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ART & CULTURE

Srinagar tagged World Craft City 4
Project PARI 4
Rashtriya Vigyan Puraskar, 2024 4
India at Paris Olympics, 2024 5

ENVIRONMENT

New Ramsar sites in India 6
Cloudburst in Himachal Pradesh 6
Development and disasters in Himalayan Regions 8
Ballast Water Management 10
Guru Ghasidas-Tamor Pingla Tiger Reserve 10
Jim Corbett National Park and Tiger Reserve 11
Cheetah Reintroduction in Kuno National Park 12
Banni grasslands of Kachchh 12

GEOGRAPHY

St. Martin's Island 13
Kursk Operation 13
River Seine 14
Nankai Trough 14
Tungabhadra Dam 15
Mullaperiyar Dam 15

POLITY & GOVERNANCE

Provisions related to Bail 16
Disaster Management (Amendment) Bill, 2024 17
State's Power to Tax Minerals 19
Uniform Civil Code (UCC) 20
National Commission for Allied and Healthcare Professions Bill 23
Privilege Motion 24
No-Confidence Motion against Vice-President of India 25
The Oilfields (Regulation and Development) Amendment Bill 2024 25
Sub Classification of SCs and Sts 26
Bharatiya Vayuyan Vidheyak 2024 27

Schemes & Social Issues

Multidimensional Vulnerability Index (MVI) 28
Mahatma Gandhi National Rural Employment Guarantee Act 29
Unified Pension Scheme 30
Nandini Sahakar Scheme 31

ECONOMY

Securities and Exchange Board of India (SEBI) 32
Rashtriya Gokul Mission for Animal Husbandry 33
Sovereign Gold Bonds 34
Indexation on Long Term Capital Gains Tax (LTCG) 34
PM-Surya Ghar Muft Bijli Yojna 35
Clean Plant Programme 36
Google Antitrust Case 36
Banking Laws (Amendment) Bill, 2024 37

INTERNATIONAL RELATIONS

India-EU Relations amid Ukraine War 38
Turmoil in Bangladesh 38
India-US Relations 40
India-Maldives Relations 41

SCIENCE & TECHNOLOGY

FloodWatch India 42
Trichophyton Indotineae Fungal Infection 42
Axiom 4 Mission 43
National Space Day- Chandrayaan 3 43
Governing Generative Artificial Intelligence (AI) 45
Vigyan Dhara Scheme 46
BioE3 Policy 46
BPaL Regimen for Tuberculosis 47
PrecivityAD2 Test for Alzheimer's 48
DengiAll Vaccine 49
Monkeypox 50
Organ Transportation Guidelines 51

DEFENCE & SECURITY

Jammu and Kashmir Counter Terrorism Grid 53
INS Shalki 53
Exercise Udara Shakti 2024 54
Long Range Glide Bomb 'GAURAV' 54

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Srinagar tagged World Craft City

Art & Culture

Why in news?

- **Srinagar** has become the fourth Indian city to be recognized as a 'World Craft City' by the
- **World Craft Council (WCC).**

About World Craft Council

- It is a **non-governmental** organisation that promotes and supports the preservation and development of traditional crafts across the globe.
- Established in 1964, it operates under **UNESCO**, it promotes crafts as vital cultural heritage.

World Craft City Program

- The 'World Craft City' title honors cities with exceptional craft heritage and excellence.
- This program boosts cities' global recognition, tourism, and local economies by promoting their unique crafts.
- **Jaipur**, **Malappuram** and **Mysore** are the other Indian cities that have previously been recognised as World Craft Cities.

World Craft City designation criteria

- Longstanding tradition of craftsmanship.
- Thriving craft sector that contributes to the local economy.

Project PARI

Art & Culture

Why in news?

- The Ministry of Culture, Government of India, on the occasion of the **46th Session of the World Heritage Committee Meeting** has initiated **Project PARI (Public Art of India)**.

About Project PARI

- Project PARI (Public Art of India) is an initiative by the **Ministry of Culture**, Government of India.
- It is executed by **Lalit Kala Akademi** and the **National Gallery of Modern Art**.
- The aim of the PARI project is to provide a platform to uplift the aesthetic and cultural outlook of Delhi while adding grandeur to the rich historical legacy of our national capital.

Significance of Project PARI

- Showcases the nation's rich and diverse **cultural heritage**.
- **Democratisation of art** through public installations transforms urban landscapes into accessible galleries.
- This **inclusive** approach fosters a shared cultural identity and enhances social cohesion.

Rashtriya Vigyan Puraskar, 2024

Art & Culture

Why in news?

- The Rashtriya Vigyan Puraskar awards will be announced annually on **National Technology Day (11th May)**, with the ceremony held on National Space Day (23rd August).

Categories of the Awards

- **Vigyan Ratna :** Recognizes lifetime achievements and major contributions in science and technology, with up to three awards given annually.
- **Vigyan Sri :** Honours exceptional contributions in science and technology, with up to 25 awards given annually.
- **Vigyan Yuva-Shanti Swarup Bhatnagar (VY-SSB) :** Rewards and supports young scientists under 45 for their outstanding contributions.
- **Vigyan Team (VT):** Honours teams of three or more for exceptional collaborative achievements, with up to three awards given annually.

The Key Awardees

- **Vigyan Ratna**: Awarded to G. Padmanabhan for his lifetime achievements in biological sciences, notably his work on malaria parasites.
- **Vigyan Team:** The Chandrayaan-3 Team received the award for landing India's first spacecraft on the Moon in 2023, a milestone in space exploration.
- **Vigyan Shri:** Awarded to Annapurni Subramaniam (star clusters and galaxies), Jayant Bhalchandra Udgaonkar (biology), and Naba Kumar Mondal (particle physics).
- **Vigyan Yuva:** Awarded to Vivek Polshettiwar (carbon capture), Urbasi Sinha (quantum research), and Roxy Mathew Koll (climate science).

India at Paris Olympics, 2024

Art & Culture

Why in news?

- The Paris Olympics 2024 concluded recently, celebrating athletes' achievements and the unity of the Games.

Key Highlights

- **Gender Parity:** For the first time, equal male and female athlete participation marked a milestone in inclusivity in the games.
- **Sustainability Focus:** Paris Olympics emphasised **sustainability** and **urban inclusiveness**, aligning with the Olympic Agenda reforms.
- **India's Status:** India sent a contingent of **117 athletes**, securing a total of six medals, including **one silver** and **five bronze.**
- **Manu Bhaker** won India's first medal at the Paris 2024 Olympics, a bronze in shooting, becoming the first Indian woman to do so. Manu Bhaker also made history by being the first Indian to win two medals in a single olympics.
- **Lakshya Sen** became the first Indian to reach the semi-finals in men's badminton at the Olympics, finishing fourth.

India's Medal Winners at Paris Olympics 2024

Athlete/Team	Sports Event	Medal
Manu Bhaker	Women's 10m air pistol event	Bronze
Sarobjit Singh and Manu Bhaker	10m air pistol mixed team event	Bronze
Swapnil Kusale	Men's 50m rifle 3 positions	Bronze
Neeraj Chopra	Javelin Throw	Silver
Aman Sehrawat	Wrestling Men's 57kg freestyle event	Bronze
Hockey- Team India	Field Hockey	Bronze

Scheme	Objective
Khelo India Scheme	• Under the component **'Khelo India Centres and Sports Academies'** of the 'Khelo India' Scheme, the sportsperson identified is provided financial assistance towards equipment support, training expenses, coaching, competitions exposure etc. • Under the 'Khelo India' Scheme, **32 Khelo India State Centre of Excellence and 1059 Khelo India Centres** are being supported.
Target Olympic Podium Scheme	• National Coaching Camps and international training sessions. • Opportunities for athletes to compete and train overseas. • Hiring of specialised experts, coaches, and support staff. • Provision of necessary sports equipment and training facilities. • Direct funding to cover various aspects of athletes' preparation.
Pandit Deendayal Upadhyaya National Welfare Fund	• Assistance up to Rs. **10 lakhs** for injuries sustained during training for and participation in sports competitions, • Assistance up to Rs. **2.5 lakh** for training, procurement of equipment and participation in national and international sports events

New Ramsar sites in India

Environment

Why in news?

- **New Ramsar sites are nominated**

About Ramsar Convention:

- India became a **signatory** to the Ramsar Convention in 1982.
- India is one of the contracting parties to the Ramsar Convention, which was signed in Ramsar, Iran, in 1971.
- India's Ramsar wetlands constitute about **10% of the total wetland area** in the country, spread across 18 states.
- **Tamil Nadu** currently has the highest number of Ramsar sites in India, with 18 sites, followed by Uttar Pradesh with 10 sites.
- The **UK leads globally** with 175 sites, followed by Mexico with 142 sites.

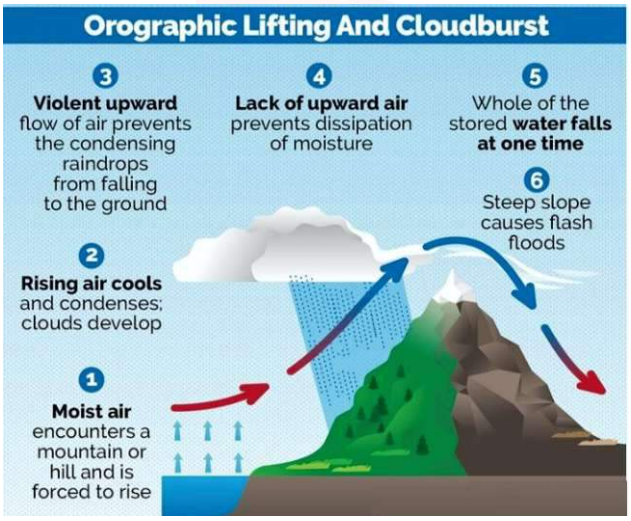
Name of Ramsar Site	State	Specifications
Nanjarayan Bird Sanctuary	Tamil Nadu	• The wetlands here rely on weather, mainly heavy rain from Nallar drainage. • Nanjarayan Lake is named after King Nanjarayan, who restored it. • Important site for migratory birds. • The lake is crucial for agriculture and groundwater recharge in the region.
Kazhuveli Bird Sanctuary	Tamil Nadu	• Brackish shallow lake located on the Coromandel Coast. • The lake is connected to the Bay of Bengal by the brackish Uppukalli creek and the Edayanthittu Estuary. • One of the largest wetlands in peninsular India. • Important site for migratory species and aquifers.
Tawa Reservoir	Madhya Pradesh	• Located inside the Satpura Tiger Reserve and forms the western boundary of the Satpura National Park and Bori Wildlife Sanctuary. • Important for aquatic flora and fauna. • Largest protected area in the state of MP.

Cloudburst in Himachal Pradesh

Environment

Why in news?

- Recently, a cloudburst in Himachal Pradesh triggered **flash floods**, leading to many fatalities and several people being reported missing.



Characteristics of Cloudbursts:

- **Short Duration**: Usually lasts only a few minutes to an hour.
- **High Intensity**: Rainfall rates during a cloudburst can exceed typical weather patterns, sometimes as much as 100 millimeters in a single hour.
- **Localized Impact**: Typically, cloudbursts affect small, confined areas (often less than 20 to 30 square kilometers).
- **Flooding and Landslides**: The massive water influx overwhelms natural drainage systems, leading to flash floods and landslides, especially in mountainous regions.

Localized Impact and Consequences:

- **Loss of Life and Injuries:**
  - The rapid and unpredictable nature of flash floods caused by cloudbursts can result in serious injuries or fatalities among individuals caught in their path.
- **Immediate Property Devastation:**
  - Flash floods carry immense water force and can transport substantial debris, including boulders, leading to significant structural damage to homes. This damage can render residences uninhabitable and sweep away valuable property like vehicles.
- **Disruption of Vital Infrastructure:**
  - Infrastructure such as bridges and roadways can suffer structural harm from the force of floodwaters and debris, disrupting travel routes and making transportation impossible.
  - Flash floods also pose a risk to utility systems, causing power, telephone, and cable lines to be knocked out, hampering communication and daily life.
  - Floodwaters can infiltrate and contaminate groundwater sources, rendering tap water unsafe for consumption.
- **Deposition of Sediment and Debris:**
  - Cloudburst-induced floods often leave behind substantial deposits of silt and debris, creating obstacles for travel and necessitating expensive cleanup efforts.
- **Economic Setbacks:**
  - The aftermath of cloudbursts can lead to local businesses being unable to operate due to damage, and customers may face difficulties accessing these establishments.
  - Such disruptions to business and commerce can result in economic losses for the affected area.

Forecasting Challenges

- Meteorological agencies such as the IMD can offer forecasts about the likelihood of heavy rainfall events occurring in advance. However, predicting the precise amount of rainfall at a specific location remains a complex challenge.
- Forecasts tend to become less accurate as they narrow down to smaller geographical areas. Despite advancements, our current technology still lacks the capability to predict individual cloudburst events with high accuracy.
- Alerts for heavy to very heavy rainfall can be issued with a window of 4 to 5 days. However, The potential for extreme rainfall, which might lead to conditions akin to cloudbursts, can only be forecasted approximately 6 to 12 hours before they occur.

Changing Patterns and Climate Impact

- While there isn't definitive proof of an increasing trend in cloudbursts as defined by the IMD, there's a globally observed rise in extreme rainfall events attributed to the effects of climate change.
- India's rainfall pattern has undergone significant shifts, resulting in concentrated heavy rainfall over shorter periods, interspersed with extended dry spells. This altered pattern, linked to climate change, suggests the possibility of a higher frequency of cloudburst-like events in the future.

Challenge of forecasting Cloudbursts

- Efforts to monitor and forecast cloudbursts are still at a **nascent** stage
- Cloudbursts occur mostly over the **rugged terrains** over the Himalayas, Western Ghats, and northeastern hill States of India.
- Satellites fail to detect cloudburst systems as the resolution of the precipitation **radars are much smaller** than the area of individual cloudburst events.
- Multiple **doppler weather radars** can monitor moving cloud droplets and help to provide forecasts for the next three hours. But radars are **expensive** and installing them widely may not be feasible.

Cloudburst and Climate Change

- **Increased Moisture:** Rising temperatures allow more atmospheric moisture, leading to intense cloudbursts, especially in mountains.

- **Precipitation Shifts:** Climate change can cause extreme rainfall in some areas and prolonged dry periods in others.
- **Atmospheric Instability:**Highertemperatures destabilize the atmosphere, increasing convective activity and thunderstorms linked to cloudbursts.
- **Glacier Melt:** Faster glacier melt from rising temperatures can contribute to cloudbursts, especially in glacier-fed regions.
- **Land Use Changes:** Deforestation and urbanization can alter local climates and precipitation patterns, increasing cloudburst occurrences.

Measure to deal with cloudburst

- **Early Warning Systems:** Develop and implement advanced early warning systems to provide timely alerts about impending cloudbursts, giving residents and authorities the opportunity to take necessary precautions.
- **Infrastructure Resilience:** Design and construct buildings, roads, and bridges that are more resilient to cloudburst-induced floods, incorporating features that can withstand the force of water and debris.
- **Sustainable Urban Planning:** Implement effective urban planning strategies that consider the local topography and drainage systems, minimizing vulnerabilities to flash floods in urban areas.
- **Community Education:** Raise awareness among local communities about the risks associated with cloudbursts and flash floods, providing them with knowledge on how to respond effectively during emergencies.
- **Disaster Preparedness Training:** Conduct regular training and drills for residents and first responders to ensure they are well-prepared to handle cloudburst-related emergencies.
- **Vegetation and Watershed Management:** Implement measures such as reforestation and sustainable land management practices to reduce soil erosion and improve watershed management, which can mitigate the intensity of flash floods.
- **Early Recovery and Rehabilitation Plans:** Develop strategies for post-cloudburst recovery and rehabilitation, including providing support for affected communities, restoring damaged infrastructure, and addressing economic losses.
- **Climate Change Adaptation:** Incorporate climate change adaptation measures into planning processes, recognizing that changing weather patterns may increase the frequency and severity of cloudbursts.

Development and disasters in Himalayan Regions

Environment

Why in news?

- Frequent flash floods in Himachal Pradesh have killed hundreds of people, damaged critical infrastructure, and raised concerns about the **ecologically fragile Himalayan region**, besides adversely impacting the traditional water sources across the State.

Key Concerns

- **Inadequate Planning Models:** Using **plains-based planning models** in the IHR (Indian Himalayan Region) leads to ineffective adaptation and implementation.
- **Human Resource Shortage:** Up to 75% of positions are unfilled in IHR city governments, affecting urban management.
- **Uncontrolled Urban Expansion:** Cities are **encroaching** on rural lands, as seen in Srinagar, where built-up areas increased by 75.58% and water bodies decreased by 25% from 2000 to 2020.
- **Environmental Impact:** Urbanization, tourism, and unsustainable infrastructure are increasing environmental strain, worsened by **climate change**.
- **Financial Limitations:** High costs and lack of industrial corridors prevent IHR cities from generating capital, needing Finance Commission support for urban financing.

Challenges of Urbanization in the Himalayan Region

- **Unbalanced Urbanisation and Development:** The Indian Himalayan range is facing increasing pressures of urbanisation and development which is compounded by high-intensity, unsustainable infrastructure and resources (land and water) use. This is further aggravated by climate changes such as changing rainfall patterns and rising temperatures.

- For example, Uttarakhand has faced disasters like submergence of Joshimath, floods and landslides in Himachal Pradesh, glacial lake outburst in Sikkim, Silkyara-Barkot tunnel in Uttarkashi, etc.

- **Water Crisis:** Water quality & management may be a problem. Water bodies in Srinagar have depleted by about 25%.
- **Lack of Waste Management:** Cities like Srinagar, Guwahati, Shillong and Shimla as well as smaller towns face immense challenges in sanitation, solid and liquid waste management.
  - For example, in Srinagar, about 90% of the liquid waste enters water bodies without treatment.
- **Tourism pressure:** Tourism growth puts pressure on local resources.
  - Tourism continues to expand and diversify in the Indian Himalayan Range (IHR), with an estimated average annual growth rate of 7.9% from 2013 to 2023.
  - Tourism growth in these areas often results in inappropriate and hazardous construction activity, poorly designed roads and inadequate solid waste management, instead of sustainable infrastructure. This leads to loss of natural resources and damage to biodiversity and ecosystem services.
- **Failure of Planning Institutions:** The urban areas of these states use models copied from the plains for development. Their capacity to implement these plans is limited.
- **Human Resource Shortage:** Urban governments have a shortage of human resources by about 75%. For example, in the Kashmir Valley, more than 40 urban local bodies, barring the Srinagar Municipal Corporation, have only 15 executive officers.
- **Land Encroachment:** Cities are expanding with encroachment on common land of villages. Srinagar and Guwahati are examples of such expansion leading to loss of open spaces, forest land and catchment areas.
  - For example, Srinagar saw a 75.58% increase in land use change between 2000-2020. These areas have been taken over by real estate.

Government Initiatives to Protect IHR?

- National Mission for Sustaining the Himalayan Ecosystem (NMSHE)
- Indian Himalayas Climate Adaptation Programme (IHCAP)
- SECURE Himalaya Project.
- Integrated Himalayan Development Program (IHDP)
- National Action Plan on Climate Change (NAPCC)

Measures for the development of Himalayan cities

Special measures are required for the development of Himalayan cities as the region is environmentally sensitive. Some of the major measures are as follows:

- **Mapping of cities**: Vulnerabilities should be identified from a geological and hydrological perspective as climate-induced disasters destroy infrastructure built without such mapping every year.
- **Involvement of local community:** The planning process should involve local people and follow a bottom-up approach.
- **Financing:** None of the cities in this region can raise capital for their infrastructure needs. The Finance Commission should include a separate chapter on urban financing for this region.
- **Sustainable and environment-friendly development:** Construction and infrastructure development should adopt measures that cause minimum damage to the environment. Use of local materials and traditional architecture should be given priority for building construction in this region.
- **Conservation of natural resources:** Conservation of water sources, forest areas and biodiversity should be ensured. Improvement in solid and liquid waste management system is necessary to protect water sources from pollution.
- **Sustainable development of tourism:** Sustainable tourism policies should be formulated to promote tourism, which can reduce the negative impact on the environment. Planning is also needed to control the number of tourists and preserve local cultural heritage, such as:
- **Protection from landslides and disasters:** Himalayan regions are prone to landslides and other natural disasters. Keeping this in mind, identification of risk areas, strengthening of disaster management system and implementation of risk reduction measures should be done.
- **Improvement of road and transport system:** It is important to maintain environmental balance during road construction in hilly areas. Emphasis should be laid on the development of air and public transport, so that traffic pressure can be reduced.
- **Urbanization and population control:** To avoid uncontrolled urbanization, planned city development plans should be implemented. Facilities should be developed keeping in mind the population growth.

Ballast Water Management

Environment

Why in news?

- Ballast water management was in the news after Tamil Nadu's Water Resources Department demanded ₹160 crore from **Kamarajar Port in Ennore** for inefficient practices, harming marine ecosystems and disrupting fishing activities, which affects local livelihoods.

About Ballast Water

- Ballast water is fresh or saltwater stored in the ballast tanks of ships.
- It is used to provide **stability** and **maneuverability** during a voyage, particularly when the ship lacks sufficient cargo or needs extra stability in rough seas.
- Ballast water can contain various **biological materials**, including **bacteria**, **microbes**, and small **invertebrates**.
- Discharging ballast water at a new location can introduce non-native species into local ecosystems.

Challenges

- **Introduction of Invasive Species**: Ballast water introduces invasive species that outcompete native species and disrupt local ecosystems. For example, the **Charru mussel** has caused significant damage in **Pulicat Lake and Ashtamudi Lake** in India.
- **Pollution and Algal Blooms**: Ballast water often contains pollutants like oil, heavy metals, and chemicals, which can contaminate aquatic ecosystems.
- **Spread of Diseases**: Pathogens carried in ballast water pose serious health risks to humans, wildlife, and marine life.
- **Economic Impact**: Invasive species and pollution from ballast water can harm industries such as fisheries, aquaculture, tourism, and water supply, leading to significant economic losses.

Global Regulation

- **Ballast Water Management (BWM) Convention**: Adopted by the **International Maritime Organization (IMO)** and enforced since 2017, this convention aims to prevent the spread of harmful aquatic organisms and pathogens through ballast water.
- **Requirements**: The BWM Convention mandates that ships must manage their ballast water to ensure that aquatic organisms and pathogens are removed or rendered harmless before discharge.
- **Compliance**: Countries such as Australia and New Zealand enforce stringent regulations on ballast water management, including rigorous checks of ballast water management systems to protect their marine ecosystems.

Laws in India

- India is **not a signatory** to the Ballistic Water Management convention.
- The discharge of ballast water brought in from other countries is not subject to checks or regulation.

Guru Ghasidas-Tamor Pingla Tiger Reserve

Environment

Why in news?

- **Chhattisgarh** has approved the Guru Ghasidas-Tamor Pingla Tiger Reserve, making it India's third-largest tiger reserve and the state's fourth.

About the Guru Ghasidas-Tamor Pingla Tiger Reserve

- The state cabinet approved the **merger** of Guru Ghasidas National Park and Tamor Pingla Sanctuary to form a new tiger reserve.
- The new reservecovers2,829 square kilometers across the northern districts of Manendragarh-Chirmiri-Bharatpur, Koriya, Surajpur, and Balrampur in **Chhattisgarh**.
- This decision was made following a Chhattisgarh High Court directive, which gave the state government four weeks to clarify its stance on designating the area as a tiger reserve.

- Andhra Pradesh's **Nagarjunasagar Srisailam Tiger Reserve** is currently the largest in India, covering 3,296.31 square kilometers.
- Assam's Manas Tiger Reserve is the second largest, spanning 2,837.1 square kilometers.

- **State Governments** on advise of the National Tiger Conservation Authority (NTCA)
- As per provisions of the **Wildlife (Protection) Act, 1972**
- **Core or critical tiger habitat:** Have the legal status of a national park or a sanctuary,
- **Buffer or peripheral area:** A mix of **forest and non-forest land** and a lesser degree of habitat protection is required
- Alteration in the boundaries of a tiger reserve shall be made only on a recommendation of the Tiger Conservation Authority and the approval of the National Board for Wild Life.
- State Government shall de-notify a tiger reserve, in case of public interest with the approval of the Tiger Conservation Authority and the National Board for Wild Life.

About Tigers

- Tigers are both a **Flagship** and **Umbrella** species.
- As per the All India Tiger Estimation (AITE) 2021-2022, the number of tigers in India has increased by 6.74% from 2,967 in 2018 to **3,167** in 2022.
- The tiger census is held once in every 4 years by **National Tiger Conservation Authority**
- **(NTCA)** in association with state forest departments and the Wildlife Institute of India.
- IUCN status: **Endangered**
- Wildlife Protection Act (WPA): **Schedule I**
- CITES: **Appendix I**

Jim Corbett National Park and Tiger Reserve — Environment

Why in news?

- The Jim Corbett National Park and Tiger Reserve recently concluded an awareness campaign in celebration of **World Elephant Day on August 12.**

About Jim Corbett National Park and Tiger Reserve

- **Establishment**: Corbett is the **first national park of India**, established in 1936. It was named Hailey National Park then.
- **Location**: Located on the foothills of the Himalayas in **Uttarakhand**, spread over three districts, viz., Pauri, Nainital, and Almora.
- The rivers **Ramganga**, **Pallaen**, and **Sonanadi** flow through the valleys.
- **Flora and fauna**:
  - The vegetation mainly consists of sal and mixed forests, with grasslands and riparian vegetation.
  - Grasslands, locally called '**Chaur**', have formed from abandoned settlements or past clearings.
  - Evergreen Sal trees, along with **Sheesham and Kanju**, are commonly found on the ridges.
  - **Lantana**, a widespread weed, is a significant challenge for the reserve authorities.
  - **Tigers** and **elephants** are the main attractions, alongside co-predators like leopards, ungulates such as sambar and spotted deer, various birds, reptiles like gharials and crocodiles, and fish species.

About Elephants

- The **largest terrestrial mammal** on the Asian continent.
- The oldest and largest female, known as the **matriarch**, leads the elephant herd.
- Elephants' **gestation** (pregnancy) period, which can last up to 680 days (22 months), is the
- **longest** known gestational period among any mammals.
- IUCN Red List: **Endangered**
- Wildlife (Protection) Act, 1972: **Schedule I**
- CITES: **Appendix I**

Cheetah Reintroduction in Kuno National Park

Environment

Why in news?

- The Centre's **Cheetah Project Steering Committee** decided to release the African cheetahs and their cubs, born in India, into the wild in a phased manner.

Cheetah Reintroduction Project

- **Project Cheetah** is World's first **intercontinental translocation** project for large wild carnivores. It focuses on reintroducing cheetahs to India, where they became extinct in the 1950s.
- **Kuno National Park** was chosen for its suitable habitat and prey base, making it ideal for cheetah reintroduction.
- The project is implemented by the **National Tiger Conservation Authority (NTCA), Madhya Pradesh Forest Department, Wildlife Institute of India (WII),** and cheetah experts from Namibia and South Africa.
- The first batch of cheetahs was translocated from **Namibia and South Africa**, as India currently lacks native cheetahs.
- This initiative is seen as a major step in global conservation efforts and showcases India's commitment to wildlife preservation.

About the Cheetah

- The cheetah (Acinonyx jubatus) is a large cat native to **Africa** and **central Iran**.
- It is the **fastest land animal**, capable of running at 80 to 128 km/h.
- Habitat: The cheetah occurs in a variety of habitats such as **savannahs** in the **Serengeti**, arid mountain ranges in the **Sahara** and hilly desert terrain in **Iran**.
- **Threats:** Habitat loss, conflict with humans, poaching and high susceptibility to diseases

Kuno National Park

- The park is situated in the **Vindhyan Hills** of Central India, within **Madhya Pradesh.**
- It is traversed by the **Kuno River**.

Banni grasslands of Kachchh

Environment

Why in news?

- In a new study, researchers have assessed the suitability of different areas of Banni for sustainable **grassland restoration**.

About Banni Grasslands

- Covering an area of **3847 sq. km**, Banni is a **salt tolerant grassland in Kachchh (Gujarat).**
- It can survive and thrive in saline and arid conditions.
- The region is primarily inhabited by the **Maldhari community**, who are traditional pastoralists.
- Supports wildlife such as chinkaras, Indian wolves, desert foxes etc.
- Affected by invasive species like **Prosopis juliflora**, the forest department initiated the **Banni Grassland Restoration Project in 2019.** This project involves uprooting Prosopis plants and replanting native grass species to restore the natural ecosystem of the grasslands

Grassland Ecosystem

- **UNESCO** defines Grassland as "land covered with herbaceous plants with less than 10 per cent tree and shrub cover" and wooded grassland as 10-40 per cent shrub cover.
- Grasslands are also called **transitional** landscapes between the deserts and the forest ecosystems.
- The **low rainfall** prevents the growth of numerous trees and shrubs but is sufficient to support the growth of grass cover during the monsoon.
- This ecosystem makes up almost a **quarter of the total land surface** and covers areas where rainfall is usually low and/or the soil depth and quality are poor.

Maldhari community

- The Maldharis are a pastoral community in **Gujarat**, known for their herding traditions.
- The term "Maldhari" literally means a keeper (dhari) of the animal stock (mal).
- They have inhabited regions like the **Gir National Park** and the **Banni Grasslands** for centuries, even coexisting with the **Asiatic lions in Gir**.

Prosopis juliflora

- Introduced in 1961 **to combat desert encroachment,** Prosopis juliflora has drastically transformed the Banni grasslands.
- The invasive species has **outcompeted native vegetation**, leading to a decline in local grass diversity, including edible species.
- This dominance by Prosopis juliflora has **degraded** the grasslands, reducing both their productivity and biodiversity

St. Martin's Island

Geography

- It is the only coral island in Bangladesh.
- Due to increasing tourism and human activity, there are concerns about the environmental impact on the island, particularly on its coral reefs.

Kursk Operation

Geography

- Ukraine's Kursk Operation is a military campaign aimed at advancing into the Kursk region of Russia.
- It marks a significant escalation in the conflict between Ukraine and Russia.

River Seine

- At the Paris Olympics 2024 in France, the men's triathlon swimming leg was postponed due to poor water quality in the River Seine.
- Heavy rains cause Paris's old sewage system to overflow, discharging untreated sewage into the Seine.
- High levels of E. coli bacteria in the river exceed safety limits.

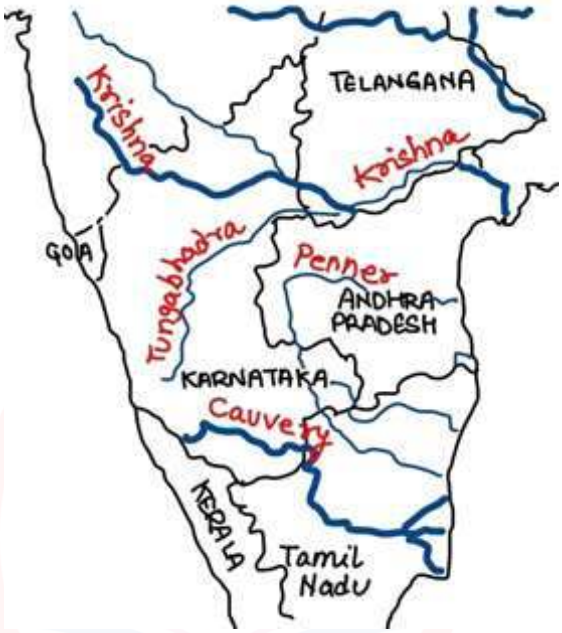
Nankai Trough

- The Nankai Trough is a large subduction zone, about 900 km long near Japan.
- It is where the Eurasian Plate collides with the Philippine Sea Plate.
- This area has a history of producing large earthquakes every 100 to 150 years.

Tungabhadra Dam

Geography

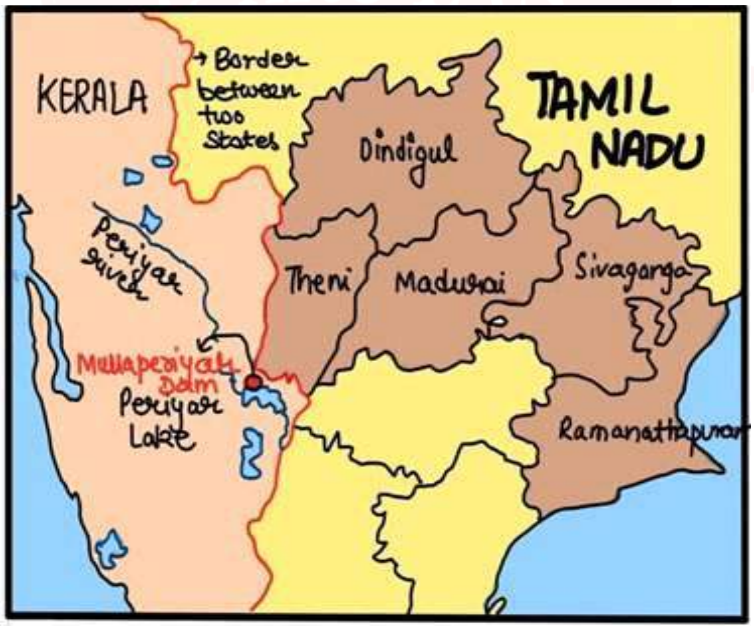
- It is a multipurpose dam across the Tungabhadra River, a tributary of the Krishna River in Karnataka.
- Also known as Pampa Sagar.
- The Tungabhadra reservoir and the Mullaperiyar dam in Kerala are uniquely distinguished as the only two reservoirs in India constructed using a combination of mud and limestone.



Mullaperiyar Dam

Geography

- This dam is located in a seismically active area in Kerala and has structural flaws.
- Tamil Nadu operates and maintains the dam, but Kerala and Tamil Nadu have been fighting for control for over 35 years.
- A 2021 UN report identified the dam as one of the world's big dams that needs to be decommissioned.



Why in news?

- Recently, the Court granted bail to an accused who had been jailed for four years without conviction on counterfeiting and smuggling charges. The Supreme Court has criticised the denial of bail as unjust, causing "**prisonization**" of an accused presumed innocent.

Classification of bail

Depending on the stage of the criminal proceeding, a person may ask for one of four types of bail in India:

- **Regular Bail:** Regular bail is frequently issued to an individual who has previously been arrested and detained by police. The accused has the right to be freed from such confinement under Section 437 and Section 439 of the CrPC. So, a regular bail is simply the release of an accused from jail to ensure his attendance at the trial.
- **Interim Bail:** Interim bail is bail issued for a short period. Interim bail is granted to an accused before the hearing for regular or anticipatory bail.
- **Anticipatory Bail:** If a person suspects that he may be arrested for a non-bailable offence, he may petition for anticipatory bail. In recent years, this has become an important problem because corporate competitors and other prominent persons sometimes seek to frame their opponents with fake charges. It's similar to obtaining advance bail under Section 438 of the CrPC. A bail under Section 438 may be bail before arrest, and an individual cannot be arrested by the police if the court has granted anticipatory bail.
- **Statutory Bail:** The remedy of statutory bail, also known as default bail, is distinct from bail obtained in the ordinary procedure under CrPC Sections 437, 438, and 439. As the name implies, statutory bail is given when the police or investigating agency fails to file its report/complaint within a certain time frame.

Concerns in India's Bail System

- **Arbitrary and Excessive Bail Bonds:** Imposition of exorbitant bail amounts, leading to undue detention.
- **Delay in Hearing Bail Applications:** Prolonged delays in hearing bail applications, even when there is insufficient evidence to justify continued incarceration. (P. Chidambaram v. Directorate of Enforcement (2019)
- **Over-Reliance on Money Bonds:** The excessive reliance on money bonds as a condition for bail can disproportionately affect those from marginalised socioeconomic backgrounds.
- **Lack of Transparency and Accountability:** In some cases, the reasons for granting or denying bail are not adequately recorded or explained. (Dataram Singh v. The State of Uttar Pradesh (2018)
- **Inconsistent application of bail provisions:** Results in disparate outcomes for similarly situated accused, violating Article 14 of the Constitution. (Satender Kumar Antil v. Central Bureau of Investigation (2022)

1. **Hussainara Khatoon v. State of Bihar (1979)**
   - This was a landmark case where the Supreme Court addressed the plight of undertrial prisoners languishing in jails due to delays in their trials. It emphasized the right to a speedy trial as part of Article 21 of the Constitution (Right to Life and Personal Liberty) and directed the release of undertrials on bail if they had already served more than the maximum sentence for the offense they were charged with.
2. **Sanjay Chandra v. CBI (2011)**
   - In this case, the Supreme Court emphasized that bail should not be denied simply as a punitive measure. It held that the right to personal liberty should prevail, especially when the accused is not a flight risk or likely to interfere with the investigation. The court underscored that bail is a rule, and jail is an exception, promoting the principle of "bail, not jail" in cases involving non-violent economic offenses.
3. **Arnesh Kumar v. State of Bihar (2014)**
   - The Supreme Court provided detailed guidelines to prevent unnecessary arrests, especially in cases punishable with up to seven years of imprisonment. It directed that arrests should be based on a necessity assessment, preventing custodial misuse and upholding personal liberty. The court mandated that police officers justify arrests in written form, aiming to curb arbitrary detentions.

Reforms

- **Malimath Committee (2003)**
  - **Alternative bail bonds:** Such as surety bonds to reduce the financial burden on accused persons.
  - **Community-based supervision:** To monitor the behaviour of accused persons released on bail.
  - **Categorization of offences:** Based on their severity and the likelihood of the accused absconding.
  - **Increase the period for filing a charge sheet:** From 90 days to 180 days after arrest. If a charge sheet is not filed within this period, the accused should be released on bail.
- **Revisions by the Supreme Court**
  - The Supreme Court of India has repeatedly emphasized the importance of "bail not jail," especially for undertrials who are accused of minor offenses and have already spent significant time in jail. It has encouraged courts to avoid unnecessary detention, focusing on individual liberty and presumption of innocence.
  - Landmark judgments, such as the Satender Kumar Antil v. CBI case, have led to guidelines encouraging lower courts to be more considerate in granting bail.
- **Legal Aid and Representation**
  - The National Legal Services Authority (NALSA) has been increasing efforts to provide legal aid to undertrials who cannot afford lawyers. The idea is to ensure that all eligible individuals have access to the information and representation they need for bail applications.
- **Strengthening Review Mechanisms**
  - Regular review mechanisms are being enforced by high courts to monitor district and subordinate courts. These reviews help ensure timely hearings and adherence to guidelines set forth for bail applications.

Disaster Management (Amendment) Bill, 2024 — Polity

Why in news?

- The Disaster Management (Amendment) Bill, 2024 was introduced in Lok Sabha to amend the **Disaster Management Act, 2005**.

Features of Disaster Management Act, 2005

- **Institutional Structure**:
  - **National Disaster Management Authority (NDMA)**: Chaired by the Prime Minister, NDMA is responsible for creating policies and laying down guidelines for disaster management at the national level.
  - **State Disaster Management Authorities (SDMA)**: Chaired by respective Chief Ministers, SDMAs ensure that disaster management plans and policies are implemented at the state level.
  - **District Disaster Management Authorities (DDMA)**: Chaired by District Collectors, DDMAs coordinate disaster management activities at the district level.
- **National and State Executive Committees**:
  - These committees assist the NDMA and SDMAs, respectively, in implementing the national and state disaster management plans and policies.
- **Disaster Response Fund and Mitigation Fund**:
  - The act mandates the creation of National, State, and District Disaster Response and Mitigation Funds to finance disaster response and preparedness measures.
- **Disaster Management Plans**:
  - The act requires every ministry, state government, and district to prepare a comprehensive disaster management plan that aligns with national guidelines, addressing preparedness, response, and mitigation.
- **Roles and Responsibilities**:
  - It defines the roles and responsibilities of different government levels, public sector entities, and community organizations, ensuring a coordinated response in times of disaster.
- **Focus on Preparedness and Mitigation**:
  - The act promotes proactive disaster management through risk assessment, capacity building, awareness programs, and implementing preventive measures.

- **Penalties for Non-Compliance**:
  - The act imposes penalties on individuals or agencies that obstruct disaster response activities or refuse to comply with disaster management guidelines and orders.
- **Use of Technology and Research**:
  - Encourages the integration of modern technology, research, and development in disaster management practices.
- **Training and Capacity Building**:
  - Emphasizes disaster education, training, and mock drills for community and emergency responders to improve preparedness and resilience.
- **Coordination with International Agencies**:
  - Facilitates cooperation with international organizations and agencies to access resources, expertise, and support when necessary.

Key Highlights of the Proposed Amendments

- **Clarification of Roles**
  - The bill seeks to streamline the roles and responsibilities of various authorities and committees involved in disaster management.
- **Statutory Status for Key Bodies**
  - The National Crisis Management Committee and the High Level Committee will be given statutory status, ensuring their continued operation and effectiveness.
- **Empowerment of Disaster Management Authorities**
  - The National and State Disaster Management Authorities will be empowered to prepare disaster plans, replacing the previous role of the National and State Executive Committees.
- **Establishment of Disaster Database**
  - The bill mandates the creation of disaster databases at both national and state levels to improve data management and analysis.
- **Urban Disaster Management Authority**
  - To address the specific challenges of urban areas, the bill proposes the establishment of Urban Disaster Management Authorities in state capitals and large cities.
- **State Disaster Response Force**
  - The creation of State Disaster Response Forces will enhance the capacity of states to respond to disasters effectively.
- **Omissions from the Act**
  - The Bill seeks to omit sections related to "Guidelines for minimum standards of relief" and "Relief in loan repayment etc." It also seeks to omit the section related to "Guidelines for minimum standards of relief by State Authority".

Concerns

- **Centralisation Concerns**
  - The Bill grants substantial rule-making and regulatory powers to the central government, particularly the NDMA.
  - Critics argue this centralisation could infringe on state rights and lead to bureaucratic overlaps that might hinder effective disaster management.
- **Resource Allocation Issues**
  - Concerns have been raised about the capacity of local authorities, especially in smaller cities, to manage the new responsibilities under UDMAs.
  - The Bill does not adequately address the resource and expertise needs required for these authorities to function effectively.
- **Constitutional and Legal Challenges**
  - The Bill faces scrutiny over its constitutionality, as disaster management is not explicitly mentioned in the Constitution's Concurrent List.
  - This raises questions about whether the central government is overstepping its authority by imposing regulations that might traditionally fall under state jurisdiction.

- **Multiplicity of Authorities**
  - The creation of new bodies like UDMAs, along with the formalisation of existing committees, has raised concerns about potential bureaucratic overlaps.
  - This could lead to confusion and inefficiencies, complicating coordination and hindering swift disaster response.
- **Role Confusion**
  - The Bill's aim to streamline disaster management could blur the lines of responsibility among various levels of government.
  - This may result in delays in decision-making and action during emergencies.
- **Penalties for Non-Compliance**
  - The Bill introduces penalties for obstructing disaster management efforts, including fines up to ₹10,000.
  - However, the criteria for imposing these penalties are not clearly defined, raising concerns about potential misuse or arbitrary enforcement.

State's Power to Tax Minerals — Polity

Why in news?

- Recently, The Supreme Court 9-judge constitution bench held by an 8:1 majority that **States have the power to levy tax on mineral rights** and that the Union law- Mines and Minerals (Development and Regulation) Act 1957 do not limit such power of the States.

- **Entry 50 List II (State List) pertains to states' taxing powers on mineral rights. The court noted that the term "limitation" in this entry does not imply a transfer of taxing power to the Parliament.**
- **Entry 54 List I (Union List) pertains to the Union's power over minerals but is regulatory and does not include taxing authority.**
- **Entry 49 List II (State List) includes "land," which encompasses mineral-bearing lands, thereby granting states the competence to tax such lands.**

Mines and Minerals (Development and Regulation) Act 1957

- It governs the mining sector in India, by regulating mineral extraction, classifying minerals into
- **major and minor categories**, and outlining procedures for granting mining rights.
- The Act aims to ensure sustainable development and management of mineral resources while balancing **economic and environmental concerns**.
- Amended in 2015: established **District Mineral Foundation (DMF)** for the welfare of the people and **National Mineral Exploration Trust (NMET)** to give thrust to exploration.
- Amended in 2023 to bring the following amendments:
  - **Omitted 6 minerals** from the list of 12 atomic minerals specified in 1st Schedule Part-B of the Act- **Lithium, Titanium, Beryllium, Niobium, Tantalum and Zirconium**.
  - Empowers the **Central Government** to exclusively auction mineral concessions for critical minerals.

Background

- Under **Section 9 of the Mines and Minerals (Development and Regulation) Act, 1957 (MMDRA),** entities holding mining leases are required to pay royalties to the owner of the land, which could be a state government.
  - **Royalties** refer to the fees paid to the owner of a product in exchange for the right to use that product
- **India Cement Ltd v State of Tamil Nadu 1989 case**
  - The court ruled that while states can collect royalties, they **cannot impose taxes** on mining activities, as the Central government has overriding authority over the regulation of mines and mineral development under **Entry 54 of the Union List**.
- **State of West Bengal v Kesoram Industries Ltd 2004 case**
  - The five-judge Constitution Bench identified a typographical error in the India Cement decision, clarifying that it should have stated "cess on royalty is a tax" rather than "royalty is a tax." This led to the case being transferred for review to a 9 judge bench.

Recent 9 Judge Bench Verdict

- The Supreme Court affirmed that States have the legislative competence to tax mineral rights and mineral-bearing lands, as conferred by Entry 50 in the State List of the Seventh Schedule of the Constitution.
- The Court held that royalty is not a tax but a contractual consideration for the enjoyment of mineral rights. This distinction was crucial in determining that the Mines and Minerals (Development and Regulation) Act, 1957 (MMDR Act) does not limit the States' power to impose taxes on mineral rights.
- The judgment emphasized the importance of fiscal federalism, ensuring that States retain their power to levy taxes within their legislative domain. This protection is vital for States to raise revenues necessary for delivering welfare schemes and services to their people.
- Justice B.V. Nagarathna, in her dissenting opinion, warned that allowing States to levy taxes on mineral rights could lead to unhealthy competition among States to derive additional revenue. This could result in an uneven and uncoordinated spike in the cost of minerals, affecting industrial product prices and potentially leading to market exploitation for arbitrage.
- The majority judgment highlighted that diluting the States' taxation powers would adversely affect their ability to deliver welfare schemes and services. States need adequate fiscal resources to invest in infrastructure, health, education, and other essential services.
- Given the ruling's implications, the central government may seek to amend the law to impose explicit limitations on the States' taxation power or even prohibit them from taxing mineral rights. However, such a move could leave mining activities out of the tax net, as the majority judgment also held that Parliament lacks the legislative competence to tax mineral rights.

Implications of the Judgement

- **Benefits**:
  - **Increased Revenue for States**: States can now benefit directly from taxing minerals, leading to improved local economic conditions and infrastructure development.
  - **Enhanced State Autonomy**: The decision reinforces federal principles by granting States greater control over their mineral resources.
- **Challenges:**
  - **Economic Disparity**: Mineral-rich States may gain disproportionately, leading to economic imbalances between regions.
  - **Increased Mining Costs**: Additional taxes may increase the cost of mining operations, potentially making Indian mining less competitive on a global scale.
  - **Regulatory Conflicts**: There may be conflicts between State and Central regulations, complicating the mining sector's regulatory environment.

Uniform Civil Code (UCC) — Polity

Why in news?

- Prime Minister Narendra Modi, in his Independence day address from the Red Fort, made a strong case for the **implementation of a Uniform Civil Code (UCC)** in India.

About UCC

- A common law that applies to all religious communities in personal matters such as **marriage, inheritance, divorce, adoption**, etc.
- **Constitution: Article 44** of Directive Principles of State Policy (DPSP).

Constituent Assembly Discussions

- **Draft Article 35**: Proposed by **Ambedkar**, this article, which later became **Article 44**, placed the UCC in the **Directive Principles**, making it non-mandatory.
- **Concerns of Muslim Leaders**: Leaders such as **Ismail Sahab and Pocker Sahib Bahadur** argued that the UCC infringed on religious freedom and would lead to discord.

Support for UCC

- **K.M. Munshi**: Supported the UCC for promoting **national unity and secularism**, acknowledging concerns even within Hindu communities.
- **Alladi Krishnaswami Aiyyar**: Asserted that the UCC would foster harmony and questioned the lack of opposition to the existing common criminal code.
- **Ambedkar**: Highlighted the **optional nature** of the UCC and its inclusion in the Directive Principles as a compromise.

- **Shayara Bano vs. Union of India**
- **Joseph Shine vs Union of India**
- **Indian Young Lawyers association vs Kerala**

Arguments in Favor of Uniform Civil Code

- **Promoting National Unity and Secularism**
  - **Fostering Unity**: Encourages a shared identity and sense of belonging among all citizens, enhancing national integration and secularism.
  - **Reducing Conflicts**: Minimizes communal and sectarian conflicts arising from different personal laws.
  - **Upholding Constitutional Values**: Strengthens principles of equality, fraternity, and dignity for all individuals.
- **Ensuring Gender Justice and Equality**
  - **Addressing Gender Discrimination**: Provides equal rights and status to women in marriage, divorce, inheritance, adoption, and maintenance.
  - **Empowering Women**: Enables women to challenge patriarchal and regressive practices that violate their fundamental rights.
- **Guaranteeing Equality Under the Law**
  - **Equal Rights for All**: Ensures equal rights and treatment for all citizens, regardless of their religious background, aligning with Article 14 of the Indian Constitution.
  - **Standardizing Marriage Laws**: Promotes gender equality and religious neutrality by standardizing marriage laws.
  - **Model Implementation**: The UCC implementation in Uttarakhand, banning polygamy and standardizing the marriage age at 21, serves as a model for national implementation.
- **Simplifying the Legal System**
  - **Streamlining Personal Laws**: Eliminates the complexities of multiple personal laws, making it easier for courts to administer justice and for citizens to understand their rights.
  - **Reducing Judicial Backlog**: A unified code could streamline legal processes, reducing the backlog of personal law disputes in civil cases.
- **Modernizing and Reforming Society**
  - **Updating Outdated Practices**: Modernizes and reforms outdated practices across all communities, aligning personal laws with contemporary social values.
  - **Addressing LGBTQ+ Rights**: Could address issues like LGBTQ+ rights in marriage, adoption, and inheritance, which are currently not uniformly recognized.
- **Aligning with International Standards**
  - **Global Examples**: Many countries with diverse populations have successfully implemented unified civil codes, such as Turkey in 1926.
  - **Improving Global Standing**: Adopting a UCC could align India with international human rights standards, potentially improving its standing on global indices like the Global Gender Gap Index.

Arguments Against the Uniform Civil Code

- **Risk of Homogenization**: Critics argue that a UCC could lead to cultural homogenization, threatening unique practices like the matrilineal inheritance system of the Khasi tribe in Meghalaya.
- **Infringement on Religious Practices**: Opponents believe that a UCC could infringe on the right to religious freedom guaranteed by Article 25 of the Constitution, as personal laws are integral to many communities' religious practices.

- **Marginalization Concerns**: There are fears that a UCC could disproportionately affect minority communities, leading to a sense of marginalization and dilution of their cultural identity.
- **Impractical for Diverse Society**: Critics argue that creating a UCC that satisfies all communities in a diverse country like India is practically impossible, as evidenced by regional variations within codified Hindu law.
- **Economic Costs**: Implementing a UCC would require a massive legal overhaul, including retraining professionals and updating databases, potentially increasing the court burden during the transition period.
- **Infringes on Federal Structure**: The implementation of a nationwide UCC could potentially undermine state autonomy, as personal laws fall under the Concurrent List of the Constitution.
- **Electoral Considerations**: The UCC is often viewed through a political lens, with parties and leaders resisting or supporting it based on electoral considerations, leading to inconsistent policies and delays.

Way Forward

- **Collaborative Discussions and Agreement Formation:**
  - **Engage Stakeholders**: Involve religious leaders, legal experts, civil society organizations, and community representatives in nationwide consultations.
  - **Transparent Communication**: Clearly explain proposed changes and their implications.
  - **Public Debates**: Foster public discussions to raise awareness and gather diverse viewpoints.
  - **Build Consensus**: This inclusive approach can help address concerns and reduce resistance.
- **Gradual Rollout:**
  - **Start with Common Ground**: Begin with widely agreed-upon areas like standardizing the legal age of marriage and ensuring equal inheritance rights.
  - **Tackle Contentious Issues Gradually**: Address more controversial issues in subsequent phases.
  - **Allow Adaptation**: Make adjustments based on feedback and real-world outcomes, giving communities time to adapt.
- **Protection of Minority Rights:**
  - **Strong Protections**: Include robust constitutional safeguards to protect minority rights and cultural practices.
  - **Oversight Body**: Establish a body to oversee UCC implementation and address grievances.
  - **Exemption Mechanisms**: Create clear processes for communities to seek exemptions for specific practices that do not conflict with fundamental rights.
- **Data-Driven Policy Making:**
  - **Learn from States**: Study state-level initiatives related to personal law reforms.
  - **Analyze Outcomes**: Examine the results of Goa's civil code and Uttarakhand's recent UCC implementation.
  - **Inform National Policy**: Use this evidence to design a national UCC, highlighting successful strategies and potential pitfalls.
- **Overcoming Implementation Hurdles:**
  - **Logistical Planning**: Prepare for extensive legal reforms, retraining of professionals, and updating of legal databases.
  - **Economic Considerations**: Plan for the costs associated with the legal overhaul and potential increase in court burden during the transition period.

Conclusion

- The implementation of a Uniform Civil Code (UCC) in India is a complex yet crucial step towards achieving national integration, gender justice, and legal uniformity. While it faces significant challenges, including cultural preservation and minority rights, a phased and inclusive approach, backed by constitutional safeguards and evidence-based reforms, can pave the way for a balanced and effective UCC that respects India's diverse heritage while promoting equality and modernity.

Why in news?

- The Bill seeks to regulate and standardise the education and practice of allied and healthcare professionals.
- **Key features of the Bill include:**
  - **Allied health professional**:
    - The Bill defines 'allied health professional' as an associate, technician, or technologist trained to support the diagnosis and treatment of any illness, disease, injury, or impairment.
    - Such a professional should have obtained a diploma or degree under this Bill. The duration of the degree /diploma should be at least 2,000 hours (over a period of two to four years).
  - **Healthcare professional**:
    - A 'healthcare professional' includes a scientist, therapist, or any other professional who studies, advises, researches, supervises, or provides preventive, curative, rehabilitative, therapeutic, or promotional health services.
    - Such a professional should have obtained a degree under this Bill. The duration of the degree should be at least 3,600 hours (over a period of three to six years).
  - **Allied and healthcare professions**:
    - The Bill specifies certain categories of allied and healthcare professions as recognised categories.
    - These are mentioned in the Schedule to the Bill and include life science professionals, trauma and burn care professionals, surgical and anaesthesia related technology professionals, physiotherapists, and nutrition science professionals.
    - The central government may amend this Schedule after consultation with the National Commission for Allied and Healthcare Profession.
  - **National Commission for Allied and Healthcare Professions**:
    - The Bill sets up the National Commission for Allied and Healthcare Professions.
    - The Commission will consist of: (i) the Chairperson, (ii) Vice-Chairperson, (iii) five members (at the level of Joint Secretary) representing various Departments/ Ministries of the central government, (iv) one representative from the Directorate General of Health Services, (v) three Deputy Directors or Medical Superintendents appointed on a rotational basis from amongst medical institutions including the AIIMS, Delhi and AIIPMR, Mumbai, and (vi) 12 part-time members representing State Councils, among others.
    - **Functions of the Commission**: The Commission will perform the following functions with regard to Allied and Healthcare professionals:
      - framing policies and standards for regulating education and practice,
      - creating and maintaining an online Central Register of all registered professionals,
      - providing basic standards of education, courses, curriculum, staff qualifications, examination, training, maximum fee payable for various categories, and
      - providing for a uniform entrance and exit examination, among others.
    - **Professional Councils**:
      - The Commission will constitute a Professional Council for every recognised category of allied and healthcare professions.
      - The Professional Council will consist of a president and four to 24 members, representing each profession in the recognised category.
      - The Commission may delegate any of its functions to this Council.
    - **State Councils**:
      - Within six months from the passage of the Bill, state governments will constitute State Allied and Healthcare Councils.
      - The State Councils will consist of: (i) the Chairperson (at least 25 years of experience in the field of allied and healthcare science), (ii) one member representing medical sciences in the state government, (iii) two members representing state medical colleges, (iv) two members representing charitable institutions, and (v) two members from each of the recognised categories of allied and healthcare professions, nominated by the state government, among others.
      - The State Councils will: (i) enforce professional conduct and code of ethics to be observed by allied healthcare professionals, (ii) maintain respective State Registers, (iii) inspect allied and healthcare institutions, and (iv) ensure uniform entry and exit examinations.

- **Establishment of institutions:**
  - Prior permission of the State Council will be required to: (i) establish a new institution, or (ii) open new courses, increase the admission capacity, or admit a new batch of students to existing institutions.
  - If such permission is not sought, then any qualification granted to a student from such an institution will not be recognised under the Bill.
- **Offences and penalties**:
  - No person is allowed to practice as a qualified allied and healthcare practitioner other than those enrolled in a State Register or the National Register.
  - Any person who contravenes this provision will be punished with a fine of Rs 50,000.

Privilege Motion — Polity

Why in news?

- Opposition moves Privilege Motion against Education Minister.

About Privilege Motion

- A Privilege Motion is initiated when an MP believes that their rights, immunities, or dignity, or those of the Parliament, have been violated.
- Privilege motions are rare but significant, often arising from issues like misleading the house, obstructing MPs in their duties, or showing disrespect to parliamentary proceedings.
- The motion aims to protect the **sanctity and functioning** of Parliament, ensuring that no member or the institution is unduly hampered in performing their duties.

Rules governing privilege

- Rule No 222 in Chapter 20 of the Lok Sabha Rule Book and correspondingly Rule 187 in Chapter 16 of the Rajya Sabha rulebook governs privilege.
- It says that a member may, with the consent of the Speaker or the Chairperson, raise a question involving a breach of privilege either of a member or of the House or of a committee thereof.
- However, the rules mandate that any notice should be relating to an incident of recent occurrence and should need the intervention of the House. Notices have to be given before 10 am to the Speaker or the Chairperson.

Privileges Committees

- In the Lok Sabha, the Speaker nominates a committee of privileges consisting of 15 members as per respective party strength.
- A report is then presented to the House for its consideration.
- The Speaker may permit a half-hour debate while considering the report.
- The Speaker may then pass final orders or direct that the report be tabled before the House.
- A resolution may then be moved relating to the breach of privilege that has to be unanimously passed.

Procedure

- The motion is raised in **either house** of Parliament (Lok Sabha or Rajya Sabha).
- It requires the **Speaker** (Lok Sabha) or the **Chairman** (Rajya Sabha) to decide whether the motion will be admitted for discussion.
- If admitted, it may be referred to the **Committee of Privileges** for investigation.
- If the motion is found valid, the offending party may face penalties ranging from a reprimand to imprisonment or expulsion from the house.

No-Con□dence Motion against Vice-President of India

Polity

Why in news?

- Opposition to move No-Confidence Motion against Vice-President of India

Constitutional Basis

- **Article 67(b)** of the Indian Constitution provides the procedure for the removal of the Vice President.
- The Vice President can be removed from office through a resolution passed by the **Rajya Sabha**, but the Constitution does not specify the grounds for removal.

Initiation of Process

- The removal process begins in the Rajya Sabha (the Council of States).
- A resolution for removal must be passed by a majority of all the then members of the Rajya Sabha **(Effective Majority)**.
- The resolution must also be agreed upon by the **Lok Sabha** (the House of the People).
- **Notice Period**:
  - A 14-day notice must be given before moving the resolution.
- **Role of Lok Sabha**:
  - After the Rajya Sabha passes the resolution, it must be agreed to by the Lok Sabha.

The Oilfields (Regulation and Development) Amendment Bill 2024

Polity

Why in news?

- Recently the Ministry of Petroleum & Natural Gas (MoPNG) introduced a Bill in Parliament to amend the Oilfields (Regulation and Development) Act, 1948.

Key features of the Bill

- **Definition of mineral oils accelerated:** The Act defines mineral oils to include petroleum and natural gas. It will not encompass coal, lignite or helium. The Bill expands the definition to consist of:
  - Any evidently happening hydrocarbon,
  - Coal mattress methane, and
  - Shale gas/oil.
- **Introduction of petroleum lease:** The Act offers for a mining lease. The lease offers for various activities inclusive of exploration, prospecting, manufacturing, making merchantable, and disposal of mineral oils.
  - The Bill replaces the mining lease with a petrol rent, which also covers a comparable set of activities. Existing mining leases granted under the Act will continue to be valid.
- **Rule making powers of the central government:** The Act empowers the central government to make Rules on several matters.
  - These include regulating the grant of leases, conservation and development of mineral oils, strategies for generating oil, and way of collection of royalties, fees, and taxes.
  - The central government may additionally make Rules on merger and combination of petroleum leases, sharing of production and processing facilities, responsibilities of lessees toward defensive surroundings and lowering emissions, alternative mechanisms for resolving disputes in terms of the supply of petroleum leases.
- **The Bill provides following offenses:**
  - Undertaking activities related to mineral oils along with exploring, prospecting, and manufacturing without a valid lease, and
  - Non-payment of royalty.
- **Adjudication of penalties:** The central government will employ an officer of the rank of Joint Secretary or above for adjudication of penalties.
  - Appeals against the decisions of the Adjudicating Authority will lie before the Appellate Tribunal specific in the **Petroleum and Natural Gas Board Regulatory Board Act, 2006**.
- The 2006 Act designates the Appellate Tribunal for Electricity, constituted under the Electricity Act, 2003, as the Appellate Tribunal.

Why in news?

- In a landmark decision, the Supreme Court of India affirmed the **authority of states to create sub-categories** within SCs and STs for the allocation of reservation benefits.

Constitutional Provisions

- **Article 15(4)**: Allows special provisions for advancing weaker sections.
- **Article 16(4A)**: Provides reservation in state services for SCs/STs.
- **Article 17**: Abolishes untouchability.
- **Article 46**: Promotes educational and economic interests of SCs/STs; protects from injustice and exploitation.
- **Articles 330 & 332**: Reservation of seats for SCs/STs in the House of the People and State legislative assemblies.
- **Article 335**: Considers SCs/STs claims in service appointments, balancing efficiency.
- **Article 338**: Establishes National Commission for Scheduled Castes (NCSC) and National Commission for Scheduled Tribes (NCST).
- **Part IX & IXA**: Reservations for SCs/STs in Panchayats and Municipalities.
- **Article 46:** Directs the state to promote the educational and economic interests of SCs and STs

Legal basis of sub-classification

- The Constitution of India does not prohibit sub-classification of SCs and STs but leaves it to the discretion of Parliament and State Legislatures to legislate for the welfare of these groups.
- Under Articles 341-342, the Constitution empowers the President and Parliament to include or exclude any group from the list of SCs or STs in a State/Union Territory.
- Article 16(4) of the Constitution empowers the State to provide for reservation in appointments in favour of any backward class of citizens which, in the opinion of the State, is not adequately represented in the services under the State.
- The Supreme Court also recognised the power of the states to sub-classify Scheduled Castes and Scheduled Tribes based on relevant data and empirical evidence of their backwardness.
- The apex court has overruled its own judgment in the E.V. Chinnaiya case, which had struck down the sub-classification of Scheduled Castes by the Andhra Pradesh government in 2000.
- The court held that the Chinnaiya case was wrongly decided and did not take into account ground realities and the constitutional mandate of social justice.

Significance of the Judgment

- **Ordered Inequalities**: SC communities experience varying levels of disadvantage, with some groups more deprived of basic amenities than others.
- **Unequal Representation:** Certain SC sub-groups, like the Madiga community, are underrepresented and believe that benefits are disproportionately claimed by other groups, such as the Mala community.
- **Legal Validation:** The Supreme Court, led by Justice Arun Mishra, has upheld the states' right to prioritise the most disadvantaged SC sub-groups while ensuring that others still receive benefits.
- **Equitable Distribution:** The Union government is devising strategies to ensure that over 1,200 Scheduled Castes receive benefits more equitably.
- **Acknowledging Diversity:** The court acknowledged the diversity within Scheduled Castes, emphasising the need for customised affirmative action.

Possible Roadblocks

- **Legal Challenges:** Only Parliament, not states, can modify SC/ST lists, as per the Supreme Court ruling.
- **Outdated Data:** The absence of updated data since the 2011 census limits the accuracy of sub-categorization efforts.
- **Untouchability Consideration:** SCs require special treatment due to the historical impact of untouchability, which differs from other forms of social disadvantage.

Why in news?

- Bharatiya Vayuyan Vidheyak 2024 introduced in the Lok Sabha.

Bharatiya Vayuyan Vidheyak 2024:

- Aims to replace **Aircraft Act, 1934**
- Provide guidelines for the control of the manufacture, possession, use, operation, sale, import and export of aircraft
- Key Highlights –
  - Aims to empower the Central Government to make rules to implement the Convention relating to international civil aviation.
  - Examples – **Chicago Convention (1944) and the International Telecommunication Convention (1932)**.
  - It also gives the Directorate General of Civil Aviation (DGCA), the Bureau of Civil Aviation Security (BCAS), and the Aircraft Accident Investigation Bureau (AAIB) increased powers.
  - It also empowers the Central Government to issue orders (like detaining aircraft) in emergency in the interest of public safety.
- Significance –
  - In alignment with the **Atmanirbhar Bharat initiative**.
  - Wider coverage to cover drones, unmanned aerial vehicle (UAV) and certain electronic gliders.

Why in news?

- The UN General Assembly recently launched the Multidimensional Vulnerability Index (MVI) to help Small Island Developing States (SIDS) to secure low-interest financing.

About Multidimensional Vulnerability Index (MVI)

- The MVI is an international quantitative benchmark designed to measure structural vulnerability and lack of resilience across various dimensions of sustainable development at the national level.
- It serves as a complement to Gross National Income (GNI) per capita.

Need for MVI:

- Current Limitations: Traditional measures like GNI per capita fail to capture the development and well-being of countries facing high risks of external shocks.
- Access to Concessional Financing: Eligibility for affordable development support is often determined by income thresholds, not vulnerability.
- Inclusive Aid Allocation: The MVI could better guide development policies and aid allocation by providing early identification of nations in need of international assistance.

Structure of the MVI:

- Universal Level Quantitative Assessment: Provides a summary index that ranks countries based on structural vulnerability and resilience using a common methodology. This is presented as an overall MVI score.
- Vulnerability-Resilience Country Profiles (VRCP): Offers a detailed, tailored characterization of each country's specific vulnerability and resilience factors.

Key Principles Guiding MVI Index Construction:

- Multidimensionality: Covers economic, environmental, and social dimensions of sustainable development.
- Universality: Designed to capture vulnerabilities across all developing countries for credibility and comparability.
- Exogeneity: Differentiates between policy-induced and exogenous factors to reflect structural challenges independent of government actions.
- Availability: Uses reliable, recognized, and comparable data.
- Readability: Clear and comprehensible design.

Conceptual Framework for the MVI:

- The MVI is based on two main pillars:
  - Structural Vulnerability: Linked to a country's exposure to adverse external shocks and stressors.
  - Structural Resilience: The capacity to withstand and recover from such shocks.

Dimensions of Sustainable Development:

- Economic Vulnerability: Risks from adverse external economic shocks.
- Environmental Vulnerability: Risks from natural hazards, climate change, and anthropogenic shocks.
- Social Vulnerability: Risks from social shocks.

Resilience Types:

- Structural Economic Resilience: Economic capabilities and capital that aid recovery.
- Structural Environmental Resilience: Environmental capital and infrastructure that reduce vulnerability.
- Structural Social Resilience: Social capabilities and human capital that enhance adaptive capacity.

Indicator Selection and Index Construction:

- Chosen indicators are of high quality and sourced from United Nations data.
- Indicators are combined into a single vulnerability metric through rescaling, aggregation, and weighting.

Key Observations by the MVI Panel

- Correlation: High structural vulnerability often correlates with low structural resilience.
- Income Independence: MVI scores are not directly related to income levels, making it a valuable complement to GNI.
- Small Island Developing States (SIDS): The MVI does not discriminate against small countries; 70% of SIDS score above the median.
- Ranking and Thresholds: Many countries are moderately vulnerable, complicating the establishment of a clear vulnerability threshold for aid allocation.

Recommended Use of MVI

- Incorporation by Donors: Donors and international financial institutions (IFIs) should explore integrating the MVI into existing policies to ensure a common approach to aid distribution.
- Debt Assessment: Use the MVI to assess external debt sustainability and the need for concessional debt restructuring, in addition to income-based assessments.

Mahatma Gandhi National Rural Employment Guarantee Act — Social Issues

Why in news?

- Enhance rural livelihood security by providing **at least 100 days** of guaranteed wage employment annually. It involves creation of **durable assets** and infrastructure to improve rural quality of life and productivity.

Components

- Guaranteed employment of at least 100 days per years
- Timely and fair wage Payment as per **Minimum Wages Act, 1948.**
- **Asset** creation
- **Decentralised** planning by gram panchayats based on local needs.
- **Demand driven** scheme- A legal guarantee for rural adults to receive work within 15 days of demand or be provided an unemployment allowance.

Challenges

- Delayed payment of wages- This is mainly due to failed payment transfer arising from inactive Aadhaar, and closed, blocked, or frozen bank account.
- Fake job cards
- Corruption
- Late uploading of muster rolls
- Inconsistent payment of unemployment allowance
- Appointment of ombudsman: A committee noted that only 263 out of 715 possible ombudsman positions had been filled.
- Poor coordination: The committee observed poor coordination between central and state nodal agencies.

Implementation:

- **Ministry of Rural Development**

Funding:

- The funding pattern of the scheme comprises 100% funding for unskilled labour cost and 75% of the material cost by Central Government and rest shall be borne by the State Government.

Why in news?

- The government has rolled out a new pension offering, the Unified Pension Scheme (UPS), as an **alternative** to the existing National Pension System (NPS), for its employees.

About Unified Pension Scheme (UPS)

- The Unified Pension Scheme was introduced by the Central Government and will be implemented from 1 April 2025.
- The scheme aims to provide **stability, dignity, and financial security** to government employees post-retirement.
- Current government employees under the National Pension System (NPS) can switch to UPS, but the **choice is irreversible.**
- **State governments** can adopt UPS for their employees. Maharashtra is the first state to do so.

Feature	Unified Pension Scheme (UPS)	New Pension Scheme (NPS)	Old Pension Scheme (OPS)
Pension Amount	50% of average basic pay (last 12 months)	Market-linked returns	50% of last drawn salary with DA hikes
Employee Contribution	10% of basic salary	10% of basic salary	None
Government Contribution	18.5% of basic salary	14% of basic salary	Paid entirely by the government
Inflation Protection	Yes, adjusted by AICPI-IW	No automatic adjustment	Yes, through DA hikes
Family Pension	60% of employee's pension	Based on accumulated corpus and annuity plan	Continues to family after retiree's death
Minimum Pension	₹10,000/month (10+ years of service)	No fixed minimum, it depends on investments	No specific minimum pension amount
Lump Sum Amount	1/10th of last drawn pay (every 6 months)	Up to 60% of the corpus as a lump sum	Typically, none (defined benefit plan)
Risk Factor	No market risk, assured returns	Subject to market risk, variable returns	Low risk, government-backed
Flexibility	Limited, with assured pension	High, with investment choice flexibility	Low, fixed benefits
Portability	Non-portable	Portable	Universal, restricted to government employees
Tax Benefits	Limited	Deductions under Section 80C/80CCD	Likely, but not yet defined

Comparison with Old Pension Scheme (OPS)

- Unlike the OPS, where employees didn't contribute their own money to the fund, the UPS retains employee contributions.
- The government's contribution will be hiked from the present 14% to 18.5%. Of the 18.5% contribution made by the government, 8.5% will flow into a separate fund called the guarantee reserve fund. This fund will be drawn upon to meet any shortfall in commitments.
- Effectively, the UPS offers a hybrid model featuring the fixed benefit of the OPS, along with a contribution-based, market linked component akin to the NPS.

Nandini Sahakar Scheme

Social Issues

Why in news?

- **Recently, the Minister of Cooperation informed the Rajya Sabha about the Nandini Sahakar Scheme.**

Objectives:

- Aims to help women cooperatives undertake **business model-based activities** to improve the socio-economic status of women.

Beneficiary

- Any Women Cooperative Society registered under any **State/Multi State Cooperative Societies Act** under three months in operation.
- Any cooperative society with **minimum 50% women members** at primary level.

Components

- Provides support in enterprise inputs
- Business plan formulation
- Capacity development
- Credit
- Subsidy
- Interest subvention

Implementation:

- **National Cooperative Development Corporation (NCDC).**

Funding:

- NCDC provides funding based on projects.

Why in news?

- **Hindenburg report accused SEBI chief about conflict of interest.**

Securities and Exchange Board of India (SEBI)

- Prior to the establishment of SEBI, the Controller of Capital Issues was the primary regulatory body, operating under the Capital Issues (Control) Act, 1947.
- Formation: SEBI was constituted in 1988 as a non-statutory entity to oversee the securities market. It gained statutory authority in 1992 with the enactment of the SEBI Act, 1992 by the Indian Parliament.
- Foundation: SEBI was initially set up in 1988 as an executive body and was later endowed with statutory powers in 1992 through the SEBI Act, 1992.
- Objective: The primary aim of SEBI is to safeguard the interests of investors in securities, foster the development of the securities market, and regulate it effectively.
- Governance: SEBI is administered by a board known as the SEBI Board.
- Chairperson: The chairperson is appointed by the Union Government of India.
- Members:
  - Two members are from the Union Finance Ministry.
  - One member is from the Reserve Bank of India.
  - The remaining five members are nominated by the Union Government of India, with at least three being full-time members.
- Headquarters: SEBI's main office is situated in Mumbai.
- Regional Offices: It has regional offices in Ahmedabad, Kolkata, Chennai, and Delhi.

Powers of SEBI

- Quasi-legislative Authority: SEBI has the power to draft and implement rules and regulations, including those related to obligations, insider trading, and disclosure requirements.
- Quasi-executive Authority: SEBI can inspect books of accounts and other critical documents to detect and gather evidence against malpractices.
- Quasi-judicial Authority: SEBI can adjudicate cases involving fraud and unethical practices in the securities market.
- Approval of By-laws: SEBI has the authority to approve the by-laws of securities exchanges to ensure their efficient functioning.

Functions of SEBI

- Investor Protection: SEBI's primary function is to protect the interests of investors in securities and promote the development of the securities market.
- Amendment of By-laws: SEBI can mandate securities exchanges to amend their by-laws.
- Inspection of Accounts: SEBI can inspect the books of accounts and call for periodic returns from recognized securities exchanges.
- Inspection of Financial Intermediaries: SEBI can also inspect the books of accounts of financial intermediaries.
- Listing of Shares: SEBI can require certain companies to list their shares on one or more securities exchanges.
- Registration of Brokers: SEBI can mandate the registration of brokers and sub-brokers.
- Control of Malpractices: SEBI can take measures to control malpractices in the securities market by introducing new laws and technologies.
- Investor Education: SEBI plays a crucial role in educating investors about the workings of the securities market.
- Common Platform: SEBI serves as a common platform for portfolio managers, bankers, stockbrokers, investment advisers, merchant bankers, registrars, share transfer agents, and others.

Significance of SEBI

- Technical Innovations: SEBI has implemented numerous technological advancements to expedite trade settlements, including the T+2 settlement cycle introduced in 2023.
- Elimination of Physical Certificates: By replacing physical certificates with digital ones, SEBI has mitigated issues related to postal delays, theft, and forgery, thereby streamlining the settlement process.

- Data Seizure Powers: SEBI possesses the authority to seize data, including call records, from individuals or entities involved in securities transactions under investigation, ensuring transparency in exchange operations.
- Promotion of Self-Regulatory Organizations: SEBI encourages the formation of self-regulatory bodies and enforces measures to prevent fraudulent and unfair trade practices.
- Promotion of Market Growth: SEBI actively promotes the development of the securities market by introducing new regulations and technologies to enhance market efficiency.
- Comprehensive Supervision: SEBI provides thorough oversight of market participants, including brokers, sub-brokers, and other intermediaries, to maintain market integrity.
- Common Platform: SEBI serves as a unified platform for various market participants, including portfolio managers, bankers, stockbrokers, and investment advisers, facilitating coordinated market activities.

Criticism

- **Confidential Disclosures**: According to the '**Code on Conflict of Interests for Members of Board**', disclosures are kept confidential except in specific situations. This can potentially lead to misconduct and cover-ups by unscrupulous individuals.
- **Conflict of Interest Determination**: The SEBI chairperson decides if a board member has a conflict of interest, while the board determines if the chairperson does. This process can result in **quid pro quo** arrangements.
- **Public Disclosure Removal**: The statutory requirement for public disclosure under the **Lokpal and Lokayuktas Act** was removed in 2016. It was replaced with a clause allowing the Union government to set rules for the form and manner of disclosures.
- **Exemption from Disclosure**: The **Digital Personal Data Protection (DPDP) Act** has amended the **RTI Act** to exempt all personal information from disclosure, raising privacy issues.
- **Altered Selection Process**: Allegations suggest that the structure of the search-cum-selection committee for recommending the chairman and whole-time members of SEBI has been modified.
- **Directed Actions**: There have been instances where SEBI was believed to be directed by the Finance Ministry to act in a particular manner, especially in cases involving certain business groups.
- **Restrictive Authority**: SEBI possesses extensive powers that allow it to impose significant restrictions on economic activities, often resulting in losses for the entities under suspicion.

Steps to ensure transparency in SEBI

- **Reform Codes and Laws**: Amend relevant codes and laws to mandate the public disclosure of **assets, liabilities, and conflicts of interest**.
- **Extended Disclosures**: Ensure that disclosures encompass **family members, close relatives, and other known associates**.
- **Historical Connections**: Include information about past associations of the individual and their family members with any **listed companies**.
- **Fair Enquiries**: Establish impartial **judicial or parliamentary inquiries** to ensure fairness in investigations.
- **Privacy Exemption**: The **Supreme Court** has ruled that information related to **assets, liabilities, and performance evaluations** of public servants falls under the privacy exemption.
- **Periodic Assessments**: SEBI should conduct regular reviews of its activities to ensure it performs its duties effectively.
- **Technological Integration**: Embrace emerging technologies such as **Big Data, Machine Learning, and Artificial Intelligence** for enhanced performance.

Rashtriya Gokul Mission for Animal Husbandry

Economy

Why in news?

- Union Minister for Fisheries, Animal Husbandry & Dairying mentioned the steps taken under Rashtriya Gokul Mission for enhancing efficiency and success rate of **Artificial Insemination of Indigenous Breeds** in the country in a written reply in Rajya Sabha.

Steps taken under Rashtriya Gokul Mission to increase milk production

- Implementation of **Nationwide Artificial Insemination Programme** to extend Artificial insemination coverage in the districts with less than 50% coverage

- Accelerated breed improvement programme using bovine In-Vitro fertilization technology **(IVF)**
- for faster genetic upgradation of bovines
- **Accelerated breed Improvement programme** using sex sorted semen for production female calves with more than 90% accuracy
- Progeny Testing and Pedigree Selection Programme for production of high genetic merit bulls
- Delivery of quality artificial insemination services at farmers doorstep through Multi Purpose Artificial Insemination Technicians in Rural India **(MAITRIs)**
- Establishment of **breed multiplication farm** for development of entrepreneurship and to make available disease free heifers.

Sovereign Gold Bonds — Economy

Why in news?

- The government's decision to **reduce customs duty** on gold from 15% to 6% has worried Sovereign Gold Bond (SGB) investors, who fear lower returns due to a potential drop in domestic gold prices following the change announced in the 2024-25 Union Budget.

About Sovereign Gold Bond (SGB)

- SGBs are **tradeable government securities** denominated in grams of gold.
- They are substitutes for holding physical gold.
- Investors have to pay the issue price in cash and the bonds will be redeemed in cash on maturity. Maturity of the bond is **8 years**.
- These bonds offer 2.5 per cent simple interest per annum paid semi-annually on the purchase value.
- The Bond is issued by the **Reserve Bank** on behalf of the Government of India.
- These securities are **eligible to be used as collateral** for loans from banks, financial Institutions and Non-Banking Financial Companies (NBFC).

Benefits

- **Protection of Investment**: Investors receive the market price of gold at the time of redemption or premature redemption, ensuring the quantity of gold paid for is protected.
- **Superior to Physical Gold**: SGBs eliminate storage risks and costs associated with holding physical gold.
- **Assured Returns**: Investors are assured of the market value of gold at maturity and receive periodic interest.
- **No Additional Charges**: SGBs are free from making charges and purity concerns that apply to gold jewellery.
- **Secure Holding**: Bonds are held in RBI's books or in demat form, eliminating the risk of loss or damage.

Indexation on Long Term Capital Gains Tax (LTCG) — Economy

Why in news?

- Amidst concerns over the Budget proposal to **remove indexation benefits** on long-term capital gains (LTCG), the government has decided to offer taxpayers the option to pay 20% LTCG tax with indexation on property sold if acquired before July 23, 2024.

Definitions

- **Indexation:** Indexation is the process of adjusting the original purchase price of an asset or investment; it allows a taxpayer to **neutralise the impact of inflation** while paying tax on capital gains.
- **Capital Gain:** A Capital gain refers to the increase in the value of a capital asset when it is sold. It occurs when you sell an asset for more than what you originally paid for it. They fall into two categories:
- **Short-term:** Gains realised on assets that you've sold after holding them for one year or less.
- **Long-term:** Gains realised on assets that you've sold after holding them for more than one year.

Budget Proposal

- Currently, LTCG on property sales is calculated by adjusting the purchase price for inflation using the Cost Inflation Index (CII).
- The new rule eliminates this inflation adjustment.
- Taxpayers will now calculate capital gains by simply subtracting the original purchase price from the sale price.
- **Cost Inflation Index (CII):**
- The Cost Inflation Index (CII) is published **annually** by the **income tax department**.
- CII helps **adjust the cost** of an asset for inflation.
- The inflation-adjusted cost is subtracted from the sale price to determine taxable capital gains.

New Amendment

- Taxpayers can now choose between a 12.5% LTCG tax rate without indexation or a 20% rate with indexation for properties acquired before July 23, 2024.
- This allows taxpayers to select the most beneficial tax rate for properties bought before the cutoff date.

PM-Surya Ghar Muft Bijli Yojna

Economy

Why in news?

- Government of India issues Operational Guidelines for Implementation of '**Model Solar Village**' under PM-Surya Ghar: Muft Bijli Yojana.

About the scheme

- The scheme claims to provide 300 units of "free electricity" every month to one crore households.
- Scheme provides a central financial assistance of:
  - Rs 30,000 subsidy for 1 kW system
  - Rs 60,000 for 2 kW systems
  - Rs 78,000 for 3 kW systems or higher
- Systems of higher wattage will not be eligible for Central subsidy.
- Households will apply for subsidy through national portal and can select suitable vendor for installing rooftop solar.
- Households can access collateral-free low-interest loan products of around 7% at present for installation.
- **Model Solar Village** will be developed in each district to act as role model for adoption of rooftop solar in rural areas.
- **Status of Solar energy in India**
  - India currently stands **5th globally in solar power capacity** (as per International Renewable Energy Agency – Renewable capacity statistics 2023).
  - Share of non-fossil fuel in the total electricity production during the year 2022-23 was 25.44%

Significance of the Scheme

- Households will be able to save electricity bills.
- Households can earn additional income through sale of surplus power to DISCOMs.
- Will result in addition of 30 GW of solar capacity through rooftop solar in the residential sector.
- Guided by the **Panchamrit Policy,** as announced at **COP26,** Scheme helps to **reach net zero emissions by 2070** and helps to meet **fifty percent of its electricity requirements from renewable energy sources by 2030.**
- Scheme will create around 17 lakh direct jobs in manufacturing, logistics, supply chain, soles, installation, O&M and other services.

Clean Plant Programme

Economy

Why in news?

- The Union Cabinet has approved the Clean Plant Programme (CPP) proposed by the Ministry of Agriculture and Farmers Welfare.

Key Benefits of the Clean Plant Programme

- **Farmers**
  - **Increased Crop Yields:** By providing virus-free, superior planting material, the CPP aims to boost crop yields.
  - **Enhanced Income Opportunities:** Higher quality produce will lead to better market prices and income for farmers.
- **Nurseries**
  - **Propagation:** Streamlined certification processes and infrastructure support will help nurseries in efficiently producing clean planting material.
  - **Sustainability:** Improved facilities will foster growth and sustainability in the nursery sector.
- **Consumers**
  - **Superior Produce:** The initiative ensures that consumers receive fruits that are not only virus-free but also enhanced in taste, appearance, and nutritional value.
- **Exports**
  - **Global Market Strengthening:** With higher-quality, disease-free fruits, India will enhance its position as a leading global exporter, thereby expanding market opportunities and increasing its share in the international fruit trade.

Core Components of the Clean Plant Centers (CPCs)

- **State-of-the-Art Facilities:** Nine advanced CPCs will be established across India equipped with modern diagnostic and therapeutic facilities, including tissue culture labs.
- **Regulatory Measures:** A certification system under the **Seeds Act of 1966**.
- **Enhanced Infrastructure:** Large-scale nurseries will receive support to facilitate efficient multiplication of clean planting material.

Google Antitrust Case

Economy

Why in news?

- In a landmark case, a U.S. District Court ruled that Google holds an illegal **monopoly** over the internet search market and effectively blocks competitors from gaining market share.

About the anti-trust case

- **Allegations:** Google suppressed competing search engines by making deals to be the default search engine on devices.
- **Impact of Monopoly:** Google's dominance linked to its integration with Chrome, Ad Network, and other Google services, harming market competition.
- **Market Share:** Google holds **89.2%** of the general search market and **94.9%** on mobile devices.
- **Legal Violation:** Judge ruled Google violated Section 2 of the **Sherman Act**, which prohibits monopolisation.
- **Google's Response:** Google plans to appeal, arguing it will limit consumer choice.

Effect of the case on internet searches

- **Default Engine Changes:**
  - Restrictions may bar exclusive contracts for default search engines.
  - Potential shift in default search options could disrupt Google's monopoly.
- **Additional Competitors:**
  - New restrictions could lead to increased competition in the search engine market.

- More competitors may bring diverse and AI-powered search options.
- Potential for innovation, new features, and better search results.

- **Digital Advertising Changes:**
  - Changes in Google's advertising practices might alter digital ad dynamics.
  - Could affect the types and relevance of ads seen by consumers.
- **Consumer Choices:**
  - More search engine options give consumers a choice in what they use.
  - Increased awareness of privacy policies and informed decision-making.
  - Possible impact on the effectiveness of Google's advertising practices.

Banking Laws (Amendment) Bill, 2024 — Economy

Why in news?

- Union Finance Minister Nirmala Sitharaman introduced the Banking Laws (Amendment) Bill, 2024 in the Lok Sabha to bring critical updates to banking regulations.

Key Changes:

- **Increased Nominee Options:**
  - The Bill proposes increasing the number of nominees allowed per bank account from one to four.
- **Redefinition of 'Substantial Interest':**
  - It seeks to redefine 'substantial interest' for bank directorships, raising the financial threshold from ₹5 lakh to ₹2 crore.
- **Flexibility in Auditor Pay:**
  - Banks will have more flexibility in determining the pay for statutory auditors.
- **Updated Reporting Dates:**
  - The Bill changes banks' regulatory reporting dates to the 15th and last day of each month, replacing the current second and fourth Fridays.
- **Amendments to Multiple Laws:**
  - The Bill amends several key laws, including the Reserve Bank of India Act, 1934, the Banking Regulation Act, 1949, the State Bank of India Act, 1955, and the Banking Companies (Acquisition and Transfer of Undertakings) Acts of 1970 and 1980.

Significance of the Bill

- **Enhanced Flexibility for Banks:**
  - The Bill provides banks with greater autonomy, especially in managing auditors and complying with regulatory requirements.
- **Modernized Banking Regulations:**
  - By updating outdated financial thresholds and nominee options, the Bill modernizes banking practices to reflect current economic realities.
- **Improved Governance:**
  - Redefining 'substantial interest' for directorships ensures that only individuals with significant financial stakes can influence bank decisions, promoting better governance.
- **Streamlined Reporting:**
  - The new reporting dates align regulatory practices with modern banking operations, reducing the administrative burden on banks.
- **Broader Legal Reforms:**
  - The Bill's amendments to multiple foundational banking laws signify a comprehensive effort to reform the banking sector, ensuring it is equipped to meet contemporary challenges.

India-EU Relations amid Ukraine War

International Relations

Why in news?

- Prime Minister Narendra Modi's visit to Ukraine signals a shift in India's stance on European security. The **Ukraine conflict** has added complexity to India-EU relations, as both sides navigate their respective strategic interests and foreign policy priorities in a rapidly shifting global environment.

Divergent Stances on the Ukraine Conflict

- **India's Neutral Position:** India has remained neutral on the Ukraine conflict, avoiding direct criticism of Russia and emphasising **dialogue and diplomacy**.
- **EU's Firm Stance Against Russia:** The EU has **firmly opposed** Russia's actions in Ukraine, imposing sanctions and supporting Ukraine.

Impact on Strategic Relations

- **Balancing Act:** The Ukraine war has challenged India's balance between its ties with Russia and its growing partnership with the EU.
- **Strategic Autonomy:** India seeks to pursue an independent foreign policy that serves its national interests.

Economic and Energy Security Concerns

- **Energy Security:** The Ukraine war disrupted global energy markets, prompting the EU to seek alternatives, while India, facing energy challenges, continued buying discounted Russian oil, raising Western concerns.
- **Trade Relations:** Despite their differences, India and the EU's economic ties have strengthened, with the Ukraine conflict.

Geopolitical Realignment and Indo-Pacific Focus

- **Indo-Pacific Cooperation:** The Ukraine war has prompted the EU to focus more on the Indo-Pacific, viewing India as a key partner for regional stability.
- **Multilateral Engagement:** India and the EU maintain engagement in multilateral forums, focusing on a rules-based international order

Diplomatic Engagement and High-Level Visits

- **Continued Dialogue:** Despite differences over the Ukraine conflict, diplomatic engagement between India and the EU has remained robust
- **EU's Understanding:** The EU has shown understanding of India's unique geo-political stance

Opportunities for Future Cooperation

- **Energy Transition:** The EU's push for energy diversification and India's growing interest in renewable energy present opportunities.
- **Digital and Technological Cooperation:** The EU and India can strengthen their partnership in digital transformation, cybersecurity, and data governance.
- **Global Governance and Multilateralism:** India and the EU both seek to reform global governance institutions to better reflect current realities.

Turmoil in Bangladesh

International Relations

Why in news?

- Bangladesh is in turmoil after Prime Minister Sheikh Hasina was ousted in August 2024, leading to massive protests and the installation of an **interim government** under Muhammad Yunus. The country faces widespread violence, political instability, and uncertainty over restoring democracy and holding elections.

Key Aspects of India-Bangladesh Relations

- **Security Cooperation:** India and Bangladesh collaborate closely on counterterrorism, border security, and curbing insurgent activities. For instance, the Coordinated Patrols and Border Management Agreements (2017) facilitate joint border patrols.

- **Economic Ties:** Trade between the two countries has grown, with India being one of Bangladesh's largest trading partners.
- **Geopolitical Challenges:** Bangladesh's increasing engagement with China poses concerns for India.
- **Water Sharing and Border Issues:** Disputes over water sharing, particularly regarding the **Teesta River**, and border management continue to be contentious issues. For Instance, the Teesta Water Sharing Agreement deal is yet to materialize.
- India is one of Bangladesh's largest trade partners. **In 2023-2024, bilateral trade between the two countries was around $14 billion.**
- Bangladesh shares a long land, riverine, and maritime border with India, making it critical to India's security. **India seeks Bangladesh's cooperation in countering China's "String of Pearls" strategy.**
- Bangladesh is strategically located at the intersections of South and Southeast Asia, which make it an **essential part of India's "Act East Policy" of strengthening ties with Southeast Asian nations.**
- India and Bangladesh share transboundary rivers and ecological systems, necessitating cooperation in water management and flood control.

Major agreements

- India and Bangladesh are involved in a number of significant infrastructure projects, including the **Akhaura-Agartala rail link, which improves connectivity between Bangladesh and India's North Eastern region**, and the Matarbari deep-sea port in Bangladesh, which will strengthen industrial and trade links.
- The **Comprehensive Economic Partnership Agreement (CEPA) was announced in 2022 to improve trade by lowering trade tariffs** and encouraging investments in services, professionals, and goods. It is expected to reduce the bilateral trade deficit while increasing economic cooperation.
- The **BBIN Motor Vehicle Agreement, signed by India, Bangladesh, Bhutan, and Nepal, allows cross-border vehicle movement** and aims to boost economic development through improved connectivity and regional integration. However, Bhutan has yet to ratify the agreement.
- The **India-Bangladesh Friendship Pipeline** was inaugurated in March 2023 to transport high-speed diesel from India to Bangladesh.

Implications for India

- **Security Concerns:** The instability may lead to increased cross-border crime, illegal migration, and a rise in extremist activities.
- **Geopolitical Shift:** With Sheikh Hasina's departure, Bangladesh may further strengthen ties with China.
- **Economic Disruptions:** The turmoil could disrupt trade routes and economic cooperation.
- **Regional Stability:** The overall instability in Bangladesh poses a threat to the broader security and stability of South Asia.
- **Increased Trade Barriers:** Heightened security concerns may lead to stricter border controls and delays.
- **Investment Uncertainty:** The crisis creates an uncertain business environment, potentially deterring investment.

Indias concern with on going developments

- India has significantly developed subregional connectivity with its Seven Sisters through land transit, rail connectivity and transhipment within Bangladesh, which was allowed by the Hasina regime.
- North–eastern region-based insurgents were also expelled and handed over to India through extradition treaties. New Delhi was also awarded two special economic zones and priority in the Teesta Project. These ensured India access to its North–eastern region in case of a conflict with China, where the latter might cut off the former by occupying the Siliguri Corridor or aiding regional insurgents.
- Hasina also diminished terrorist outfits like ISIS offshoot Neo-JMB and Al–Qaeda offshoot Ansar Al Islam. Law enforcement and the judiciary crushed anti-India political parties like Hefazat-e-Islam and Jamaat Islami. Such measures prevented Bangladesh from becoming a terrorist hub and protected the Hindu minorities inside Bangladesh from being targeted by extremists.
- New Delhi also successfully established defence cooperation with Dhaka by providing military hardware through loans and interactions like exercises, seminars and dialogues.
- Through defence diplomacy, New Delhi also tried to assuage the long-term scepticism of Bangladesh's Armed Forces, one of the largest buyers of Chinese defence equipment.
- New Delhi is concerned about the BNP and other Islamist parties winning the new elections, which will harm their geopolitical interests and influence.

- India's support and shelter for Hasina could be used by the BNP to garner popular anti-India sentiment in Bangladesh. They have previously used anti-India rhetoric as a political tool and have already started putting pressure on New Delhi by demanding that the former premier be extradited.
- This uneasy relationship between the BNP and New Delhi has also built an environment of mistrust and resentment towards the latter by the former. These political realities may be headed toward severely disadvantaging India's strategic interests and geopolitical realities concerning Bangladesh.

India-US Relations

Why in news?

- Two new agreements signed under **India US Roadmap for defence industrial cooperation**.

About the New Agreements

- **Security of Supply Arrangement (SOSA)**
  - Under SOSA, both India and the U.S. agree to give priority to each other's defence-related needs. It means that if one country faces a shortage of critical defence supplies, the other country will prioritize their support.
  - Both countries will collaborate on supply chain disruptions that may occur unexpectedly. Such a collaborative approach helps to ensure operational efficiency and seamlessly handles any shortfalls that may arise from time to time.
  - A Code of Conduct will be established between Government and Industry ensuring that Indian Companies prioritize U.S. defence needs whenever such requirements arise. In exchange, the U.S. will offer assurances about necessary supplies it controls through its Defense Priorities and Allocations System (DPAS) to India.
- **Significance of SOSA**
  - Strengthening Alliances: By ensuring that both countries help each other with critical supplies, solidifies their strategic partnership and enhances their mutual defence capabilities.
  - In today's complex global landscape, supply chains can be vulnerable to various disruptions, including geopolitical tensions and natural disasters. SOSA helps mitigate these risks by establishing a framework for priority support and collaboration between the two countries.
  - This agreement supports the broader U.S.-India Defense Technology and Trade Initiative (DTTI), which focuses on the co-development and co-production of defence technologies.
  - By developing a closer defence-industrial relationship, SOSA contributes to the success of these initiatives.

MOU On Liason Officers

- The Memorandum of Agreement regarding the Assignment of Liaison Officers is a progression on a decision taken earlier to increase information-sharing between India and the US, and to post Indian armed forces officers in key strategic US Commands.
- India will deploy the first Liaison Officer to the US Special Operations Command headquarters in Florida.

- India and the US had signed the **General Security of Military Information Agreement (GSOMIA) in 2022** to facilitate sharing of military information. Between 2016 and 2020, the two sides signed four more agreements.
- The **US designated India as a Major Defence Partner in 2022**. Commensurate with this designation, in 2018, **India was elevated to Strategic Trade Authorisation tier 1 status**, which gave it licence-free access to a range of military and dual-use technologies regulated by the US Department of Commerce.
- The **Logistics Exchange Memorandum of Agreement (LEMOA) of 2016**established the basic terms, conditions, and procedures for reciprocal provision of logistic support, supplies, and services between the two militaries.
- COMCASA, an India-specific version of the **Communications and Information Security Memorandum of Agreement (CISMOA),** was signed in 2018 to secure military communication between the countries, facilitate access to advanced defence systems, and enable India to optimally utilise its existing US-origin platforms.
- The **Basic Exchange and Cooperation Agreement (BECA) of 2020** aimed to facilitate the sharing of military information including maps, nautical charts, and other unclassified imagery and data.

Why in news?

- India's External Affairs Minister S. Jaishankar visited Maldives to review Indian projects.

Highlights of the Meeting

- The visit highlights the importance of Maldives, India's maritime neighbour, as a key partner in the **'Neighbourhood First' policy** and **India's Vision 'SAGAR'** i.e. Security and Growth for All in the Region.
- Maldives remains an important partner of India in maintaining peace, stability and prosperity in the Indian Ocean region

- India's Initiatives to Strengthen relation with Maldives
- India is building a new Coast Guard base at Uthuru Thilafalhu (UTF) atoll.
- India provides grant to Maldives for High Impact Community Development Projects (HICDPs).
- Greater Male Connectivity Project being developed by India is the Maldives' largest infrastructure project.
- Both the countries have an open skies arrangement and visa-free entry for tourism, medical and business purposes.

FloodWatch India

Science & Technology

Why in news?

- Union Minister for Jal Shakti launched the Version 2.0 of the 'FloodWatch India' mobile application developed by the **Central Water Commission (CWC)**

About FloodWatch India

- Version 2.0 of the app now covers 592 flood monitoring stations, up from the previous 200.
- Users gain a comprehensive overview of **flood conditions** across the country.
- The app provides information on the storage positions of **150 major reservoirs**, aiding in predicting downstream flooding.
- Advanced technologies such as **satellite data** analysis, **mathematical modelling**, and
- **real-time monitoring** ensure accurate and timely flood forecasts.

Trichophyton Indotineae Fungal Infection

Science & Technology

Why in news?

- The rise of **drug-resistant fungal infections**, notably Trichophyton indotineae, is emerging as a significant health concern in India.

About Trichophyton indotineae Fungal Infection

- It is a **dermatophyte**, a type of fungus that primarily affects the skin, hair, and nails. It is known for causing conditions commonly referred to as **"jock itch" or ringworm.**
- The **hot, humid climate and dense population** of India create an ideal breeding ground for this fungus, making it a pervasive problem, especially in rural areas where healthcare access is limited.

Drug Resistance:

- The most alarming aspect of Trichophyton indotineae is its growing resistance to conventional antifungal treatments.
- **This resistance complicates the management of infections** and often leads to prolonged discomfort and recurring issues for patients.
- The resistance emerges from genetic mutations within the fungal strains, rendering standard treatments ineffective.

Causes of Trichophyton indotineae Spread:

- **Persistent, Treatment-Resistant Rashes:**
  - **Patients often present with rashes that persist despite treatment**. These rashes are frequently misdiagnosed as eczema or other skin conditions.
  - **Misdiagnosis leads to the use of ineffective treatments**, which prolongs patient suffering and allows the infection to worsen.
- **Resistance to Antifungal Medications:**
  - **Terbinafine Resistance**: Trichophyton indotineae has shown resistance to terbinafine, a commonly used antifungal, due to genetic mutations.
  - **Itraconazole Resistance**: Growing resistance to itraconazole, another antifungal medication, is also a concern.
- **Unregulated Sale of Steroid-Containing Combination Creams:**
  - The use of over-the-counter steroid-containing creams, often without medical supervision, can suppress symptoms temporarily but may worsen the underlying fungal infection.

Treatments Available

- **Alternatives to Terbinafine and Itraconazole:**
  - While alternatives to these antifungals exist, they often come with significant side effects, necessitating close monitoring by healthcare providers.

- **Comprehensive Skin Care Regimens:**
  - **Skin Hydration**: Maintaining adequate skin hydration can improve treatment efficacy.
  - **Barrier Creams**: The use of barrier creams helps protect the skin & can be an integral part of the treatment plan.

Axiom 4 Mission

Science & Technology

Why in news?

- India has shortlisted Group Captains Shubhanshu Shukla and Prashant Nair to train in the U.S. for the upcoming Axiom-4 mission to the International Space Station (ISS).

About the mission

- The Axiom 4 mission, organised by Axiom Space, aims to transport astronauts to the
- **International Space Station (ISS)** as part of a series of private space flights.
- This mission is in collaboration with NASA, and is set for launch in 2024.

Objectives of the Mission

- **Conduct scientific research:** In microgravity to advance scientific knowledge.
- **Test and validate space technology:** For future missions.
- **Support commercial activities:** Facilitate private sector research and business in low Earth orbit.
- **Advance crew training:** Provide crew with practical experience in space operations and mission management.

Organisations participating in the mission

- **NASA:** Provides oversight and coordination for the mission.
- **Axiom Space:** The private space company responsible for the mission's planning, spacecraft, and operations.
- **SpaceX:** Provides the Crew Dragon spacecraft and Falcon 9 rocket for transporting astronauts to and from the International Space Station (ISS).

National Space Day- Chandrayaan 3

Science & Technology

Why in news?

- The Indian government has designated **August 23 as National Space Day** to honour the historic Chandrayaan-3 Moon mission, which landed on the lunar surface on August 23, 2023.

Chandrayaan 3 mission

- Chandrayaan-3 is India's **third lunar exploration mission**, developed by the Indian Space Research Organisation (ISRO). It aims to further India's lunar exploration capabilities with a focus on a soft landing on the Moon's surface.

Objective of the mission

- To demonstrate Safe and Soft Landing on Lunar Surface
- To demonstrate Rover roving on the moon
- To conduct in-situ scientific experiments.

Components of the mission

- **Propulsion module: It will carry the lander and rover configuration to 100 km lunar orbit.**
- **Lander module (Vikram lander) : It has the capability to soft land and deploy Rover on the lunar surface.**
- **Rover (Pragyan): It will carry out chemical analysis of the lunar surface**

Significance of the Mission

- Play a vital role in India's quest to establish a **human presence** on the moon.
- Fresh insights into Lunar **geology** and resources.
- Successful testing of LVM-3 will boost **Ganganyan** and **Aditya- L1** Mission.

- Demonstration of India's space technology prowess - boosting **private investment**
- Boost to the Indian **space-tech** ecosystem.
- Future opportunities for ISRO towards an enhanced role in **Artemis accord**

- **Bereshit (SpaceIL, Israel):** Bereshit was a privately funded lunar lander developed by the Israeli organization SpaceIL. It was launched in 2019 as part of the Google Lunar XPRIZE competition with the goal of achieving the first privately-funded moon landing. While the lander did crash on the lunar surface during its landing attempt, it was still a significant achievement for a non-governmental organization.
- **Hiten (ISRO, India):** Launched in 1990 by the Indian Space Research Organisation (ISRO), Hiten was India's first lunar probe. It was primarily a technology demonstration mission, and it impacted the Moon's surface in 1994.
- **Clementine (NASA, USA):** Launched in 1994, Clementine was a joint mission between NASA and the Department of Defense. It was designed to study the Moon from lunar orbit, conducting mapping and scientific observations.
- **SELENE-2 (JAXA, Japan):** The proposed SELENE-2 mission by the Japan Aerospace Exploration Agency (JAXA) aims to send a spacecraft to the Moon to explore and study the lunar surface in greater detail, building on the success of the original Kaguya (SELENE) mission.

- **Lunar Prospector (NASA, USA):** Launched in 1998, Lunar Prospector was a NASA mission that orbited the Moon to study its composition, magnetic field, and search for evidence of water ice.
- **Chang'e 5 (CNSA, China):** Launched in 2020, Chang'e 5 was a Chinese mission designed to collect lunar samples and return them to Earth. It successfully brought back lunar samples from the Moon's surface.
- **Luna-Glob (Roscosmos, Russia):** The Luna-Glob program by the Russian space agency Roscosmos aims to launch a series of robotic missions to the Moon, including landers and orbiters. The first mission in this program is planned to study the Moon's south pole region.
- **Huygens (ESA):** While not a lunar mission, Huygens was a European Space Agency (ESA) probe that successfully landed on Saturn's moon Titan in 2005 as part of the Cassini-Huygens mission.
- **LRO (NASA, USA):** The Lunar Reconnaissance Orbiter, launched in 2009, is a NASA mission that continues to orbit the Moon, mapping its surface in high detail and providing valuable data for future lunar missions.

Governing Generative Artificial Intelligence (AI)

Science & Technology

Why in news?

- Lately, companies embracing stakeholder capitalism are concentrating on products such as **Generative AI**. These products need governance models that balance making profits with addressing broader social responsibilities, signalling a change in corporate priorities.

Generative AI

- Generative AI **produces new content**, such as text, images, music, and code, by learning patterns from existing data.
- It uses advanced models like Generative Adversarial Networks **(GANs)** and large language models (LLMs), such as GPT-4, for generating outputs.
- Generative AI is used in diverse fields like text generation (e.g., **ChatGPT**), image creation (e.g.,
- **DALL·E**), music composition, and code generation (e.g., **GitHub Copilot**).
- It enables the automation of creative processes, offering innovative solutions for industries like content creation, gaming, and customer service, apart from others.

Traditional Shareholder Focus

- Modern corporate governance often prioritises **shareholder primacy**, aiming to maximise
- **profits** and wealth for shareholders, sometimes at the expense of public good.
- There's a growing movement towards **stakeholder capitalism**, which aims to benefit all parties, not just shareholders.

Shift Towards Stakeholder Capitalism

- Companies are increasingly adopting governance models that **balance social responsibility**
- with profit-making.
- This shift is evident in sectors like Generative AI, where **ethical considerations** are becoming crucial.

Data Privacy Concerns

- Advancements in AI technology raise significant **data privacy challenges**.
- Meta faced issues when the Irish privacy regulator halted its use of public content for AI training.
- AI systems can perpetuate biases, as seen with Amazon's discontinued gender-biased recruiting algorithm and Princeton University's findings of racial biases in AI.

Conflict Between Purpose and Profits

- Conflicts between **social purpose and profit goals** remain, as demonstrated by OpenAI's governance crisis involving CEO Sam Altman.
- The reinstatement of Altman and board changes highlight the tension between public benefit and profit.

Proposed Solutions

- Policymakers should implement strategies that balance profit with social responsibility.
- This includes enhancing the long-term profitability of companies with public benefit goals, incentivizing adherence to these goals, and reducing compliance costs.
- Developing ethical AI governance standards and enacting regulatory reforms are crucial for aligning corporate actions with societal goals.

Vigyan Dhara Scheme

Science & Technology

Why in news?

- The Union Cabinet has approved the continuation of the three umbrella schemes, **merged** into a unified central sector scheme namely 'Vigyan Dhara' of Department of Science and Technology **(DST)**, Ministry of Science and Technology.

Objectives of Vigyan Dhara Scheme

- **Promote Science and Technology Capacity Building:** By enhancing infrastructure and research capabilities.
- **Support Research and Innovation:** Advance basic and translational research, including international collaborations.
- **Increase Human Resource Pool**: Of skilled S&T professionals with a focus on gender parity.
- **Enhance Collaboration:** Between academia, government, industries, and startups to drive innovation.

Components of the Scheme

- **Science and Technology (S&T) Institutional and Human Capacity Building**
  - **Focus:** Increase FTE researcher count and promote gender parity in STI.
- **Research and Development (R&D)**
  - **Focus Areas:**
    - Basic research with international facilities.
    - Translational research in sustainable energy, water, etc.
    - Collaborative research with international partners.
- **Innovation, Technology Development, and Deployment**
  - **Focus:** Streamline technology deployment to enhance the S&T ecosystem.

Significance of the Scheme

- **Efficiency and Synchronisation:** Merging three schemes into one improves fund utilisation and aligns S&T programs.
- **Strengthening S&T Infrastructure:** Enhances R&D labs and academic institutions to build a stronger S&T landscape.
- **Promotion of Gender Parity:** Increases women's participation in S&T, advancing gender equality.
- **Alignment with National Goals:** Supports DST's 5-year goals and Viksit Bharat 2047 vision, in line with the Anusandhan National Research Foundation (ANRF).

BioE3 Policy

Science & Technology

Why in news?

- The Union Cabinet, chaired by the Prime Minister Shri Narendra Modi, today approved the proposal '**BioE3** (Biotechnology for Economy, Environment and Employment) **Policy for Fostering High Performance Biomanufacturing**' of the Department of Biotechnology.

About BioE3 (Biotechnology for Economy, Environment and Employment) Policy

- An initiative by the Indian government aimed at **leveraging biotechnology** to foster the growth of **economy, environment, and employment opportunities**

Key Objectives –

- Economic Growth – Promote research and innovation in biotechnology to drive economic growth.
- Environmental Sustainability – Encourage green growth strategies and regenerative bioeconomy models.
- Employment – Expand India's skilled workforce and create jobs in the biotechnology sector

Strategic Focus Areas –

- Development of High-Value Bio-Based Chemicals.
- Innovations in food technology.
- Advanced medical treatments (Precision Biotherapeutics)
- Sustainable farming practices.
- Technologies for reducing carbon footprint.

Implementation Strategy –

- Biomanufacturing & Bio-AI Hubs – Establishing hubs to advance biotechnologies and AI.
- **Biofoundry** – Converting academic research into commercial products.
- **BioE3 Council** – To oversee policy implementation.
- **BioE3 Fund** – To support R&D and biotechnology entrepreneurship.
- Online BioE3 Portal – To facilitate knowledge distribution and stakeholder coordination

Alignment with Government Initiatives

- **Net Zero Carbon Economy**: Supports achieving 'Net Zero' carbon economy and 'Life mission'
- **Green Growth and Circular Bioeconomy**: Promotes 'Green Growth' and 'Circular Bioeconomy.'

BPaL Regimen for Tuberculosis

Science & Technology

Why in news?

- India is getting ready to roll out BPaL (bedaquiline, pretomanid, and linezolid) regimen for all multi/extensively drug-resistant **tuberculosis** patients and the training for this new exercise is scheduled to begin this month.

BPaL treatment

- BPal stands for- Bedaquiline, Pretomanid, amoxicillin-clavulanate and linezolid.
- The BPal treatment regimen is used for **multidrug-resistant tuberculosis (MDR-TB)** and
- **extensively drug-resistant tuberculosis (XDR-TB)**.

BPal superiority over traditional treatments

- **Effectiveness**: effective for strains resistant to multiple first-line and second-line TB drugs.
- **Shorter Duration**: BPaL brings down treatment time to around six months.
- **Fewer Side Effects**: designed to minimise adverse effects and drug interactions.
- Mode: It is an **oral** regimen.

Tuberculosis

- TB is an infectious disease caused by bacteria (Mycobacterium tuberculosis) which is spread when people who are sick with TB expel bacteria into the air.
- TB is spread through the air when people with lung TB cough, sneeze or spit.
- TB is the leading cause of death of people with HIV and also a major contributor to antimicrobial resistance (AMR).
- According to the **Global TB Report 2023,** around 87% of new TB cases occurred in the 30 high TB burden countries, while more than two-thirds of the global total was in eight countries: India (27%), Indonesia (10%), China (7.1%), the Philippines (7.0%), Pakistan (5.7%), Nigeria (4.5%), Bangladesh (3.6%) and the Democratic Republic of the Congo (3.0%).

- The number of reported TB cases increased from 24.2 lakh in 2022 to 25.5 lakh cases in 2023.
- TB is a curable disease. It is treated by a standard 6-month course of 4 antibiotics. Common drugs include rifampicin and isoniazid.

There are several types of drug-resistant TB disease.

- **Mono-resistant TB disease** is caused by TB bacteria that are resistant to one TB treatment drug.
- **Poly-resistant TB disease** is caused by TB bacteria that are resistant to at least two TB drugs (but not both isoniazid and rifampin).
- **Multidrug-resistant TB (MDR TB) disease** is caused by TB bacteria that are resistant to at least isoniazid **and** rifampin, the most effective first-line TB treatment drugs.
- **Extensively drug-resistant TB (XDR TB)** is a rare type of MDR TB caused by TB bacteria that are resistant to:
- Isoniazid and rifampin, a fluoroquinolone, and a second-line injectable (amikacin, capreomycin, and kanamycin).

India's initiative to eliminate TB

- **National Strategic Plan (NSP) for Tuberculosis Elimination (2017-2025):** is a framework that outlines the government's plan to eliminate tuberculosis (TB) in India by 2025.
- **TB-Mukt Panchayat initiative:** is a collaboration between multiple sectors launched by the Government of India to end tuberculosis (TB) by 2025.
- **DOTS (Directly Observed Treatment Short-course):** is a cost-effective strategy that is the international standard for TB elimination programs. India has adapted and tested DOTS since 1993 under the National Tuberculosis Elimination Programme (NTEP).

PrecivityAD2 Test for Alzheimer's

Science & Technology

Why in news?

- Researchers have developed a new blood test named **PrecivityAD2** to detect **Alzheimer's**disease that helps diagnose the disease even at the early stage of mild cognitive impairment.

Alzheimer's disease

- Progressive **neurodegenerative** disorder characterised by memory loss, cognitive decline, and behavioural changes.
- It involves the accumulation of amyloid plaques and tau tangles in the brain, leading to neuronal damage and cognitive decline.

Detection issue

- Current issues in detecting Alzheimer's disease include challenges in early and accurate diagnosis due to overlapping symptoms with other conditions and **limitations in existing biomarkers and imaging techniques.**

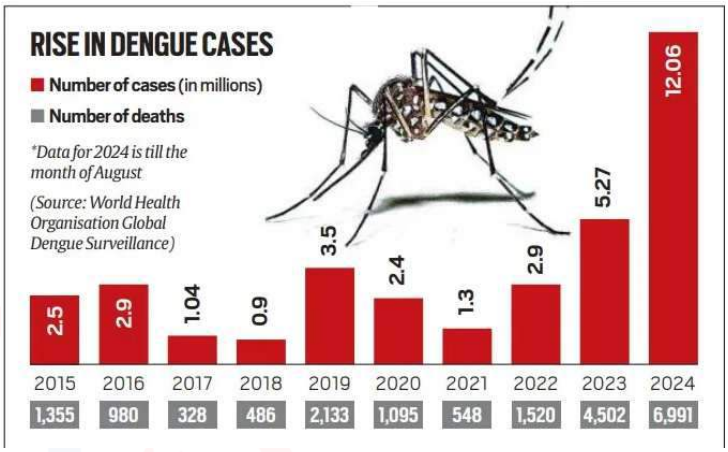
Significance Precivity AD2

- The PrecivityAD2 test is a **blood-based biomarker assay** that assesses the levels of amyloid beta and tau proteins associated with Alzheimer's disease, aiding early and accurate diagnosis.
- Compared to previous methods, it offers a **less invasive, cost-effective, and convenient** alternative to PET scans and cerebrospinal fluid analysis, potentially improving early detection and patient management.

Why in news?

- The **Indian Council of Medical Research (ICMR)** and **Panacea Biotec** have announced the initiation of the first-ever Phase 3 clinical trial for a **dengue vaccine** in India.

Dengue



- **Causes**
  - It is caused by Aedes Aegypti mosquito and Aedes Albopictus (minor) mosquito. It is a small, black mosquito with white stripes and is approximately 5 mm in size.
  - The Aedes eggs remain dormant for > 1 year and will hatch once they come in contact with water.
  - Aedes mosquitos cannot fly above 100 m and they bite during the day time. It is an asymptomatic infection.
  - A person develops Dengue after 5-6 days of being bitten by an infective mosquito.
- **Types of Dengue**
  - It occurs in two forms: Dengue Fever and Dengue Haemorrhagic Fever(DHF).
  - Dengue Fever is a severe, flu-like illness.
  - Dengue Haemorrhagic Fever (DHF) is a more severe form of disease, which may cause death
- **Factors causing Dengue**
  - Urbanization, Poor town planning and improper sanitations are the factors.
  - Lack of coordination between local bodies and health departments.
  - There is a deficiency of manpower and hence active surveillance is not possible according to National Vector Borne Disease Control Program.

Dengue in India

- **Current Data**: By June 2024, India reported over **32,000 cases** and **32 deaths**. By early August, there was a reported **50% increase** compared to the same period in 2023.
- **Geographic Spread**: Dengue has expanded from eight states in **2001** to affecting every state and **Union Territory** in India by **2022**.

Factors Behind the Surge

- **Urbanization**: Urban areas provide breeding grounds for mosquitoes due to stagnant water collection. Increased rainfall and warm spells create ideal conditions for mosquito proliferation.
- **Climate Change**:
  - **Temperature Rise**: Higher temperatures allow mosquitoes to thrive in previously unsuitable areas, including higher altitudes.
  - **Virus Transmission**: Climate change enhances the robustness of the dengue virus, enabling better transmission and survival rates among mosquito populations.
- **Movement of People**: Global movement facilitates the spread of infections carried by individuals. Improved testing and reporting may also contribute to perceived increases in cases.
- **Co-infections**: Other vector-borne diseases, such as **chikungunya** and **Zika**, are also on the rise. There is a need to study whether infections reduce mosquito immunity, potentially increasing transmission rates.

Prevention Strategies

- **Eliminate Breeding Sites**: Prevent water accumulation in pots, planters, and bird baths to reduce mosquito breeding.

- **Personal Protection**: Wear long-sleeved clothing and use mosquito repellent, especially during the day when Aedes mosquitoes are most active.

Steps Taken by the Government to Combat Dengue:

- **Inter-Ministerial Collaboration**: Regular meetings involving the Urban Development Ministry and state officials to enhance dengue prevention and control efforts.
- **Increased Surveillance**: Implementation of disease and entomological surveillance to monitor dengue cases and vector populations.
- **Hospital Preparedness**: Ensuring availability of hospital resources, including **platelets**, to manage dengue cases effectively.
- **Identification of Hotspots**: Mapping and geotagging of dengue cases to focus preventive measures in high-risk areas.
- **Public Health Campaigns**: Initiatives like the "**Safai Apnao, Beemari Bhagao Campaign**" aimed at promoting cleanliness to reduce mosquito breeding sites.
- **Training and Capacity Building**: Training healthcare professionals on updated national guidelines for dengue case management to improve clinical responses.
- **Expanded Sentinel Surveillance**: Increasing the number of sentinel surveillance hospitals from **110** in 2007 to **848** in 2024 for better diagnosis and monitoring.
- **Behavior Change Communication**: Engaging communities through social mobilization and information, education, and communication (**IEC**) strategies to promote preventive measures.
- **Vector Management**: Environmental management and source reduction strategies to eliminate mosquito breeding grounds.
- **Outbreak Response Plans**: Developing and implementing epidemic preparedness and response strategies, including media management to raise awareness.
- **Legislative Support**: Enforcing regulations related to waste management and water storage to mitigate mosquito breeding.
- **Monitoring and Supervision**: Regular analysis of reports and field visits to assess the effectiveness of ongoing initiatives.

Vaccines for Dengue:

- **Available Vaccines**: WHO recommends two vaccines:
  - **Dengvaxia (Sanofi)**
  - **QDenga (Takeda)**
- **Status in India**: These **vaccines are not yet approved in India, although the country is developing its own vaccines** in collaboration with international institutes. Notably:
  - **Serum Institute of India** is advancing a vaccine using a genetically engineered weakened virus.
  - **Panacea Biotec** is developing a similar candidate

Monkeypox

Science & Technology

Why in news?

- WHO Director-General declared the escalating global **monkeypox** outbreak a **Public Health Emergency of International Concern (PHEIC).**

Public Health Emergency of International Concern (PHEIC)

- Formal declaration by the **World Health Organization (WHO)** under the **International Health Regulations (IHR) of 2005.**
- **WHO Director-General**, advised by the IHR Emergency Committee, determines whether an event qualifies as a PHEIC.
- **Criteria for declaration-** Serious Public Health Risk **beyond the national border**, require immediate and coordinated international action to manage the threat.

Monkey Pox Virus

- **About**
  - Monkeypox is a **viral zoonotic disease that occurs primarily in tropical rainforest areas of Central and West Africa** and is occasionally exported to other regions.
  - Monkeypox virus is an enveloped **double-stranded DNA virus**that belongs to the **Orthopoxvirus genus** of the Poxviridae family.
  - The **first case of monkeypox in humans was recorded in 1970 in the Democratic Republic of Congo**during a period of intensified effort to eliminate smallpox.
  - Scientists have so far discovered two distinct genetic groups of monkeypox virus—**Central African and West African.**
- **Cause**
  - It is caused by monkeypox virus, a member of the Orthopoxvirus genus in the family Poxviridae.
  - Monkeypox belongs to the same family of viruses as smallpox. But **Smallpox had a higher fatality rate than monkeypox.**
  - Smallpox was declared eradicated worldwide in 1980.
- **Symptoms**
  - Monkeypox is **characterised by flu-like symptoms and swelling of the lymph nodes, which gradually progresses to a widespread rash all over the face and body.**
- **Transmission**
  - Monkeypox virus is mostly transmitted to people from wild animals such as rodents and primates, but human-to-human transmission also occurs.
  - It spreads from one person to another via respiratory droplets.
- **Treatment**
  - There is **currently no specific treatment recommended for monkeypox**.
  - Vaccination against smallpox was about 85% effective in preventing monkeypox.
  - Thus, prior childhood smallpox vaccination may result in a milder disease course.

Organ Transportation Guidelines

Science & Technology

Why in news?

- The Union Health Ministry has released the first-ever SOPs for the transport of human organs, aiming to maximise utilisation and streamline processes.

About the Guidelines

- **Air Transport:** Priority take-off and landing, arrange front-row seats, and offer priority reservation for medical personnel transporting organs.
- **Metro Transport:** Priority transit to metros carrying live organs.
- **Green Corridor:** Create a "green corridor" free from obstructions for organ transport on the request of specific authority.
- **Orientation and Labelling**: During transport, the organ box must be kept upright at a 90-degree angle and labelled "handle with care".
- **One Trigger System:** request from organ allocation authority to initiate the process of organ transport by creation of green corridor.

Organ Transplantation Scenario in India

- India ranks **3rd** globally in the number of transplants performed, yet the demand for organs far exceeds the number of transplants carried out.
- **The kidney** is the most commonly transplanted organ, followed by the liver, heart, lungs, pancreas, & small bowel.
- The Government of India has adopted the policy of "**One Nation, One Policy**" for Organ Donation and Transplantation.
- **Domicile Requirement Removed:** Patients no longer need to be domiciled in the state where they register for organ transplantation, they can now register in any state across the country.

- **Age Limit Removed:** People of any age can now register for receiving organs from deceased donors and the upper age limit of 65 years has been abolished.
- **No fees required for registration.**

Transplantation of Human Organs and Tissues Act (THOTA), 1994 as amended in 2011

- Source of Organs for Transplant
  - Living Donor Transplant: Near Relative donor, Other than the near relative donor (with specific conditions), by Swapping of near relative donors between pairs of unmatched donor and recipient.
    - It is not allowed if the recipient is a foreign national and the donor is an Indian national unless they are near relatives.
    - Where the donor or the recipient being a near relative is a foreign national, prior approval of the Authorisation Committee shall be required
  - Deceased donor Transplant: Donor after Brain stem death or BSD (also known as brain death), Donor after cardiac death (DCD)
- Provision of mandatory 'Transplant Coordinator' in all hospitals registered under the Act.
- Brain Stem death (BSD) is recognized as a legal death provides for the constitution of Brain death certification board.

Challenges in Organ Transplantation

- Shortage of organ donors
- Lack of infrastructure and trained manpower
- Legal and ethical issues due to illegal organ trade and exploitation concerns.
- Lack of centralised registry
- Logistic challenges in the organ retrieval and transplantation.
- Challenging post-transplant care

Jammu and Kashmir Counter Terrorism Grid

Defence & Security

Why in news?

- To address the security vacuum left by troop redeployment, around 3,000 Army personnel and 500 special forces have been deployed to Jammu to **bolster counter-terrorism efforts.**

About Counter Terrorism Grid

- **Purpose**
  - A **strategic deployment** of military units, sub-units, and special forces to dominate and secure vulnerable areas.
  - It aims to prevent terrorists from gaining freedom of movement by creating a **multi-tiered defence system** across the region.
- **Grid Formation**
  - Based on threat assessments that consider factors like terrain, population support, and the location of potential terrorist hideouts.
  - Involves deploying troops in a manner that covers all critical areas, from **forested regions** to higher terrains south of the **Pir Panjal range**.
  - The current counter-terrorism grid strategy is informed by past operations, such as the successful "**Operation Dudhi**" conducted by the Assam Rifles in the 1990s.

Issues in the Jammu and Kashmir

- **Cross-Border Terrorism:** Persistent threat of infiltration from Pakistan, with support for groups like JeM and LeT orchestrating terrorism in J&K.
- **Internal Insurgency:** Rising local militancy driven by youth disenchantment and alienation, compounded by increasing radicalization through online platforms.
- **Ceasefire Violations and Skirmishes:** Frequent ceasefire violations along the LoC, resulting in casualties and heightened tensions.
- **Hybrid Warfare:** Growing challenges from the use of drones and cyber tactics by adversaries.
- **China's Influence and the Ladakh Border:** Concerns about China's expanding influence and infrastructure near the LAC, alongside the risk of a two-front challenge with simultaneous conflicts involving Pakistan and China.
- **Political Uncertainty:** Impact of Article 370 abrogation leading to potential increased unrest and instability.

INS Shalki

Defence & Security

Context:

- ndian Navy's **submarine INS Shalki**, is in Colombo, Sri Lanka on a two day visit. The submarine was accorded a ceremonial reception by the Sri Lanka Navy.

About INS Shalki

- **Class**
  - Shishumar-class diesel-electric submarine
- **Crew Capacity**
  - 40 people on board including 8 officers
- **Construction**
  - Constructed under licence by Mazagon Dock Limited, Mumbai
- **Range**
  - Snorting: 8,000 nautical miles (15,000 km) at 8 knots (15 km/h)
- **Significance**
  - First-ever submarine built in India

Submarines in India

- **Conventional Submarines:** India has 3 classes
  - **Shishumar class**
  - **Sindhughosh class**
  - Indigenously developed **Kalvari class**
- **Nuclear-Powered Attack Submarines(SSN):** India presently does not have any nuclear-powered attack submarines (SSNs) in service
  - Reinforced its SSN lineup by ordering another **Akula class submarine (INS Chakra III),**
  - planned for induction in 2025.
  - There are plans for indigenous **Project 75 Alpha SSNs** in the future.
- **Nuclear ballistic missile submarines (SSBN):**
  - **INS Arihant,** an Arihant Class SSBN which has been developed indigenously under the Advanced Technology Vessel program.
  - **INS Arighat (S3):** It is India's second SSBN, **being built** as an upgraded version of INS Arihant.

Exercise Udara Shakti 2024

Defence & Security

Why in news?

- Recently, Exercise Udara Shakti 2024, a joint air drill was held in Kuantan, Malaysia between **the Indian Air Force (IAF) and the Royal Malaysian Air Force (RMAF).**

About Exercise Udara Shakti 2024

- **Aim:** Strengthens defense cooperation amid increasing geopolitical complexities in the Indo-Pacific region
- **Participants:** Indian Air Force (IAF) and Royal Malaysian Air Force (RMAF).
- **Aircraft Involved:** IAF deployed Su-30MKI fighters, RMAF deployed Su-30MKM fighters.
- **Training Focus:**
  - Joint air combat missions to understand each other's tactics and procedures.
  - Strengthening coordination for future joint operations.
- **Technical Collaboration:**
  - Discussions on aircraft maintenance between IAF and RMAF experts.
  - Exchange of best practices to ensure aircraft mission readiness.

Long Range Glide Bomb 'GAURAV'

Defence & Security

Why in news?

- **Defence Research and Development Organisation (DRDO)** has carried out a successful maiden flight test of Long Range Glide Bomb (LRGB), GAURAV from Su-30 MK-I platform of the IAF.

About GAURAV

- GAURAV is an **air launched** 1,000 kg class **glide bomb** capable of hitting targets at long distance.
- **Highly accurate** hybrid navigation scheme with a combination of INS and GPS data.
- The glide bomb is capable of hitting targets at **long distances**, although the exact range is not publicly disclosed.
- Gaurav enhances India's precision strike capabilities, allowing for significant impact on various target types with reduced risk to aircraft.
- Designed and developed indigenously by the Research Centre Imarat (RCI), Hyderabad.
- It is air-launched from a **Su-30 MK-I fighter jet** of the Indian Air Force.

About Defence Research and Development Organisation (DRDO)

- **Role & Mission**: DRDO is the R&D wing of the **Ministry of Defence**, Govt of India, focused on empowering India with advanced defence technologies and achieving self-reliance in critical defence systems.
- **Key Developments**: DRDO has successfully developed and produced strategic systems like the **Agni and Prithvi missile series**, **Tejas light combat aircraft**, **Pinaka multi-barrel rocket launcher**, **Akash air defence system**, and various radars and electronic warfare systems.

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