**. They are easily spotted in the **Bandhavgarh National Park** and **Sariska Tiger Reserve**.
- Habitat → It is found both in **forests** and **near human habitations**. They prefer tropical, dry thorn shrub, pine and alpine forests as well as urban areas.
- Protection Status →
  - IUCN Red List: **Least Concern**.
  - CITES: **Appendix-I**.
  - Wildlife Protection Act, 1972 : **Schedule-I**.
- Threat → **Deforestation, Mining** and **Pollution**.

## 37. New non-toxic organic photocatalyst

### Why in News?

Recently, Indian Scientists have designed a cost-effective metal-free catalyst to convert carbon dioxide to methane by absorption of visible light.

### About

- Scientists used the **photochemical process** to convert atmospheric CO2 into methane.
  - A **photochemical reaction** is a chemical reaction initiated by the absorption of energy in the form of light (photons), which results in certain products.



- Methodology →
  - Currently, there are **several methods** for CO<sub>2</sub> reduction such as photochemical, electrochemical, photochemical and photothermal. But most of **these methods contain catalysts that are toxic** and have **expensive metal counterparts**.
  - To overcome this challenge, the scientists designed a catalyst that has a **metal-free porous organic polymer** called the **Conjugated Microporous Polymer (CMP)**.
  - This polymer can **uptake CO<sub>2</sub>** onto its surface due to its high CO<sub>2</sub> intake capability at room temperature, **converting it into methane** as a value-added product.
- Benefits → Besides reducing the atmospheric CO<sub>2</sub>, this method will yield **methane** that can be **widely used in vehicles**.

## 38. Possibly Extinct species

### Why in News?

A number of animals and plants have been listed as 'possibly extinct' in the latest edition of the International Union for the Conservation of Nature (IUCN)'s Red List of Threatened Species.

### About Possibly Extinct

- The term is taken as a marker **to estimate after when the presence / population of the species has declined**. Species marked thus have been last assessed in the 1900s post which their presence and updates to their population has not been found.
  - Those marked '**extinct post-500**' include Green peafowl, cheetah, hairy-nosed otter, Banteng, a bovid found today in southeast asia, the Sumatran and javan rhino and the Osteobrama belangeri , a fish species endemic to Manipur.
  - **Indian species that are possibly extinct**: Tentacled butterfly ray; Dwarf sawfish; Fire coral; Coconut crab (the largest terrestrial arthropod in the world);
  - **Fishes**: Bovany barb (native to the cauvery river system), Deolali minnow, the Deccan barb and the Nilgirimystus (all 3 are found in the deccan);
  - **Birds** : Pink-headed duck, Siberian crane, Buffy fish-owl or Malaya owl.

### Other Key updates by IUCN:

- Over 900 species of animals have become extinct.
- IUCN also officially launched its "**green status**" – the first global standard for assessing species recovery and measuring conservation impacts.

### Species whose statuses changed:

- **Komodo dragon**\_(world's largest living lizard, endemic to Indonesia) has been moved from **vulnerable to endangered**.
- **Albacore Tuna and Yellowfin Tuna** were moved from near **threatened to least concern**.
- **Yeracud Day Gecko**\_was moved from **least concern to endangered**.
- **Satara Gecko** was moved from **vulnerable to critically endangered**.
- **Yellow Monitor** was moved from **least concern to endangered**.

# Science & Technology

## 1. Global Roadmap to Defeat Meningitis

### Why in News?

Recently, World Health Organization (WHO) and its partners launched the first-ever global strategy to defeat meningitis. Meningitis is a debilitating disease that kills hundreds of thousands of people each year.

### About

- The strategy 'the Global Roadmap to Defeat Meningitis by 2030', aims to **prevent infections and improve care** and **diagnosis for those affected**.
- It also aims to **eliminate epidemics of bacterial meningitis** (deadliest form of the disease) and to **reduce deaths by 70 per cent** and halve the number of cases.
- The strategy could **save more than 200,000 lives annually** and significantly reduce disability caused by the disease.

### 👉 Meningitis

- Meningitis is an **inflammation** (swelling) **of the protective membranes** covering the brain and spinal cord.
- It is predominantly caused by **bacterial** and **viral infection**. However, injuries, cancer, certain drugs, and other types of infections also can cause meningitis.
- Symptoms → **Severe headache** that seems different from normal, Sudden **high fever**, **Stiff neck**, **Confusion or difficulty concentrating**, etc.
- Transmission → Most bacteria that cause meningitis such as **meningococcus**, **pneumococcus** and **Haemophilus influenzae** are carried in the human nose and throat.
  - They spread from **person to person by respiratory droplets** or throat secretions.
  - Group B streptococcus (bacteria) is often **spread from mother to child** around the **time of birth**.
- Impact → Meningitis is **fatal and debilitating**, **striking fast with serious health**, economic and social consequences, including life-long disabilities, and affecting people of all ages in all countries.
  - Meningitis caused by bacterial infection causes around **2,50,000 deaths a year** and can **lead to fast-spreading epidemics**.
- Spread → Meningitis epidemics have occurred in the last decade in all regions of the world. But it is most common in the '**Meningitis Belt**,' which **spans 26 countries across sub-Saharan Africa**.
- Available Vaccines → **Meningococcal**, **Haemophilus influenzae type b** and **Pneumococcal vaccines**.
- Treatment → A **range of antibiotics** is used to **treat meningitis**, including **penicillin**, **ampicillin**, and **ceftriaxone**.

## 2. Lucy Mission

### Why in News?

NASA will launch its first spacecraft Lucy on an Atlas V rocket to study Jupiter's Trojan asteroids to collect insights into the solar system's formation.

### About

- Named → The mission is named as 'Lucy' **after an ancient fossil** that provided insights into the evolution of human species.
- Purpose → To **investigate the group of rocky bodies** circling the Sun in two swarms, one preceding Jupiter in its orbital path and the other trailing behind Jupiter.
- After receiving boosts from Earth's gravity, Lucy will embark on a **12-year journey to 8 different asteroids**.
  - Among the 8 asteroids, one asteroid is in the Main Belt between Mars and Jupiter and then 7 Trojan Asteroids.
- Working → Lucy will fly by its **targets within 400 kms** of their surfaces.

- It will use its **onboard instruments** and **large antenna** to investigate their geology, including composition, mass, density and volume.
- It will be the **first solar-powered to venture this far from the Sun**, and will observe more asteroids than any other spacecraft before it.
- Significance → Lucy will offer **new insights into the history of the solar system**, including how all of the planets came to be and why they are aligned in their current configuration.

### 📖 Trojan Asteroids

- Trojan asteroids or Jupiter Trojans are **group of asteroids** (more than 7,000 in number) that **share the planet Jupiter's orbit around the Sun**.
- They are **leftovers of the primordial material** from which Jupiter and the other outer planets were formed.
- Despite the fact that they really are in a **very small region of space**, they're **very physically different** from one another.
- Trojans are a **type of co-orbital object**, where a star and a planet orbit around a common barycentre.

## 3. Diabetes

### Why in News?

A first-of-its kind report of long-term survivors of Type 1 Diabetes (T1D) from India, a multi-centric study was published in the peer-reviewed journal Diabetes Technology and Therapeutics.

### About

- What is it? → Diabetes is a **Non-Communicable Disease** (NCD) that occurs either when the **pancreas does not produce enough insulin** (a hormone that regulates blood sugar, or glucose), or when the body cannot effectively use the insulin it produces.
- Type 1 diabetes → It mostly **affects children of age 14-16 years**. This type occurs when the body **fails to produce sufficient insulin**. They must take **artificial insulin** daily to stay alive.
- Type 2 diabetes → While the body **still makes insulin**, unlike in type 1, the cells in the body do **not respond to it** as effectively as they once did. The population with 45 and above age group is the most affected with it.
  - This is the most common type of diabetes and it has strong links with obesity.
- Diabetes affects the five major organs → **Kidney, Heart, Blood vessels, Nervous System, and Eyes** (retina).
- Responsible factors → **Unhealthy diet, lack of physical activity, harmful use of alcohol**, overweight/obesity, tobacco use, etc.

### 📖 Other observations made in this study

- Patients who have T1D have **reduced life-span** even with insulin being administered to them
- Subjects who were able to **control all the three had better glycemic** and **blood pressure control**, more favourable lipid profiles and lower prevalence of complications which helped them to increase their life-span compared to those who could not control all the three
- T1D prevalence in India → **India is home to more than 95,000 children** with T1D, reported to be the highest in the world, according to the 9th International Diabetes Federation Atlas

### 📖 National Programme for prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and strokes (NPCDCS):

- Launched in → **2010** in **100 districts across 21 States**, in order to prevent and control the major NCDs.
- Focus → The main focus of the programme is on **health promotion, early diagnosis, management and referral of cases**, besides strengthening the infrastructure and capacity building.

- The funds are being provided to States under **NCD Flexi-Pool** through State PIPs of respective States/UTs, with the **Centre to State share in ratio of 60:40** (except for North-Eastern and Hilly States, where the share is 90:10).

#### Fit India movement

- Launched recently to **highlight the need to stay healthy** amid rising instances of lifestyle disorders and non-communicable diseases (NCDs).

## 4. Barium

### Why in News?

The Supreme Court said a preliminary enquiry by the CBI into the firecracker industry, including in Tamil Nadu, revealed rampant violation of its ban on use of toxic ingredients like barium and its salts.

### About

- What is it? → Barium is a **chemical element** having atomic number 56.
- It is a **soft, silvery alkaline earth metal**.
- Because of its high chemical reactivity, barium is **never found in nature** as a free element.
- Applications →
  - As a **component of high-temperature superconductors** and **electroceramics**.
  - Added to steel and cast iron to **reduce the size of carbon grains**
  - Added to **fireworks** to **impart a green color**.
  - As **X-ray radiocontrast agents** for imaging the human gastrointestinal tract.
  - As **rodenticides**.
- Harmful effects →
  - Soluble barium compounds are **poisonous**.
  - In higher doses, they **affect the nervous system, causing cardiac irregularities, tremors, weakness, anxiety**, etc.
  - However, Barium is **not carcinogenic** and does **not bioaccumulate**.

## 5. IAO Hanle

### Why in News?

According to a recent study, the Indian Astronomical Observatory (IAO) is becoming one of the promising observatory sites globally.

### About

- Hanle site is as **dry as the Atacama Desert** in Chile and **much drier than Devasthal (Uttarakhand)** and has around 270 clear nights in a year and is also one of the **emerging sites for infrared** and **sub-mm optical astronomy**.
- This is because water vapour absorbs electromagnetic signals and reduces their strength.
- It has advantages of **more clear nights, minimal light pollution, background aerosol concentration, extremely dry atmospheric conditions**, and **uninterrupted monsoon**.
- Such conditions are considered **crucial for astronomers** to **build huge telescopes** and plan for future observatories and predict how they will vary with time.
- Other Promising Sites →
  - Merak observatories in Ladakh.
  - Devasthal in Nainital, Ali Observatory in the Tibet Autonomous Region in China.
  - South African Large Telescope in South Africa.
  - University of Tokyo Atacama Observatory and Paranal in Chile.
  - Mexico's National Astronomical Observatory.

### 📍 Indian Astronomical Observatory (IAO)

- Location → It is located in **Hanle near Leh in Ladakh** and has one of the **world's highest located sites for optical, infrared and gamma-ray telescopes**.
- Operated by → the **Indian Institute of Astrophysics, Bangalore**.
- It is currently the ninth highest optical telescope in the world, situated at an elevation of 4,500 meters (14,764 ft).
- The Observatory has two active telescopes →
  - These are the 2.01 meter optical-infrared **Himalayan Chandra Telescope (HCT)** and,
  - a **High Altitude Gamma Ray Telescope (HAGAR)**.

## 6. Nobel Prize in Medicine 2021

### Why in News?

Recently, two United States-based scientists, David Julius and Ardem Patapoutian, have been awarded the 2021 Nobel Prize for Physiology/Medicine for their discoveries of receptors for temperature and touch.

### About their discoveries

- They discovered the **molecular sensors in the human body** that are sensitive to heat, and to mechanical pressure, and make us “feel” hot or cold, or the touch of a sharp object on our skin.
- David Julius → He discovered **TRPV1**, a **heat-sensing receptor**.
  - His findings on the skin’s sense of temperature was **based on how certain cells react to capsaicin**, the molecule that makes chili peppers spicy, by simulating a false sensation of heat.
- Ardem Patapoutian → He discovered **two mechanosensitive ion channels** known as the **Piezo channels**.
  - The **Piezo1** is named after the Greek word for pressure, ‘πίεσι’.
  - He is credited for **finding the cellular mechanism** and **the underlying gene** that translates a mechanical force on our skin into an electric nerve signal.
- Significance of these discoveries →
  - This knowledge is being used to **develop treatments** for a wide range of disease conditions, including chronic pain.

### 📍 Somatosensation

- Somatosensation is a **collective term for the sensations** of touch, temperature, body position, and pain recognized through neural receptors in the skin and certain internal organs.
  - It includes processes such as” **mechanoreception, thermoreception, proprioception**.

### 📍 About Nobel Prizes

- The prestigious award comes with a **gold medal** and **10 million Swedish kronor** (over \$1.14 million).
- The prize money comes from a bequest left by the prize’s creator, **Swedish inventor Alfred Nobel**, who died in 1895.
- The **Nobel Prize for Physiology or Medicine** is awarded for discovery of major importance in **life science** or **medicine**.
- **Karolinska Institutet** (now The Nobel Assembly at Karolinska Institutet) selects the winner.
- Candidates eligible for the medicine prize are **nominated by nominators** who have **received an invitation from the Nobel Committee** to submit names for consideration. No one can nominate herself or himself.

## 7. Nobel Prize in Physics 2021

### Why in News?

Three scientists — Syukuro Manabe (90) and Klaus Hasselmann (89) and Giorgio Parisi (73) — have been awarded the Nobel Prize for physics 2021. This is the first time climate scientists have been awarded the Physics Nobel.

### About

- Manabe and Hasselmann were awarded for their work in **“the physical modelling of Earth’s climate, quantifying variability and reliably predicting global warming”**.
- Demonstrated how **increases in the amount of carbon dioxide** in the atmosphere would **increase global temperatures**, laying the foundations for current climate models.
- Parisi was awarded for **“the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales.”**
- He **“built a deep physical and mathematical model”** that made it possible to understand complex systems in fields such as mathematics, biology, neuroscience and machine learning.
- Last year, scientists **Roger Penrose**, **Reinhard Genzel** and **Andrea Ghez won** the Nobel physics prize for their **discoveries concerning black holes**.

#### **Climate Science and Nobel Prize Recognition:**

- The Intergovernmental Panel on Climate Change (**IPCC**) had **won the Peace Nobel in 2007**, an acknowledgement of its efforts in creating awareness for the fight against climate change.
- A **Chemistry Nobel to Paul Crutzen in 1995**, for his **work on the ozone layer**, is considered the only other time someone from atmospheric sciences has won this honour.

## 8. Nobel Prize in Chemistry 2021

### Why in News?

The 2021 Nobel Prize in Chemistry was awarded to Benjamin List and David W C MacMillan “for the development of asymmetric organocatalysis”.

### About

- Catalysts are **substances** that **control and accelerate chemical reactions, without becoming part of the final product**.
- For example, catalysts in cars **transform toxic substances in exhaust fumes** into harmless molecules.
- Our bodies also contain **thousands of catalysts** in the **form of enzymes**, which chisel out the molecules necessary for life.
- In the past, it was believed that there are **just two types** of catalysts available: **metals** and **enzymes**. Now, there is a third type of catalyst i.e., **asymmetric organocatalysis**.
- How does it work?
  - Organocatalysts **bind to the reacting molecules** to **form short-lived intermediates** that are more reactive than the substrate molecules on their own.
  - Being chiral, the catalyst **transfers its handedness to the substrate**, **controlling** which side of the intermediate can react further.
- Significance →
  - These new catalysts are thus **fundamental tools for chemists** and **many research areas** and industries are dependent on chemists’ ability to construct molecules.
  - A new generation of small-molecule catalysts is **more friendly for the environment** and **cheaper to produce**.
  - Organocatalysis finds several **applications in pharmaceutical research** and **other industries**.

## 9. Indian Space Association

### Why in News?

The PM has launched the Indian Space Association (ISpA), an industry body consisting of various stakeholders of the Indian space domain.

### About



- Aim → ISpA aims to be a **forum of the space industry** in the Indian private sector and partner the Government of India and other key stakeholders across space industry segments in making the nation **self-reliant in the area** as well as to **become a global service provider**.
- ISpA aims to contribute to the Government of India's vision of **making India Atmanirbhar and a global leader in the space arena**, which is fast emerging as the next growth frontier for mankind.
- Composition/members →
  - ISpA is represented by **leading home grown** and **global corporations** with advanced capabilities in space and satellite technologies.
  - Its founding members include **Bharti Airtel, Larson & Toubro, Nelco** (Tata Group), **OneWeb, Mapmyindia, Walchandnagar Industries** and **Alpha Design Technologies**.
  - Other core members include **Godrej, Hughes India, Ananth Technology Limited, Azista-BST Aerospace Private Limited, BEL, Centum Electronics, Maxar India**.
- Functions →
  - The association will **engage with stakeholders** across the ecosystem for the formulation of an **enabling policy framework** that fulfils the Government's vision.
  - ISpA will also work towards **building global linkages** for the Indian space industry to bring **in critical technology** and investments into the country to **create more high skill jobs**.
  - ISpA also plans to work in **very close coordination** with IN-SPACE to further the space vision of the Government.
- Significance →
  - With our **large talent pool, growing prowess of home grown technology startups** and **private enterprises** the country is at an inflexion point of what will be a giant leap in the space arena.
  - India has the potential to become a **technology leader** and **frugal service provider** to the global space industry.
- The current size of the global space economy stands at about **USD 360 billion**.
- India accounts for only about **2% of the space economy** with a potential to capture 9% of the global market share by 2030.

## 10. Quantum Key Distribution

### Why in News?

Centre for Development of Telematics (C-DOT), the premier telecom R&D centre of the Department of Telecommunications has unveiled an indigenously developed Quantum Key Distribution (QKD) solution Lab.

### About

- What is it? → It is a **secure communication technique** that uses quantum properties of photons, the elementary particles of light, to **encrypt secret keys** that can be shared by two parties to protect their communications.
- Mechanism →
  - The security of QKD stems from the **ability to detect any intrusion** on the QKD transmission. Because of the unique and fragile properties of photons, any third party (or eavesdropper) who **tries to read** or **copy the photons in any way will change the photons' state**.
  - The change will be **detected by the endpoints, alerting them** that the key has been tampered with and must be discarded. A **new key is then transmitted**. Moreover, since the keys generated are truly random, they are protected from future hacking attempts.
- Need → QKD is essential to **address the threat** that **rapid advancement in Quantum Computing poses** to the security of the data being transported by various critical sectors through the current communication networks.

## 11. CRISP-M tool

### Why in News?

Govt. of India launched Climate Resilience Information System and Planning (CRISP-M) tool under Mahatma Gandhi NREGA.

### About

- CRISP-M is a **web and mobile phone-based Geographic Information System(GIS) aided tool** that has been designed to help communities make climate-smart decisions.
- The tool will help **integrate climate information** in the GIS-based planning and implementation of Mahatma Gandhi NREGA.
- This tool will be **used in seven states** where the Foreign Commonwealth and Development Office (FCDO), Government of UK and Ministry of Rural Development, Government of India are jointly working towards climate resilience.
  - The states are **Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh, Odisha** and **Rajasthan**.

### 📌 Geographic Information System(GIS)

- GIS is a system that **captures, stores, checks** and **displays data related to positions on Earth's surface**.
- It can **show many different kinds of data** on one map such as streets, buildings, and vegetation. This enables people to more easily see, analyze and understand patterns and relationships.

## 12. SC120-LOX

### Why in News?

Hindustan Aeronautics Ltd (HAL) has delivered the 'heaviest' Semi-Cryogenic propellant tank (SC120-LOX) to the Indian Space Research Organisation (ISRO).

### About

- The semi cryo-liquid oxygen (LOX) tank - **the first developmental welded hardware** - is a part of the SC120 stage.
- SC120 stage is intended for payload enhancement by **replacing the L110 stage** in the existing GSLV Mk-III launch vehicle.
- **HAL, strategic reliable partner to ISRO**, has delivered critical structures, tankages, satellite structures for the PSLV, GSLV-Mk II and GSLV-Mk III launch vehicles since the last 5 decades.

### 📌 Semi Cryogenic Engine

- Unlike a Cryogenic engine, a Semi Cryogenic engine **uses Refined kerosene** instead of liquid hydrogen.
- The **liquid oxygen** is **used as a Oxidiser**.
- That's the advantage of using a Semi Cryogenic engine as it **requires Refined Kerosene** which is **lighter than liquid fuel** and can be stored in a normal temperature.
  - Kerosene **combined with liquid oxygen** provide a **higher thrust** to the rocket.
- Refined Kerosene **occupies less space**, making it possible to **carry more propellant** in a **Semi Cryogenic engines fuel compartment**.
- A semi cryogenic engine is **more powerful, environment friendly** and **cost effective** as compared to a cryogenic engine.

### 📌 SCE200

- SCE200 (under development) is an **Indian example** of **Semi-Cryogenic Engine**.
- This engine is expected to **power ISRO's** upcoming **Unified Launch Vehicle (ULV)** and **Reusable Launch Vehicle (RLV)**.
- Semi-Cryogenic Engine **burns liquid oxygen (LOX)** and **RP-1 kerosene** in an oxidizer-rich staged combustion cycle.
- [A cryogenic engine uses Liquid Oxygen and Liquid Hydrogen (LH2) as propellants.]

## 13. Xenotransplantation

## Why in News?

New York surgeons have successfully transplanted a kidney from a genetically engineered pig into a brain-dead human.

## About

- What is it? → Xenotransplantation or heterologous transplant is the **process of transplanting living cells, tissues or organs between different species.**
- Such cells, tissues or organs are called **xenografts** or **xenotransplants**.
- Observation →
  - During the observation, the **kidney began functioning** and **producing large amounts of urine** within minutes of being connected to the person's blood vessels.
  - **Creatinine** which is cleared from the blood by the kidney **dropped from 1.9 to 0.8** demonstrating that the kidney was functioning optimally.
  - If found compatible in the long run, this process of Xenotransplantation could help provide an **alternative and additional supply of organs for people facing life-threatening diseases.**

## 👉 GalSafe Pigs

- The transplant **used a kidney** that was **obtained from a pig** that had **undergone editing** to knock out a gene that codes for a sugar molecule called **Alpha-gal**.
- Alpha-gal is **not normally found in humans** and this molecule can elicit a devastating immune response in humans.
- The pigs with this gene alteration are called **GalSafe pigs**.
- GalSafe pigs have been **FDA approved for human use** for those who have pork allergies and also for use in pharmacology.
- Generally, pigs are preferred, as they are **easier to genetically modify**.
- They also **breed better with large litter, grow faster**, and are less likely to transmit infections. The size of their organs is also **similar to humans**.

## 14. Innovations for You

### Why in News?

NITI Aayog's Atal Innovation Mission (AIM) launched a new digi-book-called "Innovations for You".

### About

- What is it? → Innovations for You is a **digital book**.
- Aim → aims to **showcase the success stories** of Atal Innovation Mission's Startups in different domains.
- These startups have worked to **create new, disruptive** and **innovative products, services** and solutions that can pave a path for a sustainable future.

### 👉 Atal Innovation Mission and its Initiatives

- **Atal innovation mission(AIM)** → It was **set up by NITI Aayog** in **2016** to **promote a culture of innovation and entrepreneurship** by creating institutions and programs that enhance innovation in schools, colleges, and entrepreneurs in general.
- **Atal Tinkering Labs(ATL)** → It aims to **foster curiosity, creativity** and **imagination in young minds** and **inculcate skills** such as design mindset, computational thinking, adaptive learning, physical computing among others.
- **Atal Incubation Centres(AICs)** → These centres have been **established at universities, institutions** and **corporates to foster and support world-class innovation**, dynamic entrepreneurs who want to build scalable and sustainable enterprises.
- **Atal New India Challenge** → It is an initiative aimed at **supporting innovators to create products/solutions** based on advanced technologies in areas of national importance and social relevance through a grant-based mechanism.

- **Atal Community Innovation Centers** → They have been launched to **encourage a spirit of entrepreneurship** in the underserved/unserved regions of India by providing enabling infrastructure and facilitating an environment for innovation.
- **Atma Nirbhar Bharat ARISE-ANIC program** → It is a **national initiative to promote research & innovation** and increase the competitiveness of Indian startups and MSMEs.

## 15. AI Pe Charcha

### Why in News?

The National e-Governance Division (NeGD) of the Ministry of Electronics and IT organised “AI Pe Charcha (AI Dialogue)” on October 28, 2021.

### About

- AI Pe Charcha was organised under the theme- **“AI for Data Driven Governance”**.
- AI Pe Charcha is a **series of panel discussions** involving various global and domestic leaders from the Government and industry, researchers and academicians **sharing their views & experiences and challenges around Artificial Intelligence**.

### 📌 National e-Governance Division

- Created in **2009** by the Ministry of Electronics & Information Technology as an Independent Business Division **under the Digital India Corporation**.
- Mandate → To **support** the Ministry of Electronics & Information Technology **in Programme Management and implementation of e-Governance projects** and initiatives undertaken by Ministries/ Departments, both at the Central and State levels.

### 📌 Digital India Corporation

- Digital India Corporation is a **not for profit company** set up by the Ministry of Electronics and Information Technology (**MeitY**) under **Section 8 of Companies Act 2013**.
- Purpose → It provides **strategic support to Ministries/ States for carrying forward the mission of Digital India** by way of Capacity Building for e-Governance projects, promoting best practises, etc.

## 16. Blue stragglers

### Why in News?

Indian researchers have carried out the first-ever comprehensive analysis of blue stragglers.

### About

- Blue stragglers are **bigger and bluer star formed when one star eats up another**.
- These stars are primarily present in the older and massive star clusters.
- More than 54% of blue stragglers are formed through **mass transfer** from a close binary companion star, 30% are likely formed through **collisions of 2 stars**, and 10-16% are formed through **interactions of more than 2 stars**.

# Geography

## 1. Sorghum

### Why in News?

Genes that can increase the grain size of sorghum, a versatile grain crop used for human consumption, fodder and bioenergy generation, have been discovered, according to a new report.

### About

- It is a **versatile grain crop** used for human consumption, fodder and bioenergy generation.
- The grain is **popular across the world** because it has a **low glycaemic index**, is **gluten-free** and **nutritious**.
  - The lower the glycemic index of a cereal, the **lower is the relative rise in blood glucose level** after two hours of consuming it.
- The variety of the crop found **in India is called jowar**. It is said to have its **origin in the country** and is one of its most important food and fodder crops.
  - Jowar has a dedicated **All-India Coordinated Research Project since 1969**.
- Sorghum plants are **very hardy** and can **withstand high temperature** and **drought conditions**.
- It is well adapted to **semiarid regions** with a minimum annual precipitation of **350-400 mm**. It is grown in areas that are **too hot and dry for growing maize**. In India, the **main sorghum belt** receives an annual rainfall ranging from **400-1000 mm**.
- It can grow on a **wide range of soils**. Medium to deep black soils are predominantly suitable for growing sorghum.

### New report

- As many as **125 regions** in the sorghum genome have now been **identified** where **variation in the DNA sequence** was associated with grain size and response to environmental conditions.
- New variants have also been identified that are **capable of doubling grain weight**.
- Significance → Bigger grain size can **improve the usage value of the crop**. Larger grains make it **more digestible** for both people and animals and **improves processing efficiency**.

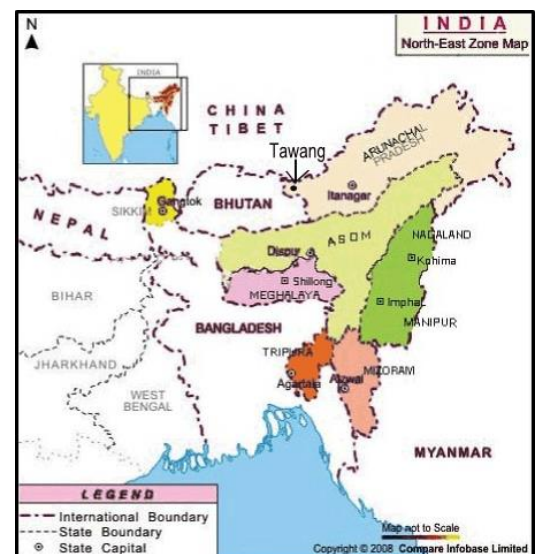
## 2. Tawang

### Why in News?

Some Chinese soldiers of a large patrol team were detained for few hours by the Indian Army after such teams of the sides were engaged in a minor face-off and clashed near Yangtse in Tawang Sector of Arunachal Pradesh.

### About

- Tawang was **historically part of Tibet**.
- The **1914 Simla Accord defined the McMahon Line** as the new boundary between British India and Tibet. By this treaty **Tibet relinquished some of its territories**, including **Tawang**, to the British. But it was not recognised by China.
- In **1950, Tibet lost its de facto independence** and was incorporated into the newly established People's Republic of China.
- Later, in **1959**, when the current **Dalai Lama fled Tibet**, he **came into India through Tawang**.
- During the **Sino-Indian war of 1962**, Tawang fell briefly **under Chinese control**, but China voluntarily withdrew its troops at the end of the war.



- Tawang again came **under Indian administration**, but China has **not relinquished its claims** on most of Arunachal Pradesh including Tawang.

### 3. Lukha River

#### Why in News?

Recently, the detoxing pilot project of the Meghalaya state has brought a Lukha river back from the dead. Acid mine drainage, run-off from coal mines led to contamination of the Lukha river.

#### About

- Location → It is located in the **southern part of East Jaintia Hills of Meghalaya**.
- It receives **water from the Lunar river** (Wah Lunar) and small streams draining from the Narpuh Reserve Forest and the undulating hills of the area while flowing down.
- The river is mainly **fed by monsoon rain** and **flows in the southwest direction** and later takes a southern path after joining the Lunar river near the Khaddum village.
- The river **passes via the Sonapur village** and then into the **Surma valley** and ultimately ends up in the **flood plains of Bangladesh**.

#### 👉 Detoxify the river

- The **phytoremediation method** was used to detoxify the river, where **algae were used** to remove major toxic contents from the water.
- The pilot project was undertaken under the **District Mineral Fund** after reports of **low pH levels** affecting the aquatic life in the river.
- pH is a measure of **how acidic/basic water is**. The range goes **from 0 to 14, with 7 being neutral**. pHs of less than 7 indicate acidity, whereas a pH of greater than 7 indicates a base. The pH of water is a very important measurement concerning water quality.

### 4. Katol Meteorite

#### Why in News?

Recently, some researchers studied a meteorite from Katol, Maharashtra which was from the meteor shower of 2012.

#### About

- Initial studies revealed that the host rock was mainly **composed of olivine, an olive-green mineral**.
  - Olivine is the **most abundant** phase in **our Earth's upper mantle**.
  - Our Earth is composed of different layers including the **outer crust**, followed by the **mantle** and then **the inner core**.
  - You can reach the **upper mantle** if you drill for about **410 kilometers**.
- Now, by studying the composition of these meteorite fragments, researchers have unravelled the composition expected to be present in the **Earth's lower mantle** which is **at about 660 km deep**.

#### 👉 How to study a meteorite?

- The researchers took a **small sample** of the meteorite and examined it using **special microscopy techniques**.
- The mineralogy was determined using a **laser micro-Raman spectrometer**.
- These techniques helped the team **identify, characterize the crystal structure** of the meteorite and determine its chemical composition and texture.

#### 👉 What does the new study show?

- The paper published this month in PNAS reports the first natural occurrence of a mineral called **bridgmanite**.



- The mineral was **named in 2014 after Prof. Percy W. Bridgman**, recipient of the 1946 Nobel Prize in Physics.
- Various computational and experimental studies have shown that about **80% of the Earth’s lower mantle is made up of bridgmanite**.
- The bridgmanite in the meteorite was found to be **formed at pressures of about 23 to 25 gigapascals** generated by the shock event.
  - The high temperature and pressure in our Earth’s interior have **changed over billions of years causing crystallisation, melting, remelting** of the different minerals before they reached their current state.

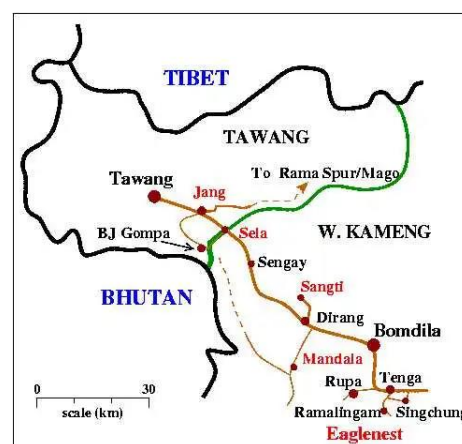
## 5. Sela Main Tunnel

### Why in News?

In a major milestone in providing all-weather connectivity to Tawang in Arunachal Pradesh close to the border with China, the BRO carried out the breakthrough blast of the main tube of the Sela tunnel which marks the completion of the excavation process.

### About

- Background → The foundation stone for the Sela tunnel was laid by Prime Minister on **February 09, 2019**.
- It will provide connectivity **between Guwahati in Assam and Tawang, Arunachal Pradesh** through the Balipara-Chariduar-Tawang Road.
- Constructed by → **the Border Roads Organisation (BRO)** under **Project Vartak**.
- Features → This tunnel is constructed using the latest **New Austrian Tunneling Method** is much below the snow line allowing all-weather travel without the challenges of snow clearance.
- Significance →
  - It will **reduce the distance** and travel time, ensure speedier movement across the Sela Pass and ensure connectivity even during winter.
  - It will **strengthen national security**.



## 6. Tigray Region

### Why in News?

Recently, airstrikes hit the capital of Ethiopia’s Tigray region in an ongoing internal armed conflict.

### About

- Tigray is the **northernmost regional state in Ethiopia** ( Africa’s second-most populous country).
- Tigray region is **known for its mountainous terrains** that have often helped the people protect their territory from invaders, such as the Greeks, the Turkish, and the Italians.
- It is the homeland of the **Tigrayan, Irob** and **Kunama peoples**.
- It is also known as **Region 1** according to the federal constitution.
- Capital and largest city → **Mekelle**.
- Border Areas → **Eritrea** (North), **Sudan** (West), **the Amhara Region** (South), and **the Afar Region** (East and South East).



## 7. Black Sea

### Why in News?

US Defence Secretary has urged more defence cooperation among friendly Black Sea countries amid Russia "militarisation" of the region.

### About

- Location → located between **Eastern Europe and Western Asia**.
- Surrounded by → **the Pontic, Caucasus, and Crimean Mountains** in the south, east and north respectively.
- The Black Sea is also **connected to the Sea of Azov** by the Strait of Kerch.
- The Turkish straits system - **the Dardanelles, Bosphorus and Marmara Sea** - **forms a transitional zone** between the Mediterranean and the Black Sea.
- Bordering countries → **Russia, Ukraine, Georgia, Turkey, Bulgaria and Romania**.
- There is a significant **absence of oxygen** in the water (anoxic waters).



## 8. Double Dip La Nina

### Why in News?

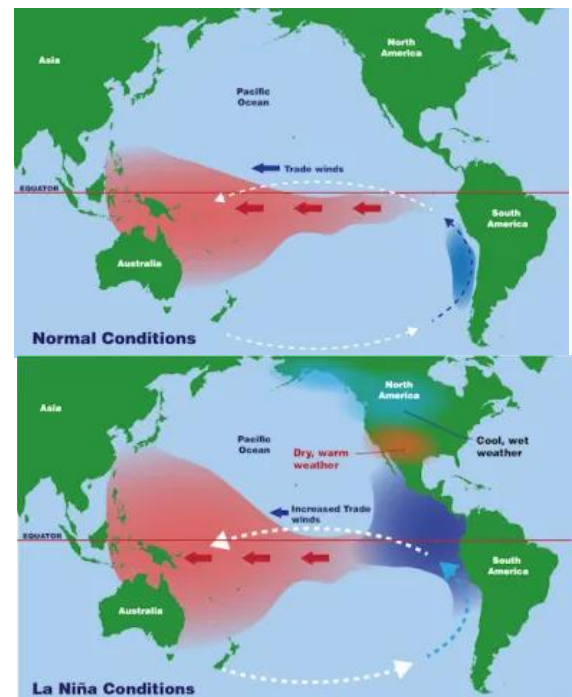
The National Oceanic and Atmospheric Administration (NOAA) has declared that La Niña has re-developed.

### About

- What is it? → La Nina is **one part of the El Niño Southern Oscillation (ENSO) cycle**. But when two La Ninas happen **one after the other** (with a transition through ENSO neutral conditions in between) is not uncommon.
- This is usually referred to as a '**double-dip**'.
- In 2020, La Nina developed during the **month of August** and then **dissipated in April 2021** as **ENSO-neutral conditions returned**.

### 👉 La Nina

- La Niña is a **weather pattern** that can occur in the Pacific Ocean every few years.
- In a **normal year**, winds along the equator **push warm water westward**. Warm water at the surface of the ocean blows from South America to Indonesia.
- As the **warm water moves west**, cold water from the deep rises up to the surface. This cold water ends up on the coast of South America.
- In the **winter** of a **La Niña year**, these winds are **much stronger than usual**. This makes the **water in the Pacific Ocean** near the equator a few degrees **colder than it usually** is. Even this small change in the ocean's temperature can affect weather all over the world.
- Impact of La Nina →
  - La Niña results in **heavy** or **better monsoon rains in India**, **droughts in Peru and Ecuador**, heavy floods in Australia, and high temperatures in the Indian Ocean and Western Pacific.



### 👉 Difference between El Niño and La Niña

- Both events **start in the Pacific Ocean**, but they are **opposites in almost every other way**.

- La Niña **causes the water in the eastern Pacific to be colder than usual**. In the same region, El Niño can cause the water to be warmer than usual. So, areas that are hit with drought during La Niña years can get lots of rain in El Niño years!

## 9. Cumbre Vieja Volcano

### Why in News?

Cumbre Vieja volcano erupted on Spain's Canary Island of La Palma. Cumbre Vieja last erupted in 1971 and in 1949.

### About

- La Palma is one of the eight volcanic islands in **Spain's Canary Islands archipelago off Africa's western coast**.
- It has **rugged and forested terrain** and is dotted with volcanoes like Teneguía and Cumbre Vieja.
- Its highest mountain is the **Roque de los Muchachos**, at 2,423 metres being second among the peaks of the Canaries only to the peaks of the Teide massif on Tenerife.
- Capital: **Santa Cruz de la Palma**.

### 📍 Canary Islands

- The Canary archipelago (group of islands) is located **in the Atlantic Ocean**, about 1300 km South of mainland Spain and 115 km West of the African coast (Morocco).
- It includes **7 islands** belonging to Spain, among which **La Palma** (in the North-West of the archipelago), **Tenerife** and **Gran Canaria** (central).

## 10. Mullaperiyar Dam

### Why in News?

The Supreme Court has directed the Supervisory Committee to take an immediate and firm decision on the maximum water level that can be maintained at Mullaperiyar dam, amid torrential rain in Kerala.

### About

- The 130-year-old Mullaperiyar dam is located on the **confluence of the Mullayar and Periyar River** in Kerala's Idukki district.
- It was **built by Pennycuik** to create a harmonious atmosphere in the east coast by taking the water there and have people cultivate crops.
- It is **operated and maintained by the Tamil Nadu** for meeting the drinking water and irrigation requirements of 5 of its southern districts.
- The dam resulted in the formation of a big lake - **the Periyar Lake**. People call it the **Thekkady Wildlife Sanctuary**.
- Mullaperiyar is listed among the **world's big dams** that **need to be decommissioned** in a report by the UN University – Institute for Water, Environment and Health.
  - It has been stated that the Mullaperiyar dam, situated in a **seismically active area**, **faces the risk of failure**.
  - The ageing of large dams is an emerging **global development issue** as they pose **threats to human safety and the environment**.
- Decommissioning Mullaperiyar is **strongly opposed by Tamil Nadu state**, which inherited a lease agreement between the former princely state of Travancore (now Kerala) and the British government.
  - The matter is **still subjudice** in the Supreme Court.



### 📍 Periyar River

- It **rises in the Western Ghats** near the border with Tamil Nadu state and flows north a short distance to Periyar Lake.

- The river **continues northwest**, descending out of the mountains and onto **the coastal plain**, and turns west before **emptying into the Arabian Sea**.
- It is the **longest river** in the **state of Kerala**.
- It is **one of the few perennial rivers** in the region and provides drinking water for several major towns.

# Polity

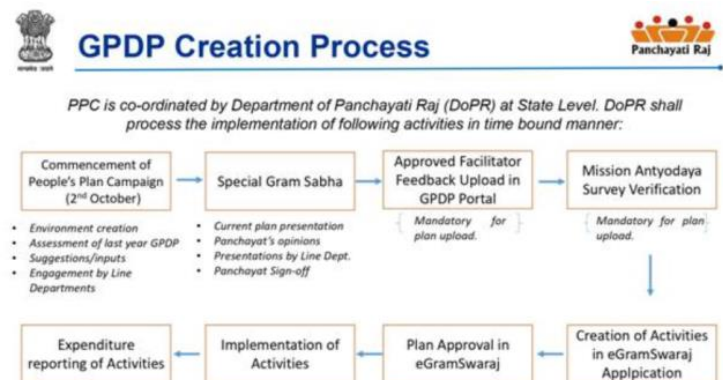
## 1. People's Plan Campaign

### Why in News?

Union Minister for Panchayati Raj and Rural Development has launched People's Plan Campaign 2021– Sabki Yojana Sabka Vikas and Vibrant Gram Sabha Dashboard.

### About

- Aim → To **help Gram Panchayats(GPs) in the preparation of a convergent and holistic** Gram Panchayat Development Plan(**GPDP**) through the identification of sectoral infrastructural gaps in respective areas.
- Duration → This year's campaign will be rolled out in all the States from **2nd October 2021 to 31st January 2022**.
- Features →
  - During the campaign, **structured Gram Sabha meetings** will be held for preparing Panchayat Development Plans for the next financial year 2022–2023.
  - The structured Gram Sabha meetings will include **physical presence and presentation by frontline workers/supervisors on 29 sectors**.
  - These sectors represent the **29 subjects listed** in the **Eleventh Schedule** of the Constitution.



### 👉 Vibrant Gram Sabha Dashboard

- It is a dashboard that will help in **increasing maximum participation from Panchayats** through the meeting of Gram Sabha, the Standing Committee meeting of Gram Panchayat, meeting of elected Panchayat public representatives throughout the year.

### 👉 Gram Panchayat Development Plan(GPDP)

- Under **Article 243 G of the Constitution**, Gram Panchayats have been **mandated** for the **preparation of GPDP** for economic development and social justice utilizing the resources available to them.
- The GPDP planning process should be **comprehensive and participatory by involving full convergence with the schemes** of all related Central Ministries / Line Departments.

## 2. PRAGATI

### Why in News?

Recently, the Prime Minister (PM) has chaired the 38th PRAGATI meeting.

### About

- What is it? → PRAGATI is a **multi-purpose and multi-modal governance platform** launched in 2015.
- Nodal Body → The portal has been designed by the **Prime Minister's Office(PMO) team with** the help of the National Informatics Center (NIC).
- Aim → The portal is aimed at:
  - **Addressing** the common man's grievances
  - To simultaneously **monitor and review important programmes and projects** of the Government of India as well as projects flagged by various State governments.



- It is a three-tier system → **PMO, Union Government Secretaries, and Chief Secretaries of the States.**
- Significance →
  - It **promotes cooperative federalism**;
  - It is a robust system for bringing **e-transparency** and **e-accountability** with real-time presence and exchange among the key stakeholders;
  - It is an **innovative project** in e-governance and good governance.

### 3. Renunciation of Indian citizenship

#### Why in News?

The Ministry of Home Affairs (MHA) has simplified the process for Indians who want to renounce their citizenship.

#### About

- In India, **Articles 5 – 11** of the Constitution deals with the concept of citizenship. The term citizenship entails the enjoyment of **full membership of any State in which a citizen has civil and political rights.**
- Termination of citizenship is possible in **three ways** according to the Citizenship Act, 1955.
- By renunciation →
  - Any citizen of India of full age and capacity can make a **declaration renouncing Indian citizenship**
  - Such declaration may **not be accepted during war.**
  - Even the **minor children of the person who renounces citizenship stands to lose their Indian citizenship.** However, when their children attain the age of eighteen, he may resume Indian citizenship
- By termination →
  - If a citizen of India **voluntarily acquires the citizenship of another country**, then he loses the citizenship of India
  - However, this provision does **not apply during times of war**
- By deprivation → **Compulsory termination** of Indian citizenship by the Central government, in the following conditions:
  - Obtained the **citizenship by fraud**
  - Citizen has **shown disloyalty** to the Constitution of India
  - Citizen has **unlawfully traded** or **communicated** during the times of war
  - Within 5 years of naturalization, the said citizen is **imprisoned for a term of two years**
  - Citizen has been **ordinarily resident out of India** for a **period of 7 years**

#### WHO IS A CITIZEN OF INDIA?

According to the Ministry of Home Affairs, there are four ways in which Indian citizenship can be acquired

**[ BY BIRTH ]**

- Every person born in India on or after January 26, 1950, and before July 1, 1987, is an Indian citizen irrespective of the nationality of their parents
- Every person born in India between July 1, 1987 and December 2, 2004, is an Indian citizen if either of their parents is a citizen of India at the time of their birth
- Every person born in India on or after December 3, 2004, is an Indian citizen if both their parents are Indians, or at least one parent is a citizen and the other is not an illegal migrant at the time of birth

**[ BY REGISTRATION ]**

- A person of Indian origin who has been a resident of India for seven years can apply
- A person of Indian origin who is a resident of any country outside undivided India can apply for citizenship
- A person who is married to an Indian citizen and is ordinarily resident for seven years may apply
- Minor children of persons who are citizens of India may also apply

**[ BY DESCENT ]**

- A person born outside India on or after January 26, 1950, is a citizen of India if their father was a citizen of India by birth
- A person born outside India on or after December 10, 1992, but before December 3, 2004, if either of their parents was a citizen of India by birth
- If a person born outside India on or after December 3, 2004, is to acquire citizenship through descent, their parents must declare that the minor does not hold a passport issued by another country and must ensure that the birth is registered at an Indian consulate within one year

**[ BY NATURALISATION ]**

A person can acquire Indian citizenship through naturalisation if they are ordinarily resident in India for 12 years (through the 12 months preceding the date of application with 11 years in aggregate) and fulfil all the qualifications in the third schedule of the Citizenship Act, 1955

**WHAT PROVES MY CITIZENSHIP?**

Ironically, there is no single document that can conclusively support a claim to citizenship. Only Indian citizens can have passports and voter IDs, but the government can seek verification of these documents too.

Aadhaar cards, PAN cards and driving licences are no indicator or proof of citizenship either. That's one reason the government suggested providing national ID card, based on the National Register of Citizens.

#### 👉 New guidelines include-

- Uploading of documents online and completion of the process of renunciation **within 60 days.**
- The new form also has a provision **mandating** the Indian citizen to **indicate the reason for renouncing the citizenship.**
- The uploaded documents have to be **submitted to the District Magistrate** in case of citizen living in India or an Indian Mission abroad. The applicant will be **interviewed** before issuing the final certificate.



- Also, the guidelines specify that as per the Citizenship act, 1955- “**every minor child of that person shall thereupon ceases to be a citizen of India**”.

#### 4. North Eastern Council

##### Why in News?

Recently, the Vice President of India advised the North-Eastern Council to propel the NE region on a resurgent phase of accelerated development by quickly resolving issues that have been impeding its progress.

##### About

- Formation → It was constituted in **1971 by an Act of Parliament**.
- Purpose → It is the nodal agency **for the economic and social development of the North Eastern Region** which consists of the eight States of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura.
- NEC members → **the Governors** and **the Chief Ministers of the 8 states** including Sikkim, Chairman and 3 members who are nominated by the country's President.
- Functions →
  - To **discuss any matter** in which some or all of the States represented in the Council have a common interest and advise the Central Government and the Governments of the States concerned as to the action to be taken on any such matter, particularly with regard to:
  - any **matter of common interest** in the field of economic and social planning.
  - any **matter concerning inter-State Transport and Communications**.
  - any matter **relating to Power** or **Flood-control projects of common interest**.

#### 5. Indian Telegraph Right of Way (Amendment) Rules, 2021

##### Why in News?

Central Government notifies Indian Telegraph Right of Way (Amendment) Rules, 2021.

##### About

- Objective → To incorporate the provisions related to **nominal one-time compensation** and **uniform procedure** for establishment of Overground Telegraph Line in the Indian Telegraph Right of Way Rules, 2016.
- The amount of one-time compensation for establishment of overground telegraph line will be **maximum one thousand rupees per kilometre**.
- **Documentation for Right of Way (RoW) application** for overground telegraph line has been **made simple**.
- Also, there will be **no fee other than Administrative fee** and **Restoration charges** for establishing, maintaining, working, repairing, transferring or shifting the underground and overground telegraph infrastructure.
- These amendments will **ease Right of Way related permission procedures** for establishment and augmentation of Digital Communications Infrastructure across the country.

#### 6. AMENDMENT IN ALL INDIA SERVICES (AIS) (CONDUCT) RULES, 1968

##### Why in News?

Amendment will allow IAS, IPS and IFoS officers to retain gifts received from foreign dignitaries while being members of the Indian delegation.

##### About

- **Presently there are no provisions** under the AIS (Conduct) Rules, 1968, with regard to receipt/ retention of **gifts from foreign dignitaries**.

- Existing rules allowed these officers to accept gifts from their near relatives or from personal friends having no official dealings with them, on occasions such as weddings, anniversaries, funerals and religious functions.
- However, they are supposed to **report** to the government if the value of such **gift exceeds ₹25,000**.

## 7. Caste Census

### Why in News?

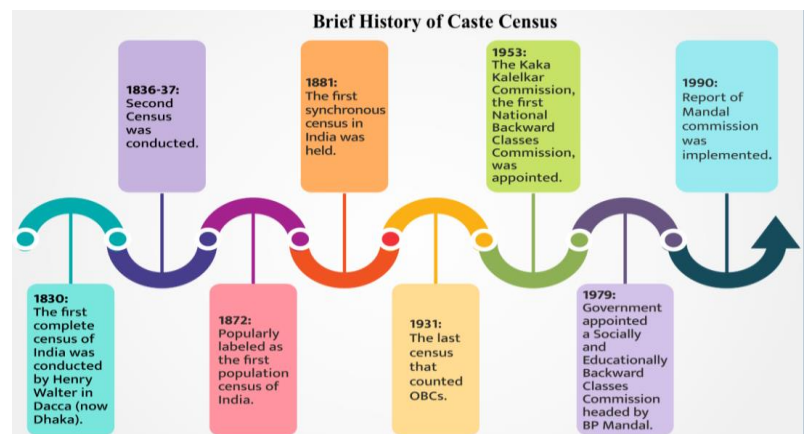
Demands by various political parties to have a caste-based enumeration in the 2021 Census has triggered a serious debate.

### About

- Caste Census is the **caste-wise tabulation of population** in the census exercise. Caste, was last **included in the Census of India back in 1931**. The practice was stopped by the British in 1941 and the post 1947, the government did not revive it.
- While India publishes separate data on Scheduled Castes (SC) and Scheduled Tribes (ST), since the first exercise in independent India in 1951, the Census does not include data on other castes.

### Socio-Economic Caste Census (SECC), 2011:

- This was a distinct exercise from the Census of 2011.
- It is a **study of socioeconomic status of rural and urban households** and allows ranking of households based on predefined parameters.
- It had three census components:
  - Census in Rural Area:** Department of Rural Development (DoRD).
  - Census in Urban areas:** The Ministry of Housing and Urban Poverty Alleviation (MoHUPA).
  - Caste Census:** The Ministry of Home Affairs, Registrar General of India (RGI) and Census Commissioner of India.
- It provides information like- **structure of the houses** of household (Kuccha or Pucca), **ownership status**, **main source of income** among others. But the **entire SECC data has not been made public**.



## 8. Gambling in India

### Why in News?

Recently, a plea in Delhi High Court sought appropriate steps to prohibit online gambling websites.

### About

- The Delhi High Court was informed by the Centre that **online gambling is a State subject** and the State governments have to make laws to regulate such activities.
- Centre also claimed that the legislative competence to determine whether a game is a game of skill or a game of chance or is involved in gambling (played with stakes or not) is conferred on the States only or to the court of laws (which possess the judicial wisdom).

### Legal position of gambling in India right now:

- Horse racing is legal** in India. Horse racing **involves some prior skills** so it isn't all about gambling.

- Several Indian states have legalized **lotteries**. These are Goa, Kerala, Arunachal Pradesh, Assam, Maharashtra, Madhya Pradesh, Mizoram, Manipur, Meghalaya, Punjab, Nagaland, West Bengal, and Sikkim.
- Online gambling and land-based **casinos are legalized in Goa, Sikkim, Nagaland, and Daman** under the **Public Gambling Act, 1976**.
- **Maharashtra has prohibited gambling** and considers gambling as illegal under the **Bombay Prevention of Gambling Act, 1887**.
- **E-gaming** (games of chance) has been **legalized in Sikkim and Nagaland**.
- Telangana and Arunachal Pradesh consider the game of skill as **illegal** as per the **Telangana State Gaming Act, 1974**.
- All India Gaming Federation, The Rummy Federation, and Federation of Indian Fantasy Sports have adopted a **self-regulation code** for all their advertisements.

#### **The Lodha Committee:**

- It was constituted by the Supreme Court under RM Lodha to examine and make suitable recommendations for reforms in the Board of Cricket Control in India (**BCCI**).
- The committee a sharp **distinction between betting and fixing, favouring the legalising** of the **former and criminalising the latter**.

# International Relations

## 1. Interpol

### Why in News?

The Interpol has launched an online campaign to apprise people of major cyberthreats to help them protect their computer systems, networks and personal information from cybercriminals.

### About campaign

- Duration → The **three-week campaign**, from October 4 to 22, would be run primarily through social media.
- Objective → With cyber threats becoming increasingly sophisticated, in addition to increased levels of remote work and dependence on digital devices, the campaign will **focus on ransomware, online scams and phishing**, and **business email compromise**.

### Interpol

- The International Criminal Police Organization (INTERPOL) is an **intergovernmental organization** that helps coordinate the police force of **194 member** countries.
- Headquartered → **Lyon, France**.
- Formation → Formed in **1923** as the International Criminal Police Commission, and started calling itself Interpol in 1956.
- **India joined** the organisation in **1949**, and is one of its **oldest members**.
- Each of the member countries hosts an **INTERPOL National Central Bureau (NCB)**.
- The Central Bureau of Investigation (**CBI**) is **designated** as the National Central Bureau of India
- Interpol General Assembly →
  - It is Interpol's **supreme governing body**, and comprises representatives from all its member countries.
  - It **meets annually** for a session lasting approximately **four days**, to vote on activities and policy.
  - Each country is **represented by one or more delegates** at the Assembly, who are typically chiefs of law enforcement agencies.

## 2. International Energy Agency (IEA)

### Why in News?

The International Energy Agency (IEA) has invited India, the world's third-largest energy consumer, to become its full-time member.

### About

- IEA is an **autonomous intergovernmental organisation**.
- Established in → **1974** as per the framework of the OECD.
- Mission → Its mission is guided by four main areas of focus: **energy security**, **economic development**, **environmental awareness** and **engagement worldwide**.
- Headquarters (Secretariat) → **Paris, France**.
- Composition and eligibility → It **has 30 members** at present. IEA family also includes eight association countries. A candidate country **must be a member country of the OECD**. But all OECD members are not IEA members.
  - **India** became an **Associate member of IEA in March 2017** but it was in engagement with IEA long before its association with the organization.
- Roles and functions → Established in the wake of the **1973-1974 oil crisis**, to **help its members respond to major oil supply disruptions**, a role it continues to fulfil today.
  - IEA's mandate has expanded over time to include **tracking and analyzing global key energy trends**, **promoting sound energy policy**, and fostering multinational energy technology cooperation.

- Reports → Global Energy & CO2 Status Report, World Energy Outlook, World Energy Statistics, World Energy Balances, Energy Technology Perspectives.

### 3. CICA

#### Why in News?

India's External Affairs Minister has attended the Conference on Interaction and Confidence-Building Measures(CICA) Ministerial 2021 in Kazakhstan.

#### About

- What is it? → CICA is a multi-national forum for enhancing cooperation towards promoting peace, security and stability in Asia.
- Established in → 1999.
- Secretariat → Nur-Sultan, Kazakhstan.
- Membership →
  - For becoming a member of CICA, a state must have at least a part of its territory in Asia.
  - Presently CICA has 27 member states. 8 countries and five multi-national organizations, including united nations, have the observer status.
  - India is a member of CICA since its inception.
- Summits → The CICA Heads of the State Summit is convened every four years in order to conduct consultations, review the progress of, and set priorities for CICA activities. The Meeting of the Ministers of Foreign Affairs is required to be held every two years.

### 4. International Monetary and Financial Committee

#### Why in News?

The Union Minister for Finance has recently attended the Plenary Meeting of the International Monetary and Financial Committee of the Board of Governors of the International Monetary Fund(IMF).

#### About Meetings

- The event occurred at the Annual Meetings 2021 held in Washington D.C.
- Purpose → The discussions at the meeting centered on "vaccinate, calibrate and accelerate" which is the theme of the IMF's Managing Director's Global Policy Agenda.

#### International Monetary and Financial Committee(IMFC)

- IMFC is one of the Ministerial-level committees of the International Monetary Fund(IMF).
- Meeting → The committee meets twice a year, once during the Fund-Bank Spring Meetings in April, and again during the Annual Meetings in October.
- Functions → The Committee discusses matters of common concern affecting the global economy and advises the IMF on the direction of its work.
- Composition → The IMFC has 24 members who are central bank governors, ministers, or others of comparable rank and who are usually drawn from the governors of the Fund's 190 member countries.
- Powers → IMFC has no formal decision-making powers. But in practice, it has become a key instrument for providing strategic direction to the work and policies of the IMF.
- At the end of the Meetings, the Committee issues a joint communiqué summarizing its views. These communiqués provide guidance for the IMF's work program during the six months leading up to the next Spring or Annual Meetings. There is no formal voting at the IMFC. They operate by consensus.

### 5. International Finance Corporation

### Why in News?

IFC stake in Federal Bank Ltd has resulted in no new coal commitment.

### About

- Established in → **1956**.
- It is an **international financial institution** that **offers investment, advisory, and asset management services** to encourage private sector development in developing countries.
- It is a **member of the World Bank Group**.
- Headquartered → **Washington, D.C., United States**.
- It was **established as the private sector arm of the World Bank Group** to advance economic development by investing in strictly for-profit and commercial projects that purport to reduce poverty and promote development.
- Governance →
  - The IFC is **owned and governed by its member countries**, but has its own **executive leadership** and **staff** that conduct its normal business operations.
  - It is a corporation whose **shareholders are member governments** that provide **paid-in capital** and which have **the right to vote** on its matters.
- Roles and functions →
  - Since **2009**, the IFC has focused on a **set of development goals** that its projects are expected to target. Its goals are to **increase sustainable agriculture opportunities, improve healthcare** and education, increase access to financing for microfinance and business clients, advance infrastructure, help small businesses grow revenues, and invest in climate health.
  - It offers an **array of debt and equity financing services** and helps companies face their risk exposures while refraining from participating in a management capacity.
  - It **advises governments** on building infrastructure and partnerships to further support private sector development.

## 6. International Solar Alliance General Assembly

### Why in News?

The fourth general assembly of The International Solar Alliance (ISA), is to be held virtually between October 18th and October 21st, 2021.

### About

- The Assembly is the **apex decision-making body** of International Solar Alliance (ISA), in which each member country is represented.
- This body makes decisions concerning the **implementation of the ISA's Framework Agreement** and **coordinated actions** to be taken to achieve its objective.
- Meeting → The Assembly **meets annually** at the Ministerial level at the seat of the ISA, **assesses the aggregate effect of the programmes** and other activities in terms of deployment of solar energy, performance, reliability, as well as cost and scale of finance.

### 👉 Key Highlights

- The Fourth Assembly of the ISA will deliberate on the key initiatives around the operationalisation of the **OSOWOG initiative**, the **\$1 trillion Solar Investment Roadmap for 2030**, and approval of a **Blended Financial Risk Mitigation Facility**.
- World leaders of ISA member countries will also discuss the **strategic plan of the ISA for the next five years**.
- The ISA will also discuss the **partnership with Global Energy Alliance** (GEA) to scale up technical and financial support to LDCs and SIDS.



### International Solar Alliance (ISA)

- launched in **2015**.
- It is an alliance of **more than 122 countries** initiated by India.
- ISA is a coalition of solar resource rich countries lying **fully or partially between the Tropic of Cancer and the Tropic of Capricorn** to specifically address energy needs by harnessing solar energy.
- The alliance is also called **International Agency for Solar Policy and Application (IASPA)**.
- Secretariat → **Gurugram, Haryana**.
- Objectives → The ISA's major objectives include global deployment of over **1,000GW** of solar generation capacity and mobilisation of **investment of over US\$ 1000 billion into solar energy by 2030**.
  - The primary objective of the alliance is to work for **efficient exploitation of solar energy** to reduce dependence on fossil fuels.

## 7. New Quad

### Why in News?

First virtual summit of the foreign ministers of the US, India, Israel and UAE was recently held. After the meeting, India, Israel, the United Arab Emirates and the United States have decided to launch a new quadrilateral economic forum.

### About

- What is it? → The quadrilateral builds on ongoing cooperation between **the U.S., Israel and the UAE after the Abraham Accords and India**.
- The forum is described as an **international forum for economic cooperation**.
- Aim → The aim of the new quadrilateral grouping is to **establish an international forum for economic cooperation**. The grouping will specifically look for the **"possibilities for joint infrastructure projects"** in transportation and technology.
- Focus areas → The new quadrilateral grouping will **"expand the economic and political cooperation in the Middle East and Asia**, including through trade, combating climate change, technology cooperation including Big Data, energy cooperation, and increasing maritime security."
- Future of the new Quad → Each country will appoint a **senior professional to a joint working group**. This joint working group will **formulate options** for cooperation in the focus areas identified by the new Quad.
  - Apart from that, the four ministers also decided to convene **an in-person meeting in Dubai soon**.
  - During the meeting, they also agreed that the key to the success of the new quad depends upon how **quickly the forum can move** from **'government-to-government'** to **'business-to-business**.
- Significance → The four countries have a **"unique set of capabilities, knowledge, and experience"** that can be used to create a new network of cooperation.

## 8. Financial Action Task Force (FATF)

### Why in News?

Pakistan will continue to be on the "Grey List" of the FATF as it needs to "further demonstrate" that action is being taken against UN-designated terrorists like India's most wanted Hafiz Saeed and Masood Azhar, and groups led by them.

### About FATF

- What is it? → FATF is an **inter-governmental body** established in **1989** on the initiative of the G7.
- It is a **"policy-making body"** which works to generate the necessary political will to bring about national legislative and regulatory reforms in various areas.
- Secretariat → The FATF Secretariat is housed at the OECD headquarters in **Paris**.
- Member Countries →

- The FATF currently **comprises 37 member jurisdictions** and **2 regional organisations**, representing most major financial centres in all parts of the globe. It also has observers and associate members.
- Roles and functions →
- Initially it was established to **examine and develop measures to combat money laundering**.
- In October 2001, the FATF **expanded its mandate** to incorporate efforts to combat terrorist financing, in addition to money laundering.
- In April 2012, it added efforts to **counter the financing of proliferation of weapons of mass destruction**.

#### 👉 **Blacklist and Grey list**

- Black List → Countries known as **Non-Cooperative Countries or Territories (NCCTs)** are put in the blacklist. These countries **support terror funding** and **money laundering activities**. The FATF revises the blacklist regularly, adding or deleting entries.
- Grey List → Countries that are considered **safe haven for supporting terror funding** and **money laundering** are put in the FATF grey list. This inclusion serves as a warning to the country that it may enter the blacklist.

## 9. 7th Meeting of BRICS Communications Ministers

### Why in News?

India as the current BRICS Chair convened the 7th Meeting of BRICS Communications Ministers meeting. The meeting was presided by India's Minister of State for Communications.

### About key highlights

- The ministers supported the advancement in work of the **BRICS Partnership on New Industrial Revolution(PartNIR)**.
- The ministers adopted the proposal to **host the Digital BRICS Forum annually** to facilitate sharing of information and knowledge, practices, and initiatives on agreed cooperation areas.
- The ministers encouraged continuous **cooperation in ICTs activities** in international organizations and multilateral forums such as the International Telecommunications Union and other organizations.

#### 👉 **Partnership on New Industrial Revolution(PartNIR)**

- Partnership on New Industrial Revolution(PartNIR) is a programme of partnership among BRICS nations that will **focus on Maximising the opportunities arising from the fourth industrial revolution/New Industrial Revolution**.
- The partnership was **formed at the 10th BRICS summit in 2018** at Johannesburg, South Africa.

#### 👉 **BRICS**

- BRICS is an acronym for the grouping of the world's leading emerging economies, namely **Brazil, Russia, India, China, and South Africa**.
  - In **2001**, the British Economist **Jim O'Neill coined the term BRIC** to describe the four emerging economies of Brazil, Russia, India, and China.
  - The grouping was **formalised during** the first meeting of BRIC Foreign Ministers' in **2006**.
- **South Africa** was invited to **join BRIC in December 2010**, after which the group adopted the **acronym BRICS**.
- The **chairmanship of the forum** is **rotated annually** among the members, in accordance with the acronym B-R-I-C-S.
- India is the chair for 2021.
- During the **Sixth BRICS Summit in Fortaleza (Brazil) in 2014**, the leaders signed the Agreement establishing the **New Development Bank (NDB - Shanghai, China)**. They also signed the **BRICS Contingent Reserve Arrangement** to provide short-term liquidity support to the members.

## 10. Asian Infrastructure Investment Bank

### Why in News?

Union Minister of Finance participated in the 6th Annual Meeting of the Board of Governors of Asian Infrastructure Investment Bank (AIIB).

### About

- It is a **multilateral development bank** with a mission to improve social and economic outcomes in Asia and beyond.
- The Parties (**57 founding members**) to agreement comprise the Membership of the Bank.
- It is headquartered in **Beijing** and **began its operations in January 2016**.
- Aim → By investing in sustainable infrastructure and other productive sectors today, it **aims to connect people, services and markets** that over time will impact the lives of billions and build a better future.
- Membership → There are **more than 100 members** now.
- Voting Rights →
  - **China** is the **largest shareholder with 26.61 %** voting shares in the bank followed by **India (7.6%)**, **Russia (6.01%)** and **Germany (4.2 %)**.
  - The **regional members hold 75%** of the total voting power in the Bank.
- Various organs of AIIB →
  - Board of Governors → The Board of Governors consists of **one Governor** and **one Alternate Governor** appointed by each member country. Governors and Alternate Governors serve at the pleasure of the appointing member.
  - Board of Directors → Non-resident Board of Directors is responsible **for the direction of the Bank's general operations**, exercising all powers delegated to it by the Board of Governors.
  - International Advisory Panel → The Bank has established an International Advisory Panel (IAP) **to support the President and Senior Management** on the Bank's strategies and policies as well as on general operational issues.

## 11. Indo-Pacific Regional Dialogue

### Why in News?

The Go-Quant Camp programme has been launched by Bloomberg in collaboration with GIFT City under the aegis of the International Financial Services Centres Authority (IFSCA).

### About

- What is it? → Indo-Pacific Regional Dialogue (IPRD) is the **apex international annual conference of the Indian Navy**.
- The dialogue was **first conducted in 2018**.
- Aim → To **review both opportunities and challenges** that arise within the Indo-Pacific.
- Organised by → **National Maritime Foundation** is the navy's knowledge partner and chief organiser of each edition of the dialogue.
- The theme for 2021 → **"Evolution in Maritime Strategy during the 21st Century: Imperatives, Challenges, and, Way Ahead"**.

### National Maritime Foundation (NMF)

- NMF was established in **2005** as **India's first maritime think-tank** for conducting independent and policy-relevant research on '**matters maritime**'.
- It is an **autonomous think-tank**. But its **intellectual and organisational development** is supported by the Ministry of Defence and the Indian Navy.
- It is Located in **New Delhi**.

## 12. 16th East Asia Summit

### Why in News?

Recently, the Indian Prime Minister spoke about Global Value Chains, during ASEAN - East Asia Summit virtual summit on the sidelines of the ASEAN summit with the leaders.

### About

- Hosted by → **Brunei as EAS** and **ASEAN Chair**.
- The EAS leaders adopted **three Statements on Mental Health, Economic recovery through Tourism and Sustainable Recovery**, which have been co-sponsored by India.
- Discussion on **important regional and international issues** including Indo-Pacific, South China Sea, UNCLOS, terrorism, and situation in Korean Peninsula and Myanmar was seen.

### 📌 East Asia Summit(EAS)

- Origin → The concept of East Asia Grouping was **first promoted in 1991** by the then Malaysian Prime Minister, Mahathir bin Mohamad.
- Formed → Established in **2005**, it is the **Indo-Pacific's premier forum for strategic dialogue**.
- Different from rest → It is the **only leader-led forum** at which **all key partners meet to discuss political, security and economic challenges** facing the Indo-Pacific.
- Membership → Apart from the **10 ASEAN** (Association of Southeast Asian Nations) member states, the East Asia Summit includes **India, China, Japan, the Republic of Korea, Australia, New Zealand, the United States and Russia**.
- Leader → **ASEAN leads the forum**, and the chair position rotates between the ASEAN Member States annually.
- India → **India** is one of the **founding members** of the East Asia Summit.

## 13. AIR-LAUNCHED UNMANNED AERIAL VEHICLE (ALUAV)

### Why in News?

The Project Agreement for ALUAV is under the umbrella Defence Technology and Trade Initiative (DTTI).

### About

- Under DTTI, there are 2 categories of projects, one, related to **industry-to-industry projects** facilitated by export licenses and second done via **Project Agreements (PA)**.
- The PA for ALUAV is a project of second category undertaken under Research, Development, Testing and Evaluation (**RDT&E**) Agreement which was first signed in January 2006 and renewed in January 2015.

### India-US defence relationship:

- In **2016**, the United States designated India as a Major Defense Partner which was elevated to Strategic Trade Authorization **Tier 1 status** in 2018.
- **2+2 dialogue** between the defence and foreign ministers.
- India has signed four **foundational defence agreement** of USA.
- General Security of Military Information Agreement (**GSOMIA**) in **2002** on military information exchange.
- Logistics Exchange Memorandum of Agreement (**LEMOA**) in **2016** to use each other's military base.
- Communications Compatibility and Security Agreement (**COMCASA**) in **2018** for interoperability between the two militaries and sale of high-end technology to India.
- Basic Exchange and Cooperation Agreement (**BECA**) in **2020** to share high-end military technology, logistics and geospatial maps.

# Society

## 1. PM Poshan Shakti Nirman (PM POSHAN)

### Why in News?

The existing Mid-Day Meal scheme will be renamed as National Scheme for PM Poshan Shakti Nirman (PM POSHAN).

### About

- Type → **Centrally-Sponsored Scheme.**
- This scheme will **replace** the existing **national programme for mid-day meals** in schools or Mid-day Meal Scheme.
- Aim of the scheme → To provide **one hot cooked meal** in Government and Government-aided schools **from 2021-22 to 2025-26.**
- Coverage → It will cover all school children studying in **Classes I-VIII of Government, Government-Aided Schools.**

### 📌 Key Changes/Modifications

- Extension of Coverage → The scheme is proposed to be extended to students **studying in pre-primary or Bal Vatikas of Government and Government-aided primary schools**, in addition to all the children from elementary classes.
- TithiBhojan → The concept of **TithiBhojan** will be **encouraged extensively.** TithiBhojan is a **community participation programme** in which people provide special food to children on special occasions/festivals.
- School Nutrition Gardens → Government is promoting the development of School Nutrition Gardens in schools to give **children first-hand experience with nature and gardening.** The harvest of these gardens is used in the scheme, **providing additional micronutrients.**
- Direct Benefit Transfer (DBT) → The central government will **ensure Direct Benefit Transfer (DBT) from states to schools**, which will use it to cover cooking costs.
- Nutrition Expert → A **nutrition expert** is to be **appointed in each school** whose responsibility is to ensure that health aspects such as Body Mass Index (BMI), weight and haemoglobin levels are addressed.

## 2. SACRED portal

### Why in News?

In a first of its kind move, the government has come up with an online employment exchange platform to cater to senior citizens seeking job opportunities.

### About

- The portal named, **'Senior Able Citizens for Re Employment in Dignity'** (SACRED).
- Aim → To devise ways to ensure Senior Citizens **live healthy, happy, empowered, dignified and self-reliant life.**
- The portal will be **developed through NIC.**
- It is an IT portal to **bring the employment seeker senior citizens** and **employment providers** on **one platform.** The portal will be developed and maintained by an **agency** identified through a **transparent process.**
- The portal will **not be a guarantee** for getting a job or employment or selling of the products of the SHGs, or for any other activity.
- Working →
  - A senior citizen can get **himself registered** on the portal with his education, experience, skills and areas of interest. Any **job provider**, be it an **individual, firm or organization**, can **also register on the portal, specifying the task** involved and the number of senior citizens required.
  - **Voluntary Organizations** will **help** senior citizens in applying for jobs. **No user charges** will be taken from any of the senior citizens by any Voluntary Organizations.

### 📌 Other Recent Initiatives

- Elder Line → The first Pan-India toll-free helpline number (**14567**) for Senior Citizens.
- SAGE (Seniorcare Aging Growth Engine) Portal → It will be a “**one-stop access**” of **elderly care products** and **services by credible start-ups**.

#### 📌 International Day of Older Persons (1st October)

- Theme 2021 → **Digital Equity for All Ages**.
- The United Nations General Assembly has declared **2021-2030 the Decade of Healthy Aging**.

### 3. State of the World's Children Report 2021

#### Why in News?

The UNICEF released its global flagship report titled, 'The State of the World's Children 2021.'

#### About

- This UNICEF report is the **most comprehensive analysis** of **global trends affecting children**.
- Purpose → The 2021 report details the **impact of COVID-19 pandemic** on the **mental health** of children, adolescents and caregivers.
- It **examines how risk and protective factors** in the home, school and community shape mental health outcomes.
- It **urges global commitment, communication** and **action to promote good mental health** for every child and young people.

#### 📌 Key Findings

- Globally, **1 in 5 young people** of 15 to 24-years of age are **feeling depressed** or having little interest in doing things.
- In **India, 1 in 7 young people** (14% of 15 to 24-years of age) are reported often **feeling depressed** or having little interest in doing things.
- Children have not only been living an **emotional tragedy**, many are also at a **higher risk of neglect** and **abuse**.

### 4. Multidimensional Poverty Index 2021

#### Why in News?

The UN report: Global Multidimensional Poverty Index 2021 highlights yet another divide in the Indian society as 5 out of 6 multidimensionally poor are from lower tribes or castes.

#### About

- Developed by → **Oxford Poverty and Human Development Initiative** (OPHI) and United Nations Development Programme (**UNDP**) since 2010 for UNDP's Human Development Reports.
- The report provides estimates on multidimensional poverty for **109 developing countries**.
- MPI is based on the idea that poverty is **not unidimensional** (not just depends on income and one individual may lack several basic needs like education, health etc.), **rather it is multidimensional**.
- The index shows the **proportion of poor people** and **the average number of deprivations** each poor person experiences at the same time.
- MPI uses three dimensions which are →
  - **Education** → Years of schooling and child enrollment (1/6 weightage each, total 2/6);
  - **Health** → Child mortality and nutrition (1/6 weightage each, total 2/6);
  - **Standard of living** → Electricity, flooring, drinking water, sanitation, cooking fuel and assets (1/18 weightage each, total 2/6).

#### 📌 Key findings

- The report mentions that there are **1.3 billion** multidimensionally poor people globally.



- The **top five countries** with the largest number of people living in multidimensional poverty are **India** (381 million), **Nigeria** (93 million), **Pakistan** (83 million), **Ethiopia** (77 million) and **the Democratic Republic of the Congo** (56million).
- Related to India →
  - Overall, **five out of six** multidimensionally poor people in India live in households whose **head is from a Scheduled Tribe, a Scheduled Caste or Other Backward Class**.
  - In India, **close to 12 percent** of the Multidimensional poor population — **162 million people** — live in female-headed households.

## 5. Tejaswini initiative

### Why in News?

Tejaswini initiative helps build confidence: police.

### About

- Tejaswini – a **women-centric safety initiative** of north-west district – Delhi.
- The initiative aimed to **reach out to women belonging to all strata** of society and female senior citizens, and also to **safeguard the rights and dignity** of women and children.
- The tasks and assignments are carried out by **women beat staff**.
- It resulted in **significant growth** in terms of its reach and scope of work.
- The presence of **women constables** and **their identifying the needy and distressed people** have worked as a **catalyst for building confidence** and courage among women and making them more aware of their own safety.
- These **women beat constables** work in tandem with various NGOs, schools, colleges and other agencies to get insights and **spread legal and social awareness** of various issues concerning women and children.

## 6. International Day of the Girl Child

### Why in News?

Every year, October 11 is observed as the International Day of the Girl Child.

### About

- Purpose → The occasion marks the **importance of adolescent girl children** and attempts at identifying their power and potential by opening opportunities for them.
- The United Nations General Assembly on **December 19, 2011**, **passed a resolution** declaring October 11 as the International Day of the Girl Child.
- Theme → **DIGITAL GENERATION. OUR GENERATION.**

### 👉 Beijing Declaration

- The **very first conference** that identified and **talked about the rights of girl children** was the Beijing Declaration.
- Held in **1995**, at the **World Conference on Women in Beijing**, countries unanimously adopted the Beijing Declaration and Platform for Action – known to be the **most progressive blueprint** ever for advancing the rights of not just women but girls too.

### 👉 Global Girlhood Report 2021: Girls Right in Crisis

- Released by → an Non-Governmental Organization (NGO), **Save the Children**.
- **Key Finding**
  - Rate of Child Marriage → **West and Central Africa** has the **highest rate** of child marriage in the world.
  - Death Due to Child Marriage → Child marriage **kills more than 60 girls a day globally**, 26 girls a day in West and Central Africa and six girls a day in South Asia.

- The deaths are majorly caused from **pregnancy and childbirth resulting** from child marriage.

## 7. Global Hunger Index 2021

### Why in News?

India has slipped to 101st position in the Global Hunger Index (GHI) 2021 of 116 countries, from its 2020 position of 94th.

### About

- What is it? → It is an annual report jointly published by '**Concern Worldwide**' and '**Welthungerhilfe**'.
- Indicators → GHI scores are based on the values of four component indicators — **child wasting, child stunting, child mortality** and **undernourishment**.
- Aim → To **comprehensively measure and track hunger** at the global, regional, and country levels.
- Scoring →
  - Based on the values of the four indicators, the GHI determines hunger on a **100-point scale** where **0 is the best possible score** (no hunger) and **100 is the worst**.
  - Each country's GHI score is **classified by severity, from low to extremely alarming**.
- Data Collection →
  - **Undernourishment data** are provided by the **Food and Agriculture Organisation** and **child mortality data** are sourced from the UN Inter-agency Group for Child Mortality Estimation (**UN IGME**).
  - Child **wasting and stunting data** are drawn from the joint database of **UNICEF**, the World Health Organization (**WHO**) and **the World Bank, among others**.

### 📌 Key findings

- India's score on the Global Hunger Index (GHI) in the recent two decades has **declined by 10 points**. It **slipped to 28.8 in 2021, from 38.8 in 2000**.
- It ranked India at **101st position of 116 countries**. India was **ranked 94 among 107** countries in the Global Hunger Index (GHI) released last year.
- Globally, India ranked among the **worst in 'child wasting' or 'weight for height'**. Its performance was worse than Djibouti and Somalia.

## 8. One Health consortium

### Why in News?

The Department of Biotechnology has launched a 'One Health' consortium. This is the First 'One Health' project of the DBT.

### About

- It is one of the **biggest one health programs** launched by Govt of India in post-COVID times.
- This programme envisages carrying out **surveillance of important bacterial, viral and parasitic infections of zoonotic** as well as transboundary pathogens in India.
- Use of **existing diagnostic tests** and **the development of additional methodologies** when required are mandated for the surveillance and for understanding the spread of emerging diseases.
- Composition → The 'One Health Consortium' consists of **27 organisations led by DBT-National Institute of Animal Biotechnology**, Hyderabad.

### 📌 OneHealth concept

- One Health is the **collaborative efforts of multiple disciplines working locally, nationally, and globally**, to attain optimal health for people, animals and our environment, as defined by the One Health Initiative Task Force.

- One Health model facilitates **interdisciplinary approach** in disease control so as to control emerging and existing zoonotic threats.

## 9. NIPUN Bharat Mission

### Why in News?

Recently, the National Steering Committee (NSC) for implementation of the NIPUN Bharat Mission has been constituted under the chairmanship of the Union Education Minister.

### About National Steering Committee

- Chairman → Constituted under the chairmanship of the **Union Education Minister**.
- Responsibilities of NSC → The following are the roles and responsibilities of the NSC:
  - **To oversee the progress** of the National Mission on Foundational Literacy and Numeracy and provide guidance on policy issues.
  - **To arrive at the target** to be achieved nationally in 2026-27.
  - **To disseminate tools** for the measurement of yearly progress in the form of guidelines.
  - **To prepare and approve** a National Action Plan
  - **To review** programmatic and financial norms periodically to ensure they are synchronised with targets to be achieved.
  - **To develop the methodology** of assessment to analyse the progress and provide feedback to States/UTs.

### 👉 National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat)

- Implemented by → **Department of School Education and Literacy (DoSEL)**, the Ministry of Education.
- Vision → It aims to achieve the goal of **universal proficiency in foundational literacy and numeracy for every child by the end of Grade 3, by 2026-27**, as envisaged by National Education Policy 2020.
  - It aims to cover the learning needs of children in the **age group of 3 to 9 years**.
- Mechanism → A **five-tier implementation mechanism** will be set up at the national- state- district- block- school level in all states and UTs for the mission.
- Funding → **No additional funding** is being allocated for the mission. Instead, money is being allocated **from the Samagra Shiksha scheme**, which saw a **20% drop** in its budget in 2021.
- Significance → **Foundational literacy and numeracy** is one of the goals under the National Education Policy 2020.
  - Initially, the policy had included a **2025 deadline to achieve** this goal. But the target has been **extended to 2026-27**, given that COVID-19 has already disrupted two academic years.

## 10. PM Ayushman Bharat Health Infrastructure Mission

### Why in News?

The Prime Minister has launched the Pradhan Mantri Ayushman Bharat Health Infrastructure Mission also known as Pradhan Mantri Atmanirbhar Swasth Bharat Yojana (PMASBY).

### About

- Aim → PM Ayushman Bharat Health Infrastructure Mission aims to **fill the gaps in public health infrastructure**, mainly in critical care facilities and primary care in both urban & rural areas at regional and national level.
- It is in **addition to the National Health Mission**.
- Through this, critical care services will be available in all the districts of the country with **more than five lakh population through exclusive critical care hospital blocks**, while the **remaining districts will be covered through referral services**.

### key components of the Scheme

- Creation of **elaborate facilities for diagnostics & treatment** - Health & Wellness Centers are being opened in villages and cities, where there will be facilities for early detection of diseases.
- Facilities like **free medical consultation, free tests, free medicine** will be available in these centres.
- **Testing network for diagnosis of diseases** - Necessary infrastructure will be developed for the diagnosis and monitoring of diseases - **Integrated Public Health labs** and **Block Public Health Units**.
- Apart from that, 5 Regional National Centers for Disease Control, **20 Metropolitan units**, and **15 BSL labs** will further strengthen this network.
- **Expanding existing research institutions** that study pandemics - PM Ayushman Bharat Health Infrastructure Mission aims to strengthen the existing Viral Diagnostic and research labs
- Under the scheme, the **following will be set up**,
  - A National Institution for One Health,
  - 4 new National Institutes for Virology,
  - A regional research platform for WHO South East Asia Region,
  - 9 Biosafety level-III laboratories,
  - 5 new regional national centre for disease control.
- **IT enabled disease surveillance system** will be built by developing a network of surveillance laboratories at block, district, regional and national levels, in Metropolitan areas.

## 11. Integrated Teacher Education Programme

### Why in News?

Recently, The Ministry of Education has notified a Four Year Integrated Teacher Education Programme (ITEP).

### About

- What is it? → It is a **four-year dual-major holistic bachelor's degree** offering B.A B.Ed./ B.Sc B.Ed and B.Com B.Ed.
- This integrated course will benefit students since they will **save one year by finishing it in four years** rather than the customary five years required by the present B.Ed. plan.
- Eligibility →
  - This course will be available for all students **who want to choose teaching as a profession** after clearing secondary school.
  - Hence, the basic aim of the government is to make a **four-year integrated B.Ed, the minimum degree required for teaching by 2030**.
- Who has prepared the curriculum for the course? →
  - The National Council for Teacher Education (**NCTE**) has created the curriculum of this course to **enable a student-teacher to get a degree in education** as well as a **specialised discipline** such as history, mathematics, science, arts, economics, or commerce.
  - The course will also **impart cutting-edge pedagogy** and establish a foundation in **early childhood care and education (ECCE)**, foundational literacy and numeracy (**FLN**), inclusive education among others.
- Nodal Agency for Admission →
  - The commencement of the ITEP will be from **the academic session 2022-23**.
  - Admission for the course will be carried out by the **National Testing Agency (NTA)** through the National Common Entrance Test (**NCET**).

## 12. Saath initiative

### Why in News?

Saath was recently inaugurated by the Jammu and Kashmir Lieutenant Governor.

### About

- It is a **Rural Enterprises Acceleration Programme for women** associated with Self Help Group (**SHGs**).
- It will stress on mentoring and market linkages of products created by women associated with SHGs.
- Also, these women would be **imparted knowledge** about marketing, packaging and branding.
- This initiative aims to **impart skills and convert** such women's' businesses into Higher Order Enterprises.

### 13. Prevention of begging

#### Why in News?

The Supreme Court recently refused to ban begging.

#### About

- Begging is defined in Indian law as soliciting or **receiving alms in public places** by exposing wound, injury, deformity or disease, whether of oneself or of any other person or animal. It is the practice of imploring others to grant a favour, often a gift of money, **with little or no expectation of reciprocation**.
- It is the consequence of destitution, a situation of extreme vulnerability with multiple dimensions.
- Persons experiencing destitution live in a vicious cycle of poverty, homeless, powerlessness, stigmatization, discrimination, exclusion and material deprivation all of which reinforced each other.

#### Steps taken for rehabilitation of Beggars:

- **SMILE - Support for Marginalized Individuals for Livelihood and Enterprise**: This scheme has been launched by the **Ministry of Social Justice and Empowerment (MSJE)**.
- This includes sub-scheme - '**Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in the act of Begging**'.
- The focus of the scheme is extensively on rehabilitation, provision of medical facilities, counselling, basic documentation, education, skill development, economic linkages and so on.
- **Skill development**: The MSJE has also released fund to National Backward Classes Finance & Development Corporation (**NBCFDC**) for skill development programmes for beggars **on pilot basis**.
- **Integrated Child Protection Scheme (ICPS)**: It is being implemented by the **Ministry of Women and Child Development** for creating a safe and secure environment for children in need of care and protection including those children who are found begging.

## Security

### 1. Exercise Milan

#### Why in News?

India is set to host its largest naval exercise, Ex Milan, early next year for which 46 countries have been invited.

#### About

- The exercise will see the **participation of all Quad countries** with the U.S. being invited for the first time.
- Milan, which **began in 1995**, is **held biennially** and brings together Navies of all the countries in the region. It has **so far been held at Port Blair** but is now being **shifted to Visakhapatnam** which offers more space and infrastructure.
- The invitees **include all Indian Ocean littoral states** and **countries from South East Asia**.

### 2. S-400 Triumf Missile

#### Why in News?

Recently, the American Deputy Secretary of State described the S-400 missile deal between India and Russia as dangerous, expressed hope that the India and US could solve the issue amicably.

#### About

- What is it? → It is a **mobile, surface-to-air missile system** (SAM) designed by Russia.
- The missile can **destroy airborne targets** within the **range of 250 km** and is also capable of destroying fast-moving targets such as fighter aircraft.
- It is capable of **firing three types of missiles** to create a **layered defence**.
- It can **track 100 airborne targets** and **engage six of them simultaneously**.
- It is the **most dangerous** operationally deployed modern long-range SAM (MLR SAM) in the world, considered **much ahead** of the US-developed **Terminal High Altitude Area Defense system** (THAAD).
- What are the concerns for India? → India is concerned that the U.S would proceed with Countering America's Adversaries through Sanctions Act (CAATSA) sanctions against India over the S-400 purchase from Russia.

#### 👉 CAATSA

- Countering America's Adversaries through Sanctions Act (**CAATSA**)'s core objective is **to counter Iran, Russia** and **North Korea through punitive measures**.
- Enacted in **2017**.
- Includes sanctions against countries that **engage in significant transactions with Russia's defence** and **intelligence sectors**.
- What sanctions will be imposed? →
  - prohibition on loans to the sanctioned person.
  - prohibition of Export-Import bank assistance for exports to sanctioned persons.
  - prohibition on procurement by United States Government to procure goods or services from the sanctioned person.
  - denial of visas to persons closely associated with the sanctioned person.

### 3. Exercise AJEYA WARRIOR

#### Why in News?

Recently, the 6th Edition of India - UK Joint Company Level Military Training EXERCISE AJEYA WARRIOR has commenced at Chaubatia, Uttarakhand.

#### About



- The exercise is part of an initiative to **develop interoperability and sharing expertise** with friendly foreign nations.
- **Experiences gained** during the conduct of various military operations in their respective countries and during overseas engagements would be **shared** during this exercise.
- The exercise is **conducted alternatively** in the United Kingdom and India.

#### 👉 Other exercises between India-UK:

- Navy → **Konkan**.
- Air Force → **Indradhanush**.

## 4. Border Security Force (BSF) jurisdiction extended

### Why in News?

The Centre has issued a notification declaring the expansion of the jurisdiction of the Border Security Force (BSF).

### About BSF

- The BSF is India's border **guarding organization on its border with Pakistan and Bangladesh**.
- It comes under the **Ministry of Home Affairs**.
- It was raised in the **wake of the 1965 War** on 1 December 1965 for ensuring the security of the borders of India and for matters connected therewith.
- The BSF has **its own cadre of officers** but its head, designated as a Director-General (DG), since its raising has been an officer from the Indian Police Service (IPS).

### 👉 New modifications

- The Union Home Ministry has **increased the powers** of the Border Security Force (BSF) **to arrest, search and seize within 50 km from the international boundary in Assam, West Bengal and Punjab**. Earlier, this range was 15 km.
- At the same time, the Ministry has **reduced BSF's area** of operation in **Gujarat from 80 km from the border, to 50 km**.
- The MHA has exercised the powers under the **Border Security Force Act of 1968**.

### 👉 Powers exercised by BSF in its jurisdiction

- BSF's jurisdiction has been extended only in respect of the **powers it enjoys under**:
  - Criminal Procedure Code (CrPC)
  - Passport (Entry into India) Act, 1920 and
  - Passport Act, 1967
  - Arrest and search
- BSF currently has powers to **arrest** and **search** under these laws.
- It also has powers to arrest, search and seize **under the NDPS Act, Arms Act, Customs Act and certain other laws**.
- Its powers under these **will continue to be only up to 15 km** inside the **border in Punjab, Assam and West Bengal**, and will remain as far as 80 km in Gujarat.

## 5. Exercise Yudh Abhyas 2021

### Why in News?

As part of the ongoing Indo-US Defence Cooperation, the Joint Military Training Exercise "Ex Yudh Abhyas 2021" will be conducted at Joint Base Elmendorf Richardson, Alaska (USA) from 15 to 29 October 2021.

### About

- Exercise Yudh Abhyas is the largest running **joint military training and defence cooperation** endeavor between India and USA.

- This will be the **17th Edition** of the joint exercise which is hosted alternately between both countries.
- The previous version of this exercise was **held at Mahajan Field Firing Ranges in Bikaner, Rajasthan** in **February 2021**.

#### 📌 Other Exercises of India with the USA

- Exercise VAJRA PRAHAR (Special Forces).
- Cope India (Air Force).
- Red Flag (USA's multilateral air exercise).
- Malabar Exercise (trilateral naval exercise of India, USA and Japan).

## 6. 7 defence PSUs

### Why in News?

Recently, The Prime Minister has inaugurated seven new defence public sector undertakings(DPSUs) incorporated after the dissolution of the Ordnance Factory Board (OFB).

### About

- In **June 2021**, the Union Government had approved a **plan for Ordnance Factory Board(OFB) Corporatisation**.
- As per the plan, **OFBs** 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).

#### 📌 Seven new DPSUs

- Advanced Weapons and Equipment India (AWE) Limited →
  - Based in **Kanpur, Uttar Pradesh**.
  - It is involved in the **manufacturing of small arms and weapons** for the armed forces and police.
- Armoured Vehicles Nigam Limited (AVANI) →
  - Based in **Chennai, Tamil Nadu**.
  - It is the **biggest** among all the seven new DPSUs.
- Gliders India Limited (GIL) →
  - Registered address in **Kanpur**.
  - It is involved in the **manufacture of textiles**.
- India Optel Limited (IOL) →
  - Based in **Dehradun, Uttarakhand**.
  - It is involved in the **manufacturing of electrical machinery and apparatus**.
- Munitions India Limited (MIL) →
  - Based in **Pune, Maharashtra**.
  - It works to **manufacture general-purpose machinery**.
- Troop Comforts Limited (TCL) →
  - Based in **Kanpur**.
  - The company **manufactures apparel** except those made of fur.
- Yantra India Limited (YIL) →
  - Based out of **Nagpur, Maharashtra**.
  - **Manufactures components** such as shells of ammunition.

## 7. Exercise Cambrian Patrol

### Why in News?

Recently, the Gorkha Rifles (Frontier Force) of the Indian Army has been awarded a Gold medal in the Cambrian Patrol Exercise, which was held in Wales (the UK).

About

- Exercise Cambrian Patrol is organised by **the UK Army**.
- It is considered as the **ultimate test of human endurance, team spirit** and is sometimes referred to as the **Olympics of Military Patrolling** among militaries in the world.
- During the exercise, teams are **assessed with respect to their performance** under harsh terrain and cold weather conditions. They were also **exposed to complex real-world situations** in order to assess their reactions in combating the settings.
- Who participated in the exercise from India? → The **Indian Army team** participated in the exercise and **competed against a total of 96 teams**, which included 17 international teams representing Special Forces and prestigious Regiments from around the world.
- What did the Indian Army receive? → The Indian Army team received a **Gold Medal for their excellent navigation skills, overall physical endurance** and **delivery of patrol orders**.

📌 Joint Exercises between India and UK:

- Navy → Konkan
- Air Force → Indradhanush
- Military → Ajeya Warrior.

8. Nuclear capable hypersonic missile

Why in News?

Recently, it has been reported that China tested a nuclear-capable hypersonic glide vehicle that circled the globe before speeding towards its target.

About

- Hypersonic speeds are those that **exceed five times the speed of sound**, that is, anything that can move at speeds of Mach 5 or above, which means at least 1.6 km per second.
- Types of Hypersonic Missiles → There are **two types of hypersonic missiles**.
  - Hypersonic cruise missiles → These are the ones that **use rocket or jet propellant through their flight** and are regarded as being just faster versions of existing cruise missiles.
  - Hypersonic glide vehicle (HGV) missiles → This is the one that China has tested. They are **launched on rockets** and **then orbit the earth at their own speed**. They are difficult to track because, unlike ballistic missiles, they **“do not follow the fixed parabolic trajectory”**.
- Note → Countries like the US, Russia and China are developing hypersonic glide vehicles.
- Development of Hypersonic Technology in India →

- **India too** is working on hypersonic technologies. In September 2020, DRDO has successfully flight-tested the **Hypersonic Technology Demonstrator Vehicle(HSTDV)** with a **capability to travel at 6 times the speed of sound**.
- In December 2020 an **advanced Hypersonic Wind Tunnel (HWT) test** facility of the DRDO was inaugurated **in Hyderabad**. It is a pressure vacuum-driven, enclosed free jet facility that simulates Mach 5 to 12.

Ballistic Missile	Cruise Missile
•Travel in projectile motion and trajectory depends on gravity, air resistance and Coriolis Force.	•Comparatively follows a straight trajectory of motion.
•Leave the earth’s atmosphere and re enter it.	•The flight path is within the earth’s atmosphere.
•Long-range missiles (300 km to 12,000 km)	•Short range missiles (range upto 1000 km)
•E.g. Prithvi I, Prithvi II, Agni I, Agni II and Dhanush missiles.	•E.g. BrahMos missiles

## 9. Abhyas

### Why in News?

Defence Research and Development Organisation (DRDO) has successfully flight-tested Abhyas High-speed Expendable Aerial Target (HEAT) from the Integrated Test Range in Chandipur, Odisha.

### About

- Purpose → The **indigenous unmanned aerial vehicle** will be used as a target for the evaluation of various missile systems.
- Developed by → It has been designed and developed by **DRDO's Aeronautical Development Establishment (ADE)**.
- Key Features →
  - Abhyas is powered by a **small gas turbine engine** to sustain a long endurance flight at subsonic speed.
  - It is also equipped with a **MEMS-based Inertial Navigation System (INS) for navigation**, along with the **Flight Control Computer (FCC)** for guidance and control.
  - Moreover, the Abhyas vehicle is programmed for **fully autonomous flight**. The check-out of air vehicle is done using a **laptop-based Ground Control Station (GCS)**.

## 10. Agni-V

### Why in News?

India successfully tests nuclear-capable Agni-V ballistic missile.

### About

- It is a **surface-to-surface nuclear-capable** InterContinental Ballistic Missile (ICBM).
- Developed by → Defence Research & Development Organisation (**DRDO**) and **Bharat Dynamics Limited**.
- Range → It is capable of striking targets at ranges **up to 5,000 kilometres** with a very high degree of accuracy.
- Speed → It can reach an exceptional **Mach 24 speed**, which is around 29,401 km/h.
- Key Features of Agni-V →
  - The missile uses a **three-stage solid-fuelled engine**.
  - Satellite Guidance: The missile is equipped with a **ring laser gyroscope inertial navigation system (NavIC)** that works with satellite guidance. So, the missile can **carry nuclear warheads** with advanced navigation and guidance systems.
  - MIRV Technology: The most striking feature of Agni-V is its **MIRV (Multiple Independently Targetable Reentry Vehicles)** technology. In this technique, **multiple weapons can be installed** instead of one in the warhead mounted on the missile. That is, a **missile can hit multiple targets simultaneously**.
  - It is **road-mobile** and can be **transported by a truck** and launched **via a canister**.
  - It weighs close to **50,000 kilograms**. The missile is **1.75 meters tall** with a diameter of two metres.
- Significance → The missile can range the **whole of Asia, Europe** and **parts of Africa**. Once inducted, Agni-V will be maintained by the Strategic Forces command.

## 11. MK 54 lightweight torpedo

### Why in News?

Recently, The Defence Minister has signed a contract with the US government to procure MK 54 torpedoes and expendables such as chaff and flares for the Indian Navy's anti-submarine warfare aircraft P-8I.

### About MK 54

- What is it? → It is an **anti-submarine warfare (ASW) torpedo** used by the United States Navy.
- Can be launched **from a submarine, surface vessel, or airplane**.

- Previously known as **Lightweight Hybrid Torpedo (LHT)**.
- Function →
  - Launched **above or below the water surface**.
  - **Self-propelled** towards a target.
  - Capable of **tracking, classifying** and **attacking underwater targets**.

### 👉 P-8I

- P-8I is a **long-range, multimission maritime patrol aircraft** offered by US Boeing for the Indian Navy.
- The aircraft **can conduct** Anti-Submarine Warfare (ASW), Anti-Surface Warfare (AsuW), intelligence, maritime patrol and surveillance and reconnaissance missions.

### 👉 Chaff

- Chaff is an **electronic countermeasure technology** used by militaries worldwide to protect naval ships, aircraft or other sensitive targets from radar and radio frequency guiding mechanisms of the enemy missile.

### 👉 Flare

- A flare or decoy flare is an **aerial infrared countermeasure used by a plane or helicopter** to **counter an infrared homing** (“heat-seeking”) surface-to-air missile or air-to-air missile.

## 12. ICGS Sarthak

### Why in News?

An Offshore Patrol Vessel (OPV), Indian Coast Guard Ship (ICGS) Sarthak has been commissioned and dedicated to the nation at Goa by the Indian Coast Guard.

### About

- Development → ICGS Sarthak is an indigenously built Offshore Patrol Vessel(OPV) by the **Goa Shipyard Limited**.
- It is a **105-meter-long** ship displacing **2,450 tons** and is propelled by **two 9,100 kilowatt diesel engines** designed to attain a maximum speed of 26 knots.
- Features →
  - It has state-of-the-art **Navigation and Communication equipment, sensors** and **machinery**.
  - It is capable of **carrying a twin-engine helicopter, four high speed boats** and **one inflatable boat** for swift boarding and Search & Rescue operations.
  - It is also capable of carrying **limited pollution response equipment** to undertake oil spill pollution response at sea.
- Utility → It will be deployed extensively **for Exclusive Economic Zone (EEZ) surveillance, Coastal Security** and **other duties** as enshrined in the Coast Guard charter of duties, to safeguard the maritime interests of the Nation.
- It is **4th in the series** of five OPVs. And will significantly boost the maritime safety and security of the nation.
  - Other OPVs: **Sajag, Vighraha, Yard 45006 VAJRA, Varaha**.

## 13. Overground workers (OGWs)

### Why in News?

Jammu and Kashmir (J&K) police recently arrested three overground workers (OGWs) for a grenade attack on a Central Reserve Police Forces (CRPF) camp.

### About overground workers

- The Jammu and Kashmir Police categorize “**anybody who supports the militants**” as an OGW.

- A person providing a safe house, passage, information or acting as a messenger for suspected militants automatically is categorized as an OGW.
- OGWs are often described as '**militants without weapons**'.

#### Steps taken in India to deal with OGWs

- **Operation All Out** was launched in 2017 by the Indian armed forces to eliminate the militant networks, their OGW, and top militant commanders.
- **Jammu and Kashmir Public Safety Act, 1978 (PSA)** is used to book anti national elements and OGWs to prevent them from disrupting peace and security.
- **Operation Sadbhavana (Goodwill)** is a unique humane initiative undertaken by Indian Army in Jammu & Kashmir to address aspirations of people affected by terrorism with focus on improving the overall core social indices of Education, Women & Youth Empowerment, and Health care with simultaneous thrust on capacity building through implementation of community/infrastructure development projects.
- **Mission Pehal** launched in 2021: Under it, officers conduct face-to-face interactions with the Kashmiri youth to encourage the youth to express their grievances and the reasons they may have for mistrusting the Indian state; the Army officers.
- **Education scholarships and livelihood schemes** such as USTTAD, Udaan, and Nai Manzil.
- **Watan Ko Jano program** is a student exchange program, sports as well as civic action program of Central Armed Police Forces (CAPFs).
- **Training and employment opportunities for the youth of Jammu and Kashmir** are also provided under many schemes such as HIMAYAT and **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**.
- **Army conducts around 100 "national integration" tours** for young Kashmiris every year, where they are introduced to history, culture, and development opportunities across India.
- **Utilization of the social media platforms** by the armed forces, alongside the local police, for limiting extremist content and narratives on social media by monitoring and reporting them to tech platforms, and countering them with genuine news.
- **Other steps by Law enforcing agencies include-**
  - enhanced interaction between police and public at various levels.
  - sharing of intelligence inputs on real time basis amongst all security forces operating in Jammu and Kashmir.
  - intensified area domination of militancy affected areas by deployment of additional Nakas and patrolling by security forces etc.
  - Tracking flow of funds to terrorist organisations by National Investigative Agency (NIA).

## 14. National Automated Facial Recognition System (NAFRS)

### Why in News?

Recently, in order to empower the Indian police with information technology, Government has approved implementation of the National Automated Facial Recognition System (NAFRS).

### About

- Facial recognition is a way of identifying or **confirming an individual's identity** using their face. Facial recognition systems can be used to identify people in **photos, videos, or in real-time**.
- It would be a **mobile and web-based application** hosted in Delhi to help in crime prevention and detection and fast track document verification.
- It is supposed to be **interlinked with other existing database** like crime and criminal tracking Network & systems (CCTNS), integrated criminal justice system (ICJS), state specific database systems and the **Khoya-paya portal**.

### Mechanisms of some of the identification methods-

- **Fingerprint:** Fingerprints are easy to capture, and can verified by comparing the unique loops, arches, and whorls in each pattern.
- **Voice Recognition:** Physically, the shape of a person's **vocal tract**, including the nose, mouth, and larynx determines the sound produced. Behaviorally, the way a person says something – movement variations, tone, pace, accent, and so on – is also unique to each individual.
- **Retina Scan:** Retinal scans **capture capillaries deep within the eye** (unique to each person) by using unique near-infrared cameras.
- **Keystroke dynamics:** Keystroke dynamics leverage the fact that people follow a **definite pattern while typing on a keyboard or keypad**. Apart from the aforementioned indicators, other biometrics are also - emerging like ear authentication, footprint and foot dynamics and **gait recognition (style of walking)**.



# History and culture

## 1. Brahmaputra heritage centre

### Why in News?

Vice-President has recently inaugurated the Mahabahu Brahmaputra River Heritage Centre in Guwahati.

### About

- Set up in a nearly **150-year-old Scottish-type wooden bungalow** after an elaborate restoration.
- The Centre is located in **Guwahati's Barphukanar Tila**, meaning **Barphukan's Hillock**.
- The centre has on display the **history of the Battle of Saraighat**, the heritage of Assamese war boats, an amphitheatre, an exhibition space, a cafeteria and two viewing decks.

### 📍 Barpukhan hillock

- Barpukhan was a **post equivalent to Governor-General** created **by Ahom king Pratap Simha** or **Susengpha** (1603-1641). The hillock in the Brahmaputra has been mentioned in ancient scriptures as **Mandrachal**. The hillock is used to be the **17th-century military office** of the Ahom rulers.
- From this hillock only, **Ahom General Lachit Barpukhan** launched the **Battle of Saraighat** in **March 1671** to inflict the most crushing defeat on the Mughals.
- **Captain Archibald Bogle**, posted as the **Assistant Commissioner** and **Collector** of Kamrup district in the 1850s, had the bungalow built.
- Post-Independence, it continued to be the **Deputy Commissioner's Bungalow until 2011**.

### 📍 Battle of Saraighat

- The Battle of Saraighat was the **last major attempt by the Mughals** to **extend their empire into Assam**. The Battle was fought in **1671** between the Mughal Empire, **led by Raja Ram Singh I** and **the Ahom Kingdom**, led **by Lachit Borphukan**.
- The **Ahom army defeated the Mughal Army** by brilliant uses of the terrain, guerrilla tactics, clever diplomatic negotiations to buy time, military intelligence and by exploiting the sole weakness of the Mughal forces—its navy.
- Battle of Saraighat is regarded as the **"greatest naval battle ever fought in a river"**.

## 2. Shyamji Krishna Varma

### Why in News?

Recently, the Prime Minister of India paid tributes to Shyamji Krishna Varma on his Jayanti.

### About

- Shyamji Krishna Varma (1857 – 1930) was an **Indian freedom fighter, lawyer** and **journalist**.
- Indian Home Rule Society (IHRS) → It was an Indian organisation founded **in London in 1905** that sought to **promote the cause of self-rule in British India**. The organisation was founded by Shyamji Krishna Varma, with support from **Bhikaji Cama, Dadabhai Naoroji** and **S.R. Rana**.
- India House → He founded **India House in London**. It was a student residence that existed between 1905 and 1910 which was opened to **promote nationalist views** among Indian students in Britain.
- Indian Sociologist → He founded **Indian Sociologist in London**. The monthly Indian Sociologist became an **outlet for nationalist ideas**.
- In 1877 toured India to propagate the **philosophy of Vedas** and earned the title of "**Pandit**" from the pundits of Kashi.

- Inspired by → **Swami Dayananda Saraswati** and **Herbert Spencer** were his chief inspirations on the path to revolution.

### 3. Langa-Manganiyar

#### Why in News?

Recently, the Langa-Manganiyar artists are in the news as efforts are made by the government to document and digitize their folk art performances.

#### About

- The Langas and Manganiyars are **communities of Muslim folk musicians** residing mostly in **western Rajasthan's** Jaisalmer and Barmer districts.
- While the Manganiyars are **patronised by the Bhati Rajputs**, the Langas have the **Sindhi Sipahis as yajman**.
- They still **sing for their Hindu yajmans** on Holi, Diwali and other auspicious occasions like weddings.

#### Folk art

- The folk art practised by these two communities includes **ballads, folklore** and **songs**.
- The major theme includes **heroic ballads, romantic epic tales** and **the Sufi spiritual stories**.
- The performances are in multiple languages and dialects including **Marwari, Sindhi, Saraiki, Dhatti** and **Thareli**.
- The romantic tales revolving around legendary lovers such as **Umar-Marvi, Heer-Ranjha, Sohni-Mahiwal, Moomal-Rana** and **Sorath-Rao Khangar have** traditionally captivated audiences.
- Folk art forms a **vital part of the Thar desert's cultural landscape**.

### 4. Nobel Prize for Literature 2021

#### Why in News?

Tanzanian novelist Abdulrazak Gurnah has won the 2021 Nobel Prize in Literature.

#### About

- It was awarded to him "**for his uncompromising and compassionate penetration of the effects of colonialism and the fate of the refugee**".
- In his 10 novels he has consistently, and with great compassion, penetrated the **effects of colonialism in East Africa** and its **effects on the lives of uprooted and migrating individuals**.
- Gurnah is the **first African writer to win** the award since the Zimbabwean Doris Lessing in 2007, and only the second writer of colour from sub-Saharan Africa.
- Note: Last year, the award was given to **Louise Glück** "**for her unmistakable poetic voice** that with austere beauty makes individual existence universal."

### 5. Jayaprakash Narayan

#### Why in News?

Recently biography of JP Narayan – The Dream of Revolution, authored by Bimal Prasad and Sujata Prasad, was released.

#### About

- Birth → **11th October 1902** in Sitabdiara, Bihar.
- He is also known as "**Lok Nayak**". People also affectionately called him JP.
- He was a **freedom fighter** and one of the pioneers of the **socialist movement** in India. He was a man of **great intellect and ethical values and standards**.
- Contributions of JP Narayan? →

- He **worked relentlessly for the poor and the underprivileged** and became a symbol in the fight against corruption, anti-democratic conduct.
- He fought **against the repressive practices of Indira Gandhi's government** in the 1970s. Furthermore, he also created support for the **Bhoodan movement**.
- How did JP evolve as a leader? →
  - JP's life can be studied under various phases. His **formative years** were the ones where he evolved as a **political leader**. He then **turned to socialism**. He also waged a **guerrilla struggle against the British** in the Terai region of Nepal.
  - However, his life had a **transition from socialism to Sarvodaya**. This also led to the initiation of the **Total Revolution**.
- Total Revolution? →
  - It is a **revolution against Indira Gandhi Regime**, as she was found guilty of violating electoral laws by the Allahabad High Court. JP advocated a program of **social transformation** which he termed '**Sampoorna Kranti**' (total revolution) in 1974 against corruption in public life.
  - This resulted in the **defeat of the Indira Gandhi government** in **1977** and the installation of the first-ever non-Congress government at the Centre.
  - What is so great was **his stature**, the **position of Prime minister or President was within his reach**, but he chose to work for the people at the grassroots level. This made him a true Lok Nayak.
- Awards and recognitions → Jayaprakash Narayan was posthumously conferred with **India's highest civilian award, the Bharat Ratna** in **1999**.

## 6. Karuppur kalamkari paintings & Kallakurichi wood carvings

### Why in News?

Recently, Traditional Indian Art kalamkari paintings and the Kallakurichi wood carvings both of Tamilnadu are recognized with GI tag because of its reputation.

### About Karuppur kalamkari paintings

- Location → Mainly practised in the **Karuppur and its surrounding villages in Tamil Nadu**.
- History → The documentary evidence has shown that kalamkari paintings evolved under the **patronage of Nayaka rulers** in the **early 17th century**.
- Features → The paintings are done **on pure cotton cloth** and are predominantly **used in temples for umbrella covers, cylindrical hangings, chariot covers** and **asmanagiri** (false ceiling cloth pieces).

### 📍 Kallakurichi wood carvings

- Location → Mainly practised in the **Kallakurichi district in Tamil Nadu**.
- History → The woodcarving skill **evolved as an indigenous art** when Madurai was an important town **under different monarchical regimes in ancient times**.
- Features → They are a **unique form of wood carving** wherein the craftsmen are specialised in carving temple-related items and also furniture using traditional designs.

## 7. Sir Syed Ahmad Khan

### Why in News?

204th birth anniversary of Sir Syed Ahmad Khan was recently observed. He was born on October 17, 1817.

### About

- Sir syed Ahmed khan was a **teacher, politician, social reformer** etc.
- He **served the British administration** before the revolt of 1857.

- He has also written a pamphlet titled "**The Causes of the Indian Revolt**" to explain the reasons for the revolt from a Indian perspective.
- Educationist → Sir Syed is, first and foremost, known for his pioneering role in **transforming the educational opportunities for Muslims**.
  - Sir Syed realised that Muslims could only make progress if they took to **modern education**.
  - For this he started the **Aligarh movement**.
- Social Reformer → He also pushed for **social reforms** and was a champion of **democratic ideals** and **freedom of speech**.
  - He was **against religious intolerance, ignorance** and **irrationalism**. He denounced purdah, polygamy and easy divorce.
  - **Tahzebul Akhlag** (Social Reformer in English), a **magazine** founded by him, tried to **awaken people's consciousness** on social and religious issues in a very expressive prose.
- Critical of National Movement →
  - In his later years Sir Syed **encouraged the Indian Muslims not to join the National Movement**. He felt that education and not politics was needed by them.
  - In a way he encouraged the forces of **communalism** and **separatism** at this stage.

### 📌 Aligarh Movement

- It was a **systemic movement** aimed at **reforming the social, political** and **educational aspects** of the Muslim community.
- The movement undertook to **modernise Muslim's education** by adapting English as a medium of learning and western education rather than just focusing on traditional teachings.
- Sir Syed established the **Scientific Society in 1864**, in Aligarh to translate Western works into Indian languages to prepare the Muslims to accept Western education and to inculcate scientific temperament among the Muslims.
  - The **Aligarh Institute Gazette**, a magazine published by Sir Syed was an **organ of the Scientific Society**.
- In 1877, he founded the **Muhammadan Anglo Oriental College** on the pattern of Oxford and Cambridge universities. The college later grew into Aligarh Muslim University.
- The Aligarh Movement **helped in the Muslim revival**. It gave them a common language— **Urdu**.

## 8. Martand Sun Temple

### Why in News?

Union Minister Piyush Goyal visited the Sun temple at Martand. Located atop a hillock, the temple is one of the earliest known sun temples much older than Konark and Modhera.

### About

- The temple is located five miles from Anantnag in the **Indian union territory of Jammu and Kashmir**.
- The Martand Sun Temple, also known as **Pandou Laidan** is a **Hindu temple** dedicated to Surya (the chief solar deity in Hinduism) and **built during the 8th century CE**.
- The Martand Sun Temple was built by the **third ruler of the Karkota Dynasty, Lalitaditya Muktapida**, in the 8th century CE. It is said to have been built during 725-756 CE.
- Martand is another **Sanskrit synonym for Surya**.
- It is **now in ruins**, as it was destroyed by the orders of Muslim ruler Sikandar Shah Miri.

## 9. Bhaskarabda

### Why in News?

Bhaskarabda to be added to official Assam calendar. Presently, the official calendar of Assam government makes use of the Saka calendar and the Gregorian calendar.

## About

- Bhaskarabda, an era counted from the date of the **ascension of a 7th-century local ruler Bhaskar Varman**.
- Bhaskarabda began when Bhaskaravarman was **crowned ruler of the Kamrupa kingdom**. He was a **contemporary and political ally** of northern Indian **ruler Harshavardhana**.
- The gap between Bhaskarabda and Gregorian is **593 years**.
- Luni-Solar → In the lunisolar calendar **months are lunar** but **years are solar**, it was used in the early civilizations of the whole Middle East and in Greece.

## 👉 Bhaskarvarman (600–650):

- He belonged to the **Varman dynasty** and was the **ruler of Kamarupa Kingdom**.
- Kamarupa was one of the **most advanced kingdoms** in India under Bhaskaravarman.
- Kamarupa was the first historical kingdom of Assam.
- His name has been immortalised in the accounts of the **Chinese Buddhist pilgrim, Xuanzang**, who visited Kamarupa during his reign.
- He is known for his **alliance with Harshavardhana against Shashanka**, the first major ruler of Bengal (Karnasuvarna).

## 10. Gorias

### Why in News?

Indigenous Muslims in northern Assam's Darrang district are now facing the threat of being evicted from the banks of the Brahmaputra.

### About

- Gorias is **Assam's ethnic indigenous Muslim community**.
- Apart from the **religious aspect, no Muslim in India and the world** has any cultural, linguistic and traditional **similarities with the Gorias**.

## 11. Netaji's Azad Hind Government

### Why in News?

Press Information Bureau (PIB) Bhubaneswar in association with the Language, Literature and Culture Department, Government of Odisha organised a joint press conference at Netaji Birth Place Museum on the anniversary of the formation of Netaji's Azad Hind Government.

### About

- Netaji Subhash Chandra Bose had announced the establishment of the **provisional government of Azad Hind in occupied Singapore in 1943**.
- Known as **Arzi Hukumat-e-Azad Hind**, it was **supported by** the Axis powers of Imperial Japan, Nazi Germany, the Italian Social Republic, and their allies.
- The provisional government was **also formed** in the **Japanese-occupied Andaman and Nicobar Islands**. The islands were reoccupied by the British in 1945.
- Why was it set up? →
  - Bose was convinced that **armed struggle was the only way** to achieve independence for India.
  - It drew **ex-prisoners and thousands of civilian volunteers** from the **Indian expatriate population in Malaya** (present-day Malaysia) and Burma (now Myanmar).
- Key features →
  - The Azad Hind government had its **own court, civil code** and **currency**.
  - Its provisional capital was **Port Blair**, while its capital-in-exile was **Rangoon** and **Singapore**.
- Under the provisional government →

- **Bose** was the **head of the state**, the prime minister and the minister for war and foreign affairs.
- **Captain Lakshmi** headed the **women's organisation**.
- **S A Ayer** headed the **publicity and propaganda wing**.
- **Rash Behari Bose** was designated as the **supreme advisor**.
- How it came to an end? → **Bose's death** was **seen as the end** to the Azad Hind movement. The **Second World War**, also **ended in 1945** with the defeat of the Axis powers.



## Miscellaneous

### 1. IndiaXports 2021 Portal

#### Why in News?

Union Minister for MSMEs virtually inaugurated the India Export Initiative and IndiaXports 2021 Portal of India SME Forum in New Delhi.

#### About

- The initiative aims to **support the growth of MSMEs exports** by providing free of cost information and knowledge to MSMEs on the untapped export potential in existing tariff lines.
- The initiative features an **Info Portal** which serves as a **knowledge base for exports** by Indian MSMEs.
- The portal has information related to the **export potential for all the 456 tariff lines** along with the potential markets as well as trends in exports, export procedures and lots more.
- Apart from an export help desk, **Instructor-led orientation** will also be provided to MSMEs through a series of sessions for specific sectors, **highlighting the opportunities in specific products** in international markets.
- The initiative **targets 1 lakh+ MSMEs** desirous of knowing more about exports and hand **holding 30,000+ MSMEs to start exporting**, doubling the base of active exporters.

### 2. Senegal-Mauritanian Aquifer Basin (SMAB)

#### Why in News?

Ministers of the Gambia, Guinea Bissau, Mauritania and Senegal signed a joint declaration September 29, 2021, to advance transboundary cooperation in the Senegal-Mauritanian Aquifer Basin (SMAB).

#### About

- The four West African countries have, through the declaration, agreed to **establish a legal and institutional framework for cooperation** on SMAB.
- This would be the **first such mechanism in West Africa** and pave the way for strengthened collaboration on shared groundwater resources worldwide.

#### 👉 Senegal-Mauritanian Aquifer Basin

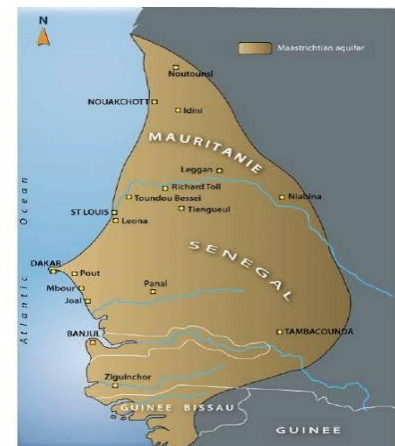
- The Senegalo-Mauritanian aquifer basin is the **largest basin in the Atlantic margin of north-west Africa**, having an area of 350,000 square kilometres.
- More than 24 million inhabitants of the region are dependent on it for **drinking water** and **other needs**.

#### Need for:

- Senegal, upon accession to the **UNECE Water Convention in 2018**, had requested for such a declaration.
- The **Water Convention Secretariat**, together with the Geneva Water Hub and the International Groundwater Resources Assessment Centre, subsequently **facilitated the declaration**.

#### 👉 Water Convention

- Background → The Convention on the Protection and Use of Transboundary Watercourses and International Lakes (**Water Convention**) was adopted in **Helsinki in 1992** and **entered into force in 1996**.
- Purpose → The Convention is a **unique legally binding instrument** promoting the sustainable management of shared water resources, the implementation of the Sustainable Development Goals, the prevention of conflicts, and the promotion of peace and regional integration.
- Implementation →



- The Water Convention requires **Parties to prevent, control and reduce transboundary impact, use transboundary waters** in a reasonable and equitable way and ensure their sustainable management.
- Parties **bordering the same transboundary waters** have to cooperate by entering into specific agreements and **establishing joint bodies**.
- As a framework agreement, the Convention does **not replace bilateral and multilateral agreements** for specific basins or aquifers; instead, it fosters their establishment and implementation, as well as further development.
- Members → As of September 2018, it has been **ratified by 43 parties**, which includes **42 states** and **the European Union**. It has been signed but not ratified by the United Kingdom.

### 3. State Nutrition Profiles

#### Why in News?

NITI Aayog, in a joint effort with International Food Policy Research Institute (IFPRI), the Indian Institute of Population Sciences (IIPS), UNICEF and the Institute of Economic Growth (IEG) has launched 'The State Nutrition Profiles' for 19 States and Union Territories.

#### About

- The SNPs give **insights on nutrition outcomes**, immediate and underlying determinants and interventions based on National Family Health Survey (NFHS) rounds 3, 4 and 5.
- The SNPs include a **comprehensive compilation of crucial data** that can positively affect policy decisions and facilitate research in the area.
- They contain the trend analysis of key indicators such as wasting, stunting, anemia, underweight and overweight and NCDs (Diabetes and High blood pressure) showcase the **variability of performance across districts**.
- The reports highlight the **best** and **worst-performing districts, the highest-burden districts** and **top** coverage districts of the country.

### 4. i-Drone

#### Why in News?

Ministry of Health and Family Welfare has launched a Drone-Based vaccine delivery model named, ICMR's Drone Response and Outreach in North East (i-Drone).

#### About

- Aim → The delivery model is aimed at **ensuring that life-saving vaccines reach everyone**.
- This is for the first time that a **'Make in India' drone** has been **used in South Asia to transport COVID vaccine** over an aerial **distance of 15 km in 12-15 minutes** from the Bishnupur district hospital to Loktak lake, Karang island in Manipur for administration at the primary health centre.
- The **actual road distance** between these locations is **26 km**.
- The delivery model would **serve remote areas** and **hard to reach terrains**.

### 5. Gaming Disorder

#### Why in News?

As the pandemic increased screen time across age groups, the concerns over gaming disorder have been growing.

#### About

- According to the WHO, Gaming disorder is defined as a **pattern of gaming behavior** ("digital-gaming" or "video-gaming") characterized by,
  - **Impaired control** over gaming,

- **Increasing priority given to gaming over other activities** to the extent that gaming takes precedence over other interests and daily activities, and
- **Continuation** or **escalation of gaming** despite the occurrence of negative consequences.
- It is the **obsessive** and **compulsive overuse of internet games** and video games as an escape from life.
- Symptoms → **Insomnia, withdrawal from social contacts, academic failure, extreme anger** and **irritability**, and refusal to eat food.
  - Online gaming has not only been a problem for children and youth but **adults too** get addicted to games that involve real money.
  - Ultimately, **gaming addictions** can **cause physical, social** and **emotional damages, impairing sleep, appetites**, careers and social lives.
- Diagnosis → For gaming disorder to be **diagnosed**, the **behaviour pattern must be of sufficient severity** to result in significant impairment in important areas of functioning.
- It would normally have been evident for **at least 12 months**.
- Background → WHO released the **11th revision** of the International Classification of Diseases (**ICD-11**) in **mid-2018**.

### 👉 International Classification of Diseases

- International Classification of Diseases (ICD) is the **basis for identification of health trends and statistics globally** and the international standard for reporting diseases and health conditions.
- It is **used by medical practitioners** around the world **to diagnose conditions** and by researchers to **categorize conditions**.
- The inclusion of a disorder in ICD is a consideration which **countries take into account when planning public health strategies** and **monitoring trends of disorders**.

## 6. New Biodegradable Polymer

### Why in News?

Scientists have developed a New biodegradable polymer, using Guar Gum, and Chitosan, which has high potential for packaging material.

### About

- What is it? → It is a **guar gum-chitosan composite film** which is a cross-linked polysaccharide developed with the help of solution casting method (a simple technique to make polymer films).
- It **overcomes** the **challenges of polysaccharides**.
- Polysaccharides → Polysaccharides is **one of the biopolymers** with high potential for use in synthesis of packaging material.
- However, due to some drawbacks of polysaccharides, such as **low mechanical properties, high water-solubility**, and **low barrier properties**, they are **not preferred**.
- **Guar Gum**, and **Chitosan** are polysaccharides extracted from guar beans and **shells of crab** and **shrimps**.
- Key Properties of the Film →
  - **High water stability, high mechanical strength** as well as **excellent resistance** towards harsh environmental conditions.
  - It is **highly water repellent** or **hydrophobic** because of its high contact angle of 92.8°.
  - **Water vapor permeability** is **low** as compared to the film made only from chitosan.
  - Vapour permeability is a material's ability to allow a vapour (such as water vapour or, indeed any gas) to pass through it.
- Benefits →
  - It is likely to **help effectively deal with the menace of piling non-biodegradable packaging materials**, including water and soda bottles.

- Normally, Polymers have a **wide variety of industrial and commercial uses** but it is not biodegradable and hence poses a major challenge to the environment and earth's ecosystem.

## 7. Henley Passport Index 2021

### Why in News?

India has been ranked 90th in the most powerful passport report 'Henley Passport Index 2021'.

### About

- Released by → **Henley & Partners**.
- The Henley Passport Index is the original ranking of all the world's passports **according to the number of destinations their holders can access without a prior visa**.
- When was it started? It was **started in 2006** as Henley & Partners Visa Restrictions Index (HVRI) and was **modified and renamed** in **January 2018**.
- Based on → Originally created by **Dr. Christian H. Kaelin** (chairman of Henley & Partners), the ranking is **based on exclusive data from the International Air Transport Association (IATA)**, which maintains the world's largest and most accurate database of travel information.

### 👉 Key Takeaways

- **Japan and Singapore** stood at the **top** of this year's list, with their passport holders allowed to travel visa-free to 192 countries, while South Korea and Germany share the second position.
- **India fell down** to the **90th position**, with its passport holders allowed to travel visa-free to 58 countries.

## 8. Mosquirix

### Why in News?

RTS,S/AS01 (RTS.S), trade name Mosquirix, was recently endorsed by the World Health Organisation (WHO).

### About

- Developed by → British pharmaceutical company **GlaxoSmithKline** in partnership with the PATH Malaria Vaccine Initiative. It was **approved for the pilot programme in 2015**.
- The vaccine acts **against P. falciparum**, the most deadly malaria parasite globally, and the most prevalent in Africa.
- The malaria vaccine should be provided in a **schedule of 4 doses in children from 5 months of age** for the reduction of malaria disease and burden.

### 👉 About Malaria

- Malaria is a **life-threatening disease** caused **by parasites** that are transmitted to people through the bites of infected **female Anopheles mosquitoes**.
- There are five kinds of malarial parasites — **Plasmodium falciparum**, **Plasmodium vivax** (the commonest ones), **Plasmodium malariae**, **Plasmodium ovale** and **Plasmodium knowlesi**.

## 9. Guduchi

### Why in News?

Ministry of Ayush has recently noticed safety concerns on use of Guduchi (*Tinospora cordifolia*) that were published in social media and in some scientific journals.

### About

- Guduchi is a popularly known **herb** and has been **used in therapeutics** since long in AYUSH systems.

- It is a **large, glabrous, perennial, deciduous, climbing shrub** of weak and fleshy stem found throughout India.
- It is a **widely used plant** in **folk and Ayurvedic systems** of medicine.
- The chemical constituents reported from this **shrub belong to different classes**, such as alkaloids, diterpenoid lactones, glycosides, steroids, sesquiterpenoid, phenolics, aliphatic compounds and polysaccharides.
- **Potential medicinal properties** reported by scientific research include anti-diabetic, antipyretic, antispasmodic, anti-inflammatory, anti-arthritic, antioxidant, anti-allergic, anti-stress, anti-leprotic, antimalarial, hepato-protective, immuno-modulatory and anti-neoplastic activities.

## 10. Palk Bay scheme

### Why in News?

The Union Government is considering increasing the unit cost of deep-sea fishing vessels under the Palk Bay scheme to make it more attractive to fisherfolk.

### About Palk Bay scheme

- Launched in **July 2017** under the **Blue Revolution programme**.
- Type → **Centrally Sponsored Scheme**. The scheme is financed by the Union and the State Governments with beneficiary participation.
- It is a **Tamil Nadu-specific scheme** aimed at providing 2,000 vessels in three years to fishermen of the State and **motivating them to abandon bottom trawling**.
  - Bottom trawling, an ecologically destructive practice, involves trawlers dragging weighted nets along the sea-floor, causing great depletion of aquatic resources.
- Another objective of the scheme is to “**reduce fishing pressure**” around the proximity of the International Maritime Boundary Line (**IMBL**) so that **Tamil Nadu fishermen do not cross the IMBL and fish in Sri Lankan waters**.
- The Funding pattern of the scheme is Centre 50%, State 20%, Institutional funding 10% and Beneficiary 20%.
- The Scheme is **limited to vessels costing upto Rs. 80 Lakh**.
- The scheme is **not part of Pradhan Mantri Matsya Sampada Yojana**.

### 📌 Marine Fisheries Bill

- The Bill proposes to **only grant licenses to vessels registered** under the **Merchant Shipping Act, 1958**, to fish in the Exclusive Economic Zone (EEZ).
- It also proposes **punishments for fishermen breaching the EEZ without a licence**, not complying with Indian Coast Guard (ICG) orders, and obstructing ICG officials.
- The Bill **prohibits fishing** by foreign fishing vessels, thus nationalising our EEZ.
- It proposes **social security** for fish workers and **calls for protection of life at sea** during severe weather events.

## 11. Nobel Peace Prize 2021

### Why in News?

Maria Ressa of the Philippines and Dmitry Muratov of Russia received the Nobel Prize for Peace “for their courageous fight for freedom of expression”.

### About

- This is the first Nobel Peace Prize for journalists since the **German Carl von Ossietzky won it in 1935** for revealing his country's secret post-war rearmament programme.
- In **2020**, the award was given to the **World Food Programme (WFP)**, a United Nations (UN) agency.

### 📌 Maria Ressa:

- An **investigative journalist**, Ressa in 2012 co-founded Rappler, a digital media platform for investigative journalism, which she continues to head.
- Rappler has focused critical attention on **President Rodrigo Duterte's regime's controversial, murderous anti-drug campaign**.
  - In the 2021 World Press Freedom Index, the Philippines ranked 138 of 180 nations (India was ranked lower, at 142).
- She has also **authored Seeds of Terror: An Eyewitness Account of Al-Qaeda's Newest Center, and From Bin Laden to Facebook: 10 Days of Abduction, 10 Years of Terrorism**.

#### **Dmitry Muratov:**

- Muratov has for decades **defended freedom of speech in Russia** under increasingly challenging conditions".
  - Russia has **ranked 150** in the 2021 World Freedom Index.
- He along with around 50 colleagues started Novaya Gazeta (Newspaper) in 1993, as one of its founders. He has served as the **newspaper's editor-in-chief since 1995**.
- Committee to Protect Journalists, a US-based non-profit, had felicitated Muratov as one of its **International Press Freedom awardees** in **2007**.
- Six of Muratov's colleagues have been killed since the newspaper started, which has **often faced harassment, threats, violence** and **murder from its opponents**.

## 12. Tiananmen Square massacre

### Why in News?

The University of Hong Kong has ordered the removal of the Tiananmen Square massacre statue (Pillar of Shame statue) that commemorates the protestors killed in China's 1989 crackdown.

### About

- The Tiananmen Square protests were **student-led demonstrations** held in Tiananmen Square in Beijing **during 1989** **calling for democracy, free speech** and a **free press in China**.
- Background to protests →
  - The protests were set off by the **death of pro-reform Communist general secretary Hu Yaobang in April 1989**, amid the backdrop of rapid economic development and social changes in post-Mao China.
  - **Common grievances at the time** included inflation, corruption, limited preparedness of graduates for the new economy, and restrictions on political participation.
- Tiananmen Square Massacre →
  - The protests **started on April 15** and were **forcibly suppressed** in a bloody crackdown, known as the Tiananmen Square Massacre, by the Chinese government on June 4 and 5, 1989.
  - On **June 4**, the government **declared martial law** and **sent the military to occupy central parts** of Beijing. Troops with assault rifles and tanks fired at the demonstrators.
  - Estimates of **the death toll vary** from **several hundred** to several thousand, with thousands more wounded.

## 13. Endosulfan

### Why in News?

Recently, the protesters have called for the endosulfan stocks to be returned to the company for safe disposal in the Kasaragod district.

### About

- Endosulfan is a **pesticide** and It does **not occur naturally** in the environment.
- It is a **cream-to-brown-coloured solid** that may appear crystalline or in flakes.
- It has a **distinct odour** similar to turpentine.



- It is **used to control insects** on food and non-food crops and also as a wood preservative.
- It is sold as a **mixture of two different forms** of the same chemical (referred to as  $\alpha$ - and  $\beta$ -endosulfan).
- Endosulfan can be **released into the air, water, and soil** in areas where it is applied as a pesticide.
- The **health effects** of endosulfan depend on **how much endosulfan you are exposed** to and the length of that exposure.
  - Toxic by **inhalation, skin absorption, or ingestion**.
- In 2012, when there was the threat of endosulfan **leaks from old godowns**, they were **transferred to new godowns** through a scheme called **Operation Blossom Spring**.
  - It aims to **restore organic farming practices** back in the district and preserve the ecological balance

## 14. Nokku kooli

### Why in News?

The Kerala High Court lashed out again at the practice of demanding nokku kooli by headload workers in the State.

### About

- Nokku kooli **refers to extortion by organized labour unions in Kerala** under which wages are paid to trade union activists for allowing common householders/ investors/builders to unload belongings/materials using machines or their own labour.
- In Malayalam, 'nokku kooli', translates into '**gawking wages**' or '**wages for (just) looking on**'.
- The practice **still persists in the state despite a ban** and **repeated directives by the High Court**. On May 1, 2018, the Kerala government banned the practice.

## 15. First movie shoot in space

### Why in News?

Russian film crew returned to Earth after spending 12 days on the International Space Station (ISS) shooting scenes for the first movie in orbit.

### About

- The filmmakers had blasted off from the Russia-leased Baikonur Cosmodrome in ex-Soviet Kazakhstan earlier this month, **travelling to the ISS to film scenes for 'The Challenge'**.
- The Russian movie's **plot centres around a surgeon** who is dispatched to the ISS to save a cosmonaut.

## 16. Geospatial Energy Map of India

### Why in News?

NITI Aayog launched a comprehensive Geographic Information System (GIS)-based Geospatial Energy Map of India.

### About

- Developed by → **NITI Aayog** in collaboration with Indian Space Research Organisation (**ISRO**).
- It provides a **holistic picture of all energy resources** of the country.
- This will **enable visualisation of energy installations** such as conventional power plants, oil and gas wells, petroleum refineries, coal fields and coal blocks, etc.
- Further, it will **visualise district-wise data** on renewable energy power plants and renewable energy resource potential.
- Significance → The Geospatial Energy Map of India will be **useful in planning** and **making investment decisions**. It will also **aid in disaster management** using available energy assets.

### Geospatial Mapping

- It is a **type of spatial analysis technique** that typically employs software capable of rendering maps, processing spatial data, and applying analytical methods to terrestrial or geographic datasets, including the use of geographic information systems.
- It is different from traditional mapping, as geospatial mapping provides us with **computerized data** that can be used to **create a custom map designed for your needs**.

## 17. Earthshot Prize

### Why in News?

Vidyut Mohan, a Delhi-based entrepreneur, won the inaugural edition of The Earthshot Prize. He won it for his innovative technology that recycles agricultural waste to create fuel.

### About

- Formation → The award was set up by **Prince William and Royal Foundation**, the charity founded by the Duke and Duchess of Cambridge.
- Earthshot Prize is also called the “**Eco Oscars**”.
- Objective → To **honour five finalists** between 2021 and 2030 **for developing solutions to fight the climate crisis**.
- The prize is inspired by US President John F Kennedy’s “**Moonshot**” programme, which resulted in the US Apollo lunar launches and the first man setting foot on the Moon in 1969.
- Categories → The **year 2021** was the first year when awards were handed out to five finalists for their **contributions towards the five UN Sustainable Development Goals** —
  - Restoration and protection of nature,
  - Air cleanliness,
  - Ocean revival,
  - Waste-free living and
  - Climate action.
- Earthshot Prize Council → Every year, **five winners will be selected** from 15 finalists (3 from each category) **by the Earthshot Prize Council**.
  - The council **comprises global spokespersons** who are striving to bring impactful action in various capabilities.
  - The historian **David Attenborough will honour** five finalists between 2021 and 2030.
- Prize Money → The winner will receive prize money of **£1 million**. Each winner will also receive a **global platform and prestigious profile**, with their stories being showcased over the decade with the ambition that their solutions lead to mass adoption, replication and scaling.

Category	Winner	Contribution
Clean Our Air	Indian Vidyut Mohan led Takachar	Cheap technology innovation to convert crop residues into sellable bio-products
Protect and Restore Nature	Costa Rica	Scheme paying local citizens to restore natural ecosystems that has led to a revival of the rainforest.
Revive our oceans	Coral Vita Project run by two individuals	Growing coral in the Bahamas designed to restore the world’s dying coral reefs.
Build a waste-free world	The City of Milan Food Waste Hubs, Italy	A waste-busting initiative which dramatically cut fast while tackling hunger
Fix our Climate	AEM Electrolyser, Thailand/Germany/Italy	A renewable energy project to make hydrogen by splitting water into hydrogen and oxygen

## 18. DLX1 gene

### Why in News?

Researchers at the IIT, Kanpur, have discovered that a particular gene (DLX1) has an important role to play in the growth and development of prostate cancer.

### About

- DLX1 plays an **important role** in the **development of jaws, skeleton**, and **interneurons in the brain**.
- It is also **expressed at higher levels** in the prostate cancer cells.

### About the study

- The team of researchers at the institute has now found that the **DLX1 protein** has a **huge role in the growth and development of the tumour** and the spread of the cancer to other organs in the body (metastasis).
- Using small molecules as inhibitors, the researchers have shown in mice a **new therapeutic strategy** to treat people with **DLX1-positive prostate cancer**.

### Prostate cancer

- Prostate cancer is **cancer of the prostate**.
- The prostate is a **gland in the male reproductive system** that surrounds the urethra just below the bladder.
- Most prostate cancers are **slow growing**.
- Factors that increase the risk of prostate cancer include **older age, family history** and **race**.
- The **DLX1 protein** is found at elevated levels in prostate cancer patients, the reason why the DLX1 protein has been **used as a urine-based biomarker**.

## 19. Ayush Van

### Why in News?

Union Minister of AYUSH, Sarbananda Sonowal inaugurated Ayush Van, a dedicated forest for Ayurvedic plants in a program held at the Deendayal Port Trust (DPT) – Rotary Forest in the city.

### About

- Location → It is located at the **Deendayal Port Trust (DPT) in Kutch, Gujarat**.
- Ayush Van is a **dedicated forest for Ayurvedic plants**.
- The Ayush Van was set up in **30 acres of land allotted by DPT** in green-belt area where tree plantation is being done to improve greenery in urban area and increase density of tree cover in the Kutch region.
- Benefits → The Ayush Van will help to **realise the huge potential and benefits of the medicinal plants in India**.

## 20. Sowa -Rigpa

### Why in News?

UGC has issued notification regarding the recognition of Bachelor of Sowa Rigpa Medicine and Surgery (BSRMS) of a minimum of five years. 10+2 is mandatory for admission.

### About

- It is commonly known as the **Amchi system of medicine** is **one of the oldest, living** and **well documented** medical traditions of the world.
- It has been a popular practice in **Tibet, Magnolia, Bhutan**, some parts of **China, Nepal, Himalayan regions of India** and few parts of the former Soviet Union etc.
- The majority of theory and practice of Sowa-Rigpa is **similar to "Ayurveda"**.
- **Yuthog Yonten Gonpo** from Tibet is believed to be the **father of Sowa Rigpa**.
- The basic theory of Sowa-Rigpa may be adumbrated in terms of the following five points →
  1. The body in disease as the locus of treatment.
  2. Antidote, i.e., the treatment.
  3. The method of treatment through antidote.
  4. Medicine that cures the disease.
  5. Materia Medica, Pharmacy & Pharmacology.

## 21. Nebra Sky Disc

### Why in News?

The British Museum in London will display an ancient object called the Nebra Sky Disc. It will be showcased as part of an exhibition on Stonehenge, which will open in February 2022.

### About

- The Nebra Sky Disc is widely believed to **be 3,600 years old**, dating from the **Bronze Age**.
- It is thought to be the **world's oldest concrete depiction of stars**.
- The disc measures about **30 cm in diameter** and has a **blue-green patina** emblazoned with gold symbols representing the Sun, Moon, stars, solstices and other cosmic phenomena.
- Discovery →
  - The disc was **unearthed in Germany in 1999** and is considered one of the most important archaeological finds of the 20th Century.
  - It was **ritually buried along with two precious swords**, two axes, two spiral arm-rings and one bronze chisel circa near Nebra in Germany. The burial of these objects is thought to be **made as a dedication to gods**.
- Value →
  - The disc has a value of about **\$11 million** and is thought by some to be **one part of a pair**, with the other part still out there, waiting to be discovered.
- Significance of Nebra Sky Disc →
  - The Nebra Sky Disc is considered to be one of the **most important archaeological finds** of the 20th century and has been associated with the **Unetice culture** that **inhabited parts of Europe around 1600 BC**.
  - The Unetice culture comprised early **Bronze Age communities** in **Central Europe**, including in Bohemia, Bavaria, southeastern Germany and western Poland.

## 22. Mastirak Gel

### Why in News?

A poly-herbal and cost-effective medicine has been developed to treat Mastitis.

### About

- The medicine called Mastirak Gel was developed by **National Innovation Foundation** (NIF).
- It has been developed **utilising indigenous knowledge systems** shared by a farmer from Gujarat.
  - It has been **commercialized through** the industry partner **Rakesh Pharmaceuticals**.
- A gel preparation has been developed **for topical application over the affected udder surface**.
- Benefits →
  - It was found that the medication could **minimize Somatic Cell Count** (SCC) and **improve the udder health**.
  - The Somatic Cell Count is a parameter noted globally, and efforts are fine-tuned in reducing the SCC in milk at the standard limit.
  - Polyherbal medicine **reduces inflammation** which is detrimental to the udder.

### 👉 Mastitis disease in Cattle

- Mastitis is an **infectious disease** condition resulting in an **inflammatory reaction in the mammary gland** of the cow.
- Caused by → There are a **variety of microorganism species** that are known to cause mastitis. These range from viruses, mycoplasma, fungus and bacteria.
- Symptoms → The clear sign of mastitis is **inflammation** of the mammary gland that **turns into a red and hard mass**. This affects farm productivity due to a fall in milk quality thus impacting income-generating activities.
- Treatment → The treatment usually **involves antibiotics**. But this poses a public health hazard.

## 23. Mount Manipur and Anglo-Manipur War

### Why in News?

Union government has renamed Mount Harriet of Andaman and Nicobar (A&N) Islands to Mount Manipur.

### About Mount Harriet

- Mount Harriet is the **third highest peak in the Andaman and Nicobar Islands**, and served as the summer headquarters of the Chief Commissioner during British Raj.
- It is believed to be **named after British artist and photographer, Harriet Christina Tytler**, who was the wife of Robert Christopher Tytler, a soldier who served in the British Indian Army.
- Mount Harriet, where **Manipur's Maharaja Kulchandra Singh** and **22 other freedom fighters were imprisoned** during the Anglo-Manipuri war (1891).
- It has been **renamed in a tribute** to those freedom fighters of Manipur.
  - Manipur celebrates **Khongjom Day on 23rd April** in commemoration of the freedom fighters of Anglo-Manipuri War.

### 📌 Anglo-Manipur War of 1891- Causes:

- Considered an epoch in the history of Manipur, the Anglo-Manipur War was fought **between the kingdom of Manipur and the British over a month in 1891**.
- The battle was **triggered by a coup in the palace of Manipur**, which had been marked by internal factionalism in the years leading up to 1891.
- The British government **took advantage of the "internal dissension"** among the princes of the royal family.
- Significance of the war →
  - Many say the war was described as a **"blow to British prestige"**. Despite their victory, it had led to the death of five important officers.
  - In India, it was viewed as being **part of the general uprising against British rule** in the country, soon after the Revolt of 1857.
  - The war led to Manipur officially **becoming a princely state** under the indirect rule of the British crown.

## 24. Georissa Mawsmiensis

### Why in News?

Researchers have recently discovered a micro snail species named *Georissa mawsmiensis* from Mawsmai, a limestone cave in Meghalaya.

### About

- This is significant as the **last discovery** of the same genus was **made in 1851**.
- The new species is **unique from *Georissa sarrita* in its shell morphology**, starting from shell size variation to the presence of **four very prominent spiral striations** (a minute groove, scratch) on body whorls of the shell.
- These spiral striations, which are counted from the **suture to aperture in apertural view**, are **seven in *Georissa sarrita***.
- Habitat → *Georissa* is **found in soil** or **subterranean habitats in lowland tropical forest** as well as high altitude evergreen forests or on rock surfaces rich in calcium.
- Distribution → The members of the *Georissa* genus are widely distributed across and reported from **Africa, Asia**, and **the Pacific**. However, they are **confined to microhabitats** consisting of **limestone caves** or **karst landscapes** formed by the dissolution of limestone.

### 📌 Mawsmai cave

- Mawsmai cave is situated in the **small village of Mawsmai**, around four kilometres from Cherrapunjee (Sohra) in the East Khasi Hills district of Meghalaya.
- The term 'Mawsmai' means **'Oath Stone' in the Khasi language**. The Khasi people use the local term **'Krem'** for the cave.

- The cave is located at an **altitude of 1,195 metres** above sea level and is indirectly **influenced by the streams of the Kynshi river** originating from the East Khasi Hills.

## 25. India Internet Governance Forum

### Why in News?

India Internet Governance Forum (IIGF) event will be conducted jointly by Ministry of Electronics and IT, NIXI and Multistakeholder Group from 8th to 11th of November, 2021.

### About

- The India Internet Government Forum is an initiative **associated with the UN Internet Governance Forum** (UN-IGF).
- India Internet Governance Forum(IIGF) has been constituted in **conformance to IGF-Paragraph 72 of the Tunis Agenda** of the UN-based Internet Governance forum (IGF).
- The Internet Governance Forum (IGF) is a **multi-stakeholder platform** bringing representatives together from various groups **to discuss public policy issues related to the Internet**.
- Through an **open and inclusive process**, IIGF brings together all stakeholders in the Global Internet governance ecosystem, including government, industry, civil society, academia - as equal participants of the larger Internet Governance discourse.
- The theme of IIGF 2021 is '**Empower India through Power of Internet**'. The event will witness enlightening discussions on the road to Digitization in India.

## 26. Zero Waste Cities Challenge

### Why in News?

Recently, WasteAid's Circular Economy Network has announced the finalists of its Zero Waste Cities Challenge.

### About

- WasteAid (a UK based international NGO) launched its Zero Waste Cities Challenge in **Johannesburg, Ho Chi Minh City and Guwahati**.
- The competition was launched to **find grassroots solutions** to resource efficiency, waste collection and recycling in South Africa, Vietnam and India.
- It is part of a programme to **encourage a circular economy** and **inclusive livelihood opportunities** in the city.
- Prizes of **€10,000** will be awarded to **two innovation solutions** that increase resource efficiency and reduce waste, in the three cities
- It aims to **find entrepreneurs with innovative business ideas** that help reduce or recycle waste and create green employment opportunities.
- Recent Winners → It has chosen two winners — entrepreneurs from **Shree Guru Plastic** and **Inside Out** — for their work on **promoting the circular economy** and **reducing the usage of plastics**.

### Circular economy

- The circular economy is a **model of production and consumption**, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible.
- It aims to **tackle global challenges** such as waste, pollution, climate change and biodiversity loss.

## 27. National Fund to Control Drug Abuse

### Why in News?

Ministry of Social Justice and Empowerment has recommended that the National Fund to Control Drug Abuse (NFCDA) be used to carry out de-addiction programmes, rather than just policing activities.



## About

- Formation → It was created in accordance with a provision of the **Narcotic Drugs and Psychotropic Substances Act, 1985**.
- It had a nominal **corpus of ₹23 crore**.
- Funding → Under the NDPS Act, the **sale proceeds of any property forfeited, grants** made by any person and institution, and **income from the investments of the fund**, go towards the fund.
- Usage of the fund → The Act states that the fund would be **used to combat illicit trafficking of narcotics, rehabilitating addicts, and preventing drug abuse**.
- Note → The World Health Organisation defines '**Drug Abuse**' as the **harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs**.

## 28. Ambergris

### Why in News?

Forest Department officials seized 8.013 kg of ambergris at Muthupet in Tiruvarur district and arrested two persons.

### About

- Ambergris, French for grey amber, is generally **referred to as whale vomit**.
- It is a **solid waxy substance** originating in the intestine of the sperm whale.
  - Ambergris is produced **only by an estimated 1% of sperm whales**.
- Chemically, ambergris contains **alkaloids, acids**, and a specific compound called **ambreine**, which is **similar to cholesterol**.
- It **floats around the surface of the water body** and at times settles on the coast.
- Because of its high value it is referred to as **floating gold. 1 kg of ambergris is worth Rs 1 crore** in the international market.
- Use →
  - It is used 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 and as a spice.

## 29. Global Pension Index 2021

### Why in News?

The 13th Global Pension Index 2021 is published.

### About

- Published by → the **Australian Centre for Financial Studies** (ACFS) in collaboration with **Mercer** with most of the funding from the State Government of Victoria.
- The primary objective of this research is to **benchmark each country's retirement income system**.
- The report **compared 43 retirement income systems** from around the world, highlighting strengths and weaknesses.

### 👉 Key Findings

- In 2021, new entrant **Iceland** is named as having the **world's best pension system overall**.
- **India** has **ranked at 40th position** out of 43 countries in the 2021 Index.
- [In 2020, India was ranked at 34th position out of 39 countries.]
- The report reveals that the financial well-being of Indian future retirees is left to chance. Also, it shows that the **minimum pension of Indians** (as a % of average wage) will be the **lowest across the nations**.

## 30. Go-Quant Camp programme

### Why in News?

The Go-Quant Camp programme has been launched by Bloomberg in collaboration with GIFT City under the aegis of the International Financial Services Centres Authority (IFSCA).

### About

- What is it? → The Go-Quant Camp is a **unique educational competitive programme** for students from premier business schools of India.
- As part of the programme, participating students will be **trained on the fundamentals of Quantum Computing** with a self-assessment component following which they will compete on the Quant models/solutions that they would have built.
- A panel of industry experts will **select the best ideas and models to identify the winners**, who will get a chance to showcase the models to the global investment community.

## 31. Traffic Management Framework for Drones

### Why in News?

The Ministry of Civil Aviation has notified a Traffic Management Policy Framework for Drones.

### About Key Points

- Traffic Management Framework → The rules **envisages private, third-party service providers for ensuring safe operations**.
  - Under the framework, **Unmanned Traffic Management Service Providers (UTMSP)** will extend automated, algorithm-driven software services instead of voice communication as in the traditional Air Traffic Management (ATM) systems.
- Scope of Regulation → All drones (except nano drones operating in the green zone) shall be required to **share their real-time location** through the network to the Centre.
  - Law enforcement and security agencies will also have **access to some information in the UTM ecosystem on a need-to-know basis**.
- Responsibility of UTMSP → They will primarily be **responsible for segregating and separating a drone** from other drones and manned aircraft in the airspace below 1,000 feet in the country.
  - The UTMSP will be **assisted by Supplementary Service Providers (SSPs)**, who will maintain data about terrain, weather, location of manned aircraft and provide services such as insurance, data analytics and drone fleet management.
- Approval Authority → DigitalSky platform shall continue to be the **interface for government stakeholders** to provide approvals and permissions to drone operators.
  - **DigitalSky platform** provides end-to-end governance of drones related activities in India.
- Financial Provisions → The policy also allows UTMSPs to **levy a service fee on users**, a small portion of which will also be shared with the Airports Authority of India.
- Significance of the Rules → India has started taking **steps towards enabling advanced use cases like delivery of goods using unmanned aircraft** and is also looking at human transportation using unmanned aircraft.

## 32. Queen Heo Hwang-ok

### Why in News?

On the banks of the Sarayu in Ayodhya, the Ram Katha Park has been renovated which will be renamed as Queen Heo Hwang-ok memorial park.

### About

- Queen Heo Hwang-ok was a Korean queen who is believed to have been born Princess Suriratna of Ayodhya, daughter of King Padmasen and Indumati.
- Padmasen ruled the ancient kingdom of Kausala (Kosala), a region that extended from present-day UP to Odisha.
  - The memorial park now comprises Queen and King pavilions with their busts in place, and a pond to represent Princess Suriratna’s journey.
- The queen’s story is described in Samguk Yusa (Memorabilia of Three Kingdoms). It is a 13th-century collection of legends, folktales and history of Korea’s three kingdoms — Goguryeo, Baekje and Silla — and some other regions.
- In 48 BC, the princess travelled to Korea from the ancient land of ‘Ayuta’ and married Kim Suro, founder and King of Geumgwan Gaya in south-eastern Korea.
  - There is no consensus among historians on the location of 'Ayuta' as some historians believe that the princess could actually be from Thailand’s Ayutthaya kingdom.
- Princess Journey From India to Korea →
  - She travelled by boat along with an entourage, having been sent by her father, who is said to have had a dream about her marrying king Suro.
  - A pagoda, believed to have been brought by the queen from India to calm the ocean gods, is placed next to the tomb.
  - According to the legend, the princess had taken a golden egg to Korea, and the park includes an egg made of granite.

### 33. Time for India drive

#### Why in News?

Sweden set to launch ‘Time for India’ drive.

#### About

- Sweden would soon launch a trade promotion event — Time for India — to boost bilateral trade.
- Under it, there shall be no requirement for vaccination for entry nor will there be a quarantine regime in place. But travellers need to take a COVID-19 test on arrival.



### 34. Military base in Tajikistan

#### Why in News?

China will take full control of a military base in Tajikistan near the Afghan border that it has been quietly operating and will also build a new base for the Tajik Government.

#### About

- It will be located in the eastern Gorno-Badakhshan autonomous province near the Pamir mountains, and Chinese troops will not be stationed there.
- The new base would be owned by Tajikistan’s Rapid Reaction Group or special forces, and financed by China for a cost of \$10 million.
- Russia and India are among countries that already have a military presence in bases in Tajikistan.
- The base, once full control has been transferred, will become only the second known overseas Chinese security facility, after Djibouti near the Horn of Africa.



## 35. Meenakari

### Why in News?

Prime Minister has gifted 'Meenakari' chess set to US Vice President.

### About

- It is the **process of painting** and coloring the surfaces of **metals and ceramics** through **enameling**.
- It usually involves intricate designs and is applied as a decorative feature to serving dishes, containers, vases, frames, display ornaments and jewelry.
- It was introduced to India by the **Mughals**.
- **Raja Man Singh** of Mewar is regarded as the **patron** of the meenakari art in 16th century Jaipur.

## 36. Payment Banks

### Why in News?

SEBI has allowed payments banks to act as investment bankers.

### About

- An investment banker is primarily concerned with raising capital for corporations, governments, or other entities like Goldman Sachs, Morgan Stanley.

### About Payment Banks:

- Suggested by **Nachiket Mor committee**, it is a bank operating on a smaller scale without involving any credit risk (**can't advance loans or issue credit cards**).
- It can **accept demand deposits** (up to Rs 1 lakh), offer remittance services, mobile payments/transfers/ purchases and other banking services.

## 37. RBI ISSUED FRAMEWORK FOR PAYMENT SERVICE OPERATORS (PSOS)

### Why in News?

Framework, issued under provisions of Payment and Settlement Systems Act 2007, is for payment and settlement related activities by PSOs.

### About

- A PSO means a **person who operates an authorised payment system**.
- Clearing Corporation of India Ltd., National Payments Corporation of India, VISA etc. are some of the authorized PSOs in India.
- Framework places **minimum standards** to manage risks in outsourcing of payment and/or settlement-related activities.
- Earlier, RBI also allowed PSOs to take **direct membership** of Centralised Payment Systems, such as **RTGS and NEFT**.

## 38. SWEAT EQUITY

### Why in News?

Securities and Exchange Board of India (SEBI) has relaxed the quantum of sweat equity that can be issued by new-age technology companies listed on the Innovators Growth Platform (IGP).

### About

- It refers to **shares issued by a company to its employees** for non-cash consideration.
- Startups and promoters typically use it to fund their companies.

- By amending the Issue of Capital and Disclosure Requirements Regulations, 2019, SEBI launched **-IGP for listing of issuers** which are in intensive use of technology, **IT, IPR, data analytics, biotechnology or nanotechnology** to provide products, services or business platforms with substantial value addition.

### 39. Water plus city

#### Why in News?

Indore, the country's cleanest city, has now been declared as the first 'water plus' city of India under the Swachh Survekshan 2021.

#### About

- A city can be declared as Water Plus provided, all wastewater released from households, commercial establishments etc. is treated to a satisfactory level before releasing the **treated wastewater to the environment**.
- Swachh Survekshan is an **annual survey of cleanliness, hygiene and sanitation in cities** and towns across India launched as **part of the Swachh Bharat Mission**.

### 40. Floating rate funds

#### About

- Floating rate funds buy **bonds** whose **interest rates change** according to the changing rates in the economy.
- This feature is thus supposed to **insulate from losses** because of rate hikes and can even increase their returns as rates rise.
- According to Securities and Exchange Board of India rules, **65% of the corpus** of floating rate funds must be invested in floating rate instruments.
- Floating rate funds have seen huge inflows in recent months as investors expect interest rates to rise.

### 41. REITS AND INVITS CAN NOW BE PART OF NIFTY INDICES

#### Why in News?

Recently, the National Stock Exchange (NSE) revised the eligibility criteria for inclusion in Nifty indices, paving the way for inclusion of REITs and InvITs in Nifty Indices.

#### About

- Wider investor participation including small investors.
- **Increased volumes and liquidity** with efficient price discovery of REITs and InvITs.
- Help government in National Monetization Pipeline which includes use of investment mechanisms like InvITs.

#### About SIDBI

- It was set up in **1990** under The Small Industries Development Bank of India Act passed by Parliament.
- It acts as the Principal Financial Institution for **promotion, financing and development** of the Micro, Small and Medium Enterprise (**MSME**) sector.

Real Estate Investment Trusts (REITs)	Infrastructure Investment Trusts (InvITs)
<p>It is an investment vehicle that owns/manages investment grade and income-producing real estate properties such as offices, malls etc and almost any asset that can produce an annuity revenue stream.</p> <ul style="list-style-type: none"> <li>• It is <b>regulated</b> by <b>SEBI (Real Estate Investment Trusts) Regulations, 2014</b></li> </ul>	<p>InvITs are like mutual fund, which enables direct investment into the infrastructure sector (e.g. roads, power transmission etc.) by pooling money from individual and institutional investors to earn a portion of the income as return.</p> <ul style="list-style-type: none"> <li>• It is <b>regulated</b> by <b>SEBI (Infrastructure Investment Trusts) Regulations, 2014</b></li> </ul>
<p>As of <b>March</b> end, a <b>total</b> of <b>15 InvITs</b> and <b>4 REITs</b> are <b>registered</b> in India, including the <b>6 InvITs</b> and <b>3 REITs</b> listed on the stock exchanges with net assets of nearly <b>₹1.64 lakh crore</b>.</p>	

## Quick revision (True/False)



1	<b>PM Poshan Shakti Nirman (PM POSHAN)</b> -> Central Sector Scheme.	
2	<b>IndiaXports 2021 Portal</b> -> aims to support the growth of MSMEs exports by providing free of cost information and knowledge to MSMEs.	
3	<b>Sorghum</b> -> it has a high glycaemic index.	
4	<b>Meningitis</b> -> An infection caused by a virus that attacks the liver and leads to inflammation.	
5	<b>Rakthamichthys mumba</b> -> Endemic to India was discovered in a well in Arunachal Pradesh.	
6	<b>SACRED portal</b> -> to bring the employment seeker senior citizens and employment providers on one platform.	
7	<b>Water Convention</b> -> Convention is a unique non-legally binding instrument promoting the sustainable management of shared water resources.	
8	<b>DigiSaksham programme</b> -> is a joint initiative of Microsoft India and the Ministry of Labour & Employment.	
9	<b>Termination of citizenship</b> -> minor children of the person who renounces citizenship stands to lose their Indian citizenship.	
10	<b>Diabetes</b> -> occurs only when the pancreas does not produce enough insulin (a hormone that regulates blood sugar, or glucose).	
11	<b>Emergency Credit Line Guarantee Scheme</b> -> Minimum Guarantee Fee shall be charged by NCGTC.	
12	<b>Barium</b> -> found in nature as a free element. Added to fireworks to impart a Red color.	
13	<b>PRAGATI</b> -> is a multi-purpose and multi-modal governance platform launched in 2015.	
14	<b>Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR)</b> -> India is not a member of CCAMLR.	
15	<b>Jal Jeevan Mission</b> -> launched in 2019. under the Ministry of Jal Shakti.	



16	<b>Indian Home Rule Society</b> -> Under the leadership of Annie Besant and Bal Gangadhar Tilak to the educated English speaking upper class Indians.	
17	<b>Indian Astronomical Observatory</b> -> located in Hanle near Leh in Ladakh.	
18	<b>Battle of Saraighat</b> -> It was a last-stand battle fought before the Tirah Campaign between the British Raj and Afghan tribesmen.	
19	<b>Nobel Prize in Medicine 2021</b> -> for the discovery of Hepatitis C virus.	
20	<b>Tax Inspectors Without Borders Programme</b> -> It is a International Monetary Fund (IMF) initiative launched in July 2015.	
21	<b>North Eastern Council</b> -> constituted in 1971 by an Act of Parliament.	
22	<b>Exercise Milan</b> -> began in 1995, is held biennially and brings together Navies of all the countries in the region.	
23	<b>Nobel Prize in Physics 2021</b> -> for their discoveries concerning black holes.	
24	<b>National Road Safety Board</b> -> Consist of the Chairman and not less than 3, but not exceeding seven Members.	
25	<b>Polysaccharides</b> -> one of the biopolymers with high potential for use in synthesis of packaging material.	
26	<b>Coral Reefs</b> -> Most of the world's coral reefs are in Temperate waters.	
27	<b>Electricity</b> -> is a State List (Seventh Schedule) subject.	
28	<b>Nobel Prize in Chemistry 2021</b> -> for the development of a method for genome editing.	
29	<b>PM MITRA Parks</b> -> aims to integrate the entire textile value chain. Developed by a Special Purpose Vehicle.	
30	<b>Tiger reserve</b> -> approval is granted by NTCA under Section 38V(1) of Biological Diversity Act, 2002.	
31	<b>Interpol</b> -> Formed in 1923. Headquartered in Lyon, France.	
32	<b>Mosquirix</b> -> is a vaccine that aims to protect against COVID-19.	
33	<b>Exercise AJEYA WARRIOR</b> -> India - USA Joint Company Level Military Training EXERCISE.	

34	<b>High Ambition Coalition for Nature and People</b> -> initiated at the “One Planet Summit” in Paris in January 2021.	
35	<b>Guduchi</b> -> popularly known herb and has been used in therapeutics since long in AYUSH systems.	
36	<b>S-400</b> -> An Israeli radar system.	
37	<b>Multidimensional Poverty Index 2021</b> -> uses three dimensions – Per capita income, Standard of living, Poverty line.	
38	<b>National Green Tribunal</b> -> bound by the procedure laid down under the Code of Civil Procedure 1908.	
39	<b>National Digital Livestock Mission</b> -> is a digital platform developed jointly by the Department of Animal Husbandry and Dairying (DAHD) and NDDB.	
40	<b>Palk Bay scheme</b> -> Centrally Sponsored Scheme.	
41	<b>Tawang</b> -> Sikkim.	
42	<b>River Ranching Programme</b> -> National Fisheries Development Board (NFDB), Hyderabad as the Nodal Agency.	
43	<b>Lukha River</b> -> located in the southern part of East Jaintia Hills of Meghalaya.	
44	<b>Hydroponics</b> -> Art of gardening without soil, where the roots are exposed to the air.	
45	<b>Ecological Threat Report 2021</b> -> Released by World Wide Fund for Nature (WWF).	
46	<b>World Meteorological Organization</b> -> is not a specialized agency of the United Nations.	
47	<b>Tejaswini initiative</b> -> a senior citizens-centric safety initiative of north-west district – Delhi.	
48	<b>Beijing Declaration</b> -> Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society.	
49	<b>Central Zoo Authority</b> -> statutory body. constituted in 1992 under the Wildlife (Protection) Act, 1972.	

50	<b>International Energy Agency (IEA)</b> -> Established in 1974. India became an Full time member of IEA in March 2017.	
51	<b>Kunming Declaration</b> -> talked about the rights of girl children.	
52	<b>Kallakurichi wood carvings</b> -> Andhra Pradesh.	
53	<b>Border Security Force</b> -> under the Ministry of Defence.	
54	<b>Conference on Interaction and Confidence-Building Measures(CICA)</b> -> India is not a member of CICA.	
55	<b>Exercise Yudh Abhyas 2021</b> -> between India and USA.	
56	<b>Power Finance Corporation</b> -> Under the administrative control of the Ministry of Finance.	
57	<b>Global Hunger Index 2021</b> -> published by the World Health Organization (WHO).	
58	<b>Advanced Weapons and Equipment India (AWE) Limited</b> -> Based in Chennai, Tamil Nadu.	
59	<b>International Monetary and Financial Committee</b> -> has 24 members. has no formal decision-making powers.	
60	<b>Endosulfan</b> -> a new species of green pit viper discovered from Arunachal Pradesh.	
61	<b>Exercise Cambrian Patrol</b> -> Gorkha Rifles (Frontier Force) of the Indian Army has been awarded a Gold medal.	
62	<b>International Finance Corporation</b> -> is a member of the International Monetary Fund group.	
66	<b>Ballistic Missile</b> -> BrahMos missiles.	
67	<b>Bengal Florican</b> -> In India - found Only in the state of Uttar Pradesh at places like the Dudhwa and Pilibhit Tiger Reserve.	
68	<b>Earthshot Prize</b> -> set up by World Wide Fund for Nature.	
69	<b>Allium Negianum</b> -> It was discovered in the western ghat.	
70	<b>Sir Syed Ahmad Khan</b> -> encouraged the Indian Muslims to join the National Movement.	

71	<b>Nebra Sky Disc</b> -> believed to be 3,600 years old, dating from the Bronze Age.	
72	<b>International Solar Alliance</b> -> launched in 2010. Secretariat- Paris, France.	
73	<b>Biotech KISAN</b> -> is a scientist-farmer partnership scheme launched by the Department of Biotechnology.	
74	<b>Global Food Security Index 2021</b> -> Released by Food and Agriculture Organization.	
75	<b>United Nations Environment Programme</b> -> established on 5th June 1972. Headquarters: Gland, Switzerland.	
76	<b>Mawsmai cave</b> -> Meghalaya.	
77	<b>Tigray Region</b> -> northernmost regional state in Ethiopia.	
78	<b>La Nina</b> -> droughts heavy in India, or better monsoon rains in Peru and Ecuador.	
79	<b>Financial Action Task Force (FATF)</b> -> The UN Charter established the FATF as one of the main organs of the United Nations.	
80	<b>Debrigarh Wildlife Sanctuary</b> -> Odisha.	
81	<b>Abhyas</b> -> autonomous rocket artillery system.	
82	<b>Amur Falcons</b> -> IUCN Status: endangered.	
83	<b>Hornbills</b> -> they have a symbiotic relationship with several canopy trees in tropical forests.	
84	<b>Banni Buffalo IVF</b> -> which can withstand extreme weather conditions, survive in the water-scarce atmosphere and produce 16 litres of good quality milk in a day.	
85	<b>Barak Valley</b> -> West Bengal.	
86	<b>Mullaperiyar Dam</b> -> located on the Godavari River.	
87	<b>NIPUN Bharat Mission</b> -> Implemented by Department of School Education and Literacy (DoSEL), the Ministry of Education.	
88	<b>Azad Hind Government</b> -> Rash Behari Bose was designated as the supreme advisor.	
89	<b>Global Pension Index 2021</b> -> Published by World bank.	

90	<b>SANKALP Programme</b> -> Centrally sponsored scheme. launched by the Ministry of Skill Development and Entrepreneurship.	
91	<b>National Maritime Foundation</b> -> established in 2016. Located in Mumbai.	
92	<b>Bugun Liocichla</b> -> IUCN: critically endangered.	
93	<b>Asian Infrastructure Investment Bank</b> -> India is the largest shareholder with 26.61 % voting shares.	
94	<b>Agni-V</b> -> striking targets at ranges up to 10,000 kilometres.	
95	<b>Time for India drive</b> -> launched by USA.	
96	<b>East Asia Summit</b> -> Established in 2005. India is one of the founding members.	
97	<b>Digital India Corporation</b> -> not for profit company set up by Ministry of Science and Technology.	
98	<b>ICGS Sarthak</b> -> Indian nuclear-powered ballistic missile submarines being built for the Indian Navy.	
99	<b>Gray or Hanuman Langur</b> -> spotted in the Bandhavgarh National Park and Sariska Tiger Reserve.	
100	<b>Climate Vulnerability Index</b> -> Released by World Meteorological Organization.	