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# Current Affairs (CONSOLIDATION)

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# Polity and Governance

## Highlights

- 13<sup>th</sup> National Voters' Day
- GACs to Address Complaints Against Social Media Platforms
- National IPR Policy
- Bharat Pravah-India along its Shores
- All India Survey on Higher Education 2020-2021
- PARAKH
- 17th ASER 2022
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## 13<sup>th</sup> National Voters' Day

### Why in News?

**Election Commission of India** is celebrating **13<sup>th</sup> National Voters' Day (NVD)** on 25th January 2023.



### What are the Key Points of NVD 2023?

- **Theme:** Nothing Like Voting, I Vote for Sure.
- **Awards 2023:** National Awards for the Best Electoral Practices were presented to State and District level officers for their outstanding performance in the conduct of elections during 2022.
- **About NVD:**
  - The main objective behind the celebration is to encourage, facilitate, and maximize enrolment, especially for new voters.
  - The day has been celebrated every year since 2011 across the country to mark the foundation of the Election Commission of India (25<sup>th</sup> January 1950).
  - It not only encourages the youth to participate in the electoral process but also focuses that the Right to vote as the basic right.

- NVD is a significant root of India as the future of the country lies in the leader that we choose.

### What is the Election Commission of India?

- The Election Commission of India (ECI) is an **autonomous constitutional authority** responsible for administering Union and State election processes in India.
  - ECI was established on 25th January 1950.
- The **body administers elections to the Lok Sabha, Rajya Sabha, State Legislative Assemblies**, and the offices of the **President** and **Vice President** in the country.
- **Structure of the Commission:**
  - Originally the commission had only one election commissioner but after the Election Commissioner Amendment Act 1989, it has been made a multi-member body.
  - The commission presently consists of one Chief Election Commissioner (CEC) and two Election Commissioners (ECs).
  - The secretariat of the commission is located in New Delhi.

## GACs to Address Complaints Against Social Media Platforms

### Why in News?

Recently, the Union government notified the formation of three **Grievance Appellate Committees (GACs)** that will address user complaints against **social media** and other internet-based platforms.

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- These panels will also be **empowered to oversee and revoke content moderation-related decisions** taken by these platforms.

### What are GACs?

#### ➤ Composition:

- Each of the three GACs will have a **chairperson, two whole-time members** from different government entities and **retired senior executives** from the industry **for a term of three years** from the date of assumption of office.
  - **The First Panel:** It will be chaired by the chief executive officer of the **Indian Cyber Crime Coordination Centre** under the **Ministry of Home Affairs**.
  - **The Second Panel:** It will be chaired by the joint secretary in charge of the Policy and Administration Division in the **Ministry of Information and Broadcasting**.
  - **The Third Panel:** It will be chaired by a senior scientist at the **Ministry of Electronics and IT (MeitY)**.

#### ➤ Solving of Conflicts:

- **The GACs will deal with two categories of disputes:**
  - Violation of law and rights of users including the right to free speech and privacy
  - Contractual dispute between a platform's community guidelines and a user

#### ➤ Functions:

- The GACs will act also **act as a layer of a tech-sector regulator** that the MeitY is expected to prescribe under the **upcoming Digital India Bill**, which is the successor to the **Information Technology Act, 2000**.
- The GACs **will adopt an online dispute resolution mechanism** where the entire appeal process, from its filing to the final decision, will be done online.
- Any person aggrieved by a decision of the grievance officer of a social media intermediary **will be allowed to file an appeal to the GAC within a period of thirty days**.
  - The GAC will **have to deal with the appeal and resolve it within a month of receipt of the appeal**.

#### ➤ Significance & Need:

- GAC is a critical piece of overall policy and **legal framework to ensure that the internet in India is open, safe & trusted and accountable**.

- The need for GAC was **created due to large numbers of grievances being left unaddressed or unsatisfactorily addressed** by Internet Intermediaries.
- It is **expected to create a culture of responsiveness** amongst all internet platforms and Intermediaries towards their consumers.

#### ➤ Criticism:

- The proposal has previously drawn criticism over fears that **government-appointed panels will be able to dictate content-moderation decisions** taken by social media firms.

### What are Present Government Initiatives for Cyber Security?

- **Cyber Surakshit Bharat Initiative**
- **Cyber Swachhta Kendra**
- **Online cybercrime reporting portal**
- **Indian Cyber Crime Coordination Centre (I4C)**
- **National Critical Information Infrastructure Protection Centre (NCIIPC)**

## National IPR Policy

### Why in News?

Since the inception of the **National Intellectual Property Rights (IPR) Policy**, both the IPR ecosystem in this country has witnessed many changes. However, it appears that the patent **establishment of the country overdrive to prove its patent-friendliness, rather patentee-friendliness**.

- As per the structural and legislative changes in the IPR, the **dissolution of the Intellectual Property Appellate Board (IPAB)** took place in 2021 and **dedicated IP divisions were established in the Delhi High Court** to address the issues.

### What is the National IPR Policy?

#### ➤ About:

- The **Department for Promotion of Industry and Internal Trade (DPIIT)** under the Ministry of Commerce **adopted the National Intellectual Property Rights (IPR) Policy in 2016**.
  - The main goal of the policy is **"Creative India; Innovative India"**.

Note:

- The **policy covers all forms of IP**, seeks to create synergies between them and other agencies, and **sets up an institutional mechanism for implementation and review**.
- **DPIIT is the nodal department for IPR development in India** and the **Cell for IPR Promotion & Management (CIPAM)** under DPIIT is the **single point of reference** for implementing the policy.
- India's IPR regime complies with **World Trade Organisation's (WTO)** agreement on **Trade Related Aspects of Intellectual Property (TRIPS)**.

➤ **Objectives:**

- **IPR Awareness:** Outreach and promotion are important to create public awareness about the economic, social and cultural benefits of IPRs among all sections of society.
- **Generation of IPRs:** To stimulate the generation of IPRs.
- **Legal and Legislative Framework:** To have strong and effective IPR laws, which balance the interests of rights owners with larger public interest.
- **Administration and Management:** To modernise and strengthen service-oriented IPR administration.
- **Commercialisation of IPRs:** Get value for IPRs through commercialisation.
- **Enforcement and Adjudication:** To strengthen the enforcement and adjudicatory mechanisms for combating IPR infringements.
- **Human Capital Development:** To strengthen and expand human resources, institutions and capacities for teaching, training, research and skill building in IPRs.

**What are Intellectual Property Rights?**

➤ **About:**

- IPR are the **rights given to persons over the creation of their minds**. They usually give the creator an **exclusive right over the use of his/her creation for a certain period of time**.
- These rights are outlined in **Article 27 of the Universal Declaration of Human Rights**, which provides for the right to benefit from the protection of moral and material interests resulting from authorship of scientific, literary or artistic productions.

- The importance of intellectual property was first recognized in the **Paris Convention for the Protection of Industrial Property (1883)** and the Berne Convention for the Protection of Literary and Artistic Works (1886).

- Both treaties are administered by the **World Intellectual Property Organization (WIPO)**.

➤ **Types of IPR:**

○ **Copyrights:**

- The rights of authors of literary and artistic works (such as books and other writings, musical compositions, paintings, sculpture, computer programs and films) **are protected by copyright, for a minimum period of 50 years after the death of the author**.

○ **Industrial Property:**

- **Protection of distinctive signs, in particular trademarks and geographical indications:**
  - Trademarks
  - **Geographical Indications (GIs)**
- **Industrial Designs and Trade Secrets:**
  - Other types of industrial property are protected primarily to stimulate innovation, design and the creation of technology.

➤ **Need for IPR:**

○ **Encourages Innovation:**

- The legal protection of new creations encourages the commitment of additional resources for further innovation.

○ **Economic Growth:**

- The promotion and protection of intellectual property spurs **economic growth**, creates new jobs and industries, and enhances the quality and enjoyment of life.

○ **Safeguard the Rights of Creators:**

- IPR is required to safeguard creators and other producers of their intellectual commodity, goods and services by granting them certain time-limited rights to control the use made of the manufactured goods.

○ **Ease of Doing Business:**

- It promotes innovation and creativity and ensures ease of doing business.

○ **Transfer of Technology:**

Note:

- It facilitates the transfer of technology in the form of foreign direct investment, joint ventures and licensing.

### **What are the Treaties and Conventions related to IPR?**

#### ➤ **Global:**

- India is a member of the WTO and committed to the Agreement on TRIPS Agreement.
- India is also a member of WIPO, a **body responsible for the promotion of the protection of intellectual property rights** throughout the world.
- **India is also a member of the following important WIPO-administered International Treaties and Conventions relating to IPRs:**
  - Budapest Treaty on the International Recognition of the Deposit of Microorganisms for the Purposes of Patent Procedure
  - Paris Convention for the Protection of Industrial Property
  - Convention Establishing the World Intellectual Property Organization
  - Berne Convention for the Protection of Literary and Artistic Works
  - **Patent Cooperation Treaty**

#### ➤ **National:**

- **Indian Patent Act 1970:**
  - This principal law for patenting system in India came into force in the year 1972. **It replaced the Indian Patents and Designs Act 1911.**
  - The **Act was amended by the Patents (Amendment) Act, 2005**, wherein product patent was extended to all fields of technology including food, drugs, chemicals and microorganisms.

### **What are the Issues Related to IPR Regime?**

- **Patent-Friendliness Over Public Health:** The National IPR Policy recognizes the contribution of the Indian pharmaceutical sector in providing affordable medicines globally. However, India's patent establishment has prioritized **patent-friendliness over public health and national interest in the pharmaceutical sector.**
- **Data Exclusivity:** Foreign investors and **Multi-National Corporations (MNCs)** allege that Indian law does not protect against unfair commercial use of test data or other data submitted to the government during the

application for market approval of pharmaceutical or agro-chemical products. **For this, they demand a data exclusivity law.**

- **Resulting in Anti-Competitive Market:** The **Patents Act has four stakeholders:** society, government, patentees, and their competitors, and interpreting and enforcing the act to only benefit patentees undermines the rights of other stakeholders and leads to anti-competitive market outcomes.

### **Conclusion**

It is not sufficient to just promote a pro-IPR environment to attract investment. The promotion of IPR should be balanced with the national interest and public health obligations. **"Make in India" should not compromise "Atmanirbhar Bharat", and the latter should take priority.**

## **Bharat Pravah-India along its Shores**

### **Why in News?**

Recently, the Ministry of Shipping, Waterways, and Ports has launched 'Bharat Pravah-India along its Shores', an initiative to highlight the significance and **imagery of rivers, ports, and shipping in everyday life through a series of nationwide events.**

- Kochi, Vizhinjam in Kerala and Galathea Bay ports in Andaman Nicobar Islands have made some headway in the direction of becoming full-fledged transshipment hubs.

### **What is Bharat Pravah?**

#### ➤ **About:**

- **Bharat Pravah will serve as a common platform to bring together stakeholders from different walks** for the purpose of creating a larger vision of shipping, rivers, seas & people.
- It will highlight the challenges, policy issues and future goals relating to the maritime sector.

#### ➤ **Themes:**

- Rivers and Sea-Centric Development in India- the Historical lens.
- Sea, River, Ports and Ship in Folk Culture and Literature.

Note:



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- Representation of Ports and Shipping in Popular Culture.
- Role of Shipping and Ports in India's Development in the last 30 years.
- The Politics and Economy of Privatisation of Ports.
- Inland Waterways – Arteries of Growth, their Role and Significance.
- Greening Ports and Shipping Industry.
- Future of Ports and Shipping Industry- Management, Challenges and Policies.

### ***What are the Important Points related to Ports in India?***

- Government is seeking that **all ports to prepare a master plan to become mega ports by 2047.**
- Currently, nearly **75% of India's transshipment cargo is handled at ports outside India.** The **ports of Colombo, Singapore, and Klang handle more than 85%** of this cargo, according to Ministry data.
  - Transshipment hubs are ports that have connections to originating and destination ports.
- While India was looking to build mega ports which will be digitised and more environment-friendly, there are challenges along the way.
- India does roughly **35% of containerization, while other developing countries do 62% to 65% containerization.**
  - Currently India does **more break bulk shipping rather than using containers**, however, we are making rapid progress towards containerization.
- India's share in world trade is a **meagre 2%.** Balance of trade is towards import. India stands at **44 on the logistics performance index.**
  - The reason for low ranking is the **absence of appropriate infrastructure and procedural reforms.**

## **All India Survey on Higher Education 2020-2021**

### ***Why in News?***

The **Union Ministry of Education** released data from the **All India Survey on Higher Education (AISHE), 2020-2021**, which showed a **7.5% increase in student enrolments** across the country compared to **2019-20.**

- The survey also revealed that in 2020-21, the year when the **Covid-19 pandemic** began, there was a **7% rise in enrolments in distance education programmes.**

### ***What is the AISHE?***

- To portray the status of higher education in the country, the **Ministry of Education** has endeavored to conduct an **annual web-based AISHE** since 2010-11.
  - Data is being collected on several parameters such as teachers, student **enrolment, programmes, examination results, education finance, infrastructure.**
- Indicators of educational development such as **Institution Density, Gross Enrolment Ratio, Pupil-teacher ratio, Gender Parity Index, Per Student Expenditure** will also be calculated from the data collected through AISHE.
  - These are useful in making informed policy decisions and **research for development of the education sector.**

### ***What are the Major Highlights of the AISHE Data?***

- **Student Enrolment:**
  - **Gross Enrolment Ratio (GER)** for all enrolments (as per 2011 Census) increased by over **2 points to 27.3.**
    - The **highest enrolment was seen at the undergraduate level**, which accounted for **78.9%** of all enrolments.
  - The **female enrolment in higher education** programmes had increased to **49% of total enrolments in 2020-21** compared to 45% in 2019-20.
    - But, the overall figures for **Science, technology, engineering, and mathematics (STEM)** enrolments (at all levels of **higher education**) showed that women lagged behind men, who accounted for over 56% of enrolments in these fields.
  - **Gender Parity Index (GPI)**, the ratio of female GER to male GER, has increased from 1 in 2017-18 to 1.05 in 2020-21.
  - The number of students in the **Persons with Disabilities** category dropped in **2020-21** to 79,035 from 92,831 in 2019-20.

Note:



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- The **proportion of Muslim students** enrolling for higher education dropped to **4.6% in 2020-21** from **5.5% in 2019-20**.
- **Uttar Pradesh; Maharashtra; Tamil Nadu; Madhya Pradesh; Karnataka and Rajasthan** are the top 6 States in terms of number of students enrolled.
- **Universities and College:** During **2020-21**, the number of **universities has increased by 70**, and the number of **colleges has increased by 1,453**.
- The **21.4% government colleges accounted for 34.5% total enrolments** in 2020-21, whereas the rest **65.5% enrolments were seen at private aided colleges and private unaided colleges** put together.
- **Uttar Pradesh; Maharashtra; Karnataka; Rajasthan; Tamil Nadu; Madhya Pradesh; Andhra Pradesh and Gujarat** are the top 8 States in terms of number of colleges.
- **Faculty:** The female per 100 male faculty has improved to 75 in 2020-21 from 74 in 2019-20 and 63 in 2014-15.

### ***What are the Current Major Issues Related to India's Higher Education System?***

- **Faculty Shortage:** AISHE 2020-21 showed that the **teacher-pupil ratio was at 27:1** for all universities, colleges and standalone institutions and at **24:1 if only regular mode is considered** due to which the quality of education remains a concern.
- **Inadequate Infrastructure:** Poor infrastructure is another challenge to higher education in India.
  - Due to the **budget deficit, corruption and lobbying** by the vested interest group, public as well as private sector universities in India lack the necessary infrastructure.
- **Regulatory Issues:** Management of Indian higher education faces challenges of lack of **accountability, transparency, and professionalism**.
  - As a result of the increase in the number of affiliated colleges and students, the **burden of administrative functions of universities has significantly increased** and the core focus on academics and research is diluted.
- **Problem of Brain Drain:** Due to cutthroat competition for **getting admission in top institutes like IITs and IIMs**, a challenging academic environment is created for a large number of students in India, so they prefer going abroad, **which makes our country deprived of good talent**.

- There is definitely a **quantitative expansion of education in India** but the **qualitative front (essential for a student to get a job)** is lagging behind.

### ***How can the Indian Higher Education System be Revolutionized?***

- **Implementation of National Education Policy (NEP):** The implementation of the **NEP** can help shake the education system from its slumber.
  - Moving away from the **current 10+2 system to a 5+3+3+4 system** will bring the **pre-school age group** formally into the education set-up.
- **Education-Employment Corridor:** India's educational setup needs to be enhanced by **integrating vocational learning with mainstream education** and providing right mentorship at school (**especially in government schools**) to ensure that **students are guided in the right direction** from the start and are aware of career opportunities.
- **Taking a Note from Past to Future:** It is important to look to the future while keeping our long-established roots in mind.
  - The **ancient evaluation of education was not restricted to grading thematic knowledge**. Students were assessed on the skills they learned and how well they can apply practical knowledge to real-life situations.
    - The modern education system can also **devise similar systems of assessment**.

## **PARAKH**

### ***Why in News?***

Recently, the **National Council for Education Research and Training (NCERT)** has notified India's first national assessment regulator, **PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development)**, which aims to set up assessment guidelines for all boards.

### ***What is PARAKH?***

- **About:**
  - PARAKH has been launched as part of the implementation of the **National Education Policy (NEP)-2020** that envisaged a standard-setting

Note:

body to advise school boards regarding new assessment patterns and latest research, and promote collaborations between them.

- It will act as a **constituent unit of the NCERT**.
- It will also be tasked with **holding periodic learning outcome tests like the National Achievement Survey (NAS)** and State Achievement Surveys.
- It will work on **three major assessment areas**: large-scale assessments, school-based assessment, and examination reforms.

➤ **Objective:**

- **Uniform Norms & Guidelines:** Setting norms, standards and guidelines for student assessment and evaluation for all recognized school boards of India.
- **Enhance Assessment Pattern:** It will encourage and help school boards to shift their assessment patterns towards meeting the skill requirements of the 21st century.
- **Reduce Disparity in Evaluation:** It will bring uniformity across the state and central boards which currently follow different standards of evaluation, leading to wide disparities in scores.
- **Benchmark Assessment:** The benchmark assessment framework will seek to put an end to the emphasis on rote learning, as envisaged by the **National Education Policy (NEP) 2020**.

➤ **Significance:**

- **Removes Disparity in College Admission:**
  - It will help tackle the problem of students of some state boards being at a disadvantage during college admissions as compared to their peers in CBSE schools.
- **Innovative Evaluation:**
  - It will develop and implement the technical standards for the design, conduct, analysis and reporting of tests at all levels of school education.
- **Holistic Approach:**
  - PARAKH further aims to facilitate an inclusive, participatory and holistic approach to education, which takes into consideration field experiences, empirical research, stakeholder feedback, as well as lessons learned from best practices.
- **Progressive Shift:**
  - It is a progressive **shift towards a more scientific approach to education**.

- The prescribed structure will **help to cater to the ability of the child – stages of cognitive development** as well as social and physical awareness.

## 17<sup>th</sup> ASER 2022

### Why in News?

Recently, the **17<sup>th</sup> Annual Status of Education Report (ASER) 2022** was released by NGO Pratham, which highlights the impact of the pandemic on education.

- The report unveils high enrolment of children in schools which is a good performance indicator for government programmes like **Nipun Bharat Mission**.

### What is ASER?

- The **ASER** is an **annual, citizen-led household survey** that aims to understand whether **children in rural India** are enrolled in **school** and whether they are learning.
- **ASER** has been conducted every year since **2005** in all rural districts of India. It is the largest citizen-led survey in India.
- **ASER** surveys provided representative estimates of the **enrolment status** of children **aged 3-16** and the **basic reading and arithmetic levels** of children **aged 5-16** at the **national, state and district level**.

What are the Findings of the Report?

- **Enrollment in Government Schools:**
  - According to the **ASER, 2022** the country has seen an **increase in the enrollment of children in government schools**.
- **Basic Reading and Arithmetic Skills:**
  - There has been a **decline in the basic reading and arithmetic skills** of young children in **Class 3** and **Class 5** in India.
- **Proportion of Girls not Enrolled:**
  - The decrease in the proportion of girls not enrolled in schools for the age group **11-14 from 4.1% in 2018 to 2% in 2022** is a significant improvement and a **positive development**.
  - This indicates that efforts to promote **gender equality in education** have been effective and have helped to increase the enrollment of girls in schools.

Note:

Parameters	2018	2022	Trend
Overall Enrollment (Age Group 6-14)	97.2%	98.4%	Positive
Enrolled in Government School (Age Group 6-14)	65.6%	72.9%	Positive
Girls not Enrolled in School (Age Group 11-14)	4.1%	2 %	Positive
Children in Std I-VIII Taking Paid Private Tuition Classes	26.4%	30.5%	Positive
Children in Std III (Government or Private Schools) Able to read at Std II level	27.3%	20.5%	Negative
Children in Std III who are able to at least do subtraction	28.2%	25.9%	Negative
Children in Std V across India who can do division	27.9%	25.6%	Negative
Government Schools with Less than 60 Students Enrolled	29.4%	29.9%	Negative
Average Teacher Attendance	85.4%	87.1%	Positive
Fraction of Schools with Useable Girls' Toilets	66.4%	68.4%	Positive
Schools with Drinking Water Availability	74.8%	76%	Positive



**Annual Status of Education Report**  
**असर 2022 RURAL**  
Facilitated by PRATHAM

The 17th edition of ASER Report highlights the impact of the Covid-19 pandemic on education.

**ABOUT ASER**

- India's annual, largest, citizen-led household survey (conducted since 2005).

**AMBIT**

- Children from all rural districts

**PROVIDES/ASSESSES**

- Estimates of enrolment status of children (aged 3-16)
- Basic reading and arithmetic levels of children (aged 5-16)

**KEY FINDINGS OF ASER 2022**

ASER 2022 covered ~7 lakh children in 19,000 villages across India

- ↑ in enrolment of children in govt schools (from 65.5% to 72.9%)
- ↑ in enrolment of 6-14 age group (98.4%, up from 97.2%)
- ↑ in children taking pvt tuitions (26.4% to 30.5%)
- ↑ in proportion of girls not enrolled in schools (age 11-14) (from 4.1% to 2%)
- ↑ in basic reading and arithmetic skills of young children (classes 3 (20.5%) and 5 (42.8%))

Note: The improvement/decline in the performance in 2022 is against the year 2018 when the last full pre-pandemic survey was conducted

## India's Centralised Power Market Shift

### Why in News?

India is changing its **power market** system from a **decentralized, voluntary and short-term market to a mandatory pool model** that eliminates fixed-price contracts. While, the **European Union** is going in the opposite direction.

### What is the European Union's Policy Related to the Power Market?

- The **EU** wants to change its power market because a gas shortage caused high **electricity** prices in 2022.
  - The high prices happened because electricity prices are set by the most expensive power plant, usually a gas plant.
- The **European Commission** is considering different ways to change how power plants sell electricity.
  - They want to use long-term contracts that give power plants a fixed price for their electricity.
  - This will help **make electricity prices more stable for households and businesses.**

### What is India's New Market-Based Economic Dispatch (MBED) Model?

- India is developing a new electricity market model called the **MBED mechanism**.
  - This will centralize scheduling for dispatching the **country's annual electricity consumption of around 1,400 billion units.**
- MBED is a way forward to deepen power markets in line with the Centre's '**One Nation, One Grid, One Frequency, One Price**' formula.
  - It will ensure that the **cheapest electricity generating resources across the country** are supplied to meet the overall system demand and will therefore be a win-win for both the distribution companies and the generators and result in savings for consumers.
  - It will also mark a clear shift from a decentralized model which is backed by the **Electricity Act, 2003.**
- Currently, the electricity grid is divided into state-wise autonomous control areas managed by the **State Load Dispatch Centers (SLDCs)**, which in turn are supervised by **Regional Load Dispatch Centers (RLDCs)** and the **National Load Dispatch Centre (NLDC).**

Note:



- The MBED model wants to change this by having a **central market operator in charge of all the electricity**. This new model would limit the current options and **discoms** and **State Load Dispatch Center** would have to buy or sell electricity in real-time even if it's **just to balance demand**.
- India is also making a new rulebook for the electricity grid and a new way for people to use the electricity network called **GNA (General network access)** that is more **open and flexible**.

### ***What are the Concerns Associated with the Centralized Model of MBED?***

- **Impact on State Autonomy:** MBED will have effect on the relative autonomy of states in managing their electricity sector, including their own generating stations, and make the **Electricity Distribution Companies (DISCOMs)** (mostly state-owned) entirely dependent on the centralized mechanism.
- **Clash with Emerging Decentralized Market:** It could potentially clash with emerging market trends i.e., **increase in renewable energy** in the overall generation mix and the increasing numbers of **electric vehicles** plugging into the grid.
  - All of these actually necessitate greater decentralization of markets and voluntary pools for efficient grid management and operations.
- **Grey Areas:** The **must-run status of some power stations such as Trombay TPS, Mumbai or the Dadri TPS in the NCR region** will come under question.
  - These power stations are critical for **security of supply to key cities such as Mumbai or Delhi** and in islanding operations in the event of a grid failure.

## **National Tourism Day**

### ***Why in News?***

**National Tourism Day** is celebrated every year on **January 25** to recognize India's natural beauty and raise awareness about the **importance of tourism for the Indian economy**.

- India is one of the **top tourist attractions for visitors from all around the globe**. Hence tourism holds so much importance in India, both in **cultural and economic terms**.

### ***What is the Status of the Tourism Sector in India?***

#### ➤ **About:**

- India provides a diverse portfolio of tourism, including **eco-tourism, cruises, business, sports, educational, rural, and medical travel**.
- The **Ministry of Tourism in India** is responsible for formulating the country's national policies for developing and promoting tourism.
  - It also collaborates with **local, national, and international organisations**.

#### ➤ **Contribution to Economy:**

- India ranks **6<sup>th</sup> according to World Travel and Tourism Council** in terms of Travel & Tourism total contribution to GDP in 2021.
  - **Travel & Tourism contributed 5.8% to GDP** and the sector created 32.1 million jobs, which is equivalent to 6.9% of total jobs in 2021.
- Also, India is currently ranked **54<sup>th</sup> in World Economic Forum's Travel & Tourism Development Index (2021)**.
- According to Global Data, international arrivals to the country is forecast to reach 7.2 million in 2022 and 8.6 million in 2023.

#### ➤ **Challenges Related to the Tourism Sector:**

- **Lack of Training and Skill Development:** Given that the tourism industry is a **labour-intensive sector**, it is undeniable that practical training plays an important role.
  - But over the years, **availability of trained manpower** has not kept pace with growth of the tourism sector in India.
- **Overexploitation of Resources:** Unsustainable Tourism often puts pressure on natural resources through **overconsumption especially in Himalayan regions of India**, where resources are already scarce.
  - **Unsustainable tourism** also affects local land use, **resulting in soil erosion, increased pollution**, and loss of natural habitats of endangered species.
- **Lack of Infrastructure and Security:** It is a major challenge for the Indian tourism sector. It includes a lack of **multi cuisine restaurants, basic health facilities, public transport** and hygiene and safety & security of tourists.
- **Initiatives Related to Tourism in India:**

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- **Swadesh Darshan Scheme**
- **Draft National Tourism Policy 2022**
- **Dekho Apna Desh Initiative**
- **National Green Tourism Mission**
- **National Tourism Day**
- **World Tourism Day (27th September)**

### **How can Sustainable Tourism be Promoted in India?**

- **Responsible, Inclusive, Green and Hospitable Tourism (RIGHT):** To ensure better accountability, all stakeholders involved in **tourism management** need to be governed by a common umbrella of regulations.
  - It is important to **promote green tourism** with minimal disturbance to the **natural ecosystem** and **maintain sustainable infrastructure** so that warm hospitality can thrive.
- **Unified Tourism System:** An **extensive market research and evaluation exercise** can be undertaken in order to **identify desired tourist destinations** across the country and major markets and segments.
  - It can be followed by developing a **digital unified system** (promoting the essence of **Ek Bharat Shreshtha Bharat**), to map these places and promote them through social media.
- **One State One Tourism Mascot:** State animals can be used as **advertising mascots for Tourism Departments** of different states as an innovative tool to promote **tourism education**, especially among children
- **Presidency of G20:** India has an opportunity to position itself as a major tourism destination during India's presidency of the **G20 (December 2022- November 2023)**.
  - India's age-old dictum of '**Atithi Devo Bhava**' will come to the fore as it welcomes delegates from different countries.

## **Disclosure of Journalistic Sources**

### **Why in News?**

Recently, while rejecting a closure report filed by the **Central Bureau of Investigation (CBI)**, a Delhi court stated that **there is no statutory exemption in India to journalists from disclosing their sources to investigating agencies.**

### **What is the Legal Protection for Disclosure of Journalistic Sources?**

- **In India:**
  - In India, there is **no specific legislation** that protects journalists from being asked to disclose their sources.
  - However, **Article 19** of the Constitution **guarantees the right to freedom of speech and expression** to all citizens.
  - Investigative agencies **can issue notices to anyone, including journalists, to provide information.**
    - Like any citizen, a journalist can be compelled to give evidence in Court. If she does not comply, **the journalist can face charges of Contempt of Court.**
- **Globally:**
  - **United Kingdom:** The Contempt of Courts Act 1981 creates a presumption in favour of journalists who want to protect the identity of their sources. However, that right is subject to certain conditions in the "interest of justice".
    - An attempt to force a journalist to reveal his source for a news story **violated his freedom of speech and expression guaranteed under the European Convention on Human Rights.**
  - **United States:** Although the First Amendment guarantees free speech in the United States specifically mentions the press, the Supreme Court has held that journalists do not have the right to refuse to testify in a federal grand jury proceeding and disclose sources.
    - However, **several states in the US have shield laws that protect the rights of journalists** to varying degrees.
  - **Sweden:** The Freedom of the Press Act in Sweden is a broad protection of the rights of journalists and even extends to state and municipal employees who might share information with journalists freely. **A journalist who reveals his or her source without consent may be prosecuted at the behest of the source.**

### **What are the Constitutional Provisions Related to Press Freedom in India?**

- **Fundamental Right Under Article 19:** The Indian Constitution guarantees freedom of speech and

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expression under Article 19, which deals with 'Protection of certain rights regarding freedom of speech, etc.

- **Implicit Right:** Freedom of the press is not expressly protected by the Indian legal system but it is impliedly protected under article 19(1) (a) of the constitution.
  - However, **Freedom of the press is also not absolute.**
  - A law could impose only those restrictions on the exercise of this right, it faces **certain restrictions under article 19(2), which is as follows:**
    - Sovereignty and integrity of India,
    - Security of the State,
    - Friendly relations with foreign States,
    - Public order, decency or morality or in
    - Contempt of court,
    - Defamation
    - Incitement to an offence.

### ***What're some of the Legal Opinions on this Issue?***

- While the **Supreme Court** broadly recognises the freedom of the press, including the right of journalists to ensure the protection of their sources, **various courts have ruled differently on this issue.**
- During the investigation of **Pegasus spyware**, the Supreme Court in 2021 stated that one of the fundamental conditions for the media to exercise its **right to freedom of speech and expression under Article 19 is the protection of 'journalistic sources.**
- The protection of journalistic sources is one of the basic conditions for the freedom of the press. Without such protection, **sources may be prevented from assisting the press in informing the public on matters of public interest.**
- Under the **Press Council of India (PCI) Act, 1978**, the Press Council has the powers of a civil court to deal with complaints **when a newspaper has offended the standards of journalistic ethics** or when an editor or working journalist has committed any professional misconduct.
  - However, the **Council cannot force a newspaper, news agency, journalist, or editor to reveal their sources during the proceedings.**
- In **Romesh Thappar v. State of Madras case, 1950** the **Supreme Court** observed that freedom of the press lay at the foundation of all democratic organisations.

### **What is the Press Council of India?**

#### ➤ **About:**

- It was **first set up in 1966** under the Indian Press Council Act, 1965, on the **recommendations of the first Press Commission**, with the two-fold objective of preserving the freedom of the press by **maintaining and improving the standards of newspapers and news agencies** in India.
- As a **quasi-judicial autonomous authority**, it was re-established in the year 1979 **under an Act of Parliament, Press Council Act, 1978.**
- The Press Council of India **is the only body to exercise authority even over the instruments of the State in its duty** to safeguard the independence of the press.

#### ➤ **Structure:**

- The Council is a body corporate having perpetual succession **consisting of a Chairman and 28 members.**
  - The Chairman is **selected by the Speaker of the Lok Sabha**, the **Chairman of the Rajya Sabha** and a member elected amongst themselves by the **28 members of the Council.**

### ***What are the Recommendations?***

- The **Law Commission of India** in its 93<sup>rd</sup> Report, 1983 recommended recognising journalistic privilege by amending the **Indian Evidence Act, 1872.** The report suggested the insertion of a new provision:
  - **No court shall require a person to disclose the sources of information contained in a publication** for which he is responsible, where such information has been obtained by him on the express agreement or implied understanding that the source will be kept confidential.

## **Women Get Command Roles in The Indian Army**

### ***Why in News?***

Recently, in a **significant development** the **Indian Army** cleared the **108 women officers** eligible to command units and troops in their respective arms and services for the first time.

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- This would be a major step forward in terms of **gender equality**.
- This decision will also **encourage more women** to join the **Indian Army** and will help to promote **diversity** and **inclusivity** within the organization.

### ***What did the Supreme Court Order in 2020?***

- In **2019**, the Army changed its rules allowing **Short Service Commission (SSC) officers women officers** to opt for **permanent commission** who would have otherwise retired after **14 years of service**.
- However, **this was not retrospective**, and applied only to the batches of women officers starting their career in the Army in **2020**.
- With the landmark **Supreme Court judgment of 2020**, **permanent commission was granted to women officers with retrospective effect**.
  - This opened the doors for their further growth and promotions in the Army, which has been of late opening leadership and higher management courses for women.

### ***Why did their Colonel Promotions Come so Late?***

- An officer in the Army is promoted to the rank of Colonel only after serving between **16 and 18 years**, based on certain criteria such as **annual confidential reports** and various courses.
- Women officers who were inducted into the Army were inducted as **SSC officers** in **1992** and in the years after did not have the choice to opt for permanent commission.
- **JAG and Army Education Corps** were exceptions, where a permanent commission was opened for them in **2008**.
- For other **arms and services**, women could not become permanent cadres, and had to retire much before they completed the service period that is mandatory to become a Colonel.

### ***What Does Commanding a Unit Mean?***

- Once promoted to the rank of **Colonel**, an officer is **eligible to command troops** dire.
- The **position of Colonel** is considered a **coveted appointment** because it is a **high-ranking position** within the military, but it also allows the officer to **interact directly with troops** on the ground.

- This interaction allows the **Colonel** to have a more hands-on approach to **leadership and decision making**, which is a unique opportunity not found in **higher-ranking positions** like **Brigadier** or **Major General**.

### ***What are the different Army Domains where Women are not Allowed to Work?***

- Women are still not eligible in core combat arms such as **Infantry, Mechanized Infantry and Armored Corps** as Army is not open to **women fighting wars** at the borders as foot soldiers. Much of this resistance stems from past instances of **male soldiers** being taken as **prisoners of war** and tortured by the enemy.
- However, the Army has recently decided to **open the Corps of Artillery**, a combat support arm, to women.

### ***What About the Indian Navy and the Indian Air Force (IAF)?***

- Women officers have been **inducted into all branches of the Navy**, and they will be eligible for permanent commission in the future.
- Women officers **can command shore-based units** and, as they join the service and become eligible for permanent commission, they would be able to command ships and air squadrons.
- The **IAF has opened all branches for women officers**, including the fighter stream and the new weapon systems branch.
- As they are granted permanent commission based on eligibility and vacancies, **they will be eligible to command units in the future**.

### ***Which Other Armies Allow Women to hold Command Positions?***

- All major countries, including the **United States, United Kingdom, Russia, and Israel**, allow women to hold **command positions** within their **national armed forces**. This includes positions such as **officers** and **non-commissioned officers**, as well as roles in **combat units and special forces**.

## **Chargesheet: Not a Public Document**

### ***Why in News?***

Recently, the **Supreme Court (SC)** ruled that **chargesheets are not 'public documents'** and enabling

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their **free public access** violates the provisions of the **Criminal Code of Procedure (CrPC)** as it compromises the rights of the accused, victim, and the investigation agencies.

### What is a Chargesheet?

#### ➤ About:

- A chargesheet, as **defined under Section 173 CrPC**, is the final report prepared by a police officer or investigative agency after completing their investigation of a case.
  - In the ***K Veeraswami vs Union of India & Others (1991) case***, the SC ruled that the chargesheet is a **final report of the police officer under section 173(2) of the CrPC**.
- A chargesheet **must be filed against the accused within a prescribed period of 60-90 days**, otherwise, the arrest is illegal, and the accused is entitled to bail.

#### ➤ Chargesheet Should Contain:

- Details of names, the nature of the information, and offences. Whether the accused is under arrest, in custody, or has been released, whether any action was taken against him, these are **all important questions answered in the chargesheet**.

#### ➤ Procedure after Filing the Chargesheet:

- After preparing the chargesheet, the officer-in-charge of the police station **forwards it to a Magistrate**, who is empowered to take notice of the offences mentioned in it **so that the charges can be framed**.

### How is a Chargesheet Different from an FIR?

#### ➤ Provision:

- The term, 'chargesheet' is defined under Section 173 of the CrPC but **First Information Report (FIR)**, has **not been defined in either the Indian Penal Code (IPC) or the CrPC**. Instead, it finds a place **under the police regulations/ rules under Section 154 of CrPC**, which deals with 'Information in Cognizable Cases'.

#### ➤ Time of Filing:

- While the **chargesheet is the final report** filed towards the end of an investigation, an **FIR is filed at the 'first' instance** that the police are informed of a cognizable offense (offence for which one **can be arrested without a warrant**; such as rape, murder, kidnapping).

#### ➤ Determination of Guilt:

- An **FIR does not decide a person's guilt** but a chargesheet is complete with evidence and is often used **during the trial to prove the offenses the accused is charged with**.

#### ➤ Terms & Conditions:

- After filing an FIR, the investigation takes place. Under Section 169 of the CrPC, the **police can only forward the case to the Magistrate if they have sufficient evidence, otherwise, the accused is released from custody**.
  - According to Section 154 (3) of the CrPC, if any person is aggrieved by the **refusal of authorities to file an FIR**, they can send the complaint to the **Superintendent of Police**, who will either investigate himself or direct it to their subordinate.
- A chargesheet is filed by the police or law-enforcement/ investigative agency only after they have gathered sufficient evidence against the accused in respect of the offenses mentioned in the FIR, **otherwise, a 'cancellation report' or 'untraced report' can be filed when due to lack of evidence**.

### What is a FIR?

- It is a report of information **that reaches the police first in point of time** and that is why it is called the First Information Report.
- It is **generally a complaint lodged with the police by the victim of a cognizable offence** or by someone on his/her behalf. Anyone can report the commission of a cognizable offence either orally or in writing.

### Why is a Chargesheet not a Public Document?

- According to the Court, a chargesheet cannot be made publicly available as it's not a 'public document' **under Sections 74 and 76 of the Evidence Act, 1872**.
  - **Section 74:** It defines public documents as those which form the acts or records of sovereign authority, official bodies, tribunals, and of public offices either legislative, judicial or executive in any part of India, Commonwealth or a foreign country. It **also includes public records "kept in any State of private documents"**.
    - Documents mentioned in this section **are only public documents**, and certified copies of them

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must be provided by the public authority having custody of them.

- Copy of chargesheets along with necessary public documents **cannot be said to be public documents under this section.**
- **Section 76:** Any public officer having custody of such documents must provide a copy upon demand and payment of a legal fee, **along with a certificate of attestation that states the date, seal, name, and designation of the officer.**
- As per Section 75 of the Evidence Act, **all documents other than those listed under Section 74 are private documents.**
- The Supreme Court in the *Youth Bar Association of India vs Union of India case (2016)* directed all police stations in the country to publish copies of FIRs online within 24 hours of registration, except in cases where offenses were of sensitive nature.
  - Only FIRs were covered by this ruling, and chargesheets were not included.

## Regulating Promotions on Social Media

### Why in News?

The Centre has released **endorsement** guidelines for celebrities and **social media** influencers that mandates compulsory disclosure of monetary or material benefits of a product or a brand they are promoting through their social media platforms.

### What is the New Guideline for Enforcement on Social Media?

- **Disclosure Norms:**
  - Disclosures must be **prominently and clearly displayed in the endorsement** and terms such as 'advertisement', 'sponsored' or 'paid promotion' should be used for all sorts of endorsements.
  - It aims to ensure that **individuals do not mislead their audiences through unfair trading practices** when endorsing products or services and that they are in compliance with the **Consumer Protection Act 2019** and any associated rules or guidelines.
  - Disclosures should not be mixed with a **group of hashtags or links**. Also, in the case of a live stream,

disclosures should be displayed continuously and prominently during the entire stream on **social media**.

#### ➤ **Penalty:**

- If there are any violations, the penalty prescribed for misleading advertisements under the **Consumer Protection Act 2019** will be applicable.
- In that case, the **Central Consumer Protection Authority (CCPA)** can impose a penalty of up to ₹ 10 lakh on manufacturers, advertisers and endorsers and for repeated offences, a penalty of up to ₹ 50 lakh can be imposed.
- The CCPA can also prohibit the **endorser of a misleading advertisement from making any endorsement** for up to one year and for subsequent contravention, prohibition can extend up to three years.

### What is the Extent of Consumption of Social Media in India?

#### ➤ **Extent of Social Media in India:**

- According to the **Global Statistics**, in India, the number of social media users is growing at a steady rate of **467 million** in 2022 due to **deep penetration of internet connectivity among people**.
  - Also, overall the number of Internet users in India has grown to a whopping **658 million**, which is roughly **47% of the total population of India**.

#### ➤ **Benefits of Social Media:**

- **Democratization of Information:** Social media is allowing the **democratization of knowledge and broader communication**. Billions of netizens around the world now feel empowered to bypass traditional curators of information.
  - They have also become **creators and disseminators of content**, not just consumers of it.
- **Direct Interaction with Government:** Today social media has empowered common people to **directly interact with the government and avail government services directly**.
  - Common people tagging **Railway and other ministries** and the agencies responding to them is common news these days.
- **Promote Creativity and Self-expression:** Social media provides a platform for users to share their **ideas, thoughts, and creativity with the world**.

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- **Increased Customer Engagement:** Social media allows businesses to engage with their customers in a way that was not possible before, allowing for more **personalized and effective customer service**.
  - Social media is a cost-effective way for businesses to market and advertise their products and services.
- **Challenges Related to Social Media:**
  - **Misleading Advertising:** Social media platforms are often used to **advertise products and services**, but some businesses use **misleading or false advertising**, which is an unfair trading practice.
    - **Social media platforms** are also used to **post product reviews** by influencers, but some **reviews may be fake or biased**, which can be misleading to consumers and also a violation of fair-trading practices.
  - **Cyberbullying and harassment:** Social media has become a breeding ground for **cyberbullying and harassment**, leading to mental health issues and even suicide in some cases.
  - **Privacy Concerns:** Social media platforms collect and store large amounts of personal data, raising concerns about **privacy and data security**.
  - **Lack of Regulation and Polarisation:** Social media platforms operate with little regulation, which can lead to harmful **content, fake news, and hate speech**.
    - Also, social media can create an echo chamber effect where people are exposed to similar views and opinions, causing polarization in society.

## Remote Voting for Migrants

### Why in News?

Recently, the **Election Commission of India (ECI)** has proposed a new **Remote Electronic Voting Machine (RVM)**, which will allow domestic migrants **to vote in national and regional elections**.

- The EC proposed using this in a State Assembly election **as a pilot so internal migrants** within a state can cast their ballots.

### Why the Need for Remote Voting?

- **Decrease in Voting Turnout:**

- In 2019 general election, **over 91% of its eligible citizens were registered with 67% of them coming out to vote**, which is the highest voter turnout in the nation's history.
- It is, however, worrying that a **third of the eligible voters, a whopping 30 crore people, do not vote**.
- **Internal Migration:**
  - One of the reasons for less voter turnout remained the internal migration **that took electors away from their home constituencies**.
  - Electors can have their names **added to the electoral rolls of the constituency they ordinarily reside in, but many chose to retain the Voter ID from their home constituencies** for various reasons.
- **Supreme Court's Direction:**
  - Hearing a petition on the alleged denial of voting opportunities to migrants, the **Supreme Court (SC)** had in **2015 directed the EC to explore options for remote voting**.
- **Increasing Registrations of Unorganised Workers:**
  - There are nearly 10 million migrant workers, which is for the unorganised sector, registered with the government's **e-SHRAM portal**. If the remote voting project is implemented, it will have far reaching ramifications.

### What is the Current Proposal for Remote Voting?

- **RVM:**
  - **RVM** is a modified version of the existing Electronic Voting Machine (EVM).
  - The **special remote polling booths** would be set up in different states when elections are on in the home state of migrants.
  - The RVM can handle multiple constituencies from a single remote polling booth.
  - For this, instead of a **fixed ballot paper sheet, the machine has been modified to have an electronic dynamic ballot display** which will present different candidate lists corresponding to the constituency number of the voter read by a constituency card reader.
- **Security:**
  - The system would **have a device similar to the so voters can verify their votes**.

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- The units will save the number of votes for each candidate for each of the constituencies, to be tallied on counting day.
- The results would then be shared with the home **RO (Returning Officer)**.
  - A returning officer is responsible for overseeing elections in one or more constituencies.

### How do Existing EVMs Work?

- EVMs have been used **on a large scale in India since 1992** and have been used in all Lok Sabha and State Assembly elections since 2000.
- The latest iteration of the machine is the **M3 model, which has been manufactured since 2013**. In 2010, multiple political parties approached the ECI to develop a mechanism to verify that the EVM had recorded the vote correctly.
- As a result, the ECI developed the **Voter Verified Paper Trail Audit (VVPAT) machine**, which has become universal in elections since mid-2017.
- The current EVM setup includes a Balloting Unit (BU), which is **connected to the VVPAT printer and is located inside the voting compartment**.
- The VVPAT is connected to the Control Unit (CU), which sits with the Presiding Officer (PO) and totals the number of votes cast.
- The VVPAT prints a slip with the **poll symbol and candidate name** once the voter presses the key on the BU, **which is visible to the voter for seven seconds before being dropped off in a box** inside the VVPAT.

### What are the Concerns and Challenges Ahead?

- The Multi-Constituency RVM for migrant voting **will have the same security system and voting experience as the EVM**. This essentially means that the challenges with regard to the current **EVMs will persist when it comes to the RVMs**.
- Besides machine related concerns, remote voting will also face logistical and administrative challenges. These include questions on how voter registration will take place in remote locations, how names will be removed from the electoral rolls of the home constituency, **how remote voting applications will be made transparent etc.**
- The current **VVPAT system is not voter verified** in its full sense, meaning, while the voter sees their vote slip behind the VVPAT's glass for seven seconds, it does

not mean they have verified it. That would happen if the voter got the printout in their hand, was able to approve it before the vote was finally cast, and was able to cancel if there was an error.

- Under the current system, if the voter disputes what they have seen behind the screen, **they are allowed a test vote in the presence of an election officer**, and if the outcome of the test vote is correct, the voter can be penalized or even prosecuted. The same may persist with remote voting.

## Centre vs Delhi Govt on Control Over Services

### Why in News?

A five-judge **Constitution Bench** of the **Supreme Court (SC)** is hearing a dispute between the **Delhi government** and the Centre over the control of administrative services.

- Almost five years ago, another **Constitution Bench** had ruled in favour of the State government in a similar tussle.

### What is the Timeline of the Dispute?

- **2017 Judgement:**
  - The Delhi High Court had, in its judgment 2017 **held that for administration purposes of the National Capital Territory (NCT), the Lieutenant Governor (L-G) is not bound by the aid and advice of the Council of Ministers in every matter**.
  - On appeal, the SC in 2017, referred the matter to decide the interpretation of **Article 239AA of the Constitution**.
- **2018 Judgement:**
  - A **five-judge Constitution bench** had **unanimously held that the L-G of Delhi is bound by the aid and advice of the elected government**, and both needed to work harmoniously with each other.
- **2019 Judgement:**
  - A two-judge Bench of the SC **delivered a split verdict on the question of powers of the Government of NCT of Delhi and Union government** over services and referred the matter to a three-judge Bench.
    - While one judge had ruled the Delhi government has no power at all over administrative services.

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- Another judge, however, had said the transfer or posting of officers in top echelons of the bureaucracy (joint director and above) can only be done by the Central government and the view of the L-G would prevail in case of a difference of opinion for matters relating to other bureaucrats.

➤ **2022 Case:**

- The Centre on 27<sup>th</sup> April 2022 sought a reference to a larger Bench, arguing that it needed the power to make transfers and postings of officers in Delhi on account of it being the national capital and the “face of nation”.
- The court agreed that the limited question relating to the scope of the legislative and executive powers of the Centre and NCT of Delhi, with respect to the term “services”, would need an authoritative pronouncement by a Constitution Bench in terms of Article 145(3) of the Constitution.

**What are the Arguments and Counterarguments in the Issue?**

➤ **Arguments For:**

- The Centre has consistently maintained that because Delhi is the national capital and the face of the country, it must have control over administrative services, which include appointments and transfers.

➤ **Counterarguments:**

- The Delhi government has argued that in the interest of federalism, the elected representatives must have power over transfers and postings.

- The Delhi government had also contended that the recent amendments to the Government of National Capital Territory of Delhi (Amendment) Act, 2021, violate the doctrine of basic structure of the Constitution.

**What is the Governance Model of New Delhi?**

- The status of Delhi being a Union Territory under Schedule 1 of the Constitution but christened the ‘National Capital Territory’ under Article 239AA.
- The 69<sup>th</sup> amendment to the Constitution of India inserted Article 239AA, which declared the Union Territory of Delhi to be administered by a L-G who works on aid and advice of the elected legislative assembly.
  - However, the ‘aid and advice’ clause pertains only to matters on which the elected Assembly has powers under the State and Concurrent Lists with the exception of public order, police, and land.
- Further, the Article 239AA also notes that L-G has to either act on the aid and advice of the Council of Ministers, or he is bound to implement the decision taken by the President on a reference being made by him.
- Also, Article 239AA, empowers the L-G to refer a difference of opinion on ‘any matter’ with the Council of Ministers to the President.
- Thus, this dual control between L-G and the elected government leads to a power tussle.



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# Economic Scenario

## Highlights

- *State Finances: A Study of Budgets of 2022-23*
- *Startup India Innovation Week*
- *Gig Workers' Rights*
- *Sugar Exports*
- *Open Market Sale Scheme*
- *Risk of Moving from Fossils to Clean Energy*
- *Davos Summit 2023: WEF*
- *Survival of the Richest Report: The India Story*
- *World Economic Situation and Prospects 2023*
- *Recent Wave of Tech Layoffs*

## State Finances: A Study of Budgets of 2022-23

### Why in News?

- Recently, the **Reserve Bank of India (RBI)** has released a report stating that the **Gross Fiscal Deficit (GFD)** of states is expected to **decrease to 3.4% of Gross Domestic Product (GDP)** in **2022-23**, from **4.1%** in **2020-21**.
- This is due to a **broad-based economic recovery** and an increase in **revenue collections**.
- What is the Report "State Finances: A Study of Budgets of 2022-23"?
- **About:**
  - The report titled "**State Finances: A Study of Budgets of 2022-23**" is a **comprehensive analysis of the financial position of the Indian states**, including the **trends and challenges** in their **revenue and expenditure**.
- **Finding of the Report:**
  - According to the **RBI** report, **states' debt** is expected to **decrease to 29.5% of GDP in 2022-23**, compared to **31.1% in 2020-21**.
  - However, the report also highlights that this is still higher than the **20%** recommended by the **Fiscal Responsibility and Budget Management (FRBM) Review Committee in 2018**.
  - States are anticipating an increase in **non-tax revenue**, which is generated from sources such as **fees, fines, and royalties**. This increase is likely to be driven by **revenue** from industries and general services.

- The report notes that states are expecting to see an **increase in revenue** from various sources such as **State GST, excise taxes, and sales taxes** in the **2022-2023** fiscal year.

### ➤ Measures Suggested in the Report:

- This suggests that **debt consolidation should be a priority for state governments**.
  - **Debt consolidation** refers to the **process of combining multiple debts into a single, more manageable debt**. This can help to **lower overall interest costs**, simplify **payments**, and make it **easier to pay off the debt**.
- Allocating **more resources to key sectors** such as **healthcare, education, infrastructure, and green energy**, the states can promote **economic growth and development**.
- The report is proposing that it would be beneficial to establish a fund that would be used to **buffer capital expenditure** during periods of **strong revenue growth**.
  - The purpose of this fund would be to **maintain a consistent level of spending on capital projects**, and to ensure that spending on these projects is not drastically reduced during **economic downturns**.
- In order to attract **private investment**, **state governments** should focus on creating a **favorable environment** for the private sector to operate and grow.
  - This can be achieved by **implementing policies and regulations** that make it easy for private companies to do business, as well as **providing incentives and support for private investment**.
- States also need to encourage and facilitate **higher inter-state trade and commerce** to realize the full

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benefit of spillover effects of state capex across the country.

#### ➤ What is Gross Fiscal Deficit (GFD)?

- GFD measures the **overall financial health** of the **state government** and is **calculated by subtracting total revenue from total expenditure**.
- A decrease in **GFD** is generally considered a **positive sign** as it indicates that the **state government is able to balance** its revenue and expenditure more effectively.
- **What are the Measures of Government Deficit?**
- **Revenue Deficit:** It refers to the excess of government's revenue expenditure over revenue receipts.
  - **Revenue Deficit = Revenue expenditure – Revenue receipts**
- **Fiscal Deficit:** It is the gap between the government's expenditure requirements and its receipts. This equals the money the government needs to borrow during the year. A surplus arises if receipts are more than expenditure.
  - **Fiscal Deficit = Total expenditure – (Revenue receipts + non-debt creating capital receipts).**
- **Primary Deficit:** Primary deficit equals fiscal deficit minus interest payments. This indicates the gap between the government's expenditure requirements and its receipts, not taking into account the expenditure incurred on interest payments on loans taken during the previous years.
  - **Primary deficit = Fiscal deficit – Interest payments**
- **Effective Revenue Deficit:** It is the difference between **revenue deficit** and **grants for creation of capital assets**.
  - The concept of **effective revenue deficit** has been suggested by the **Rangarajan Committee** on Public Expenditure.

## Startup India Innovation Week

### Why in News?

Recently, on the occasion of **National Startup Day** (16<sup>th</sup> January), Startup India Innovation week culminated along with **National Start up Awards 2022**.

- **National Startup Awards 2022** given by **Ministry of Commerce and Industry** acknowledges **startups and enablers** who have been instrumental in revolutionizing the development story of India.
- Startup India organized industry-focused webinars on the topic **"Championing the billion-dollar dream"**.

### What is the Status of Startups in India?

#### ➤ About:

- The **Start-up ecosystem in India** ranks **third** after that of the United States (US) and China.
- According to the **India Venture Capital Report 2021** published by Bain and Company, the number of cumulative start-ups has grown at a **Compound Annual Growth Rate (CAGR) of 17% since 2012**.

#### ➤ Growth Drivers:

- **Large Domestic Market:** India has a large domestic market for **technology-based products** and services, providing a ready market for startups to sell their products and services.
- **Government Support:** The government of India has been actively promoting entrepreneurship through initiatives such as **"Atma Nirbhar Bharat"** and **"Digital India,"** providing support to young companies.
- **Access to Technology:** Advancements in **technology** and **internet penetration** have enabled startups to scale up quickly, leading to the rise of several unicorns in the ecosystem.
- **Rising Start-up Hubs:** The major startup hubs in India are **Bengaluru, Mumbai, and Delhi-NCR**, providing a conducive environment for startups to grow and thrive.
  - **Bengaluru**, in particular, has been dubbed the **"Silicon Valley of India"** due to the large number of technology companies based in the city.

#### ➤ Problems Associated with Startup Ecosystem:

- **Stringent Regulatory Environment:** The **market laws and regulations** are **not always tailored to the needs of startups**, which can make it difficult for them to comply. This can be a significant **burden for early-stage companies**.
- **Limited Infrastructure and Logistics:** The lack of proper infrastructure and logistics can be a major challenge for startups, especially those operating in the **e-commerce** space.

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- The **inadequate transportation, warehousing and logistics** infrastructure can make it difficult for startups to reach customers and deliver their products on time.
- **Lack of Mentorship and Guidance:** Startups often lack access to experienced **mentors and guidance**, which can make it difficult for them to navigate the **business landscape** and make informed decisions.
- **Recent Government Initiatives to Support Startup Ecosystem:**
  - **Start-up India Seed Fund Scheme (SISFS):** This scheme provides **financial assistance to start-ups** to help them prove their concept, develop prototypes, test products, and enter the market.
  - **National Initiative for Developing and Harnessing Innovations (NIDHI):** It is an **end-to-end plan for start-ups** to double the number of incubators and start-ups in the duration of five years.
  - **Ranking of States on Support to Startup Ecosystems (RSSSE):** The Department for **Promotion of Industry and Internal Trade (DPIIT)** under the Ministry of Commerce and Industry has been conducting the States' Start-up Ranking Exercise since 2018.

## Gig Workers' Rights

### Why in News?

On September 20, 2021, the **Indian Federation of App-based Transport Workers**, on behalf of **gig workers**, filed a public interest litigation in the **Supreme Court** demanding that the Union government provide **succour to workers affected by the pandemic**.

- The petition has asked for '**gig workers**' and '**platform workers**' to be declared as '**unorganised workers**' so they come under the purview of the **Unorganised Workers Social Security Act, 2008**.

### What is the Gig Economy?

- **About:**
  - A **Gig economy** is a **free market system** in which temporary positions are common and organisations contract with independent workers for **short-term engagements**.
- **Gig Worker:** A person who performs work or participates in a **gig work arrangement and earns** from such activities outside of traditional employer-employee relationship.

### ➤ Growth Drivers of the Gig Economy in India

- **Rise of the Internet and Mobile Technology:** The widespread adoption of smartphones and the availability of **high-speed internet** has made it easier for workers and businesses to connect through online platforms, facilitating the growth of the gig economy.
- **Economic Liberalisation:** The Indian government's **economic liberalisation** policies have led to increased competition and a more open market, which has encouraged the growth of the gig economy.
- **Increasing Demand for Flexible Work:** The gig economy is particularly attractive for **Indian workers who are looking for flexible work arrangements** that allow them to balance their personal and professional lives.
- **Demographic Factors:** The gig economy is also driven by the large and growing number of **young, educated and ambitious Indians** who are seeking to improve their livelihoods with side income generation.

### ➤ Case of China:

- In China, the government's scrutiny over food delivery platforms has increased amidst public discourse. This was especially the case in Wuhan, the **Covid-19 pandemic's epicentre**, where there was a clear transition of social discourse in favour of delivery workers.
- In July 2021, seven government agencies of China jointly passed guidelines that called for better protection of food delivery workers' rights in areas including **salaries, workplace safety, working environment and dispute settlement**.

### ➤ Issues Related to Gig Workers in India:

- **Lack of Job and Social Security:** Many gig workers in India are not covered by labour codes and **do not have access to benefits such as health insurance and retirement plans**.
  - Additionally, gig workers often **do not receive the same level of protection as traditional employees** in the event of injury or illness.
- **Digital Divide:** The gig economy heavily relies on technology and internet access, this creates a **barrier for those who lack access to these resources**, and further exacerbates income inequality.

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- **Lack of Data:** There is a lack of data and research on the gig economy in India which makes it difficult for policy makers to understand its **size, scope, and impact on the economy and workforce.**
- **Exploitation by Companies:** Gig workers in India are often paid less than **traditional employees** and may not have the same legal protections.
  - Some companies may also exploit gig workers by **misclassifying them as independent contractors** to avoid liability and avoid paying taxes.

## Sugar Exports

### Why in News?

According to the **Indian Sugar Mills Association (ISMA)**, sugar mills in India have entered into contracts to **export 55 lakh tonnes** of sweetener.

- The government has allowed sugar mills to export **60 lakh tonnes of sugar** till May in the **2022-23** marketing year (**October-September**).

### What is the Present

#### Status of the Sugar Industry in India?

- **About:**
  - **Sugar industry** is an important **agro-based industry** that impacts the rural livelihood of about **50 million sugarcane farmers** and around 5 lakh workers directly employed in sugar mills.
  - In **(Oct-Sep) 2021-22** India emerges as the **world's largest producer** and consumer of sugar and world's **2nd largest exporter of sugar.**
- **Geographical Conditions for the Growth of Sugar:**
  - **Temperature:** Between 21-27°C with hot and humid climate.
  - **Rainfall:** Around 75-100 cm.
  - **Soil Type:** Deep rich loamy soil.
  - **Top Sugarcane Producing States:** Maharashtra, Uttar Pradesh, Karnataka.
- **Growth Drivers for Sugar Industries:**
  - **Impressive Sugar Season (Sep-Oct):** All records of **sugarcane production, sugar production, sugar exports, cane procured, cane dues paid** and ethanol production was made during the season.
  - **High exports:** The exports were the highest at about **109.8 LMT without any financial assistance**

and earned foreign currency of about Rs. 40,000 crores in the year 2021-22.

- **Indian Government Policy Initiatives:** Timely government initiatives in the last 5 years have taken them out of financial distress in **2018-19** to the stage of **self-sufficiency in 2021-22.**
  - **Encouraging Ethanol Production:** The Government has encouraged **sugar mills to divert sugar to ethanol** and also export surplus sugar so that mills may have better financial conditions to continue their operations.
  - **Ethanol Blending with Petrol (EBP) Programme:** The National Policy on Biofuels 2018, provides an indicative target of **20% ethanol blending** under the **Ethanol Blended Petrol (EBP) Programme** by 2025.
- **Fair and Remunerative Price (FRP):** The FRP is the **minimum price that sugar mills have to pay** to sugarcane farmers for procurement of sugarcane.
  - It is determined on the basis of recommendations of the **Commission for Agricultural Costs and Prices (CACP)** and after consultation with State Governments and other stakeholders.
- **Problems Associated:**
  - **Competition from Other Sweeteners:** The Indian sugar industry is facing increasing competition from other sweeteners such as **high fructose corn syrup**, which is cheaper to produce and has a longer shelf life.
  - **Lack of Modern Technology:** Many of the sugar mills in India are outdated and **lack the modern technology** needed to **produce sugar efficiently.** This makes it difficult for the industry to compete with other sugar-producing countries.
  - **Environmental Impact:** Sugarcane cultivation requires **large amounts of water and pesticides**, which can have a negative impact on the environment.
    - Additionally, sugar mills often release pollutants into the air and water, which can harm nearby communities.
  - **Political interference:** Sugar industry in India is **heavily influenced by politics**, with the state and central government having a significant role in determining the **prices, production, and distribution of sugar.** This often leads to a **lack of transparency** and inefficiency.

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**What is the Indian Sugar Mills Association (ISMA)?**

- **Indian Sugar Mills Association (ISMA)** is a premier sugar organisation in India.
  - It is the **interface between the Government and sugar industry** (both private and public sugar mills) in the country.
- The prime objective is to ensure that the **functioning and interest of both the private and public sugar mills in the country are safeguarded** through conducive and growth-oriented policies of the Government.

## Open Market Sale Scheme

**Why in News?**

The **Food Corporation of India (FCI)** will off load 30 LMT wheat from the Central pool stock to the market through various routes under the **Open Market Sale Scheme** (Domestic).

- Wheat will also be offered to State Governments/UTs for their schemes without e-auction.

**What is an Open Market Sale Scheme (OMSS)?**

- FCI sells surplus stocks of wheat and rice at predetermined prices **through e-auction in the open market from time to time to enhance the supply of food grains.**
- The purpose of OMSS is to **dispose of surplus stocks of wheat and rice held by FCI**, and to regulate the prices of wheat in the open market.
- FCI conducts weekly auctions for the OMSS for wheat on the platform of the **National Commodity and Derivatives Exchange Limited (NCDEX).**
  - NCDEX is a **commodity exchange platform in India** that provides a platform for trading in various agricultural and other commodities.

**What is the Food Corporation of India?**

- The FCI is a government-owned corporation that manages the **food security system in India.**
  - It was established in **1965** under the Food Corporation's Act 1964 with the objective of ensuring **adequate availability of food grains** throughout the country, and to maintain price stability in the market.

- The FCI also maintains **buffer stocks** of food grains to ensure food security during times of scarcity or crisis.
- The FCI is also responsible for distributing foodgrains throughout the country for **public distribution system.**
- FCI also conducts **e-auction** as one of the methods to **dispose of its surplus food grains.**

## Risk of Moving from Fossils to Clean Energy

**Why in News?**

Recently, a study published in the Global Environmental Change journal, which states that India's financial sector is **highly exposed to the risks of the economy transitioning from being largely dependent on fossil fuel to clean energy.**

**What are the Findings?****Transition can Negatively Impact:**

- India's financial sector is **highly exposed to the activities related to fossil fuels** and any transition from fossil fuel to clean energy will have a negative impact on this sector.
  - 60% of lending to the mining sector is for oil and gas extraction.
  - 20% of **manufacturing sector** debt is for **petroleum refining and related industries.**
  - Electricity production is the largest source of carbon emissions, accounting for **5.2% of outstanding credit.**

**Shortage of Experts:**

- There is a shortage of **experts in India's financial institutions who have the expertise to appropriately advise the institutions** on transition from fossil fuel to clean energy.
- Only four of the ten major financial institutions surveyed collect information on **environmental, social and governance (ESG) risks** and these firms do not systematically incorporate that data into financial planning.

**Less Capacity to respond to Shocks and Stresses:**

- High-carbon industries - power generation, chemicals, iron and steel, and aviation-account **for 10% of outstanding debt to Indian financial institutions.**

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- However, these industries are also heavily indebted, and therefore have less financial capacity to respond to shocks and stresses.
- This will further expose **India's financial sector to the risk associated with the transition.**
- **More Polluting and More Expensive Energy Supply:**
  - The financial decisions of **Indian banks and institutional investors are locking the country into a more polluting, more expensive energy supply.**
  - For example, only 17.5% of bank lending to the power sector has been to pure-play renewables.
  - Consequently, **India has much higher electricity from carbon-sources than the world average.**
    - Coal currently accounts for 44% of India's primary energy sources and 70% of its power (electricity).
    - The country's coal-fired power plants have an average age of 13 years and India has 91,000 MW of new proposed coal capacity in the works, second only to China.
    - According to the **Draft National Electricity Plan 2022, coal's share in the electricity generation mix will decrease to 50% by 2030.**
- **Potential:**
  - The current lending and investment patterns reveal that **India's financial sector is heavily exposed to potential transition risks.**
  - However, the other side of risks is the tremendous opportunity to move finance towards sustainable assets and activities.
    - In 2021, India committed to reach **net-zero emissions by 2070.**
    - India has also announced plans to source **half of its electricity needs (50%) from non-fossil fuel sources by 2030.**
    - This will require financing to the order of at least **a trillion dollars to meet these commitments.**

## Davos Summit 2023: WEF

### Why in News?

The 53<sup>rd</sup> edition of the annual **World Economic Forum summit** was held in Davos, Switzerland.

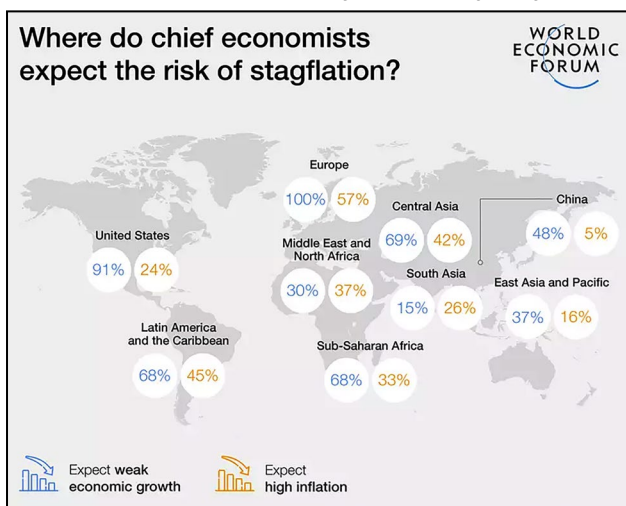
- **Theme:** Cooperation in a Fragmented World.



### What are the Key Points of Davos Summit 2023?

- **Coalition of Trade Ministers on Climate:**
  - A new Coalition of **Trade Ministers on Climate launched**, bringing together over 50 countries to boost international cooperation on climate, trade and sustainable development.
  - Stakeholders across the **world stressed the value of free trade.** Even in the current global economic landscape marked by fragmentation, the free trade system, which has contributed to global economic growth and enhanced humanity's freedom remains a global public good that can never be forsaken.
- **Chief Economists Outlook:**
  - The Chief Economist's Outlook was launched, which struck a cautious tone, with two-thirds of those surveyed **expecting a global recession this year 2023.**
  - It explores the key trends in the economic environment, **including the prospects for growth, inflation and monetary and fiscal policy.**

### Where do chief economists expect the risk of stagflation?



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- It calls for the importance of reskilling in order to prepare current and future workforces for the green transition, the digital transition and the jobs of the future.

➤ **Giving to Amplify Earth Action:**

- A new initiative **Giving to Amplify Earth Action (GAEA)** was launched to **leverage philanthropic capital to unlock funding for the climate crisis**.
- It will leverage philanthropic capital to help generate the USD 3 trillion needed each year from public and private sources to tackle climate change and nature loss.
  - Philanthropic giving totalled USD 810 billion in 2021, but just 2% went towards reducing emissions
- GAEA is a ground-breaking initiative supported by more than 45 major philanthropic, public and private sector partners.

➤ **Global Collaboration Village:**

- WEF has announced the rollout of its **own metaverse platform**, dubbed the Global Collaboration Village.
- The digital world, designed to look like the **actual town of Davos in which the organization meets once every year**, will supposedly allow for more efficient collaboration between world leaders.

### **What were the Indian Perspectives?**

➤ **Indian Participation:**

- This year marks 36 years of the Forum's collaboration with India.
- At the summit, India is represented by a high-level delegation which includes **Union Ministers, Chief Ministers, Business leaders etc.**

➤ **Focus Area:**

- India's focus areas at WEF remained **investment opportunities, infrastructural landscape and its inclusive & sustainable growth story**.

➤ **India's Resilience and Economic Trajectory:**

- India has crossed many barriers after the Covid-19 crisis and repositioned itself as the fastest-growing economy.
- Some prominent indicators for India to see robust economic growth include World Bank's latest India development update, which said India's real GDP growth is expected to be at **6.9 % in FY22-23 in comparison to 8.7 % in FY21-22**.

➤ **India@100: Realising the potential of a USD 26 trillion economy:**

- The report, 'India@100: Realising the potential of a USD 26 trillion economy', was launched by India, on the sidelines of the summit.
- As per this report, India's economy will reach USD 26 trillion by 2047, the 100<sup>th</sup> year of the country's independence.
- It underscores the **growth trajectory of the Indian economy**, which is projected to be the highest for any large economy over the coming decades.

**Note:** Situated on the Landwasser River, in the Rhaetian Alps, eastern Switzerland, Davos is a resort town consisting of two villages, Davos-Platz and Davos-Dorf.

### **What is World Economic Forum?**

➤ **About:**

- The World Economic Forum (WEF) is a **Swiss nonprofit foundation established in 1971, based in Geneva, Switzerland**.
- Recognized by the Swiss authorities as the international institution for public-private cooperation.

➤ **Mission:**

- Committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

➤ **Founder and Executive Chairman:** Klaus Schwab.

➤ **Some major reports published by WEF are:**

- **Energy Transition Index.**
- **Global Competitiveness Report.**
- Global IT Report
  - WEF along with INSEAD, and Cornell University publishes this report.
- **Global Gender Gap Report.**
- Global Risk Report.
- Global Travel and Tourism Report.

## **Survival of the Richest Report: The India Story**

### **Why in News?**

According to the **Oxfam's Report "Survival of the Richest: The India story"**, the richest 1% in India now

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own more than **40%** of the **country's total wealth**, while the **bottom half of the population** together share just **3% of wealth** between 2012 and 2021.

- **Oxfam International** released the India supplement of its annual inequality report on the first day of the **World Economic Forum Annual Meeting** at **Davos**.
- The report states that **taxing India's ten-richest individuals at 5%** could generate enough money to bring children back to school.

### ***What are the Findings of the Report?***

- **Gender Inequality:**
  - The report also highlighted gender inequality in India, stating that female workers earned only **63 paise** for every **1 rupee** earned by **male workers**.
  - The situation is even worse for **Scheduled Castes** and **rural workers**, as they earned **55%** and half of what the **advantaged social groups** earned respectively, between **2018** and **2019**.
- **Social Inequality:**
  - **Oxfam India** stated that the **country's marginalized communities** such as **Dalits, Adivasis, Muslims, Women**, and **informal sector workers** are continuing to suffer in a system that **prioritizes the survival of the richest**.
  - The poor in India are paying **disproportionately higher taxes**, and spending more on essential items and services when compared to the rich.
- **Suggested Measures to Combat Inequality:**
  - To implement **inheritance, property and land taxes**, as well as **net wealth taxes**, in order to reduce **inequality** and **generate revenue** for social programs.
  - To enhance the budgetary allocation of the **health sector to 2.5%** of **GDP** by **2025**, as envisaged in the **National Health Policy**.
  - To enhance the **budgetary allocation** for **education** to the **global benchmark** of **6%** of **GDP**.
  - To combat these problems, Oxfam urged **higher taxes on the rich**, through a combination of measures including **one-time "solidarity" taxes** and **raising** minimum rates for the wealthiest.
  - **Oxfam International** has called for food companies that are making large profits as inflation has surged to face **windfall taxes**.

- The idea behind this is that these companies have benefited from the rising prices of **food and other essentials** and should contribute a **fair share** to help address **poverty** and **inequality**.
- This measure could generate revenue for governments to support social programs that help **reduce poverty and inequality**.
- **Portugal** introduced a **windfall tax** on both **energy companies** and major **food retailers**, including **supermarket** and **hypermarket chains**.

### ***Sources for Data:***

- The report is based on data from multiple sources, including **Forbes** and **Credit Suisse** for information on wealth inequality and billionaire wealth in the country.
- Additionally, government sources like the **National Sample Survey (NSS)**, **Union budget documents**, and parliamentary questions have been used to corroborate the arguments made throughout the report.

### ***What is the Windfall Tax?***

- **Windfall taxes** are taxes imposed on **unexpected or extraordinary profits**, such as those made during times of **economic crisis, war, or natural disasters**.
- Governments typically levy a **one-off tax retrospectively** over and above the **normal rates of tax** on such profits, called **windfall tax**.
- One area where such taxes have routinely been discussed is **oil markets**, where price fluctuation leads to **volatile or erratic profits** for the industry.

### ***What is Oxfam International?***

- **Oxfam International** is a **confederation of 21 independent charitable organizations** working together with partners and local communities in more than **90 countries**.
- Its mission is to end the **injustices that cause poverty**.
- Oxfam works to find **practical, innovative ways** for people to **lift themselves out of poverty and thrive**.
- They **save lives** and help rebuild **livelihoods** when **crisis strikes**.
- They campaign so that the **voices of the poor influence the local and global decisions** that affect them.

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## World Economic Situation and Prospects 2023

### Why in News?

Recently, the **United Nations** has released a new report World Economic Situation and Prospects 2023, which stated that the Global **Gross Domestic Product (GDP)** is likely to drop to **1.9 % in 2023 from 3 % in 2022**.

- Series of severe and mutually reinforcing shocks — the **Covid-19** pandemic, the **war in Ukraine** and resulting food and energy crises, surging inflation, debt tightening, as well as the climate emergency.

### What are the Findings of the Report?

- **Inflation:** The world's average **inflation** rate was at 9% in 2022, which led to budgetary constraints in several developed as well as developing countries.
- **Recession:** Current downturn has slowed the pace of economic recovery from the Covid-19 crisis, **threatening several countries with the prospects of recession** in 2023.
  - Most **developing countries have seen a slower job recovery** in 2022.
  - **Disproportionate losses in women's employment** during the initial phase of the pandemic have not been fully reversed.
- **Slight Growth in Global Output:** The world's output growth can bounce back to 2.7 % in 2024, subject to a change in the war situation and the **disruption of supply chains**.
  - China is projected to grow at 4.8 % in 2023 and 4.5 % in 2024.
  - The US is estimated to register a 0.4 % economic growth this year and 1.7 % in 2024.
- **Russian Export:** Russian exports increased in 2022 as trade with **China, India and Turkey surged**.
- **Outlook of South Asia:** In South Asia, the economic outlook has significantly deteriorated due to high **food and energy prices**, monetary tightening and fiscal vulnerabilities.
  - Average GDP growth is projected to moderate from 5.6 % in 2022 to 4.8 % in 2023.
  - Challenging prospects for economies like Bangladesh, Pakistan and Sri Lanka, who have **sought financial**

assistance from the **International Monetary Fund (IMF)** in 2022.

### What about Indian Prospect?

- **Growth Rate:** Growth in India is expected to remain strong at 5.8 %, albeit slightly lower than the estimated 6.4 % in 2022, as **higher interest rates and a global slowdown weigh** on investment and exports.
  - India's food and energy subsidies prevented a major downfall.
  - India will grow at 6.7 % in 2024, the fastest-growing major economy in the world.
- **Inflation:** Annual inflation is estimated at 7.1% in 2022. India's inflation is expected to decelerate to 5.5 % in 2023 as global commodity prices moderate and **slower currency depreciation eases imported inflation**.
- **Unemployment:** Unemployment rate in **2022 declined to pre-pandemic levels through stepped-up urban and rural employment**, indicating strong domestic demand.
  - However, youth employment remained below pre-pandemic levels, particularly among young women.

### What are the Recommendations?

- **Calibration of Macroeconomic Policies:** Macroeconomic policies need to be carefully **calibrated to strike a balance between stimulating output and taming inflation**.
  - This will require more effective coordination among the major central banks, supported by **clear policy messages to manage and moderate inflationary expectations**.
- **De-anchoring of Inflation Expectations:** While reforming existing frameworks could yield considerable benefits, central banks will also need to **pursue a deliberate and comprehensive process to avoid losses in credibility and the de-anchoring of inflation expectations**.
- **Reprioritize Public Expenditures:** Governments will need to **reallocate and reprioritize public expenditures to support vulnerable groups** through direct policy interventions.
  - This will require strengthening social protection systems and ensuring continued support through targeted and temporary subsidies, cash transfers and discounts on utility bills.

Note:



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- **Scale up SDG Financing:** Stronger international commitment is urgently needed to expand access to emergency financial assistance and **scale up SDG financing for:**
  - Strengthening of social protection systems, ensuring continued support through targeted and temporary subsidies, cash transfers, and discounts on utility bills, which can be complemented with reductions in consumption taxes or custom duties.

## Recent Wave of Tech Layoffs

### Why in News?

The **International Business Machines Corp (IBM)** has announced that it would be laying off about 3,900 employees.

- It is the latest in the series of Big Tech layoffs in 2022, the **tech sector alone shed more than 1,50,000 employees**, with several more job cuts being announced since the start of the new year, over 40,000.
- The biggest tech companies in the US (Alphabet, Amazon, Microsoft, and Facebook-owned Meta) have accounted for 51,000 of the tech layoffs in recent months.

### What causes these Layoffs?

- **Looming Recession:**
  - The **Covid-19 Pandemic** had already slowed down the growth and in 2022, when the pandemic eased, **Russia invaded Ukraine** and **central banks around the world started sounding caution about an impending recession.**
  - These companies are apprehensive of potential **economic recession, with inflation** soaring in most parts of the world.
    - The **International Monetary Fund (IMF)** has cited forecasts for global **GDP (Gross Domestic Product)** growth in both 2022 and 2023 as gloomy, given the pandemic and ongoing Russia-Ukraine Conflict.
- **Dismal Growth:**
  - Alphabet had posted lower-than-expected numbers for its third financial quarter, where it **fell behind both revenue and profit expectations.**
  - Growth has indeed slowed down from pandemic levels, analysts also project that the five big tech

companies, including Apple, are headed to **report dismal profits for the October to December (2022) period.**

- A Reuters analysis states that Amazon is expected to report that earnings fell 38% and revenue grew at the slowest pace in more than 22 years.

### ➤ Cost Cutting:

- Cost-cutting is one of the main reasons for lay off **because the companies are not making enough profits to cover their expenses** or because they need substantial extra cash to address paying off debt.
- Indian Startups have also faced this trouble with media reports saying that more than ten thousand employees have been laid off by startups in mainly the edtech and ecommerce sectors in 2022.

### ➤ Decreasing Dependence on Online Platform:

- Along with the ease in pandemic, peoples' sparing more time on internet has gone down, **resulting in heavy losses to these big tech companies.**
- During Pandemic the overall consumption saw an upsurge following which the companies went to increase their output to meet the market requirements, which **has significantly come down.**

### How will the Layoffs

#### affect Indian Professionals?

- Between 30% to 40% of those laid off are **Indian IT professionals**, a significant number of whom are on **H-1B and L1 visas.**
  - The H-1B visa is a **non-immigrant visa that allows U.S. companies to employ foreign workers** in special occupations that require theoretical or technical expertise.
- Technology companies depend on it to hire tens of thousands of employees each year from countries like India and China. A **sizable number of them are now scrambling for options to stay in the U.S.** to find a new job in the stipulated few months that they get under these foreign work visas after losing their jobs.

### What's the Job

#### Situation for Tech Workers in India?

- **More than 20,000 workers at the country's startups** in sectors like edtech and e-commerce were handed pink slips in 2022, as investors who just a year ago had infused large sums of capital in the market pulled back.

Note:

- Already in 2023, startups like Swiggy, which in January became a decacorn — a firm with a valuation of USD 10 billion or more — recently **laid off 380 employees, and Google-backed ShareChat fired 20%** or around 400 of its workforces.
- Cab-hailing firm Ola, which had already **fired more than 2,000 workers 2022 following a failed bid** to scale up its quick commerce vertical, let go of 200 employees earlier this year.

### ***What can be the Impact of Layoffs?***

- **Loss to the Workers:**
  - Layoffs can be damaging psychologically as well as financially to the affected workers as well as their families, communities, colleagues, and other businesses.
- **Loss of Prospects:**
  - Indian workers who have been laid-off have a big

worry. If they are unable to find a new employer within 60 days, they are faced with the prospect of leaving the U.S. and re-entering later.

- To make matters worse, the prospects of these Indian workers back home are also weak.
- Most Indian IT companies have frozen or slowed down hiring as recessionary fears in the U.S. and high inflation in Europe have kept demand low.
- **Decreases Customer Prospect:**
  - When a company lays off its employees it sends out a message to customers that it is undergoing some sort of crisis.
- **Emotional Distress:**
  - The person who is laid off suffers the most distress, but remaining employees suffer emotionally as well. The productivity level of employees who work in fear is likely to go down.



Note:

# International Relations

## Highlights

- India and Maldives
- India Sri Lanka Relations
- India-Oman Strategic Dialogue
- India-Egypt Relations
- China Builds New Dam in Tibet
- Indus Waters Treaty

## India and Maldives

### Why in News?

Recently, India and Maldives have signed **pacts on development projects in Maldives**.

- Both the Maldives and Sri Lanka are **India's key maritime neighbours in the Indian Ocean Region** and occupy a special place in the Prime Minister's vision of **'SAGAR' (Security and Growth for All in the Region)** and **'Neighbourhood First'**.



### What is the Pact?

- **Grant Assistance:**
  - It includes grant assistance of **100 million Rufiyaa (currency of Maldives)** for the **High Impact Community Development Project (HICDP)** scheme.
  - A number of socio-economic development projects are planned to be implemented throughout the country under this funding.
- **Sports Complex and Academic Collaboration:**
  - It also included the development of a sports complex in Gahdhoo, and academic collaboration between Maldives National University and Cochin University of Science and Technology.

### How has India's Relations with Maldives been?

- **Security Partnership:**
  - Defence cooperation extends to the areas of Joint Exercises - **"Ekuverin"**, **"Dosti"**, **"Ekatha"** and **"Operation Shield"** (begun in 2021).
  - India provides the largest number of **training opportunities for Maldivian National Defence Force (MNDF)**, meeting around 70% of their defence training requirements.
- **Rehabilitation Centre:**
  - Signing of an USD 80-million contract for the **Addu reclamation and shore protection project**.
  - A drug detoxification and rehabilitation centre in Addu built with Indian assistance.
    - The centre is one of 20 high impact community development projects being implemented by India in areas such as **healthcare, education, fisheries, tourism, sports and culture**.
- **Economic Cooperation:**
  - Tourism is the mainstay of Maldivian economy. The country is now a major tourist destination for some Indians and a job destination for others.
  - In August 2021, **Afcons, an Indian company, signed a contract for the largest-ever infrastructure project in Maldives** which is the **Greater Male Connectivity Project (GMCP)**.
  - India is **Maldives 2<sup>nd</sup> largest trading partner** – rising up from its 4<sup>th</sup> position in 2018. In 2021, bilateral trade registered a growth of 31% over the previous year – overcoming the pandemic-related challenges.
  - A Bilateral USD Currency Swap Agreement between RBI and Maldives Monetary Authority was signed on 22 July 2019.
- **Infrastructure Projects:**

Note:



- Hanimaadhoo International Airport Development project under an **Indian credit line will add a brand-new terminal to cater to 1.3 million passengers** a year.
- In 2022, the National College for Policing and Law Enforcement (NCPLE) was inaugurated by India's External Affairs Minister.
- NCPL is the largest grant **project executed by India in Maldives.**

### What are the Challenges in India Maldives Relations?

- **Political Instability:**
  - India's major concern has been the impact of political instability in the neighbourhood on its security and development.
  - The February 2015 arrest of Maldives' opposition leader Mohamed Nasheed on terrorism charges and the consequent political crisis have posed a real diplomatic test for **India's neighbourhood policy.**
- **Radicalisation:**
  - In the past decade or so, the number of Maldivians drawn towards terrorist groups like the **Islamic State (IS)** and **Pakistan-based jihadist groups** has been increasing.
    - This gives rise to the possibility of Pakistan based terror groups using remote Maldivian islands as a launch pad for terror attacks against India and Indian interests.
- **China Angle:**
  - China's strategic footprint in India's neighbourhood has increased. The Maldives has emerged as an important **'pearl' in China's "String of Pearls"** construct in South Asia.
  - Given the uncertain dynamics of Sino-Indian relations, China's strategic presence in the Maldives remains a concern.

## India Sri Lanka Relations

### Why in News?

India sent written **financing assurances to the International Monetary Fund (IMF)**, becoming the **first bilateral creditor of the island nation** to officially support its crucial debt restructure programme after last year's economic meltdown.

- A bilateral agreement between India and Sri Lanka on raising the limit of the **High Impact Community Development Project (HICDP)** was also signed during the India's External Affairs Minister's Visit.



### What is the Significance of India's Financing Assurance?

- The International Monetary Fund's provisional **USD 2.9 billion package** to Sri Lanka will be cleared only after **Sri Lanka's official creditors — China, Japan and India — have provided adequate financing assurances.**
- The decision of financing assurance was also a reassertion of **India's belief in the principle of "neighbourhood first"**, and not leaving a partner to fend for themselves.

### How are India's Relations with Sri Lanka?

- **About:**
  - **India and Sri Lanka are two South Asian nations** situated in the Indian Ocean region. Geographically, Sri Lanka is located just off the southern coast of India, separated by the **Palk Strait.**
    - This proximity has played a significant role in shaping the relationship between the two countries.
  - The **Indian Ocean is a strategically important waterway** for trade and military operations, and **Sri Lanka's location at the crossroads** of major shipping lanes makes it a critical point of control for India.
- **Relations:**
  - **Historical Ties:** India and Sri Lanka have a long history of **cultural, religious, and trade ties** dating back to ancient times.

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- There are strong **cultural ties** between the two countries, with many Sri Lankans tracing their heritage to India. **Buddhism**, which originated in India, is also an important religion in Sri Lanka.
- **Economic ties:** India is Sri Lanka's third largest export destination, after the US and UK. More than 60% of Sri Lanka's exports enjoy the benefits of the **India-Sri Lanka Free Trade Agreement**. India is also a major investor in Sri Lanka.
- **Foreign Direct Investment (FDI)** from India amounted to around **USD 1.7 billion** over the years from 2005 to 2019.
- **Defence:** India and Sri Lanka conduct joint Military (**Mitra Shakti**) and Naval exercise (**SLINEX**).
- **Issues in India-Sri Lanka Relations:**
  - **Killing of Fishermen:** Killing of Indian fishermen by the Sri Lankan Navy is a lingering issue between these two nations.
    - In 2019 and 2020, a total of **284 Indian fishermen** were arrested and a total of **53 Indian boats** were confiscated by the Sri Lankan authorities.
  - **Influence of China:** **China's rapidly growing economic footprint** (and political clout as a corollary) in Sri Lanka is straining India-Sri Lanka relations.
    - China is already the largest investor in Sri Lanka, accounting for 23.6% of the total **Foreign Direct Investment (FDI)** during 2010-2019 as against 10.4% from India.
  - **13<sup>th</sup> Amendment of the Sri Lankan Constitution:** It envisages devolution of necessary powers to the provincial councils to address the just demand of the Tamil people for **equality, justice, peace, and respect within a united Sri Lanka**.
    - India supports its implementation but the Sri Lankan government is yet to **"fully implement"** the 13th Amendment.

## India-Oman Strategic Dialogue

### Why in News?

Recently, the **8<sup>th</sup> India-Oman strategic dialogue** was held in India, where both countries have underlined the need to work collectively to fight the challenge of terrorism, terrorist propaganda, abuse of cyberspace and misuse of new and emerging technologies.

- They agreed to hold the next round of the strategic dialogue in Oman in 2024.



### What are the Highlights of the Dialogue?

- Both sides highlighted the high priority accorded by the leadership of both countries to further enhance their **strategic ties based on trust and mutual respect**.
- Discussions were held on a wide range of issues of **mutual interest, including bilateral strategic and security cooperation, defence and regional security**.
- Both sides reiterated the **importance of preserving Maritime Safety and Security** in the region.
- Both sides reiterated the importance of the **strategic dialogue as an important mechanism of bilateral cooperation between India and Oman**.

### What are the Key Points of India-Oman Relationship?

- **Background:**
  - The two countries across the **Arabian Sea** are **linked by geography, history and culture** and enjoy **warm and cordial relations**, which are attributed to historical maritime trade linkages.
  - The Sultanate of Oman is a strategic partner of India in the Gulf and an important interlocutor at the **Gulf Cooperation Council (GCC)**, **Arab League** and **Indian Ocean Rim Association (IORA)** fora.
  - **Gandhi Peace Prize** 2019 was conferred on Late HM Sultan Qaboos in recognition of his leadership in strengthening the ties between **India & Oman** and his efforts to promote peace in the **Gulf region**.

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- Defence Relations:
  - **Joint Military Cooperation Committee (JMCC):**
    - The JMCC is the highest forum of engagement between India and Oman in the field of defence.
    - The JMCC is expected to meet annually, but could not be organised since 2018 when the meeting of the 9th JMCC was held in Oman.
  - **Military Exercises:**
    - **Army exercise:** Al Najah
    - **Air Force exercise:** Eastern Bridge
    - **Naval Exercise:** Naseem Al Bahr
- **Economic & Commercial Relations:**
  - Institutional mechanisms like **Joint Commission Meeting (JCM)** and **Joint Business Council (JBC)** oversee economic cooperation between India and Oman.
  - India is among **Oman's top trading partners.**
    - India is the **2<sup>nd</sup> largest market for Oman's crude oil exports** for the year 2022 after China.
    - India is also the 4th largest market for **Oman's non-oil exports for the year 2022 after UAE**, US and Saudi Arabia and 2nd largest source of its import after UAE.
  - Indian companies have invested in Oman in sectors like iron and steel, cement, fertilisers, textile etc.
  - **India-Oman Joint Investment Fund (OIJIF)**, a JV between State Bank of India and State General Reserve Fund (SGRF) of Oman, a special purpose vehicle to invest in India, has been operational.
- **Indian Community in Oman:**
  - There are about 6.2 lakh Indians in Oman, of which about 4.8 lakh are workers and professionals. There are Indian families living in Oman for more than 150-200 years.

### What is Oman's Strategic Significance for India?

- Oman is at the gateway of **Strait of Hormuz** through which India imports one-fifth of its oil imports.
- Defence cooperation has emerged as a key pillar for the robust India-Oman strategic partnership. Defence exchanges are guided by a **Framework MOU which was recently renewed in 2021.**
- Oman is the only country in the Gulf region with which all three services of the Indian armed forces conduct regular bilateral exercises and staff talks, enabling close cooperation and trust at the professional level.

- Oman also actively participates in the **Indian Ocean Naval Symposium (IONS).**
- In a strategic move to expand its footprint in the Indian Ocean region, India has secured access to the key **Port of Duqm** in Oman for military use and logistical support. This is part of India's maritime strategy to counter Chinese influence and activities in the region.
  - The Port of Duqm is situated on the southeastern seaboard of Oman, overlooking the Arabian Sea and the Indian Ocean.
  - It is strategically located, in close proximity to the **Chabahar port** in Iran. With the **Assumption Island** being developed in Seychelles and **Agalega in Mauritius**, Duqm fits into India's proactive maritime security roadmap.

## India-Egypt Relations

### Why in News?

Recently, on the occasion of the **74<sup>th</sup> Republic Day**, the **President of Egypt was invited as the chief guest at the parade**, this is the first time that an Egyptian President has been accorded this honour.

- **A military contingent from Egypt also participated in the parade.**

**Note:** An invitation to be **Chief Guest** is an important honour that is very high on symbolism. New Delhi's choice of Chief Guest every year is dictated by a number of reasons — strategic and diplomatic, business interest, and geopolitics.



Note:



## What is the Status of the India-Egypt Relationship?

### ➤ History:

- The history of contact between India and Egypt, two of the world's oldest civilisations, **can be traced back to at least the time of Emperor Ashoka.**
  - Ashoka's edicts refer to his relations with Egypt under Ptolemy-II.
- In modern times, **Mahatma Gandhi and the Egyptian revolutionary Saad Zaghloul shared the common goal of independence from British colonial rule.**
  - The joint announcement of establishment of diplomatic relations at Ambassadorial level was made on 18 August 1947.
- India and Egypt **signed a friendship treaty in 1955.** In 1961, India and Egypt along with Yugoslavia, Indonesia and Ghana **established the Non-Aligned Movement (NAM).**
- In 2016, the **joint statement between India and Egypt** identified political-security cooperation, economic engagement and scientific collaboration, and cultural and people-people ties **as the basis of a new partnership for a new era.**

### ➤ Recent Scenario:

- During this year's meeting, both India and Egypt **agreed to elevate the bilateral relationship to a "strategic partnership".**
  - The strategic partnership will have **broadly four elements:** political, defence, and security; economic engagement; scientific and academic collaboration; cultural and people-to-people contacts.
- India and Egypt **signed a Memorandum of Understanding (MoU)** for three years to facilitate content exchange, capacity building, and co-productions **between Prasar Bharati and the National Media Authority of Egypt.**
  - Under the pact, **both broadcasters will exchange their programmes of different genres** like sports, news, culture, entertainment on bilateral basis.

### ➤ A Partner within the OIC:

- India **views Egypt as a moderate Islamic voice among Muslim-majority countries, and as a partner within the Organization for Islamic Cooperation (OIC).**

### ➤ Terrorism & Defence:

- During this Republic Day meeting, India and Egypt **expressed concerns about the spread of terrorism** around the world as it is the most serious security threat to humanity. Consequently, **the two countries agreed that concerted action is necessary to end cross-border terrorism.**
- The two countries are **looking at deepening defence and security cooperation.** Moreover, the two **Air Forces collaborated on the development of fighter aircraft in the 1960s**, and Indian pilots trained their Egyptian counterparts from the 1960s until the mid-1980s.
  - Both the **Indian Air Force (IAF)** and Egyptian air force fly the **French Rafale fighter jets.**
- In 2022, a **pact was signed between the two countries** that have decided to also participate in exercises and cooperate in training.
- The first joint special forces exercise between **the Indian Army and the Egyptian Army, "Exercise Cyclone-I"** has been underway since 14 January 2023 in Jaisalmer, Rajasthan.

### ➤ Cultural Relations:

- The **Maulana Azad Centre for Indian Culture (MACIC)** was established in Cairo in 1992. The centre has been promoting cultural cooperation between the two countries.

### ➤ Difficult Time for Egypt:

- Egypt's economy has been in chaos over the past few years due to the pandemic and the **Russia-Ukraine war** which **impacted its supply of food as almost 80% of Egypt's grain** imported from Russia and Ukraine **and impacted Egypt's foreign exchange reserves.**
  - In 2022, **despite restrictions on the export of wheat**, India allowed shipments of **61,500 metric tonnes to Egypt.**
- **From India, Egypt is seeking investments in infrastructure** including Metro projects, a **Suez Canal** economic zone, a second channel of the Suez Canal, and a new administrative capital in Egypt.
  - **More than 50 Indian companies** have invested more than USD 3.15 billion in Egypt.

### ➤ Geo-Strategic Concerns:

- China's bilateral trade with Egypt is currently at USD 15 billion, **double that of India's USD 7.26 billion in 2021-22.** During the past eight years, the President of Egypt has **traveled to China seven times to lure Chinese investments.**

Note:



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- Egypt, the most populous country in West Asia, occupies a crucial geo-strategic location — 12% of global trade passes through the Suez Canal and is a key player in the region.
- It is a major market for India and can act as a gateway to both Europe and Africa. However, it also has bilateral trade pacts with important West Asian and African nations which is a cause of concern for India.

## China Builds New Dam in Tibet

### Why in News?

China is constructing a new dam on the **Mabja Zangbo river** in Tibet, close to the tri-junction of India, Nepal and Tibet, raising concerns since China has ramped up creation of military and dual use infrastructure and in the eastern and western sectors of the **LAC (Line of Actual Control)**.

### What is the Background?

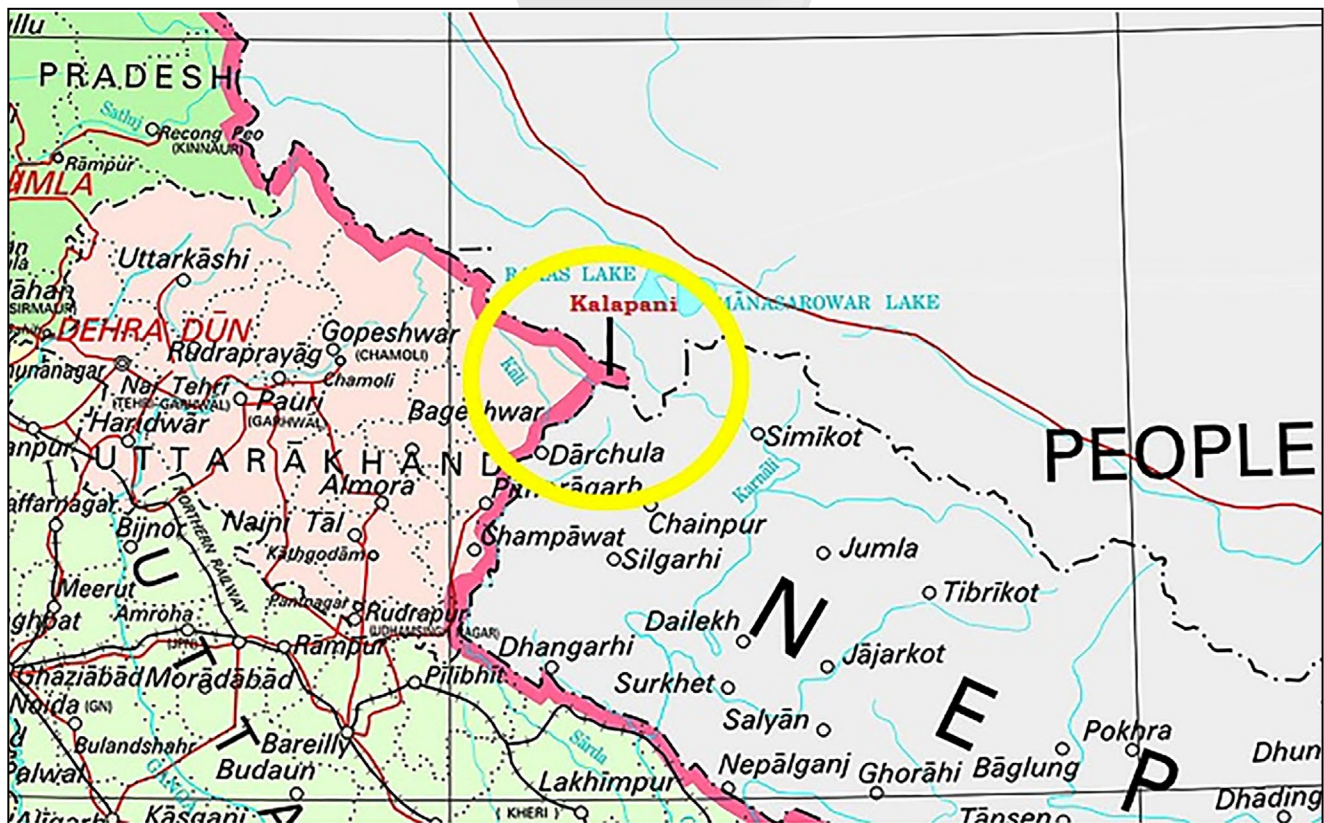
- The development comes in the wake of China unveiling plans in 2021 to build a massive dam on the lower

reaches of **Yarlung Zangbo** to generate up to 70 GW of power, three times that of the country's **Three Gorges dam**, which is the world's largest hydropower plant in terms of installed capacity.

- The **Brahmaputra**, known as **Yarlung Tsangpo** in China, is a 2,880 km long transborder river that originates in the Mansarovar lake and flows 1,700 km within Tibet, 920 km in Arunachal Pradesh and Assam and 260 km in Bangladesh. It accounts for nearly 30% of freshwater resources and 40% of India's hydropower potential.

### What is the Location of The Dam?

- The new dam is located around 16 km north of the tri-junction and is opposite the Kalapani area of Uttarakhand.
- The dam is on the Mabja Zangbo river, a **tributary of the Ganga**.
- Construction activity on the dam has been observed on the **northern side of the river in Burang county, Tibet since May 2021**.
- The Mabja Zangbo River flows into **Nepal's Ghaghara or the Karnali River before it joins the Ganga River in India**.



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### What are the Concerns?

- **Dominance over Water:**
  - China is building an embankment type **dam** with a reservoir, which raises **concerns regarding China's future control on water** in the region.
- **Likelihood of Military Establishment:**
  - In addition to using water as leverage, the possibility of a military establishment by China near the **tri-junction cannot be ruled out as the country had developed the same in the Yarlung Zangbo river near Arunachal Pradesh.**
- **Water Scarcity:**
  - China can use this dam to not only divert but also **store water which could lead to a scarcity in the regions dependent on the Mabja Zangbo river** and also lead to lower water levels in rivers such as the **Ghaghara and the Karnali in Nepal.**
- **Reinforce Chinese Claims over disputed region:**
  - Dams close to the border could be used by China to **strengthen its claim on the disputed areas in the region.**

### How is China aiming at acquiring Hydro Hegemony?

- China has built a large number of dams and **dikes to control the flow of rivers on the Indus, Brahmaputra and Mekong.**
- With the occupation of Tibet, **China has acquired the starting points for rivers that flow into 18 countries.**
- China has built **several thousand dams, which can cause floods by suddenly releasing water or create droughts** by turning off the tap, thus devastating the river's ecosystem and disrupting normal human life.
- China plans to have four dams on the Brahmaputra River **which would affect the river's flows, India had lodged a complaint with China.**
- China refused to share **hydrographic data with India while it did so with Bangladesh**, which resulted in huge destruction because of floods in Assam subsequently for which India was not prepared.
- China has already built eleven huge dams on the Mekong River, which worries the **South-East-Asian countries.**

## Indus Waters Treaty

### Why in News?

India has issued a notice to Pakistan seeking a review and modification of the **Indus Waters Treaty (IWT)** citing Pakistan's "intransigence" in resolving disputes over the **Kishanganga and Ratle (on Chenab River) hydropower projects**, both in Jammu and Kashmir.

- The notice was sent after the "contravention of the graded mechanism of dispute settlement envisaged by Article IX of the IWT."

### What is the History of the Dispute over the Hydel Projects?

- In 2015, Pakistan asked that **a Neutral Expert should be appointed** to examine its technical objections to the Kishanganga and Ratle HEPs. But the following year, Pakistan unilaterally retracted this request, and proposed that a Court of Arbitration should adjudicate on its objections.
- In August 2016, Pakistan had approached the World Bank seeking the **constitution of a Court of Arbitration** under the relevant dispute redressal provisions of the Treaty.
- Instead of responding to Pakistan's request for a Court of Arbitration, **India moved a separate application asking for the appointment of a Neutral Expert.**
  - India had argued that Pakistan's request for a Court of Arbitration **violated the graded mechanism of dispute resolution in the Treaty.**
- In March 2022, the World Bank decided to resume the process of **appointing a Neutral Expert and a Chairman for the Court of Arbitration.**

### What is Indus Waters Treaty?

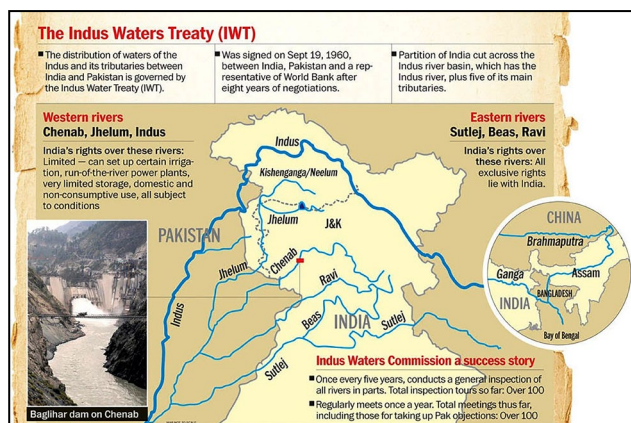
- **About:**
  - India and Pakistan signed the IWT in September, 1960 after nine years of negotiations, **with the World Bank being a signatory** to the pact.
  - The treaty sets out **a mechanism for cooperation and information exchange between the two sides** on the use of the water of the Indus River and its five tributaries **Sutlej, Beas, Ravi, Jhelum, and Chenab.**

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### ➤ Key Provisions:

#### ○ Water Sharing:

- The treaty prescribed **how water from the six rivers of the Indus River System would be shared between India and Pakistan.**
- It allocated the three western rivers—Indus, Chenab and Jhelum—to Pakistan for unrestricted use, barring certain non-consumptive, agricultural and domestic uses by India and the three Eastern rivers—Ravi, Beas and Sutlej—were allocated to India for unrestricted usage.
  - This means that 80% of the share of water went to Pakistan, while leaving the rest 20% of water for use by India.

#### ○ Permanent Indus Commission:

- It also required both the countries to establish a Permanent Indus Commission constituted by permanent commissioners on both sides.
- According to the provisions **of the IWT**, the Permanent Indus Commission is required to meet at least once a year.

#### ○ Rights over Rivers:

- While Pakistan has rights over the waters of Jhelum, Chenab and Indus, Annexure C of the IWT allows India certain agricultural uses, while

Annexure D allows it to build **'run of the river' hydropower projects**, meaning projects not requiring live storage of water.

#### ○ Dispute Resolution Mechanism:

- The IWT provides a three-step dispute resolution mechanism under **Article IX of the Indus Waters Treaty**, under which "questions" on both sides **can be resolved at the Permanent Commission**, or can also be taken up at the inter-government level.
- In case of unresolved questions or "differences" between the countries on water-sharing, such as technical differences, either side can approach the **World Bank to appoint a Neutral Expert (NE)** to come to a decision.
  - And eventually, if either party is not satisfied with the NE's decision or in case of "disputes" in the interpretation and extent of the treaty, matters can be referred to a **Court of Arbitration**.

#### What is Kishanganga Hydroelectric Project?

- The Kishanganga project is located **5 km north of Bandipore in Jammu and Kashmir, India.**
- It is a run-of-the-river project that includes a **37 m tall concrete-face rock-fill dam.**
- It requires to divert water from the Kishanganga River** through a tunnel to a power plant in the Jhelum River basin.
- It will have an installed capacity of 330 MW.
- The construction of this hydroelectric project began in 2007.
- Pakistan objected **to the project arguing that it will affect the flow of the Kishanganga River (called the Neelum River in Pakistan).**
- In 2013, The Hague's Permanent Court of Arbitration (CoA) ruled that India could **divert all the water with certain conditions.**

Note:

# Social Issues

## Highlights

- UN World Social Report 2023
- Prioritizing Mental Well-being
- Prison Reforms
- Issues Faced by Females in Sports
- World Leprosy Day 2023
- Measles and Rubella

## UN World Social Report 2023

### Why in News?

According to the **United Nations (UN) World Social Report 2023: Leaving no one behind in an ageing world**, the number of persons aged 65 years or older worldwide is expected to **double over the next three decades**.

### What are the Key Highlights of the Report?

- The elderly population will reach **1.6 billion in 2050**, accounting for more than **16% of the global population**.
- **North Africa, West Asia and sub-Saharan Africa** are expected to experience the fastest growth in the number of older people over the next three decades.
  - Also, **Europe and North America** combined now have the **highest share of older persons**.
  - This demographic shift brings into **question current arrangements of old-age support** in young and old countries.
- **Gender inequality** also persists into old age. Economically, **women's lower levels of formal labour market participation**, shorter working lives and **lower wages during working years** lead to **more economic insecurity in later life**.

### What is Ageing of the Population?

- **About:**
  - It refers to the **process by which the proportion of older individuals** in a society increases over time.
  - This is typically measured by the **proportion of the population that is over a certain age**, such as **65 years or older**.
- **Status in India:**

- According to the **National Commission on Population**, the share of the elderly in India's population, **close to 9% in 2011**, is growing fast and may reach **18% by 2036**.
- **Life expectancy** in India has more than doubled since Independence from around 32 years in the late 1940s to 70 years or so today.
- **Problems Associated with the Ageing Population:**
  - **Healthcare Costs:** As people age, they are **more likely to experience chronic physical health conditions** and require more healthcare services.
    - This can lead to increased healthcare costs for **governments, insurers, and individuals**.
  - **Social Security Imbalance:** Ageing populations can put a strain on **social security** systems, as a **smaller proportion of the population is working and contributing to the system**, while a **larger proportion is retired and drawing benefits**.
    - This can lead to increased pressure to raise taxes or reduce benefits.
  - **Mental Health Issues:** According to a recent survey, **30% to 50% of elderly people had symptoms that make them depressed** due to feelings of powerlessness, loneliness.
    - A large majority of **elderly persons living alone are women**, especially **widows**.
  - **Other Problems:**
    - Negligence by kids towards their old parents, Disillusionment due to retirement, Feeling of powerlessness, loneliness, uselessness and isolation in elderly, Generational gap.
- **Current Schemes Related to Old Age Population:**
  - **Pradhan Mantri Vaya Vandana Yojana (PMVVY)**
  - **Integrated Program for Older Persons (IPOP)**

Note:



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- **SAMPANN Project**
- **SACRED Portal for Elderly**
- **Elder Line: Toll-Free Number for Elderly**
- **International Initiative:** The **World Health Organization** and the **UN** have designated **2021-2030** as the **Decade of Healthy Aging**, building on the **Madrid International Plan of Action on Ageing** is a good step for elderly empowerment.

## Prioritizing Mental Well-being

### Why in News?

According to **World Health Organisation**, India's suicide rate in 2019, at **12.9/1,00,000**, was higher than the regional average of **10.2** and the global average of **9.0**.

- Suicide has become the **leading cause of death among those aged 15–29 in India**. While every precious life lost through suicide is one too many, **it represents only the tip of the mental health iceberg** in the country, particularly among young adults. Women tend to suffer more.

### What is the Status of Mental Healthcare in India?

- **About:**
  - Mental health encompasses **emotional, psychological, and social well-being**.
    - It influences **cognition, perception, and behaviour**. It also determines how an individual handles stress, interpersonal relationships, and decision-making.
  - In India, according to **National Institute of Mental Health and Neuro-Sciences data**, more than **80% of people** do not have access to mental healthcare services for a multitude of reasons.
- **Initiatives by Government of India Related to Mental Health:**
  - **National Mental Health Program (NMHP):** The **NMHP** was adopted by the government in 1982 in response to a **large number of mental disorders** and shortage of mental health professionals.
  - **Mental Health Act:** As part of the **Mental Health Care Act 2017**, every affected person has access to **mental healthcare** and treatment from government institutions.

- **Kiran Helpline:** In 2020, the **Ministry of Social Justice and Empowerment** launched a 24/7 toll-free helpline '**Kiran**' to provide mental health support.
- **MANAS Mobile App:** To promote mental wellbeing across age groups, the Government of India launched **MANAS (Mental Health and Normalcy Augmentation System)** in 2021.
- **Issues Associated with Mental Health:**
  - **Social Media:** Increased use of certain kinds of **social media** is exacerbating stress and mental ill health for young people.
    - Social media detracts from **face-to-face relationships**, which are healthier, and reduces investment in meaningful activities.
    - More importantly, it erodes **self-esteem through unfavourable social comparison**.
  - **Covid-19 Pandemic:** The **Covid-19 pandemic** has further exacerbated the problem. Globally, it might have increased the prevalence of **depression by 28% and anxiety by 26%** in just one year between 2020 and 2021, according to a study published in **Lancet**.
    - Again, the large increases have been noted among younger age groups, **stemming from uncertainty, financial and job losses, grief, increased childcare burdens**, in addition to school closures and social isolation.
  - **Poverty:** Mental health is closely linked to **poverty** in a vicious cycle of disadvantage. People living in poverty are at greater risk of experiencing mental health conditions.
    - On the other hand, **people experiencing severe mental health conditions are more likely to fall into poverty** through loss of employment and increased health expenditure.
  - **Lack of Mental Health Infrastructure:** Currently, only **20-30% of people with mental illnesses** receive adequate treatment.
    - One major reason for such a wide treatment gap is the problem of inadequate resources. Less than 2% of the government health budget is devoted to mental health issues.
    - Also, the **list of essential medicines** includes only a limited number of **WHO-prescribed mental health medications**.

Note:

## How India can Reimagine Mental Health?

There is a need for an **urgent and well-resourced “whole-of-society” approach to protecting, promoting and caring for the mental health** of our people. This should be based on the following four pillars:

- **Destigmatizing Mental Health: Killing the deep stigma surrounding mental health issues** which prevents patients from seeking timely treatment and makes them feel shameful, isolated and weak.
- **Including Mental Health in Public Health Programme: Making mental health an integral part of the public health programme** to reduce stress, promote a healthy lifestyle, screen and identify high-risk groups and strengthen mental health interventions like counselling services.
  - **Special emphasis will need to be given to schools.**
  - In addition, we should pay **special attention to groups that are highly vulnerable to mental health issues** such as **victims of domestic or sexual violence**, unemployed youth, marginal farmers, armed forces personnel and personnel working under difficult conditions.
- **Mental Health Infrastructure: Creating a strong infrastructure for mental health care and treatment.** Substantial investments will be needed to address the gaps in the mental health infrastructure and human resources.
- **Working on Affordability Aspects:** Mental health services should be made affordable for all. Improved coverage without corresponding **financial protection** will lead to inequitable service uptake and outcomes.
  - All government health assurance schemes, including **Ayushman Bharat**, should cover the widest possible range of mental health conditions.

## Prison Reforms

### Why in News?

Recently, the Prime Minister suggested **prison reforms** to improve jail management and recommended **repealing obsolete criminal laws**, at the **57<sup>th</sup> All-India Conference of Director Generals/ Inspector Generals of Police**, organised by the Intelligence Bureau (IB).

## What are the Key Highlights of the Prime Minister's Address?

- He emphasised on the importance of **National Data Governance Framework** for the **smoothing of data exchange, across agencies**.
  - Also, making the police forces more sensitive and training them in emerging technologies.
- He talked about **leveraging technological solutions like biometrics etc.**, and the need to further strengthen traditional policing **mechanisms like foot patrols**.
- He also emphasised on **enhanced cooperation between the State Police and Central Agencies** to leverage capabilities and share best practices replicating the model of the **DGsP/IGsP Conference at the State/ district levels**, for discussing emerging challenges and evolving best practices among their teams.

## What is the Status of Prison Administration in India?

- **About:**
  - **Prison administration is an important component of the criminal justice system.** There is a paradigm shift in social viewpoint towards prisoners in the last century.
    - Earlier system of prison with a **punitive attitude** where inmates were forcibly confined and deprived a variety of freedom as a form of punishment has changed with a change in social perception towards **prison and prisoners**.
  - It is now treated as a **correction or improvement facility** which itself indicates that there is more emphasis on reformation of prisoners than to punish them.
- **Structure of the Criminal Justice System in India:**
  - The **Indian Criminal Justice System** is composed of government agencies that enforce the law, adjudicate crimes, and correct criminal behaviour.
  - It has four subsystems:
    - **Legislature (Parliament)**
    - **Enforcement (Police)**
    - **Adjudication (Courts)**
    - **Corrections (Prisons, Community Facilities)**
- **Issues Related to Prison in India:**
  - **Pendency of Cases:** As per the records of 2022, over **4.7 crore cases are pending in Indian courts across different levels of the judiciary**.

Note:



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- Also, according to **National Crime Records Bureau (NCRB)-Prison Statistics India**, 67.2% of total prison population in India comprises trial prisoners.
- **Colonial Nature and Obsolete Laws:** Both substantive and procedural aspects of the Indian criminal justice system were designed with the **purpose of ruling the nation in British colonial times**.
  - In light of this, the relevance of these **19th century laws is debatable in the 21st century**.
- **Inhumane Behaviour Behind Bars:** Over the years, critics have repeatedly complained about the **indifferent and even inhuman behaviour** of prison staff.
  - Also, there have been many **instances of custodial rapes and deaths** resulting in violation of prisoners' human rights.
- **Overcrowding:** Many prisons in India are overcrowded, with facilities designed to hold a certain number of **inmates being filled well beyond capacity**.
  - For example, in **2020 it was reported that the Tihar Jail in Delhi**, which has a capacity of around 7,000 inmates, held more than 15,000 prisoners.
- **Inadequate Staff:** Many prisons in India are **understaffed**, which can lead to poor conditions and a **lack of security**.
  - For example, in 2020 it was reported that the **Puzhal Central Prison in Chennai, Tamil Nadu** had only one guard for every 100 prisoners.
  - Also, as per the **Prison Act, 1894 and Prisoner Act, 1900**, there should be a welfare officer and a law officer in each jail but **recruitment of these officers remains pending**.

## Issues Faced by Females in Sports

### Why in News?

Recently, some sportspersons made allegations of sexual harassment against **WFI (Wrestling Federation of India)** president Brij Bhushan Sharan Singh.

- Sports Ministry demands **explanation from WFI within 72 hours**, if WFI fails to furnish the reply, the Ministry will proceed to initiate action against the Federation in terms of the provisions of the **National Sports Development Code, 2011**.

### What is the Scenario of Such Allegations?

- According to **RTI (Right to Information)** Data, between 2010 to 2020, there were **45 complaints of sexual harassment to the SAI (Sports Authority of India)**, of which 29 were against coaches.
- In several of these reported cases, the accused were let off leniently, with punishments that consisted of transfers to a meager cut in pay or pension.
- Some of the cases have not seen the end of the tunnel with many dragging on for years, with no resolutions in sight.
  - Abuse in sports **was a poll issue in Germany in 2021**. The Federal Parliament's Sports Committee hosted a public hearing on emotional, physical and sexualised violence in sports in May 2021.
- **It is about time India discussed the issue** and not wait for athletes to stage protests at Jantar Mantar to be heard.
- Living in the 21st century, where we have devised the technology to monitor robots to do our bidding, there's still one aspect where **we fall grossly short when it comes to progress — gender equality**.

### What are the Issues Faced by Sportswomen?

- **Funding and Budget:**
  - Sportswomen face a lack of equal **funding compared to men's athletics**, making it difficult for them to compete and run consistent programs.
- **Buoyant Sexism:**
  - Women are made to face the **barrels of buoyant sexism** on a daily basis, be it at work or even at home. They are monitored and **judged by the way they dress, by the way they speak**.
- **Gender Disparity:**
  - Despite women's efforts to **advocate for their social rights**, they still **do not receive the same level of respect or recognition on the professional front**, particularly in the sports industry, as their male counterparts.
- **Lack of Access and Costlier:**

Note:

- Lack of physical education in schools and limited opportunities to play sports in both high school and college mean **girls have to look elsewhere for sports**—which may not exist or **may cost more money**.
- Often there is an **additional lack of access to adequate playing facilities** near their homes that makes it more difficult for girls to engage in sports.
- **Safety and Transportation Issues:**
  - Sports require a place to participate—and for many girls, especially in dense urban environments, that means traveling to facilities through unsafe **neighborhoods or lacking any means to get to a good facility miles away**.
  - And if there isn't a safe option like carpooling with other families, the **only option for a girl and her family may be to stay home**.
    - For example, Manipur is a sporting powerhouse, **but 48% of female athletes travel over 10 km to reach the practice facility**.
- **Social Attitudes and Disfigurement:**
  - Despite recent progress, discrimination based on the real or **perceived sexual orientation and gender identity of female athletes persists**.
  - Girls in sports may experience **bullying, social isolation, negative performance evaluations, or the loss of their starting position**.
  - During socially fragile adolescence, the **fear of being tagged “gay” is strong enough to push many girls out of the game**.
- **Decreased Quality Training:**
  - The facilities are not **as good as the boys' venues** and the playing times may not be optimal.
  - The availability of quality, trained coaches **may be lacking in their community or these coaches may be more focused on the boys' programs** that have more money for training.
  - Equipment, and even uniforms **aren't funded for many girls' programs at the same levels as boys** so their ability to grow and enjoy the sport is diminished. In short, sports just aren't “fun” any more.
- **Lack of Positive Role Models:**
  - Today's girls are bombarded with images of **external beauty, not those of confident, strong female athletic role models**.

- Peer pressure **can be hard for girls at any age**; when that pressure isn't offset with strong encouragement to participate in sports and healthy physical activity, the results may lead girls to drop out altogether.
- **Limited Media Coverage:**
  - Women's sports are often **underrepresented in the media**, which can make it harder for female athletes to gain recognition and sponsorship opportunities.
- **Pregnancy and Maternity:**
  - Female athletes often face challenges balancing **motherhood and their sports careers**.
  - This can affect the training and **competing opportunities for female athletes**.

### ***Why is it Important for More Women Participation in Sports?***

- **Physical and Mental Health:**
  - Sports can have a positive impact on **physical and mental health for both men and women**.
    - Girls active in sports during adolescence and young **adulthood are 20% less likely to get breast cancer later in life**.
- **Gender Parity:**
  - By providing equal opportunities and resources for women in sports, we can **help to break down barriers and stereotypes that limit women's potential** and participation in other areas of life.
    - Sport in its most basic form **encourages balanced participation and has the capacity to promote gender equality** (SDG Goal 5: Achieve gender equality and empower all women and girls)
- **Economic Empowerment:**
  - Women who participate in sports often have more opportunities for education and employment, which can lead to greater economic empowerment.
- **Rectify Societal Connotations:**
  - Women's participation in sports can also help to **change societal attitudes towards women** and their capabilities.
  - By seeing women excel in sports, it can **inspire more women to pursue their own goals** and aspirations, and challenge stereotypes about what women are capable of achieving.

Note:



- **Representation:**
  - Women's participation in sports can help to provide **better representation for women in leadership roles**, including coaching and administration.
  - It can also serve as an inspiration for young girls to pursue sports as a career.
- **Community Building:**
  - Sports can bring people together and promote greater understanding and respect between different groups within society.
  - By promoting greater participation in **sports among women**, we can help to **build stronger and more inclusive communities**.

#### What are the Safeguard Measures for Sexual Harassment?

- **The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013.**
- **Protection of Women from Sexual Harassment (POSH) Act, 2013.**
- **Sexual Harassment electronic Box (SHe-Box).**
- **National Commission for Women (NCW).**
- **The Protection of Children from Sexual Offences (POCSO), 2012**

## World Leprosy Day 2023

### Why in News?

Every year **last Sunday in January** is observed as Leprosy Day. This year, it falls on 29<sup>th</sup> January. Leprosy is also known as **Hansen's disease**.

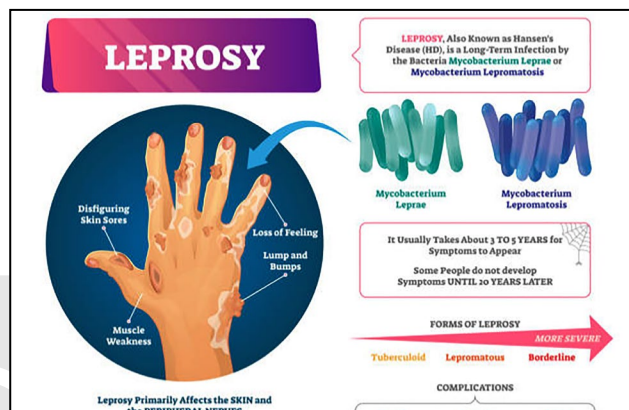
- The day is observed to provide an opportunity to lift up the voices of people affected by leprosy across the world.

### What are the Key Points of the Day?

- **Theme 2023:** Act Now, End Leprosy.
- **History:** World Leprosy Day was established in 1954 by **French philanthropist Raoul Follereau**.
- **Objective:** The main objective was to raise awareness about **leprosy disease and to teach people about this ancient disease** that is now easily curable.
  - Various people across the world are not aware of the disease, lack of access to basic medical care, and continued stigma surrounding the illness.

### What is Leprosy?

- **About:**
  - Leprosy is a chronic infectious disease **which is caused by a type of bacteria called *Mycobacterium leprae***.
  - Leprosy is a **Neglected Tropical Disease (NTD)** which still occurs in more than 120 countries, with more than 200000 new cases reported every year.



- **Symptoms:**
  - The disease mainly **affects the skin**, the peripheral nerves, mucosa of the upper respiratory tract and eyes.
- **Transmission:**
  - Leprosy is transmitted via droplets, from the nose and mouth, during close and frequent contact with untreated cases.
- **Treatment:**
  - Leprosy is curable **with MDT (multi drug therapy)** and treatment in the early stages can prevent disability. The disease is not hereditary, leprosy does not transmit from parents to children.
- **Scenario:**
  - In 2021, as many as **1,40,000 new leprosy cases were reported**, with 95% of new cases coming from the 23 global priority countries. Of these, 6% were diagnosed with visible deformities or grade-2 disabilities (G2D).
  - Although leprosy affects both sexes, in most parts of the world **males are affected more frequently than females**, often in the ratio of 2:1, according to WHO's Global Leprosy Report.
  - Over 6% of the new cases **were children under the age of 15**.

Note:



- Despite a 10% increase in new cases from 2020 to 2021, the **reported cases were 30% lower in 2021 than in 2019.**
  - This is not **due to a decrease in transmission**, but because the leprosy cases remained undetected due to Covid-19-related disruptions.
- **Indian Efforts:**
  - In 2017, the government launched nationwide **Sparsh Leprosy Awareness Campaign (SLAC)** which aims at communicating the importance of early detection and treatment of leprosy.
  - **National Leprosy Eradication Programme (NLEP)** focuses on both prevention and cure, especially in endemic regions. A Leprosy Case Detection Campaign was launched in March 2016, involving house-to-house screening and referral of patients for diagnosis.
  - Introduction of an indigenously developed vaccine for leprosy into the **NLEP. The vaccine, known as Mycobacterium indicus pranii (MIP)**, has been developed by National Institute of Immunology. This vaccine will be administered as a preventive measure to those staying in close contact with leprosy patients.
  - Indian research contributed to the development of Multi-Drug Therapy or MDT, now recommended by WHO, which led to the shortening of treatment and higher cure rates.
  - The fight against leprosy has to be measured against sensitivity displayed by society. **Removal of the stigma is vital.** More than laws, our attitude to leprosy has to change, doing away with discrimination.

## Measles and Rubella

### Why in News?

India had set a target to eliminate **Measles and Rubella (MR)** by 2023, having missed the earlier deadline of 2020, due to a variety of reasons, exacerbated by disruptions due to the pandemic.

- In 2019, India adopted the **goal of measles and rubella elimination by 2023**, anticipating that the 2020 goal could not be reached.

### What are Measles and Rubella?

#### ➤ Measles:

- It is a **highly contagious viral disease** and is a cause of death among young children globally.
- It is caused by a **single-stranded, enveloped RNA virus with 1 serotype**. It is classified as a member of the **genus Morbillivirus in the Paramyxoviridae family**.
- It is particularly **dangerous for children from the economically weaker background**, as it attacks malnourished children and those with reduced immunity.
- It can cause serious complications, including **blindness, encephalitis, severe diarrhoea, ear infection and pneumonia**.

#### ➤ Rubella:

- It is also called **German Measles**.
- Rubella is a **contagious, generally mild viral infection that occurs most often in children and young adults**.
- It is caused by the **rubella virus which is an enveloped single-stranded RNA virus**.
- Rubella infection in pregnant women may cause death or congenital defects known as **Congenital Rubella Syndrome (CRS)** which causes irreversible birth defects.
  - **Rubella isn't the same as measles**, but the two illnesses share some signs and symptoms, such as the red rash.
  - Rubella is caused by a **different virus than measles**, and rubella isn't as infectious or as severe as measles.

### What is the Global and

#### Indian Scenario of Measles and Rubella?

- The measles virus is one of the **world's most contagious human viruses** that kills more than 1,00,000 children every year globally, and **rubella is a leading vaccine-preventable cause of birth defects**, according to the **World Health Organization (WHO)**.
- Over the past two decades, the **measles vaccine is estimated to have averted more than 30 million deaths globally**, as per the WHO's statistics.

Note:



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- During 2010–2013, India conducted a phased measles catch-up immunisation for children aged 9 months–10 years in 14 States, **vaccinating approximately 119 million children.**
- **Mission Indradhanush** was launched in 2014 to ramp up vaccinating the unvaccinated population.
- During 2017–2021, India adopted a national strategic plan for measles and rubella elimination.
  - During the same period, the Government introduced rubella-containing vaccine (RCV) into the routine immunisation programme.
- As of December 2021, **five countries have been verified and have sustained measles elimination** - Bhutan, DPR Korea, Maldives, Sri Lanka, Timor-Leste. In addition, Maldives and Sri Lanka have sustained their rubella elimination status in 2021.

**What are Measures to Curb MR?**

- **Measles-Rubella Vaccination:** The MR campaign targets around 41 crore children across the country, the largest ever in any campaign.
  - All children aged between 9 months and less than 15 years are given a single shot of MR vaccination irrespective of their previous measles/rubella vaccination status or measles/rubella disease status.
- Other Initiatives include **Universal Immunization Programme (UIP), Mission Indradhanush and Intensified Mission Indradhanush.**
- The vaccines for the diseases are provided in the form of measles-rubella (MR), measles-mumps-rubella (MMR) or measles-mumps-rubella-varicella (MMRV) combination.



Note:

# Science & Technology

## Highlights

- Lumpy Skin Disease
- Hybrid Immunity
- Antimicrobial-Resistant Gonorrhea
- WHO Report on Global Trans Fat Elimination
- Hyderabad: Center for the Fourth Industrial Revolution
- BharOS Software
- Superconductivity
- Doppler Weather Radar Network
- Segregate Video Games from Money Games
- Neuromorphic Computing
- Solitary Wave in Martian Magnetosphere
- India's First Solar Mission
- Exoplanet
- Shukrayaan I

## Lumpy Skin Disease

### Why in News?

Recently, the Punjab State government has **airlifted 25 lakh doses of goat pox vaccine** to carry out a **free vaccination campaign** for early prevention of cattle from lumpy skin disease.

- **Lumpy Skin Disease (LSD)** had affected the cattle on a large scale in July, 2022. About **1.75 lakh cattle** were affected across the Punjab state and about **18,000 cattle died**.


### What is Lumpy Skin Disease?

- **Causes:**
  - **LSD** is caused by infection with the **Lumpy Skin Disease Virus (LSDV)** in cattle or water buffalo.
    - The **Food and Agriculture Organization (FAO)** estimates that its **mortality rate** is less than 10%.
  - The **first reported outbreak of LSD occurred in Zambia in 1929**, and it was initially believed to be caused by poisoning or an allergic reaction to insect bites.
- **Transmission:**
  - LSD is primarily **spread between animals through the bite of vectors**, such as mosquitoes and flies.
- **Symptoms:**
  - The primary symptoms of LSD include **fever, discharge from the eyes and nose, drooling, and blisters on the skin**.
  - Also, affected animals may also **lose their appetite** and have difficulty in eating, leading to **reduced milk production**.

### Prevention and Treatment:

- Currently, India is administering the **goat pox vaccine** and **sheep pox virus vaccines** for LSD.
  - It's a **heterologous vaccine** that offers **cross-protection** for cattle against the disease.
- **Goat pox, sheep pox and LSD** belong to the same **capripoxvirus genus**.
  - **Lumpi-ProVacInd** is a live attenuated vaccine developed jointly by **ICAR's National Research Centre on Equines and the Indian Veterinary Research Institute**, which is targeted to protect cattle against the LSD virus, and **provides 100% protection**.
    - It is **expected to be commercially launched in a few months**.
  - There are **no specific antiviral drugs for treating LSD**, and treatment primarily involves supportive care for the affected animals.
    - This may include **treating skin lesions with wound care sprays**,

### LUMPY SKIN DISEASE IN CATTLE



■ Called LSD for short, it is caused by a poxvirus

■ It can spread through saliva & nasal secretions

■ It is transmitted through the bite of an infected mosquito or tick

**LSD is not a zoonotic disease, which means it can't infect people**

**MAIN SYMPTOM**  
Skin nodules/lumps in one area or all over the body

**THE EFFECT IN CATTLE**

- Reduced milk production
- Reduced male fertility
- Weight loss
- Pregnancy loss

**TREATMENT**

- No specific remedy
- Antibiotics, anti-inflammatory drugs & vitamins are prescribed to prevent a secondary infection

An outbreak of LSD has been reported in:

- India
- Bangladesh
- Nepal
- China
- Vietnam
- Myanmar
- Thailand

In Malaysia, just 0.1% of 81,252 head of cattle tested at 9,108 farms have the disease

Note:

- using antibiotics to prevent secondary infections,
- administering anti-inflammatory painkillers to increase appetite.

## Hybrid Immunity

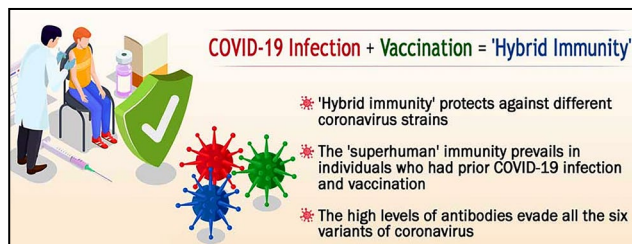
### Why in News?

A recent study in the journal The Lancet Infectious Diseases held that “hybrid immunity” provides better **protection against severe Covid-19**, while all immunity against a re-infection wane within a few months.

- The study is based on a meta-analysis of 11 other studies on the protective effectiveness of previous **SARS-CoV-2 (Covid)** infection and 15 studies on the protective effectiveness of hybrid immunity.

### What is Hybrid Immunity?

- Hybrid immunity from an infection is a combination of natural protection along with the immunity provided by the vaccine.
- It appears to result in stronger protection than just infection or vaccination alone.
- In the case of Covid-19, hybrid immunity is when someone recovers from a Covid infection before getting vaccinated.



### What are the Highlights of the Study?

- **Better Protection:**
  - A hybrid immunity offers a “**higher magnitude and durability**” of protection as compared to infection alone, emphasizing the need for vaccination.
  - However, with the faster-spreading omicron variants leading to more infections and consequently **more people developing this hybrid immunity**.
- **Efficacy of Hybrid Immunity:**
  - Protection against severe disease and hospitalisations from a Sars-CoV-2 infection alone was found to be **82.5% at three months after the last shot or infection**.

- This protection stood at 74.6% at 12 months and 71.6% at 15 months.

- Protection against reinfection declined faster, standing at 65.2% at three months and dropping to 24.7% at 12 months and 15.5% at 15 months.
- In comparison, **hybrid immunity with just the primary vaccine doses** was found to be **96% at three months and 97.4% at 12 months**.
- The same can offer 69% protection against reinfection at three months, dropping to 41.8% at 12 months.
- The effectiveness of hybrid immunity gained from infection coupled with the primary as well as a booster dose stood at **97.2% at three months and 95.3% at six months**.

### ➤ Implications:

- It can be used to **tailor guidance on the number and timing of SARS-CoV-2 vaccinations**.
- It said that in regions with high Sars-CoV-2 sero-prevalence, the primary vaccination – focused mainly on those at the highest risk of severe disease such as the old or co-morbid – can **offer high protection against severe disease** and hospitalisation for at least one year.

## Antimicrobial-Resistant Gonorrhea

### Why in News?

Recently, a strand of **antimicrobial-resistant gonorrhea** outbreak has hit Kenya.

- Researchers have raised alarm, warning this **infection is asymptomatic in some cases** and can cause significant health challenges, including **permanent damage to their reproductive systems**.

### What is Gonorrhea?

- **Gonorrhea** is a **sexually transmitted infection (STI)** caused by the bacterium **Neisseria gonorrhoeae**.
  - It can infect both men and women and can occur in the **genitals, rectum, and throat**.
  - If left untreated, gonorrhea can cause serious health problems, including infertility and an **increased risk of Human Immunodeficiency Virus (HIV) infection**.

Note:

- According to the **World Health Organization (WHO)**, it is the **second-most common disease to be sexually transmitted** across the world after **chlamydia**.
- Gonorrhea is typically treated with **antibiotics**, but the bacteria have become **increasingly resistant** to many of the drugs that were once effective.

### What is Anti-Microbial Resistance (AMR)?

- **About:**
  - **Antimicrobial resistance (AMR)** is the ability of microorganisms (such as bacteria, viruses, fungi, and parasites) to resist the **effects of antimicrobial drugs** (such as antibiotics, antivirals, antifungals, and antiparasitics).
    - Also, Microorganisms that develop antimicrobial resistance are sometimes referred to as **"superbugs"**.
- **Causes:**
  - Poor infection control and **inadequate sanitation and hygiene**.
  - **Overuse of antibiotics** and repeated use of poor-quality drugs.
  - Genetic mutations of the bacteria.
  - Lack of investment in research and development of new antimicrobial drugs.
- **Impacts:**
  - AMR **increases the risk of infections** spreading and becoming harder to treat, leading to **prolonged illness, disability and death**.
  - It also **increases healthcare costs** and threatens the sustainability of healthcare systems.
- **Recognition in India:**
  - The **National Health Policy 2017** highlights the problem of **antimicrobial resistance** and calls for effective action to address it.
  - The **Ministry of Health & Family Welfare (MoHFW)** identified AMR as one of the top 10 priorities for the ministry's collaborative work with the **World Health Organization (WHO)**.
  - India has instituted **surveillance of the emergence of drug resistance** in disease causing microbes in programmes on **Tuberculosis, Vector Borne diseases, Acquired immunodeficiency syndrome (AIDS)**, etc.
  - **Governement Initiatives :**

- **National Programme on AMR containment:** Launched in 2012. Under this programme, **AMR Surveillance Network** has been strengthened by establishing labs in State Medical College.
- **National Action Plan on AMR:** It focuses on **One Health approach** and was launched in April 2017 with the aim of involving various stakeholder ministries/departments.
- **AMR Surveillance and Research Network (AMRSN):** It was launched in 2013, to generate evidence and capture trends and patterns of drug resistant infections in the country.
- **Antibiotic Stewardship Program: Indian Council of Medical Research (ICMR)** Has initiated Antibiotic Stewardship Program (AMSP) on a pilot project across India to control misuse and overuse of antibiotics in hospital wards and ICUs.

## WHO Report on Global Trans Fat Elimination

### Why in News?

A new report from the **World Health Organization (WHO)** has found that **5 billion people globally remain unprotected from harmful trans fats**, increasing their risk of heart disease and death.

- WHO first called for the global elimination of industrially produced trans fats in 2018, with an **elimination target set for 2023**.

### What are the Major Highlights of the Report?

- According to WHO, the consumption of trans fats, which can be found in **packaged foods, baked goods, cooking oils and spreads**, is responsible for up to **half a million premature deaths** from heart disease every year.
- 43 countries have now **implemented best-practice policies for tackling trans-fat** in food, with 2.8 billion people protected globally. Many countries in America and Europe have phased the substance out with bans on partially hydrogenated oils.
  - However, **no low-income countries** have yet adopted such measures.
- Currently, **9 of the 16 countries** with the highest estimated proportion of coronary heart disease deaths caused by trans-fat intake do not have a best-practice policy.

Note:



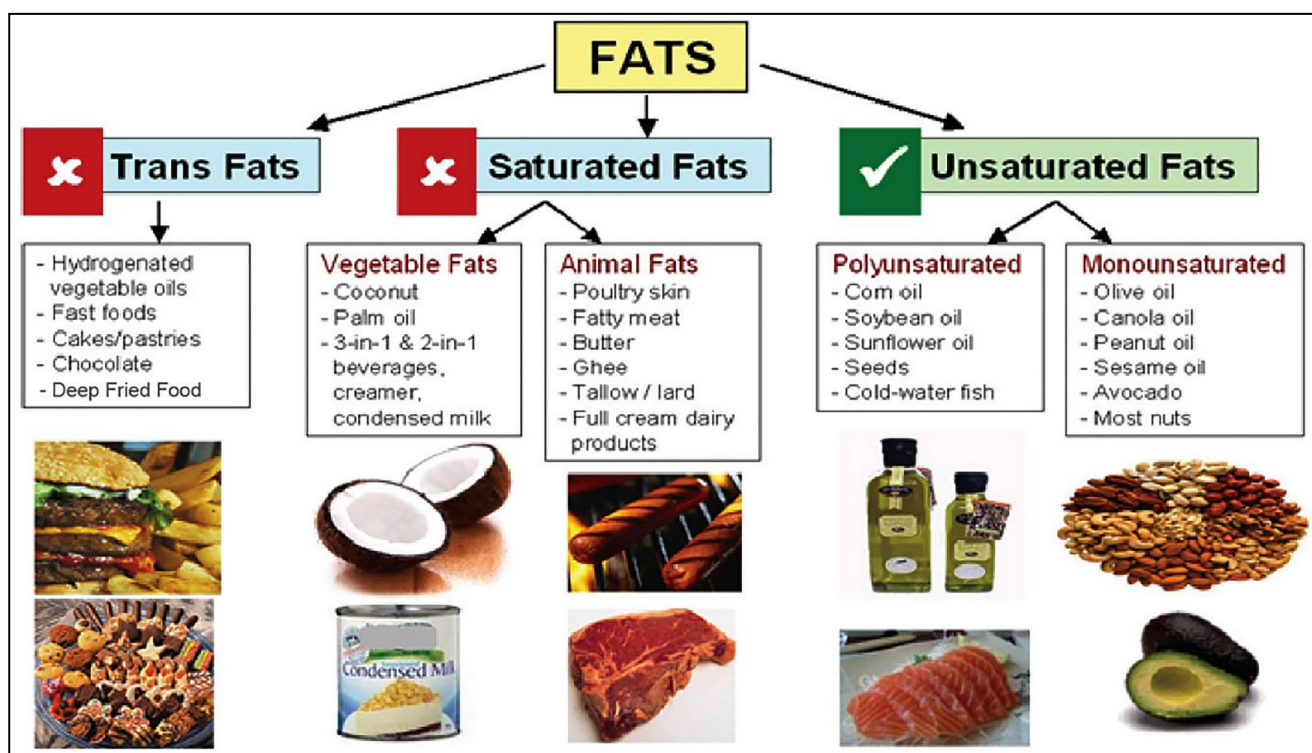
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- They are **Australia, Azerbaijan, Bhutan, Ecuador, Egypt, Iran (Islamic Republic of), Nepal, Pakistan and Republic of Korea.**
- Best-practices in trans-fat elimination policies follow specific criteria established by WHO and limit industrially produced trans-fat in all settings. There are **two best-practice policy alternatives**:
  - mandatory national limit of **2 grams of industrially produced trans-fat per 100 grams** of total fat in all foods;
  - mandatory **national ban on the production or use of partially hydrogenated oils** as an ingredient in all foods.

### What are Trans Fats?

- **About:**
  - Trans fat, or trans-fatty acids, are **unsaturated fatty acids** that come from either natural or industrial sources.
  - Naturally-occurring trans-fat come from ruminants (cows and sheep).
  - Industrially-produced trans-fat is formed in an industrial process that adds **hydrogen to vegetable oil converting the liquid into a solid**, resulting in “partially hydrogenated” oil (PHO).



- **Impacts:**
  - Trans fats have been linked to an **increased risk of heart disease**, as they can raise **bad cholesterol (LDL)** levels in the blood and lower good cholesterol (HDL) levels.
  - They can also contribute to the development of other health conditions such as **diabetes and obesity.**
- **Challenges in Eliminating Trans Fat:**
  - Trans fats are a **cheap and easy way to stabilise and extend the shelf life of food products**, which is why they are widely used by food manufacturers.

- Many **small and medium-sized food manufacturers** may not have the resources or technical expertise to **reformulate their products to remove trans fats.**
- Trans fats are often **used in food service and restaurant settings**, which can be harder to regulate than retail food products.
- **Changing consumer habits and taste preferences** can be difficult, as people have become accustomed to the taste and texture of foods that contain trans fats.

Note:

- Some countries or regions may have **limited infrastructure and resources** to monitor and enforce the ban of trans fats.
- **Initiatives to Eliminate Trans Fat:**
  - **India:**
    - **Eat Right Movement:** Launched in 2018, the programme is built on two broad pillars of 'Eat Healthy' and 'Eat Safe'.
    - **Swachh Bharat Yatra:** A Pan-India cyclothon, was launched under the movement to educate **citizens on issues of food safety, combating food adulteration and healthy diets.**
    - **Heart Attack Rewind:** It is a 30-second public service announcement which was broadcasted in **17 languages on social media platforms.**
      - The objective of the campaign was to **warn citizens about the health hazards of consuming trans fats** and offer strategies to avoid them through healthier alternatives.
    - The **Food Safety and Standards Authority of India (FSSAI)** has stated that all food items should contain less than **2% of trans fat from Jan 2022.**
  - **Global:**
    - WHO released **REPLACE**, a step-by-step guide for the elimination of **industrially-produced trans-fatty acids** from the global food supply.
      - **REPLACE** provides six strategic actions to ensure the prompt, complete, and sustained elimination of industrially-produced trans fats from the food supply:
        - ◆ **REview** dietary sources of industrially-produced trans fats and the landscape for required policy change.
        - ◆ **Promote** the replacement of industrially-produced trans fats with healthier fats and oils.
        - ◆ **Legislate** or enact regulatory actions to eliminate industrially-produced trans fats.
        - ◆ **Assess** and monitor trans fats content in the food supply and changes in trans-fat consumption in the population.
        - ◆ **Create** awareness of the negative health impact of trans fats among policymakers, producers, suppliers, and the public.
        - ◆ **Enforce** compliance of policies and regulations.

## Hyderabad: Center for the Fourth Industrial Revolution

### Why in News?

Recently, the **World Economic Forum (WEF)** has chosen Hyderabad, Telangana for establishing its **Center for the Fourth Industrial Revolution (C4IR).**

- The **C4IR Telangana** will be an **autonomous, non-profit organisation** with a thematic focus on healthcare and life sciences.

### What is the Fourth Industrial Revolution?

#### ➤ About:

- It is **characterised by the use of technology to blur the boundaries** between the **digital, physical, and biological worlds**, and is **driven by data.**
- Key technologies include cloud computing, **big data**, **autonomous robots**, **cybersecurity**, simulation, additive manufacturing, and the **internet of things (IoT).**
- The term **4IR** was coined by Klaus Schwab, executive chairperson of the WEF, in 2016.

#### ➤ Major Examples of its Application:

- **Pacemaker:** The **pacemaker** is a near-perfect example of the ongoing **fourth industrial revolution (4IR).**
  - The **four wireless sensors of the pacemaker** monitor vitals such as **temperature, oxygen levels and the heart's electrical activity.**
  - The device then analyses the vitals and decides when to pace the heart and at what rate. **Doctors can wirelessly access the information** on a tablet or smartphone.
- **Xenobots:** **Xenobots**, which are less than a millimetre long, are known to be the first **living robot**, were created in 2020 from the stem cells of the **African clawed frog** and can be programmed using **artificial intelligence.**
  - It has a reproductive ability demonstrated in October 2021 by a team of US scientists.
  - When the researchers put the xenobots into a **petri dish**, they were able to gather hundreds of tiny stem cells inside their mouths and **create new xenobots a few days later.**

Note:

- Once perfected, **xenobots could be useful for tasks like cleaning up microplastics** and regrowing or replacing dead cells and tissues inside human bodies.

○ **Smart Railway Coaches:** In November 2020, the **Modern Coach Factory (MCF)** at Raebareilly, Uttar Pradesh, rolled out **smart railway coaches** that are fitted with a **battery of sensors** to provide a comfortable experience to passengers.

- The **sensors monitor odour levels in toilets**, check if the doors are safely closed, avoid fire outbreaks and stop **unauthorised travel using CCTV cameras** with face recognition capabilities, among other technologies.

#### ➤ **Challenges Associated with 4IR:**

- **Job Displacement:** As automation and artificial intelligence become more prevalent, there is a concern that **many jobs will be replaced by machines**, leading to widespread job loss and unemployment.
- **Privacy Concern:** The increasing connectivity of devices and systems in Industry 4.0 increases the **risk of cyber-attacks**, which can have significant consequences for both businesses and individuals.
- **Ethical Concerns:** As artificial intelligence and automation become more advanced, there are also **concerns about ethical issues such as accountability, bias, and transparency**.
- **Lack of Digital Infrastructure:** Not all countries have the digital infrastructures for Industry 4.0, leading to **digital divide** and uneven economic growth.

#### **What are the Other Industrial Revolutions?**

- **First Industrial Revolution (1800s):** It used water and steam power to mechanise production. Example: **Steam engine**.
- **Second Industrial Revolution (early 1900s):** It used **electric power to create mass production**. Example: **Electricity**.
- **Third Industrial Revolution (late 1900s):** It used electronics and information technology to automate production. Example: **Computer and Internet**.

## **BharOS Software**

#### **Why in News?**

Recently, an IIT Madras-incubated company has developed the BharOS.

#### **What is BharOS?**

##### ➤ **About:**

- It is an **indigenous mobile operating system (OS)**, like Android or iOS. It is focused on **privacy and security**.
  - A mobile operating system is a software that is the core interface on a smartphone like **Android by Google and iOS by Apple**, which help **smartphone users interact with their device** and access its features, while ensuring safety.
- BharOS is a **contribution towards the idea of a self-reliant India or 'Atmanirbhar Bharat'** by creating a secure OS environment for India-based users.
- BharOS Services are currently being provided to organisations that have **stringent privacy and security requirements** and whose users handle sensitive information that requires confidential communications on restricted apps on mobiles.
- Such users require **access to private cloud services through private 5G networks**.

##### ➤ **Features:**

- **Native Over the Air:**
  - BharOS would offer Native Over the Air (NOTA) updates, meaning that **security updates and bug fixes will be automatically installed** rather than users having to check for updates and implementing them on their own.
- **No Default Apps:**
  - **No Default Apps (NDA) setting**, means that users do not have to keep or use pre-installed apps in this mobile operating system.
    - NDA is key as many pre-installed apps that currently ship with other smartphones can slow down the device or take a toll on battery life by acting as bloatware.
  - Going with an NDA design for BharOS was intentional as **it will let users have more control over the apps on their mobile phones** based on the user's trust in the app and the kind of data they store on their phone.
- **Private App Store Services:**
  - It will use a system known as Private App Store Services (PASS), which will **examine and curate the apps that are safe** for the users.

Note:



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- Users will be able to use other apps, as long as they meet BharOS' PASS standards.

#### ➤ Significance:

- The project aims to reduce the dependence on foreign OS in smartphones and promote the use of locally developed technology.
- It is a huge leap forward to create an indigenous ecosystem and a self-reliant future.
- It aspires to put India on par with those few countries that currently possess such capabilities.

#### How BharOS is

#### Different from Google Android?

- BharOS is based on **Android Open-Source Project (AOSP)** and is somewhat similar to Google Android. However, it does not **come preloaded with Google services like in regular Google Android phones**. So BharOS users are free to download only those apps that they like or prefer rather than being forced.
- Android phone with stock OS usually have Chrome set up as default browser. BharOS makers are looking to partner with DuckDuck Go for its default browser.
  - DuckDuck Go is a **privacy-focused browser with several privacy-centric features** like anonymous browsing mode and Privacy Grade.

## Superconductivity

#### Why in News?

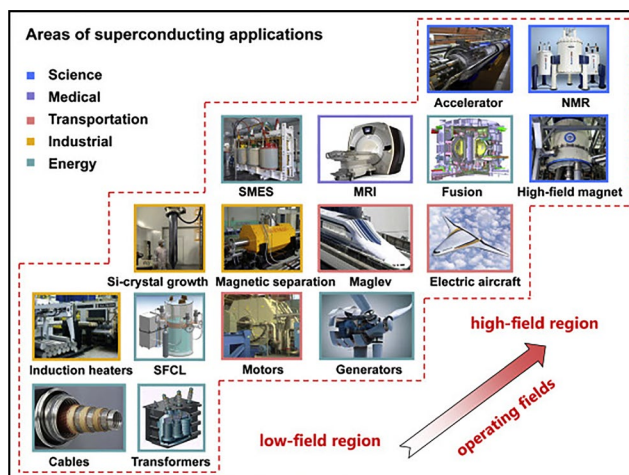
Recently, physicists at the University of L'Aquila in Italy have recently made a breakthrough by achieving a **full microscopic understanding of the superconductivity of Mercury** for the first time.

- Superconductivity was first discovered in mercury, **yet scientists required 111 years to explain how it becomes superconducting**.

#### What is Superconductivity?

##### ➤ Superconductivity:

- **Superconductivity** refers to a state when a material can conduct electricity without any resistance. It is observed in many materials when they are cooled below a **critical temperature**.



#### ➤ Superconductivity of Mercury:

##### ○ About:

- In 1911, Heike Kamerlingh Onnes discover superconductivity in mercury.
- Onnes had invented a way **to cool materials to absolute zero** – the lowest temperature possible.
- Using his technique, he found that at a very low temperature, called the threshold temperature, **solid mercury offers no resistance to the flow of electric current**. It was a watershed moment in the history of physics.

- **Various Methodologies:** Superconductivity of mercury is explained by various methodologies:

##### • The BCS Theory:

- In BCS (**Bardeen-Cooper-Schrieffer**) superconductors, **vibrational energy released by the grid of atoms encourages electrons to pair up**, forming so-called Cooper pairs.
- These Copper pairs can move like **water in a stream, facing no resistance to their flow, below a threshold temperature**.
  - ◆ These could explain why mercury has such a low threshold temperature (around  $-270^{\circ}\text{C}$ ).

##### • Spin-Orbit Coupling:

- Spin-orbit coupling (SOC) is the way an **electron's energy is affected by the relationship between its spin and its momentum**.
- SOC gave a better view of the phonons' energies and explain why mercury has such a **low threshold temperature (approx.  $-270^{\circ}\text{C}$ )**.

Note:



- **Coulomb Repulsion:**

- Another factor was the Coulomb repulsion (a.k.a. 'like charges repel') between two **electrons in each pair**.
- The superconducting state is determined by a balance between an attractive interaction between electrons, mediated by phonons, and the repulsive Coulomb interaction (electrostatic repulsion between negative charges).

### What is Mercury?

- Mercury is a **naturally occurring element that is found in air, water and soil**.
- Released into the atmosphere through natural processes such as weathering of rocks, volcanic eruptions, geothermal activities, forest fires, etc.
- Mercury is also **released through human activities**.
- It is the only metal which **remains liquid at room temperature**.

## Doppler Weather Radar Network

### Why in News?

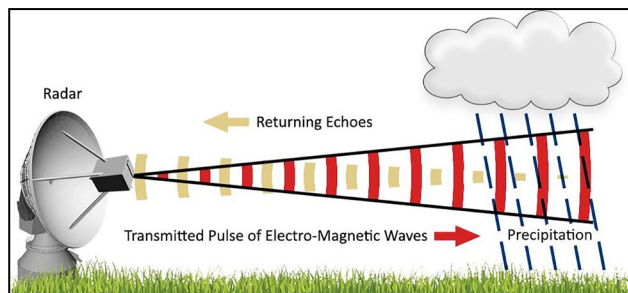
On the Occasion of **148<sup>th</sup> Foundation Day of India Meteorological Department (IMD)**, the Ministry of Earth Science has inaugurated the **Doppler Weather Radar (DWR) Systems** in Jammu & Kashmir, Uttarakhand, and Himachal Pradesh.

- The Ministry of Earth Science is also preparing to cover the entire Country with the **Doppler weather radar network** by 2025 for more accurate forecasts related to extreme weather events.

### What are

### Doppler Weather Radars?

- Based on Doppler principle, the **radar is designed to improve precision in long-range weather forecasting** and surveillance using a parabolic dish antenna and a foam sandwich spherical radome.
- DWR has the **equipment to measure rainfall intensity, wind shear and velocity and locate a storm centre** and the direction of a tornado or gust front.



### What is Radar?

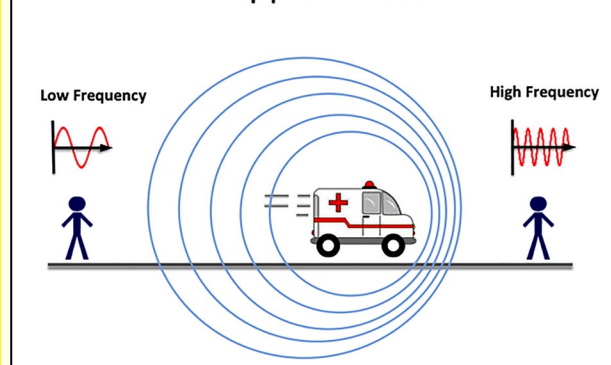
#### ➤ Radar (Radio Detection and Ranging):

- It is a device which **uses electromagnetic waves in the microwaves region** to detect location (range & direction), altitude, intensity and movement of moving and non-moving objects.

#### ➤ Doppler Radar:

- It is a specialized radar that uses the Doppler effect to produce velocity data about objects at a distance
  - **Doppler effect:** When the source and the signal are in relative motion to each other there is a change in the frequency observed by the observer. If they are moving closer, frequency increases and vice versa.

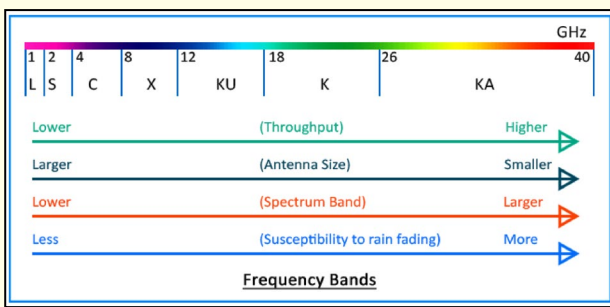
### Doppler Effect



- It does this by bouncing a microwave signal off a desired target and analyzing how the object's motion has altered the frequency of the returned signal.
- This variation gives direct and highly accurate measurements of the radial component of a target's velocity relative to the radar.
- **Types Of Doppler Radars:**
  - Doppler radar can be divided into **several different categories according to the wavelength** which are **L, S, C, X, K**.

Note:





#### • X band radars:

- They operate on a wavelength of 2.5-4 cm and a frequency of 8-12 GHz. Because of the smaller wavelength, the X band radar is more sensitive and can detect smaller particles.
- Application:**
  - These radars are used for **studies on cloud development** because they can detect the tiny water particles and also used to detect light precipitation such as snow.
  - X-band radars also attenuate (become less effective) very easily, so they are used for only very short-range weather observation.
  - Due to the small size of the radar, it can therefore be portable like the Doppler on Wheels (DOW). **Most major airplanes are equipped with an X band radar** to pick up turbulence and other weather phenomena.
  - This band is also shared with some police speed radars and some space radars.

## Segregate Video Games from Money Games

### Why in News?

Recently, Representatives from the video gaming industry have written a letter to the **Ministry of Electronics, Information and Technology (MeitY)** seeking to treat **video games separately from real money games** that involve wagering real money.

- Earlier, the MeitY released the **Draft Rules for Online Gaming** as an amendment to the **Information**

### Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021.

- The letter requests and recommends that MeitY as **“the nodal agency for ‘online gaming’”** should recognise the difference between the two industries.



### What are the Concerns over Video Games?

- **Same Regulatory Purview:**
  - As part of the amendments of **IT Rules, 2021**, there is a proposal for a **self-regulatory body which will certify a permitted online game** in India.
  - The current draft notification combines **‘video games’** and **‘online games played for stakes’** into the same regulatory purview.
    - There are no countries in the world which recognise and regulate” these two categories of games similarly.
  - But gaming companies are **worried about the lack of distinction between them and ‘real money games’ (RMG)**, which are often in the gray zone due to state rules and laws around gambling.
- **Purely Entertainment:**
  - Video game companies **state that their “games do not involve staking money and are purely played for entertainment.”**
  - They point out that **Real Money Games and Fantasy Sports** are collectively referred to as the **“iGaming Industry”** in other countries.

Note:



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### What are their Demands?

- To make world-class video games in India for a global audience, it is crucial to have a suitable framework which respects the nuances of the industry and aligns with global best practices.
  - This will **go a long way to attract capital, enhance market access, increase foreign technology collaboration**, build talent pools and help develop India's global champions.
- Video games are regulated through an **India-specific age and content rating mechanism by setting up** a video games industry-specific self-regulatory body (SRB), in line with global standards such as **PEGI (Pan-European Game Information) in the European Union** and **ESRB (Entertainment Software Rating Board)** in North America.
- Create a **robust framework to deal with issues such as children's addiction to video games**, their exposure to in-game purchases, age-inappropriate content and online harm, which will be regulated by video games industry-specific self-regulatory body in line with global standards such as **COPPA (Children's Online Privacy Protection Rule)** in the USA and **GDPR (General Data Protection Regulation)** in the European Union.

## Neuromorphic Computing

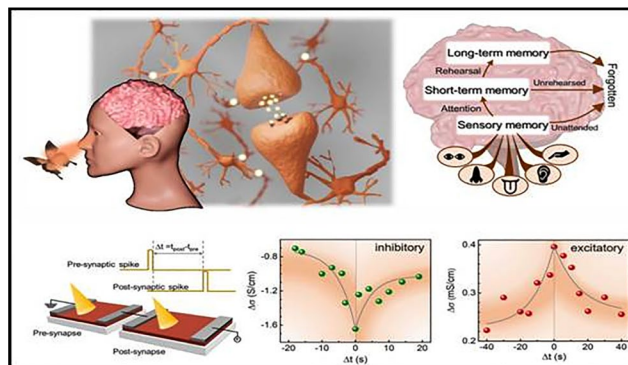
### Why in News?

Recently, a team of scientists from **Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)** has developed Artificial Synapse for Brain-Like Computing or Neuromorphic Computing.

- They have used **scandium nitride (ScN)**, a **semiconducting material with supreme stability** and Complementary Metal-Oxide-Semiconductor (CMOS) compatibility, to develop **brain-like computing**.

### What are the Significances of the Study?

- **About:**
  - Neuromorphic hardware aims at **mimicking a biological synapse that monitors and remembers the signal** generated by the stimuli.
  - ScN is used to **develop a device mimicking a synapse that controls** the signal transmission as well as **remembers the signal**.



### Significance:

- This invention can provide a **new material for stable**, CMOS-compatible optoelectronic synaptic functionalities at a relatively lower energy cost and hence has the potential to be translated into an industrial product.
- The traditional computers have **physically separated memory storage and processing units**. As a result, it takes enormous energy and time to transfer data between these units during an operation.
- On the contrary, the human brain is a **supreme biological computer that is smaller and more efficient due to the presence of a synapse** (the connection between two neurons) that plays the role of both processor and memory storage unit.
- In the current era of artificial intelligence, the brain-like computing approach can help meet the escalating computational demands.

### What is Neuromorphic Computing?

#### About:

- Inspired by the human brain and the functioning of the nervous system, **Neuromorphic Computing was a concept introduced in the 1980s**.
- Neuromorphic Computing refers to the **designing of computers that are based on the systems found in the human brain** and the nervous system.
- Neuromorphic computing devices can work as efficiently as the human brain **without acquiring large room for the placement of software**.
  - One of the technological advancements that has rekindled the interest of scientists in neuromorphic computing is the development of the **Artificial Neural Network model (ANN)**.

#### Working Mechanism:

Note:

- The working mechanism of neuromorphic computing involves the use of Artificial Neural Networks (ANN) made up of **millions of artificial neurons, similar to those in the human brain**.
- These neurons pass signals to each other in layers, converting input into output through electric spikes or signals, **based on the architecture of Spiking Neural Networks (SNN)**.
  - This allows the **machine to mimic the neuro-biological networks in the human brain and perform tasks efficiently** and effectively, such as visual recognition and data interpretation.
- **Significance:**
  - Neuromorphic computing has opened the **doors to better technology and rapid growth** in computer engineering.
  - Neuromorphic computing has been a **revolutionary concept in the realm of Artificial Intelligence**.
  - With the help of one of the techniques of AI, (machine learning), neuromorphic computing has advanced the process of information processing and enabled computers to work with better and bigger technology.

## Solitary Wave in Martian Magnetosphere

### Why in News?

Recently, **Indian Institute of Geomagnetism (IIG)**, an autonomous institute of the Department of Science and Technology (DST) has found evidence of “solitary waves” in the **weak magnetic field** around Mars for the first time.

- Scientists used **high-resolution electric field data** from **NASA's MAVEN spacecraft** to make the discovery of solitary waves.

### What are the Key Highlights of the Discovery?

- Unlike **Earth**, the planet **Mars** does not have any **intrinsic magnetic field**. This allows the **high-speed solar wind** to interact directly with the Mars atmosphere, like **an obstacle in flow**.
  - It has been suggested that even in a **weak and thin magnetosphere** as that of Mars, **frequent occurrences of solitary waves can be observed**.

- However, **despite several missions to Mars**, the presence of solitary waves in the Martian magnetosphere **has never been reported earlier**.
- The waves were found **mostly in the morning and evening on Mars**, at altitudes of **1000-3500 km**, and their **exact cause is still unknown**.

### What are Solitary Waves?

- **About:**
  - Solitary waves are the **distinct electric field fluctuations** (bipolar or monopolar) that follow constant amplitude-phase relations.
  - Their **shape and size are less affected** during their propagation.
- **Significance:**
  - Solitary waves have been found to play a significant role in the dynamics of various **physical systems**, such as in the **Earth's magnetosphere** and in the **Martian magnetosphere**.
    - In the **Earth's magnetosphere**, they are known to be responsible for the **energization and transport of plasma particles**, which can affect the behaviour of satellites and other space-borne equipment.
    - In the **Martian magnetosphere**, their significance is not fully understood yet, but it has been suggested that **they may play a role in the loss of atmospheric ions on Mars**.

### What are the Key Points Related to Mars?

- **Size and Distance:**
  - It is the **fourth planet from the Sun** and the second-smallest planet in the Solar System.
  - Mars is about **half** the size of Earth.
- **Similarity to the Earth (Orbit and Rotation):**
  - As Mars orbits the Sun, it completes one rotation every **24.6 hours**, which is very similar to one day on Earth (23.9 hours).
  - Mars' axis of rotation is tilted **25 degrees** with respect to the plane of its orbit around the Sun.
    - This is similar to Earth, which has an axial tilt of **23.4 degrees**.

Note:



- Mars has **distinct seasons like Earth**, but they last longer than seasons on Earth.

➤ **Various Mars Missions:**

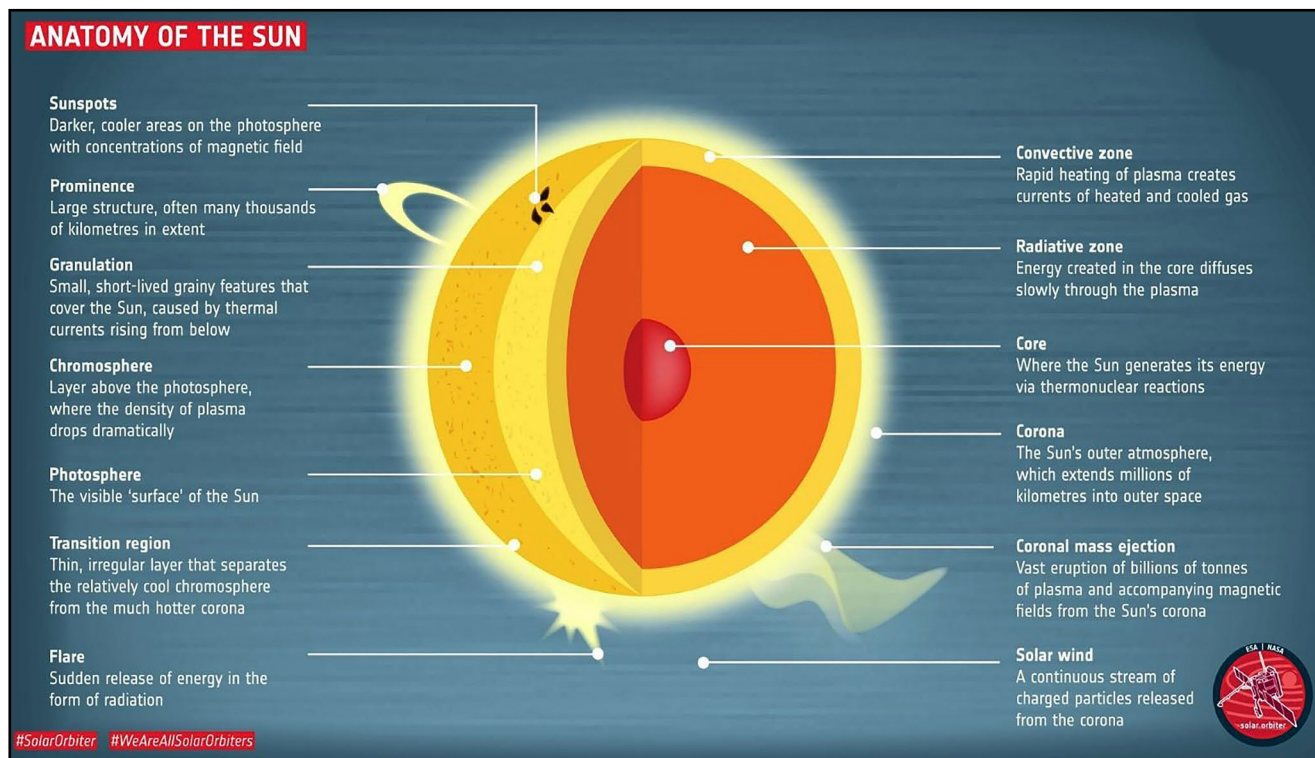
- **ExoMars rover (2021) (European Space Agency)**
- **Tianwen-1: China's Mars Mission (2021)**
- **UAE's Hope Mars Mission (UAE's first-ever interplanetary mission) (2021)**
- **India's Mars Orbiter Mission (MOM) or Mangalyaan (2013)**

## India's First Solar Mission

### Why in News?

Recently, the **Visible Line Emission Coronagraph (VLEC)**, the primary payload on board **Aditya-L1**, was handed over to **Indian Space Research Organisation (ISRO)** by the **Indian Institute of Astrophysics (IIA)**.

- ISRO is **planning to launch the Aditya-L1 mission**, first **Indian space mission to observe the Sun** by June or July 2023 to observe the Sun and the **solar corona**.



### What is Aditya-L1 Mission?

➤ **Launch Vehicle:**

- Aditya L1 will be launched **using the Polar Satellite Launch Vehicle (PSLV)** with 7 payloads (instruments) on board.
- The 7 payloads include:
  - VELC
  - Solar Ultraviolet Imaging Telescope (SUIT)
  - Solar Low Energy X-ray Spectrometer (SoLEXS)
  - Aditya Solar wind Particle Experiment (ASPEX)
  - High Energy L1 Orbiting X-ray Spectrometer (HEL1OS)

- Plasma Analyser Package for Aditya (PAPA)
- Advanced Tri-axial High Resolution Digital Magnetometers

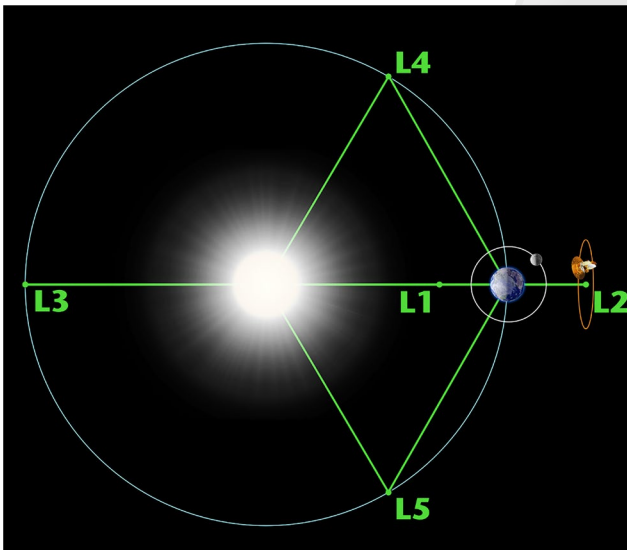
➤ **Objective:**

- Aditya L1 will study the **Sun's corona, Sun's photosphere, chromosphere, solar emissions, solar winds and flares, and Coronal Mass Ejections (CMEs)**, and will **carry out round-the-clock imaging of the Sun**.
- The mission **will be launched by ISRO to the L1 orbit** which is about 1.5 million km from the Earth. The orbit **allows Aditya-L1 to look at the Sun continuously**.

Note:

**What is L1?**

- L1 refers to **Lagrangian/Lagrange Point 1, one of 5 points in the orbital plane of the Earth-Sun system.**
  - Lagrange Points are positions in space where the gravitational forces of a two-body system like the Sun and Earth produce enhanced regions of attraction and repulsion.
- These can be used by spacecraft to reduce fuel consumption needed to remain in position.
- A Satellite placed in the halo orbit around the L1 has the major advantage of continuously viewing the Sun without any occultation/ eclipses.
- The L1 point is home to the **Solar and Heliospheric Observatory Satellite (SOHO)**, an international collaboration project of **National Aeronautics and Space Administration (NASA)** and the European Space Agency (ESA).


**What are the Features and Significance of VELC Payload?**

- **Features:**
  - VELC will be the **main payload among seven designed** to study various aspects of the sun and is **one of the most precise instruments made in India.**
  - It was **conceptualised and designed in 15 years** which will **help in solving mysteries related to solar astrophysics.**
- **Significance:**
  - It will **help in studying the temperature, velocity and density of the corona,** understand the

processes that result in heating of the corona and acceleration of the solar wind, aid studies on drivers of space weather, measure the magnetic field of corona and study the development and origin of coronal mass ejection.

**What are the Other Missions to the Sun?**

- **NASA's Parker Solar Probe:** Aims to trace how energy and heat move through the Sun's corona and to study the source of the solar wind's acceleration.
  - It is **part of NASA's 'Living With a Star' programme** that explores different aspects of the Sun-Earth system.
- **Helios 2 Solar Probe:** The earlier Helios 2 solar probe, a joint venture between NASA and space agency of erstwhile West Germany, went within 43 million km of the Sun's surface in 1976.
- **Solar Orbiter:** A joint mission between the ESA and NASA to collect data that will help answer a **central question of heliophysics** like how the Sun creates and controls the constantly changing space environment throughout the solar system.
- **Other Active Spacecraft Monitoring the Sun:** Advanced Composition Explorer (ACE), Interface Region Imaging Spectrograph (IRIS), WIND, Hinode, the Solar Dynamics Observatory, and Solar Terrestrial Relations Observatory (STEREO).

## Exoplanet

**Why in News?**

Recently, the **National Aeronautics and Space Administration's (NASA) James Webb Space Telescope** has discovered its first new exoplanet named- LHS 475 b.

- Owing to the Webb telescope's advanced capabilities, researchers may detect more Earth-sized planets in future.

**What are the Key points of LHS 475 b?**

- **Findings:**
  - It is roughly the **same size as Earth, its diameter is 99% the same as Earth.**
  - It is a terrestrial, rocky planet about **41 light-years away** from Earth in the **constellation Octans.**

Note:



- It differs from Earth in **that it completes an orbit in just two days and is hundreds of degrees hotter than Earth.**
- It is also closer to its star than **any planet in our solar system is to the sun**, although its star is less than half the temperature of the sun.
  - It orbits very close to a **red dwarf star** and completes a full orbit in just two days.
  - So far, most of the discovered exoplanets are similar to Jupiter as Earth-sized planets are much smaller in size and harder to discover with older telescopes.

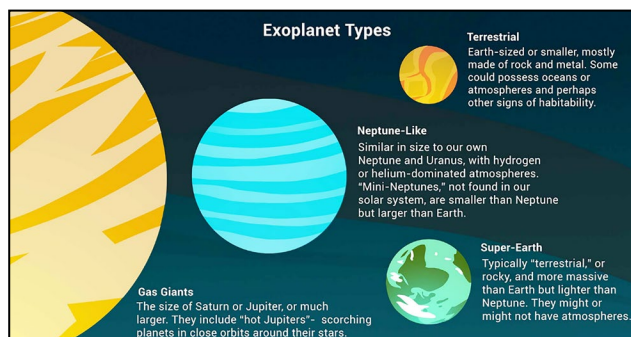
#### ➤ Significance:

- These first observational results from an Earth-size rocky planet **open the door to many future possibilities for studying rocky planet atmospheres.**
- Its red dwarf star is less than half the temperature of the Sun, so the researchers are expecting that it still could have an atmosphere.

### What are Exoplanets?

#### ➤ About:

- Exoplanets are planets **that orbit other stars and are beyond our solar system.** The first confirmation of detection of **exoplanets occurred in 1992.**
  - According to NASA, to date, **more than 5,000 exoplanets have been discovered.**
  - Scientists believe that there are more planets than stars as each star have at least one planet orbiting it.
- Exoplanets come in a host of different sizes. They can be **gas giants bigger than Jupiter or as small and rocky as Earth.** They are also known to have **different kinds of temperatures** — boiling hot to freezing cold.



#### ➤ Discovery:

- Exoplanets are very hard to see directly with telescopes. They are hidden by the **bright glare of the stars they orbit.**
- So, astronomers use other **ways to detect and study exoplanets such as looking at the effects these planets have on the stars they orbit.**
- Scientists rely on **indirect methods, such as the transit method**, which is measuring the dimming of a star that happens to have a planet pass in front of it.
- Other detection methods include **gravitational microlensing**- Light from a distant star is bent and **focused by gravity as a planet passes between the star and Earth.** The same method could hypothetically use our Sun to see exoplanets.

#### ➤ Significance:

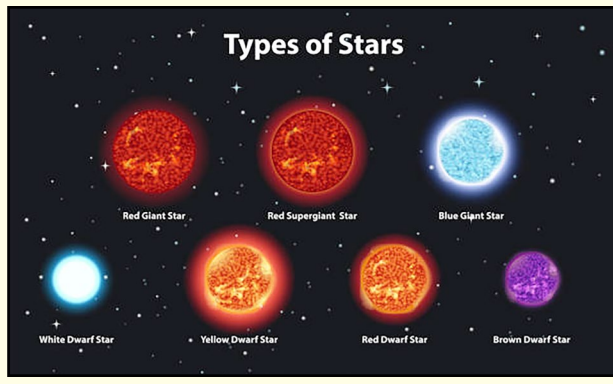
- Studying exoplanets not only broadens our understanding of other solar systems but **also helps us piece together information about our own planetary system and origin.**
- However, the most compelling reason to learn about them is to **find the answer to one of the most profound and thought-provoking questions of humankind** — are we alone in this universe?
- Another important element of the study is finding out the distance between an exoplanet and its host star.
  - This helps **scientists determine if a discovered world is habitable or not.** If an exoplanet is too close to the star, it might be too hot to sustain liquid water. If it's too far, it might only have frozen water.
  - When a planet is at a distance that enables it to have liquid water, it is said to be in the **"Goldilocks zone" or the habitable zone.**

### What are Red Dwarf Stars?

- Red dwarf stars are small, low-mass, dim, and cool stars, they are the most common and **smallest in the universe.**
- As they don't radiate much light, **it's very tough to detect them with the naked eye from Earth.**
- However, as red dwarfs are dimmer than other stars, it is easier to find exoplanets that surround them. Therefore, **red dwarfs are a popular target for planet hunting.**

Note:

- The habitable zone of red dwarf stars is closer to the star than stars like our sun, making it easier to observe potentially habitable planets.



## Shukrayaan I

### Why in News?

**Indian Space Research Organisation's (ISRO)** Venus mission, Shukrayaan I may be postponed to 2031. ISRO's Venus mission was expected to be launched in December 2024.

- Both the U.S. and the European space agencies have **Venus missions planned for 2031 — VERITAS and EnVision, respectively** — while China may launch around 2026 or 2027.

### What Causes the Delay?

- ISRO had originally planned to launch Shukrayaan I in mid-2023 but the pandemic pushed the date to December 2024.
  - Other ISRO missions, **including Aditya L1 and Chandrayaan III**, have also been affected by manufacturing delays and commercial launch commitments.
- Optimal launch windows from Earth to Venus occur once around every 19 months. This is why ISRO has 'backup' launch dates in 2026 and 2028 **should it miss the 2024 opportunity**.
- But even more optimal windows, which further **reduce the amount of fuel required at liftoff**, come around every eight years.
- Right now **the 2031 window is considered very good** by the experts.

- The mission is also **"waiting for formal approval and money"**, which are required before spacecraft assembly and testing.

### What is Shukrayaan I Mission?

#### About:

- Shukrayaan I will be an **Orbiter Mission**. Its scientific payloads **currently include a high-resolution Synthetic Aperture Radar (SAR)** and a ground-penetrating radar.
  - **SAR** would examine Venus' surface, despite the clouds around the planet, which lowers visibility.
  - It refers to a **technique for producing high-resolution images**. Because of the precision, the radar can penetrate clouds and darkness, which means that it can collect data day and night in any weather.
- The mission is expected to **study Venus's geological and volcanic activity**, emissions on the ground, wind speed, cloud cover, and other planetary characteristics from an elliptical orbit.
- Shukrayaan-I will be launched on either GSLV Mk II or **GSLV Mk III**, the latter allows more instruments or fuel to be carried, according to ISRO.

#### Objectives:

- Investigation of surface process and **shallow subsurface stratigraphy**. Until now, no prior observation of the sub-surface of Venus has been done.
  - Stratigraphy is a branch of geology in which rock layers and layering are studied.
- Study of the structure, composition and dynamics of the atmosphere.
- Investigation of **Solar wind interaction with Venusian ionosphere**.

#### Significance:

- It will help to learn how Earth-like planets evolve and what conditions exist on **Earth-sized exoplanets** (Planets that orbit a star other than our sun).
- It will help in modelling Earth's climate and serves as a cautionary tale on how dramatically a planet's climate can change.

Note:

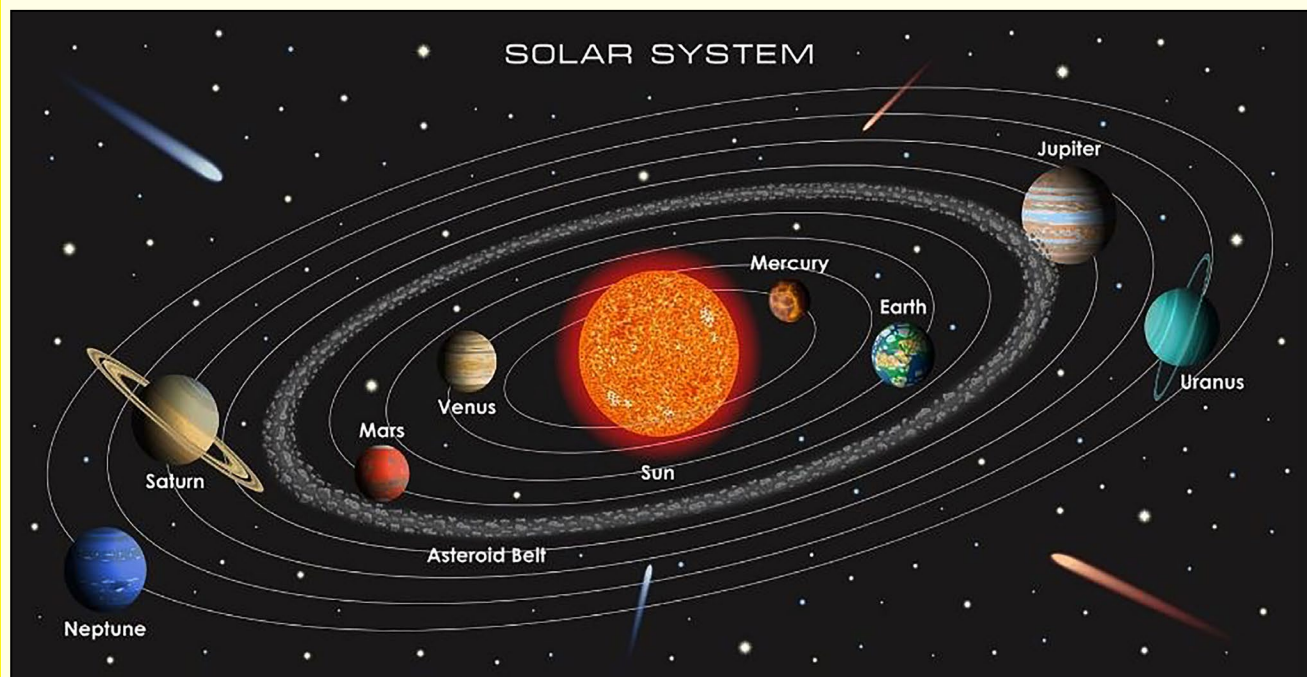


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Previous Missions Sent on Venus			
US	Russia	Japan	Europe
<ul style="list-style-type: none"> <li>➤ Mariner series 1962-1974,</li> <li>➤ Pioneer Venus 1 and Pioneer Venus 2 in 1978,</li> <li>➤ Magellan in 1989.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Venera series of space crafts 1967-1983,</li> <li>➤ Vegas 1 and 2 in 1985.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Akatsuki in 2015.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Venus Express in 2005.</li> </ul>

### What is Venus?

- It is named after the **Roman goddess of love and beauty**. It is the second planet from the Sun and sixth in the solar system in size and mass.
- It is the **second brightest natural object in the night sky after the Moon**.
- Unlike the other planets in our solar system, **Venus and Uranus spin clockwise on their axis**.
- It is the hottest planet in the solar system because of the high concentration of carbon dioxide which works to produce **an intense greenhouse effect**.
- A day on Venus is longer than a year. It takes Venus longer to rotate once on its axis than to complete one orbit of the Sun.
  - That's 243 Earth days to rotate once - the longest rotation of any planet in the Solar System - and only 224.7 Earth days to complete one orbit of the Sun.
- Venus has been called **Earth's twin because of the similarities in their masses, sizes, and densities** and their similar relative locations in the solar system.
  - No planet approaches closer to Earth than Venus; at its nearest it is the closest large body to Earth other than the Moon.
  - Venus has 90 times the atmospheric pressure of Earth.



Note:

# Environment & Ecology

## Highlights

- Global Risks Report 2023
- Forest and Tree Cover in India
- Eco-Sensitive Zones
- Etalin Hydroelectric Project
- Concerns Over Aravali Safari Park
- Water Crisis Due to Dam Sedimentation
- Air Pollution in India & NCAP
- New Plateau in the Western Ghats
- Ken-Betwa River Link Project
- Grasslands of the World
- Kelp Forests on Decline
- Corals in Thailand Getting Destroyed
- Japan to Flush Fukushima Wastewater
- Skyglow
- Senna Spectabilis
- Indian Star Tortoise
- Spot Bellied Eagle Owl

## Global Risks Report 2023

### Why in News?

Recently, the **World Economic Forum (WEF)** has released the **18<sup>th</sup> Edition of Global Risks Report 2023** which seeks that the world be prepared for 'Natural disasters and extreme weather events' in the next two years.

- The WEF report has been released ahead of its flagship Davos 2023 Meeting, which is titled as **Cooperation in a Fragmented World**.

### What are the Findings of the Report?

- **Most Severe Risks:**
  - 'Failure to Mitigate Climate Change' and 'Failure of Climate Change Adaptation' are the two **most severe risks** facing the world in the next decade, followed by 'natural disasters and **extreme weather events**' and 'Biodiversity loss and ecosystem collapse'.
  - Today, atmospheric levels of carbon dioxide, methane and nitrous oxide have all **reached record highs**.
  - Emission trajectories make it **very unlikely that global ambitions to limit warming to 1.5°C** will be achieved.

Global Risks Report 2023

### Top 10 Risks

"Please estimate the likely impact (severity) of the following risks over a 2-year and 10-year period"



Source: World Economic Forum, Global Risks Perception Survey 2022-2023

- **Climate Action and Biodiversity Loss:**
  - The world has struggled to make the required progress on climate change despite **30 years of global climate advocacy and diplomacy**.
  - Failure on climate action to address climate change' **has continued to figure among the top risks in the report since 2011**.
  - Biodiversity within and between ecosystems is already declining **faster than at any other point during human history**.

Note:



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- But unlike other climate-related risks, 'Biodiversity loss and ecosystem collapse' has **not been perceived to be of concern over** the short term.
  - It has been **ranked as the 4<sup>th</sup> most severe risk** in the long term or over the next ten years (by 2033).
- **Reversal of Climate Mitigation Progress:**
  - Growing demands on public- and private-sector resources from the socio-economic short-term crises **attributed to geopolitical tensions**, will likely reduce the speed and scale of mitigation efforts over the next two years.
  - These have, in some cases, also **reversed progress on climate change mitigation**, at least over the short term.
    - For example, the European Union spent at least 50 billion euros on new and expanded fossil-fuel infrastructure and supplies.
    - Some countries including Austria, Italy, the Netherlands and France **restarted coal power stations**.
- **Apprehensions and Threats:**
  - Over the next 10 years or by 2033, the interconnections between biodiversity loss, pollution, natural resource consumption, climate change and socioeconomic **drivers will make for a dangerous mix**.
  - In the meantime, the current **global pandemic and war in Europe has been held responsible for the energy, inflation and food crises**. In fact, 'cost of living' ranks as the top most serious global risk in the short term (over the next two years).
  - Failure to mitigate climate change is also a significant global risk that the world is least prepared for.
    - 70% of the respondents in the WEF report said existing measures to prevent or prepare for climate change have been **"ineffective" or "highly ineffective"**.

#### What is Global Risk?

- **Global risk** is defined as the **possibility of the occurrence of an event or condition which, if it occurs, would negatively impact a significant proportion** of global gross domestic product, population or natural resources.
- The Global Risks Report is **an annual study published by the World Economic Forum ahead of the Forum's**

- **Annual Meeting in Davos**, Switzerland. Based on the work of the Global Risk Network, the report describes changes occurring in the global risks landscape from year to year.

#### What is the World Economic Forum?

- **About:**
  - The WEF is a Swiss nonprofit foundation established in 1971, based in Geneva, Switzerland.
  - Recognized by the Swiss authorities as the international institution for public-private cooperation.
- **Mission:**
  - Committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.
- **Founder and Executive Chairman:** Klaus Schwab.
- **Some major reports published by WEF are:**
  - **Energy Transition Index.**
  - **Global Competitiveness Report.**
  - Global IT Report
    - WEF along with INSEAD, and Cornell University publishes this report.
  - **Global Gender Gap Report.**
  - Global Travel and Tourism Report.

## Forest and Tree Cover in India

### Why in News?

India is lagging behind in the targets to increase the **number and quality of tree- and forest-cover plantations** set in the **National Mission for a Green India (GIM)**.

- States with significant shortfall in tree cover include **Andhra Pradesh, Uttarakhand, Madhya Pradesh, and Kerala**.

#### How is Tree Cover Different from Forest Cover?

- Tree cover refers to the **total area of land that is covered by trees**, regardless of **whether or not the trees** are part of a forest ecosystem.
  - **Forest cover**, on the other hand, **refers specifically to the area of land that is covered by a forest ecosystem**, which is defined as an area with a **minimum canopy density of 10-30%** and an **area of more than 0.5 hectares**.
- So, all forest cover is tree cover, but not all tree cover is forest cover.

Note:

## What is the National Mission for a Green India?

- GIM is one of the eight Missions under the **National Action Plan on Climate Change**.
  - It aims at **protecting, restoring and enhancing** India's forest cover and responding to climate change.
    - The target under the **Mission is 10 million hectares (Mha) on forest and non-forest lands** for increasing the forest/tree cover and to improve the quality of existing forest.
  - The **Ministry of Environment, Forest and Climate Change** supports the States/Union Territories for carrying out afforestation activities through this **Centrally Sponsored Scheme**.
  - Improving tree cover is critical to **sequester carbon and bolster India's carbon stocks** as part of its international commitments to mitigate greenhouse gas emissions.

## What is the Status of Forests in India?

- **About:**
  - As per the **India State of Forest Report-2021**, forest and tree cover in the country increased by **2,261 square kilometres** since the last assessment in 2019.
  - India's total forest and tree cover was **80.9 million hectares**, which accounted for **24.62% of the geographical area of the country**.
    - The report said **17 States and Union Territories had more than 33% of their area under forest cover**.
    - **Madhya Pradesh** had the largest forest cover, followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
    - The top five States in terms of forest cover as a percentage of their total geographical area were **Mizoram (84.53%), Arunachal Pradesh (79.33%), Meghalaya (76%), Manipur (74.34%) and Nagaland (73.90%)**.
- **Issues Associated with Forests in India:**
  - **Shrinking Forest Cover:** According to the **National Forest Policy of India**, the ideal percentage of total geographical area under forest should be at least **33% to maintain ecological stability**.

- However, it currently covers just **24.62 %** of the country's land and is shrinking rapidly.
- **Resource Access Conflict:** There is often **conflict between the interests of local communities and those of commercial interests**, such as pharmaceutical industries or timber industries.
  - This can lead to **social tensions and even violence**, as different groups struggle to access and use the resources of the forests.
- **Climate Change:** Forest disturbances caused by climate change, including **insect outbreaks, invasive species due to climate led migration**, wildfires, and storms, reduce forest productivity and change species distribution.
  - By 2030, **45-64% of forests** in India will experience the effects of climate change and rising temperatures.
- **Government Initiatives for Forest Conservation:**
  - **National Afforestation Programme**
  - **Environment Protection Act of 1986**
  - **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**

## How can India Enhance its Forest Cover?

- **Utilising Technology for Conservation:** Technology can be utilised such as **remote sensing**, to monitor and track forest cover, forest fire and identify areas in need of protection.
  - Also, **Potential resource mapping** can be done in unexplored forest areas, and they can be brought under **scientific management and sustainable resource** extraction maintaining density and forest health
- **Dedicated Forest Corridors:** For safe **intrastate and interstate passage of wild animals and protecting their habitat from any external influence**, dedicated forest corridors can be maintained giving a message of peaceful-co existence.
- **Promoting Agroforestry:** This practice involves **integrating trees and forest-based products** into farming systems. This can help **increase forest cover and also provide farmers with additional income and resources**.

Note:



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## Eco-Sensitive Zones

### Why in News?

Recently, **Eco-sensitive Zones** have been met with resistance from protests claiming that compliance with the **Environmental Protection Act 1986** and the **Wildlife Protection Act 1972** has led authorities to disregard the rights of forest communities and negatively affect their way of life and livelihood.

### What is Eco Sensitive Zones?

#### ➤ About:

- The **National Wildlife Action Plan (2002-2016)** of the **Ministry of Environment, Forest and Climate Change (MoEFCC)** stipulated that state governments should declare land falling within **10 km of the boundaries of national parks and wildlife sanctuaries** as eco-fragile zones or **Eco-Sensitive Zones (ESZs)** under the **Environmental (Protection) Act, 1986**.
- While the **10-km rule** is implemented as a general principle, the extent of its application can vary. **Areas beyond 10 km can also be notified by the Union government as ESZs**, if they hold larger ecologically important “sensitive corridors”.

#### ➤ Activities Around ESZs:

- **Prohibited Activities:** Commercial mining, saw mills, industries causing pollution (air, water, soil, noise etc), establishment of major **hydroelectric projects (HEP)**, commercial use of wood.
- **Regulated Activities:** Felling of trees, **establishment of hotels and resorts, commercial use of natural water**, erection of electrical cables, drastic change of agriculture system, e.g., adoption of heavy technology, pesticides etc, widening of roads.
- **Permitted Activities:** Ongoing agricultural or horticultural practices, **rainwater harvesting, organic farming, use of renewable energy sources**, adoption of green technology for all activities.

#### ➤ Significance of ESZs:

- **Minimise the Impact of Development Activities:**
  - To minimise the impact of **urbanisation** and other developmental activities, the areas adjacent to protected areas have been declared as Eco-Sensitive Zones.

#### ○ In-situ Conservation:

- ESZs help in in-situ conservation, which deals with conservation of an endangered species in its natural habitat, for example the conservation of the **One-horned Rhino** of **Kaziranga National Park**, Assam.

#### ○ Minimise Forest Depletion and Man-Animal Conflict:

- Eco-Sensitive Zones **minimise forest depletion** and man-animal conflict.
- The protected areas are based on the core and buffer model of management, through which local area communities are also protected and benefitted.

#### ○ Minimise the Negative Impact on the Fragile Ecosystems:

- The purpose of declaring eco-sensitive zones around protected areas is to create some kind of a ‘**Shock Absorber**’ for the protected area.
- They also act as a **transition zone from areas of high protection to areas involving lesser protection**.

#### ➤ Challenges Associated with ESZs:

##### ○ Climate change:

- **Climate change** has generated land, water and ecological stress on the ESZs.
  - For example, **frequent forest fires or the Assam floods** which badly affected the **Kaziranga National Park** and its wildlife.

##### ○ Encroachment of Forest Rights:

- Sometimes, execution of The **Environmental Protection Act 1986** and the **Wildlife Protection Act 1972** makes the authorities ignore **forest communities’ rights and impact their life and livelihood**.
  - It also includes dilution of rights provided to **gram sabha** for developmental clearances.
  - **Recognition of forest rights and gram sabha’s consent were preconditions for considering proposals under The Forest Rights Act 2006** to divert forest land for non-forestry purposes – until the **MoEFCC did away with them in 2022**.

Note:



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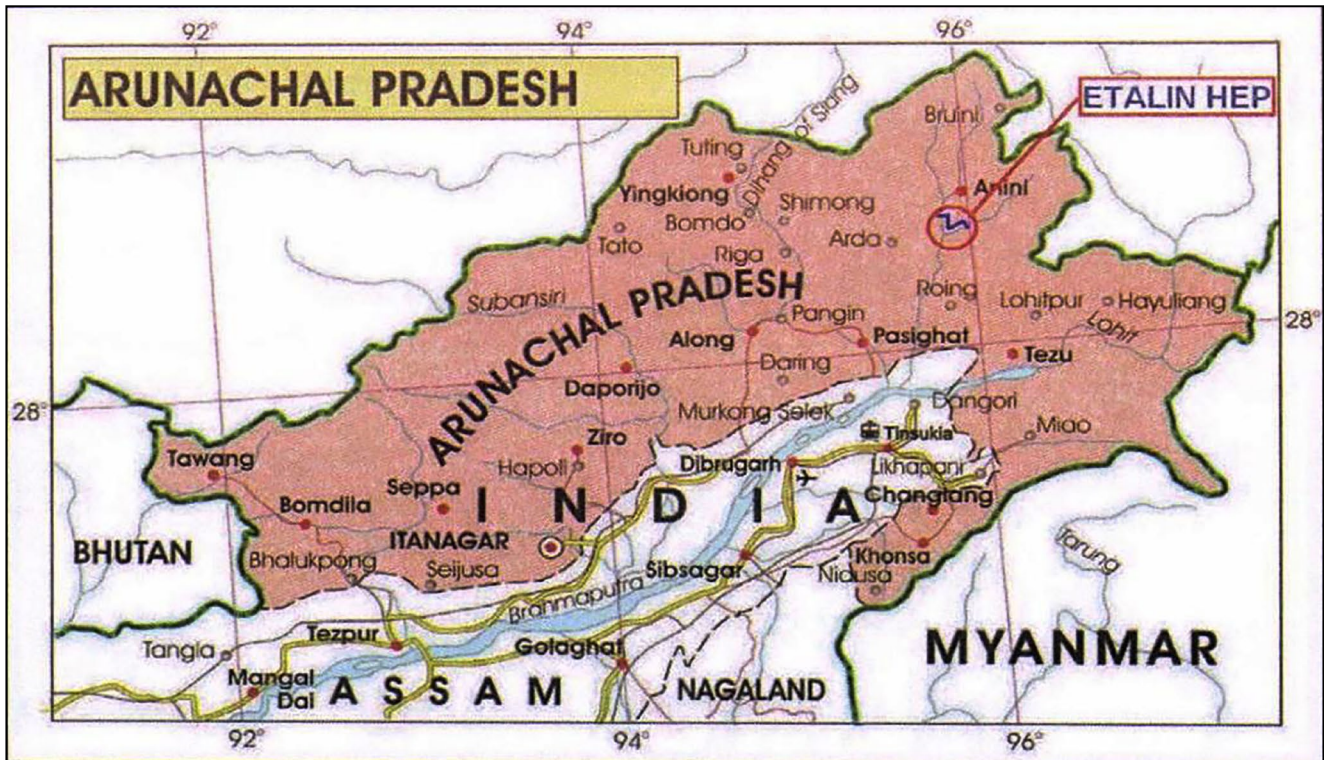


## Etalin Hydroelectric Project

### Why in News?

Recently, the **Etalin hydroelectric project** in Arunachal Pradesh has been scrapped in its present form.

- The plan combined **two run-of-the-river schemes** with limited storage requiring concrete gravity dams on rivers **Tangon and Dri**.
- It ran into several controversies since its inception in 2008 over concerns of **ecological damage, forest invasion and tribal displacement**.



### What is the Significance of Dir and Tangon River?

- The **Dir and Tangon river**, both tributaries of the **Dibang River** (tributary of Brahmaputra) in Arunachal Pradesh, India, have the following significance:
  - **Hydrological:** Both rivers contribute to the **overall hydrology of the region** by providing water for irrigation and hydropower generation.
  - **Ecological:** The Dir and Tangon rivers support a **diverse array of plant and animal life**, including rare and endangered species.
  - **Tourist Attraction:** The scenic beauty of the **Dir and Tangon rivers**, along with the Dibang, is a major tourist destination.

### What are the Concerns

#### Raised Around the Etalin Hydel Project?

- **Environmental Impact:** The project would involve the construction of a large dam on the Dibang River,

which would submerge a large area of forest and wildlife habitat.

- This could lead to the **displacement of local communities**, and have significant impacts on the region's biodiversity.
- **Displacement of Local Communities:** The project would **displace thousands of people from their homes and livelihoods**, many of whom are from indigenous communities who rely on the Dibang River for their livelihoods.
- **Impact on River Ecosystem:** The project would change the natural flow of the river and affect the **fish migration and breeding**.
  - This would have a negative impact on local communities who rely on fishing for their livelihoods.
- **Geological and Seismic Risks:** The **South Asia Network on Dams, Rivers and People (SANDRP)** highlighted the **geological and seismic risks** and threats to **biodiversity**

Note:



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in 2015, when environmental clearance (EC) to the project was underway.

- **Recent Development of Issue:** The **Forest Advisory Committee (FAC)** has asked the Arunachal Pradesh government to **go back to the drawing board** and submit the plan of project again.

#### Forest Advisory Committee

- It is a statutory body which was constituted by the **Forest (Conservation) Act 1980**.
- It comes under the **Ministry of Environment, Forests & Climate Change (MoEF&CC)**.
- It considers questions on the **diversion of forest land for non-forest** uses such as mining, industrial projects, townships and advises the government on the issue of granting forest clearances. **However, its role is advisory.**

## Concerns Over Aravali Safari Park

### Why in News?

Recently, some Environmental Activists have raised concerns over the 10,000-acre **Aravali safari park Project** proposed in Haryana.

### What are the Key Points of Safari Park?

- This project will be **the largest such project in the world**. Currently the largest curated safari park outside Africa is in Sharjah, **which opened in February 2022**, with an area of about two thousand acres.
- It aims to **boost tourism** and employment opportunities for the local people.

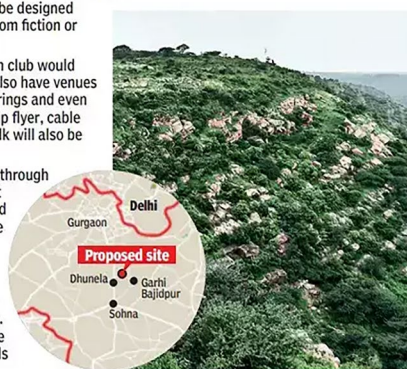
#### WHAT THE PARK MAY HAVE

**Entertainment zone** | It would be designed along specific themes inspired from fiction or Indian mythological characters

**The Safari Club** | The recreation club would have leisure activities. It would also have venues to host conferences, large gatherings and even accommodation. An aquarium, zip flyer, cable car, canopy safari and tunnel walk will also be there

**Eco village** | It will take visitors through a cultural and culinary journey. It will have space for handicraft and handloom products and even fine dining. There may be open-air theatre, stalls, display galleries, kiosks and food outlets

**Infrastructure** | Road networks along with space for pedestrians. There would be elephant or horse rides as well as eco-trekking trails



### What are the Concerns?

- The Aravalli safari project is being conceived and designed as a zoo safari and **not a natural jungle safari to see native Aravalli wildlife** in their natural habitat.
- Conservation of the **Aravallis does not even get a mention in the aims of the project** mentioned in the Proposition.
- Vehicular traffic and construction in the area, **the proposed safari park will also disturb the aquifers under the Aravalli hills** that are critical reserves for the water-starved districts.
  - These aquifers are **interconnected** and any disturbance or alterations in the pattern can **significantly alter the groundwater table**.
- The group has especially objected to the **'underwater zone' envisioned in the park since the site is a "water-scarce region"**.
  - In Nuh district, the groundwater table is already below 1,000 feet at many places; the tube wells, borewells and ponds are running dry; Gurugram district has many areas in the 'red zone'.
- The location falls under the category of **'forest', according to many orders by the Supreme Court and the National Green Tribunal**, and is protected under the **Forest Conservation Act 1972**. As such, cutting of trees, clearing of land, construction and **real estate development is prohibited on this land**.
- The group also highlighted that the construction proposed by the Haryana tourism department in May 2022 would be illegal and further damage the already damaged Aravalli ecosystem.

### How are Wildlife and Forests Protected in India?

- **The Wild Life (Protection) Act, 1972:**
  - It provides for stringent punishment for violation of its provisions. The Act also provides for **forfeiture of any equipment, vehicle or weapon that is used for committing wildlife offence(s)**.
  - Protected Areas, viz National Parks, Sanctuaries, Conservation Reserves and Community Reserves have been created in the country covering important habitats to provide better protection to wildlife, including threatened species and their habitat.
- **Wildlife Crime Control Bureau (WCCB):**

Note:

- WCCB coordinates with State/UTs and other enforcement agencies to **gather intelligence about poaching and unlawful trade** in wild animals and animal articles.
- Alerts and advisories were issued by **WCCB on poaching and illegal trade of wildlife** to the concerned State and Central agencies for preventive action.
- **National Green Tribunal:**
  - It is a specialized judicial body equipped with expertise solely for the purpose of **adjudicating environmental cases in the country**.
- **The Indian Forest Act, 1927:**
  - It seeks to consolidate the **law relating to forests, the transit of forest produce and the duty that can be levied on timber** and other forest produce.
- **The Wild Life (Protection) Amendment Act, 2006:**
  - The Act provides for creating the National Tiger Conservation Authority and the Tiger and Other Endangered Species Crime Control Bureau.
- **The Forest (Conservation) Act, 1980:**
  - It provides a higher level of protection to the **forests and to regulate diversion of forest lands for non-forestry purposes**. FC Act, 1980 – Prior approval of the Central Government is essential for DE-reservation of forest lands and / or diversion of forest lands for non-forestry purposes.
- **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006:**
  - It has been enacted to recognize and vest the forest rights and occupation of forest land in forest-dwelling Scheduled Tribes and other traditional forest dwellers, who have been residing in such forests for generations.

#### What are the Key Points of Aravali Mountain Range?

##### ➤ About:

- The Aravallis of Northwestern India, one of the **oldest fold mountains of the world**, now form residual mountains **with an elevation of 300m. to 900m.** They stretch for a distance of 800 km. from Himmatnagar in Gujarat to Delhi, spanning **Haryana, Rajasthan, Gujarat, and Delhi, the 692 kilometre (km).**

- The mountains are divided into **two main ranges** – the **Sambhar Sirohi Range and the Sambhar Khetri Range** in Rajasthan, where their extension is about 560 km.
- The hidden limb of the Aravallis that extends from Delhi to Haridwar creates a divide between the drainage of rivers of the Ganga and the Indus
- These are **fold mountains of which rocks are formed primarily of folded crust**, when two convergent plates move towards each other by the process called orogenic movement.
- The Aravallis date back to millions of years when a pre-Indian sub-continent collided with the mainland Eurasian Plate. Carbon dating has shown that copper and other metals mined in the **ranges date back to at least 5<sup>th</sup> century BC.**



##### ➤ Significance:

- The Aravallis act as a **barrier between the fertile plains in the east and the sandy desert** in the west. Historically, it is said that the **Aravalli range checked the spread of the Thar desert towards the Indo-Gangetic plains**, serving as a catchment of rivers and plains.
- The Aravalli is rich in **biodiversity and provides habitat to 300 native plant species, 120 bird species** and many exclusive animals like the jackal and mongoose.

Note:

- Aravallis have an impact upon the **climate of northwest India and beyond**. During monsoons, it provides a **barrier and monsoon clouds move eastwards towards Shimla and Nainital**, thus helping nurture the **sub-Himalayan rivers and feeding the north Indian plains**. In the winter months, it protects the fertile alluvial river valleys from the cold westerly winds from Central Asia.
- For Haryana, having the lowest forest cover at around 3.59% of the total forest cover in India, the **Aravalli range is the only saving grace, providing the major portion of its forest cover**.
- Aravallis also function as a **groundwater recharge zone for the regions around that absorb rainwater and revive the groundwater level**.
- This range is considered the “lungs” for the world’s most polluted air of Delhi–**National Capital Region (NCR)**.

## Water Crisis Due to Dam Sedimentation

### Why in News?

The **United Nations Institute for Water, Environment and Health** showed in its report that about **50,000 large dams** across the world will lose **24-28% water storage capacity by 2050** due to sediment trapped in them.

- These **water reservoirs** have already lost about **13-19% capacity** to sedimentation.
- The **United Kingdom, Panama, Ireland, Japan and Seychelles** will experience the highest water storage losses by 2050 from 35-50% of their original capacities.

### What is Sedimentation with Respect to Dams?

- **Sedimentation** in dams refers to the **accumulation of sediments**, such as **sand, gravel, and silt**, at the **bottom of a reservoir** created by a dam.
- This sediment can build up over time, **reducing the overall storage capacity of the reservoir**.
- To maintain the **capacity of the reservoir**, the sediment may need to be removed through a process called **dredging**.

### What is Dredging?

- Dredging is the **process of removing sediments**, such as **sand, gravel, and silt**, that has accumulated at the **bottom of a reservoir**.
- It can be done using various methods, such as **mechanical dredging** with a **dredge machine** or **hydraulic dredging** with a **high-pressure water jet**.
- The sediment removed during dredging is typically disposed of in a designated area away from the dam.

### What are the Causes of Sedimentation?

- **Erosion Upstream of the Dam:** When soil and rock is washed away from the area upstream of the dam, it can be carried downstream and deposited in the reservoir.
- **Runoff from Urban and Agricultural Areas:** The increased use of land for human activities, such as **urbanization** and agriculture, can lead to increased runoff of sediment into the reservoir.
- **Natural Processes:** Sedimentation can also occur naturally through processes such as weathering and erosion.
- **Climate Change:** **Climate change** causes more intense and frequent rainfall events and also causes **snowmelt** earlier which can lead to increased erosion and sediment runoff into the reservoir.
- **Deforestation:** Trees help to hold the soil together and prevent **erosion**, so when forests are removed or degraded, there is a greater risk of sediment runoff into the reservoir.
- **Poor Dam Maintenance:** Lack of maintenance and repairs can also lead to sedimentation, as the dam’s structure can become damaged, allowing sediment to enter the reservoir.

### What are the Consequences of Dam Sedimentation?

- **Environmental:**
  - **Reduced water storage capacity** in the reservoir, which can lead to water **shortages for downstream users** and the loss of habitat for aquatic species.
  - Increased risk of **dam failure** as the sediment can cause the **dam to become unstable**.
- **Economic:**
  - Increased cost of maintenance and **dredging** to remove the sediment.

Note:

- Loss of **hydroelectric power generation** due to **reduced water flow** through the dam.
- **Reduced irrigation** and **water supply** for agriculture and industry.
- **Loss of revenue** from recreational activities such as fishing and boating if the reservoir is no longer able to support them.
- **Damage to Dam Structure and Turbines:**
  - The accumulation of sediment at the bottom of the reservoir can cause **scouring, or erosion**, of the dam's foundation, which can weaken its **structural integrity** and increase the **risk of failure**.
  - Sediment can also **clog the turbine intake**, which can **reduce the efficiency of hydroelectric power generation** and require costly maintenance to remove the sediment.
  - The sediment can also cause **abrasion on the turbine blades** which can lead to damage and reduce their efficiency.
  - While sediment helps maintain the **aquatic ecosystem**, **poor management** can lead to **nutritional disbalances** causing **eutrophication** and other disruptions in the water pool of the dam, as well as damages in habitations downstream.

## Air Pollution in India & NCAP

### Why in News?

Under the **National Clean Air Campaign (NCAP)**, analysts found that **progress has been slow**, and **pollution has only incrementally reduced** in most cities.

### What is the National Clean Air Programme?

- It was **launched by the Ministry of Environment, Forests and Climate Change (MoEFCC)** in January 2019.
- It is the **first-ever effort in the country to frame a national framework for air quality management** with a time-bound reduction target.
- It **seeks to cut the concentration of coarse** (particulate matter (PM) of diameter 10 micrometer or less, or PM10) **and fine particles** (particulate matter of diameter 2.5 micrometer or less, or **PM2.5**) by at least 20% **in the next five years, with 2017 as the base year for comparison**.

- It **covers 132 non-attainment cities** which were identified by the **Central Pollution Control Board (CPCB)**.
  - Non-attainment cities **are those that have fallen short of the National Ambient Air Quality Standards (NAAQS)** for over five years.
    - NAAQs are the **standards for ambient air quality with reference to various identified pollutant** notified by the CPCB under the **Air (Prevention and Control of Pollution) Act, 1981**. List of pollutants under NAAQS: PM10, PM2.5, SO<sub>2</sub>, NO<sub>2</sub>, CO, NH<sub>3</sub>, Ozone, Lead, Benzene, Benzo-Pyrene, Arsenic and Nickel.

### What are the Target Levels?

- **Current Scenario:** The country's current, annual average **prescribed limits for PM2.5 and PM10** are 40 micrograms/per cubic metre (ug/m3) and 60 micrograms/per cubic metre.
- **New Targets:** The NCAP initially set a target of reducing key air pollutants PM10 and PM2.5 by 20-30% in 2024, taking the pollution levels in 2017 as the base year to improve upon.
  - In September 2022, however, the **Centre moved the goalposts and set a new target of a 40% reduction** in particulate matter concentration, by 2026.
- **Assess Improvements:** Cities were required to quantify improvement starting from 2020-21, which requires 15% and more reduction in the annual average PM10 concentration and a concurrent increase in clean air quality days to at least 200.
  - **Anything less will be considered low, and the funding will consequently be reduced.**

### How Effective has the NCAP Been?

- **Achieving Targets:**
  - An analysis of the four-year performance of the NCAP by the **Centre for Research on Energy and Clean Air (CREA)**, concluded that only 38 of the 131 cities that signed agreements with the Centre, Urban Local Bodies (ULBs), and State Pollution Control Boards **achieved their annual pollution reduction targets**.
- **Recommendations:**
  - The CREA noted that 37 cities have completed the **source apportionment studies** (which list and

Note:



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quantify the significant sources of pollution in a city). However, **most of these reports weren't available in the public domain and no city action plan had been updated** with information from these studies.

- The CREA estimates that **India will need to install more than 300 manual air quality monitoring stations per year** to reach the NCAP goal of 1,500 monitoring stations by 2024. **Only 180 stations have been installed over the last four years.**

### Has NCAP Managed to Reduce Pollution?



- The NCAP Tracker, a joint project by two organisations active in air pollution policy has been **monitoring progress in achieving the 2024 clean air targets.**
- Among the non-attainment cities, **the national capital of Delhi ranked the most polluted in 2022.** But Delhi's PM2.5 levels have **improved by over 7% compared to 2019.**
- Most cities in the top 10 most polluted list of 2022 **were from the Indo-Gangetic Plain.**
- Nine of the 10 cities, which were the most polluted in 2019, **have reduced their PM2.5 and PM10 concentrations in 2022.**
- There were 16 NCAP cities and 15 non-NCAP cities that **registered a significant increase in their annual PM2.5 levels** — with nearly identical numbers. This suggested that non-NCAP and NCAP cities were as likely to be polluted, **with the less effectiveness of NCAP.**

### What are the Initiatives Taken for Controlling Air Pollution?

- **System of Air Quality and Weather Forecasting and Research (SAFAR) Portal.**

- **Air Quality Index:** AQI has been developed for eight pollutants viz. PM2.5, PM10, Ammonia, Lead, nitrogen oxides, sulphur dioxide, ozone, and carbon monoxide.
- **Graded Response Action Plan** (for Delhi).
- For Reducing Vehicular Pollution:
  - **BS-VI Vehicles,**
  - **Push for Electric Vehicles (EVs),**
  - **Odd-Even Policy** as an emergency measure (for Delhi).
- **New Commission for Air Quality Management**
- Subsidy to farmers for buying **Turbo Happy Seeder (THS) Machine** for reducing stubble burning.

### National Air Quality Monitoring Programme (NAMP):

Under NAMP, four air pollutants viz. SO<sub>2</sub>, NO<sub>2</sub>, PM10, and PM2.5 have been identified for regular monitoring at all locations.

## New Plateau in the Western Ghats

### Why in News?

Recently, a **rare low-altitude basalt plateau discovered in Maharashtra in the Western Ghats can help study the effects of climate change on species survival** and increase awareness of the conservation needs of rock outcrops and their immense **biodiversity** value in the global context.

### What are the Important Findings About the Plateau?

- **Low-Altitude Basalt Plateau:** This is the fourth type of plateau to be identified in the region; the **previous three are laterites at high and low altitudes and basalt at high altitudes.**
- **Diverse Biodiversity:** During the survey of the plateau, 76 species of plants and shrubs from 24 different families were reported. This is **considered an important discovery**, as the plateau shares the vegetation with the three other rock outcrops, simultaneously holding a few unique species.
  - This gives a **unique model system to study the species' interactions** in varying environmental conditions.

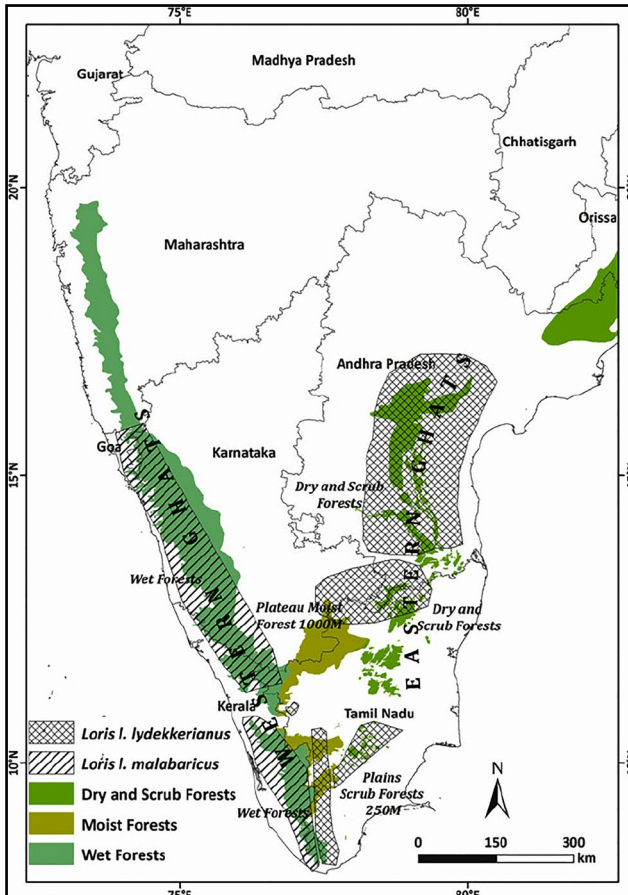
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**Note:** Rock outcrops have seasonal water availability, limited soil and nutrients, making them ideal laboratories to study the effects of climate change on species survival. Plateaus are thus a **valuable source of insight into how species can survive in extreme conditions.**

### Western Ghats: What's Important to Know?



#### ➤ About:

- Western Ghats consists of a chain of mountains running parallel to India's Western Coast and passing from the states of Kerala, Maharashtra, Goa, Gujarat, Tamil Nadu and Karnataka.
- The Western Ghats is one of four **global biodiversity hotspots** in India.
  - The other three are the **Himalayas**, the Indo-Burma region and the Sundaland (includes the **Nicobar Islands**).
- It is recognized as a **UNESCO World Heritage Site**.

#### ➤ Significance:

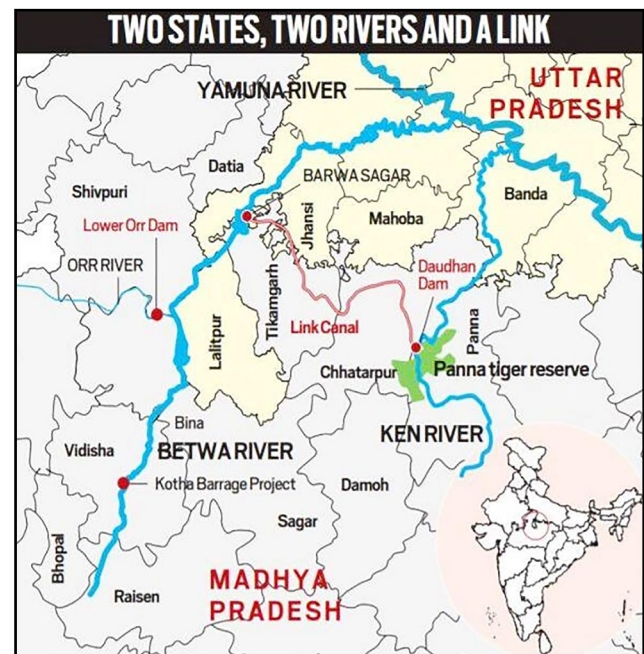
- The Ghats influence the **Indian monsoon weather patterns** that mediate the warm tropical climate of the region.
- They act as a **barrier to rain-laden monsoon winds** that sweep in from the south-west.
- Western Ghats are home to **tropical evergreen forests**, as well as to 325 globally threatened species.
- Plateaus are the dominant landscapes in the **Western Ghats**, significant because of the predominance of endemic species.

## Ken-Betwa River Link Project

### Why in News?

Recently, the Ministry of Jal Shakti has chaired a meeting on **Ken-Betwa Link Project (KBLP)**, stating that it is the **"flagship" project** of the national government and it "is crucial for the water security and socio-economic development of Bundelkhand region".

- In December 2021, the Union Cabinet approved KBLP at a total cost of Rs 44,605 crore. In this project.
- The project has been **delayed due to political and environmental issues**.



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### What is the Ken-Betwa Link?

#### ➤ About:

- The **Ken-Betwa Link Project (KBLP)** is the river interlinking project that aims to transfer surplus water from the Ken River in Madhya Pradesh (MP) to Betwa in Uttar Pradesh (UP) to irrigate the **drought-prone Bundelkhand region**.
  - The region spread across the districts of two states mainly Jhansi, Banda, Lalitpur and Mahoba districts of UP and Tikamgarh, Panna and Chhatarpur districts of MP.
- The project involves building a **77-metre tall and a 2-km wide Dhaudhan dam (to be built within Panna Tiger Reserve)** and a 230-km canal.
- Ken-Betwa is **one of the 30 river interlinking projects** conceived across the country.

#### ➤ Significance:

- It will not only accelerate the water conservation by construction of a multipurpose dam but will also produce 103 MW of hydropower and will supply drinking water to 62 lakh people.

### What are the Concerns Related to the Project?

#### ➤ Environmental:

- Because of certain environmental and wildlife conservation concerns like passing of the project though **critical tiger habitat of panna tiger reserve**, the project is stuck in for the approval from **National Green Tribunal (NGT)**, and other higher authorities.

#### ➤ Economic:

- There is a huge **economic cost attached with the project implementation and maintenance**, which has been rising due to delays in project implementation.

#### ➤ Social:

- Reconstruction and rehabilitation caused due to **displacement resulting from the implementation of the project** will involve social cost as well.

- They are also concerned that the **project will endanger the water security of Panna**.

#### ➤ Legal:

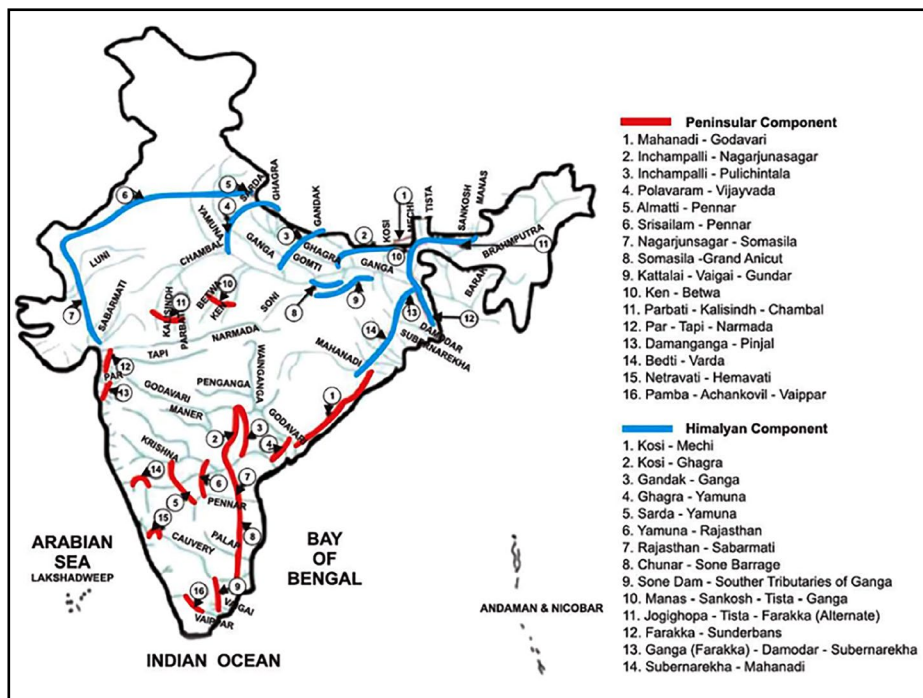
- There are also **significant legal problems** with the approval granted to the KBLP.
- Approval by the Standing Committee of the National Board for Wildlife to the Ken-Betwa link Project has **not been proved to be necessary for the improvement and better management** of the wildlife therein as provided in Section 35(6) of the Wildlife (Protection) Act, 1972.

### What is the National Perspective Plan for Interlinking of Rivers?

- The **National River Linking Project (NRLP)** formally known as the **National Perspective Plan**, envisages the transfer of water from water 'surplus' basins where there is flooding, to water 'deficit' basins where there is drought/scarcity, through inter-basin water transfer projects.

- **Under the National Perspective Plan (NPP)**, the National Water Development Agency (NWDA), has identified 30 links (16 under the Peninsular Component and 14 under the Himalayan Component) for the preparation of feasibility reports (FRs).

- The NPP for transferring water from water-surplus basins to water-deficit basins was prepared in August 1980.

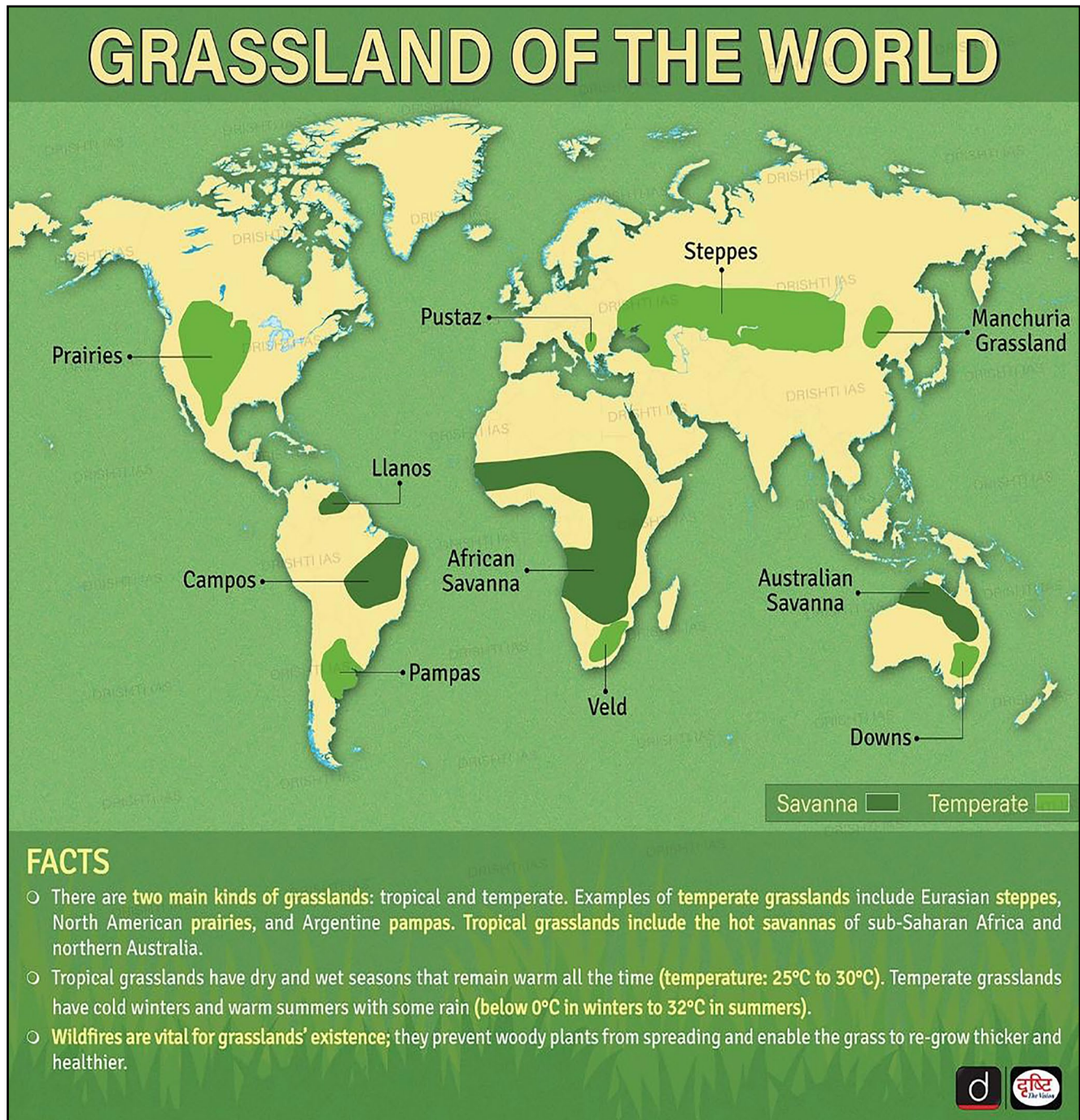


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**What are Ken and Betwa Rivers?**

- Ken and Betwa rivers originate in MP and are the tributaries of Yamuna.
- Ken meets with Yamuna in Banda district of UP and with Betwa in Hamirpur district of UP.
- Rajghat, Paricha and Matatila dams are over Betwa river.
- Ken River passes through Panna tiger reserve.

**Grasslands of the World**

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## Kelp Forests on Decline

### Why in News?

A recent study has revealed that Kelp forests are declining because of climate change.



### What are the Highlights of the Study?

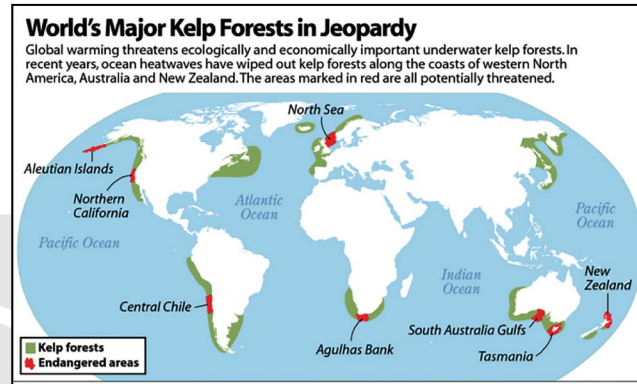
- *Ecklonia radiata*, a dominant kelp species in the southern hemisphere, is vulnerable to climate change, especially in regions near the equator.
- Rising temperatures are causing declines in the species along the eastern Australian coastline and it is expected to decline further in the future globally.
- In situ protection may not be possible but its unique genetic diversity can be preserved through ex situ preservation in culture banks for use in future restoration, hybridization, or adaptation strategies.

### What are the Kelp Forests?

- **About:**
  - Kelp forests are underwater ecosystems formed in shallow water by the dense growth of several different species.
  - Kelp are large brown algae that live in cool, relatively shallow waters close to the shore.
  - They attach to the seafloor and eventually grow to the water's surface and rely on sunlight to generate food and energy, kelp forests are always coastal and require shallow, relatively clear water.
  - They provide underwater habitats to hundreds of species of invertebrates, fishes, and other algae and have great ecological and economic value.
- **Significance:**

- It serves as a pertinent food source for a variety of marine creatures. Kelps are responsible for producing up to 60% of the carbon found in coastal invertebrates.
- As a diverse invertebrate and fish ecosystem, they serve as a habitat for birds to forage.
- It releases carbon into the coastal ecology, increasing its productivity. New biomass, detritus, and other materials are produced through primary production by kelp.

### ➤ World Distribution of Major Kelp Forests:



## Corals in Thailand Getting Destroyed

### Why in News?

Recently, it is reported that a rapidly spreading disease, commonly known as **yellow band disease**, is killing corals over vast stretches of the sea floor of Thailand.

- Scientists believe **overfishing, pollution and rising water temperatures** because of climate change may be making the reefs more vulnerable to **yellow-band disease**.

### What is Yellow Band Disease?

- Yellow-band disease - **named for the colour it turns corals before destroying them** - was first spotted decades ago and has caused widespread damage to reefs in the Caribbean. There is **no known cure**.
- The Yellow Band disease is caused by a **combination of environmental stressors, including increased water temperatures, pollution, and sedimentation**, as well as increased competition for space from other organisms.

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- These factors can weaken the coral and make it more susceptible to infection by pathogens, **such as bacteria and fungi**.
- The disease's impact **cannot be reversed, unlike the effects of coral bleaching**.

### What are Coral Reefs?

#### ➤ About:

- **Corals** are marine invertebrates belonging to the class Anthozoa in the phylum Cnidaria.
  - They typically live in compact colonies of many identical individual polyps.
  - **Coral reefs** are underwater ecosystems made up of **colonies of coral polyps**.
- Coral polyps live in a **sympiotic relationship** with a variety of **photosynthetic algae called zooxanthellae**, which live within their tissues.
  - These algae provide the **coral with energy through photosynthesis**, while the **coral provides the algae with a protected environment** and compounds, they need for growth.

#### ➤ Types of Corals:

- **Hard Corals:**
  - They extract **calcium carbonate** from seawater to build **hard, white coral exoskeletons**.
  - They are in a way the **engineers of reef ecosystems** and measuring the extent of hard coral is a widely-accepted metric for measuring the condition of coral reefs.
- **Soft Corals:**
  - They attach themselves to such **skeletons and older skeletons** built by their ancestors.
  - Soft corals are typically **found in deeper waters** and are less common than hard corals.

#### ➤ Significance:

- **Ecological Importance:** Coral reefs are one of the most diverse and productive ecosystems on Earth, **providing habitat for a wide variety of plant and animal species**.
  - They also play a critical role in regulating the **planet's climate by absorbing carbon dioxide** and protecting coastlines from erosion and storm damage.
- **Economic Importance:** Coral reefs support a variety of industries, including **fishing, tourism,**

**and recreation**. They also provide resources for medicine and biotechnology.

- **Climate Regulation:** Coral reefs act as natural buffers against the impact of climate change by **absorbing wave energy, protecting coastlines and reducing the impact of storms** and sea level rise.
- **Biodiversity:** Coral reefs are home to a vast array of marine life, including **fish, sharks, crustaceans, mollusks** and many more. They are considered as the **rainforests of the sea**.
- **Threats:**
  - **Climate change:** Coral reefs are particularly vulnerable to the effects of climate change, which is **causing ocean acidification and coral bleaching**.
    - **Coral bleaching** occurs when coral polyps expel the algae (zooxanthellae) living in their tissues, causing the **coral to turn completely white**.
  - **Pollution:** Coral reefs are also **threatened by pollution**, including sewage, agricultural runoff, and industrial discharge.
    - These pollutants can cause coral death and disease, as well as reduce the overall health of the reef ecosystem.
  - **Overfishing:** Overfishing can disrupt the **delicate balance of coral reef ecosystems**, which can lead to the decline of coral populations.
  - **Coastal Development:** Coastal development, such as the **construction of ports, marinas, and other infrastructure**, can damage coral reefs and reduce the overall health of the reef ecosystem.
  - **Invasive Species:** Coral reefs are also threatened by invasive species, such as the **lionfish**, which can outcompete native species and disrupt the overall balance of the reef ecosystem.
- **Initiatives to Protect Corals:**
  - **Technological Intervention:**
    - **Cyromesh:** Storage of the coral larvae at -196°C and can be later reintroduced to the wild
    - **Biorock:** Creating artificial reefs on which coral can grow rapidly
  - **Indian:**
    - **National Coastal Mission Programme**
  - **Global:**
    - **International Coral Reef Initiative**
    - **The Global Coral Reef R&D Accelerator Platform**

Note:



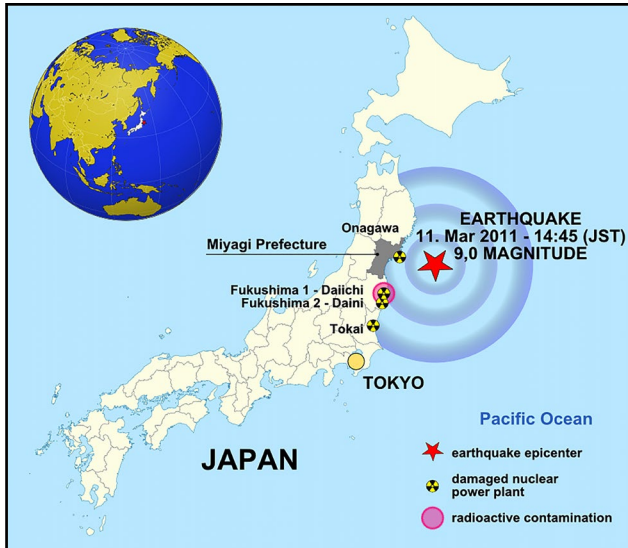
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## Japan to Flush Fukushima Wastewater

### Why in News?

Japan is expected to start flushing 1.25 million tons of wastewater from the embattled Fukushima nuclear power plant into the **Pacific Ocean** in 2023, as part of a USD 76-billion project to decommission the facility.

- The project received the Japanese cabinet's approval in **2021 and could take three decades to complete.**



### What is the Background?

- In March 2011, after a magnitude 9 **earthquake**, a **tsunami** flooded the Fukushima Daiichi **nuclear power plant** in Okuma and damaged its diesel generators.
- The loss of power **suspended coolant supply to reactors at the facility**; the tsunami also disabled backup systems.
- Soon, radioactive materials leaked from reactor pressure vessels, **exploded in the facility's upper levels**, and exposed themselves to the **ambient air, water, soil, and local population.**
- Winds also carried **radioactive material thrown up into the air into the Pacific.** Since then, the **power plant and its surrounding land have been uninhabitable.**
- The water that the Japanese government wants to flush from the plant was **used to cool the reactors**, plus rainwater and groundwater.

- It contains radioactive **isotopes from the damaged reactors and is thus itself radioactive.** Japan has said that it will release this water into the Pacific Ocean over the next 30 years.

### What are the Concerns of Releasing Water?

- There is no known threshold below which radiation can be considered safe, therefore any discharge of **radioactive materials will increase the risk of cancer and other known health impacts** to those who are exposed.
- Water released can be poisonous to the fish and anyone who happens to live in the vicinity of the discharge point can be caught precarious.
- Tokyo Electric Power Company (TEPCO) **hasn't removed tritium** from the water because this is very difficult to do.
  - Tritium is "**easily absorbed by the bodies of living creatures**" and "rapidly distributed via blood."
- There were **other radionuclides in the water** that TEPCO's treatment procedure couldn't entirely remove.
  - These include **isotopes of ruthenium and plutonium**, which could persist for longer in the bodies of marine creatures and on the seafloor.

### Why Flushing Instead of Treating Water?

- The TEPCO which operates the Fukushima facility, initially planned to treat the wastewater but because of lacking enough room for the water-tanks, it decided to release the water.
- Also, Japan cannot store water for longer than discharge it, because of **Tritium's half-life** (12-13 years).
  - **Half-life is the time a radioactive material takes for its quantity to be halved through radioactive decay.**

## Skyglow

### Why in News?

Recently, a new study has found that non-natural light had increased the brightness of **Skyglow**, by **9.2-10% every year between 2011 and 2022** with significant ecological, health and cultural implications.

- Researchers have analyzed a **global database of what the dimmest star visible from a particular location is**; the database had more than 51,000 entries submitted by citizen scientists.

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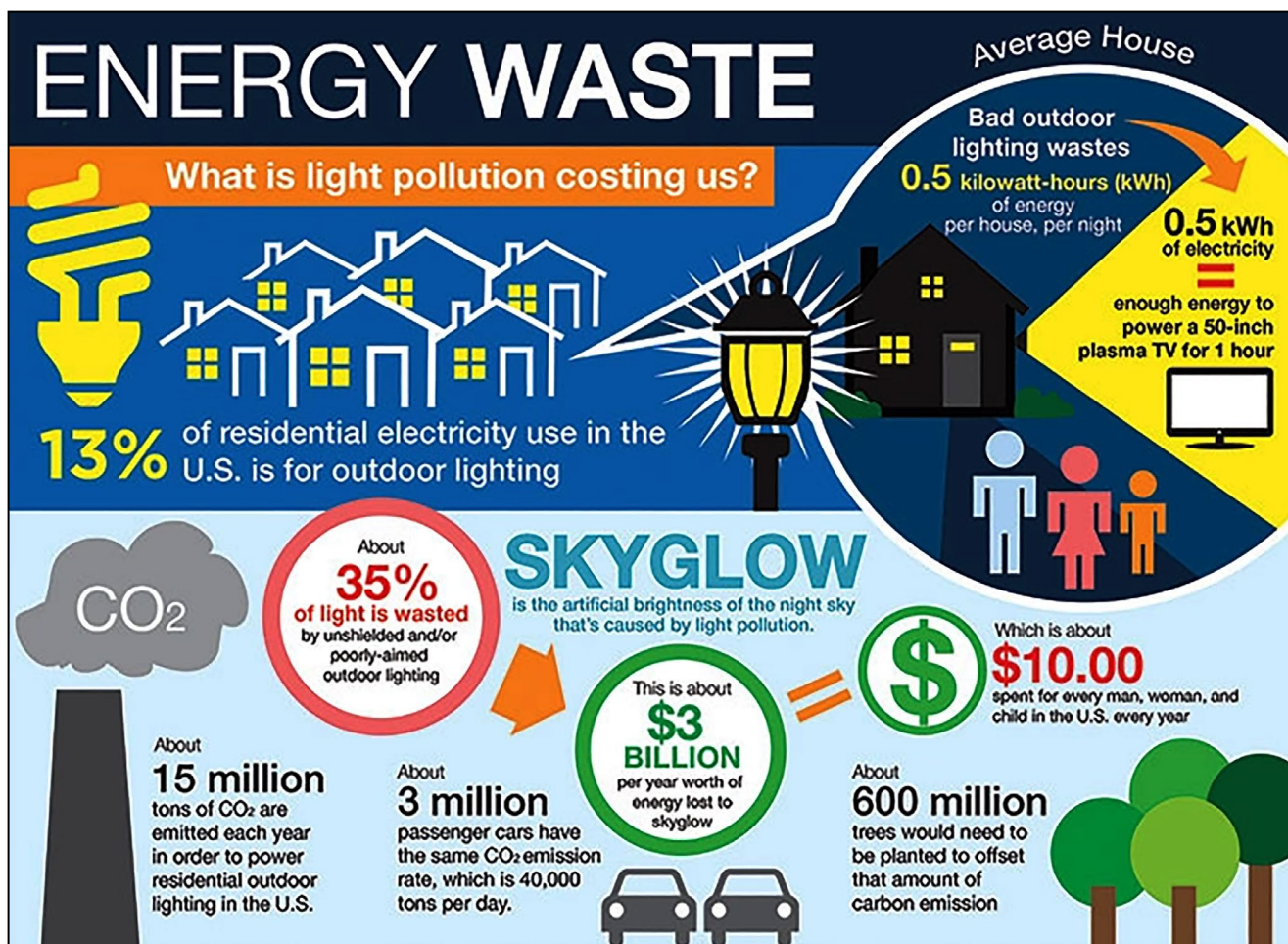


### What is Skyglow?

- The Skyglow, is an **omnipresent sheet of light across the night sky** in and around cities that can block all but the very brightest stars from view.
- The brightening of the **night sky over inhabited**

areas because of streetlights, security floodlights and outdoor ornamental lights cause the Skyglow.

- This light floods directly into the eyes of the Nocturnal (active at night) and also into the skies and misleads their path.
- 'Skyglow' is one of the components of **light pollution**.



### What is the Scenario of Skyglow?

#### ➤ Global

- The Skyglow had brightened around **6.5% over Europe, 10.4% over North America**, and 7.7% over the rest of the world.
- The finding is significant because it disagrees with **satellite-based data**, which has indicated that the **rate of increase has been around 2% per year**.
  - The discrepancy is **probably the result of the satellites being unable to 'sense' blue light** emitted by LEDs and to study light that is emitted parallel to the ground.

#### ➤ India:

- A 2016 study reported that 19.5% of India's population – the lowest fraction among G20 countries – experiences a **level of skyglow that would at least keep the Milky Way galaxy out of sight** and at most render "dark adaptation for human eyes" impossible.
- The effects **include stimulating the cone cells in human eyes**, which is possible only when an environment is considered to be well-lit.
- A 2017 study reported that between 2012 and 2016, **India's lit area increased by 1.07-1.09%** and the average radiance of "stably lit areas" – e.g., excluding wildfires – increased by 1.05-1.07%.

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### What are the Implications of Skyglow?

- **Wastes Energy and Money:**
  - Lighting that emits too much light or shines when and where it's not needed is wasteful. Wasting energy has huge economic and environmental consequences.
- **Disrupting the Ecosystem and Wildlife:**
  - Plants and animals depend on **Earth's daily cycle of light and dark rhythm to govern life-sustaining behaviors** such as reproduction, nourishment, sleep and protection from predators.
  - Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including amphibians, birds, mammals, insects and plants.
    - **Ex:** Lit beaches **deter sea turtles from coming ashore** to nest. **Skyglow keeps trees from sensing seasonal variations.**
    - Clownfish eggs **don't hatch when exposed to artificial light at night**, killing the offspring.
- **Harming Human Health:**
  - Like most life on Earth, humans adhere to a **Circadian Rhythm** — our biological clock — a sleep-wake pattern governed by the day-night cycle. Artificial light at night can disrupt that cycle.
  - A small 2009 review concluded that **circadian disruption** — which altered melatonin levels can cause — **increased the risk of breast cancer among night-shift workers by 40%.**
  - The erasure of the night sky acts to erase Indigenous connection to the stars, **acting as a form of ongoing cultural and ecological genocide.**

### What can be the Solutions?

- The researchers recommend light sources casting **light at an angle below the plane of the horizon**, capping the emissions of these sources and calibrating their output according to the total brightness at the spot being lit.
- Where lights cannot be turned off, **they can be shielded so that they do not shed light into the surrounding environment and sky.**
- The International Dark-Skies Association has **certified more than 130 'International Dark Sky Places'**, where artificial lighting has been adjusted to reduce skyglow and light trespass. However, nearly all are in developed countries in the northern hemisphere.

- Less-developed regions are often both species-rich and, currently, less light-polluted, **presenting an opportunity to invest in lighting solutions before animals there are seriously affected.**

## Senna Spectabilis

### Why in News?

Kerala has come out with a management plan to eradicate ***Senna spectabilis***, the exotic invasive plant that is posing a **severe threat to the State's wildlife habitat.**

- The management plan stipulates that **there should not be an attempt to kill the trees before a detailed reforestation programme** and the resources for implementing it are in place.



### What is Senna spectabilis?

- Senna spectabilis is a **deciduous tree native to tropical areas of America.**
- It grows up to **15 to 20 metres in a short period of time** and distributes thousands of seeds after flowering.
- The thick foliage of the tree **arrests the growth of other indigenous tree and grass species.** Thus, it causes food shortage for the wildlife population, especially herbivores.
- It also adversely affects the germination and growth of the native species.
- It is categorised as '**Least Concern**' under **IUCN Red List.**

### What is the Eradication Plan?

- The plan envisages **landscape-level management** of the tree.
- Once the resources and material for landscape restoration are ready, the invasive species has to be

Note:



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removed using a threefold approach for **large trees, large saplings, and small saplings**.

- The large trees need to be debarked from breast height downwards (1.3 m above ground level), including the collar part of the tree. Once done, the trees should be visited once a month to remove the new growth across the debarked area.
- The larger saplings can be uprooted using specially designed weed pullers.
- The third is the removal of small plantlets which need to be removed mechanically.
- The large trees would take a minimum of 18 months to completely dry up after debarking.

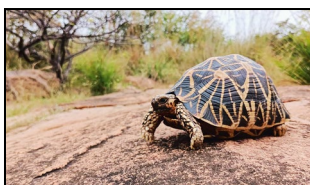
#### What is an Invasive Species?

- An invasive species is **an organism that causes ecological or economic harm** in a new environment where it is not native.
- They are capable of causing **extinctions of native plants and animals, reducing biodiversity, competing with native organisms for limited resources, and altering habitats**.
- They can be **introduced to an area by ship ballast water, accidental release, and most often, by people**.
- There are many invasive species in India. For eg: **Charru Mussel, Lantana bushes, Indian Bullfrog**, etc.

## Indian Star Tortoise

### Why in News?

A new study on the **Indian Star Tortoise** (*Geochelone elegans*) has found that **illegal trade and unscientific translocations**



are causing major losses to the species' **genetic diversity and habitat**.

- The research calls for proper conservation strategy to combat the **fragmented distribution and recommends intensive genetic screening** of the species to implement **scientific breeding**.

### What are the Key Facts about Indian Star Tortoise?

- **Habitat:**
  - **Indian star tortoises** are found across the Indian subcontinent, more specifically, in the **Central**

**and Southern parts of India, in West Pakistan and in Sri Lanka.**

- It is typically found in **dry, open habitats such as scrub forests, grasslands, and rocky outcroppings**.

#### ➤ Threat:

- The species is facing **twin challenges of a threat to its habitat** at one level and loss of its **genetic diversity** at the other.
  - Their highly fragmented habitat of the species is greatly influenced by an **increased level of urbanization and agricultural practices**.
  - Due to **subsequent hybridisation** of these species over the years, Indian star tortoises have **lost genetic diversity**.
- Also, according to the **Wildlife Crime Control Bureau**, **90% of the trade of Star Tortoise** occurs as part of the international pet market.

#### ➤ Protection Status:

- **IUCN Red List:** Vulnerable
- **Wild Life Protection Act 1972:** Schedule IV
  - **Schedule IV:** This list is for species that are not endangered. It includes protected species but the **penalty for any violation is less compared to the Schedules I and II**.
- **Convention on International Trade in Species (CITES):** Appendix I

## Spot Bellied Eagle Owl

### Why in News?

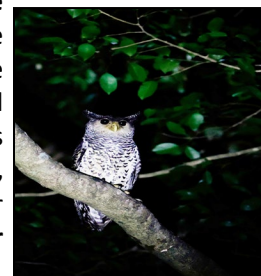
Recently, **Spot Bellied Eagle Owl** (*Bubo Nipalensis*) was spotted for the first time in **Seshachalam forest**, and for the third time in **Andhra Pradesh**.

- It was sighted twice earlier at **Nagarjunasagar Srisailem Tiger Reserve (NSTR)**.

### What is a Spot-bellied Eagle Owl?

#### ➤ About:

- The **Spot-bellied Eagle Owl**, also known as the **Forest eagle-owl** is a large owl species typically found in wooded areas, such as **forests and rocky hillsides**, and are known for their **distinctive spots on their belly**.



Note:



drishti

- The spot-bellied eagle-owls are **large, very powerful and bold predatory birds.**

- The bird makes a strange scream similar to humans and it is hence called the '**Ghost of the Forest**' in India.

➤ **Distribution:**

- These eagle-owl species are distributed in **India, Sri Lanka, Nepal, Bhutan, Bangladesh, Myanmar, China, Thailand, Laos, Cambodia and Vietnam.**

➤ **Prey:**

- They are known to prey on large birds and also on mammals like **golden jackals, hares, civets and chevrotains.**

➤ **IUCN and CITES Status:**

- **International Union for Conservation of Nature(IUCN)** Red list: "**Least Concern**".

- **CITES (the Convention on International Trade in Endangered Species of Wild Fauna and Flora):** Appendix II.

**Nagarjunasagar Srisailem Tiger Reserve**

- The Nagarjunsagar-Srisailem Tiger Sanctuary was declared officially in 1978 and has been recognized by the Project Tiger in 1983.
- **Nagarjunsagar-Srisailem Tiger Reserve** is the largest tiger reserve in India.
- In 1992, it was retitled as **Rajiv Gandhi Wildlife Sanctuary.**
- The Tiger reserve is spread over 5 districts in Andhra Pradesh and Telangana. The area consists mostly of the **Nallamala Hills.**
- The multipurpose reservoirs- **Srisailem and Nagarjunsagar** are located in the reserve.
- The **Krishna River** cuts the basin of this reserve.



Note:

# History

## Highlights

- Lala Lajpat Rai
- Shaheed Diwas
- Assam's Charaideo Moidams
- Parakram Diwas 2023
- Panini's Ashtadhyayi & Grammar's Greatest Puzzle

## Lala Lajpat Rai

# LALAJPAT RAI

28 January 1865 – 17 November 1928

### BRIEF PROFILE

- Also called **Punjab Kesari**
- Influenced by **Swami Dayananda Saraswati** - joined **Arya Samaj** in Lahore
- **Lal-Bal-Pal** trio (extremist leaders) with **Bipin Chandra Pal** and **Bal Gangadhar Tilak**
- Involved with the **Hindu Mahasabha**



### POLITICAL CONTRIBUTIONS

- 1907 - Deported to Burma without trial but returned due to lack of evidence
- 1917 - Founded **Home Rule League of America** (New York)
- 1920 - Presided **INC (special) session** (Calcutta) where Gandhiji moved the **Non-Cooperation resolution**
- 1920 - Elected (first) President of the **All India Trade Union Congress**
- 1926 - Elected **deputy leader** of the **Central Legislative Assembly**
- 1928 - Moved a resolution in the assembly against **Simon Commission**

### SOCIAL CONTRIBUTIONS

- 1886 - Founded **DAV Movement**
- 1897 - Founded **Hindu Relief movement** (to help famine-stricken people and prevent them falling into the clutches of the missionaries)
- 1921 - Founded the **Servants of People Society** (to enlist, train national missionaries for the service of the motherland)

Note: Servants of People Society is different from Servants of Indian Society founded by GK Gokhale in 1905

### OTHER CONTRIBUTIONS

- **Institution -**
  - 1894 - Co-founded **Punjab National Bank**
- **Important Literary Works -**
  - 1908 - **The Story of My Deportation**
  - 1915 - **Arya Samaj**
  - 1916 - **Young India, The United States of America: A Hindu's Impression**
  - 1917 - **England's Debt to India: A Historical Narrative of Britain's Fiscal Policy in India**
  - 1928 - **Unhappy India**

### DEATH

- 1928 - Died of injuries due to the brutal lathi-charge by James Scott while leading a silent protest against **Simon Commission** in Lahore



## Shaheed Diwas

### Why in News?

On January 30, 2023, India observes **Martyrs' Day** or **Shaheed Diwas** to pay tribute to all the freedom fighters who sacrificed their lives for the country. The day is also marked as the death anniversary of the nation's 'Bapu', **Mahatma Gandhi**.

- Martyrs' Day or Shaheed Diwas or Sarvodaya Day is celebrated in India several times a year.

### What is there to Know about Shaheed Diwas?

- **In Remembrance Of:**
  - Mahatma Gandhi, who was born on October 2, 1869, was one of the most influential leaders of India and played a significant role in the independence of the country.
  - On this day in 1948 Mahatma Gandhi was assassinated in the Birla House in New Delhi by Nathuram Godse.
- **Way of Celebrating:**
  - India celebrates Martyrs' Day by paying tribute to Mahatma Gandhi's Samadhi at Raj Ghat in Delhi.
  - The **President**, **Vice President**, Prime Minister, Defense Minister, and the three Service Chiefs (**Army**, **Air Force**, and **Navy**) pay their respects to the 'Father of the Nation'.

Note:



➤ **Significance:**

- The significance of Shaheed Diwas lies in the fact that Mahatma Gandhi who **led major movements against British rule through a non-violent approach.**
- His philosophy was **based on the principles of non-violence**, the fight for truth (**satyagraha**), and political and individual freedom (**Swaraj**) and inspired millions of people with his principles.

**Other Martyrs' Days in India: What are they?**

Days	About
March 23	➤ On this day <b>Bhagat Singh, Shivaram Rajguru, and Sukhdev</b> Thapar were hanged to death by the British in Lahore Jail.
May 19	➤ It is celebrated in Assam to remember the people who were killed by the state police on May 19, 1961. ○ The day was designated as Bhasha Shaheed Diwas or Language Martyrs' Day.
July 13	➤ Jammu and Kashmir celebrates July 13 as <b>Kashmir Martyr's Day</b> to remember people who were killed, when <b>demonstrating against the rule of Maharaja Hari Singh of Kashmir.</b>
November 17	➤ <b>Odisha celebrates this day</b> to remember famous freedom fighter <b>Lala Lajpat Rai on his death anniversary.</b>
November 19	➤ <b>Jhansi celebrate this day, the birth anniversary of Rani Lakshmbai,</b> as Martyrs' Day. ○ The day celebrates the <b>contribution of all who passed away in the Revolt of 1857.</b>
November 24	➤ It is celebrated as Martyrs' Day <b>by the Sikh community</b> as it is the <b>death anniversary of ninth Sikh Guru Tegh Bahadur.</b> ○ He <b>resisted the forced conversions of non-Muslims</b> and was executed publicly in 1675 <b>by Mughal emperor Aurangzeb.</b>

## Assam's Charaideo Moidams

**Why in News?**

The Centre has decided to nominate the **Charaideo Moidams** in Assam for the **UNESCO World Heritage Centre** this year.

- There is currently **no World Heritage Site** in the category of cultural heritage in **Northeast India.**
- The nomination of the Charaideo Moidams has attained significance at a time when the country is celebrating the **400<sup>th</sup> birth anniversary of Lachit Borphukan.**

**What is Charaideo Moidams?**

- The **Charaideo Moidams**, represents the late medieval (13<sup>th</sup>-19<sup>th</sup> century CE) **mound burial tradition** of the **Tai Ahom** community in Assam.
- It enshrines the mortal remains of the members of the Ahom royalty, who used to be buried with their **paraphernalia.**
  - After the 18<sup>th</sup> century, the **Ahom rulers adopted the Hindu method of cremation** and began entombing the cremated bones and ashes in a **Maidam at Charaideo.**
- Out of 386 Moidams or Moidams explored so far, **90 royal burials at Charaideo are the best preserved**, representative of and the most complete examples of mound burial tradition of the Ahoms.

**What are the****Key Facts About Ahom Kingdom?**

- **About:**
  - Established in 1228 in the **Brahmaputra valley of Assam**, the Ahom kingdom retained its sovereignty for 600 years.
  - The kingdom was founded by **Chaolung Sukapha**, a 13<sup>th</sup> century ruler.

Note:

- The Ahoms ruled the land till the province was annexed to British India in **1826** with the signing of the **Treaty of Yandaboo**.

#### ➤ Political Setup:

- Ahoms created a new state by suppressing the older political system of the **bhuiyans (landlords)**.
- The Ahom state depended upon **forced labour**. Those forced to work for the state were called paiks.

#### ➤ Society:

- Ahom society was divided into **clans or khels**. A khel often controlled several villages.
- Ahoms worshipped their own tribal gods, yet they accepted the Hindu religion and the Assamese language.
  - However, the **Ahom kings did not completely give up their traditional beliefs** after adopting **Hinduism**.

#### ➤ Military Strategy:

- The full contingent of the Ahom Army consisted of **infantry, navy, artillery, elephantry, cavalry and spies**.
  - The main war weapons consisted of bows and arrows, swords, Javelins discus, guns, matchlocks and cannons.
- The **Ahom soldiers were experts in guerilla fighting**. They also learnt the technique of **constructing boat bridges in the Brahmaputra**.

#### Who was Lachit Borphukan?

- Born on 24<sup>th</sup> November, 1622, Borphukan was known for his **leadership in the Battle of Saraighat, 1671** in which an attempt by **Mughal forces** to capture Assam was thwarted.
  - The battle of Saraighat was fought on the banks of the **Brahmaputra in Guwahati in 1671**.
  - It is considered as one of the greatest naval battles on a river which **resulted in the victory of Ahoms over the Mughals**.
- He was the inspiration behind strengthening **India's naval force and revitalising inland water transport** and creating infrastructure associated with it due to his great naval strategies.
- The **Lachit Borphukan gold medal** is awarded to the best cadet from the **National Defence Academy**.
  - The medal was instituted in 1999 to inspire **defence personnel to emulate Borphukan's heroism and sacrifices**.

## Parakram Diwas 2023

### Why in News?

On the Occasion of **Parakram Diwas (23rd January) 2023**, 21 unnamed islands of **Andaman and Nicobar** have been named after **Param Veer Chakra** awardees.

- Netaji's Memorial, a National Memorial dedicated to Netaji will be built on **Netaji Subhas Chandra Bose Dweep**.
- **Parakram Diwas** is celebrated to commemorate the 126<sup>th</sup> **birth anniversary of freedom fighter Subhas Chandra Bose**.

### What is the Purpose of Naming Islands?

- The islands named after Param Vir Chakra awardees will be the site of inspiration for generations to come. People are now visiting Andamans to learn India's history.
  - Param Vir Chakra is **India's highest military decoration awarded** for displaying distinguished acts of valour during wartime whether on land, at sea or in the air.
- It aims to pay tribute to Indian heroes, several of whom **had made the ultimate sacrifice to protect the sovereignty and integrity of India**.
- The islands have been named after Major Somnath Sharma, Subedar and Hony Captain (then Lance Naik) Karam Singh, Nayak Jadunath Singh, etc.

**Note:** Besides renaming Ross Islands Netaji Subhash Chandra Bose Dweep in 2018, Neil Island and Havelock Island were also renamed Shaheed Dweep and Swaraj Dweep respectively.

### Who was Subhash Chandra Bose?

- **Birth:**
  - Subhas Chandra Bose was born on **23<sup>rd</sup> January 1897**, in Cuttack, Orissa Division, Bengal Province, to **Prabhavati Dutt Bose** and Janakinath Bose.
- **About:**
  - In 1919, he had cleared the Indian Civil Services (ICS) examination. Bose, however, resigned later.



Note:

# NETAJI SUBHASH CHANDRA BOSE

## BIRTH

- 23rd January 1897 (celebrated as '**Parakram Diwas**')  
*Subhas Chandra Bose Aapda Prabandhan Puraskar is announced every year on 23 January to honour the selfless service rendered by individuals/organisations in India in disaster management.*



## EARLY LIFE

- Cleared the **Indian Civil Services (ICS) examination** (1919) but resigned later
- Considered **Swami Vivekananda** as his spiritual Guru
- Newspaper - **Swaraj**

## POLITICAL LIFE IN CONGRESS (INC)

- Stood for **unqualified Swaraj** (self-governance)
- Actively participated in **Salt Satyagraha (1930)**
- Opposed Gandhi-Irwin Pact (1931)** & suspension of **Civil Disobedience Movement**
- Won INC Presidential Elections at Haripura (1938) and Tripuri (1939)
- Resigned from INC (1939)** due to ideological differences with Gandhiji
- Founded '**the Forward Bloc**' party to consolidate the **Political Left**

## INDIAN NATIONAL ARMY (INA)

- Reached Japan-controlled Singapore in July **1943**, issued from there his famous slogan - '**Delhi Chalo**'  
**He also gave the slogan - 'Jai Hind'**
- Announced the formation of **Azad Hind Government** and INA in Oct 1943
- INA fought allied forces (1944)** in **Imphal** (India) and in **Burma**

INA was first formed under Mohan Singh and Japanese Major Iwaichi Fujiwara. It comprised Indian prisoners of war of the British-Indian Army captured by Japan in Malay and Singapore.

## DEATH

- Believably in 1945** when his plane crashed in Taiwan.



- He was **highly influenced by Vivekananda's teachings** and considered him as his spiritual Guru.
- His political mentor was **Chittaranjan Das**.
- **Association with Congress:**
  - He stood for **unqualified swaraj (independence)**, and **opposed the Motilal Nehru Report** which spoke for dominion status for India.
  - He actively participated in the **Salt Satyagraha of 1930** and vehemently opposed the suspension of

Civil Disobedience Movement and signing of the Gandhi-Irwin Pact in 1931.

- In the 1930s, he was closely **associated with left politics in Congress** along with **Jawaharlal Nehru** and **M.N. Roy**.
- Bose won the congress **presidential elections at Haripura in 1938**.
- Again in **1939 at Tripuri**, he won the **presidential elections against Gandhi's candidate Pattabhi**

Note:



**Sitarammayya.** Due to ideological differences with Gandhi, Bose resigned and left congress. Rajendra Prasad was appointed in his place.

- He founded a new party, '**the Forward Bloc**'. The purpose was to consolidate the **political left and major support base** in his home state Bengal.

#### ➤ **Indian National Army:**

- He reached Japanese-controlled Singapore from Germany in **July 1943**, issued from there his famous call, '**Delhi Chalo**', and announced the formation of the **Azad Hind Government and the Indian National Army** on **21<sup>st</sup> October 1943**.
- The INA was first formed under Mohan Singh and Japanese Major Iwaichi Fujiwara and comprised Indian prisoners of war of the British-Indian Army captured by Japan in the Malayan (present-day Malaysia) campaign and at Singapore.
- The INA included both the Indian prisoners of war from Singapore and Indian civilians in South-East Asia. Its **strength grew to 50,000**.
- The INA fought allied forces in 1944 inside the borders of India in Imphal and in Burma.
- In November 1945, a British move to put the INA men on **trial immediately sparked massive demonstrations** all over the country.

## **Panini's Ashtadhyayi & Grammar's Greatest Puzzle**

### **Why in News?**

Recently, a Cambridge scholar Dr Rishi Rajpopat's has claimed to have solved **Sanskrit's biggest puzzle**—a grammar problem found in the '**Ashtadhyayi**'.

### **What is Ashtadhyayi?**

- Written more than 2,000 years ago, **Ashtadhyayi** or '**Eight Chapters**', is an ancient text written by the scholar **Panini** towards the end of the **4<sup>th</sup> century BC**.
- It is a linguistic text that set the **standard for how Sanskrit was meant to be written** and spoken.
- It delves deep into the **language's phonetics, syntax and grammar**, and also offers a 'language machine', where one can feed in the **root and suffix of any Sanskrit word**, and get **grammatically correct words and sentences** in return.

- The **Ashtadhyayi** laid down more than 4,000 grammatical rules.
  - Later Indian grammars such as the **Mahabhasya** of Patanjali (2nd century BC) and the **Kasika Vritti** of Jayaditya and Vamana (7th century AD), were **mostly commentaries on Panini**.

### **What was the Puzzle?**

#### ➤ **Confusing Rules:**

- In **Ashtadhyayi**, there were **two or more of the rules of Grammar that could apply at the same time, causing confusion**.
- To resolve this, Panini had provided a '**meta-rule**' (a rule governing rules), which had historically been interpreted as- In the event of a conflict between two rules of equal strength, the rule that comes later in the **serial order of the 'Ashtadhyayi'** wins.
- However, it kept producing exceptions, for which **scholars had to keep writing additional rules**. This is where Dr Rishi Rajpopat's discovery came through.

#### ➤ **Solution:**

- The Scholar took a simpler approach, arguing that the **meta-rule has been wrongly interpreted throughout history**; what Panini actually meant was that for rules applying to the left and right sides of a word, **readers should use the right-hand side rule**.
- Using this logic, Dr Rajpopat found that the '**Ashtadhyayi**' could finally become an accurate '**language machine**', producing **grammatically sound words and sentences almost every time**.

#### **Take 'mantra' and 'guru' as examples.**

In the sentence 'devāḥ prasannāḥ mantraiḥ' ('The Gods [devāḥ] are pleased [prasannāḥ] by the mantras [mantraiḥ]') we encounter 'rule conflict' when deriving mantraiḥ 'by the mantras'.

The derivation starts with 'mantra + bhis'. One rule is applicable to left part 'mantra' and the other to right part 'bhis'. We must pick the rule applicable to the right part 'bhis', which gives us the correct form 'mantraiḥ'.

And in the the sentence 'jñānam dīyate guruṇā' ('Knowledge [jñānam] is given [dīyate] by the guru [guruṇā]') we

encounter rule conflict when deriving guruṇā 'by the guru'.

Note:



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The derivation starts with 'guru + a'. One rule is applicable to left part 'guru' and the other to right part 'a'.

We must pick the rule applicable to the right part 'a', which gives us the correct form 'guruṇa'.

➤ **Significance:**

- The discovery now makes it possible to construct millions of Sanskrit words using Panini's system—and since his grammar rules were exact and formulaic, they can act as a Sanskrit language algorithm that can be taught to computers.

**Who was Panini, the Father of Linguistics?**

- Panini probably lived in the 4<sup>th</sup> century BC, the age of the conquests of Alexander and the founding of the **Mauryan Empire**, even though he has also been dated to the 6<sup>th</sup> century BC, the age of The **Buddha** and **Mahavira**.

- He likely lived in **Salatura (Gandhara)**, which today would lie in **north-west Pakistan**, and was probably associated with the **great university at Taksasila**, which also produced **Kautilya and Charaka**, the ancient Indian masters of statecraft and medicine respectively.
- By the time Panini's great grammar, the 'Ashtadhyayi' was composed, Sanskrit had virtually reached its classical form — and developed little thereafter.
- Panini's grammar, which built on the work of many earlier grammarians, effectively **stabilised the Sanskrit language**.
- The earlier works had recognised the root as the basic element of a word, and had classified **some 2,000 monosyllabic roots which**, with the addition of prefixes, suffixes and inflexions, were thought to provide all the words of the language.



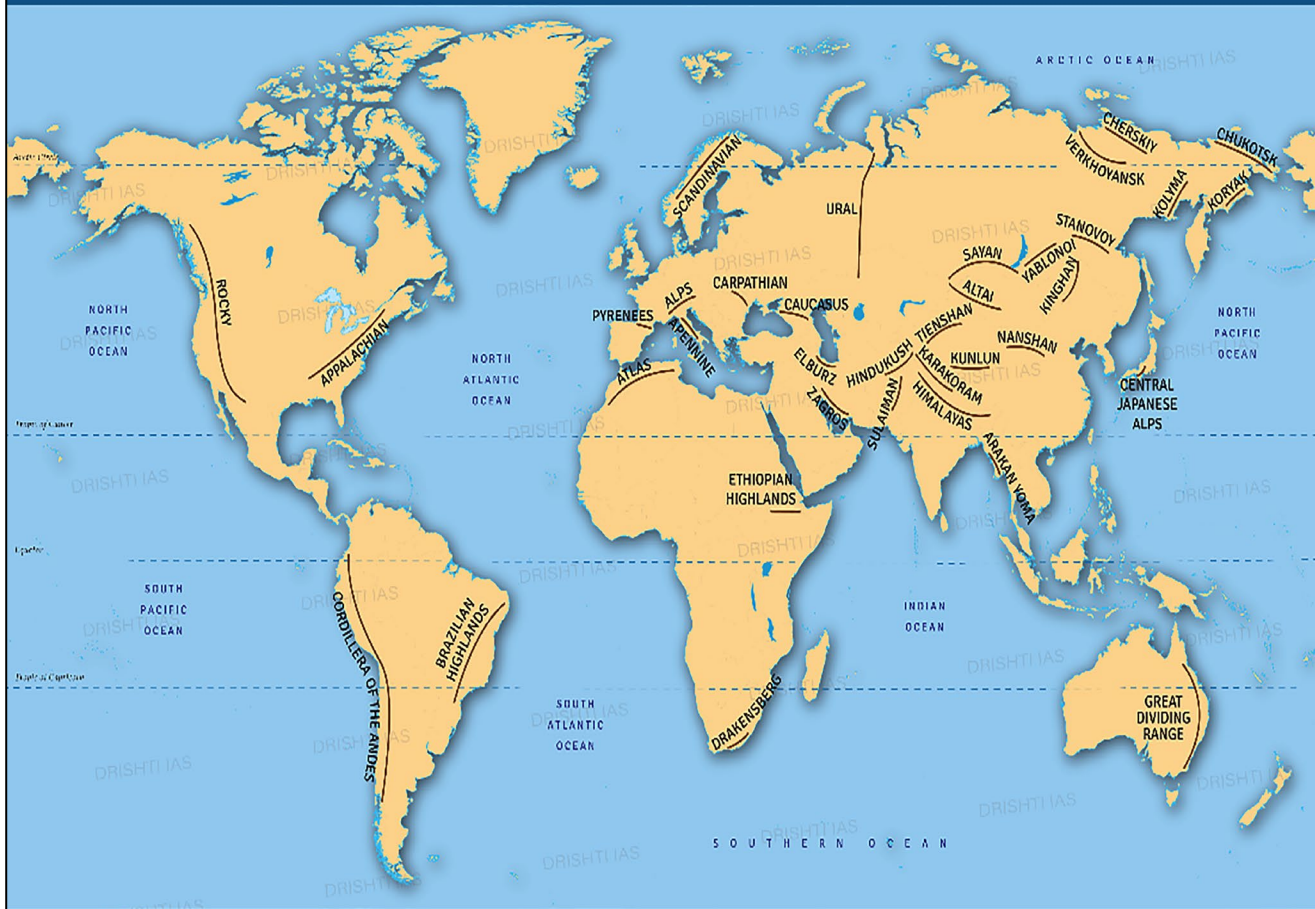
Note:

# Geography

## Highlights

- Manufactured Sand
- Deep-Water Circulation
- Rare Earth Elements Discovered in Sweden
- Inner Core of the Earth

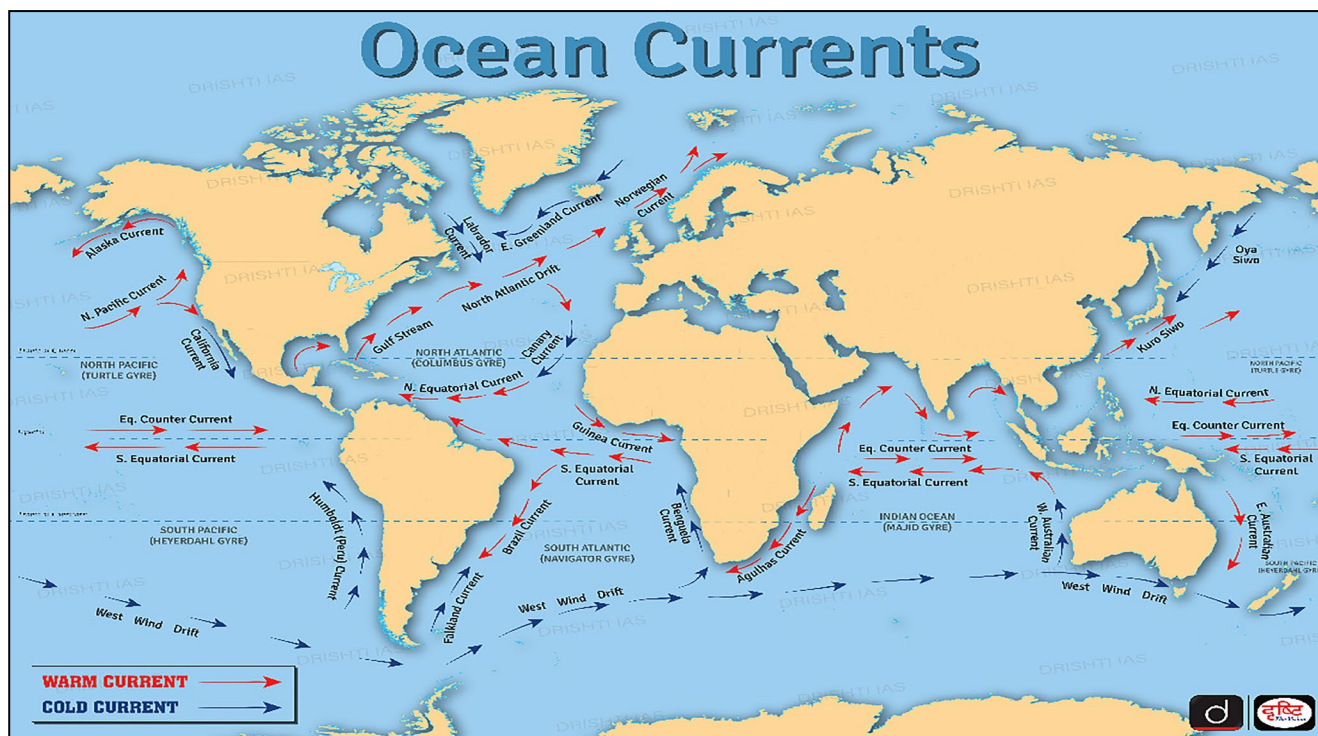
## MOUNTAIN RANGES IN WORLD



Note:



# Ocean Currents



# DESERTS IN THE WORLD



## FACTS

- The largest hot desert in the world – Sahara (northern Africa), reaches temperatures of up to 50°C during the day.
- The Gobi desert in Asia and the polar deserts of the Antarctic and Arctic, which are the world's largest, are always cold.
- Chile's Atacama desert is the driest in the world (after Antarctica) having parts that receive < 2 mm of precipitation/year.
- Namib Desert (Southern Africa) is believed to be as old as 55 million years; the oldest desert in the world.
- Thar Desert (India) is believed to be the most civilised desert in the world due to having roads, infrastructure and human settlements dating back to thousands of years (about 50,000 years old).

Note:



# EARTHQUAKE



## ABOUT

- Shaking of the earth; caused due to release of energy, generating **seismic waves in all directions**

## HYPOCENTER

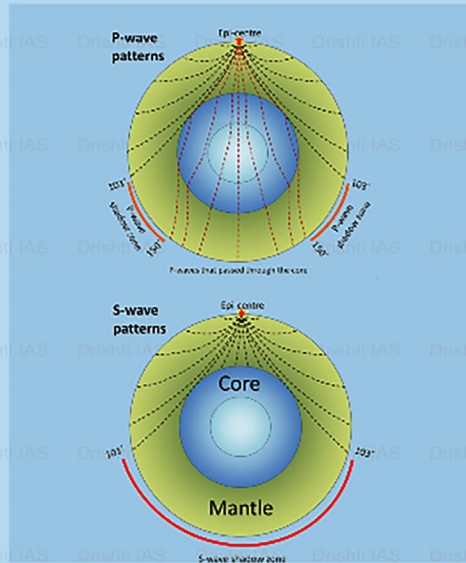
- Location where the earthquake starts (below earth's surface)

## EPICENTER

- Location right above the Hypocenter (on the earth's surface)

## EARTHQUAKE WAVES

- Body Waves:** Move in all directions travelling through the body of the earth
  - P Waves:** Move faster, First to arrive at surface, Similar to sound waves, Travel through gaseous, liquid and solid materials
  - S Waves:** Arrive at surface with some time lag, Travel only through solid materials
- Surface Waves:** Last to report on seismographs, More destructive, Cause displacement of rocks
  - Love Waves:** Same motion as S-waves (horizontal) without vertical displacement, Sideways motion perpendicular to the direction of propagation, Faster than Rayleigh waves
  - Rayleigh Waves:** Cause the ground to shake in an elliptical pattern, Spread out the most of all seismic waves, Move vertically and horizontally in a vertical plane



## CAUSES OF EARTHQUAKES

- Release of energy along a **Fault/Fault Zones** (break in the crustal rocks)
- Movement of **tectonic plates** (most common)
- Volcanic eruption** (stress changes in rock-injection/withdrawal of magma)
- Human activities** (mining, explosion of chemical/nuclear devices etc.)

## MEASURING EARTHQUAKE

- Seismometers** - Measures seismic waves
- Richter Scale** - Measures magnitude (energy released; range: 0-10)
- Mercalli** - Measures intensity (visible damage; range: 1-12)

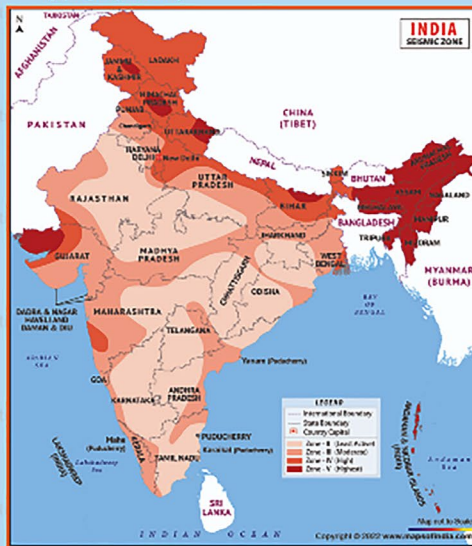
## DISTRIBUTION

- Circum-Pacific Belt** - 81% of earthquakes
- Alpine Earthquake Belt** - 17% of the largest earthquakes
- Mid-Atlantic Ridge** - Mostly submerged underwater



## EARTHQUAKE IN INDIA

- India is one of the highly earthquake affected countries due to the presence of technically active mountains - the Himalayas.
- India has been divided into **4 seismic zones** (II, III, IV, and V)



## Manufactured Sand

### Why in News?

**Coal India Limited (CIL)** is making headlines for its innovative solution to the sand shortage problem. The company is using **crushed rock fines (crusher dust)**, sand from **Overburden (OB)** of coal mines and soil removed during **opencast coal mining**, to produce **Manufactured Sand (M-Sand)**.

- This not only **repurposes waste materials** but also **reduces the need for natural sand mining** and creates an additional revenue stream for the company.

### What are the Benefits of Manufactured Sand (M-Sand)?

- Cost-effectiveness:** Using manufactured sand can be **more cost-effective than using natural sand**, as it can be produced in large quantities at a lower cost.
- Consistency:** Manufactured sand can have a **consistent grain size and shape**, which can be beneficial for construction projects that require a specific type of sand.
- Environmental Benefits:** Using manufactured sand can help to **reduce the need for mining natural sand**, which can have negative environmental impacts.

Note:



- Additionally, using the overburden from coal mines can help to repurpose materials that would otherwise be considered waste.
- **Reduced Water Consumption:** Using manufactured sand can help to reduce the amount of water required for construction projects, as it does not require washing before use.
- **Other Benefits:** Apart from commercial use, sand produced shall also be consumed for **sand stowing in Underground Mines** enhancing safety & conservation.
- Also, lesser Sand extraction from rivers will reduce erosion of channel bed & banks and protect water habitat.

### What is the Status of Sand Mining in India?

- **About:**
  - Sand is classified as a “**minor mineral**”, under The **Mines and Minerals (Development and Regulations) Act, 1957 (MMDR Act)** and administrative control over minor minerals vests with the State Governments.
  - **Rivers and coastal areas** are the main sources of sand, and the demand for it has increased significantly in recent years due to the construction and infrastructure development boom in the country.
  - The **Ministry of Environment, Forests, and Climate Change (MoEFCC)** has issued “**Sustainable Sand Mining Management Guidelines 2016**” to promote **scientific sand mining** and environmentally friendly management practices.
- **Issues Related to Sand Mining in India:**
  - **Environmental Degradation:** Sand mining can lead to the destruction of habitats and ecosystems, as well as erosion of **river banks and coastal areas**.
  - **Water Scarcity:** Sand mining can **deplete the water table** and reduce the availability of water for **drinking and irrigation**.
    - For example, in the state of Rajasthan, sand mining has led to a **decline in the water level of the Luni River**, affecting the drinking water supply of nearby villages.
  - **Floods:** Excessive sand mining can cause the **riverbeds to become shallow**, which can increase the risk of floods.

- For example, in the state of Bihar, sand mining has led to increased **flooding in the Kosi River**, causing damage to crops and property.
- **Corruption:** Sand mining is a highly profitable activity, and there have been instances of **corruption and bribery** in the allocation of mining leases and the enforcement of regulations

## Deep-Water Circulation

### Why in News?

Recent studies have indicated that **tectonically driven changes in the ocean gateways** had a dramatic impact on the global overturning circulations.

### What do the Latest Findings Suggest?

- Studies suggest that **changes in ocean routes caused by tectonics**, like the closing of the **Central American Seaway**, had a big effect on **ocean circulation**.
  - **Central American Seaway** is a body of water that once separated North America from South America,
- These changes **may have led to the creation of two distinct water bodies:**
  - Northern component water in the **North Atlantic Ocean**.
  - **Antarctic Bottom Water (AABW)** in the Southern Ocean.
- Consequently, it is also **hypothesised that there would have been large-scale changes in the Deep-Water Circulation (DWC)** in the oceans across the world, impacting **global climate** and heat exchanges.

### What is Deep Water Circulation (DWC)?

- **About:**
  - It refers to the movement of water in the deep ocean. It is **driven by the density differences between water masses** caused by variations in temperature and salinity.
  - In the Earth's polar regions ocean water gets very cold, forming sea ice. As a consequence, the **surrounding seawater gets saltier, because when sea ice forms, the salt is left behind**.
  - As the **seawater gets saltier**, its density increases, and **it starts to sink**. Surface water is pulled in to

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replace the sinking water, which in turn eventually becomes **cold and salty enough to sink**.

- This creates a circulation pattern that is known as the **thermohaline circulation**.

#### ➤ Significance:

- **Heat Distribution:** It helps to distribute heat around the globe, which helps to **regulate the Earth's temperature** and keep different regions from becoming too hot or too cold.
- **Maintaining Carbon Dioxide Levels:** It plays a critical role in controlling **atmospheric carbon dioxide levels** by **helping to transport carbon from the surface to the deep ocean**, where it can be stored for long periods of time.
- **Shaping Ocean Currents:** It is responsible for **shaping the ocean's currents** and the circulation patterns of the world's oceans.
  - These currents in turn influence the **marine ecosystem, weather patterns, and coastal regions**.
- **Maintaining Sea level:** It also has an impact on sea level, as **warm water is less dense than cold water**, therefore it can also affect **sea level** by redistributing heat and thermal expansion.

#### ➤ Deep-Water Circulations of the Indian Ocean:

- The Indian Ocean does not produce its own deep water, it **only receives it from other sources** such as the North Atlantic and Antarctic.
- The **northern part of the Indian Ocean is located far away from the areas where deep water is formed** and ocean routes, making it a good place to study the impact of ocean circulation changes.
- Studies have been done in the Indian Ocean to understand past deepwater circulation **using records from iron-manganese crusts and authigenic neodymium isotope composition** of sediment cores.
  - These records have few limitations:
    - **Iron-manganese crusts are found at deeper depths** and are only bathed by **Antarctic Bottom Water (AABW)**, so they can only provide information about the history of AABW.

- **Authigenic neodymium isotope** records are only available from the **Bay of Bengal region**, but they are also not accurate as the **Himalayan rivers that flow into the Bay bring in a lot of neodymium particulates** which can interfere with the results.

- However, recently Scientists have generated an **authigenic neodymium isotope record from the Arabian Sea** and reconstructed the **DWC record of the Indian Ocean** for the period from **11.3 million years ago (Miocene era) to 1.98 million years ago (Pleistocene era)**.

## Rare Earth Elements Discovered in Sweden

### Why in News?

Recently, Sweden's **state-owned mining company LKAB** has **discovered Europe's largest deposit of rare earth metals**.

### What is the Significance of the Discovery?

- The store, **situated in Kiruna** located in the **northern region of Sweden**, holds a stockpile of over **1 million metric tons of rare earth oxides**.
- This discovery bolsters **Europe's ambition to rely less on imported raw materials** needed for the **green transition**.
- Currently, **no rare earths are mined in Europe** and it mostly **imports** them from other regions.
  - According to a report in the BBC, **98% of rare earths** used by the **European Union (EU)** were sent by China.
- The discovery can also **prove to be a significant turning point not just for the EU but also for other western countries** as they have been trying to reduce their reliance on China for the import of these **rare earth elements**.

### What are Rare Earth Elements?

- **About:**
  - They are a set of **17 metallic elements**. These include the **15 lanthanides on the periodic table** in addition to **scandium and yttrium** that show

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similar physical and chemical properties to the lanthanides.

➤ **Significance:**

- They are important in technologies of **consumer electronics, computers and networks, communications, clean energy**, advanced transportation, healthcare, environmental mitigation, and **national defence**, among others.
  - **Scandium** is used in **televisions** and fluorescent lamps
  - **Yttrium** is used in drugs to **treat rheumatoid arthritis** and **cancer**.
- Rare earth elements are also used in **space shuttle components**, jet engine turbines, and drones.
  - **Cerium**, the most abundant rare earth element, is essential to **NASA's Space Shuttle Programme**.
- Moreover, the push for switching from **internal combustion cars to electric vehicles** has also led to a rise in demand for rare earth.

➤ **Monopoly of China:**

- China has over time **acquired global domination of rare earths**, even at one point, it produced **90% of the rare earths the world needs**.
  - Today, however, it has **come down to 60%** and the remaining is produced by other countries, including the **Quad (Australia, India, Japan and United States)**.
- Since **2010**, when China **curbed shipments of Rare Earths to Japan**, the US, and Europe, production units have come up in **Australia**.
- Even so, the **dominant share** of processed Rare Earths **lies with China**.

➤ **Rare Earth Elements in India:**

- India has **6% of the world's rare earth reserves**, it only produces **1% of global output**, and meets most of its requirements of such minerals from China.
- **Indian Rare Earths Limited (IREL)** is majorly responsible for **mining and extraction of primary mineral** that contains **Rare Earth Elements: monazite** beach sand, found in many coastal states.
- IREL's prime focus is to provide **thorium** — extracted from monazite — to the **Department of Atomic Energy**.

## Inner Core of the Earth

### Why in News?

Recently, new research suggested that Earth's inner core has **stopped spinning faster than its surface and might now be rotating slower** than it.

### What are the Highlights of the Research?

➤ **Methodology:**

- The research analyzed **seismic waves from repeating earthquakes** over the last six decades.
- By analysing changes in the time and propagation of these signals, they could estimate **the rotation of the inner core**, which is believed to move independently from the mantle and rest of the planet.

➤ **Findings:**

- The inner core started rotating slightly faster than the rest of the planet in the early 1970s. But it had been slowing down before coming in sync with Earth's rotation around 2009.
- There has been a **"negative trend"**, meaning the inner core is now rotating slower than the surface. Next change may occur in the mid-2040s.
- The results seem to indicate that **the Earth's inner core changes its speed of rotation every 60-70 years on average**.

➤ **Significance:**

- The Study can motivate **some researchers to build and test models which treat the whole Earth as an integrated dynamic system**.
- The slowdown could change how rapidly the entire planet spins, as well as influence how the core evolves with time.

### How is the Earth's Inner Core?

➤ **About:**

- It is the innermost layer of the Earth. It is a hot iron ball of the size of Pluto.
- The inner core is **solid due to the pressure caused by the weight put on it by the Earth's other top layers**.

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- It is distinct **from the outer core, which is a liquid.**
- Roughly 5,000 kilometers (3,100 miles) below the surface we live on, the inner core **can spin independently because it floats in the liquid metal** outer core.

➤ **Radius:**

- The inner core has an average radius of 1220 km.
- The boundary between the inner and outer cores is located at approximately 5150 km below the surface of the Earth.
- This boundary is called the **Lehman Seismic Discontinuity.**

➤ **Temperature:**

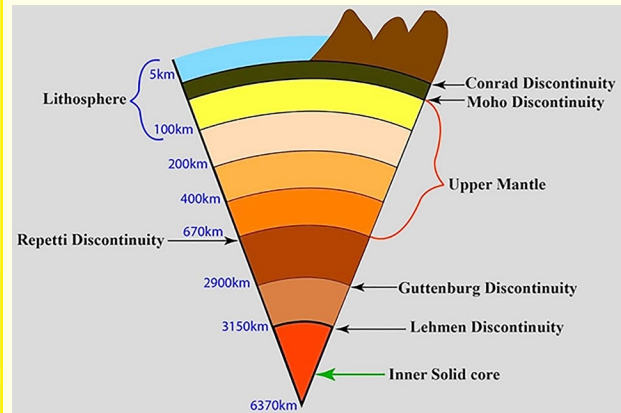
- Between **7,200–8,500°F (4,000–4,700°C).**

➤ **Properties:**

- It is predicted to have **very high thermal and electrical conductivity.**

**What are the Three Layers of Earth?**

- **Crust:** This is the outside layer of the earth and is made of solid rock, mostly basalt and granite.
- **Mantle:** It lies below the crust and is up to 2900 km thick. It consists of hot, dense, iron and magnesium-rich solid rock.
- **Core:** It is the center of the earth and is made up of two parts: the liquid outer core and solid inner core. The outer core is made of nickel, iron and molten rock.



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# Art and Culture

## Highlights

• Jagannath Temple

• Revamping Monument Mitra Scheme

## Jagannath Temple

### Why in News?

Recently, **Odisha Governor Ganeshi Lal** has backed the entry of **foreign nationals inside the world-famous Jagannath Temple** in Puri, wading into a debate that has lasted for decades and periodically triggered controversy.

- Currently, **only Hindus are allowed inside the shrine** to offer prayers to the deities in the **sanctum sanctorum**.
- A sign at the **Lion's Gate (main entrance)** of the Temple clearly states: **"Only Hindus are allowed."**

### Why are Non-Hindus not Allowed in Jagannath Temple?

- It has been the practice for centuries even though there is no clearly articulated reason for it.
- Some historians believe that **multiple attacks on the Temple by Muslim rulers might have led the servitors to impose restrictions** on the entry of non-Hindus.
  - Others have said that this was the practice from the time the **Temple was built**.
- Lord Jagannath is also known as **Patitabapan** which literally means **"saviour of the downtrodden"**.
  - So, it is believed that, all those who are barred from entering the Temple because of religious reasons **get the privilege of a darshan of the Lord in the form of Patitapaban** at the **Lion's Gate**.
- **Example:**
  - In 1984, servitors of the Temple opposed **Indira Gandhi's** entry due to her marriage to a non-Hindu.
  - In 2005, a **Thai princess** was only able to view the Temple from the outside as foreigners are not allowed.
  - Also in 2006, a **Swiss citizen** was denied entry due to her Christian faith despite her large donation.

### What are the Key

### Facts about Jagannath Temple?

- The temple is believed to have been constructed in the 12<sup>th</sup> century by **King Anantavarman Chodaganga Deva** of the Eastern Ganga Dynasty.
- Jagannath Puri temple is called **'Yamanika Tirtha'** where, according to the Hindu beliefs, the power of 'Yama', the **god of death has been nullified in Puri** due to the presence of **Lord Jagannath**.
- This temple was called the **"White Pagoda"** and is a part of **Char Dham pilgrimages** (Badrinath, Dwaraka, Puri, Rameswaram).
- The temple is known for its **unique architecture, which includes a massive compound wall and a large temple complex** with multiple towers, halls, and shrines.
- The temple's main attraction is the **Annual Rath Yatra festival**, in which the three main deities of the temple, **Lord Jagannath, Lord Balabhadra and Devi Subhadra** are taken out in a grand procession on a chariot.
- The temple is also known for its unique food offering, the **Mahaprasad**, which is prepared in the temple kitchen and is distributed among the devotees.



### What are the

### Other Popular Monuments of Odisha?

- **Konark Sun Temple (UNESCO World Heritage Site)**
- **Lingaraja Temple**
- **Tara Tarini Temple**

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## Revamping Monument Mitra Scheme

### Why in News?

Private firms will soon be able to partner with **Archaeological Survey of India** for the upkeep of **1,000 monuments** under the **Monument Mitra Scheme**, which involves adopting and **maintaining heritage sites**.

- Revamped scheme would be based on the **Corporate Social Responsibility** model and a new website having the **names of all the heritage sites**, would also be launched.

### What is the Monument Mitra Scheme?

- **Monument Mitra** is the term coined for an entity partnering with the government under the **'Adopt A Heritage'** project.
    - It was launched under the **Ministry of Tourism** earlier and then transferred to the **Ministry of Culture**.
  - The project aims to **develop monuments, heritage and tourist sites** across India by inviting corporate entities, public sector companies or individuals to 'adopt' them
- What is a Heritage?
- **About:**
    - **Heritage** is deemed to mean those buildings, artefacts, structures, areas and precincts that are of **historic, aesthetic, architectural, ecological or cultural significance**.
      - It must be recognized that the **'cultural landscape'** around a heritage site is **critical for the interpretation of the site** and its built heritage and thus is very much its integral part.
    - The three key concepts that can be considered to determine whether a property can be listed as a Heritage are:
      - **Historic significance**
      - **Historic integrity**
      - **Historic context.**
    - In India, heritage comprises archaeological sites, remains, ruins. The **primary custodian of 'Monuments and Sites'** in the country, i.e. **Archeological Survey of India (ASI)** and their counterparts protect them.

### ➤ Significance:

- **Storytellers of Indian History:** Heritage is a **legacy of physical artefacts and intangible attributes** through the generations that are inherited, preserved, and passed on.
  - Heritage has been woven into the fabric of Indian society with spiritual, religious, social, and political significance.
- **Embracing Diversity:** India heritage is itself a museum of different types, communities, customs, traditions, religions, cultures, beliefs, languages, castes and social systems.
- **Economic Contribution:** Heritage sites in India have significant economic significance.
  - These **sites attract millions of tourists every year, which generates revenue for the government and local communities** through tourism-related activities such as accommodation, transportation, and souvenir sales.

### ➤ Issues Related to Heritage Management in India:

- **Lack of Centralised Database for Heritage Sites:** India lacks a complete national level database with state wise distribution of heritage structure.
    - However, **Indian National Trust for Art & Cultural Heritage (INTACH)** has inventoried about **60,000 buildings in around 150 cities** which is still only the tip of the iceberg.
  - **Heritage Encroachments:** Many ancient monuments have been encroached upon by local residents, shopkeepers, and souvenir sellers.
    - There is **no harmony between these structures and the architectural style of monuments or the surroundings**.
    - For instance, according to the **Comptroller and Auditor-General of India (CAG) Report, 2013**, there was encroachment on the Taj Mahal's premises near Khan-i-Alam's Bagh.
  - **Lack of Human Resource:** Lack of adequate numbers of qualified and competent human resources to look after the monuments and carry out conservation activities is the **biggest problem faced by agencies like ASI**.
- **Other Government Initiatives Related to Heritage Management:**
- **National Mission on Monuments and Antiquities (NMMA), 2007**
  - **Project Mausam**

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### ***How can Heritage Sites in India be Further Revamped?***

- **Smart City, Smart Heritage:** It is necessary to consider the **Heritage Impact Assessment** for all large infrastructure projects.
  - The **Heritage Identification and Conservation Projects** need to be adjoined to the city master plans and integrate with the Smart City Initiative.
- **Innovative Strategies for Increasing Engagement:** The use of monuments that do not attract a large number of visitors and not have cultural/religious sensitivity can serve as **venues for cultural and wedding programmes** that can fulfil twin objective:
  - The promotion of the associated intangible heritage.
  - Increasing visitor numbers to such sites.
- **Linking Heritage Conservation with Climate Action:** Heritage sites can serve as **opportunities for climate communication and education, and research** on historic sites and **practices to understand past responses to changing climate conditions can help adaptation** and mitigation planners develop strategies that integrate natural science and cultural heritage.
  - For example, **coastal and river communities such as the island of Majuli** in India have been living with and adapting to changing water levels for centuries.

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# Security

## Highlights

- Challenges Faced by Chin-Kuki-Mizo Group
- Revival of Village Defence Committees
- IL-38 Aircraft
- AK-203 Rifles

## Challenges Faced by Chin-Kuki-Mizo Group

### Why in News?

Recently, the **Zo Reunification Organisation (ZORO)**, representing the **Chin-Kuki-Mizo communities**, has sought the help from India in ending the “policy of extermination” of **Ethnic Minorities** inhabiting the **Chittagong Hill Tracts (CHT)** of Bangladesh.

- More than 300 people belonging to the Chin-Kuki-Mizo group have taken shelter in Mizoram’s Lawngtlai district since November 2022, following an alleged offensive by the Bangladesh army in collusion with the Arakan Army, a Rohingya Muslim extremist group.

### What are the Issues faced by Chin-Kuki-Mizo Group in Bangladesh?

- The constitutional and human rights of the indigenous **Kuki-Chin tribes**, are being violated in the CHT with impunity under a policy of the Bangladesh army to exterminate them.
- CHT is a 13,000 sq. km hilly and forested area in south-eastern Bangladesh,

bordering India’s Mizoram and Tripura and Myanmar’s Chin and **Rohingya**-inhabited Rakhine States.

- The pre-British CHT had self-governing chiefdoms and chieftaincies. The population of these groups was



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categorised either as the **Khyongtha, tribes who live along the river banks**, or the **Toungtha, tribes who live in the thick jungles of the hills**.

- The tribes remained beyond the realms of Hindu kings and Muslim nawabs, but the annexation of the CHT by the British in 1860 **made them vulnerable to external pressures**.
- The British gave special constitutional status to the CHT to protect the identity, customs, culture, tradition and ancestral land of the tribes. The restrictive laws were, however, repealed by 1903 **to let the dwellers of the plains infiltrate the areas of the highlanders**.
- Contrary to the expectations of the indigenous people, the CHT was merged with Pakistan in 1947, all the indigenous tribes began to face discrimination in all aspects of life.
- While the tribal population of the CHT declined drastically, the government of Bangladesh encroached upon the ancestral land of the indigenous tribes, particularly the Kuki-Chin people, in the name of promoting tourism.

#### **What are their Demands?**

- The Kuki-Chin tribes of the CHT have been demanding a separate State due to the large-scale **influx of non-tribal people into the hills**. But the Bangladesh government chose to step up its oppressive measures.
- The ZORO asked India to advise his Bangladeshi counterpart to declare a ceasefire with the Kuki-Chin National Army (KNA) and stop abusing the rights of the Kuki-Chin people in the CHT.
- The organisation also appealed India to direct the Ministry of Home Affairs and the Border Security Force **not to drive away the Kuki-Chin people who are fleeing Bangladesh** and taking refuge among their "blood-related tribes" in Mizoram.

#### **What is India's Refugee Policy?**

- India lacks **specific legislation to address the problem of refugees**, in spite of their increasing inflow.
- India is not a party to the **1951 Refugee Convention and its 1967 Protocol**, the key legal documents pertaining to refugee protection.
  - However, India has **had a stellar record on the issue of refugee protection**. India has a moral tradition for assimilating foreign people and culture.

- Further, the constitution of India **also respects the life, liberty, and dignity of human beings**.
  - The Supreme Court in the **National Human Rights Commission vs. State of Arunachal Pradesh (1996)** held that "while all rights are available to citizens, persons including foreign citizens are entitled to the right to equality and the right to life, among others."
- Further, **Article 21** of the Constitution encompasses the **right of non-refoulement**.
  - Non-refoulement is the **principle under international law** which states that a person fleeing persecution from his own country **should not be forced to return to his own country**.

#### **What is the Status of Refugees in India?**

- Since its independence, India has accepted various groups of refugees from neighbouring countries, including:
  - **Partition refugees** from Pakistan in 1947.
  - **Tibetan refugees** that arrived in 1959.
  - **Chakma and Hajong** from present day Bangladesh in early 1960s.
    - Other Bangladeshi refugees in 1965 and 1971.
  - **Sri Lankan Tamil refugees** from the 1980s.
  - **Rohingya refugees** from Myanmar.

#### **What is the Current Legislative Framework to Handle Refugees?**

- **Foreigners Act of 1946**: Under Section 3, the Central government is empowered to detect, detain and deport illegal foreign nationals.
- **Passport (Entry into India) Act, 1920**: Under Section 5, authorities can remove an illegal foreigner by force under Article 258(1) of the Constitution of India.
- **Registration of Foreigners Act of 1939**: Under this, there is a mandatory requirement under which all foreign nationals (excluding overseas citizens of India) visiting India on a long-term visa (more than 180 days) is required to register themselves with a Registration Officer within 14 days of arriving in India.
  - Foreign registration was mandated and is regulated by the **Registration of Foreigners Act, 1939 and the Registration of Foreigners Rules, 1992**.
- **Citizenship Act, 1955**: It provided provisions for renunciation, termination, and deprivation of citizenship.

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- Further, **Citizenship Amendment Act, 2019 (CAA)** seeks to provide citizenship only to Hindu, Christian, Jain, Parsi, Sikh, and Buddhist immigrants persecuted in Bangladesh, Pakistan, and Afghanistan.

## Revival of Village Defence Committees

### Why in News?

**Lieutenant Governor** of the Jammu and Kashmir declared to revive **Village Defence Committees (VDC)** amid recent militant attacks.

### What are Village Defence Committees (VDC)?

- **About:**
  - The VDC were set up in the mid - 1990s as a **force multiplier against militant attacks**.
  - Its aim was to **provide residents of remote hilly villages with weapons** and give them arms training to defend themselves.
- **Need to Setup VDCs:**
  - The **militancy that began in Kashmir** in the early 1990s had spread to the adjoining **Doda district by mid 1990s**.
    - The demand for **arming the civilian population first rose after the massacre of 13 people in Kishtwar in 1993**.
  - The **Home Ministry in 1995 decided to set up the VDCs**. Later, the scheme was expanded to other areas of the Jammu division as militants extended their activities to **Udhampur, Reasi, Rajouri, Poonch, Kathua and Samba districts**.
- **Contribution:**
  - During the peak of militancy in most parts of Jammu division, especially areas falling in **Chenab Valley and Pir Panjal regions**, the hills of Udhampur, and Reasi and Kathua districts, the **VDCs played a significant role in combating militancy**.
    - They were the **most-feared armed groups** among militants in areas where **poor road networks delayed the arrival of security forces**.
  - The **villagers, well-versed with the local topography**, averted many militant attacks and helped in their capture and killings.
- **Issues Associated:**

- Along with the successes, the **VDCs also faced allegations of human rights violations** and other crimes, including murder, rape and extortions.

### Recent Developments:

- The VDCs have now been renamed as **Village Defence Guards (VDG)**. The new scheme to set up VDGs in vulnerable areas of J&K was approved by the **Union Ministry of Home Affairs** in **March 2022**.
- The VDGs will function under the direction of the Senior superintendent of police (**SSP**)/**superintendent of police (SP)** of the district concerned.
- **Similarities and Differences in VDC and VDG:**
  - **Similarity:** Like a VDC member, each **VDG** will be provided a **gun and 100 rounds of ammunition**.
  - **Difference:** Under the new scheme, the persons leading the **VDGs will be paid Rs 4,500 per month by the government**, while others will get Rs 4,000 each.
- In the VDCs, only the **Special Police Officers (SPOs)** leading them were provided a remuneration of **Rs 1,500 monthly**.

## IL-38 Aircraft

### Why in News?

**Indian Navy's IL-38 Aircraft** will take part in the **74<sup>th</sup> Republic Day** celebrations at the **Kartavya Path** for the first time and perhaps the last time.

- It will be among the **50 aircraft including 9 Rafales of the Indian Air Force**- will take part in the event.



### What is an IL-38 Aircraft?

- IL-38 is a **maritime reconnaissance aircraft** that was commissioned into the Indian Navy in 1977 and remained a **formidable air asset** throughout its service life for nearly **44 years**.

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- It was with the induction of IL 38 aircraft that the Navy moved into the arena of airborne Long Range Maritime Reconnaissance (LRMR) combined with long range anti-submarine search and strike, anti-shipping strike, electronic signal intelligence and distant SAR.
- The IL 38 is an all-weather aircraft with long endurance and substantial operating range. Having clocked nearly 10,000 hours of operational flying.

## AK-203 Rifles

### Why in News?

India and Russia have begun the joint production of AK 203 rifles at a factory in Amethi, Uttar Pradesh.

- India and Russia had inked an agreement in December 2021 for procurement of 6,01,427 AK 203 assault rifles through Korwa Ordnance Factory in Uttar Pradesh's Amethi district.

### What are the Key Points of Joint Contract?

**A Defence Upgrade**

Korwa Rifle Factory in Amethi being upgraded to manufacture latest version of the Kalashnikov rifles

After multiple hurdles like payment issues over western sanctions and a complicated technology transfer agreement, the JV is back on track and equipment to make the rifles will be sent in two stages, officials said

Kalashnikov has delivered a batch of 70,000 AK-203 assault rifles made in Russia as part of the larger order

₹5,124-crore deal was signed between India and Russia last December

- More than six lakh rifles are to be manufactured in India as part of a joint venture — Indo-Russia Rifles Private Limited — established between the Indian Ordnance Factory Board (OFB), Kalashnikov Concern, and Rosoboronexport, (both subsidiaries of the Rostec State Corporation).
- The Rs 5,124 crore deal was signed between India and Russia in December 2021.
  - It is the biggest defence deal between the two nations in recent years. The deal has a clause for complete technology transfer. The rifles will also be exported to friendly foreign nations.
- The idea is to have rifles made of 100 % indigenous components over a period of 128 months.

### What is an AK 203 Rifle?

- AK-203 assault rifle is considered to be the latest and most advanced version of the AK-47 rifle.
- It is a 7.62×39mm variant from the AK-100 rifle family (one that offers the AK-74M system, in multiple cartridges and lengths).
- It is expected to replace the Indian Small Arms System (INSAS) 5.56×45 mm assault rifle, which are presently being used by Army, Navy and the Air Force besides other security forces.
- INSAS rifles are not suitable for use at high altitude. Several other issues with these rifles include gun jamming, oil leakage etc.

### How has Indo-Russia

### Defence and Security Relations been?

- India-Russia military-technical cooperation has evolved from a buyer-seller framework to one involving joint research, development and production of advanced defence technologies and systems.
- Both countries regularly conduct the Tri-Services exercise 'INDRA'.
- The joint programmes between India and Russia include:
  - BrahMos cruise missile programme
  - 5th generation fighter jet programme
  - Sukhoi Su-30MKI programme
  - Ilyushin/HAL Tactical Transport Aircraft
  - KA-226T twin-engine utility helicopters
- The military hardware purchased/leased by India from Russia includes:
  - S-400 Triumf
  - Kamov Ka-226 200 to be made in India under the Make in India initiative
  - T-90S Bhishma
  - INS Vikramaditya aircraft carrier programme
- Russia also plays a very important role in assisting the Indian Navy with its submarine programmes:
  - Indian Navy's first submarine, 'Foxtrot Class' came from Russia.
  - India is dependent on Russia for its nuclear submarine programme.
  - INS Vikramaditya, the sole aircraft carrier operated by India, is also Russian in origin.

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# Ethics

## Highlights

- ChatGPT and Associated Ethical Concerns
- Ideals of Mahatma Gandhi
- SC Eases Norms for Passive Euthanasia

## ChatGPT and Associated Ethical Concerns

### Why in News?

Recently, **OpenAI** (AI research and deployment company) opened its most recent and powerful **AI chatbot, ChatGPT**, to users to test its capability.

### What is ChatGPT?

- **About:**
  - ChatGPT is a variant of **GPT (Generative Pre-trained Transformer)** which is a **large-scale neural network-based language model developed by OpenAI**.
  - GPT models are trained on vast amounts of **text data** to generate **human-like text**.
  - It can generate responses to a wide range of topics, such as **answering questions, providing explanations, and engaging in conversations**.
  - In addition to being able to **“admit its mistakes, challenge false premises, and refuse unsuitable requests,”** the ChatGPT can also **“answer follow-up questions.”**
  - The chatbot was also trained using **Reinforcement Learning from Human Feedback (RLHF)**.
- **Limitations:**
  - The chatbot displayed clear **racial and sexist biases**, which remains a problem with almost all AI models.
  - The chatbot gives answers which are grammatically correct and read well— though some have pointed out that these **lack context and substance**, which is largely true.
  - ChatGPT occasionally produces **inaccurate information** and that **its knowledge is restricted to global events that occurred before 2021**.

### What are the Ethical Concerns Associated with It?

- **Malicious and Dangerous Coding:** Some users have been experimenting with the **chatbot’s potential** to carry out **malicious actions**. It has been claimed by several users that **malicious and dangerous coding** is generated by the **Chatbot** despite their **claims to be amateurs**.
- **Generation of Phishing Email:** ChatGPT is set up to reject requests to write **phishing emails or malicious code** but in actual sense **ChatGPT** is producing an outstanding **phishing email**.
- **Creation of Biased Data/information:** One concern is the **potential for bias in the generated code**, as the training data used to create the **code generator** may contain biases that are reflected in the generated code.
- **Curtailling the Job Opportunity:** There is a concern that the use of code generators could lead to the **loss of jobs for human programmers**.
- **Plagiarism Chokepoint:** Plagiarism in academics is not a **new issue**, but **ChatGPT** has altered how **AI** is utilized to produce **original writing**. It is difficult to identify **plagiarized** information as a result. Teachers and academicians have also expressed concerns over ChatGPT’s impact on written assignments.

## Ideals of Mahatma Gandhi

### Why in News?

The Nation pays tribute to **Mahatma Gandhi** on his **75<sup>th</sup> death anniversary** on 30th January 2023. The day is also observed as **Martyrs’ Day**.

### What are the Major Gandhian Ideologies?

- **Vision for India:** Gandhi’s vision for India went beyond **political independence** from colonial rule.

Note:



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- He aimed for **social emancipation, economic empowerment, and a shared sense of solidarity** across different language, religion, and cultural backgrounds.
- **Non-violence:** Gandhi was a **strong advocate of non-violence** and believed that it was the most powerful weapon in the struggle for justice and freedom.
  - He also believed that non-violence should be a way of life, not just a political strategy, and that it would lead to **lasting peace and social harmony**.
  - Gandhi was a leader who inspired and empowered the people through **love and compassion**.
- **Against Discrimination:** Gandhi travelled all over India and saw the different cultural parts of the country. He brought people together by **highlighting the common things that united them**, like their faith.
  - Gandhi strongly believed in treating everyone equally, regardless of religion or caste. He was **against discrimination and the practice of untouchability**.
- **Secular Outlook:** Gandhi was a Hindu but believed in a **secular India**, where all religions could exist peacefully together. He was very upset about the partition of India, which was based on religion.
  - Today, **it is important to remember Gandhi's values of peace, inclusiveness, and harmony** as these values are still relevant.
- **Communal Harmony:** Gandhi was a firm believer in the unity of all communities and worked tirelessly to promote communal harmony.
  - He believed that **India's strength lay in its diversity and that this diversity should be celebrated, not feared**.
  - He was deeply troubled by the **Hindu-Muslim divide** and worked to bring the two communities together.
- **Self-Reliance:** Gandhi believed in the **importance of self-reliance** and encouraged Indians to become **self-sufficient in as many ways as possible**.
  - He **encouraged the use of local resources** and traditional skills and the development of cottage industries.
  - He also believed that the **people of India should take responsibility for their own development** and not rely on external support.

### What is the Relevance of Gandhiji in Today's Context?

- The ideals of **truth and nonviolence**, which underpin the whole philosophy, are relevant to all humankind, and are considered as universal by the Gandhians.
  - More than ever before, Mahatma Gandhi's teachings are valid today, when **people are trying to find solutions to the rampant greed, widespread violence, and runaway consumptive style of living**.
- The Gandhian technique of mobilising people has been successfully employed by many oppressed societies around the world under the leadership of people like **Martin Luther King in the United States, Nelson Mandela in South Africa, and Aung San Suu Kyi in Myanmar**, which is an eloquent testimony to the continuing relevance of Mahatma Gandhi.
- The **Dalai Lama** said, **"We have a big war going on today between world peace and world war, between the force of mind and the force of materialism, between democracy and totalitarianism."** It is precisely to fight these big wars that the Gandhian philosophy needed in contemporary times.

## SC Eases Norms for Passive Euthanasia

### Why in News?

The **Supreme Court in India** has made changes to the rules for **passive euthanasia** with the primary objective to make the process **less difficult and less time-consuming**.

### What are the Major Changes in Guidelines?

- The Supreme Court tweaked the previous judgement to do away with the **necessity of a judicial magistrate** to attest or countersign a living will.
  - SC held that an **attestation by a notary or a gazetted officer** would be **sufficient for a person to make a valid living will**.
- Instead of the living being in the custody of the district court concerned, SC said that the document will be a part of the **National Health Digital Record** which can be accessed by hospitals and doctors from any part of the country.

Note:



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# EUTHANASIA

## ABOUT

- The practice of an individual deliberately ending their life; to get relief from an incurable condition/intolerable pain

## ACTIVE EUTHANASIA

- An active intervention to end a person's life with substances or external force, (e.g. - by a lethal injection)

## PASSIVE EUTHANASIA (PE)

- Withdrawing essential life support/treatment keeping a terminally ill person alive

## ARGUMENTS FOR

- Patient's freedom of choice
- Right to die with dignity
- More humane to end the suffering
- Shortens the grief of patient's loved ones

## ARGUMENTS AGAINST

- Unacceptable from moral, religious perspectives
- Euthanasia cannot be properly regulated
- Guilt-ridden patients may feel bound to give consent

## EUTHANASIA - LEGALITY IN INDIA

### P RATHINAM V UNION OF INDIA (1994)

- SC challenged the constitutional validity of IPC Section 309 (penalty for attempt to suicide)

### SMT. GIAN KAUR VS THE STATE OF PUNJAB (1996)

- SC overturned its 1994 judgement and held that Right to Life (Article 21) did not include the Right to Die (which must **not be mistaken with Right to Die with Dignity**)

### ARUNA RAMCHANDRA SHANBAUG V UNION OF INDIA (2011)

- SC allowed PE for Aruna Shanbaug and made a distinction between 'active' and 'passive', and allowed the latter in "certain situations"

### COMMON CAUSE V UNION OF INDIA & ANR. (2018)

- SC legalised Passive Euthanasia claiming it contingent upon the person having a '**living will**'
- If a person does not have a living will, his/her family members can make a plea before the HC to seek permission for PE

*Recently, the SC has agreed to significantly ease the procedure for passive euthanasia by altering the existing guidelines for 'living wills' (laid down in 2018 case)*

Note:



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- If the **hospital's medical board denies permission** to withdraw medical treatment, the **family members of the patient can approach the relevant high court**, which forms a fresh board of medical experts to enable the court to take a final call.

THE CHANGES BROUGHT		
	NOW	EARLIER
<b>Living will</b>	An attestation by a notary or a Gazetted officer to be sufficient for a living will	It was necessary that a judicial magistrate attest or countersign a living will
<b>Access to the living will</b>	Living will a part of national health record which can be accessed by Indian hospitals	Living will was kept in the custody of the district court concerned
<b>Primary board to examine patient's condition</b>	Three doctors, including treating physician and two other doctors with five years of experience in the specialty, will comprise the primary board of doctors	Primary board of doctors needs at least four experts from general medicine, cardiology, neurology, nephrology, psychiatry or oncology with overall standing of at least 20 years
<b>Time taken to decide</b>	Primary/secondary board to decide within 48 hours on withdrawal of further treatment	The 2018 judgment did not specify any outer limit on withdrawal of treatment
<b>Secondary board</b>	Hospital must immediately constitute a secondary board of medical experts	The district collector had to constitute the second board of medical experts

### What is Passive Euthanasia?

- **About:**
  - **Passive euthanasia** is the act of **withholding or withdrawing medical treatment**, such as withholding or withdrawing life support, with the **intention of allowing a person to die**.
    - This is in contrast to **active euthanasia**, which involves an active intervention to **end a person's life with substances or external force**, such as administering a lethal injection.

### Euthanasia in India:

- In a landmark judgement, the **Supreme Court of India** legalised passive euthanasia in 2018, stating that it was a **matter of 'living will'**.
- According to the judgement, **an adult in his conscious mind** is permitted to **refuse medical treatment or voluntarily decide not to take medical treatment** to embrace death in a natural way, under certain conditions.
  - It also laid down **guidelines for 'living will' made by terminally ill patients** who beforehand know about their chances of slipping into a permanent vegetative state.
- The court specifically stated that **"Dignity in the process of dying is as much a part of the right to life under Article 21"**. To deprive an individual of dignity towards the end of life is to deprive the individual of a meaningful existence."

### Different Countries with Euthanasia:

- **Netherland, Luxembourg, Belgium** allows both euthanasia and assisted suicide for anyone who faces "unbearable suffering" that has no chance of improvement.
- **Switzerland** bans euthanasia but allows assisted dying in the presence of a doctor or physician.
- **Canada** had announced that euthanasia and assisted dying would be allowed for mentally ill patients by March 2023; however, the decision has been widely criticised, and the move may be delayed.
- **United States** has different laws in different states. Euthanasia is allowed in some states like Washington, Oregon, and Montana.



Note:



# Miscellaneous

## Highlights

- Joshimath Land Subsidence
- Kashmiri Pashmina Shawl
- Bharat Parv 2023

## Joshimath Land Subsidence



**JOSHIMATH LAND SUBSIDENCE**

Recent satellite images have shown rapid sinking of Joshimath; 5.4cm in just 12 days (27 Dec'22 to 8 Jan'23)

**LAND SUBSIDENCE**

- Subsidence is the **sinking of the ground** because of **underground material movement**.
- Causes:** (Man-made + Natural) Removal of water/oil/natural resources, mining activities, earthquakes, soil erosion, soil compaction, sinkhole formation etc.

**JOSHIMATH**

**About**

- Located on the **Rishikesh-Badrinath National Highway (NH-7)** (Uttarakhand)
- Falls in seismic **Zone-V**

**Religious Importance**

- Key **transit point for tourists** travelling to **Badrinath** and **Hemkund Sahib**
- Home to 1 of the 4 **cardinal maths/monasteries** established by **Adi Shankara**

**Strategic Importance**

- One of the most important **cantonments** of **Indian Army**

**Possible Causes Of Sinking**

- Joshimath **built on ancient landslide material** and not on main rock
- Reactivation of a **geographic fault** (fracture(s) b/w 2 blocks of rock)
- Unplanned construction**
- Obstruction of natural water flow**
- Hydel power activities**

**Expert Recommendations**

- Complete shutdown** of **development and hydropower projects** in the region
- Redevelopment of **drainage planning**
- Relocation** of residents to a safer place
- Re-forestation** to help retain soil capacity
- Better coordination** – govt – civil bodies – Border Roads Organisation

*The MC Mishra Committee Report (1976) first warned about Joshimath, pointing to the unplanned development in the already vulnerable area.*



## Bharat Parv 2023

### Why in News?

Government of India is organising the **six-day mega event "Bharat Parv"** event from **January 26-31, 2023**, as part of the **Republic Day** celebrations.

- **Bharat Parv** started in **2016** and has been held annually at the lawns and Gyan Path in front of Red Fort until 2020. **In 2021**, it was held virtually.

### What are the Key Points Related to Bharat Parv?

- The **Ministry of Tourism** has been designated as the **nodal ministry** for the event.
  - The event includes a **food festival**, a **handicraft mela**, **folk and tribal dance performances**, **cultural troupe performances**, a display of **Republic Day tableaux**, and the **illumination of the Red Fort**, among other things.

Note:



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- Branding and promotion of **Dekho Apna Desh, Ek Bharat Shreshtha Bharat, G20 and Mission LIFE** would be undertaken during the event.
- The program is a way to **celebrate India's unity in diversity** and to make India a hub of civilization, culture, spirituality and inheritance in the next 25 years of Amrit Kaal.
- The event is also promoting **Vocal for Local motto** as many artisans across the country are also taking part in this.

➤ **Note:**

- **Dekho Apna Desh:** The Ministry of Tourism launched the 'Dekho Apna Desh' initiative in January 2020 with the objective of creating awareness among the citizens about the rich heritage and culture of the country and **encouraging citizens to travel within the country.**
- **Ek Bharat Shreshtha Bharat:** It was launched in 2015 to promote engagement amongst the people of different States/UTs so as to enhance mutual understanding and **bonding between people of diverse cultures**, thereby securing stronger **unity and integrity of India.**
- **G20:** India has assumed the charge of the **G20 presidency.**
  - The **G20 was formed in 1999 in the backdrop of the financial crisis** of the late 1990s that **hit East Asia and Southeast Asia** in particular. It aims to secure global financial stability by involving middle-income countries.
- **LiFE:** The idea of LiFE was introduced by India during the **26th United Nations Climate Change Conference of the Parties (COP26)** in Glasgow in 2021.
  - The **idea promotes an environmentally conscious lifestyle** that focuses on 'mindful and deliberate utilisation' instead of 'mindless and wasteful consumption.

## Kashmiri Pashmina Shawl

### **Why in News?**

Kashmir's famed pashmina shawls, known for centuries for their signature intricate buta or paisley patterns, **got a French touch.**

- The transformation, where Kashmiri shawls were adorned with abstract paintings rather than intricate embroidery, has **re-introduced the fabric with new-age aesthetics.**

### **What is Pashmina?**

➤ **About:**

- Pashmina is a **Geographical Indication (GI)** certified wool that has its origin from **Kashmir region of India.**
  - Originally Kashmiri people used Pashmina shawls to **keep themselves warm during the winter season.**
- The term 'Pashmina' has been derived from a **Persian word "Pashm" meaning a weavable fiber** precisely wool.
- Pashmina Shawls are very costly **due to their fine quality of wool** and the hard work involved in making one single piece.
  - Weaving a single Pashmina Shawl takes a long time depending on the type of work involved. It generally takes around 72 hours or more to complete one shawl.

➤ **Source:**

- The wool that is used in weaving the Pashmina Shawl is obtained from the **Changthangi goats (Capra Hircus) domesticated in Ladakh** by the Changpa tribes.
  - The Changpa are semi-nomadic community which inhabit Changthang (which is spread across Ladakh and Tibet Autonomous Region) or other regions of Ladakh.
  - The Changpa were classified as a Scheduled Tribe under the Indian Government's affirmative action reservation program.

➤ **Significance:**

- Pashmina is one of the **finest and highest quality wool in the whole world.**
- Pashmina Shawl attracted the attention of people from all across the world and hence this became one of most demanding shawls in the whole world.
  - Its high demand boosted the local economy.



Note:



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# Rapid Fire Current Affairs

## Highlights

- 5<sup>th</sup> Khelo India Youth Games
- India won U19 Women's T20 World Cup
- Oldest Known Caecilian Fossil Discovered
- Record Global Investments in Clean Energy Technology
- Mughal Gardens Renamed as Amrit Udyan
- India's Newest Butterfly
- Polar Vortex
- Tensions Rebuild at Gaza
- Maiden Exercise Veer Guardian
- Simlipal National Park Becomes Hunting Ground
- Short Selling
- Himachal Pradesh Statehood Day
- History of Republic Day and 26 January
- Kuno Cheetah Detected with Hepatorenal Infection
- T+1 Settlement
- Water Hyacinth Invasion in Sankhya Sagar
- Ops Alert Exercise
- TROPEX 2023
- National Girl Child Day
- Norovirus
- Medical Termination of Pregnancy (Amendment) Act 2021
- Changes in Global Gender Gap Report Criteria
- Subhash Chandra Bose Aapda Prabandhan Puraskar 2023
- Statehood Day of Manipur, Tripura and Meghalaya
- Additional Tier-1 Bonds
- Leopard 2 Tank
- PM-KISAN handout may rise to Rs. 8000
- MoU Between IREDA & MNRE
- Caste Census in Bihar
- Hakku Patra
- Caller Name Presentation (CNAP)
- National Disaster Response Force (NDRF)
- SC Refuses to Entertain Plea on Google-CCI Issue
- Sansad Khel Mahakumbh 2022-23
- Pankaj Kumar Singh appointed as Deputy NSA
- GMRT Detects Atomic Hydrogen
- AI-AQMS v1.0 for Air Quality Monitoring
- Biosensing based EDC Detection System
- Loan Loss Provision
- India's 75th Army Day
- Avalanches
- Business Confidence Index
- Invasive Tree Species
- SPIC MACAY
- VARUNA
- Thiruvalluvar Day
- The Population of Saltwater Crocodiles
- UNSC 1267 Committee
- IT Amendment Rules 2022
- Windfall Tax
- Saudi and Houthis Rebels Revive Talks

## 5<sup>th</sup> Khelo India Youth Games

The Union Minister of Sports and Youth Affairs inaugurated the **5<sup>th</sup> edition of Khelo India Youth Games 2022 in Madhya Pradesh** at the **Tatya Tope Nagar Stadium** (Bhopal).

Around **6000 players from across the country** will try their sports skills for more than **900 medals** in **27 sports events** of these games. **For the first time** sports like **kayaking, canoeing, canoe slalom and fencing** will be part of the Khelo India Youth Games.

The **theme** for this edition is - '**Hindustan Ka Dil Dhadka Do**'.

The Khelo India Youth Games was **started in 2018** under the name **Khelo India School Games**. The aim of these games is to **find and groom sports talents at the local level** and train them for national and international sports events.

India's **sports budget has also been increased to Rs. 2000 crores** and in the next 5 years, a budget of **Rs. 3200 crores** will be given for Khelo India.

**Read More - [Khelo India Youth Games \(KYIG\)](#)**

Note:

## India won U19 Women's T20 World Cup

The Indian Under-19 women's cricket team created a new history on January 29, 2023 by becoming the first champions of the ICC U-19 T20 Women's World Cup. The team was led by Shafali Verma.

This victory is significant because it is the first time that the Indian women's team has won the World Cup title. In the past, the senior Indian women's team has reached the finals of the T20 and 50 over World Cups. With 36 balls to spare, the Indian team defeated the England women's team by 7 wickets in the final. The Prime Minister of India congratulated the team and BCCI General Secretary Jai Shah announced a reward of Rs. 5,00,00,000.

**Read More - Issues Faced by Females in Sports**

## Oldest Known Caecilian Fossil Discovered

A team of palaeontologists from the US have discovered the first 'unmistakeable' Triassic-era (about 250-200 MYA) caecilian fossil that could help fill an 87 million-year gap in the historical record of caecilians having amphibian-like structure (no fossils have been found before). The fossil has been named *Funcusvermis gilmorei*.



These Caecilian fossils are the **oldest-discovered** and extend the record of the small mammal by roughly 35 million years. **Before this discovery, only 10 caecilian fossil occurrences had been discovered**, dating back to the **early Jurassic** period (~183 MYA).

**Modern-day caecilians are amphibians with no limbs and cylindrical bodies with compact "bullet-shaped" skulls**

that let them burrow underground. They spend their lives burrowing in leaf litter or soil, searching for prey like worms and insects.

The **Triassic Period** is the first period of the **Mesozoic Era** which marked the beginning of major changes; distribution of continents, evolution of life etc. At the beginning of the Triassic, **only the supercontinent - Pangea existed; at the end of the Triassic, however, plate tectonic activity picked up.**

**Read More - Triassic Mass Extinction**

## Record Global Investments in Clean Energy Technology

According to BloombergNEF, **for the very first time in history, investment in low-carbon energy technologies worldwide was equal to money spent on fossil fuels.** BloombergNEF is a global strategic research service provider.

The amount of investment in cleaner energy technology in 2022 was **USD 1.1 trillion - a 31% (of USD 261 billion) growth from 2021.** However, the investment in fossil fuels was also simultaneously up USD 214 billion over 2021 levels.

The trillion-dollar investment in energy transition included **renewables** (solar, wind, nuclear), **storage, charging infrastructure, hydrogen production, carbon capture** (& utilisation & storage) and technology such as **small-scale solar, heat pumps, and zero-emission vehicles.**

**China is still the leading manufacturer of low-carbon technologies.** It attracted over half of the trillion-dollar investment at USD 546 billion, **followed by the EU** at USD 180 billion **and the US** at USD 141 billion.

**Read More - Towards Green Energy Transition**

## Mughal Gardens Renamed as Amrit Udyan

In keeping with the theme of **Azadi ka Amrit Mahotsav**, the Government of India recently renamed the **Mughal Gardens at Rashtrapati Bhavan** as '**Amrit Udyan**'.

Mughal Gardens or now, Amrit Udyan, **draw inspiration from the Mughal Gardens of Jammu & Kashmir**, the gardens around the Taj Mahal and **miniature paintings of India and Persia.**

Note:



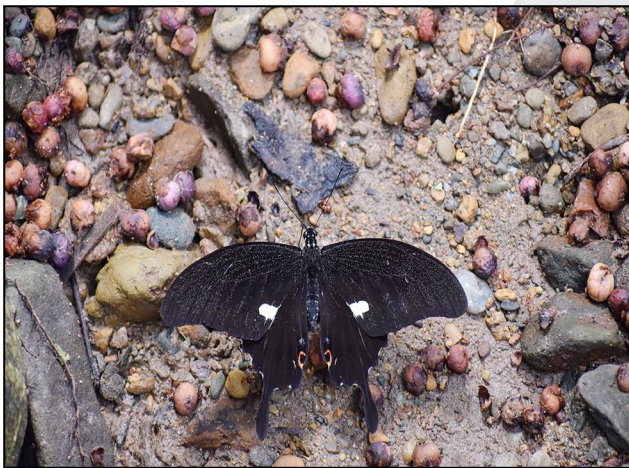
The design of Mughal Gardens was **finalised by Sir Edwin Lutyens in 1917** in **collaboration with William Mustoe**, Director of Horticulture.

These gardens were **never officially named Mughal Gardens**; rather, came to be known so owing to the style of architecture - influenced by the Persian gardens, particularly the **Charbagh structure**. Afghanistan, Bangladesh, India, and Pakistan have a number of Mughal gardens.

Mughals were known to appreciate gardens; *Babur Nama* mentions Babur's favourite kind of garden - Persian **Charbagh style** which was intended to create a representation of an earthly utopia – *jannat*.

**Read More - Mughal Architecture, Azadi ka Amrit Mahotsav**

## India's Newest Butterfly



A **swallowtail butterfly** disappearing from its previously known ranges from **Myanmar** and **southern China** to **Vietnam** has been recorded for the first time in India.

The butterfly is "**extremely rare**" **Noble's Helen** (*Papilio noblei*), identified from three locations in the **Namdapha National Park** (Arunachal Pradesh).

Noble's Helen is also found in Thailand, Laos and Cambodia.

Butterflies are considered vital indicators representing the state of biodiversity and key ecosystem functions.

**Note** - Arunachal Pradesh also has a **state butterfly** - **Kaiser-i-Hind**.

**Read More - Namdapha National Park, White Tufted Royal Butterfly** (another rare butterfly found in India)

## Polar Vortex

According to scientists, the **extremely cold weather** that Asia is witnessing is **largely the result of what is called a Polar Vortex**. The term refers to an **expanse of cold air that generally circles the Arctic** but **occasionally shifts south** from the North Pole.

The term "**vortex**" refers to the **counterclockwise flow of air** that helps keep the colder air near the Poles. It **always exists near the poles** but **weakens in summer** and **strengthens in winter**.

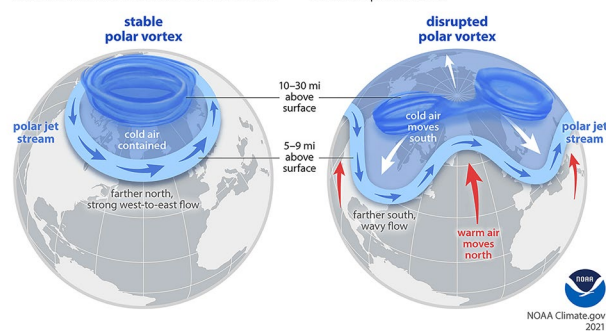
Although there is a lack of consensus, it is believed that **with a warming planet, shifts in the polar vortex are likely to become more frequent** and pronounced.

### Understanding the polar vortex

The Arctic polar vortex is a strong band of winds in the stratosphere, surrounding the North Pole 10–30 miles above the surface.

The polar vortex is far above and typically does not interact with the polar jet stream, the flow of winds in the troposphere 5–9 miles above the surface. But when the polar vortex is especially strong and stable, the jet stream stays farther north and has fewer "kinks." This keeps cold air contained over the Arctic and the mid-latitudes warmer than usual.

Every other year or so, the Arctic polar vortex dramatically weakens. The vortex can be pushed off the pole or split into two. Sometimes the polar jet stream mirrors this stratospheric upheaval, becoming weaker or wavy. At the surface, cold air is pushed southward to the mid-latitudes, and warm air is drawn up into the Arctic.



**Read More - Polar Vortex**

## Tensions Rebuild at Gaza

Recently, the Gaza militants fired rockets and Israel carried out airstrikes as tensions soared **following an Israeli raid in the occupied West Bank** killing 9 Palestinians, mostly militants. It was the **deadliest single raid in the territory in over two decades**.

Israel and Hamas have fought four wars and several smaller skirmishes since the militant group seized power in Gaza from rival Palestinian forces in 2007. However, tensions have soared since **Israel stepped up raids in the West Bank in 2022**, following a series of Palestinian attacks; nearly 150 Palestinians were killed in the West Bank and east Jerusalem last year, making **2022 the deadliest in those territories since 2004**.

Note:



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Read More - [Israel-Palestine Conflict](#)

## Maiden Exercise Veer Guardian

The inaugural edition of the bilateral air exercise ‘**Veer Guardian 2023**’ between the Indian Air Force (IAF) and Japan Air Self Defence Force (JASDF) concluded recently in Japan. This is **Indo-Japan’s maiden bilateral air exercise**.

The **IAF contingent participated in the exercise with the Su-30 MKI aircraft** complemented by one IL-78 Flight Refuelling Aircraft and two C-17 Globemaster strategic airlift transport aircrafts.

The other exercises that India conducts with Japan include – **Dharma Guardian (Military)**, **JIMEX (naval)**, **SHINYUU Maitri (air force)** and **Malabar** (along with Australia and the US).

It was also the **first time when an IAF woman fighter pilot was a part** of the Indian contingent for aerial wargames in a foreign land.

Read More - [India-Japan Relations, Exercise Dharma Guardian](#)

## Similipal National Park Becomes Hunting Ground

**Similipal National Park (SNP)** in Odisha’s Mayurbhanj district has turned out to be the hunting ground for animal poachers over the last few years. Since 2019, it has witnessed **11 elephant deaths - hunted mainly for ivory** (elephants are protected under **Schedule 1 of the Wildlife Protection Act, 1972**).

Similipal derives its name from ‘**Simul**’ (silk cotton) **tree**. It is part of the Similipal-Kuldiha-Hadgarh Elephant Reserve popularly known as **Mayurbhanj Elephant Reserve**.

It was formally **designated a tiger reserve in 1956** and brought under **Project Tiger** in the year 1973 and **declared a biosphere reserve** by the Government of India in **June 1994**. It is also a part of the **UNESCO World Network of Biosphere Reserve** since 2009.

Read More - [Similipal Biosphere Reserve](#)

## Short Selling

“**Buy low, sell high**” is the traditional investment strategy in which **one buys a stock/security at a particular price and then sells it** when the price is higher, thereby making a profit. This is referred to as a “**long position**” and is **based on the view that the price of the stock or security will appreciate with time**.

**Short selling, or shorting**, on the other hand, is a trading strategy **based on the expectation that the price of the security will fall**. While fundamentally it is based on the “**buy low, sell high**” approach, the **sequence of transactions is reversed** in short selling — to **sell high first and buy low later**. Also, in short selling, the **trader usually does not own the securities** he sells, but merely borrows them.

## Himachal Pradesh Statehood Day

On **25<sup>th</sup> January**, Himachal Pradesh observed its Statehood Day.

Before independence, the **British territories in the hill came under the British Crown** after Queen Victoria’s proclamation of 1858 and **virtually all rulers of the hill states remained loyal and contributed to the British war effort** in WW-1 (1914-18).

Note:



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Post-independence, the **Chief Commissioner's province of HP** came into being on 15th April 1948. It became a **part C state (under Part VII)** on 26th January 1950. After recommendation of the **State Reorganisation Commission**, **HP became Union Territory** on 1st November 1956. Kangra and most of the other hill areas of Punjab were merged with HP on 1st November 1966 though its status remained that of a UT.

On 18th December 1970 the **State of Himachal Pradesh Act** was passed by Parliament and **HP became the 18th state of the Indian Union** on 25th January 1971.

Himachal Pradesh	
State Animal:	Snow Leopard
State Bird:	Western Tragopan
State Flower:	Pink Rhododendron
State Language:	Hindi & Local Dialects
Major Rivers and Dams:	Sutlej (Bhakra Dam, Gobind Sagar reservoir, Koldam Dam), Beas (Pandoh Dam, Maharana Pratap Sagar Reservoir), Ravi (Chamera Dam), Parbati
Major Lakes:	Renuka, Rewalsar, Khajjar, Dal, Beas Kund, Dasaur, Brighu, Prashar, Mani Mahesh, Chander Tal, Suraj Tal, Kareri, Sreolsar, Gobind Sagar, Nako
National Parks	Great Himalayan National Park, Pin Valley National Park, Khirganga, Inderkila, Simbalbara

Read More - [Statehood Day of Himachal Pradesh](#)

## History of Republic Day and 26 January

The **Constitution of India** was adopted officially by the Constituent Assembly on **Nov 26, 1949**, however, Republic Day is celebrated on 26 January. It is so because on 26/Jan/1930, the **historic "Poorna Swaraj" declaration was officially promulgated**, beginning the final phase of India's freedom struggle where the goal would be complete independence from British rule.

Opposing the **Motilal Nehru report 1927** which demanded for a **dominion status**, young leaders such as **SC Bose and JL Nehru wanted complete independence** for India. On 19 Dec 1929, "**Poorna Swaraj**" resolution was passed at the **Lahore session of INC** and officially

promulgated on 26 Jan 1930. From 1930 till India finally won its independence in 1947, **January 26 was celebrated as "Independence Day"**.

Thus, when leaders had to decide on a day to promulgate India's new Constitution, January 26 was thought to be ideal.

Read More - [Republic Day 2022](#)

## Kuno Cheetah Detected with Hepatorenal Infection

One of the 8 cheetahs that were introduced in **Kuno National Park (MP)** has been detected with a hepatorenal infection. **Hepatorenal Infection** is a condition in which there is **progressive kidney failure that occurs in a patient with poor functioning of the liver**.

In September 2022, 8 Cheetahs were **relocated from South Africa and Namibia** into the wild at Kuno Palpur National Park. It was the **world's first inter-continental large wild carnivore translocation project**.

Read More - [Reintroduction of Cheetah](#)

## T+1 Settlement

Indian stock markets have embarked on a **shorter settlement cycle or T+1 regime** for the final list of large stocks - a move that will **help reduce margin requirements for clients and boost retail investment**.

**T+1 (trade plus one)** means that market **trade-related settlements will need to be cleared within one day of the actual transactions** taking place. Earlier, trades on the Indian stock exchanges were settled in **2 working days** after the transaction was done (**T+2**).

The stock exchanges - National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) - in Nov 2021 jointly announced plans to implement the T+1 settlement cycle in a phased manner with the bottom 100 stocks in terms of market value.

Read More - [T+1 Settlement System for Shares: SEBI](#)

## Water Hyacinth Invasion in Sankhya Sagar

**Sankhya Sagar** - an artificial lake in Madhya Pradesh has virtually disappeared under a thick layer of **Water Hyacinth** - an invasive aquatic plant. **Sankhya Sagar** was

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declared a Ramsar site in July 2022, and helps maintain the ecological balance of the **Madhav National Park**.

The lake is home to 19 indigenous fish species and in turn piscivorous birds along with **Marsh crocodile (WPA 1972; Schedule I)**.

**Water Hyacinth**, though, native to South Africa, has naturalised itself in many other parts of the world. However, it **can't be outrightly placed in a harmful or useful category** - on one hand, it acts as a water purifier by removing heavy metals present in small quantities while on the other, once it covers the entire surface of a water body, it **does not allow sunlight to penetrate the water** and also starts depleting oxygen.

The water hyacinth in Sankhya Sagar is leading to the death of native species; its presence also indicates high nitrogen levels in the lake.

Read More - **Water Hyacinth, Ramsar Sites**

## Ops Alert Exercise

In view of the upcoming Republic Day celebrations, the **Border Security Force (BSF)** has started an "Ops Alert" exercise (21-28 Jan 2023) to enhance security along the India-Pakistan border from **Sir Creek (marshy area)** to **Kutch (Gujarat)** and **Barmer (Rajasthan)** with the objective of "thwarting any ill designs of anti-national elements".

To enhance its security, "permanent vertical bunkers" of concrete are **being constructed for the first time to station BSF troops** right at the strategically significant Sir Creek and 'Harami Nalla' marshy area.

The Union Home Ministry has sanctioned a **Rs. 50-crore fund** for the construction of 8 multi-storey bunkers cum observation posts in this area in view of the "constant infiltration of Pakistani fishermen and fishing boats in the area".

Read More - **Border Security Force (BSF)**

## TROPEX 2023

The 2023 edition of **Indian Navy's major maritime exercise TROPEX**, was conducted in the Indian Ocean Region. The **Theatre Level Operational Readiness Exercise (TROPEX)** is conducted biennially and witnesses participation from **all Indian Navy units** and also **Indian Army, Indian Air Force and Indian Coast Guard**.

TROPEX 23 is being conducted over a duration of three months from Jan - Mar 23. As part of the exercise, **all surface combatants of the Indian Navy** including **Destroyers, Frigates, Corvettes** as well as **submarines and aircraft** are put through complex maritime operational deployments to validate and **refine the Navy's Concept of Operations** including operational logistics and interoperability with other Services.

Read More - **TROPEX, Indian Navy**

## National Girl Child Day

On **January 24**, India celebrates **National Girl Child Day** with the objective of **highlighting the prejudice and injustice that girl children face**. This day also encourages awareness of **women's rights** in our country. The day was established in 2008 by the Ministry of Women and Child Development.

The government of India has taken many initiatives for the betterment of the girls. '**Beti Bachao and Beti Padhao (BBBP)**' is one such initiative. **BBBP was recently revised**.

Read More - **National Girl Child Day, Revised Beti Bachao Beti Padhao Scheme**

## Norovirus

Recently, the Norovirus infection was confirmed in two schoolchildren in Kerala.

Norovirus is a **group of viruses that leads to gastrointestinal illness**. It causes **inflammation** of the lining of the stomach and intestines, in addition to **severe vomiting and diarrhoea**.

According to Health officials, **Norovirus outbreaks are rarely serious**, but the virus **can spread fast** if proper precautions are not taken. **Contaminated water or food is the usual infective agent**. The virus spreads through the **faecal-oral route**.

Norovirus is resistant to many disinfectants and **can heat up to 60°C**. Therefore, merely steaming food or chlorinating water does not kill the virus. It can also survive many common hand sanitisers.

While there is **no specific treatment available** to cure the virus, generic medications for diarrhoea and vomiting can help cure the disease.

Read More - **Norovirus**

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## Medical Termination of Pregnancy (Amendment) Act 2021

Recently, **Bombay HC** allowed a married woman to get her **33-week pregnancy** medically terminated citing that the length of the pregnancy does not matter in cases of **severe foetal abnormalities**.

Under the **Medical Termination of Pregnancy (Amendment) Act, 2021**, the maximum gestational age at which a woman may obtain a medical abortion in India was **raised from 20 weeks to 24 weeks** (with the recommendation of two registered medical practitioners). And for **beyond 24 weeks of gestational stage**, medical termination of pregnancy is allowed if serious foetal abnormalities are found.

**Read More - Medical Termination of Pregnancy (Amendment) Act, 2021**

## Changes in Global Gender Gap Report Criteria

The **World Economic Forum (WEF)** has agreed to make changes in criteria for Global Gender Gap Reports by taking into account the participation of women at **panchayat level** to rank countries in its future reports. It will **better India's position** at the global level.

The decision comes after India's Union Women and Child Development Minister led an Indian delegation to **Davos Summit** held recently and **reiterated the "flaws" in the ranking system**.

So far, the WEF has **4 major verticals** to assess gender gap in a country — (a) **economic participation**, (b) **political participation**, (c) **health** and (d) **education levels**.

There are **1.4-million women in the Indian panchayat system** whose political contribution will now be enumerated in the future reports.

**Read More - World Economic Forum (WEF), Global Gender Gap Index 2022**

## Subhash Chandra Bose Aapda Prabandhan Puraskar 2023

**Subhash Chandra Bose Aapda Prabandhan Puraskar (SCBAPP) 2023** was announced on 23 January 2023.

For 2023, **Odisha State Disaster Management Authority (OSDMA)** and **Lunglei Fire Station (LFS), Mizoram**, both in the **Institutional category**, have been selected for their excellent work in Disaster Management.

SCBAPP is **conferred annually** to recognize and honour the invaluable contribution and selfless service in the field of disaster management. The award carries a **cash prize of Rs. 51 lakh and a certificate** in case of an institution and **Rs. 5 lakh and a certificate** in the case of an individual.

**Read More - Netaji Subhas Chandra Bose, Disaster Management**

## Statehood Day of Manipur, Tripura and Meghalaya

Recently, on 21 January, the states of Manipur, Tripura and Meghalaya observed their **51<sup>st</sup> statehood day**. The three states gained their statehood in 1972 under the **North-Eastern Areas (Re-organisation) Act, 1971**.

A few days before India's Independence, the Maharaja of Manipur, **Bodhachandra Singh**, signed the **Instrument of Accession** with the Indian govt. on the assurance that the internal autonomy of Manipur would be maintained.

**Tripura** accepted merger with the Indian Union on **15th November, 1949**. **Queen Kanchan Prabha**, the then regent of Tripura (after the demise of **King Bir Bikram**) was instrumental in this merger.

**Meghalaya** came into existence as an **autonomous state within the state of Assam** in April **1970** comprising the **United Khasi and Jaintia Hills** and the **Garo Hills districts**.



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Read More - **Statehood Day of Manipur, Meghalaya and Tripura**

## Additional Tier-1 Bonds

The Bombay HC recently **quashed the write-off of Additional Tier-1 (AT1) bonds** worth Rs 8,400 crore issued by **Yes Bank Ltd**, bringing relief to investors.

A **SEBI** probe found that Yes bank facilitated the selling of AT1 bonds from institutional investors to individual investors and during the process of selling the AT1 bonds, the **latter were not informed about all the risks involved** in the subscription of these bonds.

AT1 bonds are **unsecured bonds that have perpetual tenor; no maturity date**. These bonds are **typically used by banks to bolster their core or tier-1 capital**. AT1 bonds are **subordinate to all other debt** and only senior to common equity.

Read More - **Additional Tier 1 Bonds**

## Leopard 2 Tank

Amid the ongoing talks among **NATO allies** regarding supplying defence equipment to Ukraine, **Germany is sceptical about allowing its Leopard 2 tanks** to be sent to Ukraine.

The **Leopard 2 is one of the world's leading battle tanks**, used by the German Army for decades and by the militaries of **Canada, Indonesia and many other European nations**. It has served in conflicts in Afghanistan, Kosovo and Syria. **Germany believes re-exporting German-made tanks without its permission would be illegal**.

Leopard 2, powered by a diesel engine, **features night-vision equipment and a laser range finder** enabling it to better aim at a moving target while travelling over rough terrain.

Until now, **both Ukraine and Russia have used Soviet-era tanks** in battle. Supplies of the **Leopard 2 would help Ukraine offset Russia's superiority** in artillery firepower.



Read More - **Russia-Ukraine Conflict**

## PM-KISAN handout may rise to Rs. 8000

In a move to provide a modicum of consumption booster, the **Centre may enhance the income support to farmers** under the PM-KISAN scheme to **Rs. 8,000 from Rs. 6,000/year**, in the **upcoming Budget**.

Under PM-KISAN, an amount of Rs. 6000 is **annually transferred to each farmer's direct benefit transfer (DBT)-linked bank account in three equal instalments**, irrespective of their land holdings. The number of beneficiaries has crossed 110 million from 31 million at the beginning of the scheme (in 2019).

PM-KISAN is a **Central Sector (CS) Scheme**; however, the entire responsibility of **identification of beneficiary farmer families rests with the State / UT Govts**.

Read More - **Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)**

## MoU Between IREDA & MNRE

Recently, the **Indian Renewable Energy Development Agency Ltd. (IREDA)** signed a Memorandum of Understanding (MoU) with the **Ministry of New and Renewable Energy (MNRE)**, Government of India (GoI), setting an **annual performance target for the year 2022-23**.

The GoI has also set **various performance-related key parameters** such as Return on Net Worth (RoNW), Return on Capital Employed (ROCE), **Non-Performing Assets (NPA)** to Total Loans, Asset Turnover Ratio and Earning Per Share (EPS), etc.

**Return on Equity (RoE) or RoNW:** The amount of profit or earnings a company generates on the sheer strength of its shareholders' equity.

**ROCE:** It refers to a financial ratio that can be used to assess a company's profitability and capital efficiency.

**Asset Turnover Ratio:** It measures the value of a company's sales or revenues relative to the value of its assets.

**EPS:** It is calculated as a company's profit divided by the outstanding shares of its common stock.

Read More: **Indian Renewable Energy Development Agency Ltd. (IREDA), Ministry of New and Renewable Energy (MNRE)**

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## Caste Census in Bihar

Recently, the **Supreme Court** dismissed petitions challenging the Bihar government's decision to conduct a **caste survey** in the state. Petitioners claimed that it was a census and that the **state government had no power to make any laws regarding it**. The **subject of a census falls in the Union list** and only **Parliament** can legislate on it.

The caste census is **under the administrative control of the Ministry of Home Affairs: Registrar General of India (RGI)** and Census Commissioner of India.

The origin of the Census in India **goes back to the colonial exercise of 1881**. Census has evolved and been used by the government, policymakers, academics, and others to **capture the Indian population, access resources, map social change, delimitation exercises**, etc. The Census **provides a portrait of the Indian population**, while the Socio-Economic and Caste Census (SECC) is a tool to **identify beneficiaries of state support**.

**Read More: Caste Census, Socio-Economic and Caste Census (SECC)**

## Hakku Patra

Recently, the Prime Minister of India symbolically **distributed Hakku Patra** (land title deeds) to five families of the **Banjara (Lambani) community**, a **nomadic Scheduled Caste group**, at an event organised by the state Revenue Department in Karnataka.

A title deed is a **property ownership document**, and the bearer of the document owns the land. The title deeds **enable owners to avail of bank loans** with the documentation. The government will also grant them the **right to buy or sell land on which the title deed has been granted**.

**Read More: Banjara, Nomadic Tribes**

## Caller Name Presentation (CNAP)

According to the Telecom operators, a proposal by the Telecom Regulatory Authority (TRAI) of India to display callers' names **may result in privacy implications**. The proposal, Caller Name Presentation (CNAP), will **also be difficult to execute technically since many phones in the Indian market may not support it**.

CNAP will **allow users to know the identity of the person calling them**. If people are aware of the person who is calling them, they can make an informed choice about those calls. Moreover, such a **feature could potentially help in curbing harassment and other spam calls**.

Currently, there are some applications that offer a similar service. However, all of them are **third-party apps and depend on crowd-sourced data**. There is no unifying solution offered by telecom operators. **Read more: Telecom Regulatory Authority (TRAI), Caller Name Presentation (CNAP)**

## National Disaster Response Force (NDRF)

The Union Minister of Home Affairs recently greeted the **National Disaster Response Force (NDRF)** on its **18th Raising Day** (January 19). **NDRF is the world's largest rapid reaction force** dedicated to disaster response.

NDRF was formed in 2006 under the **Disaster Management Act, 2005** with the purpose of a **specialised response to natural and man-made disasters**. The **Kosi Floods in 2008** were NDRF's first such mission.

**Read More - Disaster Management Act, 2005**

## SC Refuses to Entertain Plea on Google-CCI Issue

The **Supreme Court of India** has **refused to entertain a plea by Google against NCLAT's order** refusing the interim stay on **₹1,337 crore penalty on Google**. The SC has granted Google **7 days to deposit 10% of the penalty** imposed by the **Competition Commission of India (CCI)**. The Indian companies have welcomed the SC's stance against Google.

Earlier, CCI imposed a penalty on Google for **"abusing its dominant position" in markets** related to the Android mobile device ecosystem. Google filed an appeal with the NCLAT against the CCI order which was declined by NCLAT.

**Read More - CCI Penalty on Google, National Company Law Appellate Tribunal (NCLAT), Competition Commission of India (CCI)**

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## Sansad Khel Mahakumbh 2022-23

The Prime Minister of India recently inaugurated the **2nd phase of Saansad Khel Mahakumbh 2022-23** (18-28 Jan), organised in Basti (UP). The first phase was organised from 10-16 Dec 2022.

The Khel Mahakumbh is a novel initiative that provides an opportunity and a platform to showcase sporting talent, and motivates people to take sport as a career option.

Various types of **competitions (indoor and outdoor)** are organised by Khel Mahakumbh such as - wrestling, kabaddi, kho kho, basketball, football, hockey, volleyball, etc.

Through these games, performing athletes are being selected for further training under the **Sports Authority of India**.

Read More - **Role of Sports in Aspirational India, Sports Governance in India**

## Pankaj Kumar Singh appointed as Deputy NSA

Recently, the retired **Director General of the Border Security Force (BSF)** Pankaj Kumar Singh was appointed as the **Deputy National Security Advisor (D-NSA)** in the **National Security Council Secretariat** for a period of 2 years.

As a D-NSA, he will **assist the NSA - Ajit Doval**, in **creating and implementing India's national security strategies** - assessing threats posed by **terrorism, data security, cyber threats, readiness** of concerned agencies and **cooperation** between different organisations dealing with **security issues**.

Read More - **National Security Advisor, National Security Council**

## GMRT Detects Atomic Hydrogen

Astronomers from McGill University, Canada and **IISc, Bengaluru** have detected a **radio signal originating from atomic hydrogen** in an extremely distant galaxy (so far, the **largest distance**) using data from **Giant Metrewave Radio Telescope (GMRT)**.

**Atomic hydrogen** is the basic fuel required for star formation in a galaxy. It emits **radio waves of 21 cm wavelength**, which can be **detected using low frequency radio telescopes** like the GMRT.

Until now, the most distant galaxy detected using 21 cm emission was at **redshift  $z=0.376$** , (corresponding to the time elapsed between detecting the signal and its original emission – of **4.1 billion years**). **The one detected now was at redshift  $z=1.29$** .

Redshift represents the change in wavelength of the signal depending on the object's location and movement; a greater value of  $z$  indicates a farther object.

This detection was made possible by a phenomenon called **gravitational lensing**. Gravitational lensing probes the distribution of matter in galaxies and clusters of galaxies, and enables observations of the distant universe.

Read More - **Atomic Hydrogen, GMRT**

## AI-AQMS v1.0 for Air Quality Monitoring

Recently, the **Technology for Air Quality Monitoring System - AI-AQMS v1.0** was launched by MeitY.

The **Centre for Development of Advanced Computing (C-DAC)**, Kolkata has developed an outdoor air quality monitoring station to monitor environmental pollutants. It includes parameters like **PM 1.0, PM 2.5, PM 10.0, SO<sub>2</sub>, NO<sub>2</sub>, CO, O<sub>2</sub>, ambient temperature, relative humidity**, etc, for continuous air quality analysis of the environment.

Read More - **Monitoring Air Quality**

## Biosensing based EDC Detection System

MeitY has recently launched the **Technology for Biosensing system for the detection of Endocrine Disrupting Chemicals (EDC)** in aquatic ecosystems. The technology has been developed by **C-DAC, Kolkata** in collaboration with **ICAR-CIFRI** for **qualitative and quantitative analysis of EDC content in water bodies**.

Endocrine disruptors are chemicals that may **interfere with the body's endocrine system** and **produce adverse developmental, reproductive, neurological, and immune effects** in both humans and wildlife.

Read More - **Endocrine Disruptors**

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## Loan Loss Provision

The RBI recently proposed a framework for **adoption of an 'expected loss-based' approach** for provisioning by banks. Presently, banks are required to make loan loss provisions **based on an 'incurred loss' approach** - the global standard till recently. It will be a **more forward-looking 'expected credit losses' approach**.

Under the proposed framework, **Banks will be required to classify financial assets** (primary loans and investments) into one of the three categories - **Stage 1**, **Stage 2**, and **Stage 3**, depending upon the assessed credit losses on them

**Loan Loss Provision** - An expense that banks set aside for **defaulted loans**. Banks set aside a portion of the expected loan repayments from all loans in their portfolio to cover the losses either completely or partially. In the event of a loss, instead of taking a loss in its cash flows, the bank can use its loan loss reserves to cover the loss.

Read More - [Reserve Bank of India](#)

## India's 75<sup>th</sup> Army Day

The Indian Army commemorated 75<sup>th</sup> Army Day on **15th January** at the Parade Grounds in Hyderabad.

On this day in 1949, Field Marshal **K.M. Cariappa** took over as the **first Indian Commander-in-Chief** of the Indian Army, replacing his British predecessor (**General Sir Francis Butcher**). General Cariappa was **second of the only two Army officers to have held the five-star rank** of Field Marshal (**first being Sam Manekshaw**).

The day honours the soldiers of the country, who have set the greatest example of selfless service and brotherhood and more than anything the love for the country.

**Note** - Army Day is different from the **Veterans Army Day** celebrated on 14 Jan which marks the formal retirement of Field Marshal KM Cariappa from the Services.

Read More - [Indian Army Day](#)

## Avalanches

The recent days have witnessed **increased stances of avalanches** in the region of Kashmir where the **Zojila tunnel project** is being implemented. The authorities have issued an **avalanche warning with 'low-danger level'** for 11 districts.



Avalanches are **masses of snow, ice, and rocks** that fall rapidly down a mountainside. **Avalanches of rocks or soil are often called landslides**. **Snowslides are the most common kind of avalanche**. **Humans trigger 90% of avalanche disasters**; most of them being skiers, climbers and snowmobilers. **Avalanches strike suddenly and can be deadly**.

Read More - [Zojila Tunnel Project](#)

## Business Confidence Index

The latest CII Business Confidence Index (for Oct-Dec 2022 quarter) **rebounded to its highest reading in almost 2 years of 67.6 (from 62.2 in the previous quarter)**, reflecting optimism around **India being in a safe spot despite the rising global economic uncertainties**.

As per **OECD**, a Business Confidence Index **provides information on future developments**, based upon opinion surveys on developments in production, orders and stocks of finished goods in the industry sector.

The CII (**Confederation of Indian Industries**) is a **non-governmental, not-for-profit, industry-led and industry-managed organization**. It was founded in 1895 and is headquartered in **New Delhi**.

Read More - [Confederation of Indian Industries](#)

## Invasive Tree Species

Delhi's State EIA Authority has asked the State Forest Department to **take steps to contain and exterminate** 3 rapidly growing **invasive tree species** - **Vilayati Kikar** (*Prosopis Juliflora*), **Subabul** (River tamarind) and **Eucalyptus** as they are adversely affecting the local ecology.

Vilayati Kikar - the **Mexican invasive species introduced by the British in 1930s, is the most harmful**. It is the **only form of vegetation visibly thriving on the Delhi Ridge**.

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Eucalyptus, which came from **Australia**, is **not invasive in nature, but uses a lot of water** as it is a fast-growing tree. It also shows **allelopathic effects** (releases compounds which **make it difficult for other native species to grow nearby**).

**Subabul** also comes from **Mexico** and was introduced by the forest department **for fuel and fodder**. **All three species are depleting the groundwater table**.  
Read More - **Environment Impact Assessment (EIA), Invasive Species**

## SPIC MACAY

Recently, **SPIC MACAY** organised its **very popular 'Music in the Park' series** under the name **"Shruti Amrut"** in collaboration with the **Ministry of Culture** and the New Delhi Municipal Council. In this series, **the first event of 2023 was held in New Delhi**.

**SPIC MACAY**: It is a **movement started in 1977** and **has chapters in over 850 towns across the world**. The Society for Promotion of Indian Classical Music And Culture Amongst Youth is a **voluntary youth movement that promotes the tangible & intangible aspects of Indian & world heritage** by organising programs and workshops of Indian Classical, Folk Music and dance, **Yoga**, meditation, crafts, and other aspects of Indian culture.

Read More: **Hindustani Music**

## VARUNA

Recently, **the 21<sup>st</sup> edition of the bilateral naval exercise between India and France began** on the western seaboard. While the bilateral exercise between the two navies **was initiated in 1993, it was adopted as 'VARUNA' in 2001** and has become a **hallmark of the India – France strategic bilateral relationship**. The exercise will be conducted over five days from January 16-20, 2023.



**Other Indo-French Joint Exercises: Exercise Shakti** (Army), **Exercise Garuda** (Air Force)

Read More: **India – France strategic Bilateral Relationship**

## Thiruvalluvar Day

Union Home and Cooperation Minister wished people on the **occasion of Thiruvalluvar Day**. In the present time, the **day is usually observed either on the 15<sup>th</sup> or 16<sup>th</sup> January in Tamil Nadu** and is a part of **Pongal** celebrations.

Thiruvalluvar, also called Valluvar, **was a Tamil poet-saint**. The period when he lived is debated, as is his religious identity. He is **thought to be linked to Jainism**. However, Hindus have **also claimed that Thiruvalluvar belonged to Hinduism**. He had contributed the **Tirukkural** or 'Kural' to the **Sangam literature**.

Tirukkural is **comprised of 133 sections of 10 couplets each is divided into three books**:

- **Aram** (virtue),
- **Porul** (government and society), and
- **Kamam** (love).

The Tirukkural has been **compared to the great books of the world's major religions**.

Read More: **Thiruvalluvar Day**

## The Population of Saltwater Crocodiles

According to the **annual reptile census**, the population of saltwater crocodiles in the water bodies of **Bhitarkanika National Park** and its nearby areas in **Odisha's Kendrapara district** has **marginally increased**. In 2023, forest officials counted **1,793 crocodiles**. In 2022 officials sighted **1,784 reptiles**.

### Protection Status of Saltwater Crocodiles:

- **IUCN List of Threatened Species**: Least Concern
- **CITES**: Appendix I (except the populations of Australia, Indonesia and Papua New Guinea, which are included in Appendix II).
- **Wildlife Protection Act, 1972**: Schedule I

In 2006, the **Guinness Book of World Records** recorded a **23-foot long salt-water crocodile in Bhitarkanika as the largest crocodile in the world**. The breeding and **rearing programme** for three species of

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crocodilians — saltwater crocodile, mugger and gharial — had been **started in 1975 in 34 places in India and Nepal**. However, the **saltwater crocodile conservation programme in Bhitarkanika is the most successful one**.

**Read More: World Crocodile Day, Bhitarkanika National Park**

## UNSC 1267 Committee

The **ISIL and Al Qaida Sanctions Committee** of the **UNSC (1267 Committee)** has **placed Abdul Rehman Makki** - the key planner of the Pakistan-based Lashkar-e-Taiba (LeT), **on its sanctions list**.

The move was made possible after **China withdrew the “technical hold”** that it had imposed in June 2022 when the US and India tried to get Makki on the global terror blacklist.

**Read More - India-US proposed to list Makki under UNSC 1267 Committee**

## IT Amendment Rules 2022

Under the notified amendments to the IT Rules, 2021, MeitY proposed a draft rule [Rule 3(1)(b)(v)] under which social media platforms will have to take down content that has been **“fact-checked” as false by the PIB’s (Press Information Bureau) fact check unit**.

The notified amendments to IT Rules 2021 aim to impose a legal obligation on intermediaries to make reasonable efforts to prevent users from uploading certain categories of harmful/unlawful content. The **new provision will ensure that the intermediary’s obligation is not a mere formality**.

**Read More - Amendments to the Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**

## Windfall Tax

The Government has reduced the windfall profit tax **levied on domestically-produced crude oil** as well as on the **export of diesel and Aviation Turbine Fuel (ATF)**, in line with softening international oil prices.

Windfall taxes are designed to **tax the profits a company derives from an external, sometimes**

**unprecedented event**. These profits **can’t be attributed to something the firm actively did**, like an investment strategy or an expansion of business but **are rather unearned and unanticipated gains**.

The government levies tax on windfall profits made by oil producers on any price they get **above a threshold of USD 75 per barrel**. The levy on fuel exports is based on margins that refiners earn on overseas shipments.

**Read More - Windfall Tax**

## Saudi and Houthi Rebels Revive Talks

Amid **Yemen’s longest ever pause in fighting** - more than 9 months - **Saudi Arabia and Iran-backed Houthi rebels** have revived back-channel talks in an **informal ceasefire**.

The roots of the **Houthi movement** can be traced to **“Believing Youth”**, a **Zaydi (oldest branch of the Shia sect)** revivalist group founded by **Hussein al-Houthi** and his father, **Badr al-Din al-Houthi (early 1990s)**. However, the movement turned political and started attacking the **“corrupt” regime of Ali Abdullah Saleh (in Yemen)** and his support for the US’ war on terror.

The rapid rise of the Houthis in Yemen set off alarm bells in **Saudi Arabia which saw them as Iranian proxies** which led to **Saudi begin a military campaign in Yemen in March 2015**.



**Read More - Houthi Rebels, India’s Operation Rahat in Yemen**



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## Key Points

## Details

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## Summary

**Key Points**

**Details**


**Summary**

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