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THE CRUX

December Issue; 2024

Compilation of UPSC relevant news from 1st December to 31st December 2024

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INDIA STATE OF FOREST REPORT 2023

Recently, the Union Minister for Environment, Forest, and Climate Change unveiled the India State of Forest Report 2023 (ISFR 2023).

About:

➲ **Overview:**
   - ISFR is a Biennial publication by the Forest Survey of India (FSI), which is under the Ministry of Environment, Forest, and Climate Change (MoEFCC).
   - It was first published in 1987, with the 2023 edition being the 18th report.

➲ **Forest Survey of India (FSI):**
   - **Established:** June 1981
   - **Headquarters:** Dehradun, Uttarakhand
   - **Role:** Conducts forest surveys, studies, and research to monitor changes in forest and land resources periodically.

➲ **National Forest Policy 1988:** Mandates that 33% of India's geographical area should be under tree or forest cover.

Major Findings:

Forest and Tree Cover of India (in km2)		
Class	**Area**	**% of GA**
Forest Cover	7,15,342.61	21.76
Tree Cover	1,12,014.34	3.41
Total Forest and Tree Cover	**8,27,356.95**	**25.17**
Scrub	43,622.64	1.33
Non Forest	24,16,489.29	73.50
Geographical Area of the country	**32,87,468.88**	**100.00**

➲ **Forest Cover Overview:**
   - *National Coverage:*
     - **Forest and tree cover** collectively span **8,27,357 sq. km**, accounting for **25.17%** of India's geographical area.
     - Forest cover constitutes **7,15,343 sq. km** (**21.76%**), while tree cover contributes **1,12,014 sq. km** (**3.41%**).
   - *Net Changes Since 2021:*
     - Forest cover increased by **156.41 sq. km**, reflecting a marginal improvement.
     - Combined forest and tree cover recorded a net rise of **1,445.81 sq. km**.

➲ **Largest Forest and Tree Cover (by Area):**
   - **Madhya Pradesh:** 85,724 sq. km
   - **Arunachal Pradesh:** 67,083 sq. km
   - **Maharashtra:** 65,383 sq. km

➲ **Highest Percentage of Geographical Area Covered by Forest:**
   - **Lakshadweep:** 91.33%
   - **Mizoram:** 85.34%
   - **Andaman & Nicobar Islands:** 81.62%

➲ **State-Wise Gains and Losses (Forest & Tree Cover):**
   - **Increases:** The largest increases were observed in Chhattisgarh (+683.62 sq. km), Uttar Pradesh (+559.19 sq. km), Odisha (+558.57 sq. km), and Rajasthan (+394.46 sq. km).
   - **Decreases:** Significant reductions were recorded in Madhya Pradesh (-612.41 sq. km), Karnataka (-459.36 sq. km), Ladakh (-159.26 sq. km), and Nagaland (-125.22 sq. km).

Classification of Forest Cover	
Class	**Description**
Very Dense Forest (VDF)	Canopy density ≥ 70 %
Moderately Dense Forest (MDF)	40 % ≤ Canopy density < 70 %
Open Forest (OF)	10 % ≤ Canopy density < 40 %
Scrub	Canopy density < 10 %, generally with shrubs interspersed with trees
Non Forest	Lands that do not fall into any of the above classes. It includes areas such as cropland, settlements, water bodies, grasslands, snow-clad areas, deserts, etc.

Very Dense Forest　　**Moderately Dense Forest**　　**Open Forest**　　**Scrub**

- **Forest Cover within Recorded Forest Areas (RFA)/Government Land (GW):**
  - **Gains:** Mizoram (+192.92 sq. km), Odisha (+118.17 sq. km), Karnataka (+93.14 sq. km).
  - **Losses**: Tripura (-116.90 sq. km), Telangana (-105.87 sq. km), Assam (-86.66 sq. km).
- **Forest Cover Outside RFA:**
  - **Gains:** Gujarat (+241.29 sq. km), Bihar (+106.85 sq. km), and Kerala (+95.19 sq. km).
  - **Losses:** Madhya Pradesh (-344.77 sq. km), Rajasthan (-110.65 sq. km).

➲ **Regional Highlights:**
- **Western Ghats Eco-Sensitive Areas (WGESA):**
  - WGESA spans 60,285.61 sq. km, with forest cover constituting 44,044 sq. km (73%).
  - A decadal analysis revealed a 58.22 sq. km loss, with gains in very dense forests offset by declines in moderately dense and open forests.
- **Hill Districts:**
  - Forest cover in hill districts totals **2,83,713 sq. km**, comprising **40%** of their geographical area.
  - An increase of **234.14 sq. km** was recorded during the current assessment.
- **Northeast Region:**
  - Forest and tree cover in the Northeast is **1,74,395 sq. km**, making up **67%** of the region's area.
  - However, a decline of **327.30 sq. km** was observed, with significant losses in **Nagaland**, **Tripura**, and **Assam**.

➲ **Mangrove Cover:**
- Total mangrove cover stands at **4,992 sq. km**, or **0.15%** of India's area.
- There was a net decline of **7.43 sq. km**, driven by losses in **Gujarat** (-36.39 sq. km), though increases were noted in **Andhra Pradesh** (+13.01 sq. km) and **Maharashtra** (+12.39 sq. km).

➲ **Bamboo Resources and Agroforestry:**
- **Bamboo-Bearing Area:**
  - Covers **1,54,670 sq. km**, an increase of **5,227 sq. km** since 2021.
  - Largest reserves are in **Madhya Pradesh** (20,421 sq. km), followed by **Arunachal Pradesh**, **Maharashtra**, and **Odisha**.
- **Agroforestry:**
  - Tree green cover under agroforestry is estimated at **1,27,590 sq. km**, a **20.02% increase** since 2013.
  - Notable contributors include **Maharashtra**, **Karnataka**, and **Odisha**.

➲ **Carbon Stock and NDC Targets:**
- **Carbon stock** for 2023 is **7,285.5 Mt**, an increase of **81.5 Mt** compared to 2021.
- India has achieved an additional **2.29 billion tonnes of CO2**

equivalent sink since 2005, progressing towards the **2.5 -- 3.0 billion tonnes** target under the Nationally Determined Contributions (NDC).

➲ **Growing Stock of Wood:** Total growing stock is estimated at **6,429.64 million cubic meters (M m³)**, marking a **4.25% increase**.
- **Inside forests:** 4,478.89 M m³; **Outside forests**: 1,950.75 M m³.
- **Shorea robusta** (sal) contributes the highest volume inside forests, while **Mangifera indica** (mango) leads outside forests.

➲ **Other Highlights:**
- **Tree Cover Leaders**: Maharashtra, Rajasthan, and Uttar Pradesh have the highest tree cover.
- **Fire Incidences**: Highest occurrences were in **Uttarakhand**, **Odisha**, and **Chhattisgarh** during the 2023-24 season.
- **Soil Health and Biotic Pressure**: General improvement in soil health and reduced biotic pressures reflect better biodiversity and ecosystem stability.

Concerns

➲ **Net Loss of Dense Forests:**
- India has lost **24,651 sq. km** (6.3%) of its dense forests since 2003 — an area nearly half the size of Punjab.
- This decline reflects ongoing deforestation and degradation of natural forest ecosystems.

➲ **Offset by Plantations:**
- **15,530 sq. km** of non-forested or scant forest areas have been converted into dense or very dense forests, primarily through plantations.
- Between 2021 and 2023, **1,420 sq. km** of plantations were classified as dense forests, continuing a trend where plantations supplement losses in natural dense forests.
- Over the past 20 years, dense forest cover increased by **1,370 sq. km** due to plantations and better management of degraded forests.
- Experts attribute this rapid transformation to plantations since natural forests do not grow at such a pace.
- Plantations are often monocultures with trees of the same age, making them susceptible to **fires, pests, and diseases**.
- They act as barriers to natural forest regeneration and lack the biodiversity and ecological functions of old-growth forests.

➲ **Fire Incidents:**
- Forest fire counts have decreased over the past two years, from **2.23 lakh (2021-22)** to **2.03 lakh (2023-24)**.
- However, states like **Himachal Pradesh** (10,136 fires in 2023-24) and **Uttarakhand** (21,033 fires in 2023-24) witnessed alarming increases.

➲ **Mangrove Decline:**
- Mangrove cover decreased by **7.43 sq. km**, with the largest loss in **Gujarat** (-36.39 sq. km).

- ◆ Even the ecologically sensitive **Andaman and Nicobar Islands** lost **4.6 sq. km** of mangrove area.
- ➲ **Bamboo Cover Integration: ISFR 2023** integrated bamboo cover into tree cover estimates, marking a methodological shift from previous assessments.
- ➲ **Fragmentation and Habitat Loss:** Infrastructure development, mining, and urban expansion cause significant habitat fragmentation, especially in ecologically sensitive regions like the Himalayas and Western Ghats.
- ➲ **Management and Monitoring Deficiencies:** Insufficient monitoring and weak enforcement mechanisms in forested areas worsen problems like illegal logging and encroachment.
- ➲ **Unsustainable Resource Exploitation:** Overharvesting of Non-Timber Forest Products (NTFPs), excessive grazing, and unregulated wood collection contribute to forest degradation.

KEY TERMS FROM THE REPORT	
Above-ground biomass	All biomass of living vegetation, both woody and herbaceous, above the soil, including stems, stumps, branches, bark, seeds, and foliage. (Source – 2006 IPCC Guidelines for National Greenhouse Gas inventories)
Below-ground biomass	All biomass of live roots. Fine roots of less than 2 mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Biodiversity	Biodiversity, or, "Biological diversity" means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. (Source – Convention on Biological Diversity)
Carbon sequestration	It is a natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.
Carbon stock	Carbon in all living and non-living biomass including Above Ground Biomass, Below Ground Biomass, Deadwood, Litter, and Soil carbon
Culturable Non Forest Area	It is the net geographical area, lying outside recorded forest, which can support tree vegetation (thus, excluding areas under waterbodies, riverbeds, perennial snow covered mountains, Alpine pastures, Sand dunes etc.). CNFA is the area over which the sample data on TOF is aggregated for the assessment.
Exotic species	Exotic species are organisms that have been introduced into an area outside their normal distribution.
Forest area	The area recorded as a forest in the Government records. It is also referred to as "Recorded Forest Area".
Forest phenology	The science that deals with time of appearance of characteristic periodic events, such as leaf shedding, etc., in the life cycle of organisms in nature; especially as those events are influenced by environmental factors.
Forest stand	Forest stand is an aggregation of tree or other growth, possessing sufficient uniformity in composition, constitution, age arrangement or structure and to be distinguished from adjacent crops forming a silvicultural unit.
Girdling	The complete removal of a strip of bark (consisting of cork cambium or "phellogen", phloem, cambium and sometimes going into the xylem) from around the entire circumference of either a branch or trunk of a woody plant.
Growing stock	The sum (by number or volume) of all the trees growing/living in the forest or a specified part of it.
Herbs	Herb is a plant with no persistent stem (non-woody) above ground and usually not exceeding 1 meter in height.
Humus	The decomposed organic matter which remains associated with soil minerals is usually referred to as humus.
Indicator species	An indicator species is a species or group of species chosen as an indicator of, or proxy for, the state of an ecosystem or of a certain process within that ecosystem.
Niche	Niche is the role or job of a species in a habitat. The word niche comes from the French word nicher, which means "to nest." An ecological niche describes how a species interacts with, and lives in, its habitat.
Protected Area	Protected area means a National Park, a Sanctuary, a Conservation Reserve or a Community Reserve notified under sections 18, 35, 36A and 36C of the Wildlife Protection Act.
Reserved Forest	An area so constituted under the provisions of the Indian Forest Act or other State Forest Acts, having full degree of protection. In Reserved forests all activities are prohibited unless permitted.

ERADICATION OF NAXALISM

Recently, the Union Ministry of Home Affairs has reaffirmed the government's commitment to eradicating Naxalism in Chhattisgarh by March 31, 2026.

Background

- **Naxalite Movement:** The Naxalite movement is a militant ultra-leftist insurrection/movement in India that aims to overthrow the Indian state through a protracted people's war.
  - The movement views India as a 'semi-colonial and semi-feudal state' and seeks to establish a communist society.
- **History of the Naxalite Movement:** The Naxalite movement traces its origins to the Naxalbari uprising in West Bengal, led by communist revolutionaries inspired by Mao Zedong's ideology.
- **Spread of the Movement:** The Naxalite movement initially spread to various parts of West Bengal and later expanded to states like Bihar/Jharkhand, Odisha, Andhra Pradesh, Maharashtra, and Karnataka. The movement was characterized by armed insurgency and aimed at challenging perceived exploitation by landlords, authorities, and the state.

CHALLENGES ASSOCIATED

- **Socio-Economic Issues**
  - **Poverty and Unemployment:** Persistent poverty and lack of job opportunities in affected regions enable LWE groups to recruit vulnerable individuals.
  - **Land Disputes and Displacement:** Tribal communities face land alienation and large-scale displacement due to industrial and infrastructure projects, fueling resentment.
  - **Migration and Food Insecurity:** Distress migration and lack of access to food, healthcare, and sanitation further exacerbate socio-economic problems.
  - **Land Reforms and Agrarian Distress:** Large tracts of land remain concentrated in the hands of a few, while the majority of the rural population struggles with landlessness and insecure tenancy.
    - This agrarian distress fuels discontent and provides fertile ground for Naxalite recruitment.
- **Security Threats**
  - **Casualties:** LWE-related violence results in significant loss of civilian and security personnel lives, despite recent reductions.
  - **Use of Advanced Tactics:** Guerrilla warfare and the use of IEDs complicate counter-insurgency operations.
- **Hindrance to Development**
  - **Opposition to Projects:** LWE groups target infrastructure projects such as roads, schools, and mobile towers, stalling regional progress.
  - **Distrust in Authorities:** Local populations, influenced by propaganda, often mistrust government efforts, hindering developmental programs.

- **Legal and Institutional Challenges:**
  - **Complex Implementation:** Coordinating central and state agencies to implement anti-LWE laws remains a significant challenge.
  - **Funding Networks:** Groups generate funds through extortion and illegal activities, complicating financial crackdowns.
- **Ideological Challenges:** LWE ideology focuses on opposing the state through violence and spreads anti-government narratives in marginalized communities.The ideology fuels distrust in democratic institutions and perpetuates a cycle of violence.

Red Corridor

- **New areas of Maoist expansion**
- **Highly affected areas**
- **Moderately affected**
- **Least affected**

ASSAM: The LWE movement seems to be expanding despite military intervention

MANIPUR: Maoists are forming links with terror groups in the North-East
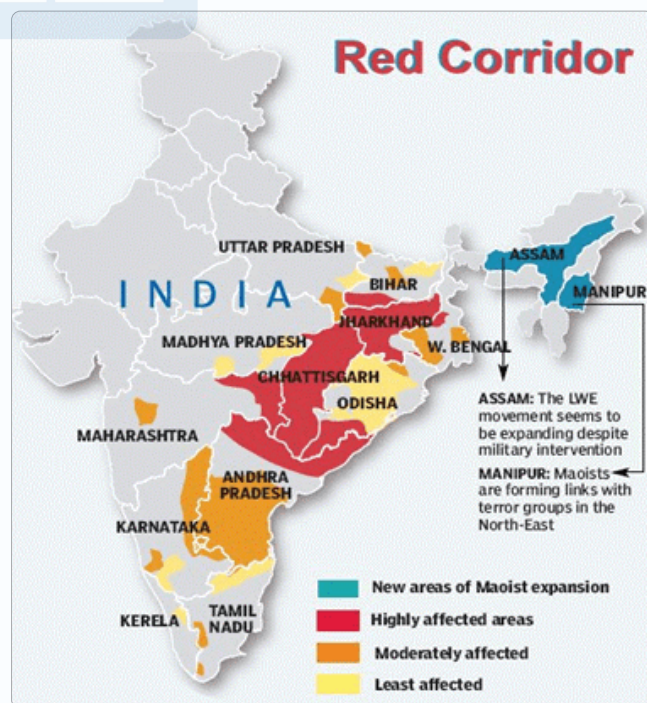
Facts Related to Left Wing Extremism (LWE)

- According to **MHA Reports**, LWE related violence reduced from 126 to 90 districts in April 2018, further to 70 in July 2021 and then to **38** in April 2024.
- The resultant deaths (Civilians + Security Forces) have reduced by 86% from an all time high of 1005 in 2010 to **138 in 2023.**
- In the current year 2024 (up to 15.11. 2024), there has been a sharp reduction of **25%** in LWE perpetrated incidents.

Bandyopadhyay Committee (2006):

- It highlighted the lack of governance, economic, socio-political and cultural discrimination against the tribals as the chief reason for the spread of Naxalism.
- The Committee recommended tribal-friendly land acquisition and rehabilitation as a means to counter this issue.

STEPS TAKEN BY GOVERNMENT	
Legal Framework	**UAPA, 1967** and **NIA Act, 2008** empower agencies to combat Left-Wing Extremism (LWE).
SAMADHAN Doctrine	A comprehensive strategy to address Left-Wing Extremism (LWE) with a focus on **Smart Leadership, Aggressive Strategy, Motivation and Training, Actionable Intelligence, Dashboard-Based KPIs, Harnessing Technology, Action Plan for Each Theatre, and No Access to Financing** for extremist groups.
Funding Support	Increased funding under **Security Related Expenditure (SRE)** and **Assistance to Central Agencies for Left Wing Extremism Management Scheme (ACALWEMS)**
Special Forces	**Greyhounds (1989):** Elite anti-Naxal force. **COBRA, IRBs, Bastariya Battalion:** Specialized units for LWE operations.
Development Programs	**Aspirational Districts Programme (2018):** Focused on transforming underdeveloped districts. **Roshni Initiative (2013):** Training and job placement for rural youth in LWE-affected areas.
Infrastructure Development	**Roads:** 9,000+ km built. **Telecom:** 2,343 mobile towers installed and upgraded to 4G. **Financial Inclusion:** New banks, ATMs, and post offices in affected areas. **Skill Development:** ITIs and SDCs set up for youth employment. **Education:** 245 Eklavya Schools approved; 121 functional for tribal students. **Youth Exchange Program:** 22,000+ tribal youth exposed to developed areas.

WAY FORWARD

- **Comprehensive Development Planning:** Strategies should be developed to focus on the marginalized sections of society, ensuring inclusive growth and echoing Gandhi's principle of uplifting the most vulnerable people.
- **Job-Centric Industries:** Priority should be given to industries that create mass employment opportunities to absorb the vast pool of unemployed youth, moving beyond industries that yield high profits but employ limited workers.
- **Responsible Industrial Practices:** The government should promote responsible practices in industries, especially in mining. Displaced communities must receive adequate rehabilitation and support to mitigate social and economic disruptions caused by development projects.
- **Modernizing Law Enforcement Agencies:** To support the often under-resourced state police, the central government should enhance its presence in disturbed states by deploying well-equipped agencies with modern artillery to help maintain law and order.
- **Centre-State Cooperation:** Effective collaboration between the central and state governments is essential in combating Naxalism. The central government should play a supportive role while state police forces lead operational activities on the ground.

REGIME CHANGE IN SYRIA

Syrian rebels, led by the Islamist militant group Hayat Tahrir al-Sham (HTS), have taken control of Homs, marking a significant defeat for President Bashar al-Assad's regime.

TIMELINE OF THE SYRIAN WAR

2011 (Uprising and Beginning of Civil War)

- Pro-democracy protests erupt in Syria following the Arab Spring of 2010, the government responds with violent repression.
- The Syrian opposition forms the Free Syrian Army (FSA) to fight Assad's regime.
- The United States and European Union call for Assad to step down.

2012 (Escalation of Violence)

- The conflict turns into an all-out civil war, with multiple armed groups fighting the government and each other.
- The Assad regime gains support from Russia and Iran.

2013 (Rise of Extremist Groups)

- The Islamic State of Iraq and Syria (ISIS) starts to gain territory, leading to fears of a growing extremist presence in the region.

2014 (U.S.-led Coalition Against ISIS)

- The Islamic State declares a caliphate across parts of Syria and Iraq, leading to the formation of an international coalition (led by the U.S.) to fight ISIS.
- Kurdish forces, mainly the YPG (People's Defense Units), gain prominence in the fight against ISIS, especially in northern Syria.

2015 (Russian Intervention)

- Russia intervenes militarily in support of the Assad government, launching airstrikes against opposition groups.
- Iran increases its involvement, providing military and financial support to Assad.

2016 (Battle for Aleppo)

- One of the largest battles of the war occurs in Aleppo, with heavy bombardment by Russian and Syrian forces.
- The city falls to Assad's regime by the end of the year.

2017 (U.S. Military Involvement & Chemical Attacks)

- A chemical attack on the town of Khan Shaykhun leads to U.S. missile strikes against a Syrian airbase.
- Syrian government forces, with Russian support, recapture much of eastern Syria, and ISIS is pushed back.

2018 (Idlib and Kurdish Tensions)

- A large-scale government offensive against the last major opposition stronghold in Idlib begins.
- U.S. and Turkish forces clash with Kurdish YPG fighters in northern Syria, raising tensions between NATO allies.

2019 (Defeat of ISIS and U.S. Withdrawal)

- ISIS loses its territorial caliphate in Syria, U.S. orders the withdrawal of American troops from northern Syria.

2020-2021 (Continued Struggle)

- The Assad regime, with Russian and Iranian support, regains control over most of Syria, but parts of the country remain under rebel control.
- The U.S. maintains a military presence in northeastern Syria to counter ISIS remnants and support Kurdish forces.
- The Hamas attack on Israel triggers fighting between Israel and Hezbollah in Lebanon, ultimately reducing the group's presence in Syria and fatally undermining Assad.

2024 (Rebel attacked and ousted President Bashar al-Assad)

- Rebels launch a new assault on Aleppo. With Assad's allies focused elsewhere his army quickly collapses and rebels have taken most major cities, driving Assad

Key Actors Involved in Syria

IRAN

RUSSIA

USA

SYRIAN DEMOCRATIC FORCES (SDF)

HAYAT TAHRIR AL-SHAM (HTS)

TÜRKIYE

➲ **Role of Iran:** Iran's military advisers and proxy fighters, including Lebanon's **Hezbollah**, have bolstered Assad's forces.
- ◆ Hezbollah has been weakened by its recent conflict with **Israel**, and Iran is increasingly distracted by other regional conflicts. Iranian-backed Iraqi militias have been deployed to Syria to support the government's counteroffensive.
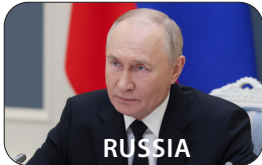
➲ **Role of Russia:** Russia has provided military aid from bases in **Latakia province**, including the **Hemeimeem airbase** and a naval base on the Mediterranean. However, Russia's focus has shifted toward its war in **Ukraine**, limiting its support.

➲ **Role of USA:**
- ◆ The U.S. has provided over **US$1 billion** in military aid to moderate armed groups resisting the Assad regime.
- ◆ A significant portion of this assistance has gone to the **Syrian Democratic Forces (SDF)**, a Kurdish-led force in **northeast Syria**, which has collaborated with the U.S. in fighting **ISIS** while opposing **Assad.**
- ◆ It is perceived that the U.S. did not directly participate in the recent toppling of the Syrian government. **Turkey** backed the rebel groups that overthrew Assad, primarily to counter the **Kurdistan Workers' Party (PKK)**, a Kurdish militant group it views as a threat to Turkey's control over its Kurdish population.

➲ **Anti-Assad Militias:**
- ◆ **Hayat Tahrir al-Sham (HTS):** Controls much of **northwest Syria** and operates a "salvation government."Initially linked to **al-Qaida**, HTS has rebranded under its leader, **Abu Mohammed al-Julani**, promoting pluralism and tolerance.
  - ◆ It aims to establish Sunni-Islamic governance.
- ◆ **Other Insurgents:** Groups like **Noureddine el-Zinki**, once U.S.-backed, now align with HTS.
- ◆ **Turkish-backed Syrian National Army** has attacked areas held by the **Syrian Democratic Forces (SDF).**

➲ **Kurdish-led Syrian Democratic Forces (SDF):**
- ◆ U.S.-backed coalition controls much of **eastern Syria** and has fought **ISIS**, capturing their last stronghold in the region.
- ◆ Around **900 U.S. troops** remain in eastern Syria to prevent ISIS resurgence.
- ◆ SDF holds parts of **Aleppo**, encircled by insurgents, with ongoing negotiations for withdrawal.

➲ **Turkey's Role:** Turkey, with a military presence in **northern Syria**, considers the Kurdish factions in the SDF linked to the **Kurdistan Workers' Party, or PKK**, a banned group it regards as terrorist.
- ◆ **Free Syrian Army (FSA)** Backed by Turkey, opposes both Assad and Kurdish groups due to concerns over separatism.

➲ **Foreign Fighters:** Fighters from groups like the **Turkistan Islamic Party (China)** and **Chechen factions** have joined battles in northwest Syria, according to activists.

Key Factors Shaping the Syrian Civil War

➲ **Historical Context:**
- ◆ Assad's regime, dominated by the Alawite minority, has faced grievances from the Sunni majority over economic inequality, corruption, and political repression.
- ◆ The uprising turned into a prolonged conflict due to violent crackdowns on peaceful protests.

➲ **Decline of Assad's Regime:** Assad's reliance on external support became unsustainable as Russia shifted focus to Ukraine, Iran reduced involvement, and Israeli strikes weakened Syria's military infrastructure.

Implications of the Rebellion

➲ **Impact on Syria and the Middle East:**
- ◆ **HTS Rule:** HTS's extremist ideology raises fears of Syria potentially following a path similar to Taliban-ruled Afghanistan.
- ◆ **Ethnic and Sectarian Challenges:** The erstwhile Assad regime, led by the Alawite minority (a Muslim sect in Syria), faced accusations of marginalizing the Sunni majority.
  - ◆ Thus, even at present times experts argues that Syria's diverse population complicates efforts to unify under a single governance model.

- **Regional Instability:** The rebellion intensifies tensions, particularly for Kurdish groups near the Turkish border.
- **Global Repercussions:**
  - **Humanitarian Crisis:** Millions have been displaced, creating one of the largest refugee crises globally.
    - The United Nations reports approximately 5.5 million Syrian refugees live , primarily in Turkiye, Lebanon, Jordan, and Europe.
  - **Extremism and Terrorism:** The ongoing conflict allows groups like ISIS to regroup, posing international security threats.
  - **Economic Disruptions:** The instability affects regional trade routes, energy markets, and global oil prices.
  - **Human Rights Violations:** Widespread abuses, including chemical weapon use and targeting of civilians, have drawn global condemnation.

Implications of the Syrian Crisis on India

- **Geopolitical Challenges:**
  - **China:** Growing Chinese investments in Syria might sideline India's regional interests.
  - **Turkey:** Its opposition to India on Kashmir and growing influence in Syria could create diplomatic challenges.
- **Energy Security:** Instability in Syria risks disrupting energy imports and trade routes critical for India's energy needs.

- **Counter-Terrorism:** Extremist group resurgence in Syria could threaten India's security and lead to radicalization concerns domestically.
- **Humanitarian Impact:** The refugee crisis in the Middle East may strain India's resources for international humanitarian efforts.
- **Trade & Connectivity:** Chinese influence through Syria's potential role in the Belt and Road Initiative could marginalize Indian trade interests.
- **India's Global Role:** The crisis is an opportunity for India to enhance its image as a neutral and constructive international actor.
- **Diaspora Safety:** Escalating tensions in Syria may endanger Indian expatriates in Gulf nations and affect remittances.
  - In December 2024, the number of Indians in Syria was around 90, including 14 who worked for UN organizations

India's Approach to the Syrian Crisis

- **Neutral Stance:**
  - India has called for a Syrian-led, inclusive political process while emphasizing the preservation of Syria's unity, sovereignty, and territorial integrity.
  - It has expressed concern over the safety of minorities and advised its nationals to leave Syria amidst escalating violence.

INDIA-SYRIA RELATIONS

- **Historic and Civilizational Ties:** India and Syria share strong political relations rooted in historical and cultural connections. Both nations emphasize secularism, nationalism, and developmental goals.
- **Geopolitical:** Both countries align on numerous international and regional issues and are members of the Non-Aligned Movement (NAM).India has consistently backed Syria on key issues, including advocacy for the return of the Golan Heights to Syria and support for the Palestinian cause.
  - **Bilateral Engagements Post-2011:**
    - India maintained its embassy throughout the Syrian crisis, emphasizing a Syrian-led political resolution.
    - India has invested in infrastructure projects and provided humanitarian aid, as seen during the 2023 earthquake under **"Operation Dost."**
    - In late 2024, India hosted the 6th Round of India-Syria Foreign Office Consultations, reaffirming its commitment to bilateral relations.
- **Economic and Trade Relations:**
  - **Key Projects:**
    - **Tishreen Thermal Power Plant:** India extended a $240M LoC for this project, which is set to resume post-crisis.
    - **Hama Iron & Steel Plant Modernization:** Completed under a $25M LoC despite the crisis.

  - **Phosphate Sector:** India conducted feasibility studies and signed an MOU for cooperation in fertilizer production.
  - **Oil Investments:** ONGC and IPR International explored oil and natural gas in Deir-ez-Zour.
  - **Bilateral Trade:** Indian exports to Syria include rice, pharmaceuticals, textiles, chemicals, and buffalo meat. Syrian exports to India include almonds, wool, leather, spices, and black sesame.
    - India-Syria Joint Business Council (JBC) was launched in 2010, with plans for reconstitution post-crisis.
- **Educational and Cultural Relations:**
  - **Cultural Exchange Programs:** Indian cultural weeks held in Damascus and Latakia featured Bollywood films and performances by Indian dance troupes. Yoga celebrations are organized annually in various Syrian cities.
  - **Scholarship Programs:** "Study in India" program offered 393 scholarships to Syrian students in 2018-19, increasing to 600 slots in 2019-20.
- **India's Role During the Syrian Crisis 2011:**
  - **Principled Stance:** Advocated for a non-military, inclusive, Syrian-led political resolution to the conflict.
  - **Humanitarian Assistance:** Delivered aid worth $6 million, including essential food and medical supplies.
  - **Engagement with Syrian Leadership:** Continued dialogue through high-level visits and diplomatic consultations.

SMUGGLING IN INDIA REPORT: 2023-24

The Directorate of Revenue Intelligence (DRI) has
released the annual 'Smuggling in India - Report 2023-24' report.

Major Highlights

➲ **Environment and Wildlife Crime:** Illegal poaching of elephants for tusks and hunting of peacocks, pangolins, and leopards persist. Smuggling of star tortoises is rising due to high demand in Southeast Asia.

Various Dimensions of Environmental Crime

➲ **Cocaine Trafficking:** A significant rise in cocaine smuggling, with cases increasing from Direct routes used from South America and via African countries.

➲ **Black Cocaine:** A new form of cocaine chemically masked with substances like charcoal or iron oxide to evade detection by standard methods.

➲ **Hydroponic Marijuana:** Smuggled from the US, Thailand, and other countries. It is cannabis grown in water-based nutrient solutions without soil, making it highly potent and in demand.

➲ **Illicit Gold Imports:** India is a key destination for smuggled gold, mostly from West Asia, involving mules, foreign nationals, and insider networks.

➲ **Porous Borders:** Smuggling of methamphetamine through eastern borders with Bangladesh and Myanmar is rising, especially in northeastern states like Assam and Mizoram.

➲ **FTA Misuse:** Free Trade Agreements(FTA) are exploited by traders through misclassified imports and fake documents. This leads to revenue losses for the government and unfair competition for domestic businesses.

Key Smuggling Routes

➲ **Golden Death Crescent**: **Afghanistan, Iran, and Pakistan** form this hub for heroin trafficking, with routes into India via the India-Pakistan border, maritime paths, and African and Gulf regions. Arms and counterfeit currency have also been funneled through this route.

Key Data Points from the DRI Report (2023-24)

➲ **Foreign currency seizures(2023-24)**: INR 12.38 Cr in 25 cases.

➲ **Narcotics and Psychotropic Substances (2023-24)**
  ◆ **Total narcotics cases**: 109.
  ◆ **Total narcotics seized**: 8223.61 kg.
    • Cocaine: 107.31 kg.
    • Heroin: 48.74 kg.
    • Methamphetamine: 136 kg.
    • Mephedrone: 236 kg.
    • Ganja: 7348.68 kg.

➲ **Increase in air-route cocaine smuggling cases:** From 21 (2022-23) to 47 (2023-24).

➲ **Gold Smuggling(2023-24)**
  ◆ **Total gold seized**: 1319 kg.
    • **Land route contribution**: 55%.
    • **Air route contribution**: 36%.

➲ **Wildlife Crime(2023-24):**
  ◆ **Major seizures**:
    • **Elephant tusks:** 53.49 kg (5 operations).
    • **Other wildlife:** Leopard skins, live pangolins, pangolin scales, parakeets, live peacocks, peacock feathers, and Indian turtles.

➲ **Commercial Fraud (2023-34)**
  ◆ **Total import cases booked**: 485.
    • **Illegal benefit involved**: INR 5907.79 Cr.
    • **Mis-declaration/mis-classification:** 201 cases.
    • **Misuse of end-use and notifications:** 52 cases.
    • **Misuse of FTA:** 51 cases (33 cases under ASEAN-India FTA).

Note: *Commercial fraud refers to any violation of Customs laws or regulations aimed at evading the payment of duties, taxes, or levies on commercial goods.*

➲ **Golden Death Triangle**: **Myanmar, Laos, and Thailand** are key sources of synthetic drugs, heroin, and illegal wildlife products.
  ◆ Smuggling often takes place through India's northeastern states, leveraging porous borders and rugged terrain.

➲ **Maritime Routes**: India's **7,500 km** coastline is a hotspot for smuggling diverse contraband, including drugs, gold, arms, and even cattle.
  ◆ Concealment in shipping containers and fishing vessels has been widely reported.

➲ **Air Routes**: Increasing international air traffic enables smuggling of drugs, **Counterfeit Indian Currency Notes (FICN)**, and gold, often hidden in luggage, courier parcels, or carried by "mules" who ingest the contraband.

➲ **Eastern Borders**: Porous borders with Bangladesh and Myanmar facilitate smuggling of methamphetamines, cattle, arms, and human trafficking.
  ◆ Difficult terrain and weak enforcement exacerbate the issue.

➲ **Cross-Border Routes from Nepal and Bhutan**: These borders are exploited for smuggling of FICN, arms, wildlife, and human trafficking, taking advantage of minimal restrictions and close trade ties.

Reasons Behind India being Prone to Smuggling

➲ **Geographical Location**: Proximity to major drug-trafficking routes, such as the Golden Crescent and Golden Triangle facilitates the influx of illicit substances.
  ◆ *For instance,* drug smuggling in Punjab from Pakistan based outfits.

➲ **Extensive Borders**: Porous land boundaries, challenging terrains, and a vast coastline of approximately 7,500 km complicate effective monitoring and enforcement efforts.

➲ **High Domestic Demand**: Cultural preferences for gold, a growing youth population, and increasing narcotics consumption make India an attractive market for smugglers.

➲ **Economic Disparities**: Variations in tax structures and pricing between India and neighboring countries incentivize smuggling activities.
  ◆ *For instance*, lower gold prices in Dubai and Bangkok encourage illicit imports to evade higher domestic duties.

➲ **Regulatory Challenges**: Complex regulations and high tariffs on certain goods, such as gold and electronics, create opportunities for smuggling to meet market demands while avoiding legal constraints.

➲ **Technological Advancements**: Smugglers increasingly exploit technology, such as encrypted communications and sophisticated concealment methods, to evade detection and facilitate illicit trade.

The Directorate of Revenue Intelligence (DRI)

➲ **About:** It is the premier intelligence and enforcement agency on anti-smuggling matters under the aegis of Central Board of Indirect Taxes & Customs (CBIC).

➲ **Established: 1957**.

➲ **Functions:**
  ◆ Preventing and detecting cases of smuggling of narcotic drugs & psychotropic substances.
  ◆ Gold, diamonds, precious metals, wildlife products, arms, counterfeit currency notes, antiques etc.
  ◆ Taking punitive action against the organised crime groups.
  ◆ It is also engaged in unearthing commercial frauds and instances of customs duty evasion.

WAY FORWARD

➲ **Stringent Law Implementation:** Enforce existing laws with regular inspections, stricter penalties, and tighter regulations to deter smuggling.

➲ **Increasing Manpower:** Hire more inspectors, especially in customs and narcotics, to monitor goods movement effectively.

➲ **Better Cross-border Coordination:** Share intelligence, improve communication, and conduct joint operations to intercept smuggled goods.

➲ **Trade-data Reconciliations:** Compare trade data from multiple sources to identify discrepancies and detect smuggling.

➲ **Cracking Down on Grey Markets:** Enforce regulations against grey markets and educate consumers about the risks of buying smuggled goods.

➲ **Public Awareness:** Inform the public about the economic, safety, and legal impacts of smuggling to reduce demand for illicit goods.

➲ **International Case Studies:** Learn from successful operations like UAE's Operation Sea Guardian, which disrupted trafficking networks and set a global standard.

GLOBAL INITIATIVES TAKEN AGAINST ILLEGAL DRUG ABUSE

Initiatives	Description
United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances (1988)	International treaty targeting drug trafficking and preventing illicit drug production and distribution.
United Nations Office on Drugs and Crime (UNODC)	Leads global efforts to counter illicit trafficking, including drugs, arms, and wildlife, by providing technical assistance and promoting international collaboration.
AI and Technology Use	The use of AI, drones, and advanced scanning technologies for tracking, detecting, and intercepting smuggled goods at ports, airports, and borders.
CITES (Convention on International Trade in Endangered Species)	International agreement aimed at ensuring that international trade in wildlife and plants does not threaten their survival, focusing on wildlife trafficking.
International Anti-Smuggling Operations	Large-scale coordinated operations, such as INTERPOL's Operation Lionfish, designed to target and dismantle international smuggling networks.
Paris Pact Initiative	Targets the global trafficking of Afghan opiates, one of the major sources of illicit drugs, by promoting regional cooperation to curb production and trafficking.
INTERPOL's Counterfeit Crime Unit	Focuses on global coordination to combat counterfeit goods, including fake currency, through international intelligence sharing and operations.
United Nations Convention Against Transnational Organized Crime (2000)	Addresses various aspects of transnational organized crime, including arms trafficking and smuggling.
World Customs Organization's (WCO) Customs Enforcement Network (CEN)	Provides a global network for customs authorities to share information and track smuggling activities, including counterfeit goods and weapons.

INDIAN INITIATIVES TAKEN AGAINST ILLEGAL DRUG ABUSE

Initiatives	Description
Narcotic Drugs and Psychotropic Substances Act, 1985 (NDPS Act)	The legal framework to regulate the production, manufacture, and trafficking of narcotic drugs and psychotropic substances within India.
Directorate of Revenue Intelligence (DRI)	A key agency in India tasked with tackling smuggling, customs fraud, and the illicit trade of goods, including narcotics and counterfeit currency.
Border Security Force (BSF)	Ensures security along India's international borders, preventing cross-border smuggling of goods, including drugs, arms, and counterfeit products.
Customs Department's X-Ray Scanners and AI Tools	The use of advanced technology, including AI and scanning tools, to detect concealed smuggled goods at airports, ports, and border checkpoints.
Wildlife Crime Control Bureau (WCCB)	An agency focused on preventing illegal wildlife trade and the protection of endangered species from poaching and trafficking.
Prevention of Money Laundering Act (PMLA), 2002	Provides legal authority for the Enforcement Directorate to investigate and prosecute money laundering, especially related to the proceeds of smuggling activities.
National Action Plan on Drug Demand Reduction (NAPDDR)	A national initiative aimed at reducing drug demand and addiction through awareness programs, rehabilitation, and enforcement.
Terror Funding and Fake Currency Cell (TFFC)	A specialized unit under the NIA and other agencies that focuses on tackling terrorism financing through the circulation of fake currency and smuggling activities.

GROWING MISUSE OF SECTION 498A OF IPC

Recently, the Supreme Court expressed concerns about the misuse of Section 498A of the Indian Penal Code (now Section 84 of the Bharatiya Nyaya Sanhita), addressing cruelty against married women.

About:

➲ **Background**: Section 498A was added to the IPC in response to increasing dowry deaths and domestic violence cases in the 1980s.
  - It aimed to provide legal protection to women suffering from physical and mental harassment, dowry-related abuse, coercion, and violence within marriages.

➲ **Legal Protection**: Section 498-A of the IPC protects married women from cruelty by their husbands or relatives.

➲ **Punishment for Cruelty**: A husband or his relatives can face a jail term of up to three years for subjecting the wife to cruelty.

➲ **Definition of Cruelty**: Cruelty is defined as:
  - Any willful conduct likely to drive the woman to commit suicide or cause grave injury or danger to her life, limb, or health (mental or physical).
  - Harassment with the intent to coerce the woman or any person related to her into meeting unlawful demands for property or valuable security.

➲ **Forms of Cruelty**: Cruelty includes harassment or torture with the intent to coerce the woman or her relatives to meet unlawful demands for property or money.

➲ **Definition of Husband**: 'Husband' includes a legal or customary partner, such as a live-in partner or someone who claims to be married but is not legally married.

➲ **No Time Limitation**: There is no time limitation for filing a complaint; a wife can file a complaint under this section at any time.

➲ **Offence Characteristics**: Offences under Section 498-A are cognizable, non-compoundable, and non-bailable.

➲ **Bail Conditions**: Bail can only be granted by the Magistrate after an FIR has been registered by the police based on the aggrieved party's complaint.

➲ **Supreme Court Rulings**:
  - **Scrutiny of Allegations**: The Supreme Court emphasized the need to scrutinize vague allegations to prevent the misuse of legal provisions and arm-twisting tactics.
  - **Specifics Required**: FIRs should contain concrete and precise allegations, including details about the time, date, place, and manner of the alleged harassment.
  - **Context Matters**: The court considers the context of the FIR, such as timing and circumstances, to assess the genuineness of the complaint.
  - **Protecting Innocents**: The court aims to protect innocent family members from being unnecessarily dragged into matrimonial disputes without substantial evidence.

  - **Judicial Responsibility**: The court underscores the judiciary's role in scrutinizing complaints to prevent the misuse of legal processes.

Reasons for the Rising Cases of Misuse of Section 498A

➲ **Lack of Strong Evidence:**
  - Many cases are filed without substantial evidence, making it easier for false accusations to be made.
  - The broad interpretation of "cruelty" allows for the filing of complaints based on trivial matters.

➲ **Matrimonial Disputes:**
  - In cases of divorce or separation, Section 498A is often misused by one party as a tool to gain leverage or as a means of revenge, leading to false allegations of cruelty.

OVERVIEW OF MARRIAGE OFFENCES IN INDIAN LAW (IPC SECTIONS 493-498A)

✔ **Mock or Invalid Marriage (Sections 493 & 496)**

Legal consequences for deceiving someone into a false belief of marriage or conducting a fraudulent marriage ceremony.

Key Elements:
• Deception or false belief of marriage
• Fraudulent marriage ceremony

Punishment:
• Up to 10 years (Section 493)
• Up to 7 years (Section 496)

✔ **Bigamy (Sections 494 & 495)**

Marrying again while the spouse is still alive, or concealing a previous marriage before remarrying.

Key Elements:
• Remarriage during the lifetime of a spouse
• Concealing prior marriage

Punishment:
• Up to 7 years (Section 494)
• Up to 10 years (Section 495)

✔ **Adultery (Section 497)**

Once a criminal offence, adultery was decriminalized in 2018 by the Supreme Court but remains grounds for divorce.

Key Elements: Sexual relations with someone not the lawful spouse

Punishment (Before Decriminalization): Up to 5 years

✔ **Criminal Seduction or Elopement (Section 498)**

Punishes enticing or detaining a married woman with the intent of illicit relations.

Key Elements: Enticing or detaining a married woman for illicit sexual relations

Punishment: Up to 2 years

✔ **Cruelty (Section 498A)**

Protects women from physical or mental cruelty by the husband or in-laws, especially in cases involving dowry demands or harassment.

Key Elements: Harassment or cruelty related to dowry or abuse

Punishment: Up to 3 years

Additional Information

- **Surge in Crimes Against Women:** The National Crime Records Bureau (NCRB) annual report reveals a significant rise in crimes against women in India, with 4,45,256 cases registered in 2022 alone, equivalent to nearly 51 FIRs every hour.
- **Increase in Crime Rates:** The data shows a grim escalation in crimes against women compared to 2021 and 2020.
  - The crime rate per lakh population was 66.4, with a charge sheeting rate of 75.8, according to the "Crime in India 2022" report.
- **Categories of Crimes:** The majority of crimes against women under the Indian Penal Code were:
  - Cruelty by husband or his relatives (31.4%),
  - Kidnapping and abduction of women (19.2%),
  - Assault on women with intent to outrage modesty (18.7%),
  - Rape (7.1%).

- **Immediate Arrest Provisions:**
  - The law allows for the immediate arrest of the accused without a thorough investigation, which can lead to the wrongful imprisonment of innocent individuals and pressure on them to settle the matter.
- **Lack of Awareness of Legal Safeguards:**
  - Many people misuse the provision without understanding the legal repercussions for making false claims.
  - Additionally, there may be a lack of awareness about the potential consequences for both the accused and the accuser.

- **Incentive for False Complaints**
  - In some cases, there are financial incentives or social pressures (such as dowry demands) that encourage the filing of false complaints under Section 498A.
  - The potential for compensation or a favorable outcome in court proceedings may drive this behavior.

Arguments in Favor of Section 498A

- **Protection Against Abuse:** Provides immediate relief to women facing domestic abuse and ensures legal recourse for protection.
- **Reduces Gender Inequality:** Empowers women by addressing domestic violence and promoting gender equality within households.
- **Tackles Dowry Harassment:** Focuses on preventing dowry-related cruelty, holding perpetrators accountable for mistreatment linked to dowry demands.
- **Legal Safeguard for Vulnerable Women:** Offers protection to women in abusive relationships, providing immediate legal action and support when needed.
- **Safety for Dependent Women:** Provides a safety net for women financially dependent on their husbands, ensuring legal protection from abuse.
- **Access to Justice:** Empowers women with legal tools to seek justice, offering a mechanism to address mistreatment effectively.
- **Focus on Family Welfare:** Aims to preserve family welfare by addressing abusive behavior and promoting non-violent conflict resolution within households.

WAY FORWARD

- **Stricter Investigation and Scrutiny:** Ensure that police and investigators conduct detailed inquiries before filing charges under Section 498A, including verifying evidence and examining the context of allegations.
- **Judicial Oversight:**
  - **Court Supervision**: Courts should exercise greater scrutiny in cases involving Section 498A to assess the genuineness of allegations at an early stage.
  - **Timely Interventions**: Ensure faster resolution of cases to minimize prolonged legal battles that can exacerbate emotional and financial hardships for the accused.
- **Amendments to the Law**
  - **Clarifying Definitions**: Amend the law to include clearer definitions of "cruelty" to prevent its misuse for trivial issues or non-abusive situations.
  - **Stronger Safeguards**: Introduce safeguards that hold individuals accountable for making false accusations, potentially including penalties or legal action for frivolous complaints.
- **Alternative Dispute Resolution (ADR)**
  - **Mediation and Counseling**: Encourage alternative dispute resolution methods, such as mediation or counseling, to resolve matrimonial disputes without resorting to criminal proceedings under Section 498A.
  - **Family Courts**: Strengthen the role of family courts to deal with domestic issues more effectively and without criminalizing the process unless absolutely necessary.

RECENT DEVELOPMENTS IN SOUTH KOREA

On December 3, 2024, South Korean President Yoon Suk Yeol declared martial law, sparking a political crisis. The National Assembly rejected the move, and on December 14, he was impeached. The case now awaits a verdict from South Korea's Constitutional Court.

Reasons for President Yoon's Martial Law Declaration

- **Political Challenges:** Facing growing dissent and allegations of corruption involving his wife, Yoon attempted to consolidate control after losing support in the National Assembly following the April 2024 elections.
- **Opposition Dominance:** Opposition parties, controlling 192 of 300 seats in the National Assembly, intensified pressure on Yoon, leading him to take extreme measures to suppress dissent.
- **Military Hesitation:** Attempts to deploy military and police forces were ineffective as security forces showed reluctance to act against peaceful protests. The National Assembly swiftly voted to revoke martial law.

Changes in South Korea's Political Landscape

- **Heightened Polarization:** The impeachment motion, passed with 204 votes, has deepened political divides and exposed internal rifts within Yoon's conservative People Power Party.
- **Empowered Opposition:** The impeachment has bolstered opposition parties, enabling them to challenge Yoon's policies and push for greater accountability.
- **Public Sentiment:** Yoon's declining popularity, exacerbated by policy missteps and corruption allegations, has amplified calls for reform and strengthened the opposition's position.

Implications for South Korea's Democratic Institutions

- **Threat to Democratic Norms:** The invocation of martial law raises concerns about undermining democratic principles and setting harmful precedents for future administrations.
- **Judicial Independence:** The Constitutional Court's handling of the impeachment will be closely scrutinized, influencing perceptions of its impartiality and South Korea's legal integrity.
- **Stability Concerns:** Continued political infighting and partisanship may erode public trust in democratic institutions, hindering governance and fostering societal divisions.

Preventing a Similar Scenario in India

- **Federal Structure:** India's federal system, with strong state governments, disperses power and minimizes the risk of centralized crises.
- **Institutional Resilience:** A robust judiciary, free press, and active civil society serve as safeguards against government overreach.
- **Electoral Vigilance:** Regular elections ensure accountability, reducing the likelihood of prolonged governance failures.
- **Cultural Pluralism:** India's diversity discourages uniform political consensus, making large-scale systemic crises less likely.

India's Stance

- India, a strategic partner of South Korea, closely followed the developments. While staying neutral, India stressed the importance of democratic governance and constitutional processes.
- Diplomatic relations remained steady, highlighting India's commitment to long-term economic and security cooperation in the Indo-Pacific.

Article 34: Martial Law in India

- It allows Parliament to indemnify individuals for actions taken during martial law.
- It grants the power to provide legal immunity for acts done in connection with maintaining or restoring order in areas under martial law, including validating sentences, punishments, or forfeitures.
- **However, two conditions apply:**
  - The act must be related to maintaining or restoring order.
  - Martial law must be in force in the relevant area when the act occurred.

WAY FORWARD

- **Strengthen Democratic Institutions:** Safeguard the independence of the judiciary, Election Commission, and media to maintain effective checks and balances.
- **Enhance Accountability:** Foster bipartisan dialogue and establish transparent governance mechanisms to address corruption and reduce political polarization.
- **Promote Public Trust:** Uphold democratic values and prioritize inclusive governance to sustain public confidence in democratic processes.

SRI LANKAN PRESIDENT'S VISIT TO INDIA

Sri Lankan President Anura Kumara Dissanayake met PM Modi during his first foreign visit after assuming office.

Key Outcomes of the Meeting

- **Debt Restructuring**: Sri Lanka recognized India's important role in its debt restructuring, providing emergency financing of USD 4 billion and co-chairing the **Official Creditors' Committee (OCC).**
  - **OCC**: In 2023, 17 countries formed the OCC, co-chaired by India, Japan, and France, to address Sri Lanka's debt treatment request.
- **Trade and Investment Cooperation**: Both countries highlighted the India-Sri Lanka Free Trade Agreement (ISFTA) signed in 1998.
  - Bilateral merchandise trade reached USD 5.5 billion in FY 2023-24, with India having a trade surplus. They agreed to shift from debt-based models to investment-driven partnerships.
- **Strategic & Defence Cooperation**: India and Sri Lanka committed to addressing traditional and non-traditional security threats, ensuring a free and secure maritime environment.
  - Sri Lanka also acknowledged India's role in establishing the Maritime Rescue and Coordination Centre to improve maritime domain awareness.

Significance of India-Sri Lanka Relations

- **Historical and Cultural Ties:** India is Sri Lanka's closest neighbor and the relationship between two countries is more than 2,500 years old, sharing a strong civilizational and historical connect. Sri Lanka has a central place in India's 'Neighbourhood First' policy and Security and growth for all in the region (S.A.G.A.R) vision.
  - Cultural Exchange Programmes under the **1977 Cultural Cooperation Agreement** foster shared heritage.
  - The **India-Sri Lanka Foundation,** established in **1998**, aims to strengthen cooperation in science, technology, education, and culture through exchanges between civil societies.
- **Geo-Strategic:** Sri Lanka's strategic position in the Indian Ocean places it along some of the world's most vital maritime trade routes, such as the S**trait of Malacca, the Bab el-Mandeb Strait, and the Suez Canal.**
  - These routes facilitate global trade, including the transportation of energy resources like oil and gas.
- **Multilateral Forum Collaboration:** India and Sri Lanka are member nations of the **South Asian Association for Regional Cooperation (SAARC)**, South Asia Co-operative Environment Programme, South Asian Economic Union and **BIMSTEC**, working to enhance cultural and commercial ties.

- **Economic Ties and Assistance:**
  - **India-Sri Lanka Free Trade Agreement (ISFTA)** in 2000 contributed significantly towards the expansion of trade between the two countrieS.
  - The Merchandise trade between India and Sri Lanka reached USD 5.5 billion in FY 2023-24 with India's exports amounted to USD 4.1 billion while Sri Lanka's exports reached USD 1.4 billion.
  - India extended ~$3.5 billion during Sri Lanka's 2022 economic crisis, aiding with fuel imports and economic recovery. *(MEA Data)*
  - India is also one of the largest contributors to Foreign Direct Investment (FDI) in Sri Lanka, with a cumulative figure of approx USD 2.2 billion till 2023. *(MEA data)*
- **Technology and Financial Integration:** Adoption of India's UPI in Sri Lanka enhances fintech connectivity and trade settlements using the Indian rupee.
  - Both nations are exploring the Economic and Technology Cooperation Agreement (ETCA) to integrate their economies.
- **Tourism and Connectivity:** Tourism is another important component with India being the leading tourist source market in 2023 with around **3 lakh arrivals** (~20 % of ~1.48 million total arrivals) and in 2024 (till October 2024) with around **3.2 lakh arrivals** (~19.3 % of 1.65 million total arrivals).
  - There are plans to develop ports and logistics infrastructure at **Colombo, Trincomalee, and Kankesanthurai** to consolidate regional logistics and shipping.
- **Maritime Security and Defence Cooperation:** Initiatives like the **Colombo Security Conclave** and exercises such as *'Mitra Shakti,' 'Dosti,'* and *'SLINEX'* promote maritime security and regional stability.

Colombo Security Conclave (CSC)

- **About:** The CSC is a regional security group comprising India, Bangladesh, Sri Lanka, Maldives, and Mauritius. Its main goal is to enhance regional security by addressing shared threats and challenges.
- **Origin:** The CSC started as the Trilateral for Maritime Security Cooperation in 2011, with meetings between NSAs and Deputy NSAs from India, Maldives, and Sri Lanka.
- **The group focuses on five key areas:**
  - Maritime safety and security
  - Countering terrorism and radicalization
  - Combating trafficking and organized crime
  - Cybersecurity and protecting critical infrastructure
  - Humanitarian aid and disaster relief
- **Permanent secretariat:** Colombo.

Challenges in India-Sri Lanka Relations

- **Fisheries Dispute:** Indian fishermen are often arrested for crossing maritime boundaries, causing tensions over fishing rights in the Palk Strait and Gulf of Mannar.
- **Katchatheevu Island Issue:** The 1974 agreement ceded the island to Sri Lanka but granted rights for Indian fishermen to dry nets and visit the Catholic shrine. Disputes continue over fishing restrictions.
- **Border Security and Smuggling:** Porous maritime boundaries lead to concerns over illegal smuggling, including narcotics and human trafficking.
- **China's Strategic Influence:** Chinese investments in Sri Lanka, such as the Hambantota Port and Colombo Port projects, challenge India's regional influence.
- **Tamil Ethnic Issue:** India is sensitive to the welfare of Sri Lanka's Tamil minority and their demand for equitable rights, which remains a domestic challenge in Sri Lanka.
  - India's External Affairs Minister in his tour to Srilanka in 2023 has said that the full implementation of the 13th amendment is crucial for effective power devolution for the Tamil Minority.

13th Amendment of Sri Lankan Constitution

- It was part of the India-Sri Lanka Peace Accord (1987), signed by Prime Minister Rajiv Gandhi and President J.R. Jayawardene.
- It aimed to resolve the civil conflict between the Sri Lankan government and the LTTE.
- The amendment created Provincial Councils to allow power-sharing and self-governance in all nine provinces, including Sinhala-majority areas.
- Key subjects like education, health, agriculture, housing, land, and police were devolved to provincial administrations.
- Tamil was made an official language, alongside Sinhala, with English as a link language.
- However, full implementation has been hindered by the extensive powers retained by the President.

WAY FORWARD

- **Managing China's Influence:**
  - **Strategic Investments:** India should prioritize funding infrastructure projects like the Kankesanthurai Port and Trincomalee Oil Tank Farms, offering competitive alternatives to Chinese projects with favorable terms.
  - **Maritime Security:** Strengthen naval cooperation through joint exercises (e.g., SLINEX) and regional initiatives like the Colombo Security Conclave to monitor China's activities and secure strategic assets.
  - **Regional Diplomacy:** Leverage platforms like BIMSTEC and SAARC to integrate Sri Lanka into regional economic and security frameworks, reducing its reliance on China.
  - **Cultural and People-Centric Diplomacy:** Enhance cultural ties and provide scholarships, healthcare, and training to foster goodwill, contrasting India's developmental approach with China's transactional model.
  - **Flexible Financial Support:** Offer low-interest loans and grants to help Sri Lanka manage its debt sustainably, avoiding the predatory terms of Chinese loans.
- **Resolving the Fisheries Dispute:** Create a joint fisheries management mechanism to regulate activities in the Palk Strait and Gulf of Mannar.Conduct joint maritime patrols to foster cooperation and monitor fishing activities.
- **Tamil Welfare:** Encourage inclusive policies in Sri Lanka to ensure the rights of the Tamil minority while supporting dialogue with their government.
- **Enhancing Economic Engagement:** Expedite ETCA negotiations to deepen trade ties and further financial integration using Indian fintech solutions.
- **Strengthening Connectivity:** Continue promoting tourism and cross-border initiatives for mutual development.

KING OF BHUTAN VISITED INDIA

The recent visit of King Jigme Khesar Namgyel Wangchuck of Bhutan to India marked a significant step in reinforcing the close bilateral ties between the two nations.

Key Outcomes of the Visit

- **Hydropower Collaboration:** Both sides emphasized the completion of the timely **Punatsangchhu Hydropower Project (Phase I & II).**
- **Gelephu Mindfulness City project:** India reiterated its support to transform **Gelephu** (a town in **southern Bhutan near the Indian border**) into a hub of sustainable development and urban planning.
  - **Gelephu's strategic location near Assam** makes it a critical point for regional connectivity and trade.
- **Cross-Border Connectivity:** The inauguration of the **Integrated Check Post (ICP) at Darranga, Assam**, marks a significant advancement in enhancing connectivity.

Significance of India-Bhutan Relations

- **Diplomatic Relationship:** India and Bhutan established diplomatic ties in 1968, grounded in the 1949 (revised 2007) Treaty of Friendship, emphasizing non-interference and mutual security cooperation.
- **Geopolitical Importance:** Bhutan serves as a strategic buffer between India and China, safeguarding the Siliguri Corridor.
- **Economic Cooperation:** India is Bhutan's largest trading partner, with bilateral trade of **USD 1.6 billion** (2022-23), driven by hydropower projects. India contributes 50% of Bhutan's total FDI, supporting its economic development (MEA Data).
  - **Trade and Transit Agreement:** The 2016 agreement establishes a free trade regime between the two nations.
- **Security Collaboration:** India and Bhutan jointly address insurgencies, strengthened by the Friendship Treaty and Indian Military Training Team (IMTRAT).
- **Educational and Cultural Connections:** Bhutan's Buddhist heritage fosters spiritual tourism to Indian sites and enhances people-to-people ties.
  - **Education and Skills:** India supports Bhutan's GyalSung project to equip youth with modern skills and leadership training.
  - **India-Bhutan Foundation:** Established in 2003 to promote cultural exchanges and strengthen bilateral ties.
- **Infrastructure Development:** India's Project DANTAK has built critical roads and bridges, boosting trade and tourism.
  - **Rail Link:** In 2024, India and Bhutan agreed to survey a rail link connecting Kokrajhar (Assam) with Gelephu (Bhutan).
  - **Immigration Check Posts:** In 2024, Darranga and Samdrup Jongkhar were designated for land-based travel, boosting tourism.
- **Technological Cooperation:** Initiatives like RuPay cards, BHIM app integration, and joint space programs highlight growing collaboration.

Challenges in India-Bhutan Relations

- **Chinese Assertiveness:** China's territorial claims over Jakarlung, Pasamlung, and the Doklam plateau challenge Bhutan's sovereignty and India's strategic interests. The 2020 claim on Bhutan's Sakteng Wildlife Sanctuary further escalates tensions.
- **BBIN Agreement:** Bhutan's environmental concerns delay ratification of the BBIN Motor Vehicles Agreement, slowing regional connectivity and integration efforts.
- **Trade Imbalance:** Bhutan's reliance on India for 80% of its trade highlights the need for economic diversification to reduce vulnerabilities.
- **Power Tariff Dispute:** Bhutan's dissatisfaction with low tariffs for hydropower exports to India may impact future energy collaborations and economic growth.

WAY FORWARD

- **Economic Collaboration:** Foster Bhutan's self-reliance through investment in infrastructure, tourism, and job creation, exemplified by the Kokrajhar-Gelephu rail link.
- **Strategic Partnership:** Enhance bilateral dialogue to address border disputes and counteract China's influence, ensuring stability in the Himalayan region.
- **Green Energy Development:** Invest in Bhutan's hydropower potential to ensure mutual energy security and contribute to regional sustainability goals.
- **Cultural Diplomacy:** Promote deeper cultural exchanges and support visa-free movement to strengthen people-to-people ties and appreciation of shared heritage.
- **Human Capital Development:** Provide scholarships, skill development programs, and modern education initiatives to revitalize Bhutan's declining interest in Indian educational institutions.

INDIA-KUWAIT ELEVATE TIES TO STRATEGIC PARTNERSHIP

Prime Minister Modi paid an official visit to Kuwait marking a historic moment in India-Kuwait relations. The last Indian prime minister to visit Kuwait was Indira Gandhi in 1981.

Key Highlights

- **Strategic Partnership:** India and Kuwait agreed to elevate their relationship to a Strategic Partnership, enhancing cooperation across multiple sectors.
- **A Memorandum of Understanding (MoU) in the field of defense** was signed, aiming to strengthen ties through joint military exercises, training, coastal defense, and maritime safety.
- Both the nations signed the **Executive Program on Cooperation** in the Field of **Sports for 2025-2028.** It will strengthen cooperation in the area of sports.
- Both the nations signed the **Cultural Exchange Programme (CEP)** for the years **2025-29.**
- PM Modi was conferred with the the the highest award of the State of Kuwait **'The Order of Mubarak Al Kabeer'.**

Significance

- **Political Relations:** India was one of the first countries to establish diplomatic relations with Kuwait following its independence from the British Protectorate in **1961.**
  - Recently a **Joint Commission on Cooperation (JCC)** was established between India and Kuwait, to review and monitor the entire spectrum of the bilateral relations between the two countries.
- **Trade relations:** Kuwait remains one of India's top trading partners, with bilateral trade valued at **$10.47 billion** in the financial year **2023-24.**
- **Energy Partnership:** Kuwait is a significant energy partner, serving as India's sixth-largest crude oil supplier and fourth-largest LPG supplier. It holds approximately 6.5% of global oil reserves, underlining its strategic role in India's energy security.
- **Indian Community:** Indians constitute **21 per cent (1 million)** of the total population of Kuwait and **30 per cent** of its workforce (approximately 9 lakh). Indian workers top the private sector as well as the domestic sector workforce list.
- **Climate and Environmental Cooperation:** Both countries are exploring partnerships in addressing climate change. India has offered its expertise in solar energy under the International Solar Alliance, while Kuwait has shared advancements in oil spill management.

Challenges

- **Labor Rights and Expatriate Welfare:** Over 1 million Indian expatriates in Kuwait face exploitative conditions and poor safety standards.
  - In 2023, over 300 Indian workers were rescued from exploitative conditions in Kuwait, revealing shortcomings in recruitment processes and the need for stricter oversight.
  - In 2024, a labor camp fire killed 45 Indian workers, highlighting housing issues.
- **Trade Imbalances:** India imports $7 billion of crude oil annually from Kuwait but exports only $1.8 billion in goods, exposing a significant trade imbalance and need for diversification.
- **Regional Geopolitical Dynamics:** The 2020 Gulf crisis forced India to balance ties with Kuwait and Qatar while safeguarding energy imports and addressing expatriate concerns. Kuwait's criticism of India's stance on Palestine adds diplomatic strain.
- **Energy Cooperation:** India relies on Kuwait for 10% of its crude oil needs, but joint renewable energy ventures remain stalled due to policy misalignments, limiting collaboration in solar energy and oil storage.
- **Poor Diaspora Engagement:** In 2023, over 25,000 Indians were deported from Kuwait for visa violations. Frequent visa rule changes in 2024 disrupted the livelihood of 10,000 Indian workers, exposing systemic flaws.

WAY FORWARD

- **Enhance Economic Collaboration:** Diversify trade by focusing on renewable energy, infrastructure, and technology, encouraging Kuwaiti investments in India's growth sectors, and boosting non-oil exports to Kuwait.
- **Strengthen Labor and Diaspora Engagement:** Protect Indian workers' rights in Kuwait by improving grievance mechanisms, streamlining visas, and fostering cultural integration programs to strengthen diaspora ties.
- **Deepen Energy Partnership:** Expand collaboration on renewable energy, LNG storage, and refining, ensuring sustainable and secure energy partnerships.
- **Boost Defense and Security Ties:** Strengthen defense cooperation through joint exercises, intelligence sharing, and maritime initiatives to enhance regional security and stability.
- **Strengthen Regional and Global Cooperation:** Collaborate in multilateral forums like the UN and GCC to address terrorism, promote stability, and drive economic growth.

PLI SCHEME
FOR PHARMACEUTICAL SECTOR

Recently, the Union government approved a financial outlay of Rs 15,000 crore for
the Production Linked Incentive (PLI) scheme in Pharmaceuticals to boost domestic manufacturing.

Overview of India's Pharmaceutical Sector:

- **Current Scenario:**
  - India is one of the largest suppliers of low-cost vaccines globally and the leading provider of generic medicines, holding a 20% share in global supply by volume.
  - The country accounts for **60%** of global vaccine production, making it the largest vaccine producer worldwide.
  - The pharmaceutical industry in India is the **3rd largest** globally by volume and **14th largest** by value.
  - The sector contributes **1.72%** to India's Gross Domestic Product (GDP).
- **Market Size & Investments:**
  - India ranks among the top **12 destinations** worldwide for biotechnology and is the **3rd largest** in the Asia Pacific region.
  - The pharmaceutical sector in India has expanded significantly in recent years, and it is projected to reach about **13%** of the global pharmaceutical market.
  - India has allowed up to **100% Foreign Direct Investment (FDI)** through automatic routes for Greenfield pharmaceutical projects.
  - For Brownfield projects, FDI is allowed up to **74%** through automatic routes, with additional investment requiring government approval.
- **Projected Market Growth:** The Indian pharmaceutical market is expected to reach **USD 130 billion** by **2030**.
- **Exports:**
  - India's pharmaceutical exports reach over **200 countries**, including highly regulated markets such as the **USA**, **Western Europe**, **Japan**, and **Australia**.
  - Pharmaceutical exports were valued at **USD 22.51 billion** in **FY24**, showing an **8.12% year-on-year growth**.
  - India has the highest number of **USFDA-compliant pharmaceutical manufacturing facilities** and is home to **500 API producers**, which contribute to **8%** of the global Active Pharmaceutical Ingredient (API) market.
  - The Indian pharmaceutical industry supplies over **50%** of the global vaccine demand, **40%** of generic drugs in the US, and **25%** of medicines in the UK.
  - Over **80%** of the global antiretroviral drugs used to treat AIDS are supplied by Indian pharmaceutical companies.
- **Global Recognition**: India is often referred to as the "**pharmacy of the world**" due to its ability to supply high-quality medicines at a low cost, leading to a transformed and vibrant pharmaceutical sector.

Key Factors Driving India's Pharmaceutical Sector

- **Robust Generic Drug Industry:**
  - India's large generic drug industry significantly contributes to global access to essential medicines.
  - For instance, the generic version of Paracetamol 500 mg (10 tablets) is priced at Rs 6 in India, compared to Rs 28-72 for the branded version.
- **Leading Vaccine Supplier**: India plays a key role in global vaccine coverage, manufacturing vaccines such as the recombinant Hepatitis B vaccine and COVID-19 vaccines, thereby ensuring affordable access to vaccines worldwide.
- **Production Cost Efficiency:** India's production costs are approximately **33% lower** than those in the US, with labor costs being **50-55% lower** than in Western countries, making it an attractive destination for pharmaceutical manufacturing.
- **Abundant Talent Pool**: India is the **2nd largest** provider of pharmaceutical and biotech professionals globally, after China, ensuring a skilled workforce to meet the demands of the industry.
- **Regulatory Compliance**: Regulatory bodies like Central Drugs Standard Control Organisation (CDSCO) ensure adherence to international quality and safety standards, which further boosts India's credibility as a global supplier of pharmaceutical products.
- **Export Dominance**: India has the largest number of **USFDA-compliant pharmaceutical plants** and exports products to over 200 countries, contributing significantly to the global healthcare supply chain.
- **Infrastructure and Manufacturing Facilities**: India has developed pharmaceutical hubs, clusters, and specialized **SEZs**, which promote world-class manufacturing and export capabilities.
- **Global Collaborations**:
  - Collaborations between India and global pharmaceutical companies and research institutions foster knowledge exchange, expertise sharing, and research advancements.
  - For example, Serum Institute of India (SII) partnered with **Codagenix Inc.** to produce a live-attenuated vaccine (LAV) for COVID-19.

Challenges

- **Complex Regulatory Environment:**
  - India's pharmaceutical industry must comply with a host of domestic and international regulations.
  - These include the **Drugs and Cosmetics Act**, **FDA standards** for exports, and **Good Manufacturing Practice (GMP)** regulations.

- Regulatory delays and the complex approval processes often slow down the introduction of new drugs and vaccines to the market.

➲ **Patent Barriers:**
- The pharmaceutical industry in India is often caught in conflicts over patents, especially with multinational corporations.
- India's approach to **Intellectual Property Rights (IPR)** allows for generic drugs to be produced, but patent disputes, particularly in the case of branded drugs, can lead to legal battles.

➲ **Counterfeit Drug Trade:**
- India is a major producer and exporter of pharmaceuticals, but the domestic market also faces issues with counterfeit drugs, which can pose significant public health risks.
- The rise of counterfeit medicines, particularly in unregulated markets, undermines the quality of India's pharmaceutical exports and tarnishes the industry's global reputation.

➲ **Dependence on Imports:**
- A significant portion of the raw materials needed for pharmaceutical manufacturing in India, especially **Active Pharmaceutical Ingredients (APIs)**, are imported, particularly from China. India imports around 70% of its APIs from China.
- Fluctuating raw material prices, supply chain disruptions, or geopolitical tensions can lead to increased production costs.

➲ **Export Dependency:**
- India's pharmaceutical sector is highly reliant on exports, especially to markets in the US and Europe.
- Any changes in international trade policies or regulations can impact the sector's growth prospects.
- Regulatory changes, tariff hikes, or geopolitical tensions can affect export markets, leading to fluctuations in demand.

Government Initiatives

➲ **Interim Budget 2024-25:**
- **Bulk Drug Parks**: Rs. 1,000 crore (US$ 120 million) allocated for promoting bulk drug parks in FY25, a significant increase from the previous year.
- **Pharmaceutical Development**: Total outlay increased to Rs. 1,300 crore (US$ 156.5 million) for the pharmaceutical industry.
- **Medical Device Parks**: Budget raised to Rs. 150 crore (US$ 18 million) for the promotion of medical device parks.
- **Jan Aushadhi Scheme**: Allocation for the Jan Aushadhi scheme, aimed at providing affordable generic medicines, increased to Rs. 284.5 crore (US$ 34 million) in FY25, up from Rs. 110 crore (US$ 13 million) in FY24.

➲ **Sickle Cell Anemia Mission**: A mission to eliminate sickle cell anemia by 2047, involving awareness, screening, and counseling for 7 crore individuals.

➲ **Innovation in the Pharma Sector**: Launch of centers of excellence to encourage pharmaceutical research and innovation.

➲ **Nursing Colleges**: Government to build 157 nursing colleges co-located with government medical colleges.

➲ **National Medical Devices Policy, 2023**: Approved to promote the medical device sector, ensuring access, affordability, quality, and innovation.

➲ **Ayushman Bharat Digital Mission (ABDM):**
- ABDM enables citizens to create **Ayushman Bharat Health Account (ABHA)** numbers, linking digital health records for better clinical decision-making.
- The pilot completed in 6 Union Territories, with over 450 million ABHA accounts created and 224,967 doctors registered by September 2023.

➲ **Scheme for Development of Pharma Industry – Umbrella Scheme**: Comprising several sub-schemes such as:
- Assistance to Bulk Drug Industry and Medical Device Industry for Common Facilitation Centres.
- Pharmaceutical Promotion and Development Scheme (PPDS).
- Pharmaceutical Technology Upgradation Assistance Scheme (PTUAS).

➲ The **Production Linked Incentive (PLI) Schemes** in India focus on boosting domestic manufacturing in key sectors: **bulk drugs, pharmaceuticals, and medical devices.**
- **PLI Scheme for Bulk Drugs:**
  - **Financial Outlay:** Rs. 6,940 crores
  - **Tenure:** FY 2022-2023 to FY 2028-29
  - **Objective:** Promote manufacturing of critical Key Starting Materials (KSMs), Drug Intermediates (DIs), and Active Pharmaceutical Ingredients (APIs).
- **PLI Scheme for Pharmaceuticals:**
  - **Financial Outlay:** Rs. 15,000 crores
  - **Tenure:** FY 2022-2023 to FY 2027-2028
  - **Objective**: Incentivize manufacturing of high-value pharmaceutical products like patented drugs, biopharmaceuticals, complex generics, anti-cancer drugs, and orphan drugs.
- **PLI Scheme for Medical Devices:**
  - **Financial Outlay:** Rs. 3,420 crores
  - **Tenure**: FY 2022-2023 to FY 2026-2027
  - **Objective**: Support domestic production of high-value medical devices, such as MRI machines, CT scans, and linear accelerators, reducing dependence on imports.

MARKET SIZE

Indian Pharmaceutical Market (US$ billion)

	2021	2023	2024P	2030P	2047P
	42.0	49.78	65.0	130.0	450.0

Note: P-Projected

SECTOR COMPOSITION

R&D Investment by Indian Pharma Companies* (% of sales)

FY16	FY17	FY18	FY19	FY20	FY21
7.9	8.7	8.5	8.6	8.4	7.2

Note: *Top 10 companies as per research by HDFC Securities

KEY TRENDS

Pharmaceutical Export from India (US$ billion)

FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25*
16.9	16.8	17.3	19.1	20.7	22.4	24.6	25.4	27.8	7.2

Note: Till FY25* (April-June)

Government Expenditure on Health in India (US$ billion)

FY17	66.4
FY18	35.1
FY19	34.9
FY20	41.4
FY21	46.0
FY22	38.6
FY23	64.7

Note: E-Estimate

WAY FORWARD

➲ **Increase R&D Investment:**
  - A greater focus on research and development is essential to ensure that India can compete in high-value therapeutic areas such as biotechnology, biosimilars, and new drug formulations.
  - Increased government and private sector funding should be allocated for R&D.

➲ **Promote Innovation in Drug Development:**
  - There should be an emphasis on creating innovative drugs and improving the efficiency of drug production.
  - Incentives can be offered to companies for pioneering work in niche areas like rare diseases and personalized medicine.

➲ **Simplify Approval Processes:**
  - Speed up regulatory approvals for new drugs and formulations by streamlining processes and reducing bureaucratic delays. This would enhance India's position as a global player in the pharmaceutical market.

➲ **Strengthen Quality Control:**
  - India must implement more robust quality control measures to ensure that all pharmaceutical products meet global standards. This would increase the credibility of Indian pharmaceutical exports.

INCREASE IN URBAN SECTOR INVESTMENTS

Recently, The Union Minister for Housing and Urban Affairs and Power, highlighted that the urban sector investments have grown 16 times.

Achievements under Various Schemes

➲ **Atal Mission for Rejuvenation and Urban Transformation (AMRUT):**
  - ◆ **Objective:** The mission aims to ensure basic urban services such as: Water supply, Sewerage systems and Urban transport.
  - ◆ **Key Achievements**
    - ◆ **Water Treatment**: Creation of **4,649 million liters per day (MLD)** water treatment capacity.
    - ◆ **Sewage Treatment**: Establishment of **4,429 MLD** sewage treatment capacity.
  - ◆ **AMRUT 2.0**
    - ◆ **Stormwater Drainage Projects**: Prioritized to mitigate **waterlogging issues**.
    - ◆ **Infrastructure Improvements**: Initiatives underway to upgrade **drinking water** and **sewerage systems**, aiming for a more sustainable urban environment.

➲ **Smart Cities and New Cities Scheme:** Launched in 2015, this initiative aims to promote sustainable and inclusive cities by using smart technology for better infrastructure, transportation, and services.

➲ **Urban Mobility and Sustainability Initiatives:**
  - ◆ Expansion of Regional Rapid Transit Systems (RRTS). For example, Delhi–Meerut Regional Rapid Transit System.
  - ◆ Promotion of e-mobility and walkable streets in cities to reduce pollution and address environmental concerns.
  - ◆ Under the scheme the metro network has increased significantly, expanding to the new cities.

➲ **Urban Housing and PMAY 2.0:**
  - ◆ Converting existing Government funded vacant houses into ARH through PPP mode or by Public Agencies.
  - ◆ Provisional sanctions for around 7% of the planned 1 crore urban houses based on the population of states signing MoUs, ensuring timely allocation and expediting the process.

PMAY-U - Comparison with past schemes

2004–2014	2015–2024	2004–2014	2015–2024
(JnNURM &RRY)	(PMAY-U)	(JnNURM &RRY)	(PMAY-U)
13.46 Lakh	118.64 Lakh	₹ 0.38 Lakh Cr	₹ 8.07 Lakh Cr
9x		21	

Houses Approved | Investment in Projects

8.04 Lakh → 11 → 88.32 Lakh

Houses Completed
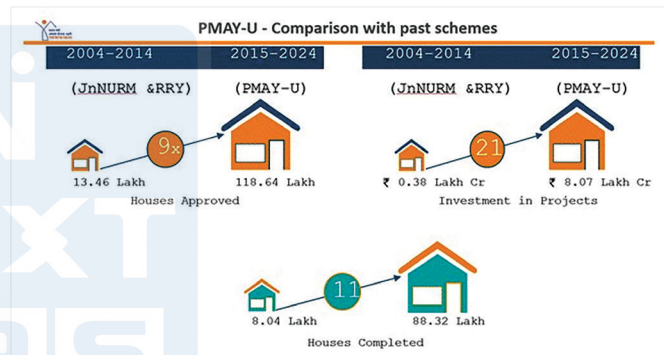
Smart Cities Mission

Smart City — MISSION TRANSFORM NATION

100 MISSION CITIES **8,076** TOTAL PROJECTS **₹164,706 crore** TOTAL COST

- Diverse projects, catering local needs
- Promoted technology in urban management
- Developing projects never undertaken by ULBs
- 91% of total projects completed

Smart Governance — Completed 636 | 16,035 Cr

Vibrant Urban Spaces — Completed 1,284 | 10,120 Cr

Smart Mobility — Completed 1,556 | 36,449 Cr

Social Infrastructure — Completed 829 | 11,847 Cr

Economic Infrastructure — Completed 822 | 10,792 Cr

Smart Energy — Completed 667 | 13,712 Cr

WASH — Completed 1,412 | 46,203 Cr

Public Private Partnerships — Completed 195 | 9,193 Cr

Mission Progress

Works Completed:
- Jun-18: 5K
- Jun-19: 15K
- Jun-20: 27K
- Jun-21: 47K
- Jun-22: 66K
- Jun-23: 108K
- Dec-24: 148K

➲ **Swachh Bharat Mission:** Over the past six months two major dumpsites in Ahmedabad and Hyderabad have been completely remediated, successfully addressing approximately 2.5 lakh metric tonnes of legacy waste.

➲ **Under the PM Svanidhi Scheme,** loans totaling ₹ 13,422 crore have been disbursed to street vendors.

Urbanisation in India

➲ **Urbanization Rate**
   ◆ In **2021**, India's urbanization rate stood at **1.34%**, reflecting a **1.5% increase** from the previous year.
   ◆ Between **2010 and 2021**, the urbanization rate grew by an impressive **19.6%**.

➲ **Urban Population**
   ◆ By **2017**, **34%** of India's population resided in urban areas.
   ◆ The **United Nations** estimates that by **2030**, **40.76%** of the population will live in urban areas, indicating a significant shift toward urbanization.

➲ **Most Urbanized Regions**
   ◆ **National Capital Territory of Delhi**: **97.5%** urban population.
   ◆ **Union Territory of Chandigarh**: **97.25%** urban population.
   ◆ **Goa**: India's most urbanized state, with **62.2%** of its population residing in urban areas.

Types of Urban Settlements in India

➲ **Census Town:**
   ◆ Population of at least **5,000**.
   ◆ Population density of at least **400 per sq. km**.
   ◆ At least **75%** of the male working population engaged in **non-agricultural pursuits**.

➲ **Statutory Town:**
   ◆ Defined by the **state government**.
   ◆ Typically governed by a **corporation** or **municipality** responsible for local administration.

➲ **Satellite Town:**
   ◆ Located near a larger **urban center**.
   ◆ Economically and socially **dependent** on the nearby city.

➲ **Urban Agglomeration:** A continuous urban area comprising:
   ◆ A city/town.
   ◆ **Suburban fringe** or **rural areas** within the administrative boundaries of the nearby city.

➲ **Outgrowth:**
   ◆ A **small settlement** adjacent to a larger town or city.
   ◆ Grown out of the main city but considered a separate entity for administrative purposes.

Factors Leading to Urbanization in India

➲ **Economic Opportunities in Urban Areas:**
   ◆ **Industrialization**: Urban areas serve as hubs for industries and services. As of 2022, the **industrial sector** contributed approximately **25.92%** to India's GDP, much of which is concentrated in urban regions like Mumbai, Delhi, and Bengaluru.
   ◆ **Employment Generation**: Urban centers offer diverse employment opportunities, particularly in manufacturing, IT, and finance.
      ◆ For instance, the **IT sector**, concentrated in cities like Bengaluru and Hyderabad, accounted for **$245 billion** in revenues in 2022-23.
   ◆ **Income Growth**: Urban incomes are significantly higher than rural incomes, with **urban per capita income** nearly **1.8 times** the rural average in 2023.

➲ **Rural-to-Urban Migration**
   ◆ **Push Factors:**
      ◆ **Agricultural Challenges**: Declining agricultural profitability and dependence on monsoons have driven rural populations to seek better opportunities in cities.
      ◆ According to the 2011 Census, **37%** of migration to urban areas was driven by employment opportunities.
   ◆ **Pull Factors**: Urban centers attract individuals with promises of better jobs, education, healthcare, and infrastructure.

➲ **Growth in Urban Services**: Cities have become hubs for the services sector, including education, healthcare, retail, and entertainment. *For example:*
   ◆ The services sector contributed around **55%** to India's GDP in FY24, with major activities concentrated in urban regions.

➲ **Urban Infrastructure Development**
   ◆ **Government Initiatives**: Programs such as **Smart Cities Mission** and **AMRUT (Atal Mission for Rejuvenation and Urban Transformation)** have significantly improved urban infrastructure, attracting migration and investment.
      ◆ As of 2023, **100 Smart Cities** have been identified, with a project investment of over **₹2 lakh crore**.
   ◆ **Transport Networks**: Expansion of metro rail networks in cities like Delhi, Bengaluru, and Hyderabad has made urban areas more accessible and livable.

➲ **FDI and Economic Liberalization**: Post-1991 economic reforms brought significant foreign investments, mainly targeting urban centers.
   ◆ Between **April 2000 and September 2024**, India received **$1.03 trillion** in FDI inflows, most of which were concentrated in metropolitan areas.

Urban Challenges in India:

➲ **Housing and Slums**
   ◆ **Housing Shortages**: Rapid urbanization has led to a shortage of affordable housing. As of 2023, India faces a housing shortage of **29 million units** in urban areas, primarily affecting low-income groups.

- **Growth of Slums**: Over **17%** of India's urban population resides in slums, leading to substandard living conditions, lack of basic amenities, and vulnerability to health risks.
- **Overburdened Infrastructure:**
  - **Transportation**: Urban transport systems struggle with congestion, inefficiency, and inadequate public transport networks.
    - According to the TomTom Traffic Index 2023, commuters in Bengaluru spend an average of 28 minutes and 10 seconds to travel 10 kilometers, which amounts to about 132 hours of extra time in traffic each year.
  - **Utilities:** Demand for essential services like water supply, electricity, and waste management often exceeds supply, affecting urban residents' quality of life.
- **Water Scarcity and Management:**
  - **Urban Water Stress**: Many Indian cities face acute water shortages due to over extraction of groundwater and inefficient water management.
    - A recent report by the National Institute for Transforming India (NITI) Aayog – a government think tank – predicted that 21 cities, including Delhi, Bengaluru, Hyderabad, and Chennai, would run out of ground water by 2030, affecting 100 million people.
  - **Wastewater Treatment**: Nearly **70%** of urban wastewater remains untreated, leading to environmental degradation and health hazards.

- **Traffic Congestion:**
  - Increasing vehicle ownership in urban areas has led to severe traffic congestion, with cities like Mumbai and Bengaluru among the most congested globally.
  - India's urban areas account for nearly 40% of the country's registered vehicles.
- **Waste Management**
  - According to the Central Pollution Control Board (CPCB), India generates approximately 62 million tons of solid waste annually, of which about 45 million tons is collected and only 12 million tons is treated.
  - Poor waste segregation practices lead to environmental degradation and the proliferation of landfills.
- **Climate Change and Urban Resilience**
  - **Vulnerability to Natural Disasters**: Cities like Mumbai and Chennai are increasingly vulnerable to flooding and sea-level rise due to climate change.
    - Between 2005 and 2015, Mumbai incurred financial losses amounting to ₹14,000 crore due to flooding caused by heavy rainfall.
  - **Heat Island Effect**:
    - Urban areas experience higher temperatures than surrounding rural areas.
    - This phenomenon reduces nighttime cooling, worsens air quality, and increases reliance on cooling systems, further driving emissions and exacerbating climate change.

WAY FORWARD

- **Decentralized Decision-Making**: Empower municipal bodies with greater autonomy and financial resources to address local challenges effectively.
- **Capacity Building**: Train urban administrators and planners to implement modern urban management practices.
- **Integrated Urban Planning**: Develop long-term master plans with a focus on sustainability and inclusivity.
- **Affordable Housing**:
  - Implement policies to increase access to affordable housing, especially for low-income groups.
  - Accelerate initiatives like **Pradhan Mantri Awas Yojana (PMAY)**.
- **Transport Systems:**
  - Expand public transportation networks, including metros, buses, and non-motorized transport infrastructure.
  - Promote Electric Vehicles (EVs) and green transportation.
- **Water Supply and Wastewater Management**: Invest in rainwater harvesting, desalination plants, and wastewater treatment to ensure sustainable water use.
- **Solid Waste Management**: Encourage waste segregation at the source and invest in waste-to-energy plants.
- **Disaster Preparedness**: Develop early warning systems and disaster management plans to mitigate the impact of natural calamities like floods and cyclones.
- **Green Infrastructure**: Increase urban green spaces, implement rooftop gardens, and promote sustainable building designs.

INDIA'S GREEN STEEL TAXONOMY

India has recently become the first country in the world to establish a taxonomy for green steel, representing a significant milestone in its efforts to decarbonize the steel sector.

About

➲ It is a framework that defines **"green steel"** based on its carbon emission intensity, making India the first country to set global standards for sustainable steel production.

➲ **Salient Features:**
- **Definition of Green Steel:**
  - Steel qualifies as **green** if its carbon emission intensity is below **2.2 tonnes of CO2 equivalent per tonne of finished steel (tfs)**.
  - The **greenness percentage** is calculated based on how much the emission intensity is reduced below this threshold.

Star Ratings for Green Steel

➲ **Five-Star:** Emission intensity less than **1.6 t-CO2e/tfs**.
➲ **Four-Star:** Emission intensity between **1.6 and 2.0 t-CO2e/tfs**.
➲ **Three-Star:** Emission intensity between **2.0 and 2.2 t-CO2e/tfs**.
➲ Steel with an emission intensity exceeding **2.2 t-CO2e/tfs** will not qualify for green rating.

- **Review and Updates:** The threshold for star ratings will be **reviewed every three years** to align with advancements in sustainable practices.
- **Emission Scope Coverage:**
  - Includes **Scope 1, Scope 2**, and **limited Scope 3 emissions** (up to finished steel production).
  - **Scope 3** emissions cover activities like agglomeration, beneficiation, and embodied emissions in purchased raw materials but exclude upstream mining, downstream emissions, and transportation.

➲ **Nodal Agency:**
- The **National Institute of Secondary Steel Technology (NISST)** will handle:
  - Measurement, Reporting, and Verification (**MRV**).
  - Issuance of **greenness certificates** and star ratings.
- **Certification:** Certificates are issued annually based on the **financial year**. Plants opting for frequent MRV can request multiple certifications within a year.

Initiatives to Decarbonise Steel Sector in India

➲ **Steel Scrap Recycling Policy, 2019**
- Aims to enhance the availability of domestically generated scrap to support a **circular economy** and green transformation of the steel industry.

- Provides a framework for establishing **metal scrapping centers** for the scientific processing and recycling of ferrous scrap.
- Includes provisions for scrapping **End-of-Life Vehicles (ELVs)** to boost scrap supply.

➲ **Vehicle Scrapping Policy, 2021**
- Enacted under the **Motor Vehicles Act, 1988** and **Central Motor Vehicle Rules, 1989**.
- Aims to increase the availability of scrap for the steel sector by regulating **vehicle scrapping facilities**.

➲ **Perform, Achieve and Trade (PAT) Scheme**
- A part of the **National Mission for Enhanced Energy Efficiency (NMEEE)**, the scheme incentivizes energy efficiency in the steel industry.
- **Achievements (as of 2020, Cycle-III):**
  - **167 steel units** saved **5.583 MTOE** (million tonnes of oil equivalent).
  - Emission reduction of **20.52 million tonnes of CO2**.

Steel Industry in India

➲ **Production:**
- In 2023, India produced **140.2 million tonnes** of steel, positioning itself as the **world's second-largest steel producer**.
- Crude steel production during **January–November 2023** reached **128.15 million tonnes**, marking a **12.1% increase** from the previous year.

➲ **Consumption:** Per capita steel consumption rose to **119 kg** in 2022–2023, up from **59 kg** in 2013–2014.

➲ **Capacity:** The **National Steel Policy (NSP)** aims to expand crude steel capacity to **300 million tonnes by 2030–2031**.

➲ **Demand:** The **Indian Steel Association (ISA)** forecasts steel demand to reach **128.9 million tonnes** in 2023–2024.

➲ **Japan's NEDO Model Projects**
- **New Energy and Industrial Technology Development Organization (NEDO)** implemented four model projects in Indian steel plants.
- Focused on improving **energy efficiency** and minimizing environmental impact.

➲ **Carbon Credit Trading Scheme (CCTS), 2023**
- **Provides a framework for** pricing emissions through **carbon credit certificate trading mechanisms**.
- Encouraging public and private sector companies to lower emission reduction costs.

COASTAL CRISIS: INDIA'S COASTLINE THREATENED BY EROSION

In a recent Lok Sabha session, the Union Environment Ministry disclosed that approximately 33.6% of India's coastline is at risk due to erosion.

About

➲ **Overview of Coastal Erosion**

- **Coastal erosion** refers to the gradual loss of land along coastlines due to natural processes such as **wave action**, **tidal currents**, and **storms**, as well as human activities like **construction**, **mining**, and **deforestation**.
- India, with a coastline of approximately **7,517 kilometers**, is highly vulnerable to coastal erosion, which presents significant **environmental**, **economic**, and **social challenges**.

➲ **Coastal Geography of India**

- The **Indian mainland** coast comprises **9 coastal states** and **2 Union Territories (UTs)**, covering **66 coastal districts**.
- **The coastal morphology is diverse, including:**
  - 43% sandy beaches
  - 11% rocky coasts
  - 36% muddy flats
  - 10% marshy coasts
  - 97 major estuaries and 34 lagoons.

➲ **Coastal Erosion Vulnerability**

- According to the **National Centre for Coastal Research (NCCR)**, about **33.6%** of India's coastline is vulnerable to erosion.
- **26.9%** of the coast is experiencing **accretion (growth)**, and **39.6%** remains **stable**.

➲ **States Prone to Coastal Erosion**

- **Karnataka:** In **Dakshina Kannada** district, where **48.4%** of the **36.66 km** coastline has been eroded over the past three decades.
- **Other States Facing Coastal Erosion:**
  - **West Bengal**: **60.5%** of the state's coastline is affected by erosion, with significant impact on the **Sundarbans**.
  - **Kerala: 46.4%** of the coastline faces erosion, which has severe consequences for local communities and ecosystems.
  - **Tamil Nadu: 42.7%** of the coastline is impacted by erosion, threatening both coastal infrastructure and livelihoods.

Causes of Coastal Erosion

➲ **Natural Factors:**

- **Wave Action:** Continuous wave action erodes the shoreline, especially during high tides and storms.
- **Sea-Level Rise:** Climate change-induced sea-level rise increases the frequency and intensity of coastal flooding and erosion.

➲ **Anthropogenic Factors:**

- **Coastal Development:** Infrastructure projects like ports, harbors, and seawalls disrupt natural sediment flow and exacerbate erosion.

- **Sand Mining:** Illegal sand mining from beaches and riverbeds reduces the natural replenishment of sand along the coast.
- **Deforestation:** Removal of mangroves and coastal vegetation weakens the natural defense against erosion.

Impacts of Coastal Erosion

➲ **Loss of Land:** Coastal erosion leads to the loss of valuable land, affecting agriculture and settlements.

➲ **Displacement of Communities:** Erosion forces coastal communities to relocate, leading to socio-economic challenges. *Eg.* Coastal erosion displaced Ghoramara Island residents.

➲ **Damage to Infrastructure:** Roads, bridges, and buildings near the coast are at risk of damage or destruction.

➲ **Biodiversity Loss:** Coastal habitats, including mangroves, coral reefs, and wetlands, are degraded, impacting marine biodiversity.

Related Initiatives and Mitigation Measures

➲ **Integrated Coastal Zone Management Project (ICZMP):** Implemented in Gujarat, Odisha, and West Bengal, this World Bank-assisted project aims to protect and conserve coastal and marine environments through sustainable practices.

➲ **Coastal Regulation Zone (CRZ) Notification (2019)**: It aims to conserve and protect coastal stretches, ensuring livelihood security for fisher and local communities while permitting erosion control measures.

- It provides for **No Development Zones (NDZ)** along various categories of coastal areas to protect India's coastline from encroachment and erosion.

➲ **Coastal Vulnerability Index (CVI):** The Indian National Centre for Ocean Information Services (INCOIS) has developed the CVI **to assess and map the vulnerability** of different coastal regions based on various parameters.

Innovative Engineering Solutions

➲ **Artificial Reefs:** Constructing artificial reefs can dissipate wave energy and protect the shoreline.

➲ **Eco-friendly Breakwaters:** Using materials that blend with the natural environment can provide effective protection without harming marine ecosystems.

➲ **Geo-Tube Installation:** In areas like Pentha Village in Odisha, geo-tubes have been installed to create artificial barriers that protect the coast from erosion.

➲ **Mangrove and Shelterbelt Plantations:** Planting mangroves and other vegetation along the coast helps stabilize the shoreline and reduce the impact of waves and storm surges.

E-WASTE SCENARIO IN INDIA

Recently, India's e-waste generation surged by 73% over five years,
rising from 1.01 million metric tonnes in 2019-20 to 1.751 million metric tonnes in 2023-24.

About

- **Definition:** E-waste refers to discarded electrical and electronic devices, including household appliances and office equipment, that are obsolete or at the end of their life cycle.
- **Toxic Components:** E-waste contains harmful chemicals such as lead, cadmium, mercury, and nickel, which pose environmental and health risks.
- **Volume Growth**: India saw a 73% rise in e-waste generation over five years, increasing from 1.01 million metric tonnes (MT) in 2019-20 to 1.751 million MT in 2023-24.
- **Untreated E-Waste**: Annually, approximately 57% of e-waste (equivalent to 990,000 MT) remains untreated.
- **Geographic Distribution**: 65 cities in India generate more than 60% of the total e-waste, and 10 states contribute to 70% of the total e-waste.
- **Recycling Gaps:**
  - Only 43% of e-waste was recycled in 2023-24, an improvement from 22% in 2019-20.
  - The informal sector largely handles e-waste, lacking the necessary environmental safeguards.
- **Global Context:**
  - India is the third-largest generator of e-waste globally, after China and the US.
  - In 2019, the global generation of e-waste was estimated at 53.6 million tonnes (MT), according to UN estimates.

India's e-waste surges by around 73 per cent in five years

Year	E-Waste Generation (Metric Ton)
2019-20	1,014,961
2020-21	1,346,496
2021-22	1,601,155
2022-23	1,609,117
2023-24	1,751,236
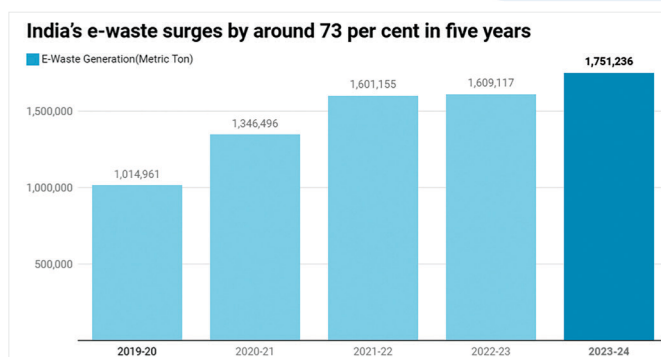
Challenges

- **Lack of Awareness:** Many consumers and businesses lack awareness about e-waste hazards, hindering adoption of safe recycling practices.
- **Informal E-Waste Sector:** A significant portion of e-waste is handled by unregulated informal workers, exposing them to health and environmental risks.
- **Inefficient Collection and Recycling Infrastructure:** India's formal e-waste collection and recycling infrastructure is underdeveloped, unable to manage the growing e-waste volumes.
- **Poor Implementation of Regulations:** Despite regulations like E-Waste (Management) Rules, 2016, enforcement is weak, with low compliance from producers and consumers.
- **Inadequate Technology for E-Waste Recycling:** Lack of advanced recycling technology limits recovery of valuable materials like gold and copper from e-waste.
- **Lack of Extended Producer Responsibility (EPR) Compliance:** Many manufacturers fail to meet Extended Producer Responsibility obligations, causing a gap in e-waste collection and disposal.
- **Insufficient Data and Statistics:** Scarcity of reliable e-waste data hampers policy development, making it difficult to track and manage e-waste effectively.
- **Health and Environmental Hazards:** Improper e-waste disposal exposes workers to toxic substances, leading to serious health and environmental issues.

E-Waste (Management) Rules in India

- **E-Waste (Management) Rules 2022:**
  - **Extended Producer Responsibility (EPR)**: Producers must meet annual recycling targets through registered recyclers, with EPR certificates ensuring accountability for recycled products.
  - **Expanded Product Coverage**: The list of Electrical and Electronic Equipment (EEE) items covered has increased to 106 from 21, starting in FY 2023-24.
  - **Integration of Bulk Consumers**: Public institutions and offices are required to dispose of e-waste through registered recyclers or refurbishers.
  - **Role of Registered Recyclers/Refurbishers**: These entities are responsible for the collection and processing of e-waste.
- **E-Waste (Management) Second Amendment Rules, 2023:**
  - **Clause 4 Addition**: Under Rule 5 of the 2022 rules, this amendment ensures safe, accountable, and sustainable refrigerant management in refrigeration and air-conditioning manufacturing.
- **E-Waste (Management) Amendment Rules, 2024:**
  - **EPR Certificate Trading**: The Central Government may establish platforms for trading EPR certificates, following guidelines issued by the Central Pollution Control Board (CPCB).
  - **Environmental Compensation for Non-Compliance**: CPCB will set a price range for EPR certificates, with environmental compensation penalties ranging from 30% to 100% for non-compliance.

International Conventions Related to E-Waste Management

- **Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1989):** India is a party to this convention, which aims to reduce hazardous waste movement across borders, including e-waste.
- **Bamako Convention (1991):** Prohibits the import of hazardous waste, including e-waste, into Africa and controls the movement of such waste within the continent.
- **Minamata Convention on Mercury (2013):** India ratified this convention in 2018, which seeks to protect human health and the environment from mercury exposure, often associated with e-waste.
- **Stockholm Convention on Persistent Organic Pollutants (POPs) (2001):** India ratified this convention, and it is implemented through domestic laws to control hazardous substances like POPs, which can be released through e-waste.
- **Rotterdam Convention (1998):** Focuses on the prior informed consent procedure for hazardous chemicals and pesticides in international trade, including substances found in e-waste. India is a party to this convention.
- **Vienna Convention for the Protection of the Ozone Layer (1985):** While not directly targeting e-waste, this convention addresses substances like chlorofluorocarbons (CFCs) used in old electronics, ensuring their proper disposal to protect the ozone layer.

GRIM E-WASTE SCENARIO IN INDIA: ASSOCHAM REPORT

The ASSOCHAM study highlighted the following cities as the top producers of E-Waste in the country based on annual E-Waste generation:

01 MUMBAI – the leading E-Waste producer with the contribution of 96,000 MT of E-Waste per year

02 DELHI (NCR) – ranked second with 67,000 MT of E-Waste per year

03 BANGALORE – ranked third in the list with 57,000 MT of E-Waste per year.
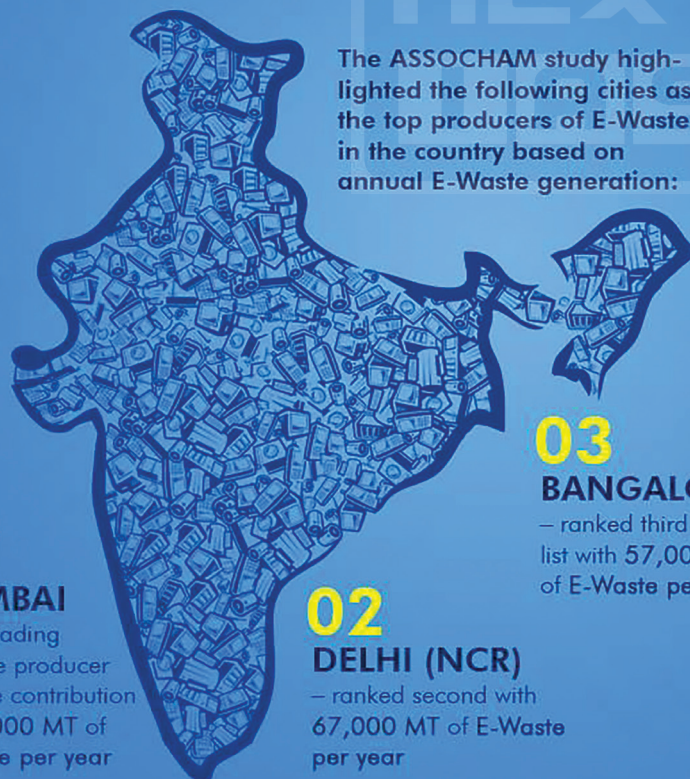
*MT - Metric Tonnes

E-WASTE MANAGEMENT IN INDIA

The research found that only 4% of 12.5 lakh metric tonnes of e-waste produced is recycled.

CHILD LABOR – INTEGRAL PART OF THE INFORMAL E-WASTE RECYCLING SECTOR

The ASSOCHAM report says – "In India, about 4.5 lakhs child labours between the age group of 10-14 are observed to be engaged in various e-waste (electronic waste) activities, without adequate protection and safeguards in various yards and recycling workshops."

HOW DOES IT IMPACT THE ENVIRONMENT

Domestic E-Waste, which includes old TV sets, computer, mobile phones and refrigerators, contain over 1,000 toxic materials, which pollute the soil and ground water. Exposure to these toxic materials can cause nausea, irritability, headache, vomiting and sore eyes.

KEN-BETWA RIVER LINKING PROJECT

Recently, Prime Minister Narendra Modi laid
the foundation stone for the interstate Ken-Betwa river linking project.

About

➲ **Overview:**
- A river interlinking project transferring surplus water from the Ken River in Madhya Pradesh (MP) to the Betwa River in Uttar Pradesh (UP) to irrigate the drought-prone Bundelkhand region.
- Covers districts like Jhansi, Banda, Lalitpur, Mahoba (UP) and Tikamgarh, Panna, Chhatarpur (MP).

➲ **Infrastructure:**
- Includes the 77-meter tall and 2-km wide Dhaudhan Dam (within Panna Tiger Reserve) and a 230-km canal.
- **Phased implementation:**
  - **Phase I**: Dhaudhan Dam, Ken-Betwa Link Canal, and powerhouses.
  - **Phase II**: Lower Orr Dam, Bina Complex Project, and Kotha Barrage.

➲ **Key Benefits:**
- Irrigation for 10.62 lakh hectares annually (8.11 lakh ha in MP and 2.51 lakh ha in UP).
- Drinking water for 62 lakh people.
- Hydropower (103 MW) and solar power (27 MW) generation.

➲ **Historical Context:**
- Proposed under the **National Perspective Plan (1980)** for river interlinking, which includes 16 peninsular and 14 Himalayan river links.
- Declared a National Project in 2008 and included in the PM's package for Bundelkhand development.
- A memorandum of agreement was signed in March 2021 between the Ministry of Jal Shakti and the governments of MP and UP.

Additional Information: Yamuna River

➲ **Tributary of the Ganga**: The Yamuna is a major tributary of the River Ganga.
➲ **Himalayan Tributaries**:
- **Main tributaries in the Himalayan region:** Rishi Ganga, Hanuman Ganga, Tons, and Giri.
- **Tons** is the largest tributary of the Yamuna.
➲ **Plains Tributaries:**
- **Major tributaries in the plains:** Hindon, Chambal, Sind, Betwa, and Ken.
- **Smaller tributaries** include Uttangan, Sengar, and Rind.

➲ **Regional Importance**: Bundelkhand, a water-scarce region spanning 13 districts in MP and UP, will greatly benefit from improved water availability.
➲ **Completion:** It is proposed to be implemented in eight years.

TWO STATES, TWO RIVERS AND A LINK
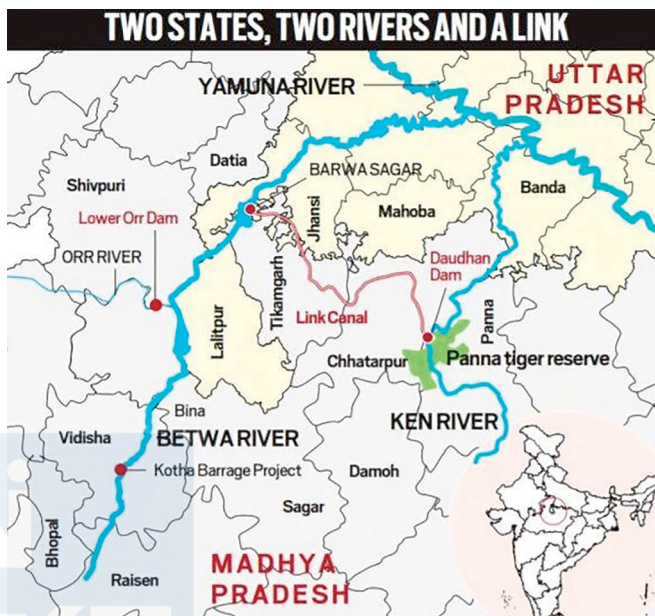
Significance of River Linking Projects

➲ **Reduction of Water Scarcity:** It helps transfer surplus water from water-rich regions to water-deficient areas, addressing water scarcity issues.
➲ **Improved Water Availability for Agriculture:** Increased water availability in dry regions to enhance agricultural productivity.
➲ **Mitigation of Floods:** Interlinking rivers help distribute excess water during periods of heavy rainfall, reducing the risk of floods in specific regions.
➲ **Increased Hydropower Potential:** The construction of reservoirs and canals for interlinking projects create opportunities for hydropower generation.
➲ **Job Creation:** The construction and maintenance of interlinking infrastructure create job opportunities, contributing to economic development.
➲ **Conflict Resolution:** River interlinking projects potentially reduce inter-state disputes over water resources by providing a more equitable distribution of water.

Environmental and Social Impact

➲ **Deforestation and Biodiversity Loss:**
- The project will involve extensive deforestation in Panna National Park and Tiger Reserve, with an estimated 2–3 million trees to be felled.
- Around 98 sq. km of the park, a critical tiger habitat where tigers went locally extinct in 2009, will be submerged due to the Daudhan Dam.

National Perspective Plan of Interlinking of Rivers (ILR) Programme

⊃ **Origin:** Formulated in 1980 by the Ministry of Water Resources (then Union Ministry of Irrigation) and the Central Water Commission. The National Water Development Agency (NWDA) oversees the Interlinking of Rivers under the NPP.

⊃ **Components:**

◆ **Himalayan Rivers Development:**
  • Construction of storage reservoirs on the Ganga and Brahmaputra tributaries in India, Nepal, and Bhutan.
  • Canal systems to transfer surplus flows from the eastern Ganga tributaries to the west.

◆ **Peninsular Rivers Development:**
  • Interlinking Mahanadi, Godavari, Krishna, and Cauvery Rivers with storage at potential basin sites.
  • Interlinking west-flowing rivers north of Mumbai and south of Tapi.
  • Interlinking Ken and Chambal rivers.

Peninsular Component
1. Mahanadi - Godavari
2. Inchampalli - Nagarjunasagar
3. Inchampalli - Pulichintala
4. Polavaram - Vijayvada
5. Almatti - Pennar
6. Srisailam - Pennar
7. Nagarjunsagar - Somasila
8. Somasila -Grand Anicut
9. Kattalai - Vaigai - Gundar
10. Ken - Betwa
11. Parbati - Kalisindh - Chambal
12. Par - Tapi - Narmada
13. Damanganga - Pinjal
14. Bedti - Varda
15. Netravati - Hemavati
16. Pamba - Achankovil - Vaippar

Himalyan Component
1. Kosi - Mechi
2. Kosi - Ghagra
3. Gandak - Ganga
4. Ghagra - Yamuna
5. Sarda - Yamuna
6. Yamuna - Rajasthan
7. Rajasthan - Sabarmati
8. Chunar - Sone Barrage
9. Sone Dam - Souther Tributaries of Ganga
10. Manas - Sankosh - Tista - Ganga
11. Jogighopa - Tista - Farakka (Alternate)
12. Farakka - Sunderbans
13. Ganga (Farakka) - Damodar - Subernarekha
14. Subernarekha - Mahanadi

⊃ **Hydrological Concerns:**

◆ Experts have repeatedly called for public disclosure of hydrological data regarding Ken River's surplus water for transparent evaluation.

◆ A study by IIT-Bombay found that interlinking rivers could disrupt land-atmosphere interactions, causing a potential mean rainfall deficit of up to 12% in September.

⊃ **Displacement and Rehabilitation:**

◆ The dam will displace 5,228 families in Chhatarpur district and 1,400 families in Panna district due to submergence and land acquisition.

◆ Protests have arisen over concerns about inadequate compensation and low perceived benefits for affected communities, particularly in Panna district.

⊃ **Social Impact**: Local communities have expressed dissatisfaction with the acquisition process, citing insufficient support for those displaced and limited advantages for the region.

⊃ **Seismic Risks:** Areas prone to earthquakes face increased risks due to the construction of large dams and other infrastructure.

CYCLONE FENGAL

Recently, Cyclone Fengal, a tropical storm, struck Puducherry,
causing significant impact in the region.

About

⮞ **Definition:**
- **Cyclones** are large-scale atmospheric disturbances marked by **rapid inward air movement** around a **low-pressure center**.
- The term "Cyclone" originates from the Greek word *Cyclos* (meaning "coils of a snake"), coined by **Henry Peddington** in reference to the spiral appearance of tropical storms in the Bay of Bengal and Arabian Sea.
- These weather phenomena are often associated with:
  - Violent storms.
  - Heavy rainfall.
  - Destructive winds.

⮞ **Air Circulation Patterns:**
- **Northern Hemisphere:** Cyclones rotate **anticlockwise** due to the Coriolis effect.
- **Southern Hemisphere:** Cyclones rotate **clockwise** due to the Coriolis effect.

TROPICAL CYCLONES

Tropical cyclones typically form over large bodies of relatively warm water.

Confined to 10-30 degree N-S of the equator.

They form only on seas with temperatures more than 26-27 degree C. They dissipate on reaching the land.

Wind velocity of tropical cyclones is much greater (100-250 kmph) (200-1200 kmph in upper troposphere). Greater destruction due to winds, storm surges and torrential rains.

Shape: Tropical cyclones are elliptical in shape. generally move from east to west.

TEMPERATE CYCLONE

They are formed due to interaction of warm and cold air masses.

Confined to 35-65 degree N-S of the equator. More pronounced in the Northern hemisphere due to greater temperature contrast owing to large expanse of landmass.

Cyclone formation by frontogenesis, on both land and sea Velocity Typical range: 30-150 kmph. Less destruction due to winds but more due to flooding.

Shape: 'inverted V' & usually move from west to east.

⮞ **Cyclone Nomenclature Worldwide:**
- **Hurricanes:** In the Atlantic Ocean and the Caribbean Sea.
- **Typhoons:** In the western Pacific Ocean and the China Sea.
- **Willy-Willies:** In northwestern Australia.
- **Tornadoes:** In Guinea lands of West Africa and the southern USA.
- **Tropical Cyclones:** In the Indian Ocean.

Type of Disturbances	Wind Speed in Km/h	Wind Speed in Knots
Low Pressure	Less than 31	Less than 17
Depression	31-49	17-27
Deep Depression	49-61	27-33
Cyclonic Storm	61-88	33-47
Severe Cyclonic Storm	88-117	47-63
Super Cyclone	More than 221	More than 120

⮞ **Formation of Tropical Cyclones:** The formation and life cycle of tropical cyclones can be divided into three stages:
- **Formation and Initial Development Stage:**
  - **Warm Sea Surface:** Temperature exceeding **26°C**, with warmth extending to a depth of 60 meters.
  - **Atmospheric Instability:** Promotes vertical movement of warm, moist air, leading to the formation of large cumulus clouds.
  - **Moisture Supply:** Abundant water vapor from ocean evaporation fuels the system.
  - **Coriolis Force:** Necessary to initiate the rotation of the system.
  - **Low Wind Shear:** Ensures the cyclone structure remains intact during its development.
- **Mature Stage:**
  - Air rises rapidly, forming **vigorous thunderstorms**.
  - Air spreads outward at the **tropopause level**, creating high-pressure perturbations.
  - This accelerates downward air movement, forming a warm **Eye** at the center of the cyclone.
- **Modification and Decay Stage:**
  - **Landfall:** Loss of moisture supply as they move over land.
  - **Cold Waters:** Absence of heat and moisture required for sustenance. Even as they decay, cyclones can still cause damage through residual rainfall and winds.

Nomenclature

⮞ **Origin of the Name 'Fengal'**
- **Proposed by:** Saudi Arabia
- The name 'Fengal' has its origins in Arabic, reflecting the region's linguistic and cultural identity.

⮞ **Cyclone Naming Process:**
- Cyclones in the North Indian Ocean are named by member countries of the World Meteorological Organization (WMO)

and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) panel.

- This panel consists of 13 nations, including Bangladesh, India, Iran, Maldives, and Pakistan, among others.
- Each member country submits a list of potential cyclone names, which are used in sequence as cyclones form in the region.

Reasons behind increasing Frequency of Cyclones in Arabian Sea:

- **Higher Sea Surface Temperatures:** Arabian Sea has warmer temperatures, providing more energy for cyclones, unlike the Bay of Bengal with cooling influences from river discharge.
- **Monsoon Winds:** Weaker and more variable monsoon winds in the Bay of Bengal limit cyclone formation, whereas the Arabian Sea experiences more favorable wind patterns.
- **Topography and Depth:** Bay of Bengal's shallow waters cool quickly during cyclones, while the Arabian Sea's deeper waters maintain higher temperatures conducive to cyclone strength.
- **Climatic Variability:** Climatic factors like El Niño and Indian Ocean Dipole influence cyclone development, with stronger effects in the Arabian Sea.

India Meteorological Department (IMD)

- **Establishment:**
  - **Founded in 1875**, IMD is India's **National Meteorological Service**.
  - It serves as the **principal government agency** for:
    - Meteorology.
    - Weather forecasting.
    - Seismology.
    - Related atmospheric sciences.
- **Nodal Ministry:** Ministry of Earth Sciences, Government of India.
- **Headquarters:** Located in **New Delhi**, India.
- **Global Recognition:**
  - IMD is recognized as one of the **six Regional Specialized Meteorological Centres (RSMCs)** under the **World Meteorological Organization (WMO)**.
  - **Responsibilities as an RSMC include:**
    - Issuing advisories on cyclones in the **North Indian Ocean region**.
    - Providing meteorological expertise to other nations in the region.

Anatomy of a tropical cyclone cross-section with exaggerated vertical dimension
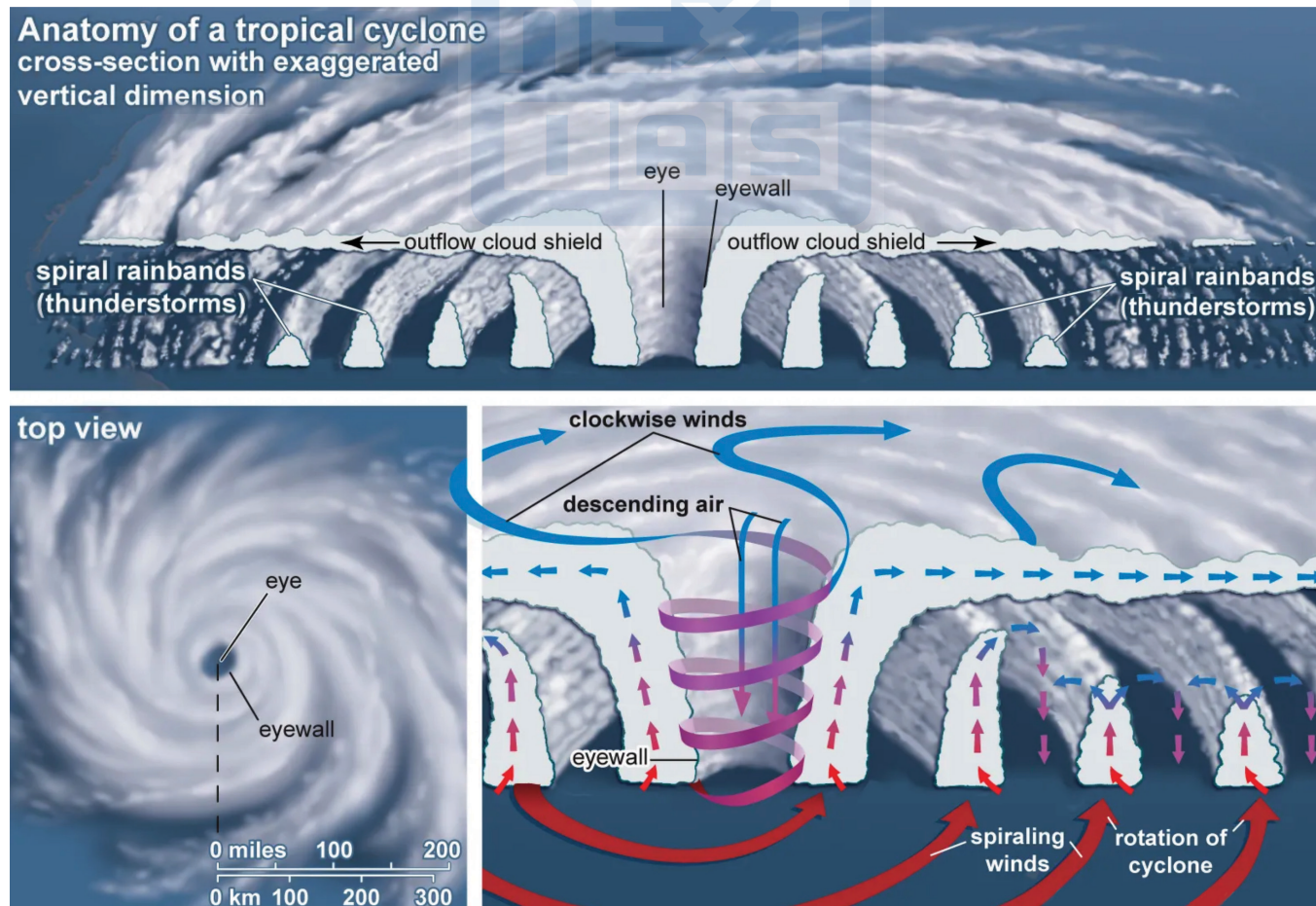
CHINA APPROVES WORLD'S LARGEST HYDROPOWER DAM

Recently, China approved the construction of the world's largest
hydropower dam near the Indian border on Yarlung Zangbo (Brahmaputra) River.

About

⮞ **Location:**
  - **River**: The project is situated along the Yarlung Zangbo River, also known as the Brahmaputra River, as it flows through the Himalayan region.
  - **Geography**:
    - The Yarlung Tsangpo river originates in Tibet and enters Arunachal Pradesh, where it is known as the Siang.
    - In Assam, the river is joined by tributaries like the Dibang and Lohit, and is referred to as the Brahmaputra.
    - The river then flows into Bangladesh before reaching the Bay of Bengal.

⮞ **Project Purpose:**
  - **Carbon Neutrality Goals**: The hydropower project is a part of China's broader strategy to achieve carbon neutrality by 2060.
  - **Economic and Regional Development**: It aims to boost industries and create jobs in Tibet, contributing to the region's economic growth and infrastructure development.
  - **Renewable Energy Focus**: The dam will significantly contribute to China's renewable energy initiatives, enhancing its clean energy production.

⮞ **Cost and Timeline:**
  - **Total Cost:** The hydropower project is estimated at a cost of **$137 billion**.
  - **Strategic Plan:** It is included in **China's 14th Five-Year Plan (2021-2025)** and aligns with the country's **Long-Range Objectives through 2035**.

Concerns for India:

⮞ **Impact on Water Flow to India**
  - The construction of the dam (or dams) in Tibet could **significantly affect the water flow** into India, a lower riparian state.
  - The **majority of the water** in the **Brahmaputra** river system originates in Tibet, and any alteration in the flow could disrupt **water availability** and **agriculture** in northeastern India, particularly in **Assam** and **Arunachal Pradesh**.

⮞ **Interruption of Silt:**
  - Large dams often **block the flow of silt**, which is essential for **fertile agriculture**.
  - The **Brahmaputra** is a **silt-laden river**, and any alteration in its flow can reduce the nutrient-rich silt deposits crucial for farming.

⮞ **Biodiversity Risks**: Disruption in the river flow can lead to **adverse effects on local biodiversity**, particularly affecting aquatic ecosystems and wildlife dependent on the river's natural cycles.

⮞ **Ecological Fragility and Earthquake Risks:**
  - The region is one of the world's most ecologically fragile and earthquake-prone areas, making it especially vulnerable to natural disasters.
  - A large dam in this geologically unstable region increases the risk of catastrophic events.
  - *For example*, the **2004 Parechu Lake** landslide in Tibet, which led to the formation of a lake that burst in 2005, illustrates the potential danger of water accumulation in such unstable regions.

⮞ **Reluctance to Cooperate:** Despite the evident need for cooperation, China has shown reluctance to engage with lower riparian states like India.
  - This lack of cooperation has led to concerns in other river basins as well.
  - In the **Mekong River basin**, China has built **12 large dams**, leading to **negative consequences** for downstream countries.

⮞ **Diplomatic Barriers**: While both nations are involved in dialogue through various mechanisms, **political tensions** have often interfered with the smooth flow of cooperation, especially in sensitive times.

India-China's Cooperation on Transboundary Rivers

⮞ **Umbrella MoU (2013):**
  - **Purpose**: This agreement establishes overall cooperation on transboundary rivers between India and China, covering various aspects of water management and sharing.
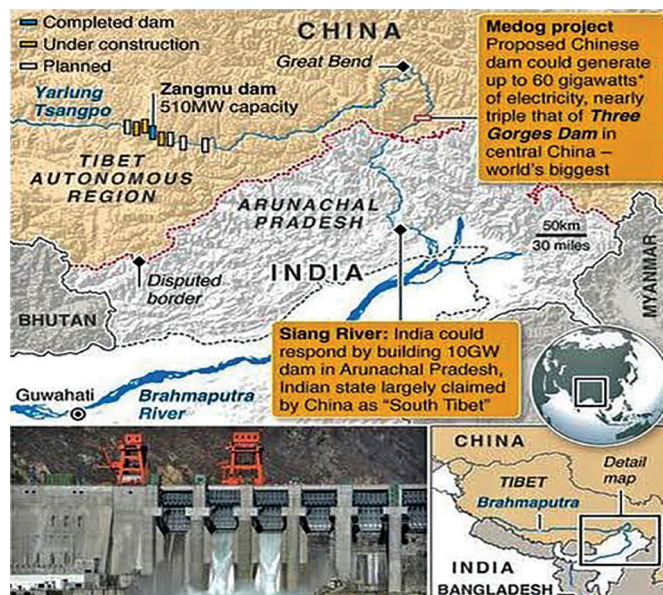
- **Status**: It does not have an expiry date, but no active activities are currently underway under this agreement.

➲ **Brahmaputra MoU:**
- **Purpose**: Focuses on data sharing related to the Brahmaputra River.
- **Renewal**: The MoU is renewable every five years. It lapsed in 2023, and renewal discussions are ongoing through diplomatic channels.

➲ **Sutlej MoU:**
- **Purpose**: This MoU was initiated following the 2004 Parechu Lake incident and aims at water cooperation related to the Sutlej River.
- **Limitations**: The agreement does not provide year-round data, and renewal is currently pending.

➲ **Expert Level Mechanism (2006):**
- **Purpose**: This mechanism facilitates annual meetings between India and China to address issues related to transboundary rivers.
- **Challenges**: The meetings have faced interruptions in recent years, hindering the effectiveness of this cooperative arrangement.

➲ **UN Convention on the Law of the Non-Navigational Uses of International Watercourses (1997):**
- **Status:** Neither **India** nor **China** is a signatory to the convention.
- **Key Principles**: However, both countries follow the **key principles** of the convention, which include:
  - **Equitable and reasonable use** of shared water resources.
  - Ensuring that the **actions of one country do not cause significant harm** to the other country's water systems.

Agreements between India & Neighbouring Nations

➲ **Indus Water Treaty (1960) – India and Pakistan:**
- **Overview:** Facilitated by the World Bank, the treaty allocates the waters of the Indus River and its tributaries between India and Pakistan.
- **Key Provisions:**
  - Pakistan has exclusive rights to the three western rivers (Indus, Jhelum, and Chenab).
  - India has control over the three eastern rivers (Ravi, Beas, and Sutlej).
  - Allows India to use water for irrigation, power generation, and domestic use.

➲ **Mahakali River Treaty (1996) – India and Nepal**
- **Overview:** Signed between India and Nepal for the utilization of the Mahakali River's waters, primarily for irrigation and hydropower.
- **Key Provisions:**
  - Allows joint development of the river's resources for irrigation, power generation, and other uses.
  - Nepal is provided 64% of the waters, while India gets 36%.

➲ **Teesta River Water Sharing Agreement:**
- **Geography:** The Teesta River flows from **Sikkim (India)** through **West Bengal (India)** and into **Bangladesh**, vital for agriculture and daily needs.
- **Current Status:** No formal agreement; ongoing negotiations over water sharing, particularly during the dry season.
- **India's Stance:** Proposes equitable distribution, prioritizing domestic needs, especially for **West Bengal.**
- **Bangladesh's Concerns:** Demands a fair allocation, particularly during the dry months, crucial for northern Bangladesh's agriculture.
- **Previous Efforts:** The **1983 Interim Agreement** addressed some water management aspects. In 2011, a proposed formula allocated **42.5%** to Bangladesh and **37.5%** to India.

WAY FORWARD

➲ **Hydropower Development with Sustainability:** Ensure sustainable hydropower projects with environmental assessments, minimizing disruption while exploring renewable energy alternatives.

➲ **Flood Control and Disaster Management:** Develop flood management strategies with infrastructure investments like dams, embankments, and early-warning systems for disaster mitigation.

➲ **Biodiversity Conservation:** Protect river ecosystems and endangered species through conservation efforts in wetlands and floodplains along the river.

➲ **Infrastructure and Connectivity Enhancement:** Improve regional infrastructure to support economic growth while maintaining environmental safeguards and enhancing connectivity.

➲ **Research and Data Sharing:** Promote joint research and establish shared data platforms to monitor water levels and climate risks for informed decision-making.

BHARAT 6G VISION DOCUMENT

The Prime Minister has recently introduced a Vision Document outlining plans to launch high-speed 6G communication services by 2030. Additionally, the Bharat 6G Project has been launched to identify and support research and deployment of next-generation technology in India.

About

➲ The Bharat 6G Vision is to **"design, develop, and deploy 6G network technologies** that offer seamless, intelligent, and secure connectivity, enhancing the quality of life globally."

➲ **Key Highlights:**
- ◆ **Core Principles:** The vision is founded on **affordability, sustainability, and ubiquity.**
- ◆ **Alignment with Atmanirbhar Bharat:** It aims to empower every Indian to achieve self-reliance while contributing to the national goal of self-sufficiency.
- ◆ **Global Leadership:** The vision seeks to position India as a leading provider of advanced, cost-effective telecom technologies that promote global welfare.

Six task forces formed under the Technology Innovations Group
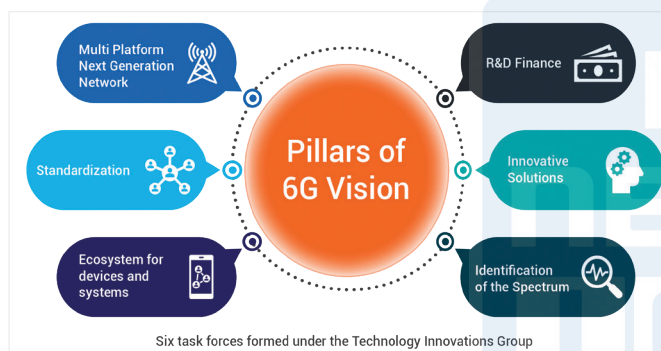
Bharat 6G Project

➲ **Implementation Phases:**
- ◆ **Phase 1 (2023-2025):** Focus on exploring new ideas, risky pathways, and proof-of-concept tests.
- ◆ **Phase 2 (2025-2030):** Support for ideas that show potential, developing them into usable products, creating intellectual property (IP), and preparing for commercialization.

➲ **Apex Council:**
- ◆ The government has set up an apex council to oversee the project.
- ◆ Focus areas include standardization, spectrum identification, creating an ecosystem for devices and systems, and funding research and development.

➲ **Key Technologies:** Focus on emerging technologies like **Terahertz communication**, **radio interfaces**, **tactile internet**, **AI for connected intelligence**, and **new chipsets** for 6G devices.

➲ **Objective:**
- ◆ To make India a global leader in providing affordable 6G telecom solutions.
- ◆ Focus on research in areas where India has competitive advantages, aiming to develop intellectual property and products for global markets.

Bharat 6G Alliance

➲ **About:**
- ◆ A collaborative platform bringing together public and private companies, academic institutions, research organizations, and standards bodies.
- ◆ The alliance will collaborate with global 6G alliances to encourage international cooperation and knowledge exchange.

➲ **Objective:** To understand the business and societal needs of 6G technology. To promote consensus and drive impactful research and development efforts in the 6G field.

Benefits of 6G

➲ **Ultra-High Speed and Low Latency:** 6G promises speeds up to 1 Tbps and latency as low as 1 ms, enabling seamless Virtual reality (VR) and augmented reality (AR) experiences.

➲ **Enhanced Connectivity and Capacity:** It will support dense IoT networks, smart cities, and autonomous vehicles with reliable connections.

➲ **Improved Reliability and Security:** Advanced encryption will ensure secure communication for critical applications like remote surgery and emergency services.

➲ **AI Integration:** AI will optimize network management, enhance user experiences, and enable predictive maintenance for efficient networks.

➲ **Enhanced Spectrum Utilization:** Terahertz frequencies will provide higher bandwidth and data rates, reducing network congestion.

➲ **Sustainable Networks:** 6G will focus on energy-efficient designs and renewable energy to create greener, eco-friendly networks.

Challenges Associated

➲ **Elaborate Design for Carrier Wave:** Water vapor affects THz waves, requiring new models to ensure data can travel through complex atmospheric paths.

➲ **Semiconductor Availability:** Current semiconductor materials can't support multi-THz frequencies, needing small antenna arrays to achieve usable ranges.

➲ **Ensuring Protective Measures:** Challenges include energy efficiency, signal attenuation from obstructions, and ensuring robust cybersecurity for data protection.

➲ **Implementation of Novel Models:** Advancements in antenna design, miniaturization, and edge Artificial Intelligence (AI) are needed, alongside prioritizing end-to-end security and privacy.

Key Recommendations to Enable Bharat 6G Mission by the Six Task Forces

➲ **Funding for R&D:** Support for industry, startups, academia, and labs through innovative funding to pursue risky yet impactful research with clear goals.

➲ **Solutions for Key Sectors:** Use 6G technologies to address challenges in transport, water, power, healthcare, education, smart cities, and digital twins.

➲ **Spectrum Management:** Enable shared use of higher frequency spectrum bands. Reassess and optimize crowded spectrum bands for Industry 4.0 and enterprise applications.

➲ **Advanced Interfaces and Devices:** Develop multi-sensor interfaces using edge cloud computing and AI for realistic 3D experiences, tactile Internet, and smart environments.

➲ **High-Speed Wireless Communication:** Expand mmWave and Terahertz communication for faster data rates and use advanced antennas like Ultra Massive MIMO.

➲ **Global Standards Participation:** Contribute to international forums to ensure compatibility and promote global reach for Indian innovations.

➲ **Enhanced Connectivity:** Provide fiber broadband to every home and integrate dense wireless and optical networks for mobile users.

➲ **Advanced Applications:** Support tactile Internet, remote operations of machines/robots, and near-realistic 3D virtual meetings.

➲ **Space-Terrestrial Integration:** Achieve seamless coverage by combining space and terrestrial communication networks.

➲ **Combined Communication and Sensing:** Explore combined communication and sensing technologies in Terahertz frequency bands.

➲ **Next-Gen Hardware:** Develop advanced System-on-Chip (SoCs) for modems, radios, and AI processors.

COMPARISON BETWEEN 5G AND 6G		
Feature	**5G**	**6G**
Peak Data Speed	Up to 10 Gbps	Expected to be up to 100 Gbps or more
Latency	As low as 1-10 ms	Expected to be less than 1 ms
Frequency Band	450 MHz to 52.6 GHz	above 100 GHz
Network Efficiency	High efficiency in energy and spectrum use	Expected to be significantly more efficient
Application Areas	Enhanced mobile broadband using optical fibres, IoT, industrial automation, smart cities, remote healthcare.	Advanced IoT, smart cities and infrastructures, 3D holographic communication, high-fidelity mobile hologram, and augmented realities.
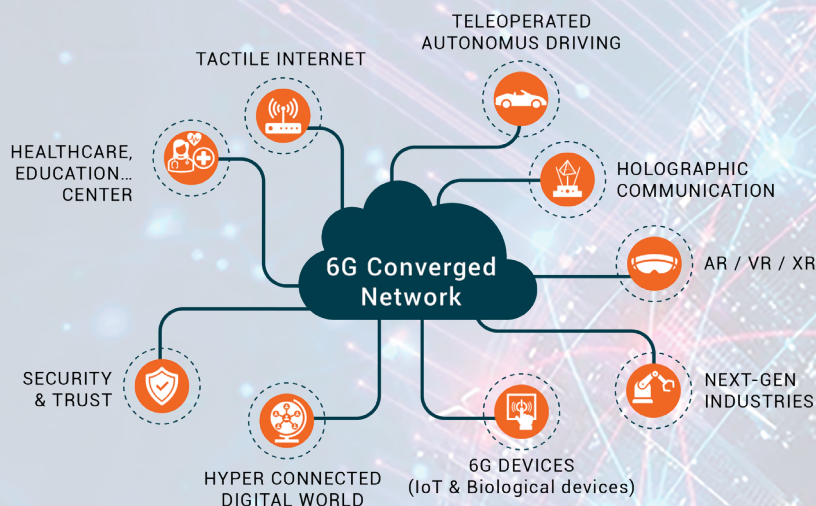
GLOBAL REPORT ON ON TRAFFICKING IN PERSONS 2024

Recently, the United Nations Office on Drugs and Crime released its Global Report on Trafficking in Persons 2024, highlighting trends and challenges in human trafficking worldwide.

Key Highlights:

- A 25% rise in the global detection of victims was recorded in 2022 compared to 2019.
- **Child Victims:** In 2022, global detections increased 31% compared to the pre-pandemic levels in 2019, with a sharper increase of 38% specifically among girls.

SHARE OF DETECTED CHILD VICTIMS OF TRAFFICKING, BY FORM OF EXPLOITATION, 2022 (OR MOST RECENT)*
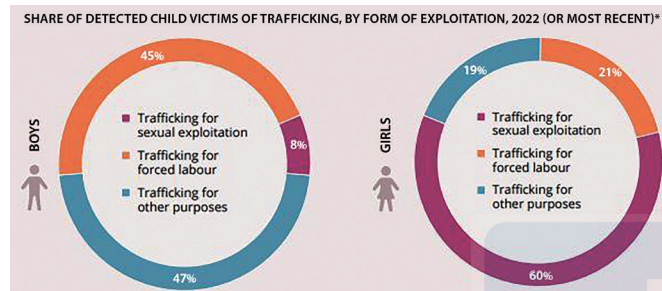
- **Majority of Victims:** In 2022, 61% of trafficking victims detected worldwide were female.
  - Adults continue to be the most detected age group, and adult females make up 39% of all detected victims.
  - At the same time, girls make up a significant 22% of the total detected victims.
- **Organised Crime Groups:** 74% of the traffickers operated as groups and networks loosely connected in a business-type criminal relation or as structured criminal organizations.
  - Non-organized criminals account for about 26% of traffickers convicted.

Europe's Situation:

- Western and Southern European countries recorded a **45% increase** in trafficking detections compared to 2019.
- The majority of victims detected were adults, with a higher percentage of **men (39%)** than **women (28%)**.
- Victims in this region were predominantly trafficked for **forced labour**, especially in **agriculture**, **restaurants**, and **cleaning/domestic work** sectors.
- Victims came from a wide range of regions, including **South-Eastern Europe**, **Sub-Saharan Africa**, **North Africa**, **South Asia**, and **East Asia**.
- **Trafficking routes:** Victims are trafficked globally through an increasing number of international routes, with African victims trafficked to the highest number of destinations.

Types of Trafficking

- **Forced Labour:** Forced labour cases surged by **47%** from 2019 to 2022, with increasing numbers of victims coerced into **online scams** and **cyberfraud**.
- **Sexual Exploitation: 60% of girls** trafficked were exploited for **sexual purposes**, while **47% of boys** were trafficked for **forced criminality**, **begging**, or **other forms of exploitation**.
- **Forced Criminality:** Cases of trafficking for **forced criminality**, including online scams, rose from **1% of total trafficking victims in 2016** to **8% in 2022**.
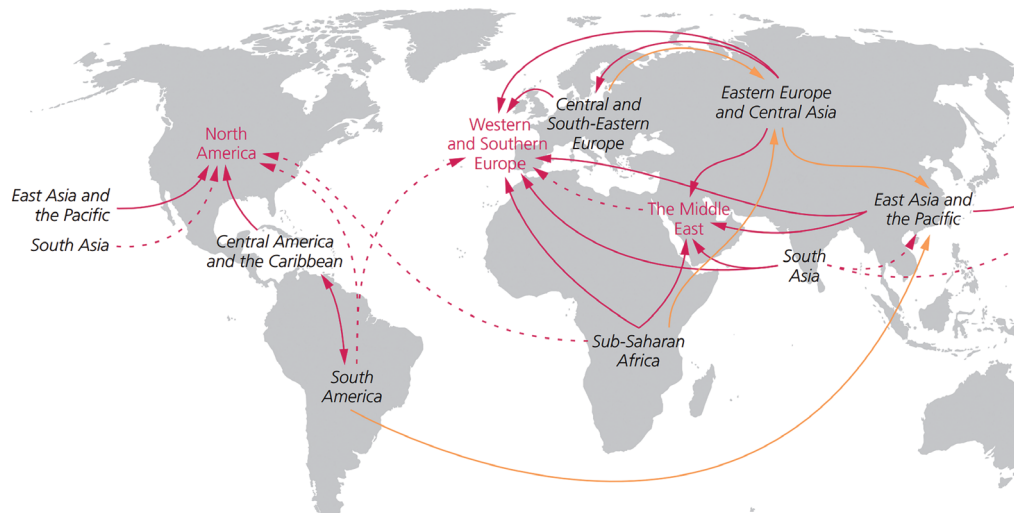
MAIN DETECTED TRANSREGIONAL FLOWS, 2022 (OR MOST RECENT)

→ Transregional flows: detected victims in destination countries
- ▸ Transregional flows: less than 5% of detected victims in destination countries
→ Transregional flows: victims repatriated from destination countries

India's Legal Framework on Trafficking in Persons

➲ **UN Protocol Ratification**: India ratified the **UN Protocol to Prevent, Suppress, and Punish Trafficking in Persons, Especially Women and Children** in 2011.

➲ **Constitutional Protection**: **Article 23 of the Indian Constitution** prohibits trafficking in human beings, **begar**, and similar forms of forced labour.

➲ **Key Laws Addressing Trafficking:**
  ◆ **Bharatiya Nyaya Sanhita (BNS), 2023**: **Sections 143 to 146** provide penalties for various forms of trafficking, habitual dealing in slaves, and unlawful compulsory labour.
  ◆ **The Immoral Traffic Prevention Act (ITPA), 1956**: Prosecutes trafficking for **sexual exploitation**.
  ◆ **Bonded Labour System (Abolition) Act, 1976**: Addresses forced labour and bonded labour.
  ◆ **Child Labour (Prohibition and Regulation) Act, 1986**: Prohibits the employment of children in hazardous jobs, impacting trafficking-related offences.
  ◆ **Transplantation of Human Organs and Tissues Act, 1994**: Tackles illegal trafficking of organs.
  ◆ **Prohibition of Child Marriage Act, 2006**: Targets trafficking related to child marriages.
  ◆ **Juvenile Justice (Care and Protection of Children) Act, 2015**: Provides measures for the care and protection of children from trafficking.
  ◆ **Protection of Children from Sexual Offences Act, 2012**: Addresses the trafficking of children for sexual offences.

➲ **Trafficking Statistics in India (2018–2022):**
  ◆ **Cases Registered**: India recorded **10,659 cases of human trafficking** between 2018 and 2022.
  ◆ **Top States by Trafficking Cases: Maharashtra** recorded the highest number of trafficking cases, followed by **Telangana** and **Andhra Pradesh**.
  ◆ **Source vs. Destination States:**
    ◆ **Source States**: **West Bengal** and **Assam** are considered key source states for trafficking.
    ◆ **Destination States**: **Maharashtra** and **Karnataka** are major destination states for trafficking victims.

Reasons behind Human Trafficking in India

➲ **Poverty**: Poverty is one of the leading drivers of human trafficking. People from impoverished backgrounds are often forced to seek better opportunities, making them vulnerable to traffickers offering false promises of employment and better living conditions.

➲ **Low Literacy and Awareness**: Lack of education and awareness among individuals, particularly in rural areas, leaves them susceptible to trafficking.
  ◆ Many victims, especially women and children, are unaware of their rights or the potential dangers they face.
  ◆ According to the **UNICEF** report, about 50% of children in India are out of school, making them vulnerable to trafficking.

➲ **Gender Discrimination**: The patriarchy in India leads to significant gender inequality, making women and girls especially vulnerable to trafficking.
  ◆ Females are more likely to be trafficked for sexual exploitation, forced marriages, and domestic servitude.
  ◆ According to the **Ministry of Women and Child Development**, about 70% of human trafficking victims in India are women and girls.

➲ **Organized Crime Networks:**
  ◆ Human trafficking in India is often orchestrated by well-established criminal syndicates, making it difficult to control.
  ◆ These networks are involved in recruiting, transporting, and exploiting victims for forced labor, sexual exploitation, and organ trade.
  ◆ The **National Human Rights Commission (NHRC)** reports that organized trafficking networks operate in multiple states, with regions like Uttar Pradesh, West Bengal, and Maharashtra being hotspots for trafficking.

➲ **Child Labor:**
  ◆ India has a large number of child laborers, often exploited in hazardous industries, domestic work, or even as beggars.
  ◆ Traffickers lure parents by offering better prospects for their children but end up exploiting them for forced labor.
  ◆ According to the **International Labour Organization (ILO)**, over 10 million children in India are engaged in child labor, with many subjected to trafficking.

UN Office on Drugs and Crime (UNODC)

➲ **Establishment:** UNODC was created in 1997 through the merger of the United Nations Drug Control Programme and the Centre for International Crime Prevention.

➲ **Functions of UNODC:**
  ◆ **Drug Abuse Education**: Works globally to educate people on the dangers of drug abuse.
  ◆ **Combating Illicit Drug Production and Trafficking**: Strengthens international efforts to fight illicit drug production, trafficking, and related crimes.
  ◆ **Crime Prevention and Criminal Justice Reform:**
    ◆ Enhances crime prevention efforts and helps reform criminal justice systems to strengthen the rule of law.
    ◆ Focuses on combating transnational organized crime and corruption.
  ◆ **Terrorism Prevention (since 2002):** The Terrorism Prevention Branch of UNODC was expanded to assist States in ratifying and implementing the eighteen universal legal instruments against terrorism.

➲ **Funding:** UNODC is primarily funded through **voluntary contributions**, mainly from **governments**.

➲ **Headquarters:** Vienna, Austria.

9 YEARS OF SUGAMYA BHARAT ABHIYAN

Recently, Prime Minister Shri Narendra Modi commemorated
the 9th anniversary of the Sugamya Bharat Abhiyan.

About: Sugamya Bharat Abhiyan ((Accessible India Campaign (AIC))

➲ **Launch and Purpose:**
- **Launch Date:** The Accessible India Campaign (AIC) was launched by the Prime Minister of India on December 3rd, 2015, which coincides with the International Day of Persons with Disabilities.
- **Objective:** The primary goal of the campaign is to enhance accessibility for persons with disabilities (PwDs) across India, ensuring equal opportunities and full participation in societal life.

➲ **Implementing Agency:**
- **Department of Empowerment of Persons with Disabilities (DEPwD):** The campaign is spearheaded by the DEPwD, which operates under the Ministry of Social Justice and Empowerment.
- **Nationwide Campaign:** AIC is India's flagship initiative to improve accessibility on a national scale for PwDs.

➲ **Background:**
- **PwD Act of 1995:** The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act, 1995, was a foundational legal framework that provided for non-discrimination in transport and the built environment for people with disabilities.
- **Replacement of the Rights of Persons with Disabilities Act, 2016**: The 1995 Act was replaced by the Rights of Persons with Disabilities Act, 2016, aligning India's laws with the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).
- **UNCRPD Commitments**: India, being a signatory to the UNCRPD, has committed to ensuring the accessibility of various aspects of life for PwDs. As per **Article 9** of the UNCRPD, governments must ensure accessibility in:
  - Information
  - Transportation
  - Physical Environment
  - Communication Technology
  - Services and Emergency Services

➲ **Components of AIC:**
- **Built Environment Accessibility:**
  - Focuses on making physical spaces (such as buildings, public places, and public services) accessible to PwDs.
  - Involves removing barriers like stairs and ensuring access to essential facilities like toilets, ramps, and elevators.
- **Transportation System Accessibility:**
  - Enhances accessibility in transportation networks, including roads, railways, and public transport.
  - Implements measures like low-floor buses, accessible railway stations, and other modes of transport designed for PwDs.
- **Information and Communication Eco-System Accessibility:**
  - Ensures that information is available in accessible formats, including braille, sign language, and digital formats for persons with disabilities.
  - Focuses on making communication technologies, websites, and media accessible to everyone, regardless of disability.

Key Achievements

➲ **Accessible Infrastructure:**
- **Government Buildings**: Accessibility audits were conducted for 1,671 government buildings, aiming to audit 25-50 buildings in 50 cities.
- **Retrofitting**: A total of ₹ 562 crore was allocated for retrofitting 1,314 buildings to improve accessibility.
- **Building Modifications**: Accessibility features were incorporated into 1,748 government buildings, with 648 buildings under State/UT governments and 1,100 Central Government buildings retrofitted by the CPWD (Central Public Works Department).

➲ **Transportation Accessibility:**
- **Airports:**
  - All 35 international airports and 55 out of 69 domestic airports now include essential accessibility features such as ramps, accessible toilets, helpdesks, and lifts with Braille and auditory systems.
  - Aerobridges have been installed at all international/customs airports.
- **Railways:** 709 railway stations have been made fully accessible, and 4,068 stations have been partially made accessible.
- **Buses:**
  - Out of 1,45,747 buses, 8,695 (5.96%) are fully accessible, and 42,348 (29.05%) are partially accessible.
  - In 24 States/UTs, 3,120 out of 3,533 bus stations are equipped with accessibility features.

➲ **Digital Accessibility:**
- 95 Central Government websites have been made accessible under the Content Management Framework by the Ministry of Electronics and Information Technology (MeitY).

- 676 State Government websites have been made accessible, with 476 of them live.

➲ **Education and Language Accessibility:**

- The Indian Sign Language Research and Training Centre (ISLRTC) was established in September 2015 to promote Indian Sign Language (ISL) usage, teaching, and research.
- Over 1,013 individuals have been trained in ISL through diploma and short-term courses offered by ISLRTC.
- Between 2016-17 and 2023, 183 students completed the Diploma in Indian Sign Language Interpretation (DISLI) course.

➲ **Media Accessibility:**

- The Ministry of Information & Broadcasting published Accessibility Standards for TV viewing for persons with hearing impairments.
- Accessibility in TV content is being implemented in phases, with 19 news channels broadcasting 2,447 accessible news bulletins and 17 General Entertainment Category (GEC) channels airing 3,686 accessible programs and movies.

Additional Information

➲ **Population of PwDs (Census 2011):** The total number of Persons with Disabilities in India is 2.68 crore, which accounts for 2.21% of the country's total population.

➲ **Types of Disabilities (RPwD Act, 2016):** The Rights of Persons with Disabilities (RPwD) Act, 2016 recognizes 21 types of disabilities.

➲ **Rural vs. Urban:** 69% of PwDs live in rural areas, while 31% reside in urban areas.

➲ **Gender Distribution:**

- **Male:** 56% of PwDs are male.
- **Female:** 44% of PwDs are female.

➲ **Age Distribution:** The prevalence of disability increases with age, with the highest rates observed in individuals over 60 years old.

➲ **Education:**

- **Literacy Rate:** 52.2% of PwDs aged 7 and older are literate.
- **Secondary Education:** 19.3% of PwDs aged 15 and older have attained secondary or higher education.

➲ **Need for Caregivers:** 62.1% of PwDs have a caregiver, while 37.7% do not require one.

➲ **Labor Force Participation Rate:** 23.8% of PwDs aged 15 and older are part of the labor force.

Other Initiatives:

➲ **Sector-Specific Accessibility Guidelines:**

- **Efforts are underway to finalize accessibility standards for the following sectors:** Road Transport and Highways, Tourism, Information and Broadcasting, and Financial Services.

- Currently, 13 out of 20 Central Government Ministries/ Departments have notified sector-specific guidelines, while three others have adopted guidelines from different departments.

➲ **Web Accessibility:**

- A plan is in progress to make 500 additional Government of India websites accessible.
- In collaboration with the National Informatics Centre (NIC), the department is organizing training sessions for officers from Central Government Ministries/Departments to ensure compliance with web accessibility standards.

➲ **Training of Access Auditors:**

- In partnership with the Council of Architecture (CoA), the Department has initiated training programs to expand the number of certified Access Auditors.
- The second phase of training for master trainers took place in July 2024, raising the total number of certified access auditors to 59.

➲ **Sugamya Bharat App:**

- This crowdsourcing platform allows individuals to report accessibility issues in infrastructure, transport, and information systems.
- Key features of the app include font adjustments, color contrast options, and integrated screen readers in Hindi and English.
- The app, available in 23 languages, promotes public participation, allowing users to report accessibility issues, which are then addressed by relevant authorities.

➲ **Curriculum Development:**

- In collaboration with IIT Kharagpur, the Department is working to introduce specialized courses on accessibility in B. Tech, B. Plan, and B. Arch programs.
- Stakeholder consultations have been conducted, and recommendations are under review for inclusion in the model curriculum by the All India Council for Technical Education (AICTE).

➲ **Accessible Pilgrimage Sites:**

- A dedicated initiative has been launched to make 75 pilgrimage sites accessible to persons with disabilities (PwDs).
- Proposals from multiple states have been received, and funds have been allocated to enhance accessibility at locations like Solophek Chardham in Sikkim.

➲ **Web Accessibility Training Program:**

- In partnership with the National Informatics Centre (NIC), a certified training course on Web Accessibility is being developed.
- This initiative aims to train approximately 10,000 web developers nationwide and sensitize government departments to adopt and implement Web Accessibility Guidelines.

59TH ALL INDIA CONFERENCE OF DIRECTOR GENERALS/INSPECTOR GENERALS OF POLICE

Context

Recently, the Prime Minister of India attended the '59th All India Conference of Director Generals/ Inspector Generals of Police', held in Bhubaneswar, Odisha.

Key Highlights

➲ **National Security Discussions:** The conference included in-depth discussions on various national security issues, including *counter-terrorism, left-wing extremism, coastal security, economic security, immigration, and narco-trafficking.*
 ◆ These aimed to develop effective counter-strategies and enhance the overall security framework of the country.
➲ **SMART Policing Initiative:** The Prime Minister has expanded on the concept of SMART policing, urging the police force to become more *Strategic, Meticulous, Adaptable, Reliable, and Transparent.*
 ◆ He emphasized the need for modernization and realignment with the **vision of 'Viksit Bharat' (Developed India).**
➲ **Technological Integration:** The conference highlighted the importance of leveraging technology to tackle *challenges such as digital fraud, cyber-crimes*, and the potential *threats posed by AI, including deep fakes.*
 ◆ It called for the police to harness **India's dual strengths in Artificial Intelligence and 'Aspirational India'** to turn these challenges into opportunities.
➲ **Urban Policing Initiatives:** The Prime Minister appreciated the initiatives taken in urban policing and suggested that these be **implemented comprehensively in 100 cities across the country.**
 ◆ He stressed the importance of using technology to reduce the workload of constables and making police stations the focal point for resource allocation.
➲ **Police Hackathons:** PM Modi proposed the idea of **organizing National Police Hackathons** to solve key problems through innovative solutions.

IMPORTANT NOTE

Police is a State subject as per Schedule 7 of the Indian Constitution.

INTERNET SHUTDOWNS IN INDIA

Context

The Union Government informed the Supreme Court that it had written to State Chief Secretaries to follow the law laid down by the apex court in the Anuradha Bhasin v. Union of India Case on the issue of internet shutdowns.

About

➲ **Internet shutdowns:** It refers to intentional disruptions of internet or electronic communications, making them inaccessible or unusable for a specific population or in a particular area.
 ◆ These shutdowns are often used to control the flow of information and can impact both mobile and broadband internet services.
➲ India has collectively had **more than 500 instances** of Internet shutdowns.
➲ A total of **13 States and Union Territories** imposed shutdowns in 2023, where seven of them disrupted Internet services five or more times.
➲ Shutdowns spanning over five days or more shot up **from 15% of all shutdowns in 2022 to more than 41% in 2023.**

Anuradha Bhasin v. Union of India Case

➲ **In 2020** the Supreme Court by **ruling on Jammu and Kashmir Internet shutdown** held that **indefinite internet shutdowns** by the State is not permissible under Indian Constitution.
➲ The apex Court further stated that **imposition of Section144** can not be used as a mechanism to avoid genuine protest which is permitted under the Constitution.
 ◆ **Section 144 of CrPC** has very specific parameters, only if those parameters are satisfied then only a Magistrate can pass the orders.

Key Highlights of the orders:
➲ Usage of the Internet is the **Fundamental Right under Article 19** of the Indian Constitution.
➲ Internet shutdowns can be of **temporary period** but not for indefinite period.
➲ Government to publish all orders imposing restrictions under Section 144.
➲ The Court had also said that any order with regard to Internet Shutdowns will come under **Judicial Scrutiny.**

Legal Provisions Relating to Internet Shutdown

- **Grounds:** Indian States and Union Territories can impose an internet shutdown only in case of a "**public emergency"** **or in the interest of "public safety", according to the Indian Telegraph Act.**
  - However, the law **does not define what qualifies as an emergency or safety issue.**
- Till the year 2017, shutdowns were imposed largely **under Section 144 of the Code of Criminal Procedure (CrPC).**
  - Section 144 of CrPC gave the police and the District Magistrate the powers in order to prevent unlawful gathering of people and also to direct any person to abstain from a certain activity.
- However, in 2017 the law was amended and the Government promulgated the **Temporary Suspension of Telecom Services (Public Emergency or Public Safety) Rule 2017.**
  - They include ensuring transparency, reviewing the shutdown after 48 hours, and giving citizens an opportunity to challenge the shutdown.

NATIONAL PANCHAYAT AWARDS 2024

Context

The Ministry of Panchayati Raj has announced the recipients of the National Panchayat Awards 2024 for the appraisal year 2022–2023.

About

- Panchayats were ranked and recognized based on their performance across **9 thematic areas of sustainable development:** Poverty-Free and Enhanced Livelihoods, Healthy Panchayat, Child-Friendly Panchayat, Water-Sufficient Panchayat, Clean and Green Panchayat, Self-Sufficient Infrastructure, Socially Just and Secured Panchayat, Panchayat with Good Governance, and Women-Friendly Panchayat.
- A total of **45 awardees** (36 Gram Panchayats, 3 Block Panchayats, 3 District Panchayats and 3 Institutions) are selected for National Panchayat Awards 2024.

Categories Under National Panchayat Awards 2024:

- **Deen Dayal Upadhyay Panchayat Satat Vikas Puraskar (DDUPSVP)**: This award recognizes the top 3 Gram Panchayats (GPs) under each of the 9 Localization of Sustainable Development Goal's thematic areas.
- **Nanaji Deshmukh Sarvottam Panchayat Satat Vikas Puraskar**: Awarded to the top 3 GPs, Block Panchayats (BPs), and District Panchayats (DPs) with the highest average score across all 9 themes.

- **Gram Urja Swaraj Vishesh Panchayat Puraskar**: Awarded to the top 3 GPs for their significant contributions to adopting and utilizing renewable energy sources.
- **Carbon Neutral Vishesh Panchayat Puraskar**: Given to the top 3 GPs for their efforts in achieving net-zero carbon emissions.
- **Panchayat Kshamta Nirmaan Sarvottam Sansthan Puraskar**: Awarded to the top 3 institutions that have provided exemplary institutional support to Panchayats in achieving the **Localization of Sustainable Development Goals (LSDGs).**

SNAKE BITE AS A NOTIFIABLE DISEASE

Context

The Ministry of Health and Family Welfare (MoHFW) has declared snakebite envenoming a notifiable disease.

About:

- Notifiable diseases are those that healthcare providers are **legally obligated to report to public health authorities.** This allows for surveillance, outbreak detection, and timely intervention.
- Other **notifiable diseases in India include: AIDS, Hepatitis, Dengue, Cholera etc.**
- The World Health Organization's International Health Regulations (IHR) require countries to report certain disease outbreaks and public health events to the WHO.
- **National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE):** It aims to halve snakebite-related deaths and disabilities by 2030 and making Snakebite a Notifiable disease is a good step in this regard.

LIC'S BIMA SAKHI YOJANA

Context

The Prime Minister has launched the 'Bima Sakhi Yojana' of Life Insurance Corporation in Haryana.

About

- It is designed to **empower women aged 18-70 years**, who are **Class X pass.**
- They will **receive specialized training** and a **stipend for the first three years** to promote **financial literacy and insurance awareness.**
- **They can serve as LIC agents and the graduate Bima Sakhis** would have the opportunity to qualify for being considered for Development Officer roles in LIC.

Life Insurance Corporation of India (LIC)

- **About:** It is the **largest life insurance company in India** and one of the oldest, having been established in **1956.**
- **Established:** by the **merger of more than 200 private life insurance companies** and provident societies.
- **Objective:** To spread life insurance across the country and making it accessible to every segment of the population.

HIGH-RISK FOOD CATEGORY

Context

FSSAI has categorised the packaged drinking water as 'high-risk food'.

About

- High risk foods are ready-to-eat items that can support **pathogen growth**, requiring careful handling and separation from raw foods.
- High-risk foods are often linked to **food poisoning outbreaks.**
- **Other Products in this category:** dairy products, meat, fish, eggs, prepared foods, sweets and fortified rice kernels.
- Businesses in the **high-risk food category** are required to undergo **annual audits** by FSSAI-recognised **third-party** food safety agencies.

Food Safety and Standards Authority of India (FSSAI)

- **Nature:** It is an **autonomous body** under the **Ministry of Health and Family Welfare.**
- **Established: In 2008** under **Food Safety and Standards Act, 2006** ensuring proper regulation, storage and distribution of food for consumption.

PRAGATI PLATFORM

Context

A recent study by Oxford University's Saïd Business School (SBS) has lauded the PRAGATI (Pro-Active Governance and Timely Implementation) infrastructure monitoring system.

Findings of the Study

- **Impact on Infrastructure Development:** PRAGATI fast-tracked 340 projects worth $205 billion, resolving challenges like land acquisition and inter-ministerial coordination. It enabled the timely completion of essential infrastructure, including roads, railways, water supply, and electricity.

- **Technological Innovation:** The initiative used real-time data, drone feeds, and video conferencing to accelerate decisions and streamline projects. It prioritized sustainability by promoting green technologies and simplifying environmental clearances.
- **Economic Transformation:** Infrastructure spending under PRAGATI boosts GDP by ₹2.5 to ₹3.5 for every rupee spent, as reported by RBI and financial studies.
- **Social Benefits:** The program improved quality of life by delivering essential services and ensuring inclusive development. It fostered accountability and a collaborative "Team India" approach to address bureaucratic delays.
- **Lessons for Global Development:** PRAGATI serves as a governance model for nations tackling development hurdles, especially those trapped in the Middle-Income category.

PRAGATI

- It is a multi-purpose, multi-modal platform launched on March 25, 2015, to address public grievances and monitor key government programmes and projects.
- Developed in-house by the **PMO** with support from the **National Informatics Center (NIC)**, it promotes e-transparency and e-accountability by enabling real-time communication among stakeholders.

Key Features:
- **Three-Tier System**: Involves the PMO, Union Government Secretaries, and Chief Secretaries of States.
- **Monthly Interaction**: The Prime Minister holds video conferences with Union and State officials on the fourth Wednesday of each month, known as PRAGATI Day.
- **Integrated Technology**: Combines digital data management, video conferencing, and geospatial technology for efficient decision-making.
- **Focus Areas**: Issues are selected from public grievances, ongoing programmes, and pending projects. Updates and comments from officials are reviewed before the PM's interaction.
- **Unified Platform**: Integrates databases like CPGRAMS (for grievances), the Project Monitoring Group (PMG), and the Ministry of Statistics and Programme Implementation.

REMOVAL OF VICE PRESIDENT

Context

After 60 INDIA bloc MPs submitted a notice in the Rajya Sabha to seek the removal of Vice President Jagdeep Dhankhar, the Deputy Chairman rejected it calling the petition "seriously flawed."

Reasons behind the Rejection of Motion

- **Timing Issue: Article 67(b)** of the Constitution requires at least 14 days prior notice for a resolution to remove the Vice-President.
  - The December 10, 2024 notice would only allow such a resolution after December 24. However, the Winter Session was scheduled to end on December 20.
- **Spelling Error:** Mr. Dhankhar's name was spelled incorrectly.
- **Defamatory Intent**: Seen as an attempt to tarnish the Vice-President's reputation and undermine the constitutional office.

Article 67(b)

Removal Process of Chairman of Rajyasabha/Vice President

- The removal resolution must start in the Rajya Sabha, not the Lok Sabha.
- It requires 14 days' advance notice.
- It must pass in the Rajya Sabha with an **Effective Majority** (majority of all the then members of the Council) and in the Lok Sabha with a Simple Majority.
- During the discussion, the Chairman cannot preside but can attend, speak, and participate, though they cannot vote.

Deputy Chairman of Rajya Sabha	
Feature	**Details**
Constitutional Basis	Article 89 of the Constitution
Election	Elected by Rajya Sabha members from among themselves
Vacancy	Filled by a new election whenever the position becomes vacant
Reasons for Vacating Office	● Ceases to be a Rajya Sabha member ● Resigns (writing to Chairman) ● Removed by resolution (14 days' notice)
Functions	● Performs duties of Chairman when vacant or absent ● Acts as Chairman when VP is President
Accountability	Responsible directly to the Rajya Sabha
Independence	Not subordinate to the Chairman
Salary and Allowances	Fixed by Parliament and charged on the Consolidated Fund of India

COMPETITION COMMISSION OF INDIA (CCI)

Context

The Competition Commission of India (CCI) passed an order under the Competition Act, 2002 against the Table Tennis Federation of India (TTFI) and its affiliate bodies.

About

- The **Table Tennis Friendly Super League Association** has alleged that TTFI and its affiliates are using anti-competitive practices.
- The Commission found that the TTFI and its affiliates violated **the Act** by restricting table tennis tournaments and preventing players from participating through WhatsApp advisories, public notices, and anti-competitive bye-laws.

Competition Commission of India (CCI)

- **Nature:** It is a **statutory body** established in 2009 by the Government of India under the **Competition Act, 2002**.
- **Composition:** Chairperson and not less than two and not more than six other members.
- **Functions under:** Ministry of Corporate Affairs (MCA)
- **Responsibilities:**
  - Eliminate practices having adverse effect on competition,
  - Promote and sustain competition,
  - Protect the interests of consumers
  - Ensure freedom of trade in the markets of India
  - Establish a robust competitive environment.

JAL JEEVAN MISSION (JJM) EMPOWERING WOMEN

Context

Prime Minister Narendra Modi highlighted the Jal Jeevan Mission's role in empowering women, particularly in rural areas.

Role of JJM in Women Empowerment

- **Time Savings:** Women traditionally bear the responsibility of fetching water, often walking long distances. Jal Jeevan Mission frees up their time, allowing them to engage in other activities like **education, skill development, or income generation.**
  - A r**eport by SBI shows**: 7.4 percentage point increase in women's participation in productive activities.
- **Health and Well-being:** Access to clean water reduces the risk of waterborne diseases, improving the health of women and their families. This leads to increased productivity and overall well-being.
- **Economic Opportunities:** With more time and better health, women can participate more actively in the workforce, contributing to household income and economic growth.
  - The SBI report highlighting increased female workforce participation in agriculture and other sectors is a testament to this.
- **Education:** Girls who previously had to miss school to fetch water can now attend regularly, leading to improved educational outcomes and better future prospects.

- **Social Status:** By reducing the burden of water collection, the Jal Jeevan Mission enhances the social standing of women and gives them a greater voice in their communities.

Jal Jeevan Mission (JJM)

- **Started in:** 2019
- **Nodal Ministry:** Ministry of Jal Shakti
- **Objective:** To provide **every rural household in India** with a functional **tap water connection by 2024.**
  - Develop **"WASH enlightened villages"** where local communities are equipped to provide long-term assured water supply and sanitation services to all residents.
- **Progress and Achievements:** Significant increase in tap water connections: From 3.23 crore (17%) households in 2019 to over 15.35 crore (79.31%) households in October 2024.
  - 100% Coverage in several states/UTs
- **Key components:** Water quality, source sustainability, greywater management – demonstrate a holistic approach to water management.

ONE CANDIDATE, MULTIPLE CONSTITUENCIES

> ### Context
>
> *Amidst ongoing political debates, one important issue often overlooked is the practice of One Candidate Contesting from Multiple Constituencies (OCMC) for the same office.*

About

- The Constitution empowers Parliament to regulate the conduct of elections in India.
- **The Representation of the People Act (RPA), 1951** governs electoral contests under which;
  - **Until 1996,** there was no limit on the number of constituencies a candidate could contest from in a single election.
  - **Parliament amended the Act,** allowing candidates to contest from a **maximum of two constituencies.**
- Despite these changes, **the practice persists**, particularly in State Legislative Assembly elections. For instance, around 44 by-elections were held for State Assemblies in November 2024 due to legislators vacating seats.

Recommendations for Reform by Election Commission of India (ECI)

- **Amend Section 33(7) of RPA, 1951** to ban candidates from contesting multiple constituencies.

- The **255th Law Commission Report (2015)** also proposed the same.
- **Recover Costs of By-elections:** Impose the full cost of by-elections on candidates vacating a seat.

SUPPLEMENTARY DEMANDS FOR GRANTS

> ### Context
>
> *The Lok Sabha has approved the Supplementary Demands for Grants-First Batch for 2024-2025.*

About

- **Definition:** The Supplementary Demand for Grants refers to an additional funding request made by the government when the allocated funds for a particular purpose in the annual budget are insufficient or when a need arises for unforeseen expenditure during the financial year.

Other Types of Grants in India

- **Additional Grant:** Given when extra money is needed for a new service not planned in the current year's budget.
- **Excess Grant:** Approved when more money is spent on a service than was allocated in the budget.
  - Voted on by the Lok Sabha after the financial year and requires approval from the Public Accounts Committee first.
- **Vote of Credit:** Provided to handle unexpected large-scale expenses where detailed estimates can't be prepared.
  - Acts like a "blank cheque" given to the government by the Lok Sabha.
- **Exceptional Grant:** Allocated for a specific, one-time purpose not related to regular services in any financial year.
- **Token Grant:** Given when funds for a new service can be arranged by transferring money from other budget heads (reappropriation).
  - A token amount (like Re 1) is requested and approved to enable the transfer.
  - This process does not require extra funds.

Additional Information

- **Article 115** of the Constitution deals with supplementary, additional, and excess grants.
- **Article 116** addresses votes on account, votes of credit, and exceptional grants.

Note: The procedure for supplementary, additional, excess, and exceptional grants, as well as votes of credit, follows the same process as the regular budget.

RADHAKRISHNAN PANEL RECOMMENDS RESTRUCTURING OF NTA

Context

A high-level committee of experts, headed by former chairperson of ISRO K. Radhakrishnan, has recommended restructuring of the National Testing Agency (NTA).

Need For the Reforms

➲ **Question Paper Leaks and Malpractices:** Compromised exam security leads to question paper leaks, giving unfair advantages to some students. For *Example:* NEET-UG Paper Leak, UGC Net irregularities etc.
  ◆ Manipulation of marks, like arbitrary awarding of grace marks, creates an uneven playing field.
➲ **Exam Cancellations and Technical Glitches:** Frequent exam cancellations due to these issues lead to delays, added stress, and financial burdens for aspirants.
➲ **Lack of Transparency:** Variations in difficulty levels across different exam sessions raise concerns about fairness and comparability.
➲ **Normalization Issues:** The process of normalizing scores to account for varying difficulty levels can be opaque and lead to disputes.
➲ **Other Challenges:** Like allegations of political interference, instances of corruption, like the Vyapam scam etc.
➲ **Loss of Trust:** These problems erode public trust in the examination system and its ability to conduct fair assessments.

Key Recommendations of Panel for Exam Reforms

➲ **Examinations Conducted:** NTA from **2025** will conduct only entrance exams for higher education institutions and **not recruitment exams.**
➲ **Restructuring of NTA:** 10 new posts covering administration, digital infrastructure, IT security being created in an effort aimed at an **error-free examination process for students.**
➲ **Digi- Exam:** On the lines of Digi-Yatra, to make the examination process foolproof, authentication at the stages of application, test, admission.
➲ **Governing Body:** It recommended to set up an empowered and accountable governing body with three designated sub-committees to oversee test audit, ethics and transparency, nomination and staff conditions.
➲ **Coordination Committee:** It recommends that Coordination Committees at State and District levels may be set up with specified roles and responsibilities.
➲ **Test Centres:** The panel also recommended usage of **Kendriya Vidyalayas (KVs) and Jawahar Navodaya Vidyalayas (JNVs) across the country as test centres.**

➲ **Secure Question Paper Transportation:** This includes the use of secure courier services, sealed by authorized officials and validated by the NTA before dispatch.
  ◆ Containers must be locked, monitored during transit, and handed over at test centers under CCTV surveillance and NTA supervision.

PRASHASAN GAON KI ORE CAMPAIGN

Context

The Prime Minister highlighted the importance of the "Prashasan Gaon Ki Ore" campaign during Good Governance Week, emphasizing its role in bringing effective governance to rural areas and strengthening grassroots democracy.

About

➲ It is the Nation-wide campaign for Redressal of Public Grievances and Improving Service Delivery.
➲ The **Department of Administrative Reforms and Public Grievances** is coordinating the **2024 campaign.**
➲ **Covered Areas:** It is being conducted in all North Eastern States.
  ◆ It is also being conducted in all the Union Territories of Jammu & Kashmir, Ladakh, Andaman & Nicobar, Lakshadweep, Dadra & Nagar Haveli, and Daman and Diu.
➲ **Key Activities:**
  ◆ Public grievances redressed in Special Camps
  ◆ Public grievances redressed in CPGRAMS
  ◆ Public grievances redressed in the State portals
  ◆ Service Delivery applications disposed
  ◆ Collation and dissemination of Good Governance practices
  ◆ Success stories on resolution of public grievances

UNION GOVERNMENT ENDS NO-DETENTION POLICY

Context

The Centre has scrapped the no-detention policy in schools for classes 5 to 8.

About

➲ The decision will impact around **3,000 Central schools,** owned or controlled by the Central Government, or the administrator of the Union Territory, having no legislature.
➲ It includes Kendriya Vidyalayas and Jawahar Navodaya Vidyalaya , Sainik Schools and Eklavya Model Residential Schools.

New Rules Under the Ministry of Education

- **Amendment Notification:** The Ministry has amended the **Right of Children to Free and Compulsory Education Rules, 2010,** to include detention provisions.
  - Students failing regular exams in **Classes 5 and 8** must receive additional instruction and a re-examination within 2 months.
  - If they fail the re-exam, they may be detained.
- **Responsibility of Teachers and Schools:** Teachers must guide detained students and their parents, offering specialized support to address learning gaps.
  - School heads are responsible for maintaining a list of detained students and closely monitoring their progress.
- **Exam Format:** Exams and re-exams must be **competency-based,** focusing on holistic development rather than just memorization.
- **Key Safeguard:** No child can be **expelled** from school before completing elementary education.

Legislative and Policy Background

- **Right to Education (RTE) Act, 2009:** Section 16 prohibited detaining students up to Class 8.
- **Amendment in 2019:** Allowed states and UTs to decide on detaining students in **Classes 5 and 8** if they fail re-exams.
- **Current Situation:** 18 states/UTs have removed the no-detention policy since the 2019 amendment.

NATIONAL CONSUMER DAY, 2024

Context

The Union Minister launched several key initiatives on national consumer day aiming at enhancing consumer protection and ensuring consumer rights.

About

- In India, National Consumer Day is celebrated annually on **December 24th** to commemorate the enactment of the **Consumer Protection Act, 1986, (replaced by Consumer Protection Act 2019)** which received the assent of the President on this date.
- The **2024 National Consumer Day** theme is "Virtual Hearings & Digital Access to Consumer Justice," reflecting the government's focus on improving consumer justice through digital platforms like e-filing and virtual hearings.

New Initiatives

- **Launch of Consumer Protection Apps:** The 'Jago Grahak Jago App,' 'Jagriti App,' and 'Jagriti Dashboard' will help identify and report "dark patterns" in e-commerce, which manipulate consumer behavior.

- These tools use AI and will support the Central Consumer Protection Authority (CCPA) in resolving consumer disputes efficiently.
- **e-Mapp Portal**: A unified digital platform will integrate state legal metrology portals, easing licensing and verification processes for businesses and enhancing transparency.
- **AI-enabled NCH 2.0**: The National Consumer Helpline Portal is being upgraded with AI-powered chatbots and multilingual support to offer improved grievance resolution.
- **SMART Standards:** The Bureau of Indian Standards (BIS) will introduce machine-readable standards that are interactive, intelligent, and dynamic, transforming how standards are created and used.

BIS and CCPA

Bureau of Indian Standards (BIS):

- **Establishment:** BIS is the **National Standards Body** of India, created under the **BIS Act, 2016.**
- **Objective:** To promote the **harmonious development** of standardization and quality assurance for goods and articles.
- **Ministry:** It operates under the **Ministry of Consumer Affairs, Food & Public Distribution.**
- **Functions of BIS):**
  - **Standard Formulation:** Develops and publishes Indian Standards for goods, services, and systems to ensure quality and safety.
  - **Product Certification:** Provides certification to products conforming to Indian Standards through the ISI mark.
  - **Hallmarking:** Certifies the purity of precious metals like gold and silver through hallmarking.
- **International Representation:** BIS represents India in the **International Organization for Standardization (ISO)** and the **International Electrotechnical Commission (IEC).**

Central Consumer Protection Authority (CCPA):

- **Statutory Organisation:** Established under **Consumer Protection Act, 2019** to safeguard consumer rights, curb unfair trade practices, and address false or misleading advertisements.
- **Nodal Ministry**: Ministry of Consumer Affairs, Food & Public Distribution.
- **Composition**: Led by a Chief Commissioner with two members (one for goods and one for services).
- **Powers:**
  - Protect and enforce consumer rights.
  - Prevent unfair trade practices.
  - Regulate and penalize false or misleading advertisements.
  - Initiate class actions, recall products, and order refunds.
  - Conduct investigations via its investigation wing, headed by a Director-General.
  - The CCPA can take **suo-moto** actions and pass orders to discontinue unfair practices.

APPOINTMENT OF NHRC CHAIRPERSON

Context

The President of India appointed retired Supreme Court Justice V. Ramasubramanian as the Chairperson of the National Human Rights Commission (NHRC), filling the vacancy that had existed since June 2024.

About

➲ **Established:** 12 October 1993 under the **Protection of Human Rights Act (PHRA), 1993.**

➲ **International Standards:** NHRC follows the **Paris Principles,** adopted in October 1991 and endorsed by the UN General Assembly.

➲ **Constitution:** The NHRC consists of a **Chairperson, five full-time Members,** and **seven deemed Members.**

➲ **Appointments:**
   ◆ The **President of India** appoints the Chairperson and Members based on recommendations from a committee.
   ◆ The committee includes the **Prime Minister** (Chairperson), **Speaker of Lok Sabha, Home Minister, Opposition Leaders** in both Lok Sabha and Rajya Sabha, and the **Deputy Chairman of Rajya Sabha.**

Qualifications of Members of NHRC	

The qualifications of full-time members of the National Human Rights Commission (NHRC) are as follows:

Position	Qualification
Chairperson	A retired Chief Justice of India or a Judge of the Supreme Court
1st Member	A serving or retired Judge of the Supreme Court
2nd Member	A serving or retired Chief Justice of a High Court
3rd, 4th, and 5th Members	Persons having knowledge or practical experience with respect to human rights

NOTE: Out of the three (3rd, 4th, and 5th members), at least one should be a woman.

➲ **Purpose:**
   ◆ NHRC reflects India's commitment to promoting and protecting **human rights.**
   ◆ It works on raising **human rights awareness** nationally and internationally, encouraging **human rights literacy** among stakeholders.

Definition of Human Rights

Section 2(1)(d) of the PHRA defines human rights as those related to life, liberty, equality, and dignity of individuals, guaranteed by the Constitution or embodied in international covenants, and enforceable by courts in India.

REMOVAL OF HC JUDGES

Context

Over 55 Rajya Sabha MPs sought Allahabad High Court Judge Justice Shekhar Kumar Yadav's impeachment over remarks against the Muslim community at a Vishwa Hindu Parishad event.

About: Mechanism for Removal of Judges

➲ **Constitutional Provisions:**
   ◆ A judge may be removed from office through a motion adopted by Parliament on grounds of 'proven misbehaviour or incapacity'.
   ◆ Although the Constitution does not explicitly use the term **'impeachment',** it is commonly applied to the procedures under **Article 124** (for the removal of a Supreme Court judge) and **Article 218** (for the removal of a High Court judge).
   ◆ A judge can only be removed by an order of the **President**, following a motion passed by both Houses of Parliament.

➲ **Procedure for Removal of Judges:**
   ◆ The procedure for removal is detailed in the **Judges Inquiry Act, 1968**, which outlines the steps for removing a judge from office.
   ◆ The motion for impeachment must be signed by **50 members of the Rajya Sabha** or **100 members of the Lok Sabha**.
   ◆ Once admitted, an **inquiry committee** is formed to investigate the charges.
   ◆ The committee consists of:
      ◆ A Supreme Court judge
      ◆ The Chief Justice of a High Court
      ◆ A distinguished jurist
   ◆ If the charges are found to be true, the motion is presented to both Houses of Parliament.
   ◆ The motion must be passed by:
      ◆ A majority of the members in the House.
      ◆ Two-thirds of those present and voting in the same session.
      ◆ Even if the charges are substantiated, Parliament is not obligated to remove the judge.
      ◆ Ultimately, the **President** issues the order for the judge's removal.
   ◆ **Judge's Rights:** The judge has the **right to be heard** but this is not available at the time the motion is admitted. During the inquiry, the judge has the full right to **defend** themselves.

➲ **In-House Procedure:** Established in **1999** and publicly released in **2014**, the in-house procedure includes the following steps:
   ◆ Submission of a complaint to the **President**, **Chief Justice of India (CJI)**, or **High Court Chief Justice**.

- A fact-finding committee, consisting of senior judges, conducts an inquiry if the allegations are serious.
- If the judge refuses to voluntarily retire, the process may escalate to impeachment or a recommendation for voluntary retirement.

Some Principles of Judicial Code of Conduct

- ➲ **1985 UN Basic Principles on the Independence of the Judiciary:**These principles aim to narrow the gap between the ideal and practical aspects of judicial independence, ensuring that:
  - Justice is upheld
  - Human rights are safeguarded
  - Courts function without discrimination
- ➲ **Restatement of Values of Judicial Life (1997):**A code of judicial ethics, consisting of 16 points, adopted by the Supreme Court. It emphasizes the importance of impartiality and conduct that strengthens public trust in the judiciary.
- ➲ **Bangalore Principles of Judicial Conduct (2002):**The UN Economic and Social Council (ECOSOC) introduced a resolution to enhance the 1985 UN Basic Principles.This resolution calls for judges to uphold dignity, impartiality, and independence, while also respecting societal diversity.

PM-ABHIM SCHEME

Context

The Delhi High Court directed the Delhi government to sign a Memorandum of Understanding (MoU) with the Ministry of Health and Family Welfare for the implementation of the PM-ABHIM.

About: Pradhan Mantri - Ayushman Bharat Health Infrastructure Mission (PM-ABHIM)

- ➲ It was launched on 25th October 2021 with an outlay of Rs. 64,180 Crore.
  - To be implemented over five years (2021-2026).
- ➲ It includes both **Centrally Sponsored Scheme (CSS) and Central Sector (CS)** components.
- ➲ It focuses on improving health systems at primary, secondary, and tertiary care levels, and preparing for future pandemics.
- ➲ **Objectives:** Aims to strengthen public health infrastructure, surveillance, and health research across urban and rural areas.
- ➲ **Key Measures under PM-ABHIM:** Support for States/UTs to build Ayushman Arogya Mandirs (AAM) in rural and urban areas.
  - Strengthening of Block Public Health Units and Integrated District Public Health Labs.

- Development of Critical Care Hospital Blocks.
- Enhancing surveillance, health emergency response, research, and pandemic preparedness.
- One Health approach to manage infectious diseases in humans and animals.

PM AYUSHMAN BHARAT HEALTH INFRASTRUCTURE MISSION

Largest Ever Scheme to Scale-up Health Infrastructure

Prime Minister Narendra Modi has ensured a transformation in healthcare in the past seven years

Ayushman Bharat PMJAY & Ayushman Bharat Health & Wellness Centers brought scale while Ayushman Bharat – Digital Mission brings technology to healthcare

"Every Indian deserves accessible, affordable and high-quality healthcare. We have worked to ensure this through multi-dimensional interventions.
- Prime Minister Narendra Modi

Rs 64,000 crore to be invested in building healthcare infrastructure

PM AYUSHMAN BHARAT HEALTH INFRASTRUCTURE MISSION

Multi-dimensional and Multi-modal Interventions
- Focus on critical and primary care
- Network of 29,000 Health and Wellness Centers
- Specialized Critical Care Hospital Blocks in all districts with 37,000 beds with ICUs, ventilators and oxygen support
- Over 4,000 Block & District level Public Health Units & Labs
- Full range of diagnostic services in all districts
- IT-enabled disease surveillance system

Institutional Approach to Holistic Healthcare
- National Institution for One Health
- 4 New National Institutes for Virology
- Regional Research Platform for WHO South East Asia Region
- 15 Biosafety Level 3 Labs
- 5 New Regional National Centre for Disease Control
- Public health units at 50 international entry points preventing public health emergencies and disease outbreaks

RAILWAYS (AMENDMENT) BILL, 2024

Context

Recently, the Lok Sabha passed the Railways (Amendment) Bill, 2024.

Key Provisions of the Bill:

- ➲ Creation of the **Railway Board**: A body to manage Indian Railways with members appointed by the central government, with specified qualifications and terms of service.
- ➲ **Autonomy to Railway Zones**: Grants more power to railway zones for better operational efficiency and decentralized decision-making.
- ➲ **Independent Regulator**: An autonomous regulator will oversee tariffs, safety, and private sector involvement in Indian Railways.
- ➲ **Organizational Structure Retained**: The existing structure of Indian Railways will remain unchanged.

Potential Impacts:

- Enhanced functioning and independence of the Railway Board.
- Faster decision-making due to decentralization and empowerment of railway zones.
- Increased transparency and accountability with an independent regulator.
- Possible rise in fares and reduced government subsidies due to increased private sector involvement.

Facts Related to Railway Sector

- India has one of the **world's largest rail networks** in terms of passenger traffic.
- India has the **4th largest railway system** in the world, behind only the **US, Russia and China.**
- The Indian Railways consists of a total track length of **126,366 km** with 7,335 stations.
   - **5100 km** of track length was achieved during **2023-24.**

PARDONING POWER OF U.S. PRESIDENT

Context

President Joe Biden granted an unconditional pardon to his son Hunter Biden for tax and gun convictions.

U.S. President's Pardon Procedure

- The U.S. President has the power to grant pardons for **federal criminal offenses** under the U.S. Constitution, **except in cases of impeachment**. However, It does not erase the criminal record but alleviates penalties and restores certain rights.
- **Discretionary Nature:** The president has unilateral clemency authority, independent of Congressional approval.
   - Discretionary powers refer to the authority granted to a person or body to act according to their own judgment and choice, without requiring prior approval or adherence to strict rules.

DIFFERENCE BETWEEN STATUTORY AND CONSTITUTIONAL POWER	
Statutory Power	➲ Under the Bharatiya Nagrik Suraksha Sanhita, the **"appropriate government"** can grant remission or commutation. ➲ For cases investigated by Central agencies like the CBI, the State must consult the Central government.
Constitutional Power	➲ Under Articles 72 and 161, the President and Governor act on the advice of the govt. to grant clemency, not independently.

NOTE: *The two powers (statutory and constitutional) are separate, as clarified by the Supreme Court in Maru Ram (1980) cases and Kehar Singh (1988) cases. The Supreme Court has ruled it can be subject to judicial review in cases of arbitrariness or improper motives.*

COMPARISON OF PARDONING POWERS OF US PRESIDENT AND INDIAN PRESIDENT		
Feature	**India**	**United States**
Source of Power	Article 72 of the Constitution	Article II, Section 2 of the Constitution
Scope	Both federal (Union) and state crimes	Federal crimes only
Death Penalty	President can pardon death sentences, including those imposed by states	President can only pardon federal death sentences; Governors hold this power for state crimes
Role of Executive Branch	President acts on the advice of the Council of Ministers	President has unilateral authority
Judicial Review	Limited judicial review; courts can examine the process but generally not the decision itself	Courts can review pardons in cases of suspected corruption or abuse of power
Limitations	Cannot pardon someone impeached by Parliament	Cannot pardon someone impeached and convicted by Congress
Other Considerations	Includes powers of reprieve, remission, commutation, and respite	Similar forms of clemency exist (reprieve, commutation, remission)

INDIA RE-ELECTED TO U.N. PEACEBUILDING COMMISSION

Context

India has secured its re-election to the United Nations Peacebuilding Commission (PBC) for the 2025-2026 term, reaffirming its commitment to global peace initiatives.

About

➲ PBC is an intergovernmental advisory body formed in 2005 by the adoption of a resolution by the General Assembly and Security Council to support peace efforts in conflict-affected countries.

➲ It is composed of **31 Member States,** elected from the General Assembly, the Security Council, and the Economic and Social Council.

➲ **Mandate:**

  ◆ It brings together relevant actors to mobilize resources and propose integrated post-conflict peacebuilding and recovery plans.

  ◆ It makes recommendations to improve coordination among major stakeholders and ensure predictable funding for early recovery activities.

  ◆ It focuses on the reconstruction and institution-building efforts required for post-conflict recovery.

  ◆ It encourages an integrated, strategic, and compressive approach to peacebuilding, emphasizing the interdependence of security, development, and human rights.

India's Contributions to UN Peacekeeping

➲ India has a rich legacy of contribution to UN Peacekeeping operations and is one of the largest contributors of troops.

➲ It has contributed approximately 2,75,000 troops to peacekeeping missions so far, with around 5,900 troops currently deployed in 12 UN Missions.

SUPPLY CHAIN RESILIENCE AGREEMENT (PILLAR-II)

Context

India participated in the 2nd meeting of the Supply Chain Council (SCC) as Vice-Chair, under India-Pacific Economic Framework (IPEF)

About

➲ India signed the **Supply Chain Resilience Agreement (Pillar-II)** in November 2023 under the Indo-Pacific Economic Framework for Prosperity (IPEF).

➲ **Supply Chain Resilience Agreement:**

  ◆ The Agreement aims to enhance supply chains critical to national security and economic stability.

  ◆ It officially came into effect on February 24, 2024.

  ◆ As part of the agreement, the Supply Chain Council (SCC) was established, with India serving as Vice Chair and the United States as Chair.

Indo-Pacific Economic Framework for Prosperity (IPEF)

➲ **Launched in:** 2022, in Tokyo, Japan.

➲ **Member Countries (14):** Australia, Brunei, Fiji, India, Indonesia, Japan, South Korea, Malaysia, New Zealand, Philippines, Singapore, Thailand, Vietnam, and the USA.

➲ **Objective:** To enhance economic engagement and cooperation among member countries, aiming to promote growth, economic stability, and prosperity in the region.

➲ **Initiatives under IPEF:**

  ◆ **IPEF Upskilling Initiative:** Focuses on empowering women and girls in emerging and middle-income partner countries of IPEF through skill development programs.

  ◆ **Critical Mineral Dialogue:** Aims to strengthen the critical mineral supply chain and promote sustainable mining practices across the region.

➲ **4 Pillars under IPEF:**

  ◆ Trade (Pillar I)

  ◆ Supply Chain Resilience (Pillar II)

  ◆ Clean Economy (Pillar III)

  ◆ Fair Economy (Pillar IV)

➲ **At present , India has joined Pillars II to IV of IPEF** while it has maintained an observer status in Pillar-I.

INTERNATIONAL ADVISORY BODY FOR SUBMARINE CABLE RESILIENCE

Context

The International Telecommunication Union (ITU) and the International Cable Protection Committee (ICPC) have jointly launched the International Advisory Body for Submarine Cable Resilience.

About

- **Aim:** To Strengthen the resilience of submarine cables.
- **Functions:**
  - Promote best practices among governments and industries to enhance cable resilience and minimize damage risks.
  - Offer strategic guidance to tackle challenges such as increasing data traffic, aging infrastructure, and environmental threats.
- **Members:** 40 members
  - Co-chaired by Nigeria and Portugal.
  - Will convene at least twice a year.

Submarine Cables and India's Role

- **Definition:** Submarine cables are fiber optic cables laid on the ocean floor, connecting two or more landing points across countries and continents.
- **India's Role:** India is a significant player in the global submarine cable network, with 17 international cables and 14 landing stations in cities like Mumbai and Chennai.
  - As of the end of **2022**, the total lit capacity and activated capacity of these cables stood at **138.606 Tbps** and **111.111 Tbps,** respectively.
- **Significance:** Submarine cables form the backbone of the global digital economy, carrying over 99% of international data exchange.
  - They support critical services like e-commerce, financial transactions, and global communications.

International Telecommunication Union (ITU)

- **Headquarter:** Geneva, Switzerland
- **Established:** In 1865 as the UN's specialized agency for information and communication technologies.
- **Functions:** Facilitates global connectivity in communication networks and manages the allocation of international radio spectrum and satellite orbits.
- **Membership:** Comprises 194 members, including India.

International Cable Protection Committee (ICPC):
- The ICPC, **founded in 1958,** is a global forum for governments and commercial entities involved in the submarine cable industry.
- Its **primary mission** is to enhance the security of undersea cables by providing a platform for exchanging technical, legal, and environmental information.

COMMISSION ON NARCOTIC DRUGS (CND)

Context

India, for the first time, has been chosen to Chair the 68th Session of the CND.

About

- **Principal Policy-Making Body:** The Commission on Narcotic Drugs (CND) is the primary policy-making body of the United Nations focused on drug-related issues.
- **Mandate:** The CND is tasked with monitoring global drug trends, assisting Member States in creating balanced drug policies, and overseeing the implementation of key international drug conventions.
- **Establishment:** In 1946 by a resolution of the United Nations Economic and Social Council (ECOSOC).
- **Members:** consists of 53 member states, which are elected by ECOSOC. The Commission is chaired by a Bureau that includes one member from each regional group.
  - Additionally, it has five subsidiary bodies: the Heads of National Drug Law Enforcement Agencies in Europe, Latin America and the Caribbean, Asia and the Pacific, Africa, and the Subcommission in the Near and Middle East.
- **Headquarters:** Vienna, Austria.

UN INTERNAL JUSTICE COUNCIL

Context

Retired Supreme Court judge Madan B Lokur has been appointed as the chairperson of the United Nations Internal Justice Council for a term ending on November 12, 2028.

About

- **Establishment:**
  - Created by the General Assembly as part of the United Nations' internal justice system.
  - Aims to ensure independence, professionalism, and accountability in the administration of justice within the UN.
- **Composition:** Consists of five members:
  - A staff representative.
  - A management representative.
  - Two distinguished external jurists (nominated by staff and management, respectively).
  - A chairperson, chosen by consensus by the other four members.
  - Members are appointed by the **UN Secretary-General.**
- **Responsibilities:**
  - Undertakes the search for suitable candidates for judge positions in the UN Dispute Tribunal (UNDT) and UN Appeals Tribunal (UNAT).
  - Conducts interviews and recommends two or three candidates for each vacancy to the General Assembly, ensuring geographical diversity.
  - Provides insights and recommendations to the General Assembly on implementing the system of justice

administration.

➲ **Appointment of Judges:**
  ◆ In accordance with General Assembly resolution 62/228, the judges of the UN Dispute Tribunal (UNDT) and the UN Appeals Tribunal (UNAT) are appointed by the General Assembly based on the recommendation of suitable candidates by the IJC.
  ◆ No two judges in any of the Tribunals can be of the same nationality.

UNITED KINGDOM JOINS COMPREHENSIVE AND PROGRESSIVE AGREEMENT FOR TRANS-PACIFIC PARTNERSHIP(CPTPP)

Context

Britain became the 12th member of the CPTPP, marking its most significant trade deal since Brexit.

About

➲ **Historical Context:** Originated as the **Trans-Pacific Partnership (TPP)**, a U.S.-led trade pact.
  ◆ It was renamed as the CPTPP after the **U.S. withdrew in 2017.**
  ◆ **Members:12 members** (Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore and Vietnam).

➲ **Objective:**
  ◆ Aims to eliminate or significantly reduce tariffs and make strong commitments to opening services and investment markets.

  ◆ It also has rules addressing competition, intellectual property rights and protections for foreign companies.
  ◆ The bloc accounts for about **15% of global GDP** and provides trade access to a market of more than **500 million people.**

PHEWA DIALOGUE

Context

Recently, Nepal and China launched the "Phewa Dialogue" series aimed at fostering regional prosperity, peace, and economic integration in South Asia.

About

➲ The **Phewa Dialogue** derives its name from the **renowned Phewa Lake**, one of Nepal's largest lakes, located in the **Pokhara Valley** (tourism capital of Nepal).
  ◆ The lake is fed by **perennial springs**, including Harpan Khola and Seti Khola, adding to its scenic and ecological significance.

Significance:

➲ The dialogue seeks to foster policies that advance regional prosperity and peace.
➲ It will address key issues impacting South Asia, such as industrial transformations and emerging priorities.
➲ This initiative underscores a dedication to strengthening economic integration across the region.

CPTPP SIGNATORIES, APPLICANTS

WINDFALL TAX

Context

Recently, the government abolished the windfall tax on crude oil, ATF, petrol, and diesel exports.

About:
- **Definition:**
  - A **windfall tax** is a higher tax imposed on specific industries that make unusual or above-average profits.
  - These profits, known as **windfall gains**, are unexpected increases in revenue due to external factors, rather than business expansions or investments.
  - Industries that are often affected by windfall taxes include those involved in **oil**, **gas**, and **mining.**
- **Common Scenarios:** Windfall taxes are applied during situations such as: Commodity shortages, Wars, Pandemics and Changes in government policy.
- **Objective:**
  - The primary goal of windfall taxes is to capture a portion of extraordinary profits perceived to exceed normal returns.
  - These profits, attributed to external circumstances, are seen as benefiting the public good by redistributing wealth.
  - Windfall taxes can also serve as an additional revenue stream for governments.
- **Examples of Windfall Taxes**: In addition to industries like oil and mining, some individual taxes, such as inheritance tax or taxes on lottery winnings or game-show prizes, can also be considered windfall taxes.
- **Reasons for Withdrawal of Windfall Tax**
  - **Global Stabilization:**
    - **Oil and fuel prices** dropped significantly (from over **$100** to under **$75 per barrel**).
    - **Supply flows** stabilized after initial shocks, reducing the need for a windfall tax.
  - **Domestic Market Conditions:**
    - **Robust fuel availability** in the domestic market made the tax less necessary.
    - Declining revenue from the tax due to market adjustments led to reconsideration of its application.
  - **Opposition to the Windfall Tax:**
    - **Resistance from Oil industry:** Companies claimed reduced profitability for publicly listed firms and argued that it discouraged oil production.

- **Unpredictable Tax Environment**: Frequent changes in levies led to uncertainty, deterring investment in a country heavily reliant on oil imports (85% dependency).
- **Decline in Revenue Collection**: As **global crude oil prices** softened, windfall tax revenues significantly declined:
  - **FY23**: ₹ 25,000 crore
  - **FY24**: ₹ 13,000 crore
  - **FY25 (so far)**: ₹ 6,000 crore
- **Impact on Key Stakeholders**
  - No significant **financial impact** on domestic producers (such as **ONGC** and **OIL**) or major exporters (e.g., **Reliance Industries** and **Nayara Energy**).
  - The withdrawal of the windfall tax signals confidence in **market stability** and reduced risks of **price surges** or **supply shocks.**

COASTAL SHIPPING BILL, 2024

Context

Recently, the Coastal Shipping Bill, 2024 was introduced in the Lok Sabha to enhance India's maritime transport infrastructure.

Background: Coastal Shipping in India
- **Overview:**
  - Coastal shipping refers to the transportation of goods and passengers along India's coastline, which spans approximately **7,517 kilometers** within territorial waters.
  - This sector is crucial to **global supply chains** and plays an important role in the economic growth of the country.
- **Port Management:**
  - **Major Ports**: These ports are directly managed by the **Central Government.**
  - **Minor/Intermediate Ports**: These are under the control and administration of the respective **State Governments.**
- **Regulatory Challenges:** The coastal shipping sector has been governed by **outdated laws** such as the **Coasting Vessel Act of 1838** and the **Merchant Shipping Act of 1958**, which are now considered to lack uniformity and fail to meet the evolving needs of the industry.

Key Provisions:
- **Scope of Coastal Waters**: The Bill seeks to regulate vessels operating within Indian coastal waters, which include territorial waters (up to 12 nautical miles, ~22 km) and adjoining maritime zones (up to 200 nautical miles, ~370 km).

- **Repeal of Previous Regulations:**
  - The Bill aims to repeal **Part XIV of the Merchant Shipping Act, 1958**, which governed non-sailing vessels involved in trade within coastal waters.
  - It now extends the regulation to include all types of vessels—**ships, boats, sailing vessels, and mobile offshore drilling units**, irrespective of whether they are self-propelled.
- **Expanded Definition of Coasting Trade**: The Bill broadens the definition of coasting trade, which previously referred to the **transportation of goods and passengers** within India, to also include the **provision of services** like exploration, research, and other commercial activities (excluding fishing).
- **Licensing Requirements:**
  - **Indian-owned Vessels**: Vessels wholly owned by Indian persons will not require a license for coasting trade.
  - **Non-Indian-owned Vessels**: Vessels not fully owned by Indians, including those hired by **Indian persons**, **NRIs**, or **OCIs**, require a license to engage in coasting trade, especially for operations between Indian and international ports or among international ports.
- **Director General of Shipping**: The **Director General of Shipping**, appointed by the central government, will issue licenses and may grant permission for vessels operating under the **Inland Vessels Act, 2021** to engage in coasting trade.
- **Revocation of Licenses**: The Director General can modify or revoke licenses if the terms are violated or if the vessel does not comply with existing laws or official directions.
- **Penalties:**
  - The Bill significantly increases fines for operating without a license. **Maximum fines** can reach **Rs 15 lakh** or **four times** the gains from unlicensed voyages, up from the previous fine of **Rs 1,000** under the Act.
  - Non-compliance with **Director General's directions** or failure to submit correct information is now punishable by a **civil penalty** up to **Rs 5 lakh** or **twice the gains** made from the contravention.
- **Detention of Vessels**: The Bill provides for the detention of vessels involved in violations like operating without a license or providing false information.
- **Compounding of Offenses**: The Bill restricts the ability to compound offenses, limiting it to violations like operating without a license or failing to provide information.
- **Strategic Plan**: The central government is required to create a National Coastal and Inland Shipping Strategic Plan within two years of the Act's commencement.
- **Exemption Powers**: The government may exempt certain classes of vessels from the Bill's provisions.

BANKING LAWS (AMENDMENT) BILL, 2024

Context

Recently, the Lok Sabha passed the Banking Laws (Amendment) Bill, 2024, aimed at strengthening the banking sector.

About

- It amends the: (i) Reserve Bank of India (RBI) Act, 1934, (ii) Banking Regulation Act, 1949, (iii) State Bank of India Act, 1955, (iv) Banking Companies (Acquisition and Transfer of Undertakings) Act, 1970, and (v) Banking Companies (Acquisition and Transfer of Undertakings) Act, 1980.

Key Provisions

- **Definition of Fortnight for Cash Reserves:**
  - Under the **RBI Act**, scheduled banks must maintain an average daily balance as cash reserves, based on the **fortnightly period** (from Saturday to the second following Friday).
  - The Bill **changes the definition of a fortnight** to the period from:
    - **First day to fifteenth day** of each month, or
    - **Sixteenth day to the last day** of each month.
  - This change also applies under the **Banking Regulation Act** for non-scheduled banks.
- **Tenure of Directors of Co-operative Banks:**
  - The **Banking Regulation Act** currently prohibits a director (except the chairman or whole-time director) from holding office for more than **eight years** consecutively.
  - The Bill proposes to **increase this period to 10 years** for directors of co-operative banks.
- **Prohibition on Common Directors for Co-operative Banks:**
  - Under the **Banking Regulation Act**, a director cannot serve on the board of another bank, except for directors appointed by the RBI.
  - The Bill extends this **exemption to directors of central co-operative banks**, allowing them to serve on the board of a **state co-operative bank** if they are a member.
- **Substantial Interest in a Company:**
  - The **Banking Regulation Act** defines **substantial interest** as holding **over ₹5 lakh or 10% of the paid-up capital** (whichever is less) in a company.
  - The Bill increases the threshold for substantial interest to **₹2 crore** and allows the central government to modify this amount.
- **Nomination:**
  - The **Banking Regulation Act** allows deposit holders to appoint a **single nominee** for deposits, articles, or lockers in case of death.

- The Bill allows the appointment of **up to four nominees**, either **successively** or **simultaneously**:
  - For **simultaneous nominations**, the nomination will be effective in a declared proportion.
  - For **successive nominations**, the first nominee will have priority.
- **Settlement of Unclaimed Amounts:**
  - Under the **State Bank of India Act** and the **Banking Companies (Acquisition and Transfer of Undertakings) Acts** of 1970 and 1980, unpaid or unclaimed dividends are transferred to the **Investor Education and Protection Fund (IEPF)** after **seven years.**
  - **The Bill widens the scope to include:**
    - Shares with unpaid dividends for **seven consecutive years.**
    - Unpaid interest or redemption amounts for bonds.
  - Individuals can **claim** the transfer or refund of their unclaimed amounts.
- **Remuneration of Auditors:**
  - Currently, the **RBI** fixes the remuneration for auditors of banks in consultation with the central government.
  - The Bill empowers banks to **decide their auditors' remuneration** independently.

OILFIELDS (REGULATION AND DEVELOPMENT) AMENDMENT BILL, 2024

Context

Recently, the Rajya Sabha passed the Oilfields (Regulation and Development) Amendment Bill, 2024, to regulate oilfields more effectively.

Key Provisions of the Bill

- **Expanded Definition of Mineral Oils:**
  - The Act defines **mineral oils** as including petroleum and natural gas.
  - The Bill expands this definition to include:
    - Naturally occurring hydrocarbons.
    - Coal bed methane.
    - Shale gas/oil.
  - It clarifies that **coal**, **lignite**, and **helium** are not included under mineral oils.
- **Introduction of Petroleum Lease:**
  - The Act provides for a **mining lease** for activities such as exploration, prospecting, production, and disposal of mineral oils.
  - The Bill replaces the mining lease with a **petroleum lease,** covering the same activities.
  - Existing mining leases under the Act will remain valid.

- **Rule Making Powers of the Central Government:**
  - The Act empowers the central government to make **Rules** on various matters, including:
    - Granting leases.
    - Terms and conditions of leases (e.g., minimum and maximum areas, lease period).
    - Conservation and development of mineral oils.
    - Oil production methods and collection of royalties, fees, and taxes.
  - The Bill retains these provisions and adds new Rules on:
    - Merger and combination of petroleum leases.
    - Sharing of production and processing facilities.
    - Environmental protection and emissions reduction obligations of lessees.
- **Decriminalisation of Offences:**
  - Under the Act, violations of Rules are punishable by:
    - Imprisonment of up to **six months.**
    - A fine of up to ₹**1,000.**
  - The Bill removes imprisonment as a penalty and instead imposes a **penalty of ₹25 lakh** for the violation of Rules.
  - Additional offences under the Bill include:
    - Engaging in petroleum-related activities (exploring, prospecting, production) without a valid lease.
    - Non-payment of royalty.
  - Continued violations will attract a **penalty of up to ₹10 lakh per day.**
- **Adjudication of Penalties:**
  - The central government will appoint an officer of the rank of **Joint Secretary or above** for adjudicating penalties.
  - Appeals against the decisions of the Adjudicating Authority will be heard by the **Appellate Tribunal** established under the **Petroleum and Natural Gas Regulatory Board Act, 2006.**

Petroleum and Natural Gas Regulatory Board (PNGRB)

- **Nature:** Statutory body formed under the **Petroleum and Natural Gas Regulatory Board Act, 2006.**
- **Functions:** Regulates the **refining, transportation, distribution, storage, marketing, supply, and sale** of petroleum products and natural gas. One key task is ensuring competitive markets for gas.
- **Appeals:** Appeals against PNGRB decisions are heard by the **Appellate Tribunal for Electricity**, as designated under the **Electricity Act, 2003.**

HOME PRICE INDEX (HPI)

Context

Recently, The All-India Home Price Index (HPI) of the Reserve Bank of India rose by 4.34% to 322 as of September 2024 as against 308.6 in September 2023.

About
- **Released By**: Reserve Bank of India (RBI)
- **Frequency**: Published quarterly
- **Base Year**: 2010-11
- **Coverage**: Tracks the price movements of residential property in **ten major cities** in India: Ahmedabad, Bengaluru, Chennai, Delhi, Jaipur, Kanpur, Kochi, Kolkata, Lucknow & Mumbai.
- **Data Source**: Official property price transaction data collected from **registration authorities** of respective state governments.

Key Findings:
- **HPI Growth:**
  - Over the last ten years, the HPI has increased by nearly 67%, from 193.05 in 2014-15, amid challenges like the pandemic, high inflation, and interest rates.
- **City-Specific Growth:**
  - Bengaluru saw the highest annual growth in home prices at 8.76%.
  - Conversely, Kanpur experienced a decline in home prices by -2.0%.
  - On a quarter-on-quarter basis, the all-India HPI decreased by 0.1% in September 2024, while Ahmedabad, Lucknow, Kolkata, and Chennai recorded a sequential rise.
- **Regional Highlights:**
  - **Mumbai:** Home prices rose by 2.95% to 303.62 in September 2024, compared to 294.92 in the previous year.
  - **Delhi**: Home prices increased by 3.31% to 350.40 from 339.16.
  - **Bengaluru**: Home prices surged by 8.76% to 360.11 from 331.08.
- **Average Housing Price Increase:**
  - The average housing price across eight major markets in India rose by 11% year-on-year, reaching 11,000 per sq ft during Q3 of 2024, driven by strong demand and positive market sentiment.
  - Delhi NCR saw the highest rise in housing prices at 32%, followed by Bengaluru, with a 24% increase.
  - Housing prices have increased for 15 consecutive quarters since 2021.

NATIONAL LEGAL METROLOGY PORTAL

Context

Department of Consumer Affairs, is developing the National Legal Metrology Portal (eMaap).

About
- **Aim:** To streamline the processes involved in issuing licenses, conducting verifications, and managing enforcement and compliance.

- **Benefits:**
  - **Ease of Doing Business**: Simplifies procedures, enhancing business operations by reducing compliance burdens.
  - **Transparency in Trade Practices**: Minimizes paperwork, fostering a more transparent system under the **Legal Metrology Act, 2009.**
  - **Data-Driven Decision Making**: Facilitates better policy formation by providing data that supports regulatory and enforcement activities.
  - **Efficient Regulatory Framework**: Strengthens and streamlines enforcement, ensuring a robust regulatory framework.
- **Current Status:** At present, **State Governments** use their own portals for:
  - Registration of packaged commodities.
  - Issuance of licenses.
  - Verification and stamping of weighing and measuring instruments.

FDI INFLOWS INTO INDIA CROSS $1 TRILLION

Context

Recently, Foreign Direct Investment (FDI) inflows into India have exceeded the $1 trillion mark between April 2000 and September 2024.

About
- **Definition of FDI:**
  - FDI refers to investments made by a person resident outside India in an unlisted Indian company or in 10% or more of the paid-up equity capital of a listed Indian company on a fully diluted basis. It is typically a non-debt-creating capital flow.
  - At present, **FDI is prohibited** in lottery, gambling and betting, chit funds, Nidhi company, real estate business, and manufacturing of cigars, cheroots, cigarillos and cigarettes using tobacco.
- **Routes for FDI in India:**
  - **Automatic Route:** No prior approval is required.
    - Investors need to inform the Reserve Bank of India (RBI) after making the investment.
    - Most sectors, such as manufacturing and software, fall under this route.
  - **Government Approval Route:** Requires prior approval from the concerned Ministry or Department.
    - Sectors such as telecom, media, pharmaceuticals, and insurance fall under this route.

Trends in FDI Inflows
- **Major Source Countries:**
  - **Mauritius**: 25% of total FDI inflows
  - **Singapore**: 24%

- **USA**: 10%
- Other key sources include **Netherlands**, **Japan**, **UK**, **UAE**, **Germany**, **Cyprus**, and **Cayman Islands.**
- **Key Sectors Attracting FDI:**
  - **Services sector**: 16% of total FDI inflows
  - **Computer software and hardware**: 15%
  - **Trading**: 7%
  - **Telecommunications**: 6%

GROWTH IN INDIA'S FDI INFLOWS

Source: Department for Promotion of Industry and Internal Trade (DPIIT)
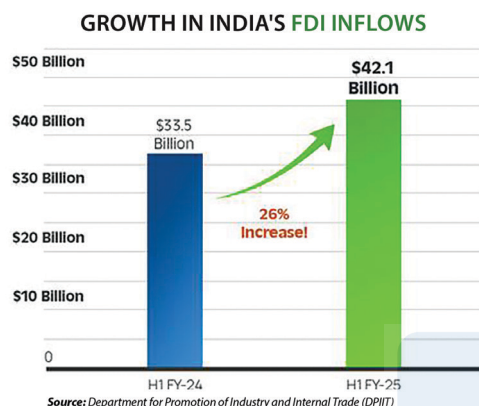
Government Policies to Boost FDI:

- Most sectors, except for certain strategically important ones, are open to **100% FDI under the automatic route.**
  - Around **90% of FDI inflows** are received through this route.
- Over **42,000 compliances** have been reduced and more than **3,800 provisions** decriminalized, e.g., through the **Jan Vishwas (Amendment of Provisions) Act, 2023.**
- The **Department for Promotion of Industry and Internal Trade (DPIIT)** developed the **National Single Window System (NSWS)** portal, a one-stop solution for regulatory approvals and services.

Factors Driving FDI Inflow:

- **Competitiveness and Innovation:** India improved its ranking in the **World Competitive Index 2024** to 40th (up from 43rd in 2021) and secured 39th place in the **Global Innovation Index 2024**, a significant leap from 81st in 2015.
- **Global Investment Standing:**
  - India ranked third in the number of greenfield projects with 1,008 announcements in the **World Investment Report 2023**.
  - It also saw a **64% increase in international project finance deals**, underscoring its rising global investment prominence.
- **Improved Business Environment**: India climbed from 142nd in 2014 to 63rd in the **World Bank's Doing Business Report (DBR) 2020**, reflecting efforts to simplify regulations, reduce bureaucratic hurdles, and improve the business climate.
- **Policy Reforms**: The government's investor-friendly policies, including the opening of most sectors to **100% FDI** under the automatic route, and amendments to the **Income Tax Act, 1961** in 2024 (abolishing angel tax and reducing tax rates for foreign companies), contribute significantly to attracting FDI.

MULEHUNTER.AI TOOL: RBI

Context

Recently, the Reserve Bank of India (RBI) introduced an AI-driven model called MuleHunter.AI to address the escalating problem of digital fraud involving "mule" bank accounts.

About

- **Mule Accounts**: Bank accounts exploited by criminals for illegal activities such as laundering illicit funds. These accounts are often obtained from individuals, typically from lower-income or low-tech literacy groups.
- **Money Mules**: Innocent individuals whose accounts are used to launder stolen or illegal money. They often face police scrutiny while the actual perpetrators remain undetected.
- **Mule Accounts and Financial Frauds in India:**
  - Mule accounts are central to **online financial frauds** in the country.
  - Recently, the government froze approximately **4.5 lakh mule accounts** linked to cybercrime proceeds, with **40,000 accounts** identified in various **SBI branches.**

Government's Response to Digital Financial Fraud

- **Meetings and Collaboration:** A high-level meeting on **Digital Financial Fraud and Mule Accounts** was convened by the Department of Financial Services (DFS), with participation from:
  - Reserve Bank of India (RBI)
  - Indian Cybercrime Coordination Centre (I4C)
  - NABARD
  - Public and private sector banks
- **Key Directions and Strategies:**
  - **Adoption of Best Practices**: Banks advised to use advanced tools and institutional collaboration.
  - **Technology Integration**: Emphasis on **AI/ML solutions** for real-time detection of mule accounts.
  - **MuleHunter Solution**: Banks encouraged to implement RBI's MuleHunter solution for advanced monitoring.
- **Additional Proposals:**
  - **Restrictions on Withdrawals**: Limits proposed for dormant accounts that suddenly receive large amounts.
  - **RBI Hackathon**: The **"Zero Financial Frauds" hackathon** focuses on developing innovative solutions for detecting mule accounts.
- **MuleHunter.AI Initiative:**
  - **Assessment of Current Systems**: Collaboration between **Reserve Bank Innovation Hub (RBIH)** and banks revealed inefficiencies in rule-based detection systems, such as high false-positive rates and slow processing.

- **Development of MuleHunter.AI:** An **AI-powered tool** analyzing **19 behavioral patterns** of mule accounts. Initial pilot tests with two large public sector banks showed promising results.
- **AI/ML-Powered Solution**: Employs machine learning to analyze transaction data and account details, improving precision and speed in detecting mule accounts.
- **Targeting Illicit Fund Flows**: Focuses on identifying illegal fund movements into mule accounts.

➲ **Significance and Impact:**
- **Enhancing Fraud Detection**: Highlights the need for advanced technologies to combat financial fraud effectively.
- **Transformative Initiative**: MuleHunter.AI is considered a pivotal step in strengthening the security and resilience of India's financial ecosystem.

INDIA SKILLS REPORT 2025

Context

Recently, the 'India Skills Report 2025' projected a 7% increase in employability among Indian graduates, anticipated to reach 54.81% by 2025.

About

➲ The report is jointly published by **Confederation of Indian Industries (CII)**, in collaboration with **Wheebox** (a talent assessment agency) and **All India Council for Technical Education (AICTE).**

➲ The report is based on extensive data from **over 6.5 lakh candidates** who participated in the **Global Employability Test (GET)** across India.

➲ In addition, insights were gathered from **over 1,000 corporations** across **15 diverse industries**, providing a comprehensive view of employability trends.

Key Findings

➲ **Global Employability Trends (2025)**
- The **global employability rate** of Indian graduates is projected to increase from **51.2% in 2024** to **55% in 2025**, a significant rise of **7%**.
- This increase reflects the growing readiness of Indian graduates to meet the demands of the international labor market, positioning India as a key player in the global talent pool.

➲ **Employability by Field of Study**
- **Management Graduates**: These students are forecasted to have the highest employability rate of **78%**.
- **Engineering Graduates**: With an employability rate of **71.5%**, engineers remain among the most in-demand professionals, particularly those with expertise in software development, AI, machine learning, and data analytics.

- **MCA (Master of Computer Applications) Students:** The employability rate for MCA graduates stands at **71%**, reflecting the continued demand for IT professionals, especially in sectors like software engineering, cloud computing, and cybersecurity.
- **Science Graduates**: With an employability rate of **58%**, science graduates are seeing steady demand, especially in emerging fields like biotechnology, data science, and environmental sciences.

➲ **Emerging Hubs for Employable Talent**
- **Maharashtra**, **Karnataka**, and **Delhi** are identified as **major talent hubs** in India.
- Cities like **Pune**, **Bengaluru**, and **Mumbai** lead the way in providing a **skilled workforce.**

➲ **Gender-Based Employability Trends**
- **Men's employability** is expected to rise to **53.5%** by 2025, up from **51.8%** in 2024.
- **Women's employability**, however, is projected to decline slightly to **47.5%** in 2025, down from **50.9%** in 2024.

➲ **Vocational Training for Secondary and Tertiary Students**
- The report forecasts that 50% of secondary and tertiary students in India will receive vocational training by 2025.
- This shift is significant, as vocational training helps bridge the gap between education and industry demands.

Confederation of Indian Industries (CII)

➲ **Organization Type:** Non-government, not-for-profit, industry-led, and industry-managed.
➲ **Founded:** 1895.
➲ **Headquarters:** New Delhi.
➲ **Mission:** To create and sustain an environment conducive to India's development.

RBI GOVERNOR APPOINTMENT

Context

Recently, the Appointments Committee of the Cabinet, chaired by the Prime Minister, approved IAS officer Sanjay Malhotra's appointment as the next Governor of the Reserve Bank of India.

About

➲ **Appointment Authority:**
- The **RBI Governor** is appointed under the authority of the **RBI Act, 1934.**
- This Act provides the legal framework for the functioning of the Reserve Bank of India and its leadership.
- The **Central Government** is responsible for appointing the RBI Governor.

- **Selection Process:** The process of appointing an RBI Governor begins with the **Financial Sector Regulatory Appointment Search Committee**, which includes the following members:
  - Cabinet Secretary
  - Current RBI Governor
  - Financial Services Secretary
  - Two Independent Members
- This committee prepares a **list of eligible candidates** for the post of RBI Governor.
- The shortlisted candidates are **interviewed** to assess their qualifications, experience, and suitability for leading India's central bank.
- After the interview process, the committee **sends the final list** to the **Cabinet Committee on Appointments**, which is headed by the **Prime Minister**.
- The Cabinet Committee then **confirms the selection** of the new RBI Governor.
- **Tenure of the RBI Governor:**
  - The **RBI Governor** holds office for a term of **up to five years**, with the specific duration determined by the **Central Government** at the time of appointment.
  - **Initial Term**: The initial term is typically set at **three years**, but it can be extended by an additional **two years**, allowing flexibility based on the needs of the institution and the country's economic requirements.
- **End of Tenure:** The tenure of the RBI Governor can end in two ways:
  - **Presidential Removal**: The President of India has the authority to remove the Governor if deemed necessary.
  - **Governor's Resignation**: The Governor may choose to resign at any time by submitting their resignation to the President of India.

Notable RBI Governors

- **Sir Osborne Smith (First RBI Governor):**
  - Sir Osborne Smith was the first Governor of the Reserve Bank of India.
  - Smith came to India in 1926 as the **Managing Governor** of the **Imperial Bank of India** before being appointed as the first RBI Governor in 1935.
- **Chintaman Dwarkanath Deshmukh (First Indian Governor):**
  - He was the first Indian to hold the post of RBI Governor.
  - He was a member of the **Indian Civil Services (ICS)** and held various senior administrative positions within the government.
  - He served as the RBI Governor from **1943 to 1949**.
- **Sir Benegal Rama Rau (Longest-Serving RBI Governor):**
  - Like Deshmukh, **Sir Benegal Rama Rau** was also a member of the Indian Civil Service.
  - He served as the **Governor of RBI** for the longest period from **1949 to 1957**, almost a decade in the post.

- **Reappointment and Extension**: The **RBI Governor** is eligible for **reappointment** or **extension** of their term if the government deems it appropriate.
- **Qualifications**:
  - The **RBI Act, 1934** does not specify any particular qualifications for the Governor.
  - This allows flexibility in selecting candidates with a broad range of backgrounds, including economics, finance, or public administration.

JALVAHAK SCHEME TO BOOST INLAND WATERWAYS

> **Context**
>
> *Recently, the Union government introduced the 'Jalvahak' scheme to promote cargo transportation on inland waterways, covering National Waterways 1 (Ganga), 2 (Brahmaputra), and 16 (Barak River).*

About

- **Cost Reimbursement Incentive:** Cargo owners transporting goods over distances exceeding **300 km via waterways** will receive up to **35% reimbursement** on operating costs.
- **Validity**: The scheme will remain in effect for **three years**, providing a fixed timeframe for its implementation and evaluation.
- **Supply Chain Optimisation**: Targets **major shipping companies**, **freight forwarders**, and **trade bodies**, enabling efficient supply chain solutions through inland waterways.
- **Promotion of Sustainable Transportation**: Focuses on fostering **cost-effective** and **eco-friendly transport** across:
  - **National Waterway 1 (NW 1)**: River Ganga
  - **National Waterway 2 (NW 2)**: River Brahmaputra
  - **National Waterway 16 (NW 16)**: River Barak
- **Incentives for Long-Haul Transport**: Encourages **long-distance cargo transport** with improved reliability through **regular freight services.**

Current Status of Inland Waterways in India

- **Extensive Coverage:** Total inland waterways span **20,236 km**, comprising:
  - 17,980 km of rivers
  - 2,256 km of canals, suitable for mechanized crafts.
- **National Waterways (NWs)**: India has **111 National Waterways**, declared under the **National Waterways Act, 2016**, enabling their development for commercial use.
- **Significant Growth in Cargo Transport**: Cargo movement on national waterways has surged from **18.07 Million Metric Tonnes (MT)** in 2013–14 to **132.89 Million MT** in 2023–24, marking a **700% growth.**

➲ **Future Targets**: India aspires to achieve:
- ◆ **200 Million MT** of cargo movement via waterways by **2030.**
- ◆ **500 Million MT** by **2047**, aligning with its long-term economic and logistical goals.

National Waterways of India

NW-2 Brahmaputra — Sadiya

NW-1 Bhagirathi

NW-1 Ganga

Allahabad — Dhubri

NW-73 Narmada

NW-1 Hooghly

NW-10 Amba

Haldia

NW-100 Tapi

NW-97 Sunderbans Waterways

NW-85 Kundalika

NW-83 Rajpuri Creek

Vijayawada

Muktiyala

NW-91 Shastri

NW-4 Krishna

NW-68 Mandovi

NW-3 West Coast Canal,Champakara, Udyogmandal

NW-111 Zuari

SAMARTH UDYOG BHARAT 4.0

Context

Recently, the Ministry of Heavy Industries (MHI) established four Smart Advanced Manufacturing and Rapid Transformation Hub (SAMARTH) Centres.

About

➲ It is an **Industry 4.0** initiative of the Ministry of Heavy Industry & Public Enterprises, under its scheme on "**Enhancement of Competitiveness in the Indian Capital Goods Sector".**
- ◆ **Industry 4.0** refers to the **fourth industrial revolution**, characterized by the integration of technologies such as **Artificial Intelligence (AI), Internet of Things (IoT), robotics, and data analytics** into manufacturing processes.

➲ It is aimed at promoting smart and advanced manufacturing technologies, boosting digital transformation, and strengthening India's manufacturing sector.

SAMARTH Centres

➲ **The established Centres are as;**
- ◆ Centre for Industry 4.0 (C4i4) Lab, Pune,
- ◆ IITD-AIA Foundation for Smart Manufacturing, IIT Delhi,
- ◆ I-4.0 India @ IISc, Bengaluru, and
- ◆ Smart Manufacturing Demo & Development Cell, CMTI, Bengaluru.

➲ Further, **10 cluster Industry 4.0 experience centres** have been approved under the Hub and Spoke model to be established across India by Centre for Industry 4.0 (C4i4) Lab, Pune.

Objectives of SAMARTH Udyog Bharat 4.0

➲ **Organizing awareness seminars**, workshops, and knowledge-sharing events on Industry 4.0 technologies.
➲ **Providing training programs** to industries, including MSMEs, for capacity building.
➲ Offering consultancy in IoT hardware, software development, and data analytics.

Key achievements of the SAMARTH Centres

➲ **C4i4 Lab, Pune** developed an Industry 4.0 solutions-enabled Model Factory.
➲ **CMTI, Bengaluru** created a production-based Smart Factory.
➲ Development of the **Industry 4.0 Maturity Model (I4MM)** to assess the readiness and progress of industries.
➲ C4i4 Lab launched a **Free Online Assessment Tool** to help MSMEs evaluate their Industry 4.0 readiness.

PARLIAMENTARY COMMITTEE RECOMMENDATIONS ON MSP

Context

Recently, The Standing Committee on Agriculture, Animal Husbandry and Food Processing, submitted a comprehensive report to Parliament highlighting the potential benefits of a legally guaranteed MSP.

Key Recommendations

➲ **Legal Guarantee of MSP**
- ◆ Propose a **legal guarantee for Minimum Support Price (MSP)** to safeguard farmers' incomes.
- ◆ Develop a **roadmap** for implementing the legal MSP, ensuring the central government allocates sufficient finances for a smooth transition.
- ◆ Present a **post-crop season report** in Parliament detailing:
  - ◦ The number of farmers who sold their produce at MSP.
  - ◦ The gap between MSP and market prices.

➲ **Paddy Waste Management**
- ◆ Provide **compensation to farmers** for managing and disposing of crop residues to prevent stubble burning.
- ◆ Consider Punjab's proposal of offering a **bonus of ₹2,000 per acre**, with cost-sharing between the Centre and the state.

➲ **Enhancing PM-KISAN Scheme**
- ◆ Double the annual financial assistance under **PM-KISAN** from ₹ 6,000 to ₹ 12,000 per beneficiary.
- ◆ Extend the scheme to **tenant farmers and farm laborers** for greater inclusivity.

- **Debt Relief for Farmers**
  - Introduce a **debt waiver scheme** to mitigate farmer distress and reduce suicides.
  - Monitor the increasing dependence on agricultural loans and rising outstanding debts among rural families.
- **Budgetary Allocation for Agriculture**
  - Highlight the **decline in agriculture's budgetary share** in the central plan.
  - The share fell from **3.53% in 2020-21** to **2.54% in 2024-25**, despite higher allocations from 2021-22 to 2024-25.
- **Universal Crop Insurance**
  - Implement **mandatory crop insurance** for small farmers with up to 2 acres of land.
  - Design the scheme based on the **Pradhan Mantri Jan Arogya Yojana (PM-JAY)** health insurance model.
- **National Commission for Farm Labourers:** Establish a **National Commission for Minimum Living Wages for Farm Labourers** to address their rights and welfare comprehensively.
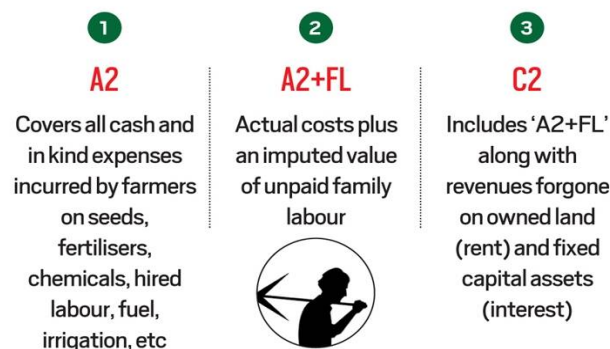- **Renaming the Agriculture Department:**
  - Rename the **Department of Agriculture and Farmers Welfare** to the **Department of Agriculture, Farmers, and Farm Labourers Welfare.**
  - This change aims to emphasize the welfare of agricultural laborers alongside farmers.

About Minimum Support Price (MSP)

- It is a form of **market intervention** by the Government to insure agricultural producers against any sharp fall in farm prices.
- The prices are announced by the Government at the **beginning of the sowing season for certain crops** on the basis of the recommendations of the **Commission for Agricultural Costs and Prices (CACP).**
- The major objectives are to **support the farmers** from distress sales and to procure food grains for public distribution.

The Centre fixes MSPs for every kharif and rabi cropping season based on recommendations of the Commission for Agricultural Costs and Prices (CACP)

● When a farmer grows a crop, he incurs costs, some of it explicit and some implicit or unpaid. The CACP considers the following costs:

1 **A2**
Covers all cash and in kind expenses incurred by farmers on seeds, fertilisers, chemicals, hired labour, fuel, irrigation, etc

2 **A2+FL**
Actual costs plus an imputed value of unpaid family labour

3 **C2**
Includes 'A2+FL' along with revenues forgone on owned land (rent) and fixed capital assets (interest)

Crops Covered under MSP

- **Kharif Crops (total 14)** like paddy, jowar, bajra, maize, ragi, tur/arhar, moong, urad, groundnut, soyabean, sunflower, sesamum, niger seed, cotton;
- **Rabi Crops (total 06)** like wheat, barley, gram, masur/lentil, rapeseed and mustard,and safflower;
- **Commercial Crops (total 02)** like jute and copra. MSP for Toria and de-husked coconut is also fixed on the basis of MSPs of rapeseed & mustard and copra respectively.

Arguments in Favour of Legalising MSP

- **Farmer Protection:** Legalizing MSP ensures a guaranteed price for farmers, shielding them from volatile market conditions and preventing exploitation by middlemen.
- **Income Stability:** It provides farmers with a stable income, helping them meet production costs and improve their financial security.
- **Encourages Agricultural Investment:** Knowing they have a safety net, farmers are more likely to invest in better farming practices, leading to increased productivity and efficiency.
- **Food Security:** A legally mandated MSP ensures the government can procure essential crops, supporting national food security and preventing shortages.
- **Poverty Reduction:** By ensuring fair prices for their produce, MSP helps reduce rural poverty and improve the overall standard of living for farmers.
- **Balanced Market Regulation:** Legal MSP can reduce market price fluctuations, ensuring fair trade and equitable distribution of agricultural products.

Arguments Against Legalising MSP

- **Market Distortions:** Legal MSP could lead to market imbalances by encouraging overproduction of certain crops, disrupting supply-demand dynamics.
- **Fiscal Burden:** It would put pressure on government finances, as they may need to buy and store surplus produce, leading to high procurement costs.
- **Inefficient Resource Allocation:** Legal MSP might result in the misallocation of resources, as farmers may focus on MSP-supported crops rather than diversifying or adopting more sustainable practices.
- **Corruption and Middlemen Exploitation:** Legalizing MSP may increase the scope for corruption, with middlemen taking advantage of the procurement system, reducing benefits to actual farmers.
- **Stifling Agricultural Reforms:** It could hinder necessary reforms by making the agricultural market too reliant on government intervention, rather than fostering a competitive and efficient market system.
- **Encouraging Dependency:** Farmers may become overly reliant on MSP, discouraging innovation, market diversification, and adaptation to changing market needs.
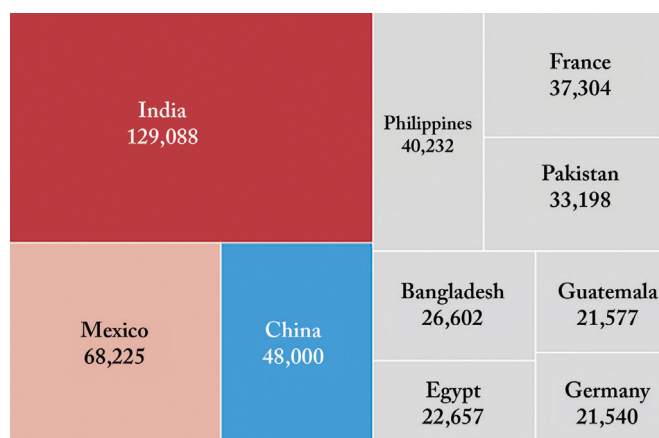
INDIA: TOP RECIPIENT OF REMITTANCES

Context

Recently, India emerged as the largest recipient of remittances in 2024, with an estimated inflow of $129 billion, surpassing Mexico, China, the Philippines, and Pakistan.

About

⮞ **Remittances**: It is a money sent by individuals working abroad to support families in their home country.
  ◆ Serve as a **critical source of income** for households in developing nations and contribute significantly to the recipient country's economy.

⮞ **India's Remittance Highlights in 2024**
  ◆ **Record-breaking Inflows**: India received **$129.1 billion**, the highest remittance ever recorded by any country in a single year.
  ◆ **Global Share**: India accounted for **14.3% of global remittances** in 2024, the largest share since 2000 for any nation.
  ◆ **Economic Contribution**: In India, remittances formed **3.3% of GDP** in 2024.

⮞ **Comparative Analysis**
  ◆ **India vs. China:**
    ◆ China's share of remittances grew to over **10% in the late 2000s** before declining to **5.3% in 2024**, a two-decade low.
    ◆ The decline is attributed to **China's economic growth**, reduced emigration of less-skilled workers, and an **ageing population.**
    ◆ India's share remained **above 10% since 2000**, with rapid growth post-pandemic.
  ◆ **India vs. Mexico:** In 2024, India's global remittance share was **twice that of Mexico (7.5%)**, making Mexico a distant second.

⮞ **Contribution to Other Economies:**
  ◆ **Nepal:** Over **25% of GDP** came from remittances in 2024.
  ◆ Other countries where remittances formed over **25% of GDP**:
    ◆ Tajikistan, Nicaragua, Lebanon, Samoa, Honduras, and Tonga.

⮞ **Remittances vs. Other Financial Flows:**
  ◆ In low- and middle-income countries, remittances have **outpaced Foreign Direct Investment (FDI)** in recent years.
    ◆ **FDI**: Investments by foreign entities to control or manage businesses in another country.
  ◆ Remittances also significantly exceed **Official Development Assistance (ODA).**
  ◆ **ODA:** Aid from wealthier nations to assist developing countries, typically through grants or low-interest loans.

India 129,088 | Philippines 40,232 | France 37,304 | Pakistan 33,198 | Mexico 68,225 | China 48,000 | Bangladesh 26,602 | Guatemala 21,577 | Egypt 22,657 | Germany 21,540

55TH GST COUNCIL MEETING

Context

Recently, the 55th GST Council convened under the chairpersonship of the Union Minister for Finance and Corporate Affairs.

Key Highlights

⮞ **Used Electric Vehicles (EVs)**
  ◆ **GST Rate Increase**: GST on used EV sales raised from **12% to 18%**, aligning with the tax rate for non-electric vehicles.
  ◆ **GST Application**:
    ◆ For **business sales**, GST will apply only on the **margin value** (difference between purchase and selling price, adjusted for depreciation if claimed).
    ◆ No GST on individual-to-individual sales.

⮞ **Bank's Penal Charges:** No GST applies to **penal charges** imposed by banks and **non-banking financial companies (NBFCs)** for **loan term violations.**

⮞ **Payment Aggregators**
  ◆ **Exemption Criteria**: Payment aggregators handling payments of less than Rs 2,000 will be eligible for GST exemption.
  ◆ **Exclusion**: This exemption does not apply to payment gateways or other fintech services unrelated to fund settlement.

⮞ **Aviation Turbine Fuel (ATF)**
  ◆ **No GST on ATF**: The GST Council did not agree on bringing **ATF** under the ambit of GST, as states opposed it.
  ◆ **States' Concern**: States see **ATF** as part of the **crude petroleum diesel basket**, and they insisted that it should not be treated in isolation.
  ◆ **Products Excluded from GST:**
    ◆ **Crude oil, petrol, diesel, ATF, and natural gas** remain outside the purview of GST.

- The **central government levies excise duty**, and **states levy VAT** on these products.

⮕ **GST Exemption:**
- **Farm Products**: **Black pepper** and **raisins** supplied directly by farmers will be **exempt from GST.**
- **Gene Therapy**: Fully exempt from GST.
- **Integrated GST Exemption**: Exemption extended to **surface-to-air missiles.**

⮕ **Compensation Cess:**
- **Reduced Cess Rate**: The **compensation cess** rate has been reduced to **0.1%** on supplies to **merchant exporters.**
- **Purpose**: The cess is collected to **compensate states** for any **revenue loss** due to the implementation of GST.

⮕ **Popcorn Taxation:**
- **Caramelized Popcorn**: Taxed at **18% GST** as it is classified as **sugar confectionery.**
- **Salted Popcorn:**
  - **5% GST** if not pre-packaged and labeled.
  - **12% GST** if pre-packaged and labeled.

GST Council

⮕ **Constitutional Status:** The **GST Council** is a **constitutional body** responsible for making recommendations on matters related to the implementation of **Goods and Services Tax (GST)** in India.

⮕ **Composition:** As per **Article 279A** (inserted by the **Constitution (101st) Amendment Act, 2016**), the **GST Council** consists of:
- **Union Finance Minister** (Chairperson)
- **Union Minister of State** in charge of Revenue or Finance (Member)
- **Finance or Taxation Minister** (or any other Minister nominated) from each State Government (Members)

⮕ **Decision-Making Process:** Decisions of the **GST Council** are taken by a **majority of not less than three-fourths (75%)** of the **weighted votes** of members present and voting.

⮕ **Voting Weightage:**
- **Centre:** 1/3rd of the total voting weightage.
- **States:** 2/3rd of the total voting weightage.

AUTOMATED & INTELLIGENT MACHINE-AIDED CONSTRUCTION (AIMC) SYSTEM

Context

Recently, the government is accelerating the adoption of Automated & Intelligent Machine-aided Construction (AIMC) systems to ensure faster and more efficient completion of National Highway projects.

AIMC System

⮕ **Overview**
- **AIMC** is an advanced system being implemented by the **Ministry of Road Transport & Highways (MoRTH)** for efficient **National Highway construction.**
- It combines **intelligent machines** with **real-time data sharing** to accelerate construction while improving road quality.

⮕ **Objectives of AIMC:**
- **Increase productivity** and reduce time taken for road construction.
- **Ensure durable and long-lasting roads** by enhancing precision and construction processes.
- **Reduce dependency** on traditional surveys after construction.
- **Address challenges** like outdated technologies, uncoordinated data, and poor contractor performance, all of which cause project delays.

⮕ **Types of AIMC Machines:**
- **GPS-Aided Motor Grader (3D Machine Control Technology):**
  - Uses **Global Navigation Satellite System (GNSS)** data and angle sensors to precisely position the grader's blade.
  - Processes data in real-time to ensure alignment with **digital design plans.**
- **Intelligent Compaction Roller (IC Roller)**
  - Minimizes **post-construction consolidation.**
  - Reduces air pockets or water voids in materials, preventing damage to roads.
- **Single Drum/Tandem Vibratory Roller:** Ensures proper **soil and base layer compaction**, promoting **road stability.**

REAL EFFECTIVE EXCHANGE RATE (REER)

Context

Recently, the Reserve Bank of India (RBI) reported that the rupee's real effective exchange rate (REER) index reached a record 108.14 in November, marking a 4.5% appreciation this calendar year.

About

⮕ **Rupee's Divergent Trends:**
- The rupee is experiencing **historic lows** against the US dollar but has reached an **all-time high** in "real effective" terms, with the **Real Effective Exchange Rate (REER)** index at **108.14** in November 2024, up 4.5% in the year.

⮕ **Implications of Overvaluation:**
- A REER value above 100 signifies the rupee is **overvalued** relative to the base year (2015-16).
- This overvaluation reduces the competitiveness of Indian **exports** while making **imports cheaper**, potentially affecting trade balance.

- The exchange rate is not adjusting adequately to offset **higher domestic inflation**, which impacts trade balance.
➲ **Role of the Dollar:**
  - The dollar's strength, driven by post-election policies like tariff hikes, tax cuts, and other economic measures, has caused this divergence.
  - The rupee is not weakening significantly; rather, the dollar is **strengthening globally**.

REER	NEER
It stands for Real Effective Exchange Rate.	It stands for Nominal Effective Exchange Rate.
It displays the home currency's adjusted value in relation to other significant trading currencies.	NEER is unadjusted with respect to inflation.
It eliminates the effects of currency-specific inflation differentials and concentrates solely on exchange rate differentials.	The difference in inflation rates between the country and its trading partners has an influence.
It is determined using the NEER.	It is determined using a currency basket.
As a result of being corrected for inflation, it is thought to be a more accurate estimate.	Due to differences in inflation, it may provide measurements that aren't exactly precise.

➲ **India's Currency Basket for Indices:**
  - Initially based on six major currencies (USD, EUR, JPY, GBP, CNY, SGD).
  - Now expanded to include a basket of **36 currencies** to better represent India's diverse trade relationships.

FREE-AI COMMITTEE

Context

Recently, the Reserve Bank of India (RBI) established a committee named FREE-AI to develop a framework for responsible and ethical AI use in the financial sector.

About
➲ **Formation and Objective:**
  - The RBI has constituted an eight-member panel to design a framework for the ethical and responsible use of Artificial Intelligence (AI) in the financial sector.
  - This initiative aims to ensure AI technologies are adopted in a manner that balances innovation with accountability.
➲ **Panel on FREE-AI:**
  - The panel is led by **Pushpak Bhattacharyya**, a professor at IIT Bombay's Department of Computer Science and Engineering.

- His expertise in AI and computational linguistics ensures informed and balanced guidance.
➲ **Composition:** The committee includes diverse stakeholders such as:
  - **NITI Aayog**: For policy insights and national strategies.
  - **HDFC Bank**: Representing the financial industry's operational perspective.
  - **IIT Madras**: Offering academic expertise in AI.
  - **Ministry of Electronics and Information Technology**: Providing regulatory and digital governance inputs.
  - **Trilegal**: Addressing legal and compliance aspects.
  - **Microsoft India**: Sharing practical insights on AI development and deployment.
➲ **Support Structure:** The RBI's **fintech department** will assist the panel, offering administrative and technical support to ensure comprehensive research and recommendations.
➲ **Mandate:**
  - **Assess Current AI Adoption**: Analyze how AI is presently used in financial services.
  - **Global Benchmarking**: Study international regulatory and supervisory practices to adapt best practices for India.
  - **Framework Development**: Propose a governance structure for responsible AI adoption, ensuring fairness, transparency, and accountability.
  - **Risk Management**: Identify risks like biases or data misuse and recommend measures to evaluate, mitigate, and monitor them for regulated entities.
➲ **Timeline**: The panel is required to submit its findings and recommendations within six months of its first meeting, ensuring timely progress toward responsible AI integration.

CURRENT ACCOUNT DEFICIT

Context

India's Current Account Deficit (CAD) slightly decreased to $11.2 billion, representing 1.2% of GDP, in the July-September 2024 quarter.

About
➲ **Definition**: A **Current Account Deficit (CAD)** occurs when a country's imports of goods and services exceed its exports.
➲ **Twin Deficits:**
  - CAD, along with the **Fiscal Deficit** (gap between government expenditure and receipts), forms the **twin deficits** that can significantly influence stock markets and investor confidence.
  - Fiscal deficit represents the borrowing requirement of the government to meet its annual expenditure needs.

Causes of current account deficits
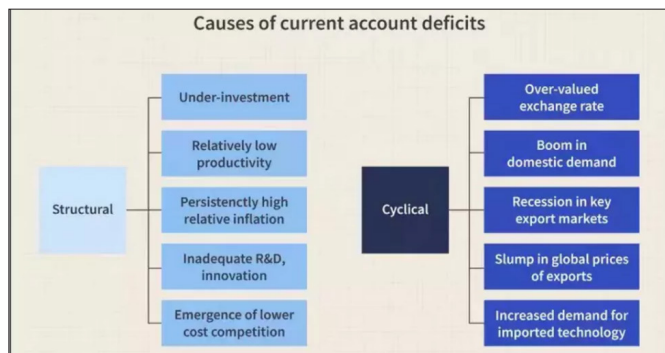
- ➲ **Implications of CAD**
  - ◆ **Economic Impact**: CAD has widespread effects on the economy, influencing stock markets and investments.
  - ◆ **Investor Sentiment**: A **lower CAD** often improves investor confidence and enhances the attractiveness of the country's currency.
  - ◆ **Current Account Surplus**: A surplus signals inflow of funds into the country, boosting **foreign exchange reserves** and strengthening the local currency's value.
  - ◆ **Weaker Currency:**
    - ◆ Excess imports reduce demand for the domestic currency, leading to **currency depreciation**, which makes imports costlier.
    - ◆ This can result in **higher inflation** and reduced purchasing power for citizens.
  - ◆ **Debt Accumulation:** Inadequate foreign investment to cover CAD may necessitate borrowing, increasing the country's **debt levels**, potentially harming the economy further.
- ➲ **Steps to Moderate CAD:**
  - ◆ **Diversify Export Markets**: Expand trade relationships with emerging and developed economies to reduce dependence on a few countries.
  - ◆ **Import Substitution**: Focus on developing domestic industries to replace imports, particularly in sectors like electronics, machinery, and energy.
  - ◆ **Encourage Domestic Production**: Strengthen "Make in India" initiatives to reduce reliance on foreign goods, especially non-essential items.
  - ◆ **Foreign Direct Investment (FDI)**: Enhance policies that attract FDI in manufacturing, services, and technology sectors, ensuring that the inflow of foreign capital offsets the outflow.
  - ◆ **Increase Remittances**: Promote schemes to channel more remittances from the Indian diaspora, which can offset the current account deficit.

- ◆ **Stable Capital Inflows**: Encourage stable foreign portfolio investments (FPI) to finance the deficit, with a focus on long-term investments rather than speculative flows.

RBI'S FINANCIAL STABILITY REPORT (FSR)

Context

Recently, the Reserve Bank of India (RBI) published the Financial Stability Report (FSR), highlighting enhancements in the banking sector's asset quality and financial resilience.

Key Highlights

- ➲ **GDP Growth:** India's GDP is projected to grow at 6.6% in 2024-25, driven by:
  - ◆ Revival in **rural consumption**.
  - ◆ Increased **government spending** and investments.
  - ◆ Strong **services exports**.
- ➲ **Government Debt:** The **central government's debt-to-GDP ratio** is expected to decrease from **62.7%** in 2020-21 to **56.8%** by **2024-25**.
- ➲ **State Liabilities:** Outstanding liabilities of state governments are projected to decline from **31%** to **28.8%** by **2024-25**.
- ➲ **Financial System Stability: Scheduled Commercial Banks (SCBs)** have improved **profitability**, reduced **non-performing assets (NPAs)**, and maintained **adequate capital and liquidity buffers**, enhancing their overall stability.
- ➲ **Gross Non-Performing Asset (GNPA) Ratio:** SCBs achieved a **12-year low GNPA ratio** of **2.6%** as of **September 2024**, demonstrating strong asset quality.
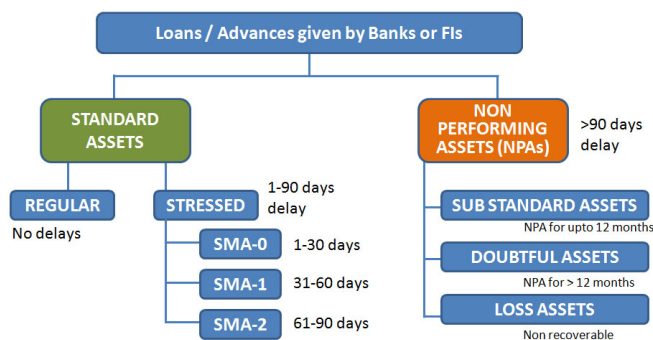
- ➲ **Household Debt Trends:**
  - ◆ **Household debt** stood at **42.9%** of GDP in **June 2024**.
  - ◆ While relatively low compared to other emerging markets, it is on a **rising trajectory**.

WORLD WILDLIFE CONSERVATION DAY

Context

Recently, on World Wildlife Conservation Day (Dec. 4), India celebrated its diverse biodiversity and reflected on the efforts made to protect its critically endangered species.

About

➲ **Origin:** The day originated from a **2012 pledge by the US State Department**, encouraging global action for **wildlife preservation** and **sustainability.**

➲ **Theme:** "Connecting People and Planet: Exploring Digital Innovation in Wildlife Conservation"

➲ **India's Biodiversity:**
- India is considered a **megadiverse country**, representing only **2.4% of the world's land area**, but it is home to **7-8%** of all recorded species, including **91,000 species of animals.**
- The country hosts **four out of the 34 globally recognized biodiversity hotspots**:
  - Himalayas
  - Indo-Burma
  - Western Ghats-Sri Lanka
  - Sundaland

➲ **Threats to Wildlife:**
- **Rapid Economic Development**: The increasing demand for natural resources due to economic development and population growth often **conflicts with wildlife habitats**, leading to habitat loss.
- **Poaching and Trafficking**: Wildlife faces the dual threats of **poaching** and **trafficking**, contributing to significant biodiversity loss.
- **Land Cultivation**: Expanding agricultural activities lead to **man-animal conflicts** and encroach upon wildlife territories.
- **Wildlife Sanctuaries and Biosphere Reserves**: Although **sanctuaries** and **Biosphere Reserves** play a crucial role, many of them face **inadequate fencing** and protection, hampering their effectiveness.
- **Overlooked Species**: While high-profile species like **tigers** and **lions** attract attention, **lesser-known species** such as the **Great Indian Bustard** are often neglected despite facing similar threats.

➲ **Endangered Species:** As of 2022, India is home to **73 critically endangered species**, up from **47** in 2011.
- The list includes **9 endemic mammal species**, highlighting the urgent need for protective measures.

UN CHAMPIONS OF THE EARTH AWARD 2024

Context

Recently, India's veteran ecologist Madhav Gadgil was honored as one of the six recipients of the 2024 'Champions of the Earth' award.

About

➲ **Overview**
- **Established:** 2005
- **Presented By:** United Nations Environment Programme (UNEP).
- **Significance:** Recognized as the **UN's highest environmental honor**, celebrating individuals and organizations at the forefront of efforts to **protect people and the planet.**

➲ **Purpose:**
- Acknowledges **innovative and sustainable solutions** to tackle the **triple planetary crisis**:
  - Climate change
  - Nature and biodiversity loss
  - Pollution and waste
- **Impact:** Champions drive economic transformation, lead political change, combat environmental injustice, and protect natural resources.

➲ **Indian Recipients:**
- **Narendra Modi (2018):** For leadership in promoting solar energy and environmental sustainability.
- **Cochin International Airport (2018):** For becoming the world's first airport powered entirely by solar energy.
- **Afroz Shah (2016):** For spearheading the world's largest beach cleanup initiative.

➲ **Gadgil Committee Recommendations:**
- **Ecologically Sensitive Area (ESA):** The entire Western Ghats region was designated as an ESA.
- **Ecologically Sensitive Zones (ESZ):**
  - **64% of the Western Ghats** classified into ESZ 1, ESZ 2, and ESZ 3.
  - **ESZ 1:** Strict restrictions on developmental activities such as mining, construction of thermal power plants, and dams, along with decommissioning projects past their shelf life.
- **Prohibited Activities Across All Zones:**
  - Cultivation of genetically modified crops.
  - Use of plastic bags.

- ◆ Establishment of Special Economic Zones (SEZs).
- ◆ Creation of new hill stations.
- ◆ **Governance Approach:** Emphasis on a **bottom-to-top governance model**, promoting decentralization and empowering local authorities.
- ◆ **Institutional Recommendation:** Proposed the establishment of the **Western Ghats Ecology Authority** under the Environment (Protection) Act, 1986, as a professional body to manage the region's ecology and ensure sustainable development.

United Nations Environment Programme (UNEP)

- ➲ **Overview:**
  - ◆ **Founded:** 1972, following the **United Nations Conference on the Human Environment.**
  - ◆ **Mandate:** Oversees environmental issues across UN agencies.
- ➲ **Key Activities:**
  - ◆ Focuses on issues related to the **atmosphere, marine and terrestrial ecosystems, environmental governance**, and **green economy.**
  - ◆ Played a foundational role in creating the **Intergovernmental Panel on Climate Change (IPCC)** in 1988, alongside the **World Meteorological Organization.**
- ➲ **Serves as an Implementing Agency for:**
  - ◆ Global Environment Facility (GEF)
  - ◆ Multilateral Fund for the Implementation of the Montreal Protocol
- ➲ **Key Reports:**
  - ◆ Emission Gap Report
  - ◆ Global Environment Outlook
  - ◆ Frontiers Report
  - ◆ Invest in a Healthy Planet Report
- ➲ **Headquarters:** Nairobi, Kenya

COASTAL HARDENING

Context

A recent study published in Nature has found that approximately 33% of the world's sandy beaches have become hardened.

About

- ➲ Coastal hardening refers to the creation of rigid, semi-impermeable structures along coastlines that alter natural landscapes.
  - ◆ These structures aim to obstruct the natural retreat of shorelines and the landward movement of sandy beaches.

- ➲ **Examples of Coastal Hardening Structures:** Seawalls, Harbours, Roads, Highways etc.
- ➲ **Purpose of Coastal Hardening:**
  - ◆ The primary goal of coastal hardening is to protect coastal areas from **erosion** and **flooding**.
  - ◆ The need for such measures has escalated due to the rapid migration of populations toward coastal areas since the 1950s.
- ➲ **Global Statistics:**
  - ◆ Around **33%** of the world's sandy beaches have been hardened.
  - ◆ **Regional breakdown:**
    - ◆ **Bay of Bengal**: 84%
    - ◆ **Western and Central Europe**: 68%
    - ◆ **Mediterranean**: 65%
    - ◆ **Western North America**: 61%
    - ◆ **East Asia**: 50%
- ➲ **Impact of Coastal Hardening:**
  - ◆ **Environmental Degradation:** Coastal hardening can disrupt natural habitats and biodiversity.
    - ◆ Rigid structures may interfere with coastal processes, affecting marine and coastal ecosystems.
  - ◆ **Beach Erosion**: While coastal hardening protects certain areas, it can exacerbate erosion in adjacent, unprotected zones.
    - ◆ The deflection of wave energy can lead to further beach erosion nearby.
  - ◆ **High Costs:** The construction and maintenance of coastal hardening structures are expensive.
    - ◆ Regular repairs and upgrades are necessary, imposing significant costs on local and national governments.

BUSINESS 4 LAND INITIATIVE

Context

Recently, at the Business 4 Land forum during the COP16 conference, the private sector was encouraged to integrate sustainable land management into corporate and financial strategies.

About

- ➲ **Overview**
  - ◆ The **Business for Land (B4L)** is a flagship initiative under the **United Nations Convention to Combat Desertification (UNCCD).**
  - ◆ It focuses on engaging the **private sector** in **sustainable land** and **water management.**
  - ◆ It aids **companies** and **financial institutions** in managing risks and identifying opportunities associated with **land degradation** and **drought.**

➲ **Aim:**
  ◆ The initiative aims to **restore 1.5 billion hectares of land by 2030.**
  ◆ It contributes to achieving **Land Degradation Neutrality (LDN)**, a global target of **net zero land degradation** by 2030, while also enhancing **drought resilience.**

Key Pillars of B4L:

➲ **Business Operations and Value Chains:**
  ◆ Encourages businesses to adopt **sustainable practices.**
  ◆ Sets targets to **reduce land-related impacts** across operations and value chains.
➲ **Finance:** Supports the development of **sustainable financial solutions** for **land restoration** and **drought resilience.**
➲ **Advocacy:** Promotes policies that create a **favorable business environment** for sustainable land and water management.

United Nations Convention to Combat Desertification

➲ **Overview:**
  ◆ **Established:** 1994.
  ◆ **Significance:** The UNCCD is the **only legally binding international agreement** linking **environmental protection** and **sustainable land management** with **development goals.**
➲ **Membership:** 196 countries and the European Union.
➲ **Objectives:**
  ◆ Protect and restore land to secure a **safer, equitable, and sustainable future.**
  ◆ Emphasizes a **bottom-up approach** by involving **local communities** in efforts to combat desertification.
➲ **Flagship Initiatives:**
  ◆ **Land Degradation Neutrality (LDN) Target Setting Programme (2015):**
    ▪ Encourages countries to establish **voluntary LDN targets.**
    ▪ **LDN:** Sustainable land management ensuring ecosystems and food security.
    ▪ **India's Commitment:** Restoration of **26 million hectares** by 2030.
  ◆ **Strategic Framework 2018–2030 (2017):** Guides nations to integrate **desertification, land degradation, and drought** concerns into **national policies.**
➲ **Other Initiatives:**
  ◆ **Great Green Wall (2007):** Aimed at combating desertification in Africa.
  ◆ **Changwon Initiative (2011):** Supports global efforts to mitigate desertification.
  ◆ **International Drought Resilience Alliance (2022):** Focused on building drought resilience.
  ◆ **G20 Global Land Initiative (2020**): Advocates for global collaboration in sustainable land management.

INDIAN STAR TORTOISE

Context

Recently, researchers identified two genetically distinct groups within the Indian star tortoise species: the northwestern and southern groups.

About Indian Star Tortoise (Geochelone Elegans)

➲ **Appearance:**
  ◆ Named after the **star-like patterns** on its **high-domed shell.**
  ◆ Known for its **distinctive patterns** and **rounded shell**, making it highly sought after in the **global exotic pet trade.**
➲ **Habitat:**
  ◆ **Found in diverse environments such as:**
    ▪ Semi-arid lowland forests
    ▪ Thorn scrub forests
    ▪ Semi-desert and arid grasslands
  ◆ Thrives in areas with **seasonal wet and dry climates**, particularly regions with a **monsoon season** followed by prolonged hot, dry periods.
➲ **Distribution:**
  ◆ **Native Range:** Arid regions of **northwest India** (bordering Pakistan), **South India**, and **Sri Lanka.**
  ◆ **Non-native Presence:** Found in private homes in countries like **Canada** and the **U.S.** due to illegal trade.
  ◆ **Behavior: Crepuscular**, active during early mornings and late afternoons, particularly in hot and dry weather.
➲ **Conservation Status:**
  ◆ **IUCN:** Vulnerable
  ◆ **CITES:** Appendix I (restricts international trade).
  ◆ **Wildlife (Protection) Act, 1972:** Schedule I (highest level of protection in India).
➲ **Threats:**
  ◆ **Habitat Fragmentation:** Driven by:
    ▪ Urbanization
    ▪ Agricultural expansion
  ◆ **Illegal Trade:** Popularity in the exotic pet market exacerbates threats to its population.

DULCIBELLA CAMANCHACA

Context

Recently, researchers discovered a new predatory amphipod species, Dulcibella camanchaca, in the Atacama Trench.

About

➲ **Classification:**
  - **Location**: The new species was discovered at a depth of **7,902 meters** in the **Atacama Trench**, a deep oceanic region.
  - **Family**: It has been classified under the **Eusiridae** family and represents a newly identified genus.

➲ **Features of the Species:**
  - **Size:** The species measures just under **4 centimeters**, making it larger than its closest relatives in the deep-sea environment.
  - **Unique Characteristics:**
    - It possesses **gnathopods**, or raptorial appendages, which are used to capture and hunt smaller organisms.
    - Unlike typical **scavenging amphipods**, this species is an **active predator**, preying on other amphipods, which plays a significant role in the deep-sea food web.
    - **Behavior**: A **fast-swimming predator**, it hunts in the deep-sea environment, contributing to the ecological balance of the trench.

➲ **Adaptations for Survival:**
  - **Colouration**: Its **pale coloring** is a typical feature of deep-sea species, which helps it adapt to the pitch-black conditions at extreme depths.
  - **Naming**: The species was named after the word for **'darkness'** in the languages of the **Andes region**, symbolizing its adaptation to the dark depths of the ocean.

MARBLED DUCK

Context

Recently, a marbled duck, a rare winter migrant, was observed at Sultanpur National Park, Haryana.

About

➲ **Appearance**: A small duck with a black bill, gray-brown plumage with pale spots, dark eye patch, and no speculum.

➲ **Scientific Name**: Marmaronetta angustirostris

➲ **Distribution**: Found across the central and southwestern Palearctic, with fragmented populations from Central Asia to northwest Africa and the Iberian Peninsula.

➲ **Migratory Patterns**: Populations in colder areas migrate south for winter, reaching North Africa and the Indian subcontinent.

➲ **Habitat**: Prefers temporary or semi-permanent wetlands, especially brackish ones with well-structured vegetation. Tolerates both natural and artificial wetlands.

➲ **Behavior**: Non-territorial, non-aggressive, and gregarious. Forms monogamous pairs annually starting in autumn.

➲ **Flight**: Flies low and slowly, with long necks and wings, making them easy to identify in flight.

➲ **IUCN Status**: Near Threatened

WROUGHTON'S FREE-TAILED BAT

Context

Recently, a rare sighting of the Wroughton's free-tailed bat was recorded at Delhi's Yamuna Biodiversity Park.

About

➲ **Scientific Name:** Otomops wroughtoni.

➲ **Characteristics:** It has large forward-pointing ears, a naked face, and a prominent nostril pad.
  - Its fur is **dark brown** on the back, with a **white border** on the flanks and forearms.

➲ **Habitat:** Primarily found in the **Western Ghats,** India, with a single known breeding colony.
  - Small colonies recorded in Jaintia Hills, Meghalaya, and a single individual sighted in Cambodia.

➲ **Ecological Role:** It helps to regulate insect populations and assists in pollination of nocturnal plant species.

➲ **Conservation Status:** It is classified as **Data Deficient** on the International Union for Conservation of Nature **(IUCN) Red List.**
  - **In India** the species is listed on **Schedule I** of the Wildlife (Protection) Act 1972.

BALD EAGLE

Context

Recently, the bald eagle was officially recognized as the national bird of the United States.

About

- **Scientific Name:** Haliaeetus leucocephalus
- **Native Range:** The bald eagle is native exclusively to North America.
- **National Emblem:** It has been the United States' national emblem since 1782, symbolizing strength and spirituality for Native Americans long before that.
- **Great Seal:** In 1782, it was first featured on the U.S. Great Seal with outspread wings as a symbol of strength.
- **Physical Features:**
  - **Appearance**: Large predatory raptors with a brown body and wings, a white head and tail, and a hooked yellow beak.
  - **Talons**: Yellow feet with sharp black talons.
  - **Juvenile Appearance**: Young bald eagles are mostly brown, with occasional white markings on their wings and chest.
  - **Size**: Height of 2.5 to 3 feet (0.7 to 0.9 meters) and wingspan of 6.5 feet (2 meters).
  - **Gender**: Females are larger than males but share the same coloration.
- **Habitat:**
  - **Range**: Found across North America, from the Mexico border to Canada, with a particularly large population in Alaska.
  - **Habitat Locations**: Can be seen year-round in Alaska, along the East and West coasts, the Rocky Mountains, and the Mississippi River. Other parts of the U.S. only see them during migration.
- **Diet:**
  - **Primary Food**: Fish, as bald eagles are opportunistic predators.
  - **Other Foods**: When fish is scarce, they hunt small birds, rodents, and scavenge carrion.
- **Behavior:**
  - **Social Structure**: Solitary but monogamous, with eagles maintaining the same breeding pair year after year.
  - **Migration**: They spend winters and migrations alone but return to the same mates annually.
- **IUCN Status:** Least Concern.

LION-TAILED MACAQUE

Context

A recent study highlights the escalating risk to non-human primates, such as lion-tailed macaques, due to rising human-wildlife interactions.

About

- **General Characteristics:**
  - **Arboreal** (tree-dwelling) and **diurnal** (active during the day), typically sleeping at night in trees, often high in the rainforest canopy.
  - Highly **territorial** and **communicative**, with males using vocal calls to define the boundaries of their home range.
  - The species has a **complex communication system**, comprising up to **17 vocalizations**.
- **Omnivorous**: They feed on a wide variety of food, but fruits form the majority of their diet.
- **Appearance:**
  - Named for its lion-like appearance, the Lion-tailed macaque has a long, thin, tufted tail resembling a lion's mane.
  - It is one of the smallest macaque species, with the distinctive grey mane around its face adding to its majestic look.
- **Distribution:** Endemic to the evergreen rainforests in the southern part of the Western Ghats, specifically across the states of Karnataka, Kerala, and Tamil Nadu.
- **Conservation Status:**
  - **IUCN:** Critically Endangered
  - **CITES:** Appendix I
  - The Wildlife (Protection) Act, 1972: Listed in Schedule I
- **Threats to Survival:** The population is threatened by habitat loss, fragmentation, and human encroachment, which has led to a significant decline in their numbers.

VARIOUS MACAQUE SPECIES, THEIR GEOGRAPHICAL DISTRIBUTION, AND THEIR LATEST IUCN STATUS		
Species	**Geographical Distribution**	**IUCN Status**
Rhesus Macaque	South, Central, and Southeast Asia, including India, Bangladesh, Pakistan, Nepal, Bhutan, Vietnam, and China.	Least Concern
Bonnet Macaque	Southern India, in wet lowlands to dry deciduous forests.	Least Concern
Pig-tailed Macaque	Southeast Asia, including Thailand, Malaysia, and Indonesia.	Vulnerable
Assamese Macaque	Northeast India, Bhutan, Bangladesh, Myanmar, Thailand, Laos, Vietnam, and southern China.	Near Threatened

LION-TAILED MACAQUE
(MACACA SILENUS)

The lion-tailed macaque, also known as the **wanderoo** or **bearded monkey**, is an **Old World monkey** native to the Western Ghats.

Covered in a **thick coat of black fur**, its short **lion-like tail** ends in a tuft, which is why it is known as the Lion-tailed Macaque.

Unlike other macaques, this **arboreal** species are **shy** and **avoids humans** when possible. **Males define the boundaries** of their home ranges **by calls**.

← Medium-sized monkey

Shiny black fur covering its body

Long tail with a tuft of black hair at the end
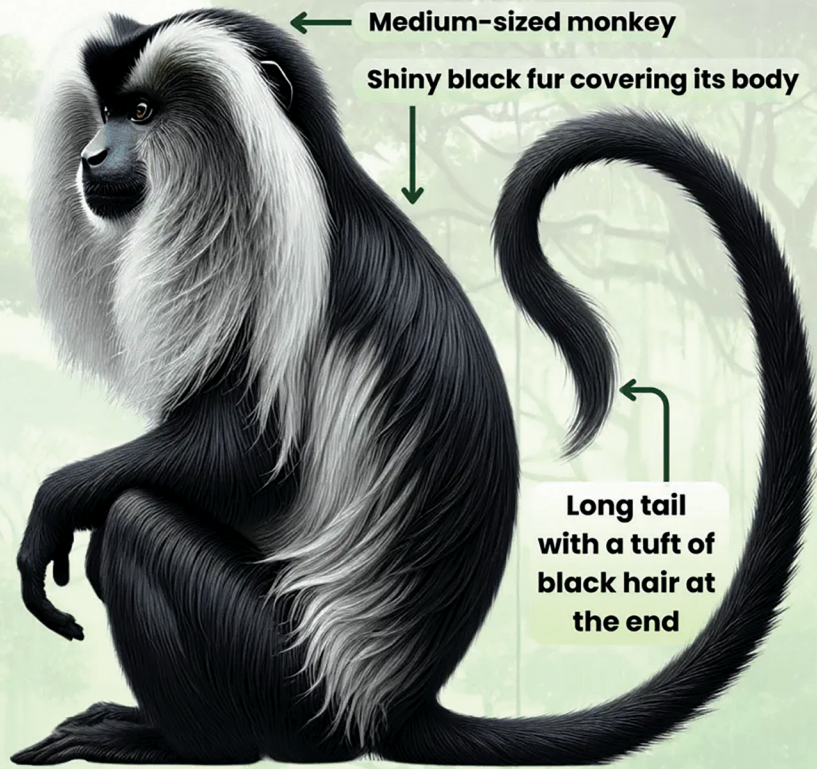
Habitat

Prefers **tropical evergreen rainforests** but also found in **monsoon forests**.

They are **arboreal** and **diurnal**

IUCN STATUS
< ENDANGERED >
EN

CITES APPENDIX I
WPA, 1972 SCHEDULE I

Diet

Are **omnivorous** but their diet consists mainly of fruit. Also eat a wide variety of vegetation such as leaves, stems, flowers, buds, and fungi.

Threats

Habitat loss   **Hunting**   **Wood harvesting**

Distribution

Found in three states, namely, **Karnataka, Kerala, and Tamil Nadu**

SANTA ANA WINDS

Context

Recently, experts have indicated that Santa Ana winds, coupled with climate change, are intensifying wildfires in Malibu, California.

About

- **Origin:** These winds derive their name from the Santa Ana Canyon, located in Southern California, where they are commonly observed.
- **Characteristics:**
  - **Type:** Santa Ana winds are dry and warm, sometimes becoming intensely hot.
  - **Location:** They occur primarily in Southern California but can influence a wider area depending on the intensity.
  - **Direction:** The winds originate from the inland desert regions, including the Great Basin, and blow westward and southward toward the Pacific Ocean.
- **Formation and Behavior:**
  - **Pressure Dynamics:**
    - **High-Pressure System**: Santa Ana winds form when a high-pressure system develops over the Great Basin, a vast area between the Rocky Mountains and the Sierra Nevada mountain range in the western United States.
    - **Low-Pressure System**: Concurrently, a low-pressure system forms along California's coastline. This pressure gradient creates a strong force that drives air from the desert regions toward the ocean.
  - **Wind Path and Transformation:**
    - As the winds travel from the Great Basin, they move over the mountains and through the canyons of Southern California.
    - During this descent, the air compresses, which increases its temperature. This compression also reduces the wind's relative humidity, often lowering it to less than 20%, or even below 10%.
  - **Seasonal Influence:**
    - Winter weather patterns contribute significantly to the formation of Santa Ana winds.
    - During the colder months (typically October through January), high pressure is more likely to build near the surface of the Great Basin, creating ideal conditions for these winds.

- **Impact on Vegetation and Environment:**
  - **Low Humidity**: The extremely dry air rapidly dehydrates vegetation, making it highly flammable.
  - **Wildfire Risk**: The combination of dry vegetation and strong winds creates a significant wildfire hazard. Fires spread quickly under these conditions, as the winds can carry embers over long distances.
  - **Heat and Dryness**: The hot and dry nature of the winds can also exacerbate drought conditions and create discomfort for residents in the affected areas.

NAZCA GEOGLYPHS IN PERU

Context

Recent breakthroughs in AI and drone technology have significantly sped up the discovery of new Nazca geoglyphs.

About

- **Definition:**
  - The Nazca Lines are a series of large-scale geoglyphs, which are designs or motifs created directly on the ground.
  - These designs were made by manipulating natural elements such as stones, gravel, dirt, or lumber to form intricate patterns and shapes that are visible from a great height.
- **Location:**
  - The Nazca Lines are located in the arid Peruvian coastal plain, about 400 kilometers south of Lima, in the Nazca Desert.
  - The region's dry, windless climate has contributed to the preservation of the geoglyphs over thousands of years, as the lack of rainfall has helped maintain the integrity of the designs.

➲ **Discovery and Study:**
  ◆ The Nazca Lines were first discovered by hikers in the mid-1920s, but their full significance was not realized until later.
  ◆ In 1926, Peruvian archaeologist Toribio Mejia Xesspe began studying the lines in a more systematic manner.
➲ **UNESCO Recognition:** In 1994, the Nazca Lines were recognized by UNESCO as a World Heritage Site.

Geoglyphs

➲ **Definition:**
  ◆ Geoglyphs are large-scale designs or motifs created by manipulating the surface of the earth.
  ◆ These patterns are typically made by arranging or removing stones, soil, or gravel to create shapes that are visible from above.
  ◆ Geoglyphs can vary in size, ranging from simple lines and shapes to highly intricate and detailed figures.
➲ **Types of Geoglyphs:** They can include various forms such as:
  ◆ **Animal shapes:** Depictions of animals, real or mythical, which often carry symbolic or ritualistic significance.
  ◆ **Geometric designs:** Simple or complex geometric patterns, such as spirals, circles, triangles, and squares, which may have cultural, religious, or astronomical meanings.
  ◆ **Human figures:** In some cases, geoglyphs depict human figures, either stylized or realistic, often associated with ancient cultures' spiritual or ceremonial practices.

KERCH STRAIT

Context

A storm-damaged oil tanker near the Kerch Strait recently caused an oil spill, releasing thousands of tons of heavy fuel oil, or mazut, into the sea.

About

➲ **Geographical Location:**
  ◆ **Region:** Located in Eastern Europe, the Kerch Strait is a critical waterway.
  ◆ **Connection:** It is the only body of water connecting the Black Sea to the Sea of Azov, making it a vital route for maritime transportation.
➲ **Historical Names:**
  ◆ **Roman Name**: Referred to as the "Strait of Cimmerian Bosphorus" by the Romans.
  ◆ **Greek Name**: Known as the "Cimmerian Strait" in ancient Greek texts.

➲ **The Kerch Strait separates:**
  ◆ **Kerch Peninsula**: Part of the Russian-occupied Crimean Peninsula, located to the west.
  ◆ **Taman Peninsula**: Located in Russia, lying to the east.

➲ **Dimensions:**
  ◆ **Length:** Approximately 3 km.
  ◆ **Breadth:** 15 km at its widest and 3–5 km at its narrowest near the Chushka Landspit.
  ◆ **Depth:** Around 18 meters.
➲ **City of Kerch:** Situated near the middle of the strait on the Crimean side, this city holds historical and strategic importance.
➲ **Strategic Importance:**
  ◆ **Shipping Route**: The strait serves as a crucial global shipping corridor, enabling passage from the Sea of Azov to the Black Sea.
  ◆ **Conflict Zone**: The strait has been a focal point of tensions between Russia and Ukraine, particularly since Russia annexed Crimea in 2014. Control over the strait is critical for regional security and economic activity.

MOLDOVA

Context

Recently, the Republic of Moldova, a country in Eastern Europe, officially inaugurated its embassy in New Delhi.

About

➲ **Geographical Location:**
  ◆ **Region:** Moldova, previously known as Bessarabia, is a landlocked country located in Eastern Europe.
  ◆ **Borders:** It shares its boundaries with:
    ◆ **Ukraine** to the north, east, and south.
    ◆ **Romania** to the west.
  ◆ **Balkan Peninsula:** Moldova is situated in the northeastern corner of the Balkan Peninsula, a region in southeastern Europe named after the Balkan Mountain Range.

➲ **Physical Features:**
- **Rivers:**
  - **Prut River**: A meandering river that forms much of Moldova's western border with Romania.
  - **Dniester River**: Flowing through the eastern part of the country, it serves as a key geographical feature and boundary.
- **Mountains:** Moldova lies to the east of the Carpathian Mountain arc, which significantly influences the region's climate and terrain.

GOLAN HEIGHTS

Context

Recently, the Israeli government decided to double its population on the occupied Golan Heights, citing continued threats from Syria.

About

➲ **Geography:**
- **Location**: A 1,200-square-kilometer rocky plateau in southwestern Syria, overlooking the Jordan River Valley.
- **Etymology**: The name "Golan" originates from the biblical city of refuge, Golan in Bashan, mentioned in the Bible.
- **Boundaries:**
  - **North**: Mount Hermon.
  - **South**: *Yarmūk* River.
  - **West**: Jordan River and Sea of Galilee.
  - **East**: Seasonal Wadi *Al-Ruqqād*.
- **Water Resources:**
  - The Golan Heights is a crucial source of water in the arid region.
  - Rainwater from the plateau's catchment area feeds into the Jordan River, supporting agriculture and regional water needs.

➲ **Historical Context:**
- **1967 Six-Day War**: Israel captured most of the Golan Heights from Syria during this conflict.
- **1973 Yom Kippur War**: Syria's attempt to reclaim the region was unsuccessful.

- **1974 Agreement on Disengagement**:
  - This ceasefire agreement followed the Yom Kippur War.
  - It established a United Nations-monitored buffer zone to separate Israeli and Syrian forces.
  - The United Nations Disengagement Observer Force (UNDOF) was created to monitor the ceasefire line.
- **1981 Annexation:** Israel formally annexed the Golan Heights, though this move remains unrecognized by most of the international community.
- **2019 US Recognition:** The United States became the first major country to acknowledge Israeli sovereignty over the region. Syria continues to claim the Golan Heights as its territory.

➲ **Military Presence and Significance:**
- **Demilitarized Zone (DMZ):** The region is divided by a United Nations-monitored buffer zone called the *"Area of Separation."*
  - This zone separates Israeli and Syrian forces, maintaining relative stability in the area.
- **Strategic Importance:** The Golan Heights serves as a critical security buffer for Israel.
  - Its elevated position provides a strategic advantage, allowing Israel to monitor military movements in both Syria and Lebanon.

MASALI

Context

Recently, Masali village has become India's first solar-powered border village.

About

➲ **Geographical Location**: Masali is situated in Banaskantha district, which lies in the state of Gujarat, India.

➲ **Proximity to Border**: The village is located about 40 kilometers from the international border with Pakistan, making it part of a strategically significant border area.

➲ **Population**: The village has a population of approximately 800 people, residing in a mix of rural dwellings.

➲ **Solar-Powered Houses**: As part of a broader initiative to provide renewable energy to remote areas, Masali has successfully installed solar rooftops on 119 houses.

➲ **Electricity Production**: The solar panels generate more than 225 kilowatts of electricity, ensuring that the energy needs of the households are met and even exceeded.

➲ **Energy Source**: The initiative was implemented under the **PM Suryaghar Yojana**, which aims to promote solar energy across India.
  ◆ The project was part of the larger **Border Development Project** designed to modernize border regions with sustainable infrastructure.

➲ **Environmental and Economic Impact:** The solar rooftops help reduce dependence on non-renewable energy sources, lower electricity costs for residents, and mitigate the environmental impact associated with conventional power generation.

LESOTHO

Context

Recently, India dispatched a humanitarian aid consignment of 1,000 metric tonnes to Lesotho to support food security and nutrition.

About

➲ **Geography:**
  ◆ **Enclaved Nation**: Lesotho is an enclaved country entirely surrounded by South Africa.
  ◆ **Global Location**: It is uniquely positioned as the only independent state in the world entirely located above 1,400 meters in elevation.
  ◆ **Capital:** Maseru

➲ **Historical Background:**
  ◆ **Early Inhabitants**: Initially, the region was home to **Khoisan-speaking hunter-gatherers**.
  ◆ **Rise of the Sotho People**: In the **19th century**, the **Sotho people** gained control of the territory.
  ◆ **Founding of Basutoland:**
    ◦ In **1822**, **Moshoeshoe I**, a visionary leader, founded **Basutoland** by uniting diverse groups to defend against Zulu forces under **Shaka Zulu**.
    ◦ His leadership earned the region recognition as the **Mountain Kingdom**.
  ◆ **Independence:**
    ◦ Lesotho achieved **full independence** on **4th October 1966**, transitioning from British colonial rule.
    ◦ **King Moshoeshoe II** became the nation's sovereign, continuing the legacy of unity and resilience.

➲ **Natural Features:**
    ◦ **Highest Point**: The country boasts the peak of **Thabana Ntlenyana**, standing as the **highest point** in Lesotho.
    ◦ **Major River**: The **Orange River**, originating in the **Lesotho Highlands** as the **Sinqu River**, spans **2,100 km**, making it one of **Africa's longest rivers**.

PANGONG TSO

Context

Recently, the statue of Chhatrapati Shivaji Maharaj was inaugurated on the banks of Pangong Tso Lake at an altitude of 14,270 feet.

About

➲ **Location and Elevation:**
  ◆ **Height**: Situated at a height of **4,350 meters** (14,270 feet) in the **Himalayas**.

- ◆ **Position**: Located approximately **140 km** from **Leh** in **Jammu and Kashmir**, India.
- ◆ **Geography**: Pangong Lake is an **endorheic lake** (one that does not drain into the sea) in a **separate, land-locked river basin**, and is not part of the **Indus River Basin**.
- ➲ **Extent:**
  - ◆ **Length: 134 km** (83 miles) long, stretching across both **India** and **China**.
  - ◆ **Width:** The lake is **5 km** (3.1 miles) wide at its broadest point.
  - ◆ **Area:** Covers an area of **604 sq.km**.

- ◆ **Distribution:** Approximately **60%** of the lake lies within **China**.
- ➲ **Special Features:**
  - ◆ **Water Color**: Pangong Lake is renowned for its unique **color-changing waters**, which transition from **blue** to **red** and **green** under different lighting conditions.
  - ◆ **Winter Freeze**: Despite being **saline**, the lake completely **freezes** during the winter months.
- ➲ **Strategic and Geopolitical Significance:** The lake lies in a **disputed region**, with the **Line of Actual Control (LAC)** passing through it, making it a significant area in the ongoing **India-China border dispute**.

IMPORTANT GEOGRAPHICAL LOCATIONS

➲ **Zagreb-Croatia:**
- ◆ On December 21, the **Republic of Croatia** observed a Day of Mourning to honor the victims of the tragic attack on students and staff at *"Prečko"* Primary School in Zagreb.

➲ **Lobito Corridor:**
- ◆ It is a railway that connects **Angola, the Democratic Republic of the Congo (DRC), and Zambia**, and provides a route to the Atlantic Ocean
- ◆ In early December, during his visit to Angola, US President Joe Biden announced an additional pledge of $600 million for the Lobito Corridor project.
- ◆ It is a part of the Partnership for Global Infrastructure and Investment (PGII) Initiative.

➲ **Deir al-Balah:**
- ◆ It is a **Palestinian city in the central Gaza Strip.**
- ◆ Israeli forces have detained over 240 Palestinians, including numerous medical staff members and the director of a hospital in northern Gaza.

➲ **N'Djamena:**
- ◆ N'Djamena is the capital and largest city of **Chad.**
- ◆ The elections were planned to conclude Chad's three-year transition period following the death of longtime President Idriss Deby Itno in April 2021.

➲ **Lhasa:**
- ◆ It is the **capital of the Tibet Autonomous Region**, lies on the Lhasa River's north bank in a valley of the Himalayas.
- ◆ Tibetan women gathered at Lhasa's Jokhang Temple to celebrate Fairy's Day, showcasing their cultural traditions and festivities.

➲ **Tammun:**
- ◆ Tammun is a **Palestinian town** in the Tubas Governorate of the State of Palestine.
- ◆ Israel conducted overnight raids in at least six areas of the occupied West Bank, including the town of Tammun.

➲ **Cetinje:**
- ◆ It is a town in **Montenegro.**
- ◆ Montenegro's interior minister reported that a shooting in Cetinje killed at least 10 people, including two children.

➲ **Tbilisi:**
- ◆ It is the capital of **Georgia.**
- ◆ Thousands protested in Georgia against the government's decision to halt EU talks, prompting international condemnation and demands for new elections.

➲ **Maputo:**
- ◆ It is the capital and largest city of **Mozambique.**
- ◆ The country faced unrest after the top court confirmed the ruling party's victory in a contested election, with over 100 deaths in post-election violence.

➲ **Gatun Lake:**
- ◆ It is a freshwater artificial lake in **Panama.**
- ◆ In an exceptional hydrological recovery, Gatun Lake, the primary water source for the Panama Canal, was expected to reach record levels in December.

➲ **Sanaa**
- ◆ It is the capital and largest city of **Yemen.**
- ◆ In addition to its internal political crisis, Yemen's major cities, including Sanaa, are being bombed by Israeli, U.S., and U.K. fighter jets.

COMMISSIONING OF NIRDESHAK

Context

The Indian Navy is set to commission the latest survey ship, Nirdeshak, at Naval Dockyard, Visakhapatnam.

About

➲ INS Nirdeshak is the second ship under the **Indian Navy's Survey Vessel** (Large) Project.
➲ **Purpose**: Designed for hydrographic surveys, navigation assistance, and maritime operations.
➲ **Constructed by:** Garden Reach Shipbuilders and Engineers (GRSE), Kolkata.
➲ **Indigenous Content**: Reflects India's Aatmanirbhar Bharat initiative, with over 80% indigenous components.
  ◆ The name 'Nirdeshak', meaning 'Pathfinder,' highlights its role in accurately charting maritime routes.

SUPREME COURT EXPANDS NIA POWERS

Context

Recently, the Supreme Court of India has expanded the investigative powers of the NIA.

About

➲ The Supreme Court has interpreted the **Section 8 of the NIA Act, 2008** and held that the **agency's powers are not confined to scheduled offences alone.**
➲ It has expanded the NIA's powers to include the **investigation of non-scheduled offences if they are connected to scheduled offences**, and allowed the NIA to probe a **broader range of criminal activities** linked to its primary investigations.

National Investigation Agency (NIA)

➲ **Statutory Body:** It is the **primary counter-terrorist task force of India**, was established in 2009, after the enactment of **National Investigation Agency Act, 2008.**
➲ **Works as:** Central Counter Terrorism Law Enforcement Agency in India under the Union Ministry of Home Affairs.
➲ **Key Objective:** It was created to investigate and prosecute offences affecting national security, such as terrorism, smuggling of arms, and other serious crimes.
➲ **Headquarter:** New Delhi.

Key Provisions of the NIA Act:

➲ **Jurisdiction and Powers:** The NIA is empowered to **investigate and prosecute offenses listed in the Schedule of the Act**, which includes acts of terrorism, offenses against the state, and other crimes that threaten national security.
  ◆ The NIA also has the **authority to investigate offenses across India.**
  ◆ The **NIA (Amendment) Act, 2019** allowed the NIA **to investigate crimes committed outside India** if they involve Indian citizens or affect Indian interests. It also empowered the agency to investigate offenses related to human trafficking, cyber terrorism, and the Explosive Substances Act, among others.
➲ **Special Courts:** The Act mandates the establishment of Special Courts for the **trial of scheduled offenses.** These courts have the authority to conduct trials, pass judgments, and impose penalties.

Implications of the Ruling:

➲ **Enhanced Investigative Reach:** The NIA can now investigate a wider array of offences, ensuring a more comprehensive approach to tackling complex criminal networks.
➲ **Strengthening National Security**: By allowing the NIA to probe related non-scheduled offences, the ruling enhances the agency's ability to dismantle organized crime and terrorism networks.
➲ **Legal Clarity:** The decision provides clear legal guidance on the scope of the NIA's powers, which can help streamline future investigations and prosecutions.

SILIGURI CORRIDOR

Context

The Union Home Minister highlighted the significance of the Siliguri corridor as a crucial link to Northeast India and said that the presence of Sashastra Seema Bal (SSB) in the area comes as an assurance to the entire country.

About:

➲ It is also referred to as the **Chicken's Neck,** is a narrow strip of land in West Bengal that connects the Northeastern States to the rest of the country.
➲ It is a very important strategic area of eastern India, located between **Mahananda and Teesta river.**

⮞ It holds critical military significance due to its proximity to international borders with **Nepal, Bhutan, Bangladesh and China.**

BHUTAN
NEPAL
● Siliguri
BANGLADESH

.... Neapl Border
.... Bhutan Border
.... Bangladesh Border

Sashastra Seema Bal (SSB)

⮞ **Parent Ministry:** Operates under the Ministry of Home Affairs as part of the Central Armed Police Forces (CAPF).
⮞ **Establishment:** Formed in May 1963 as the Special Service Bureau in response to the 1962 Chinese aggression.
⮞ **Responsibilities:**
  ◆ Ensure security and instill confidence among border area residents.
  ◆ Prevent cross-border crimes and unauthorized entry or exit from Indian territory.
  ◆ Combat smuggling and other illegal activities along Indian frontiers.
⮞ **Headquarters:** New Delhi.
⮞ **Deployment:** Operates along the Indo-Nepal and Indo-Bhutan borders.

Need for Securing Siliguri Corridor

⮞ **Strategic Connectivity**: The Siliguri Corridor links northeast India to the rest of the country.
  ◆ Disruption here, such as during natural disasters like floods, can severely impact the supply of essential goods, services, and military aid.
⮞ **Military and Defense Significance**: The corridor lies near international borders with China (close to Doklam, where a standoff occurred in 2017), Nepal, and Bangladesh. Securing this area ensures seamless movement of troops and supplies during conflicts or crises.
⮞ **Geopolitical Vulnerability**: The corridor's narrow geography makes it an easy target for blockages.
  ◆ *For example*, during the **Doklam standoff,** concerns arose about the corridor's vulnerability to Chinese aggression.

Any disruption here could isolate the northeast and allow adversaries to exploit the situation.
⮞ **Economic and Trade Importance**: It facilitates cross-border trade with Bangladesh through routes like the **Benapole-Petrapole border crossing,** which handles a significant portion of bilateral trade. Securing this corridor ensures stable economic activity and resource flow.
⮞ **Internal Security**: The region is prone to insurgencies and external influences.
  ◆ *For instance*, militant groups in the northeast have historically exploited weak connectivity. Protecting the Siliguri Corridor strengthens national unity and peace in the region.

TELECOMMUNICATIONS (PROCEDURES AND SAFEGUARDS FOR LAWFUL INTERCEPTION OF MESSAGES) RULES, 2024

Context

The Union Government notified the Telecommunications (Procedures and Safeguards for Lawful Interception of Messages) Rules, 2024.

About

⮞ These rules supersede **Rule 419A of the Indian Telegraph Rules, 1951.**
⮞ **Rule 419A:**
  ◆ It grants the government or authorized agencies the **authority to intercept and disclose messages if necessary for public safety or national security.**
  ◆ Interception of messages can be done under conditions like **public emergency, defense, or maintenance of public order.**
  ◆ The rule also mandates that telecommunication **service providers cooperate with government authorities** and provide necessary assistance for interception.

Background

⮞ The safeguards and procedure of interception under Rule 419A were notified in 2007, consequent to the directions issued by the Supreme Court in **People's Union for Civil Liberties (PUCL) versus. Union of India Case.**
⮞ The Supreme Court held that the **right to privacy cannot be curtailed arbitrarily** without laying down safeguards which are just, fair and reasonable.

Key Provisions Under the New Rules:

⮞ **Authority for Interception:** It authorises **Union Home Secretary** and the **Secretary to the State government in-charge of the Home Department** as the competent authority to order the interception of any message.

- ◆ An officer **not below the rank of a Joint Secretary** to the Union Government, may also issue such order of interception in 'unavoidable circumstances'.
- ◆ Any other agency authorised by the Central Government.
- ➲ **In remote areas or for operational reasons:** The head or the second senior most officer of the authorised agency at the central level, may also issue an order of interception.
- ➲ **Time Frame:** In case the interception order by an authorised agency is not confirmed within seven days, any messages intercepted shall not be used for any purpose.
- ➲ **Destruction of Records:** The rules also mandate the destruction of records relating to interception every six months by the authorised agency and review committee.
- ➲ **Scope of the Rule Enhanced:** The condition of interception by authorised agencies only in 'emergent cases', has been relaxed.
  - ◆ Interception by authorised agencies is now possible if it is not feasible for the competent authority to issue orders in 'remote areas or for operational reasons'.
- ➲ **Additional Authorisation:** Under Rule 419A, there was no limit for the number of IGP rank officers at the State level who could be authorised for interception.
  - ◆ But now, in addition to the head of the authorised agency, only (one) the second senior most officer can be authorised for interception.

MH-60R HELICOPTERS

Context

The United States has approved a $1.17 billion sale of advanced equipment for MH-60R Seahawk helicopters to India.

About

- ➲ The **MH-60R ("Romeo")** is a versatile helicopter designed for **anti-submarine and anti-surface warfare.**
- ➲ It targets both submarines and surface vessels and can operate from **both ships and shore-based facilities.**
  - ◆ The MH-60R is armed with torpedoes, air-to-ground missiles, rockets, Hellfire missiles, and Mark 54 anti-submarine torpedoes.
- ➲ Equipped with advanced sensors, the MH-60R includes a multi-mode radar, electronic support measures, infrared cameras, datalinks, dipping sonar, and sonobuoys.
- ➲ **Importance for India:** It will be boosting the country's anti-submarine warfare and maritime capabilities. This deal supports India's defence modernisation and enhances its naval operations in the Indo-Pacific region.

RESEARCH AND TECHNOLOGY HUB IN DEFENCE SECTOR

Context

The Ministry of Defence has implemented various initiatives to position India as a global research and technology hub.

Related Key Programs:

- ➲ **Technology Development Fund (TDF) Scheme:**
  - ◆ **Objective:** To encourage industries, particularly MSMEs and startups, to design and manufacture defense technologies.
  - ◆ **Scope:** Funded by the Ministry of Defence (MoD) and executed by DRDO under the Make in India and Aatmanirbhar Bharat initiatives.
  - ◆ **Features:** Funding of up to ₹50 crore per project as Grant-in-Aid.
    - ◆ Aimed at integrating new industries into defense R&D and production.
- ➲ **DRDO Industry Academia Centre of Excellence (DIA-CoE):**
  - ◆ **Objective:** To foster research collaboration between DRDO, academia, and industry for cutting-edge defense technologies.
  - ◆ **Structure:** Centers established at premier institutions like IISc Bangalore, IITs, and Central/State Universities. State-of-the-art infrastructure for research and innovation.
- ➲ **Innovations for Defence Excellence (iDEX):**
  - ◆ **Purpose:** To promote innovation and self-reliance in the Defense and Aerospace sectors by engaging MSMEs, startups, individual innovators, R&D institutions, and academia.
- ➲ **Dare to Dream Innovation Contest:**
  - ◆ **Launched:** Annually since 2019 by DRDO. Dare to Dream 5.0 was launched in October 2024 by Raksha Mantri.
  - ◆ **Aim:** To bring together innovators, startups, and entrepreneurs to propose ideas for defense and aerospace advancements.

INS TUSHIL

Context

Recently, Stealth frigate INS Tushil was commissioned into the Indian Navy.

About

- ➲ The ship **'Tushil'** was designed and built by Russia for the Indian Navy.
- ➲ **'Tushil'** means **Protector Shield** in Sanskrit.

⮞ It is part of **Project 1135.6**, also called the **Talwar Class** of guided-missile frigates. These are improved versions of Russia's **Krivak III-class frigates.**

⮞ **INS Tushil** is equipped with advanced Indian and Russian weapons and sensors, designed to operate in both coastal and deep-sea waters, alone or in a group.

⮞ It uses **stealth technology** to reduce detection by radar and sonar. Stealth technology is a low observable technology that makes aircraft, fighter jets, ships, submarines, satellites, missiles etc less visible to radar, infrared, sonar and other detection technologies.

MILITARY
EXERCISES

EXERCISE CINBAX

Context

The 1st edition of joint table top exercise CINBAX, between the Indian Army and the Cambodian Army commenced at Foreign Training Node, Pune (India).

About

⮞ **Aim:** is a **planning exercise** designed to simulate joint Counter Terrorism (CT) operations conducted under **Chapter VII** of the United Nations Charter.

◆ The exercise would be carried out in **three phases** and will include discussions on information operations, cyber warfare, hybrid warfare, logistics and casualty management, HADR (Humanitarian Assistance and Disaster Relief) operations etc.

EXERCISE AGNI WARRIOR (XAW-2024)

Context

The Indian Army and the Singapore Army concluded the 13th edition of Exercise Agni Warrior (XAW) in Maharashtra.

About

⮞ Held in India **since 2004**, XAW is conducted under the ambit of the Army Bilateral Agreement.

⮞ **Aim of XAW-2024** : It was to maximise mutual understanding of drills and procedures to achieve jointness as a multinational force under the **United Nations Charter.**

EXERCISE DESERT KNIGHT

Context

India, France, and the UAE have launched "Desert Knight, an air combat defence exercise.

About

⮞ **Nations Involved:** India, France, and the UAE.

⮞ **Location:** Arabian Sea

⮞ **Objective:**

◆ Strengthen trilateral defence cooperation.

◆ Enhance combat skills and interoperability among the air forces of the three nations.

EXERCISE SURYA KIRAN

Context

The 18th edition of Exercise SURYA KIRAN will take place in Saljhandi, Nepal from 31st December 2024 to 13th January 2025.

About

⮞ It is an annual joint military exercise conducted alternately between India and Nepal.

⮞ **Significance:**

◆ It focuses on operational preparedness, aviation aspects, medical training, and environment conservation.

◆ It aims to improve combat skills, coordination, and operational capabilities of troops to function effectively in challenging situations.

◆ It aims to enhance interoperability in jungle warfare, counter-terrorism operations, and Humanitarian Assistance and Disaster Relief (HADR) under the United Nations Charter.

MILITARY DIPLOMACY

⮞ It involves using defense resources and capabilities to achieve foreign policy goals peacefully. *Examples* include UN peacekeeping contributions, humanitarian assistance, and joint military exercises by India.

⮞ **Significance:**

◆ **Building Trust and Reducing Conflicts:** Regular dialogue and exchanges minimize mistrust and potential conflicts.

◆ **Strengthening Alliances:** Defense agreements, technology transfers, and joint drills foster regional security collaboration.

◆ **Modernization and Capabilities:** Promotes technology transfer, training, and joint projects (e.g., BrahMos missile by India-Russia).

NANO BUBBLE TECHNOLOGY

Context

The Union Minister of State for Forest, Environment, and Climate Change unveiled Nano Bubble Technology at the National Zoological Park in Delh.

About

➲ It is a cutting-edge method of **improving water quality** by using incredibly tiny bubbles, called nanobubbles.
 ◆ These bubbles are so small (**less than 200 nanometers in diameter**) that they are invisible to the naked eye.
➲ **Working:** Unlike regular bubbles that rise to the surface and pop, nanobubbles remain suspended in the water for a long time. This allows them to interact with pollutants and break them down.
 ◆ Nanobubbles have a strong negative charge, which helps them attract and break down impurities in the water. They can remove algae, organic waste, and even oil and grease.
 ◆ Nanobubbles can also increase the amount of oxygen dissolved in the water.
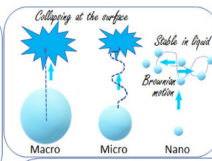
Advantages over Traditional Methods

➲ Chemical-free approach to water purification, making it environmentally friendly and safe for aquatic life.
➲ More energy-efficient, reducing operational costs.
➲ It can be applied to various water bodies, including lakes, ponds, aquariums, and even wastewater treatment plants.
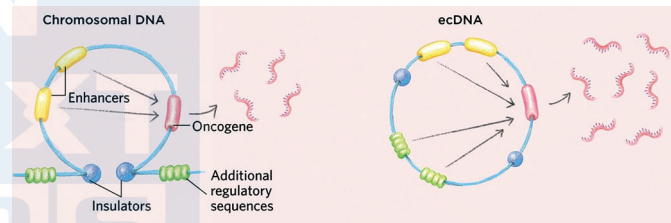
EXTRACHROMOSOMAL DNA (ECDNAS)

Context

Three papers in Nature have reported how extrachromosomal DNA contributes to the progression of cancer and drug resistance.

About

➲ Extrachromosomal DNA refers to DNA that exists outside the chromosomes in the cell.
 ◆ Unlike the chromosomal DNA that is located in the nucleus (in eukaryotic cells) or the nucleoid region (in prokaryotic cells), extrachromosomal DNA exists independently or in a separate structure within the cell.

➲ Some cells, especially cancer cells, have Extrachromosomal circular DNAs (ecDNAs) that are separate from the chromosomal DNA.
 ◆ These molecules can carry multiple copies of certain genes and may be involved in the amplification of genes, such as those responsible for drug resistance.
➲ **Chromosomal DNA** contains the complete set of genetic instructions necessary for the development, functioning, and reproduction of an organism.
 ◆ It carries the vast majority of the organism's genetic information, organized into genes, which are the building blocks for proteins and cellular structures.
 ◆ In humans, there are **23 pairs of chromosomes**, each containing a single, long molecule of DNA.

MARBURG VIRUS DISEASE (MVD)

Context

A deadly outbreak of Marburg Virus Disease (MVD), often called the 'bleeding eye disease', has emerged in Rwanda, Africa.

About

- **Ebola's Twin:** It belongs to the filovirus family, like Ebola.
  - Both cause rare but severe outbreaks with high fatality rates.
- **Origin:** First outbreak occurred in Marburg, Germany (1967).
  - Subsequent outbreaks reported across Africa, including Tanzania, Ghana, and now Rwanda.
- **Transmission: Rousettus Aegyptiacus (a fruit bat species)** is the natural reservoir.
  - Virus spreads to humans from infected fruit bats.
  - Human-to-human transmission occurs through contact with infected bodily fluids
- **Symptoms:** Severe headache, Pain, Bleeding from eyes, gums, nose.
- **Diagnosis and Treatment:** Diagnosed using Enzyme-Linked Immunosorbent **Assay (ELISA)** and **Real-Time** Polymerase Chain Reaction **(PCR) testing**. No approved vaccines or specific antivirals, only supportive care.

GAIT PATTERN ANALYSIS

> **Context**
>
> *Kolkata Police recently utilized Gait Pattern Analysis to apprehend a suspect in a heinous crime, identifying him through CCTV footage that revealed a distinct limp.*

About

- Gait analysis is the **study of human motion patterns**, particularly walking or running, to assess body movements, mechanics, and muscle activity.
- It involves **visual observation, sensors, and advanced technologies** like optical marker-based frameworks to evaluate gait abnormalities.

Some Applications of Gait Analysis

- **Clinical settings:** To diagnose and treat movement abnormalities in people with conditions like Parkinson's disease, cerebral palsy, or stroke.
- **Sports biomechanics:** To help athletes run more efficiently and identify movement problems.
- **Forensic science:** To compare a suspect's gait to evidence at a crime scene, such as footprints or CCTV footage.

SILICOSIS

> **Context**
>
> *Mine workers exposed to silica dust for many years have a heightened risk of developing silicosis.*

About

- **Silicosis is a lung disease** caused by inhaling fine silica dust, often found in industries such as mining, construction, and stone cutting.
- It leads to **inflammation and scarring of the lungs**, making it difficult to breathe.
- **Symptoms** can include coughing, shortness of breath, and chest pain, which may develop years after exposure.
  - **Chronic Silicosis:** Develops after long-term exposure to low levels of silica dust.
  - **Accelerated Silicosis:** Occurs with higher levels of exposure over a shorter period.
  - **Acute Silicosis:** Results from extremely high exposures over a brief period, leading to severe lung damage.
- **Silicosis isn't contagious** as it is not caused by a virus or bacteria.
- There's **no cure for silicosis** because the lung damage can't be reversed.

GENETICALLY MODIFIED MALARIA PARASITES

> **Context**
>
> *In recent times, scientists have shifted their focus from genetic modification of malaria-causing mosquitoes to malaria-causing parasites.*

About

- Traditionally, efforts to control malaria have focused on mosquito vectors.
- **Some key approaches include:**
  - **Radiation-Sterilised Mosquitoes:** Release of sterilised male mosquitoes prevents fertilisation, reducing mosquito populations.
  - **Slowing Parasite Growth in Mosquitoes:** Genetic engineering slows the growth of Plasmodium parasites within mosquito guts, halting the transmission to humans.
  - **Genetically Modified Mosquitoes:** Mosquitoes are engineered to thrive and spread genetic resistance to Plasmodium parasites through mating, reducing transmission rates.

Working of Genetic Modifications:

- **Immune Priming:** Genetically modified parasites act like a vaccine, priming the immune system during the liver stage to shield individuals from future infections.
- **Controlled Growth Arrest:** Parasite growth is arrested on **day six** (late-arresting parasite), allowing sufficient time for immune system activation before the parasite is killed.

➲ **Early vs. Late Arrest:** Early arrest (day one) limits immune exposure, reducing effectiveness, whereas late arrest enhances immune priming for better protection.

Significance of the Development:

➲ **Vaccine-Like Effect:** Genetically modified parasites act as a **natural immune** booster, providing protection similar to a vaccine.

➲ **Targeted Approach:** Unlike methods focusing solely on mosquitoes, modifying parasites directly disrupts the Plasmodium life cycle, reducing the risk of disease.

➲ **Overcoming Resistance:** With rising insecticide resistance in mosquitoes and drug resistance in parasites, this approach offers a promising alternative strategy.

➲ **Enhanced Efficacy:** Late-arresting parasites allow for stronger immune system activation, increasing the effectiveness of malaria prevention.

Challenges and Concerns:

➲ **Biosafety Issues:** The release and use of genetically modified organisms (GMOs) carry biosafety risks that must be addressed.

➲ **Ethical Considerations:** Genetic modification of parasites raises ethical questions about altering natural biological systems.

Malaria

➲ It is a life-threatening disease spread to humans by some types of mosquitoes. It is mostly found in tropical countries.

➲ **Transmission:** It is caused by **plasmodium protozoa.**
  ◆ The plasmodium parasites spread through the bites of infected female Anopheles mosquitoes.
  ◆ Blood transfusion and contaminated needles may also transmit malaria.

➲ **Types of parasites:** There are 5 Plasmodium parasite species that cause malaria in humans.

➲ Two of these species – **P. falciparum and P. vivax** – pose the greatest threat.
  ◆ The other malaria species which can infect humans are **P. malariae, P. ovale and P. knowlesi.**
  ◆ **P. falciparum is the deadliest malaria parasite** and the most prevalent on the African continent. P. vivax is the dominant malaria parasite in most countries outside of sub-Saharan Africa.

➲ **Symptoms:** Fever and flu-like illness, including chills, headache, muscle ache and fatigue.

INDIA'S FIRST HYPERLOOP TEST TRACK

Context

IIT Madras has completed a 410-meter Hyperloop test track, marking a milestone in advanced transportation.

About

➲ **The Mumbai-Pune corridor** will be the first full-scale Hyperloop project in India.

➲ **Meaning:** A Hyperloop is a **high-speed transportation system** where pods, functioning as pressurized vehicles, move at extraordinary speeds through **low-pressure tubes.**

➲ **Key Features:**
  ◆ **Speed:** Hyperloop pods can reach up to **1200 km/h** with an operational speed of around 360 km/h.
  ◆ **Frictionless System:** Operates within a vacuum-sealed environment, minimizing resistance and energy consumption.
  ◆ **Efficiency:** Provides direct, point-to-point travel without intermediate stops.

Travelling in a Tube

THE TECHNOLOGY

A capsule, with passengers, travels at speeds of more than **1200 KM/H** inside a vacuum tube

Vacuum tube has an area of **LOW PRESSURE INSIDE IT**

INDIA PLANS

Hyperloop can be built in India in **38 MONTHS**

Globally, **800 ENGINEERS** working on the Hyperloop, of which **25 ARE FROM INDIA**

It uses power from **RENEWABLE ENERGY** sources like solar energy, regenerative braking & wind power

These tubes stand on pylons that can **WITHSTAND** quakes & crashes

Benefits:

➲ **Energy Efficiency:** Due to reduced air resistance and friction, Hyperloop systems are expected to be highly energy-efficient.

➲ **Sustainability:** Many Hyperloop concepts are designed to be powered by renewable energy sources like solar power, making them environmentally friendly.

➲ **Reduced Travel Time:** Hyperloop could drastically reduce travel times between cities, making long-distance commutes more feasible.

BHARATGEN

Context

BharatGen is a multimodal multilingual large language model initiative, developing advanced generative AI models tailored to India's linguistic, cultural, and socio-economic diversity.

About

➲ It is the first Government-funded **Multimodal Large Language Model Initiative.**

➲ **Aim:** To ensure that generative AI models adequately represent India's diverse linguistic landscape.

- It reduces reliance on foreign technologies and strengthens the domestic AI ecosystem for startups, industries, and government agencies.
- **The four key distinguishing features of BharatGen are:**
  - Multilingual and multimodal nature of foundation models;
  - Bhartiya data set based building, and training;
  - Open-source platform and
  - Development of an ecosystem of generative AI research in the country.
- BharatGen has launched an initiative called **"Bharat Data Sagar"**, focusing on primary data collection.
  - This data collection attempts to meet the requirement that training data is available for Indian languages that are less represented.

Meaning of LLM

- **LLM** stands for **Large Language Model**, which refers to an advanced artificial intelligence system trained on vast amounts of text data to understand and generate human-like language.
- These models, such as GPT (Generative Pre-trained Transformer), are capable of performing a wide range of tasks, including answering questions, summarizing text, generating creative content, and even programming, by leveraging their extensive training on diverse datasets.

GOOGLE'S QUANTUM CHIP 'WILLOW'

Context

Google has developed a state-of-the-art quantum computing chip called Willow.

Quantum Chip

- **A quantum chip** is a special type of computer chip designed to use the principles of quantum mechanics, the science of very tiny particles like atoms.
- While regular chips use 'bits' (0 or 1) to process information, quantum chips use 'qubits', which can be 0 or 1 or both at the same time.
  - This unique ability allows quantum chips to handle complex calculations much faster than traditional computers.

About Willow

- Willow operates using **superconducting transmon qubits**—tiny electrical circuits exhibiting quantum behaviour at extremely low temperatures.
  - These circuits are engineered to function like artificial atoms in a quantum state.
  - To maintain these delicate quantum states, the qubits are cooled to temperatures just above absolute zero.

- This minimises vibrations and other disturbances that could disrupt the qubits and introduce errors in calculations.
- **Achievements:**
  - It has solved a complex computation under 5 minutes that would have taken a supercomputer around 10 septillion (10^{25}) years to complete.
  - Willow can reduce errors exponentially as we scale up using more qubits. This cracks a key challenge in quantum error correction that the field has pursued for almost 30 years.

Principles involved in Quantum Computing

- **Superposition:** It is the state in which a quantum particle or system can represent not just one possibility, but a combination of multiple possibilities.
- **Entanglement:** It is the process in which multiple quantum particles become correlated more strongly than regular probability allows.
- **Decoherence:** It is the process in which quantum particles and systems can decay, collapse or change, converting into single states measurable by classical physics.
- **Interference:** It is the phenomenon in which entangled quantum states can interact and produce more and less likely probabilities.

Application

- **Cryptography**: Quantum computers can break traditional encryption methods but also enable quantum-safe encryption, ensuring secure communication using quantum key distribution.
- **Drug Discovery**: Quantum simulations can model molecular interactions at an atomic level, accelerating the development of new drugs and reducing reliance on trial-and-error methods.
- **Optimization**: Quantum algorithms solve complex optimization problems in logistics, finance, and supply chain management much faster than classical methods.
- **Machine Learning**: Quantum computing enhances machine learning by speeding up data processing and improving the training of AI models for large datasets.
- **Material Science**: Simulating quantum materials helps design advanced materials with specific properties, aiding innovations in energy storage and semiconductors.
- **Climate Modeling**: Quantum systems process vast datasets, improving the accuracy of climate predictions and enabling better decision-making to address global warming.
  - *For exmaple,* Improved Climate Simulations, Energy Optimization, Material Discovery for Carbon Capture etc.

EMBO GLOBAL INVESTIGATOR NETWORK

Context

Dr. Prem Kaushal and Dr. Rajender Motiani from the regional center for Biotechnology , has been selected for the European Molecular Biology Organization (EMBO) Global Investigator Network.

About

➲ **The EMBO Global Investigator Network** supports young group leaders who are in the early stages of setting up their independent laboratories in **Chile, India, Singapore and Taiwan.**

➲ The new EMBO Global Investigators receive financial support for **four years.**

Regional Center for Biotechnology (RCB)

➲ **It is established by** the **Department of Biotechnology,** with regional and global partnerships synergizing with the programmes of UNESCO as a Category II Centre.

➲ It aims to provide world class education, training and conduct innovative research at the interface of multiple disciplines.

➲ **In 2016,** RCB was recognised as an **Institution of National Importance** by the Parliament of India.

NOVEL GENE THERAPY TO CURE HAEMOPHILIA A

Context

Indian scientists have successfully tested gene therapy to treat severe hemophilia A.

About

➲ Haemophilia A is a hereditary disorder caused by the **absence or dysfunction of Factor VIII** (a protein critical for **blood clotting).**

➲ **Severe hemophilia A patients** have less than 1% of the clotting factor, leading to frequent, spontaneous bleeding episodes.

➲ India has the **world's second-largest hemophilia patient pool**, with an estimated 40,000–100,000 individuals affected.

Traditional Treatment

➲ Requires frequent injections of Factor VIII or other substitutes, making it expensive and burdensome.

➲ **Estimated cost:** ₹2.54 crore ($300,000) per patient over 10 years in India.

Gene Therapy as a One-Time Solution

➲ A therapeutic gene is introduced into the body, enabling it to produce sufficient levels of Factor VIII to prevent bleeding.

➲ The CMC Vellore trial used lentivirus vectors to integrate the clotting factor gene into the patient's stem cells, avoiding the use of adenovirus vectors, which can trigger immune responses.

◆ Lentivirus is a type of viral vector capable of transferring genetic material into host cells.

Gene Therapy

➲ **Definition:** A medical technique that uses genes to treat, prevent, or cure diseases by:
◆ Replacing faulty genes.
◆ Deactivating harmful genes.
◆ Introducing new genes to restore health.

➲ **Methods Used:**
◆ **Plasmid DNA:** Circular DNA molecules engineered to carry therapeutic genes.
◆ **Human Gene Editing:** Tools like CRISPR for precise gene modifications.

➲ **Types of Gene Therapy:**
◆ **Germline Gene Therapy:** Targets germ cells (sperm or egg) to introduce functional genes.
  ◦ Changes are heritable.
◆ **Somatic Cell Gene Therapy:** Transfers therapeutic genes to somatic cells (non-germline cells).
  ◦ Changes are not passed to offspring.

➲ **Applications:**
◆ **Inherited Disorders:** Sickle cell disease, cystic fibrosis.
◆ **Acquired Disorders:** Cancer, leukemia.

MANGANESE IN WATER IS CAUSING CANCER

Context

A recent study highlighted that Manganese (Mn) contamination of water is causing cancer in the Gangetic plains of Bihar.

About

➲ **Toxicity Concerns:** Excess consumption can cause severe health issues, including neurological disorders and cancer.
◆ According to the **Bureau of Indian Standards (BIS),** the acceptable limit for manganese in drinking water is **0.1 mg/L,** and the permissible limit is **0.3 mg/L.**

➲ **Manganese** is the **fifth-most abundant metal** on earth that exists in the form of oxides, carbonates and silicates.
◆ It is a **hard, brittle, silvery metal** and is present in food, water, soil, and rock as a naturally occurring component.

➲ **Essential Trace Element:** Manganese plays a vital role in maintaining body homeostasis by supporting metabolic processes, enzyme functions, and bone health.

> **Traces of Other Elements in Ground Water**
>
> Arsenic, Fluoride, Salinity, Iron, Manganese, Uranium, Radon, Strontium, Chromium, Selenium and Nitrate.

SCIENCE AND HERITAGE RESEARCH INITIATIVE (SHRI)

Context

Recently, five years of the Science and Heritage Research Initiative (SHRI) was celebrated.

About

➲ **Launched in:** 2019
➲ A new program focused on **cultural heritage research** which aims to address heritage-related challenges through expert collaboration, advanced technology, and innovative solutions.
➲ **Objectives:**
   ◆ **Capacity Building:** Develop human resources and encourage new researchers in cultural heritage fields.
   ◆ **Scientific R&D for Conservation:** Advance research on material deterioration processes, preservation techniques, intervention technologies, and diagnostic tools for heritage conservation.
   ◆ **Safeguarding Cultural Heritage:** Protect the use, expressions, knowledge, and techniques integral to cultural heritage, recognized by communities, groups, and individuals.
   ◆ **Tribal Arts Advancement:** Support R&D and technological innovations for value addition in tribal arts.
➲ **Nodal Ministry:** Ministry of Science & Technology.

INDIA SETS UP ITS FIRST DIABETES BIOBANK

Context

India has established its first biobank for diabetes in Chennai.

About

➲ **A biobank is a facility** that collects, processes, stores, and distributes biological samples, such as blood, tissues, and DNA.
➲ **The Indian Council of Medical Research (ICMR)**, in collaboration with the **Madras Diabetes Research Foundation (MDRF),** has launched this diabetes biobank.

➲ **This initiative aims** to advance scientific studies on diabetes, focusing on its causes, variations, and complications in the Indian population.

Significance of the Biobank

➲ **Support for Scientific Research:** It will enable researchers to access a diverse range of biospecimens from individuals with various types of diabetes, including Type 1, Type 2, and gestational diabetes.
➲ **Identification of Biomarkers:** The biobank can help in the discovery of novel biomarkers for early diagnosis of diabetes.
   ◆ Biomarkers are critical for developing personalized treatment and management strategies.
➲ **India** is known as the **diabetes capital of the world,** with over **10 crore** diabetes cases and around **13.6 crore** pre-diabetes cases.

> **Types of Diabetes**
>
> ➲ **Type 1 diabetes:** The body does not make insulin since the immune system attacks and destroys the cells in your pancreas that make insulin.
>   ◆ Type 1 diabetes is usually **diagnosed in children and young adults,** although it can appear at any age.
>   ◆ People with type 1 diabetes need to take insulin every day to stay alive.
> ➲ **Type 2 diabetes:** The body does not make or use insulin well.
>   ◆ One can develop type 2 diabetes at any age, even during childhood. However, this type of diabetes occurs most often in middle-aged and older people.
>   ◆ Type 2 is the **most common** type of diabetes.

> **Role of Pancreas**
>
> ➲ The pancreas functions as both an **exocrine gland,** secreting digestive enzymes (amylase, lipase, proteases) and bicarbonate through ducts into the small intestine for digestion, and an **endocrine gland**, releasing hormones like insulin and glucagon directly into the bloodstream to regulate blood sugar and maintain metabolic balance.
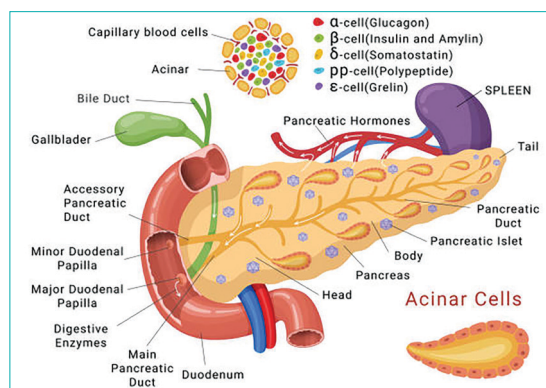
VARMAM THERAPY

Context

The National Institute of Siddha (NIS) has set a Guinness World Record for providing Varmam therapy to 567 individuals simultaneously.

About

- ➲ Varmam therapy is a unique and traditional **healing process within the Siddha system of medicine**, and has long been revered for its effectiveness in treating various health conditions.
- ➲ It is particularly renowned for its ability to provide rapid relief for **musculoskeletal pain, injuries, and neurological disorders.**
- ➲ **The Varmakalai** (the martial art form associated with Varmam) in Siddha medicine, is a scientifically grounded therapeutic practice used to treat acute and chronic diseases, including stroke, arthritis, and trauma-related injuries.

National Institute of Siddha (NIS)

- ➲ National Institute of Siddha is an institute for **study and research of Siddha medicine** operating under the **Ministry of AYUSH.**
- ➲ **It was established in 2005** at Tambaram, Chennai, India.

GENERATIVE AI SUPERCOMPUTER 'JETSON ORIN NANO SUPER'

Context

Leading graphic processing units (GPUs) maker Nvidia introduced the Jetson Orin Nano Super.

About

- ➲ It is a compact **generative AI supercomputer** with improved performance and a software upgrade.
  - ◆ A **generative AI supercomputer** is a powerful computing system specifically designed to train, optimize, and deploy generative AI models.
  - ◆ It combines massive computational resources, advanced hardware (like GPUs and TPUs), and efficient software frameworks to handle the intensive demands of generating high-quality content such as text, images, and simulations.
- ➲ It fits in the **palm of hand, offers powerful AI capabilities** for developers and students to create AI tools.
- ➲ It is designed to make AI more accessible for businesses of all sizes, enabling small businesses to deploy AI solutions efficiently.

- ➲ It is suitable for a variety of applications including smart surveillance, robotics, smart retail, healthcare, AI-powered smart homes, autonomous vehicles, research, content creation, and more.

KISAN KAVACH

Context

The Union Minister of State for Science and Technology launched "Kisan Kavach".

About

- ➲ It is I**ndia's first anti-pesticide bodysuit** designed to protect farmers from harmful pesticide exposure.
- ➲ **Developed By**: BRIC-inStem, Bangalore in collaboration with Sepio Health Pvt. Ltd.
- ➲ **Technology**: It is made from **"oxime fabric,"** which can chemically break down common pesticides that may come into contact with clothing or skin during spraying operations.
  - ◆ The fabric is treated through a process called **nucleophilic hydrolysis,** which deactivates pesticides on cotton material.
- ➲ **Significance:** To safeguard farmers from pesticide-induced toxicity, which can lead to serious health issues such as breathing disorders, vision loss, and even death.

SPEED GUN

Context

To address the issue of speeding vehicles, traffic police across India have increasingly relied on speed guns as an essential tool for enhancing road safety and enforcing traffic regulations.

About

- ➲ **Definition:** Devices used to measure the speed of moving objects without contact, commonly used by traffic police to enforce speed limits.
- ➲ **Working:**
  - ◆ **Doppler effect:** They rely on the change in frequency of waves (usually radio waves) reflected off a moving vehicle.
  - ◆ **Higher frequency (Approaching vehicle):** If the vehicle is moving towards the gun, the frequency of the reflected waves increases.
  - ◆ **Lower frequency (Vehicle Moving Away):** If the vehicle is moving away, the frequency decreases.
  - ◆ **Speed Calculation:** The gun calculates the speed based on this frequency difference.

Limitations

- **Beam Divergence:** Radio waves can spread out, potentially measuring the speed of multiple vehicles simultaneously, leading to inaccurate readings.
- **Interference:** Continuous-wave radar can be affected by reflections from multiple vehicles or other objects, causing errors.
- **Cost:** Advanced systems are needed to compensate for these limitations, making them more expensive.

Transition to LIDAR Speed Guns

- **LIDAR (Light Detection and Ranging):** Uses laser light instead of radio waves for better targeting and accuracy.
- **In LIDAR, minimal** beam divergence ensures precise measurements.

BIO-BITUMEN

Context

The Union Government inaugurated India's first bio-bitumen-based National Highway stretch on the Nagpur-Mansar Bypass (NH-44) in Maharashtra.

About

- **Definition:** Bio-bitumen is a greener alternative to traditional petroleum-based bitumen, which is a major component of asphalt used in road construction.
- **Renewable Sources:** It's derived from renewable sources like crop stubble, vegetable oils, algae, or lignin (a complex polymer found in plants). This makes it a more sustainable and eco-friendly option.

Benefits

- **Reduced Emissions:** Bio-bitumen significantly reduces greenhouse gas emissions compared to petroleum-based bitumen. This is crucial for mitigating climate change.
- **Enhanced Durability:** It offers superior strength and durability, leading to longer-lasting roads and reduced maintenance needs.
- **Waste Reduction:** Using agricultural residues like crop stubble to produce bio-bitumen helps reduce waste and prevent harmful practices like stubble burning.

Applications

- **Road Construction:** Bio-bitumen can directly replace petroleum bitumen in asphalt mixtures, making roads more sustainable.
- **Modifier and Rejuvenator:** It can also be used to enhance the properties of traditional bitumen or to rejuvenate aged asphalt pavements.
- **Industrial Uses:** Bio-bitumen has potential applications in waterproofing, adhesives, and other industrial materials.

QUANTUM SATELLITE

Context

India plans to launch a quantum satellite within 2-3 years, enhancing secure communications using quantum physics. This initiative places India at the forefront of next-generation technology.

About:

- **Quantum Satellite:** It uses quantum physics to secure signals and prevent interception.
  - It employs **Quantum Key Distribution (QKD)** to protect data during transmission.
- **Quantum Key Distribution (QKD):**
  - Its utility lies in measuring changes in states of quantum particles (like photons).
  - It works on the principle of quantum entanglement.
    - **Quantum Entanglement**: It means the states of particles are linked, so changing one particle instantly affects the other, even if they are far apart.
  - If an eavesdropper tries to interfere, it changes the photons and alerts the sender.
    - Thus it provides **unbreakable security** by detecting any interception.

National Quantum Mission (NQM)

- It was conceptualized by the Prime Minister Science Technology Advisory Council (PM-STIAC) with a total outlay of **Rs 6003.65 Crore** for a period of **eight years** from 2023 to 2031.
- The Mission aims to seed, nurture, and scale up scientific and industrial R&D and create a vibrant & innovative ecosystem in Quantum Technology (QT).
- The Mission aims to establish **four Thematic Hubs (T-Hubs)** in domains such as:
  - Quantum Computing,
  - Quantum Communication,
  - Quantum Sensing & Metrology, and
  - Quantum Materials & Devices.

DIRECT-TO-DEVICE SATELLITE CONNECTIVITY

Context

Bharat Sanchar Nigam Limited (BSNL) launched India's first Direct-to-Device (D2D) satellite connectivity, a transformative step in making satellite communications accessible to everyday consumers.

About:

➲ **Definition:** D2D technology enables satellites to act as **cell towers in space**, bypassing the need for terrestrial infrastructure for communication.

➲ **Working Principle:**

◆ Uses **Non-Terrestrial Network (NTN) technology** to enable two-way communication between satellites and devices.

◆ **NTN:** As defined by the International Telecommunication Union (ITU), it refers to space or air-based communication networks that operate without terrestrial infrastructure.

◆ BSNL leverages **Viasat's Geostationary L-band satellites** located **36,000 km above the Earth** for direct signal transmission.

➲ **Global Context:** Major global players like **AST SpaceMobile, Lynk Global, Constellation Global**, and **SpaceX Starlink** have been using D2D technology for seamless global satellite connectivity.

Key Features of D2D Connectivity

➲ **Seamless Coverage:** Eliminates reliance on ground-based cell towers, providing **uninterrupted connectivity** even in remote or difficult terrains.

➲ **High-Speed Internet:** Delivers consistent internet access even in areas with limited or no terrestrial networks.

➲ **Emergency Support:** Offers **SOS services and emergency communication** where cellular or Wi-Fi networks are unavailable.

➲ **UPI Support:** Enables **digital payments** in underserved areas, advancing **financial inclusion.**

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◆ Quantum Communication,

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◆ Quantum Materials & Devices.

SpaDeX MISSION

Context

The SpaDeX mission, along with 24 PS4-Orbital Experiment Module (POEM-4) payloads, was launched on the PSLV-C60 rocket from the Satish Dhawan Space Centre in Sriharikota, Andhra Pradesh.

About

➲ SpaDeX mission is a cost-effective technology demonstrator mission for the demonstration of in-space docking using two small spacecraft launched by PSLV.

➲ **Mission Attributes:**

◆ **Orbit:** 470 km circular orbit at 55° inclination.

◆ **Mission Life:** Up to two years after docking operations.

◆ **Objectives:**

◆ **Primary:** To develop and test technology for rendezvous, docking, and undocking of two small spacecraft (SDX01 - Chaser and SDX02 - Target) in a low-Earth orbit.

◆ **Secondary:** To transfer electric power between docked spacecraft and manage control and payload operations after undocking.

Indigenous Technologies Developed:

➲ **Inter-satellite Communication Link (ISL):** For autonomous communication between spacecraft.

➲ **GNSS-Based Relative Orbit Determination and Propagation (RODP):** To track the relative position and speed of spacecraft.

⮞ **Global Navigation Satellite System (GNSS):** Includes systems like GPS (USA) and Galileo (EU) for positioning and navigation.

⮞ Other technologies include docking mechanisms, sensor suites, and autonomous rendezvous and docking strategies.

Significance of the Mission:

⮞ **Self-Reliance:** India aims to become the fourth country (after China, Russia, and the USA) to achieve space docking technology.

⮞ **Enabler for Future Missions:** The technology developed is key for future missions like India's lunar missions, sample return from the Moon, and building the **Bharatiya Antariksh Station (BAS).**

⮞ **Cost-Efficiency in Space Operations:** The technology is cost-effective and will help achieve common mission objectives with fewer rocket launches.

PARKER SOLAR PROBE

Context

NASA scientists announced that the Parker Solar Probe survived the closest-ever approach to the Sun.

About

⮞ **Parker Solar Probe** was developed as part of **NASA's Living With a Star program**, which aims to explore the Sun-Earth system and its impact on life and society.

⮞ The program is managed by NASA's Goddard Space Flight Center in Maryland.

⮞ The mission is named in honor of **Dr. Eugene N. Parker,** who **first proposed the theory of the solar wind in the 1950s** and revolutionized solar science.

⮞ **Parker has four instrument** suites to study magnetic fields, plasma, energetic particles, and image the solar wind.
   ◆ The spacecraft is flying closer to the Sun than any previous probe, coming within about 4 million miles (6.5 million kilometers) of its surface, inside the orbit of Mercury.

⮞ **Corona Exploration**: On Dec. 14, 2021, Parker became the first spacecraft to fly through the Sun's corona, sampling particles and magnetic fields.

⮞ **Objectives:** Parker Solar Probe aims to revolutionize our understanding of the Sun by studying its atmosphere, the solar wind, and the heating of the corona.

⮞ **Significance:** Data from the probe will help better understand the Sun's impact on Earth, including space weather, which can affect satellites, electronics, and technology on Earth.

SOLAR SPACE PROGRAMS OF OTHER COUNTRIES		
Program	**Year**	**Description**
Helios 2 Solar Probe	1976	A joint NASA and West Germany project, it came within 43 million km of the Sun's surface.
Advanced Composition Explorer (ACE)	1997	Studies solar wind and cosmic rays to understand the Sun's behavior and its effects on space.
Solar Orbiter	2020	A joint ESA and NASA project studying how the Sun generates and manages the space environment.
Aditya-L1	2023	India's first mission to study the Sun, focusing on its outermost layer, the corona, and its effect on space weather

SHe-BOX PORTAL

Context

Ministry of Women and Child Development launched the SHe-Box portal, aiming to provide a platform for women to register complaints related to sexual harassment.

About

➲ **Purpose and Functionality:**
- SHe-Box is a centralized online platform designed for registering and monitoring complaints of sexual harassment of women in the workplace.
- It serves as a comprehensive repository containing information about the Internal Committees (ICs) and Local Committees (LCs) established across government and private sectors.

➲ **Key Features:**
- **Complaint Registration & Monitoring:** Provides a common platform for women to file complaints and track their status.
  - Ensures time-bound processing of complaints by ICs and LCs.
- **Confidentiality & Redressal:**
  - Guarantees safe complaint registration, with personal information kept private.
  - Ensures assured redressal and a streamlined process for all stakeholders involved.
- **Real-time Monitoring:** A designated nodal officer is responsible for real-time monitoring of complaints.

➲ **Upgraded Version (2017):**
- The platform was upgraded in 2017 in alignment with the Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013.
- The upgraded platform allows women to file complaints of sexual harassment at both government and private workplaces.

➲ **Committees for Redressal:**
- **Private Sector:** An Internal Committee (IC) is formed to address the complaint.
- **Government Sector:** A Local Committee (LC) is established under the chairmanship of the District Magistrate (DM), District Collector (DC), or an officer appointed by them.

➲ **Monitoring and Timely Action:**
- A monitoring dashboard is available for nodal officers at various administrative levels to oversee complaints filed, resolved, and pending.

- The Act mandates that the inquiry process should be completed within 90 days.

Overview of Sexual Harassment Cases in India

➲ **Reported Cases Over the Years:**
- India has consistently reported over 400 cases of sexual harassment at workplaces every year since 2018, with an average of 445 cases annually, as per National Crime Records Bureau (NCRB) data.
- In 2022, a total of 419 cases were reported, averaging about 35 cases per month. This marked a notable trend of workplace sexual harassment incidents over the years.

➲ **State-wise Distribution in 2022:**
- **Himachal Pradesh:** Recorded the highest number of workplace sexual harassment cases in 2022, with 97 reported incidents.
- **Kerala:** Followed closely with 83 cases.
- **Maharashtra:** Reported 46 cases.
- **Karnataka:** Had 43 reported incidents. These figures indicate a significant geographic spread of workplace harassment cases across India.

➲ **Increase in Corporate Reporting:**
- In FY23, there was a notable increase in the reporting of sexual harassment complaints within organizations, with companies reporting 1,160 complaints—the highest number in the past decade.
- This indicates a growing awareness and willingness to report incidents in corporate environments, likely due to the implementation of policies like the POSH Act and SHe-Box platform.

Impact of Sexual Harassment at Workplace:

➲ **Career Disruption:** Sexual harassment creates an unsafe and hostile work environment, hindering women's professional growth and well-being, often leading to career stagnation or disruption.

➲ **Violation of Fundamental Rights:** Sexual harassment at the workplace constitutes gender discrimination and violates women's constitutional rights to equality (Article 14 and 15) and the right to life with dignity (Article 21).

➲ **Perpetuation of Gender Inequality:** Sexual harassment reinforces gender inequality by discouraging women's career growth and professional advancement, contributing to broader social disparities.

➲ **Lower Workforce Participation:** Harassment often forces women to leave their jobs, reducing their representation

in the workforce. Additionally, harassment-related career disruptions can exacerbate the gender pay gap.

Initiatives Undertaken

➲ **Vishaka Guidelines (1997):** Formulated by the Supreme Court of India in response to the Vishaka vs. State of Rajasthan case, these guidelines were the first significant effort to address workplace sexual harassment in India, laying the groundwork for further legal action.

➲ **Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013 (POSH Act):**
  - The POSH Act aims to prevent and address workplace sexual harassment, providing a legal framework for addressing complaints.
  - It mandates the formation of Internal Complaints Committees (ICC) in organizations and Local Complaints Committees (LCC) for government entities to handle such complaints.

➲ **Convention on the Elimination of All Forms of Discrimination against Women (CEDAW):**
  - An international convention that acknowledges the protection against sexual harassment and the right to work with dignity as fundamental human rights.
  - India ratified this convention in 1993, reinforcing its commitment to gender equality and the protection of women in the workplace.

SAMBAL VERTICAL OF MISSION SHAKTI

Context

Recently, the Beti Bachao Beti Padhao initiative improved the sex ratio and Gross Enrollment Ratio of girls under the Sambal vertical of Mission Shakti.

About

➲ **Launch and Scope:**
  - Launched during the 15th Finance Commission period (2021-2026), Mission Shakti is an integrated women empowerment program.
  - It serves as an umbrella initiative designed to ensure the safety, security, and empowerment of women across India.

➲ **Components of Mission Shakti:**
  - **Sambal (Safety and Security of Women):** This component focuses on the immediate protection of women in distress and includes the following sub-schemes:
    - **One Stop Centre (OSC):** Provides immediate assistance to women facing violence or distress, offering integrated services like shelter, legal aid, and counseling.
    - **Women Helpline (WHL):** A 24/7 helpline to support women in distress and provide information on available services.

BETI BACHAO BETI PADHAO (BBBP) SCHEME

➲ **Launch and Funding:**
  - Launched in January 2015, **Beti Bachao Beti Padhao** aims to combat sex-selective abortion and address the declining child sex ratio (CSR) in India.
  - Initially funded with ₹ 100 crore, it is being implemented across **405 districts** in the country.

➲ **Main Objectives of BBBP:**
  - **Prevention of Gender-biased Sex-selective Elimination:** The program focuses on curbing the harmful practice of sex-selective abortion and improving the sex ratio at birth (SBR).
  - **Ensuring the Survival & Protection of the Girl Child:** Promoting the survival and safety of the girl child, addressing factors that lead to gender-based discrimination and violence.
  - **Ensuring Education and Participation of the Girl Child:** Empowering girls by ensuring access to quality education and encouraging active participation in community and nation-building activities.
  - **Protecting the Rights of Girl Children:** Safeguarding the fundamental rights of girl children, ensuring their protection and well-being in every sphere.

➲ **Components of the Scheme:**
  - **Advocacy Campaigns:** Awareness campaigns have been launched nationwide to address the declining CSR and SBR, targeting social attitudes and mindsets that contribute to gender-based discrimination.
  - **Multi-sectoral Interventions:** Focused interventions are being implemented in gender-critical districts, where gender disparities are most pronounced.
  - **Financial Incentive-linked Schemes:** The **Sukanya Samriddhi Yojana** is a key initiative under the program, offering financial incentives to parents to encourage saving for the education and marriage of their girl children.

➲ **Key Developments and Achievements:**
  - **Improvement in National Sex Ratio at Birth (SRB):** The National SRB Index improved from **918** (2014-15) to **934** (2019-20), reflecting a gain of **16 points** over five years.
  - **Improved SRB in Districts:** Out of the 640 districts covered under BBBP, **422 districts** showed improvements in SRB from 2014-15 to 2018-19.
  - **Increase in Gross Enrolment Ratio (GER) for Girls:** The GER for girls in secondary schools rose from **77.45** (2014-15) to **81.32** (2018-19), marking an improvement of **3.87 points** in four years.
  - **Access to Girls' Toilets in Schools:** The proportion of schools with separate, functional toilets for girls increased from **92.1%** in 2014-15 to **95.1%** in 2018-19.

➲ **Exclusions:** Non-resident Indian (NRI) citizens are not eligible for the BBBP scheme.

- **Beti Bachao Beti Padhao:** A campaign aimed at ensuring the survival, protection, and education of the girl child.
- **Nari Adalats:** Women's collectives that facilitate alternative dispute resolution and promote gender justice within families and society.
- **Samarthya (Empowerment of Women):** This component focuses on enhancing the economic and social empowerment of women, incorporating various existing schemes and new additions:
  - **Ujjwala Scheme:** Provides support for women victims of trafficking, exploitation, and violence.
  - **Swadhar Greh:** Provides shelter and rehabilitation services for women in distress.
  - **Working Women Hostel:** Supports women's mobility for employment by providing safe housing options near workplaces.
  - **National Creche Scheme:** Supports working mothers by providing affordable childcare.
  - **Pradhan Mantri Matru Vandana Yojana (PMMVY):** Financial support to pregnant and lactating mothers for better health and nutrition.
  - **Gap Funding for Economic Empowerment:** New funding mechanism aimed at supporting women in entrepreneurship and skill development.
- **Objectives of Mission Shakti:**
  - **Comprehensive Care and Support:** To provide immediate and long-term support to women facing violence or distress, ensuring rescue, protection, and rehabilitation.
  - **Awareness and Accessibility:** Promoting awareness of government schemes, legal provisions, and social evils like dowry, domestic violence, and sexual harassment at the workplace.
  - **Collaboration for Empowerment:** Working with partner ministries, states, and departments to ensure convergence of policies and create an enabling environment for public-private partnerships for women's safety and empowerment.
  - **Empowering the Girl Child:** Addressing gender-biased sex-selective elimination and ensuring the survival, protection, education, and development of the girl child.
  - **Reducing Women's Care Burden:** Promoting skill development, financial literacy, and providing access to microcredit, with the goal of increasing female labor force participation and reducing care responsibilities.

BIRHOR TRIBE

Context

Recently, members of the Birhor tribe, a Particularly Vulnerable Tribal Group (PVTG) in Jharkhand, have participated for the first time in a movement against child marriage in Giridih.

About

- **Location:** The Birhor tribe is traditionally a nomadic community, primarily residing in the Indian state of Jharkhand.
  - They are also found in Chhattisgarh, Orissa, and West Bengal.
- **Meaning of Name:** The name **Birhor** translates to — "bir" meaning **jungle** and "hor" meaning **men.**
- **Language:**
  - The Birhor speak the Birhor language, which belongs to the Munda group of languages within the Austroasiatic language family.
  - Their language shares similarities with other languages in the region, such as Santali, Mundari, and Ho.
- **Ethnology:**
  - **Physical Traits:** The Birhor people are characterized by short stature, long heads, wavy hair, and broad noses.
  - **Cultural Belief:** They claim descent from the **Sun** and believe that the **Kharwars**, who also trace their ancestry to the Sun, are their brothers.
  - **Ethnological Affinity:** They are ethnologically similar to the **Santals**, **Mundas**, and **Hos.**
- **Economy:**
  - The Birhor tribe traditionally follows a primitive subsistence economy based on nomadic gathering and hunting, with a special focus on hunting monkeys.
  - They are skilled in making ropes from the fibres of a specific vine, which they sell to nearby agricultural communities.
  - Over time, some Birhors have transitioned into settled agriculture.
- **Socio-economic Classification:**
  - **Uthlus:** The **wandering Birhors**, who still maintain their nomadic lifestyle.
  - **Janghis:** The **settled Birhors**, who have adopted more stable forms of agriculture.

Particularly Vulnerable Tribal Group (PVTG)

- **Definition:** PVTGs are the most vulnerable among tribal groups in India. Due to their marginalized status, more developed and assertive tribal groups often receive a larger share of tribal development funds.
- In **1975**, the Government of India declared **52 tribal groups** as PVTGs following recommendations from the **Dhebar Commission.**
- As of now, there are **75 PVTGs** out of **705 Scheduled Tribes.**
- These groups are spread across **18 states** and **one Union Territory (UT)** in India (as per the 2011 census).
- **Odisha** has the highest number of PVTGs, with a population exceeding **2.5 lakh.**

YUGA YUGEEN BHARAT NATIONAL MUSEUM

Context

India and France signed a Memorandum of Understanding (MoU) for the development of the new National Museum named Yuga Yugeen Bharat National Museum.

About

- ⊃ The project is an integral part of the **Central Vista Redevelopment Project** and is set to be developed at the and South Blocks of Parliament.
- ⊃ **Features:**
  - ◆ It will be developed through **Adaptive Reuse,** in collaboration with France, renowned for its expertise.
  - ◆ Its development will renew the historic North and South Blocks, **preserving their unique architectural features.**
  - ◆ It is expected to be the **largest museum in the world,** surpassing **The Louvre in Paris, which is the world's biggest.**
- ⊃ **The project will be implemented in two phases.**
  - ◆ The first phase will involve retrofitting the North Block into a museum space, with a targeted completion by 2026.

Central Vista Redevelopment Project

- ⊃ **Announced in:** 2019.
- ⊃ **Ministry:** Ministry of Housing and Urban Affairs.
- ⊃ **Aim:** Redevelopment project to give a new identity to the 'power corridor' of India.
- ⊃ The **plan included** the construction of a new parliament, prime minister and vice-president's residences along with 10 building blocks that will accommodate all government ministries and departments.

GREAT STUPA OF SANCHI

Context

A two-day Mahabodhi Mahotsav was recently organized at the Great Stupa in Sanchi, Madhya Pradesh.

About

- ⊃ **Foundation by Ashoka:**
  - ◆ Built during the 3rd century BCE by Emperor Ashoka, the Sanchi Stupa stands as one of India's oldest surviving stone structures.
  - ◆ Ashoka's wife, Devi, who hailed from the nearby trading town of Vidisha, oversaw its construction.
- ⊃ **Support from Local Community**: The mercantile community of Vidisha played a significant role in funding and supporting the development of the Sanchi complex.
- ⊃ **Shunga Period (2nd Century BCE):** The stupa was enlarged during the Shunga dynasty by adding sandstone slabs, a circumambulatory walkway, and a **harmika** with a **chattra** (umbrella).
- ⊃ **Further Enhancements (1st Century BCE – 2nd Century CE):**
  - ◆ Four intricately carved stone gateways **(toranas)** were added, depicting Buddhist iconography and stories from the Jataka tales.
  - ◆ These additions transformed Sanchi into a significant center of Buddhist art and culture.
- ⊃ **Rediscovery (1818):**
  - ◆ British officer Henry Taylor discovered the stupa in a ruined state.
  - ◆ Alexander Cunningham conducted the first formal survey and excavations at the site in 1851.
- ⊃ **Preservation Efforts:**
  - ◆ In 1853, Sikander Begum of Bhopal proposed sending Sanchi's gateways to Queen Victoria, but plans were delayed by the 1857 revolt and logistical challenges.
  - ◆ In 1868, the proposal was renewed, but colonial authorities opted for in-situ preservation, commissioning a plaster cast of the eastern gateway instead.
  - ◆ In the 1910s, John Marshall, the director-general of the Archaeological Survey of India (ASI), restored the site with funding from the Begums of Bhopal.
  - ◆ A museum was established at Sanchi in 1919 to preserve artefacts and manage conservation.
- ⊃ **Architectural Features:**
  - ◆ **Main Components:**
    - ◆ **Anda**: A hemispherical dome symbolizing the mound of earth.
    - ◆ **Harmika**: A square railing atop the dome, believed to represent the dwelling place of divinity.
    - ◆ **Chattra**: An umbrella-like structure on top of the dome, supported by the central pillar **(yashti)**.
  - ◆ **Supporting Structures:**
    - ◆ **Railing**: Surrounds the stupa, demarcating the sacred area from the external environment.
    - ◆ **Pradakshinapatha (Circumambulatory Path)**: A walkway for devotees to perform circumambulation in a clockwise direction as a form of worship.

- **Torana**: Monumental gateways marking the entrance to the sacred space, adorned with detailed carvings.
- **Medhi**: The elevated base that supports the main structure of the stupa.
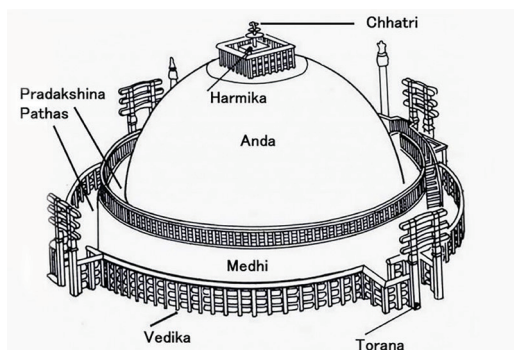
➲ **UNESCO World Heritage Status:** Sanchi Stupa was inscribed as a UNESCO World Heritage Site in 1989 in recognition of its historical, architectural, and cultural significance.

KHWAJA MOINUDDIN CHISHTI AND SUFISM

Context

A district court has recently accepted a petition asserting the presence of a Shiva temple beneath the shrine of the revered Sufi saint in Ajmer.

About

➲ **Early Life and Education:**
- **Birth and Lineage:**
  - Moinuddin was born in 1141 CE in Sistan, a province in Persia (modern-day Iran), which borders present-day Afghanistan.
  - He is believed to have been a direct descendant of Prophet Muhammad, a lineage that added to his spiritual significance.
- **Mentorship under Khwaja Usman Harooni:**
  - Near Herat (modern-day Afghanistan), he met Khwaja Usman Harooni, a highly revered Sufi master of the Chishti order.
  - Moinuddin underwent years of intense spiritual training under his guidance, developing his inner discipline and understanding of the Chishti philosophy.
  - After being initiated into the Chishti **silsila** (chain of spiritual descent), Moinuddin was entrusted by his mentor to continue the spiritual mission independently.

➲ **Spiritual Mission and Journey:**
- **Acceptance of His First Disciple:** While traveling through Afghanistan, Moinuddin accepted Qutubuddin Bakhtiyar Kaki as his first follower, marking the beginning of his role as a spiritual guide.

- **Journey to Ajmer:**
  - From Lahore, he journeyed through Delhi to eventually reach Ajmer around 1191 CE, at the age of 50.
  - At the time, Ajmer was the capital of the Chauhan dynasty, ruled by Prithviraj Chauhan. However, following the Second Battle of Tarain in 1192, the Chauhan dynasty fell to Muhammad of Ghor.
- **Settling in Ajmer:**
  - After witnessing the devastation caused by the invasion, including widespread suffering among the people, Moinuddin chose to settle in Ajmer.
  - His presence in the city brought solace to many during a turbulent period marked by political and social upheaval.

➲ **Becoming "Gharib Nawaz":**
- **Service to Humanity:**
  - Moinuddin and his wife, Bibi Ummatulla, built a modest mud hut in Ajmer to serve as a sanctuary for the poor and needy.
  - They offered food, shelter, and solace to people of all backgrounds, making their home a refuge for the destitute.
  - His acts of selflessness and compassion earned him the title **Gharib Nawaz** (Friend of the Poor).

➲ **Prominent Disciples**: Among his many disciples, notable figures such as Qutbuddin Bakhtiyar Kaki, Baba Fariduddin, Nizamuddin Auliya, and Chirag Dehalvi carried forward his teachings, ensuring their widespread influence.

➲ **The Shrine**: Mughal Emperor Humayun later honored Moinuddin by constructing a shrine at Ajmer, which became a sacred site for followers.

Sufism and the Spread of the Chishti Order

➲ **Origins of Sufism**
- **Historical Context:**
  - Sufism emerged between the 7th and 10th centuries CE as a response to the growing materialism within the expanding Muslim community.
  - Sufis adopted a more ascetic and devotional form of Islam, seeking deeper spiritual connection through mystical practices.
- **Organized Orders:** Over time, Sufi practitioners organized themselves into orders, or **silsilas**, centered around the teachings of a spiritual guide or **wali.**

➲ **Foundation of the Chishti Order:**
- **Establishment:** The Chishti order was founded in the 10th century by Abu Ishaq Shami in the town of Chisht, near Herat in modern-day Afghanistan.
- **Spread to the Subcontinent:** The order gained prominence in the Indian subcontinent through the efforts of Moinuddin Chishti and his disciples, who emphasized spiritual devotion and service to humanity.

➲ **Prominent Disciples and Expansion:**

- **Qutbuddin Bakhtiyar Kaki (1173–1235):**
  - A disciple of Moinuddin, Kaki established the Chishti order's base in Delhi, becoming a pivotal figure in the region's spiritual life.
  - He served as the spiritual mentor of Iltutmish, the third Sultan of Delhi.
  - The Qutub Minar is believed to be named after him, and his shrine in Mehrauli, adjacent to the iconic structure, remains a significant site.

- **Baba Fariduddin Ganj Shakr (1173–1265):**
  - Another notable disciple, Baba Farid, spread the Chishti teachings in Punjab.
  - Moinuddin himself gave him the title **Ganj Shakr**, meaning "treasure of sweetness," in recognition of his spiritual and personal qualities.

- **Hamiduddin Nagauri:** Played a crucial role in propagating the Chishti order in Nagaur, serving as a spiritual leader in the region.

- **Nizamuddin Auliya (1238–1325):**
  - Known as one of the most celebrated figures of the Chishti order, Nizamuddin's teachings and his shrine in Delhi continue to attract followers from various faiths.
  - His successor, Chirag Dehalvi (1274-1356), carried forward his legacy, further solidifying the order's influence.

69TH MAHAPARINIRVAN DIWAS

Context

Mahaparinirvan Diwas is observed annually on December 6 to commemorate the death anniversary of Dr. Bhimrao Ramji Ambedkar, who passed away in 1956.

Significance of Mahaparinirvan Diwas

➲ **Tribute to Dr. B.R. Ambedkar:**

- The term *Mahaparinirvan* originates from Buddhist texts, symbolizing *"nirvana after death"*—a state of liberation from the cycles of *samsara* (birth and rebirth), *karma* (actions and consequences), and earthly attachments.
- In the Buddhist tradition, this is considered one of the most sacred concepts and is deeply revered.

➲ **Ambedkar's Connection to Buddhism:**

- Dr. Ambedkar held Lord Buddha's teachings as central to his ideology and efforts toward social justice.
- Often regarded as a Buddhist guru, Ambedkar's contributions to social reform are likened to Buddha's spiritual mission of liberation.
- His death anniversary, therefore, is not just a moment of mourning but a time to celebrate his enduring impact on Indian society.

➲ **Dr. B.R. Ambedkar's Contributions:**

- **Early Life and Advocacy:**
  - Born on April 14, 1891, in Mhow (now Madhya Pradesh), Ambedkar faced systemic discrimination due to his caste. Despite these challenges, he became a pioneer of social justice in India.
  - He founded platforms like **Mooknayaka** (Leader of the Silent) to give voice to marginalized communities.
  - Established the **Bahishkrit Hitkarini Sabha (1923)**, aimed at spreading education, improving economic conditions, and promoting equality.

- **Historic Movements:**
  - **Mahad March (1927)**: Led a historic protest for Dalit access to public water resources, challenging centuries-old discriminatory practices.
  - **Temple Entry Movement (1930)**: Advocated for the right of Dalits to enter Hindu temples, confronting caste-based exclusion perpetuated by orthodoxy.

- **Poona Pact (1932):** Signed with Mahatma Gandhi, the Poona Pact replaced separate electorates for Dalits with reserved legislative seats, securing greater political representation.

- **Pioneering Reservation Policies:** Advocated reservations in education, employment, and politics as tools to empower marginalized communities and dismantle systemic oppression.

- **Influence on Institutions:**
  - His ideas laid the foundation for the Reserve Bank of India (RBI) and the Finance Commission, highlighting his economic foresight.
  - Played a pivotal role in infrastructure development through initiatives like the Damodar Valley Project, Hirakud Dam, and the National Power Grid System.

➲ **Role in Constitution Drafting:**

- **Chairman of the Drafting Committee:**
  - As Chairman of the Constitution Drafting Committee, Ambedkar was instrumental in formulating a document that guaranteed equality, justice, and fundamental rights to all citizens.
  - His draft Constitution, presented in 1948, was adopted in 1949 with minimal changes, becoming the cornerstone of Indian democracy.

- **Champion of Social Equality:** Ambedkar's vision ensured protections for Scheduled Castes, Scheduled Tribes, and Other Backward Classes, embedding the principles of social justice into the Constitution.

- **Minister of Law:** Served as independent India's first Law Minister and spearheaded initiatives like the Hindu Code Bill, promoting gender equality and modernizing personal laws.

➲ **Ambedkar and Buddhism:**
  ◆ **Conversion to Buddhism:**
    ▪ In 1956, Ambedkar converted to Buddhism, viewing it as a path to spiritual liberation and an antidote to caste-based oppression.
    ▪ Authored *The Buddha and His Dhamma*, offering an accessible interpretation of Buddhist teachings for social transformation.
  ◆ **Significance of His Embrace of Buddhism:** By adopting Buddhism, Ambedkar symbolically rejected caste hierarchies and inspired millions of Dalits to follow suit, sparking a socio-religious movement.
➲ **Notable Works and Contributions:**
  ◆ **Literary Contributions:**
    ▪ **Annihilation of Caste:** A seminal critique of caste-based discrimination.
    ▪ **The Untouchable: Who Are They and Why They Have Become Untouchables:** Explored the origins and impacts of caste.
    ▪ **Buddha and His Dhamma:** Advocated Buddhism as a path to social and spiritual emancipation.
  ◆ **Journals and Organizations:** Founded organizations like the Independent Labor Party (1936) and the Scheduled Castes Federation (1942) to advance social and political rights.
➲ **Recognition and Memorials:**
  ◆ **Bharat Ratna:** Posthumously awarded India's highest civilian honor in 1990 for his unparalleled contributions to nation-building.
  ◆ **Chaitya Bhoomi:** A memorial in Mumbai commemorates Ambedkar's life and legacy, attracting millions of followers annually on Mahaparinirvan Diwas.

ANGAMI NAGA TRIBE

Context

The Stone-Pulling Ceremony, a traditional practice of the Angami Naga tribe symbolizing unity and cooperation, was recently observed.

About

➲ **Cultural Identity and Habitat:**
  ◆ **Distinct Identity:**
    ▪ The Angami-Naga tribe is one of the many Naga tribes with a unique cultural and social heritage.
    ▪ They are recognized as a significant ethnic group in the northeastern Indian states of Nagaland and Manipur.
  ◆ **Geographic Distribution:**
    ▪ Primarily inhabit the Kohima district of Nagaland.

▪ Their ancestral roots trace back to migrations from Myanmar to the present-day Naga Hills.
  ◆ **Ethnic Classification:** Belong to the Mongoloid racial group, which is common among various northeastern tribal communities.
➲ **Language and Communication:**
  ◆ **Native Language:**
    ▪ "Tenyidie" is the primary language spoken by the Angami Nagas in Nagaland.
    ▪ The tribe traditionally does not have a written script for their language.
  ◆ **Nagamese Language:**
    ▪ Over time, the Nagamese language emerged as a common spoken medium, influenced by Assamese, Bengali, Hindi, and Nepali.
    ▪ It serves as a lingua franca among different Naga tribes and other communities in the region.
➲ **Economic Practices:**
  ◆ **Agricultural Activities:**
    ▪ The Angami Nagas are predominantly agriculturists, excelling in both terrace wet cultivation and shifting (jhum) cultivation.
    ▪ Terrace cultivation, in particular, showcases their advanced knowledge of sustainable farming in the hilly terrain.
  ◆ **Craftsmanship:**
    ▪ Renowned for cane and bamboo basketry, which reflects their artistic skills and utilitarian needs.
    ▪ The **khophi**, a traditional utility basket used for carrying items, is a hallmark of their craftsmanship.
➲ **Social Structure and Beliefs:**
  ◆ **Patriarchal Society:** The tribe follows a patriarchal and patrilineal system, where family lineage and inheritance pass through the male line.
  ◆ **Religious Beliefs:** While traditionally animistic, the majority of Angami Nagas have embraced Christianity, making it the dominant religion among them today.
➲ **Sekrenyi Festival:**
  ◆ The most important festival celebrated by the Angami Nagas.
  ◆ Sekrenyi, often referred to as the "Festival of Purification," marks the beginning of the lunar year.
  ◆ It includes various rituals, feasting, and traditional practices that reinforce community bonds and cultural heritage.

EKLINGJI TEMPLE

Context

The Eklingji Temple in Udaipur has recently introduced new regulations, including a dress code and a ban on mobile phones, to uphold the temple's sanctity.

About

⊃ **Overview:**
  - **Dedicated Deity**: Lord Shiva, worshipped as Ekling Nath, regarded as the ruling deity of the Mewar kingdom.
  - **Location**: Kailashpuri, situated approximately 22 km from Udaipur, Rajasthan.
  - **Built In**: 8th century CE by Bappa Rawal, the founder of the Mewar dynasty.
  - **Significance**: Represents both the spiritual and administrative authority of the Mewar kings, who viewed themselves as the earthly representatives of Lord Ekling Nath.

⊃ **Architectural Features:**
  - **Temple Complex:**
    - The temple comprises 108 smaller temples, demonstrating the grandeur and devotion embedded in its intricate stone architecture.
    - The design showcases detailed carvings that reflect the rich cultural and artistic heritage of Mewar.
  - **Main Idol:** A four-faced Shiva Lingam made of black marble, symbolizing the four forms of Lord Shiva—creation, preservation, destruction, and liberation.

⊃ **Sect Associations:**
  - Initially linked to the Pashupata sect, an ancient Shaivite tradition.
  - Later associated with the Nath sect, which emphasizes mysticism and spiritual practices.
  - Eventually connected to the Ramanandi sect, which is primarily Vaishnavite but retains reverence for Shiva.

⊃ **Cultural Significance:**
  - **Royal Connection:**
    - The temple has historically been managed by the Mewar royal family, who regard Lord Ekling Nath as the true ruler of the kingdom.
    - The Diwan (prime minister) of Mewar serves as the earthly representative of the deity, reinforcing the sacred and political authority of the Mewar kings.
  - **Cultural Influence:**
    - The temple remains a symbol of Mewar's spiritual legacy and its rulers' deep devotion to Lord Shiva.
    - As the religious heart of the kingdom, it continues to play a central role in the cultural and spiritual life of the region.

POTTI SRIRAMULU

Context

Recently, the Chief Minister of Andhra Pradesh affirmed the government's commitment to establishing a Telugu university in honor of Potti Sriramulu.

About

⊃ **Early Life and Background:**
  - Potti Sriramulu was born on March 16, 1901, in the village of Siddhavatam, which is in the present-day Kadapa district of Andhra Pradesh.
  - He came from a humble background and was deeply influenced by the values of truth, non-violence, and justice propagated by Mahatma Gandhi.
  - He was initially trained in the principles of Gandhian philosophy, which later shaped his activism.

⊃ **Involvement in the Indian Freedom Movement:**
  - Sriramulu was an active participant in India's struggle for independence from British colonial rule.
  - He joined the Indian National Congress and became involved in various movements, including the Salt Satyagraha and Quit India Movement.

⊃ **Commitment to Telugu Identity and Language:**
  - After India gained independence in 1947, Sriramulu shifted his focus to the linguistic and cultural rights of the Telugu-speaking people.
  - He was deeply concerned about the lack of representation and administrative efficiency for Telugu speakers within the larger Madras State, which included Tamil-speaking regions.
  - Sriramulu strongly believed that the Telugu-speaking people needed their own state to preserve their culture, language, and identity.

⊃ **The Hunger Strike for a Separate Telugu State:**
  - In 1952, Sriramulu began a hunger strike demanding the creation of a separate state for the Telugu-speaking people, which would later become the state of Andhra Pradesh.
  - Over 58 days, Sriramulu fasted in protest, despite his deteriorating health. His unwavering determination during the hunger strike drew widespread attention and support from the public.

⊃ **Death and Its Impact:**
  - On December 15, 1952, just days before the end of his 58th day of fasting, Potti Sriramulu passed away.
  - His death was a turning point in the movement for a separate Telugu state, triggering widespread protests and an outpouring of grief across the region.

⊃ **Formation of Andhra Pradesh:**
  - The martyrdom of Potti Sriramulu ultimately led to the Indian government agreeing to the creation of a new state for Telugu speakers.
    - In 1953, the state of Andhra Pradesh was formed, making it the first state in India to be created on a linguistic basis.
  - His sacrifice is widely regarded as one of the major catalysts in the creation of Andhra Pradesh.

➲ **Legacy and Recognition:**
- In recognition of his sacrifices, several memorials, institutions, and public spaces in Andhra Pradesh and Telangana are named after him.
  - The state of Andhra Pradesh also observes his death anniversary, Mahaparinirvan Diwas, to honor his contribution to the state's creation.
- The Potti Sreeramulu Telugu University in Hyderabad was also established to promote the Telugu language and culture, further cementing his legacy..
- Sriramulu was posthumously honored with the title "**Amarajeevi**" for his ultimate sacrifice. Sri Potti Sriramulu Nellore district in Andhra Pradesh is named in his honor.

ANNUAL SAHITYA AKADEMI AWARDS

Context

Hindi poet Gagan Gill and English writer Easterine Kire are among the 21 individuals honored with the prestigious Sahitya Akademi Awards for the year.

About
➲ **Overview:**
- The **Sahitya Akademi Award** is one of India's most prestigious literary awards, recognizing outstanding works in various languages.
- The award is given annually for the most distinguished books of literary merit published in any of the major Indian languages recognized by the **Sahitya Akademi.**
➲ **Key Details:**
- **Languages Recognized:**
  - The award is presented for works in **22 languages** listed in the **Constitution of India**, along with **English** and **Rajasthani**, making it inclusive of a wide range of linguistic traditions.
  - This inclusivity allows for the recognition of literature from diverse cultural and linguistic backgrounds across the nation.
- **Award Package:** The recipient of the **Sahitya Akademi Award** receives:
  - **A plaque** as a symbol of honor.
  - **A shawl** as a mark of recognition.
  - **Monetary Award:** ₹ 1 lakh (as of the current year).
- **Award Focus:**
  - The award is given for **books of literary merit**, covering a wide range of genres, including fiction, poetry, drama, and other forms of creative writing.
  - The emphasis is on quality and significance in the literary world.

➲ **Sahitya Akademi – Institution Overview**
- **Formal Inauguration:**
  - The **Sahitya Akademi** was inaugurated by the **Government of India** on **March 12, 1954**.
  - Since its establishment, it has been a prominent body in the promotion and development of Indian literature.
- **Registration:** The Akademi was formally registered as a society under the **Societies Registration Act, 1860**, making it a statutory organization responsible for fostering literary growth.
- **Role and Function:**
  - The **Sahitya Akademi** is the **central institution** for **literary dialogue**, **publication**, and **promotion** in India.
  - It is the **only institution** that undertakes literary activities in **24 Indian languages**, including **English.**
  - It plays a pivotal role in supporting Indian literature through initiatives like literary conferences, workshops, publications, and the promotion of indigenous languages.
- **Ministry and Autonomy:** The **Sahitya Akademi** operates as an **autonomous organization** under the **Ministry of Culture**, ensuring independence in its functioning and decision-making.
- **Head Office Location:** The **head office** of the **Sahitya Akademi** is located in **New Delhi.**

Criteria of Eligibility for the Sahitya Akademi Award

➲ **Outstanding Contribution to Language and Literature:**
- The book must be a significant and **outstanding contribution** to the language and literature it represents.
- The work can either be **creative** (e.g., fiction, poetry, drama) or **critical** (e.g., literary criticism), but it must fulfill the standard of excellence expected by the Akademi.
➲ **Revised or Earlier Published Works:**
- A **new edition** or a **collection of previously published works** is not eligible unless:
  - At least **75% of the content** in the collection is published for the **first time** in book form.
- **Revised editions** or collections of previously published works are not eligible for consideration.
➲ **Incomplete Works:** An **incomplete work** can only be eligible if the portion submitted for the award is **complete in itself** and can stand independently as a full literary work.
➲ **Posthumous Works:** A **posthumous publication** is eligible for the award if:
- The author passed away within the **five-year period** stipulated by the Sahitya Akademi for eligibility.
- The work must have been published posthumously within this period to be considered for the award.

CHAKRAVARTI RAJAGOPALACHARI

Context

Recently, Parliamentarians paid floral tributes to Chakravarti Rajagopalachari on his birth anniversary.

About

➲ **Early Life:**
- **Born:** December 10, 1878, in Thorapalli, Tamil Nadu
- **Education:** Studied law at Presidency College, Madras (now Chennai), and began legal practice in Salem in 1900.
- **Tamil Scientific Terms Society**: Founded in 1916, it aimed to translate scientific terms into simple Tamil, promoting the integration of science with local language.
- **Municipal Role**: Served as the chairperson of Salem Municipality in 1917 for two years, contributing to local governance.

➲ **Pre-Independence:**
- **Premier of Madras**:
  - In **1937**, Rajagopalachari became the **first Premier of Madras Presidency**, a role equivalent to that of a Chief Minister today.
  - During his tenure, he worked on progressive reforms, such as the **abolition of untouchability** and caste prejudice.
  - A key reform was the **Madras Temple Entry Authorisation and Indemnity Act of 1939**, which allowed **Dalits** (historically marginalized communities) to enter temples, a significant step toward social equality.
- **Governor of West Bengal:** When India was partitioned in **1947**, Rajagopalachari was appointed the **Governor of West Bengal**, where he played a crucial role in managing the post-partition crisis and ensuring the integration of displaced populations.
- **Acting Governor-General:**
  - In **1947**, when **Lord Mountbatten**, the last British Viceroy of India, was temporarily absent, Rajagopalachari was appointed as the **acting Governor-General of India**.
  - In this role, he represented India at crucial moments, including during the country's transition from colonial rule to independence.
  - He served as the **last Governor-General** of India, a position that was abolished in **1950**, marking the end of British influence.

➲ **Post-Independence:**
- **Chief Minister of Madras:**
  - In **1952**, Rajagopalachari became the **Chief Minister of Madras**, focusing on educational reforms.
  - He was instrumental in introducing **Hindi as a compulsory subject** in Tamil schools, a decision that led to protests

and resistance from the Tamil population, who viewed it as an imposition on their linguistic identity.
  - Due to these protests, Rajagopalachari resigned from the position, but his tenure was significant for its attempts at social reform and modernization.

- **Social Conservatism and Economic Views:**
  - Rajagopalachari was a **social conservative**, believing in the importance of religion and traditional values in society.
  - However, he was also an advocate for a **free market economy**, favoring minimal government intervention.
  - His stance on **reintroducing the Varna system** (traditional caste-based social structure) drew both admiration and criticism.

- **Swatantra Party:**
  - In **1959**, Rajagopalachari parted ways with the **Indian National Congress** due to ideological differences, particularly over economic policies.
  - He founded the **Swatantra Party**, a political party that advocated for a **market-driven economy**, greater **individual freedoms**, and reduced government control.
  - Rajagopalachari believed that India should embrace a system of **capitalism** and individual enterprise, which contrasted with the Congress's socialist policies.

➲ **Literary Contributions:**
- **Ramayana Translation**: Rajagopalachari wrote a Tamil translation of the Ramayana, titled *Chakravarthi Thirumagan*, which won the Sahitya Akademi Award in 1958.
- **Other Works**: His writings included reflections on Indian culture, history, and social issues.

➲ **Bharat Ratna:** Rajagopalachari was awarded the Bharat Ratna, India's highest civilian award, in 1954.

➲ **Death:** He passed away on December 25, 1972.

100 YEARS FOR BELGAUM SESSION

Context

Recently, the centenary of the 1924 Belgaum Congress session, chaired by Gandhiji and renowned for its emphasis on social change, is being commemorated.

About

➲ **Historical Context:**
- It was the 39th session of the Indian National Congress (INC), held in 1924 during India's freedom struggle.
- Mahatma Gandhi presided over it, marking his only tenure as Congress president.

➲ **Key Resolutions:**
- **Swaraj and Sarvodaya:**
  - Gandhi shared his vision of self-rule (Swaraj) and universal upliftment (Sarvodaya).

- The session underscored the Congress's evolution from a political platform to an agent of social and economic transformation.
- **Focus on Khadi and Village Industries:**
  - A resolution made it mandatory for Congress members to contribute **2,000 yards of hand-spun khadi cloth** monthly or pay someone to produce it.
  - This initiative highlighted Gandhi's commitment to promoting self-reliance and rural empowerment.
- **Social Reforms:**
  - Separate conferences were held on **untouchability eradication**, **Hindu-Muslim unity**, and **linguistic reorganisation of states**.
  - **Gandhi famously declared:** "If I am to be born again, may I be born a Bhangi."
- **Cow Protection:** Gandhi advocated the economic value of cows for farmers, discouraging violence against communities like Muslims over cow slaughter, emphasizing non-violence.
- **Organisational Changes:**
  - Gandhi reduced the Congress membership fee by 90%, encouraging members to view the organisation as a **social movement** fighting both political and social evils.
  - He criticised extravagant spending on Congress sessions and urged equality in treatment of all members.
- ⮞ **Cultural Significance:**
  - The session featured performances by luminaries like **Vishnu Digambar Paluskar** and a young **Gangubai Hangal**.
  - The Kannada song *"Udayavagali Namma Chaluva Kannada Nadu"* by Huilgol Narayana Rao was performed on the opening day.
- ⮞ **Infrastructure Legacy:** A well named **Pampa Sarovara**, dug to serve the session's attendees, continues to supply water to parts of south Belagavi.

125TH BIRTH ANNIVERSARY OF SARDAR UDHAM SINGH

Context

Recently, on December 26, India marked the 125th birth anniversary of Udham Singh, a symbol of courage and justice.

About
- ⮞ **Early Life:**
  - **Birth:** Udham Singh was born on **26th December 1899** in **Sunam**, a town in Punjab's Sangrur district.

- **Childhood:** Orphaned at a young age, he grew up in the **Central Khalsa Orphanage** in Amritsar, where he developed a deep sense of empathy and resilience.
- ⮞ **Jallianwala Bagh Massacre: A Turning Point**
  - **Historical Event**: On **13th April 1919**, Singh witnessed the **Jallianwala Bagh massacre**, where British Brigadier General **Reginald Dyer** ordered troops to open fire on a peaceful gathering, killing over 400 unarmed civilians.
  - **Colonial Regime**: The massacre was sanctioned by **Michael O'Dwyer**, the Lieutenant Governor of Punjab, leaving a profound impact on Singh and igniting his revolutionary spirit.
- ⮞ **Revolutionary Journey:**
  - **Joining the Ghadar Party:**
    - In **1924**, Udham Singh joined the **Ghadar Party**, a revolutionary group uniting Indian expatriates against British rule.
    - The party's mission was to inspire uprisings against colonialism and promote India's independence.
  - **Imprisonment:** In **1927**, Singh was arrested and sentenced to **five years in prison** for possession of illegal firearms, reflecting his determination to fight British oppression.
- ⮞ **Assassination of Michael O'Dwyer:**
  - **Event:** On **13th March 1940**, Singh avenged the Jallianwala Bagh massacre by assassinating **Michael O'Dwyer** during a meeting at **Caxton Hall** in London.
  - **Motivation:** This act was a direct retaliation for the massacre, symbolizing justice for the victims and resistance against colonial tyranny.
- ⮞ **Martyrdom:**
  - **Execution:** Singh was arrested shortly after the assassination and sentenced to death. He was hanged on **31st July 1940** at **Pentonville Prison** in London.
  - **Final Words**: Singh embraced his fate with unwavering courage, asserting that his actions were in defense of his country's honor.
- ⮞ **Legacy**
  - **Repatriation**: In **1974**, Singh's remains were brought back to India and given a hero's welcome, underscoring his lasting impact on the nation.
  - **Commemoration:** Singh is honored as **Shaheed-i-Azam** (Great Martyr) in India.
    - Numerous **memorials, museums, and educational institutions** in Punjab and beyond preserve his memory and sacrifice.
  - **Symbolism:** Udham Singh's life and actions epitomize the spirit of unwavering resistance against colonial oppression and the enduring fight for justice and freedom.

MURPHY'S LAW

Context

Recently, Rajya Sabha Chairperson Jagdeep Dhankhar expressed concern over the Parliament's disruptions by linking it to Murphy's Law.

About

➲ The Law is attributed to **Captain Edward A. Murphy, Jr.**, an engineer in the U.S. Air Force, during a 1949 deceleration test for rocket sleds.

➲ Murphy's Law states, **"Anything that can go wrong, will go wrong."** It underscores a realistic, albeit pessimistic, perspective on the inevitability of errors.

➲ By emphasizing the likelihood of mishaps, it **encourages meticulous planning and readiness for potential failures.**

➲ Murphy's Law also applies to everyday life. We've all experienced those moments when it seems like everything that could go wrong does go wrong. Recognizing this tendency can help us be more prepared.

Philosophical Basis

➲ Murphy's Law serves as more than just a cautionary adage. It encourages individuals and organizations to:
  - **Plan for Contingencies:** Build resilience by preparing for worst-case scenarios.
  - **Acknowledge Inevitability:** Accept that mistakes are part of any process, fostering adaptability.
  - **Humility:** It can also be a humbling reminder that we are not in complete control of everything.

INDIRA GANDHI PEACE PRIZE

Context

Former President of Chile, Veronica Michelle Bachelet Jeria was awarded the Indira Gandhi Prize for Peace, Disarmament and Development 2024. The prize honours her work to improve gender equality, human rights, democracy and development in difficult circumstances.

About

➲ **Instituted in 1986**, the award is given annually by the **Indira Gandhi Memorial Trust** and consists of a monetary award of **Rs 25 lakh** along with a citation.

➲ The award is named after **Indira Gandhi**, the first and **only woman Prime Minister** of independent India.

➲ It aims to **honor women, men and institutions** that have done exemplary work in the service of humanity and the planet Earth.

➲ Recipients are chosen from a pool of national and international nominees.
  - In 2023 it was presented to **Daniel Barenboim** and **Ali Abu Awwad**.

SPORTSWASHING

Context

Saudi Arabia, the sole bidder, has secured the hosting rights for the 2034 FIFA World Cup, but it has also sparked concerns over sportswashing.

About

➲ It is a term used to describe the practice of nations, individuals, groups, or the corporations using sports to improve their reputations that have been damaged by misconduct or controversy.

➲ It can be accomplished through hosting sporting events, purchasing or sponsoring sporting teams, or participating in a sport.

➲ **Examples of sportswashing includes:**
  - **The 1936 Berlin Olympics:** Hitler used the Olympics to improve Germany's international image.
  - **The 1978 FIFA World Cup:** Argentina hosted and won the World Cup while its military junta threw dissidents out of planes.
  - The **2022 Winter Olympics** held in China and the **2022 FIFA World Cup** in Qatar.

Additional Information

➲ **Greenwashing** refers to misleading the general public into believing that companies, sovereigns or civic administrators are doing more for the environment than they actually are.

➲ This may involve making a product or policy seem more environmentally friendly or less damaging than it is in reality.

VEER BAL DIWAS

Context

Prime Minister Narendra Modi participated in the Veer Baal Diwas celebrations in New Delhi, where Pradhan Mantri Rashtriya Bal Puraskar awardees were honoured.

About

➲ Translated as 'Day of Brave Children,' **Veer Bal Diwas** is observed annually on **December 26**.

➲ **First observed in 2022**, it commemorates the martyrdom of the younger sons of the tenth Sikh Guru, Guru Gobind Singh—**Sahibzada Zorawar Singh** and **Sahibzada Fateh Singh**.

➲ The two young boys were **bricked alive** on December 26, 1705, on the orders of the **Nawab of Sirhind Wazir Khan** since they refused to give up their religion.

Pradhan Mantri Rashtriya Bal Puraskar (PMRBP)

➲ It is awarded annually to children in the **age group of 5-18 years.**

➲ **Award given for Achievements in seven categories**: Bravery, Art & Culture, Environment, Innovation, Science & Technology, Social Service and Sports.

➲ This award is the **highest civilian honor for children** in India. Each awardee gets the medal, certificate and a citation booklet.

STATE FUNERAL

Context

Former Prime Minister Manmohan Singh was given a state funeral.

About:

➲ A state funeral is a ceremonial event for important figures, following set rules, involving public mourning.

➲ It is typically reserved for the death of the **President, Prime Minister, a former President, or a Governor in India**.

 ◆ However, in individual cases, the government may order a state funeral for other dignitaries.

➲ **Rules for State Funeral:** The funeral is attended by **gazetted officers** and **service personnel** dressed in formal state attire.

➲ **Organised by:** The Ministry of Defence organizes the arrangements, following notifications from the Ministry of Home Affairs.

Additional Information

➲ National mourning is declared by the Centre or State governments for leaders or individuals with significant contributions to the country.

➲ **Official Protocol During Mourning:** During national mourning, the national flag is flown at half mast.

 ◆ During national or state mourning, official entertainment is suspended, except for Republic Day, Independence Day, or Mahatma Gandhi's birth anniversary. Mourning is resumed after such interruptions.

➲ **Flag Code for State Funerals:** In a state funeral, the national flag is draped over the bier or coffin, with the saffron side towards the head.

➲ The flag is not lowered into the grave or burned with the body, as per Section 3.58 of the Flag Code of India, 2002.

OLIVE RIDLEY TURTLES

Context

Recently, the carcasses of Olive Ridley turtles have been discovered along the coastline of Visakhapatnam.

About

➲ **Nature**: Smallest and most abundant sea turtle species globally.

➲ **Scientific Name**: *Lepidochelys olivacea*, also known as the Pacific ridley sea turtle.

➲ **Major Nesting Sites in India**: Rushikulya rookery coast (Odisha), Gahirmatha beach (Bhitarkanika National Park), and the mouth of the Debi River..

➲ **Unique Features**: Known for "Arribada" mass nesting, where thousands of females come together on the same beach to lay eggs.

➲ **Diet**: Carnivorous, primarily feeding on jellyfish, shrimp, and other marine organisms.

➲ **Reproduction**: Eggs hatch in 45-60 days, depending on the temperature during incubation.

➲ **Conservation Status:**

 ◆ **IUCN Red List:** Vulnerable

 ◆ **Indian Wildlife (Protection) Act, 1972:** Schedule I

 ◆ **CITES:** Appendix I

Arribada

➲ It is a unique mass nesting phenomenon where thousands of female Olive Ridley turtles come ashore simultaneously to lay their eggs on specific beaches.

➲ This event occurs annually at a few select sites worldwide, such as Gahirmatha and Rushikulya in India, and is a crucial part of their reproductive cycle.

AMONG THE SMALLEST SEA TURTLES

Olive Ridley
TURTLES

(Lepidochelys olivacea)

LIFESPAN: believed to be 50-60 years

WEIGHT: 25-45 kg

LENGTH: 60-70 cm

HABITAT: Found both in open ocean and coastal areas

GEOGRAPHIC RANGE
Warm, tropical and subtropical waters of the Indian, Pacific, and Atlantic oceans

ODISHA
• In India mass nesting happens only along the **Odisha coast**
• **Gahirmatha,** mouth of the **Devi River,** and **Rushikulya** are the three main nesting sites
• Several hundred thousand olive Ridley's mass nest at Rushikulya and Gahirmatha beaches every year

ARRIBADA
• Olive Ridley turtles are known for their synchronised mass nesting or arribada
• Mass nesting is thought to be a strategy to increase survival of hatchlings
• Show site fidelity; females return to nest on the same beach that they were born on, sometimes travelling hundreds of km
• They use the wind and tide to help them reach the beach

NEST
• Females may lay eggs up to three times in a nesting season
• A clutch consists of 50 to 200 eggs
• Incubation period is about 2 months
• Sex of the hatchlings is determined by temperature; warmer temperatures produce more females

Olive-green/grey, heart-shaped carapace

Recorded at depths of over 200 m where they feed on benthic invertebrates (bottom-dwelling organisms)

EAT Invertebrates, jellyfish, crabs, lobsters, shrimps, algae, fish

THREATS
• Eggs and hatchlings are often stolen by humans or eaten by dogs, pigs, birds, and other predators
• Hunted for meat
• Overfishing and entanglement in fishing nets
• Marine debris/plastic in the ocean

CONSERVATION
In some parts of the world, such as the US, all trawlers fishing in waters where olive Ridleys are found are mandated by law to use Turtle Excluder Devices (TEDs) to prevent accidental drowning and entanglement of these turtles. These rules exist in some areas of India as well but are rarely followed

PROTECTION STATUS: **VULNERABLE** ON THE IUCN RED LIST

Odisha

LWE Extremism:

- According to MHA Reports, LWE related violence reduced from 126 to 90 districts in April 2018, further to 70 in July 2021 and then to 38 in April 2024.
- The resultant deaths (Civilians + Security Forces) have reduced by 86% from an all time high of 1005 in 2010 to 138 in 2023.

ISFR Report:

- **National Coverage:** Forest and tree cover collectively span 8,27,357 sq. km, accounting for **25.17%** of India's geographical area.
  - Forest cover constitutes 7,15,343 sq. km **(21.76%)**, while tree cover contributes 1,12,014 sq. km **(3.41%).**
- **Largest Forest and Tree Cover (by Area):**
  - **Madhya Pradesh:** 85,724 sq. km
  - **Arunachal Pradesh:** 67,083 sq. km
  - **Maharashtra:** 65,383 sq. km
- **Highest Percentage of Geographical Area Covered by Forest:**
  - **Lakshadweep:** 91.33%
  - **Mizoram:** 85.34%
  - **Andaman & Nicobar Islands:** 81.62%

Global Report On Trafficking in Persons 2024

- **Overall Increase:** 25% rise in global detection of victims compared to 2019.
- **Child Victims:** 31% increase in detections of child victims compared to 2019.
  - **Girls:** Sharp increase of 38%, specifically among girls.
- **Demographics of Victims:**
  - **Females:** 61% of victims detected worldwide were female.
- **Organized Crime Groups:**
  - **Criminal Networks:** 74% of traffickers operated in loosely connected groups or structured organizations.
  - **Non-Organized Traffickers:** Accounted for 26% of convicted traffickers.
- **Trafficking Statistics in India (2018–2022):**
  - **Cases Registered:** India recorded 10,659 cases of human trafficking between 2018 and 2022.
  - **Top States by Trafficking Cases:** Maharashtra recorded the highest number of trafficking cases, followed by Telangana and Andhra Pradesh

India's Pharmaceutical and Biotech Industry:

- **Global Leader:** India supplies 20% of global generic medicines and produces 60% of global vaccines, making it the largest vaccine producer.

- **Industry Ranking:** 3rd largest pharmaceutical industry by volume and 14th by value globally, contributing 1.72% to India's GDP.
- **Market Potential:** Ranked among the top 12 biotechnology destinations and 3rd largest in the Asia-Pacific.
- **FDI Policy:**
  - **Greenfield Projects:** 100% FDI through automatic routes.
  - **Brownfield Projects:** 74% FDI allowed via automatic routes; beyond that, government approval is required.

India's Steel Production and Consumption

- **Production:** India produced **140.2 million tonnes** of steel in 2023, ranking as the world's second-largest steel producer.
  - Crude steel production (January–November 2023): **128.15 million tonnes**, a **12.1% increase** from the previous year.
- **Consumption:** Per capita steel consumption increased to **119 kg** in 2022–2023, compared to **59 kg** in 2013–2014.

Surge in Crimes Against Women in India

- **Rising Crime Numbers:** The National Crime Records Bureau (NCRB) reported **4,45,256 cases** of crimes against women in 2022, averaging nearly **51 FIRs per hour.**
- **Crime Rate & Charge Sheeting:** The crime rate per lakh population was **66.4**, with a charge sheeting rate of **75.8**, according to the "Crime in India 2022" report.
- **Top Crime Categories:**
  - **Cruelty by husband or his relatives:** 31.4%
  - **Kidnapping and abduction of women:** 19.2%
  - **Assault with intent to outrage modesty:** 18.7%
  - **Rape:** 7.1%

Seizures and Smuggling Activity (2023-24)

- **Foreign Currency Seizures:** INR 12.38 crore seized across 25 cases.
- **Narcotics and Psychotropic Substances Seized:**
  - **Total cases:** 109
  - **Total narcotics seized:** 8223.61 kg
    - **Cocaine:** 107.31 kg
    - **Heroin:** 48.74 kg
    - **Methamphetamine:** 136 kg
    - **Mephedrone:** 236 kg
    - **Ganja:** 7348.68 kg
- **Air-Route Cocaine Smuggling:** Cases increased from 21 (2022-23) to 47 (2023-24).
  - Total gold seized: 1319 kg
- **Wildlife Crime:** Elephant tusks seized: 53.49 kg (5 operations)

Test Yourself

Objective Questions

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Mains Questions

GS PAPER-I

1. Examine the historical significance and architectural features of Stupas in ancient India, highlighting their cultural and religious importance. **(10 Marks, 150 Words)**

2. Analyze the impact of Sufism on Indian culture, religion, and society, focusing on its contributions to spiritual and social harmony. **(15 Marks, 250 Words)**

3. Analyze the contributions of C. Rajagopalachari to Indian politics, governance, and social reforms during post-independence India. **(10 Marks, 150 Words)**

4. Discuss the factors responsible for the increasing frequency and intensity of cyclones in the Arabian Sea and their implications for India's coastal regions. **(15 Marks, 250 Words)**

5. Examine the causes and consequences of human trafficking in India, and suggest measures to strengthen prevention, protection, and prosecution frameworks. **(10 Marks, 150 Words)**

6. Critically examine the misuse of Section 498A of the IPC, its societal impact, and the measures needed to prevent its abuse. **(15 Marks, 250 Words)**

GS PAPER-II

7. Analyze the historical background and current dynamics of India-Sri Lanka relations, focusing on political, economic, and security aspects. **(15 Marks, 250 Words)**

8. Examine the causes and global implications of the crisis in Syria, focusing on its humanitarian and geopolitical impact. **(10 Marks, 150 Words)**

9. Analyze the geopolitical, economic, and strategic dimensions of India-Kuwait relations. **(15 Marks, 250 Words)**

10. Evaluate the progress and challenges of the Accessible India Campaign in ensuring inclusivity for persons with disabilities in public spaces and infrastructure. **(10 Marks, 150 Words)**

11. Analyze the strategic, environmental, and socio-economic implications of China's largest hydropower dam on the Brahmaputra River for India and its neighbors. **(15 Marks, 250 Words)**

GS PAPER-III

12. Discuss the growth, challenges, and opportunities in India's pharmaceutical sector, with emphasis on its role in ensuring global health security. **(15 Marks, 250 Words)**

13. Examine challenges and opportunities in urban sector investments in India for sustainable urban development and infrastructure. **(10 Marks, 150 Words)**

14. Discuss the challenges, growth prospects, and role of the steel industry in India's economic development. **(10 Marks, 150 Words)**

15. Analyze the causes, impacts, and mitigation strategies for coastal erosion in India. **(15 Marks, 250 Words)**

16. What is e-waste, and what are the key challenges it poses to India's environment and health? **(10 Marks, 150 Words)**

17. Discuss the objectives, challenges, and environmental implications of India's River Interlinking Projects in the context of water security and sustainability. **(15 Marks, 250 Words)**

18. Critically analyze the trends in forest cover in India, their environmental implications, and the measures needed for sustainable management. **(15 Marks, 250 Words)**

19. Analyze the causes and socio-political impact of Naxalism in India, highlighting its implications for national security and development. **(10 Marks, 150 Words)**

20. Critically analyze the technological advancements, potential applications, and challenges of 5G and 6G networks. **(10 Marks, 150 Words)**