



# INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

## **PANGOLAKHA WILDLIFE SANCTUARY**

A tiger has been spotted at a record-high elevation of 3,640 meters in the Pangolakha Wildlife Sanctuary in Sikkim. This marks the highest elevation in India

11 DEC - 16 DEC 2023

# WEEKLY CURRENT AFFAIRS

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## GENERAL STUDIES – 2

Topics: Functions and responsibilities of the Union and the States, issues and challenges pertaining to the federal structure, devolution of powers and finances up to local levels and challenges therein.

### 1. SC UPHELD ABROGATION OF ARTICLES 370 AND 35A IN JAMMU AND KASHMIR

**Context:**

The Supreme Court, led by Chief Justice D.Y. Chandrachud, unanimously (5-0) upheld the abrogation of Articles 370 and 35A in Jammu and Kashmir.

**Background of the issue:**

Jammu and Kashmir was governed by Article 370, which exempted the state from certain provisions of the Indian Constitution. Introduced in 1949, it allowed Jammu and Kashmir to draft its own constitution and limited the legislative powers of the Indian Parliament in the state. Article 35A, stemming from Article 370, granted the Jammu & Kashmir legislature the power to define the state’s permanent residents and their special rights. This unique provision differed from the constitutional guarantees in place for other states in India.

The President had the authority to amend Article 370 through executive action. The special status was altered on August 5, 2019, through a Presidential Order, modifying Article 370 and reshaping the relationship between Jammu and Kashmir and the Indian Union.

**Key Changes Brought Out by the Order of 2019 (Constitution (Application to Jammu and Kashmir) Order, 2019):**

- **Reorganization into Union Territories:** The Jammu and Kashmir Reorganisation Bill, 2019 divided the state into two Union Territories: Jammu & Kashmir and Ladakh. Jammu & Kashmir will have an Assembly, while Ladakh will be a UT without a legislature.
- **Political Representation:** The UT of Jammu and Kashmir will have legislative powers except on subjects related to “public order” and “police.”
- **Changes in Governance:** Jammu and Kashmir will have a Lieutenant Governor instead of a Governor.
- **Citizenship:** Citizens of Jammu and Kashmir will no longer have dual citizenship. Article 35A, originating from Article 370, stands null and void
- **Fundamental Rights:** The Fundamental Rights of the Indian Constitution will apply to the citizens of the new Union Territory.
- **All Indian laws apply:** All laws passed by Parliament, including the Right to Information Act and the Right

to Education Act, financial emergency (Article 360), IPC will be applicable.

- **Abolishment of Special Status:** Jammu & Kashmir no longer has a separate constitution, flag, or anthem.

**What did the recent SC judgment say?**

Judgement Points	Summary
J&K Sovereignty	<p><b>J&amp;K did not retain any element of sovereignty</b> after its accession to India in 1947 and has always been an integral part of India</p> <p><b>J&amp;K Constitution’s Section 3</b> states it’s an integral part of India</p>
Article 370 Temporary	<p>The SC emphasized that <b>Article 370 is temporary</b>, and was applied due to war conditions at the time of partition.</p> <p><b>Article 370 was a transitional provision</b> until the constituent assembly of state was formed.</p> <p>The <b>Instrument of Accession</b> clarified that Article 1 applied entirely to J&amp;K.</p>
Proclamations Under President’s Rule	<p>The SC confirmed the <b>President’s power for irreversible changes (in Article 370) during the President’s Rule</b>, subject to judicial and constitutional scrutiny.</p> <p>SC upheld <b>Presidential proclamations of 2019</b> that abrogated Article 370 and equated <b>“constituent assembly of J&amp;K”</b>, as <b>“Legislative Assembly of J&amp;K.”</b></p>
Constitution of J&K Inoperative	<p>The SC <b>deemed the J&amp;K Constitution unnecessary</b> as the Indian Constitution applied entirely, rendering the state constitution inoperative.</p>
State Election	<p>SC directed the <b>Election Commission of India to conduct Assembly elections by September 30, 2024</b> and the Centre to <b>restore the statehood</b> of J&amp;K soon.</p>
Truth and Reconciliation Commission	<p>The SC recommended <b>establishing a truth and reconciliation commission</b>, similar to <b>post-apartheid South Africa</b>, to investigate human rights violations by <b>both state and non-state actors</b>.</p> <p>TRC will investigate and report on violations of human rights <b>at least since 1980s</b> and recommend measures for reconciliation</p>

**Impact of the SC judgment:**

- **Greater integration:** The SC clarified that the region **did not possess sovereignty**. This will reduce the impetus to secessionism in J&K
- **Political empowerment:** Voting rights given to West

Pakistan Refugees

- **Inclusion:** Reservation of seats for **Kashmiri pandits** and displaced people from Pakistan-occupied Kashmir.
- **Economic impetus:** People as well as investors outside J&K can now **purchase land in Union Territory etc**
- **Reconciliation:** SC's recommendation of the **establishment of a Truth and Reconciliation Commission** to address human rights violations, will help the residents find out about their missing/killed loved ones.

### Signs of Peace in J&K Post Article 370 Abrogation:

Signs	Observations/Statistics
<b>Reduction in Militancy</b>	Cases of stone pelting and Injuries to security forces were reduced drastically
<b>Reduction Injuries</b>	Civilian injuries from <b>pellet guns and baton charges</b> dropped drastically. Also, law and order has greatly improved
<b>Arrests of Militants and OGWs</b>	Arrests of <b>Over-Ground Workers (OGWs)</b> increased from 82 in 2019 to 178 in 2021.
<b>Overall Security Situation</b>	<b>32% decline in terrorist acts</b> from August 2019 to June 2022 compared to the preceding 10 months.

To know more about the Impact of Article 370 abrogation (with data): [Click Here](#)

Negative changes in the security situation in Jammu and Kashmir: [Click here](#)

### Conclusion:

As a guiding principle for reconciliation, **Atal Bihari Vajpayee's vision of Kashmiriyat, Insaniyat, and Jamhooriyat**, reflecting the **inclusive culture, humanitarian values, and democratic principles**, should serve as a cornerstone for fostering unity and stability in the region. Simultaneously, the ongoing plan to **achieve 'zero-terror incidents' by 2026**, initiated in 2020, needs sustained effort for success.

### Insta Links

- [Constitutional Challenge to the 2019 Abrogation of Article 370](#)
- [Impact of Article 370 abrogation](#)

### Mains Links

Q. The banning of 'Jamaat-e-islami' in Jammu and Kashmir brought into focus the role of over-ground workers (OGWs) in assisting terrorist organizations. Examine the role played by OGWs in assisting terrorist organizations in insurgency affected areas. Discuss measures to neutralize the influence of OGWs. (UPSC 2019)

Q. To what extent is Article 370 of the Indian Constitution,

bearing marginal note "Temporary provision with respect to the State of Jammu and Kashmir", temporary? Discuss The future prospects of this provision in the context of Indian polity. (UPSC 2016)

### Prelims Links:

Q. Siachen Glacier is situated to the (UPSC 2020)

- East of Aksai Chin
- East of Leh
- North of Gilgit
- North of Nubra Valley

Ans: D

Topics: Important aspects of governance, transparency and accountability, e-governance applications, models, successes, limitations, and potential; citizens charters, transparency & accountability and institutional and other measures.

## 2. REGULATING ARTIFICIAL INTELLIGENCE

### Context:

The Economic Advisory Council to the Prime Minister (EAC-PM) has released a paper "A Complex Adaptive System Framework to Regulate AI". Also, the European Union (EU) has reached a historic provisional deal on the **world's first comprehensive laws to regulate artificial intelligence (AI)**.

EAC-PM paper proposes a novel AI regulation framework based on a **Complex Adaptive System**, with five key principles:

1. **Specialist Regulator:** Establishing an expert regulatory body with a broad mandate and swift responsiveness.
2. **Transparency:** Open licensing of core algorithms for external audits and continuous monitoring of AI systems to ensure transparency.
3. **AI Accountability:** Mandating standardized incident reporting protocols to document system aberrations or failures and define clear lines of accountability.
4. **Manual 'Overrides' and 'Authorization Choke-points':** Empowering humans to intervene when AI systems behave erratically through mandated manual controls.
5. **Guardrails and Partitions:** Implementing clear boundary conditions to limit undesirable AI behaviours.

### Key Components of the EU Framework for AI Regulation:

Components	Details
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<b>Safeguards in Legislation</b>	<b>Empowerment of Consumers:</b> Individuals have the ability to launch complaints against perceived AI violations.
	Clear <b>boundaries</b> are set on <b>AI usage by law enforcement</b> agencies.
	Strong <b>restrictions on facial recognition technology</b> and AI manipulation of human behaviour are specified.
	<b>Tough penalties</b> for companies found breaking the rules.
	Limitations on governments for use of <b>real-time biometric surveillance in public areas</b> (allowed only in cases of serious threats like terrorist attacks)
<b>Categorization of AI Applications</b>	AI applications are classified into <b>four risk categories</b> based on their level of risk and invasiveness.
	1. <b>Banned Applications: Mass-scale facial recognition and behavioural control</b> AI applications are largely banned, with exemptions for law enforcement.
	2. <b>High-Risk Applications:</b> Allowed with certification and provision for backend technique transparency, such as AI tools for self-driving cars.
	3. <b>Medium-Risk Applications:</b> Deployable without restrictions, like generative AI chatbots, with explicit disclosure to users about AI interaction, transparency obligations, and detailed tech documentation.
	4. <b>Low-risk applications</b> with transparency obligations.
<b>Other EU's Regulatory Achievements</b>	<b>General Data Protection Regulation (GDPR) Implementation:</b> Enforced since May 2018, focusing on privacy and explicit consent for data processing.
	<b>Digital Services Act (DSA):</b> Focus on regulating hate speech, counterfeit goods, etc.
	<b>Digital Markets Act (DMA):</b> Identifying "dominant gatekeeper" platforms and addressing non-competitive practices and dominance abuse.

**Concerns related to AI use:**

Concerns	Explanation
Privacy	Risk of <b>personal and sensitive information</b> being used unethically, such as for targeted advertising or political manipulation.

<b>Responsibility</b>	AI models generating new content may lead to <b>challenges in identifying responsibility</b> , causing ethical dilemmas over the content's origin.
<b>Automation and Job Displacement</b>	AI's potential to automate processes raises concerns about <b>job displacement, impacting those skilled in the automated areas</b> .
<b>Bias and Discrimination</b>	AI training on <b>biased data may result in decisions that unfairly disadvantage certain groups</b> , perpetuating societal inequalities and discrimination.
<b>Lack of Transparency</b>	Concerns <b>about accountability for AI actions</b> , questioning whether responsibility lies with creators, deploying companies, or regulating governments.

**India's Stance on AI Regulation:**

India aims to **develop sovereign AI and AI computing infrastructure**, focusing on real-life applications in healthcare, agriculture, governance, language translation, etc., to catalyse economic development.

Currently, India is transitioning from a **no-regulation stance on AI to actively formulating regulations** based on a risk-based, user-harm approach. India's AI penetration factor is **3.09**, the highest among G20 and OECD countries. Some of the initiatives are:

- Awareness Initiatives like **#AIFORALL**
- **NITI Aayog's National Strategy for AI** (2018) focused on inclusive and responsible AI
- NITI Aayog's **'Principle of Responsible AI'** outlines seven key principles for AI use
- Meity launched **IndiaAI** in 2023, covering all AI-related research.
- TRAI proposed a **domestic statutory authority for AI regulation** in July 2023, emphasizing a risk-based framework.
- **Ethical guidelines for AI in healthcare** by the Indian Council of Medical Research
- **SEBI's circular guiding AI policies** in the capital market
- **National Education Policy 2020** recommends integrating AI awareness into school courses.

**Initiatives by other countries:**

Country	Initiative
G7	The Group of Seven (G7) has proposed a <b>"risk-based" regulation for artificial intelligence (AI) tools</b> , which could be a first step towards creating a template to regulate AI such as <b>OpenAI's ChatGPT and Google's Bard</b>
Italy	Became the first major Western country to <b>ban OpenAI's ChatGPT</b> due to privacy concerns.

<b>UK</b>	Adopts a <b>'light-touch' approach</b> to encourage innovation in the AI industry.
<b>Japan</b>	Takes <b>an accommodative approach to AI developers</b> .
<b>China</b>	Drafted a <b>20-point plan to regulate generative AI services</b> , expected to be enforced later this year.
<b>US</b>	Proposed a nonbinding roadmap, the <b>AI Bill of Rights Blueprint</b> , outlining five core principles for the responsible use of AI.

**Conclusion:**

Although the risks of AI are widely known, it remains unclear how the AI regulations would address these risks and how grievances would be remedied. Previously, Elon Musk, Steve Wozniak, and over 15,000 others had called for **a six-month pause in AI development**, and for shared safety protocols to be implemented by labs and independent experts.

**Insta Links:**

- [What are hallucinating chatbots?](#)

**Prelims Links:**

Q1. With the present state of development, Artificial Intelligence can effectively do which of the following? (UPSC 2020)

1. Bring down electricity consumption in industrial units
2. Create meaningful short stories and songs
3. Disease diagnosis
4. Text-to-Speech Conversion
5. Wireless transmission of electrical energy

Select the correct answer using the code given below:

- (a) 1, 2, 3 and 5 only
- (b) 1, 3 and 4 only
- (c) 2, 4 and 5 only
- (d) 1, 2, 3, 4 and 5

**Ans: B**

### 3. GLOBAL PARTNERSHIP ON ARTIFICIAL INTELLIGENCE (GPAI)

**Context:**

The [Global Partnership on Artificial Intelligence \(GPAI\)](#) Summit in New Delhi concluded with representatives from 28 countries and the European Union adopting the **'New Delhi Declaration.'**

This is in continuation of previous article: [Regulating Artificial Intelligence](#)

**Major points of the New Delhi Declaration:**

Key Points	Details
<b>Focus</b>	The declaration focuses on <b>mitigating risks associated with AI development</b> and deployment and advocates for <b>equitable access to critical AI resources</b> .
<b>Importance</b>	Acknowledgement of the rapid progress in advanced AI systems and their potential for economic growth
<b>Concerns flagged about advanced AI systems</b>	Concerns related to <b>misinformation, unemployment, lack of transparency, fairness, protection of intellectual property</b> , and threats to human rights and democratic values.
<b>Support for India's collaborative AI approach</b>	Endorsement of <b>India's collaborative approach in building AI systems</b> , supporting projects for <b>equitable access to critical AI resources</b> , including computing, diverse datasets, algorithms, software, and testbeds, in compliance with intellectual property and data protection laws.
<b>Inclusive AI benefits</b>	Ensuring that <b>AI benefits are inclusive and accessible to all countries worldwide</b> , including the Global South.
<b>Principles for a global AI framework</b>	Advocacy for a <b>global AI framework grounded in democratic values and human rights</b> , safeguarding dignity, personal data protection, intellectual property rights, privacy, security, fostering innovation, and promoting trustworthy, responsible, sustainable, and <b>human-centred use of AI</b> .
<b>AI innovation in the agriculture sector</b>	Agreement to <b>prioritize AI innovation in the agriculture sector</b> as a new thematic priority. Recognition of the importance of AI in sustainable food production, resilient agricultural practices, climate change adaptation, ecosystem regeneration, and improvement of land and soil quality.
<b>Pursuit of a diverse membership for GPAI</b>	Commitment to pursue a diverse membership for GPAI, with a particular focus on <b>including low and middle-income countries</b> . The declaration aims to ensure a broad range of expertise, national and regional views and shared

**About GPAI:**



**Global Partnership on Artificial Intelligence (GPAI) Summit**



**Context:** The Global Partnership on Artificial Intelligence (GPAI) Summit in New Delhi concluded with representatives from 28 countries and the European Union adopting the **'New Delhi Declaration.'**

Global Partnership in Artificial Intelligence (GPAI)	
About GPAI	GPAI is a <b>multi-stakeholder initiative</b> launched in <b>June 2020</b> with the aim of bridging the <b>gap between theory and practice</b> in artificial intelligence (AI).
Membership:	<b>Fifteen founding members</b> initially (including India); currently has <b>twenty-nine member states</b> including the European Union (EU) Membership in GPAI is <b>open to all countries</b> , including emerging and developing countries
Secretariat	Its secretariat is hosted at the <b>Organisation for Economic Co-operation and Development (OECD)</b> , in Paris
Presidency	India was handed over the <b>presidency</b> Global Partnership on Artificial Intelligence (GPAI) for <b>2022-23</b>
Four themes	Responsible AI; Data Governance; Future of Work; Innovation and Commercialization
Objective	Facilitates <b>international cooperation on AI</b> , bringing together experts from science, industry, civil society, governments, international bodies, and academia GPAI seeks to support <b>cutting-edge research and applied activities</b> on AI-related priorities
Founding Members:	Australia, Canada, France, Germany, <b>India</b> , Italy, Japan, Mexico, New Zealand, Republic of Korea, Singapore, Slovenia, UK, US, EU.
About AI	Machines performing tasks historically require human intelligence. <b>Technologies:</b> Machine learning, pattern recognition, big data, neural networks, self-algorithms, etc.
Visit Insights IAS Daily CA	<b>Expected Growth:</b> USD 967 billion by 2035, USD 450–500 billion to India's GDP by 2025, accounting for <b>10% of the country's USD 5 trillion GDP target.</b>
India's Initiatives	National AI Strategy; RAISE 2020 – 'Responsible AI for Social Empowerment 2020'; Vaishwik Bhartiya Vaigyanik ( <b>VAIBHAV</b> ) Summit

## GENERAL STUDIES – 3

Topics: [Land reforms in India.](#)

### 1. DILRMP: DIGITIZATION OF LAND RECORDS

**Context:**

The [article](#) discusses India's initiative to **digitize land records**, emphasizing the benefits and challenges associated with this process.

**What is Digitization of Land Records?**

Digitization of land records involves the **conversion of physical land ownership documents and records into digital formats**. This process aims to create a more **efficient, transparent, and accessible system** for managing and maintaining information about land ownership, transactions, and related details.

**Benefits/Challenges of Digitization of Land Records:** Same as benefits of DILRMP (given below)

**About DILRMP:**

**Digital India Land Records Modernization Programme (DILRMP)** was launched by the Government of India in **August 2008**, initially named **NLRMP**.

**About NLRMP**

It was initiated by the Government of India in 2008, and aimed to modernize the land records system and implement **conclusive land-titling with a title guarantee**. In 2016, it was **revamped and renamed as DILRMP under Digital India**, now a central sector scheme with **100% funding by the Centre**.

**Objective:** The objective of the programme was **to streamline and reduce the scope of land and property disputes**, thereby improving transparency in the maintenance of land records.

**Benefits of DILRMP:**

Benefits	Details
1. Promote Transparency	<b>Eliminates discrepancies, errors, and fraud</b> associated with manual record-keeping.
	Provides <b>accurate and up-to-date information</b> on ownership, transactions, boundaries, and encumbrances.
	Enhances <b>transparency and accountability</b> in land administration.
2. Reduce Corruption	<b>Automates processes</b> , reducing human intervention.
	<b>Creates an audit trail and tamper-proof records</b> , discouraging document forgery or manipulation.
3. Promote Rural Development	Facilitates <b>access to credit for rural land-owners</b> .
	Allows <b>financial institutions to assess land ownership</b> and value efficiently for transparent loan processes.
	Enables <b>better land-use planning</b> by providing accurate data for informed decision-making.
4. Other Benefits	Supports <b>government initiatives in rural development</b> , ensuring efficient execution of programs.
	<b>Expedites dispute resolution</b> by providing swift access to pertinent information.
	<b>Helps relieve court burdens</b> and conserve time and resources in resolving land disputes. <b>A NITI Aayog paper</b> suggests that land disputes on average take about <b>20 years to be resolved</b>
	<b>Preserves land records in digital formats</b> , reducing susceptibility to physical damage or loss.
	<b>Mitigates the risk of losing critical land information</b> in natural disasters or accidents.

**Components of DILRMP:**

- **Unique Land Parcel Identification Number (ULPIN):** An **Aadhar-like identification** for a land parcel or plot. Each land parcel or plot is assigned a unique identification number.
- **National Generic Document Registry System (NGDRS) — One Nation One Registration Software System:** It is a software application platform that facil-

itates online registration of immovable properties and documents as compared to the manual registration process used earlier.

- **Transliterating the land records in any language** under **Schedule VIII** of the Constitution to break the linguistic barriers in land records.

#### Other Schemes for land modernization:

- **SVAMITVA scheme:** The scheme seeks to confer land titles in unmapped and inhabited parts of rural India and to distribute property cards in villages.
- **PM Gati Shakti National Master Plan:** Coordinate infrastructure development using digital land records.
- **Bhoomi Project (Karnataka):** Digitize land records for efficient management and accessibility.
- **Bhulekh (Uttar Pradesh):** Digitization and computerization of land records.
- **Dharani (Telangana):** Online management of agricultural and non-agricultural land records.
- **e-Dharti (Haryana):** Online access to land records, reduction of manual processes.
- **Bhu-Adhikar (Maharashtra):** Digitize land records and streamline land administration.

#### Challenges Ahead:

Challenges	Details
1. Lack of Manpower	It is a major barrier to ensuring regular updating of land records.
2. Structural Issue	India has a system <b>of registered sale deeds</b> rather than land titles.
	Land ownership is established through <b>multiple documents maintained by different departments</b> , making access cumbersome.
	<b>The high cost of property registration</b> leads to <b>people avoiding transactions</b> .
	Under the Registration Act, 1908, <b>registration is not mandatory for certain transactions</b> , adding complexity to the system.
3. Slow Progress	<b>No state/UT has the facility for online modification</b> of records on the same day as registration, indicating slow progress.
4. Weak Linkage	Disjointed communication between <b>revenue and survey departments</b> results in disparities between textual and spatial land records.
	Raises the <b>risk of legal conflicts</b> regarding boundary definitions and land area.
	Hinders the goal of maintaining <b>precise and up-to-date land records</b> .

#### Way Forward:

- **Legislative reforms:** an important legislative reform missing in the land record modernization efforts of the government is a **revamp of the process of docu-**

**ment registration**, which continues to be governed by a **colonial-era law enacted in 1908**.

- **Promoting uniform approach:** The government needs to make necessary steps to promote a uniform approach **across the centre/State and between different departments**
- **Transition plan:** Considering the **digital divide** in India, the government should chalk out a transition plan to implement such reforms aimed at shifting from physical to online registration.

#### Conclusion

Effective land records are **imperative for a harmonious society**. Such systems offer clear ownership, reduce disputes, promote transparency in real estate, increase tax revenue, aid infrastructure development, and support the poor in providing land ownership

#### More About ULPIN:

The **Unique Land Parcel Identification Number ("ULPIN")** is a **14-digit identification number** for every parcel of land in India. Being described as "**Aadhar for Land**", it is a number that would uniquely **identify every surveyed parcel of land**. It is part of DILRMP.

ULPIN is regarded as a **digital revolution in land ownership** for the following reasons:

- The identification is based on **the longitude and latitude coordinates** of the land parcel.
- The identification is based on **detailed surveys**.
- This is to help **develop land banks** and lead **towards an Integrated Land Information Management System (ILIMS)**.

#### Insta Links:

- SVAMITVA Scheme

#### Mains Links:

**Q. Discuss the role of land reforms in agricultural development Identify the factors that were responsible for the success of land reforms in India. (UPSC 2016)**

#### Prelims Links:

**Q. With reference to land reforms in independent India, which one of the following statements is correct? (UPSC 2019)**

- The ceiling laws were aimed at family holdings and not individual holdings.
- The major aim of land reforms was providing agricultural land to all the landless.
- It resulted in cultivation of cash crops as a predominant form of cultivation.
- Land reforms permitted no exemptions to the ceiling limits.

**Ans: B**

Topics: [Conservation related issues, environmental pollution and degradation, environmental impact assessment.](#)

## 2. GLACIER MELTING AND ITS IMPACTS

### Context:

The World Meteorological Organization’s recent report, **The Global Climate 2011-2020**, reveals a concerning trend of **glacier thinning**, with an average reduction of about one **meter per year from 2011 to 2020**.

### Key findings of the report:

Key Findings	Implications
<b>Temperature Trends</b>	<p>Atmospheric concentrations of major <b>greenhouse gases</b> (GHG) continued to rise, especially CO<sub>2</sub>, <b>reaching over 413 ppm</b> in 2020, primarily due to fossil fuel combustion and land-use changes.</p> <p>Record high temperatures contribute to <b>extreme weather events, posing risks to ecosystems</b>, agriculture, and human populations.</p>
<b>Oceanic Changes</b>	<p>Accelerated <b>ocean warming and acidification</b> (with 90% of total accumulated heat stored in the ocean) highlight the vulnerability of marine ecosystems, necessitating conservation efforts.</p>
<b>Marine Heatwaves and Sea Level Rise</b>	<p>Increased frequency of <b>marine heatwaves</b> poses threats to marine life and ecosystems, impacting fisheries and coastal communities.</p> <p>Accelerated sea level rise calls for <b>adaptive measures to protect coastal areas</b> and vulnerable populations from potential flooding.</p> <p>Global mean sea level rise accelerated to <b>4.5mm/yr from 2011-2020</b>, mainly due to ocean warming and ice mass loss</p>
<b>Glacier and Ice Sheet Loss</b>	<p>Global glacier thinning impacts water supply, necessitating <b>water resource management strategies</b> in regions dependent on glacial melt.</p> <p>The significant loss of ice from <b>Greenland and Antarctica</b> (lost <b>38% more ice compared</b> to 2001-2010) contributes to rising sea levels, with implications for coastal regions.</p> <p>The report warns of the rapid growth of <b>pro-glacial lakes, contributing to glacier lake outburst floods (GLOF)</b>, with past incidents, like the Uttarakhand floods</p> <p>With current greenhouse gas emission rates, glaciers may decline by <b>55% to 75%, impacting freshwater</b> supply significantly by 2050</p>

<b>Arctic Sea Ice Decline</b>	<b>Ongoing Arctic Sea ice decline</b> (30% below the 1981-2010 average) underscores the vulnerability of polar regions to climate change and its cascading effects globally.
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### Impact of Arctic and Antarctic Ice Melting:

Impact	Implications
<b>1. Impacts on Climate</b>	<b>Rise in Sea Levels:</b> Threatens coastal communities; IPCC projects significant sea level rise.
	<b>Albedo Effect Reduction:</b> Loss of ice increases solar radiation absorption, contributing to planetary warming.
	<b>Disruption of Ocean Currents:</b> Melting ice disrupts thermohaline circulation, influencing global climate patterns.
	<b>Release of Greenhouse Gases:</b> Melting permafrost releases methane, exacerbating global warming.
<b>2. Impacts on Marine Life</b>	<b>Increased Weather Extremes:</b> Influences jet streams, contributing to global extreme weather events.
	<b>Habitat Loss for Species:</b> Polar bears and penguins face habitat loss, affecting populations and distribution.
	<b>Changes in Marine Ecosystems:</b> Altered temperature and salinity levels impact marine biodiversity, including plankton.
	<b>Ocean Acidification:</b> Increased CO <sub>2</sub> absorption leads to acidification, harming marine life, especially shell-forming species.
	<b>Disruption of Food Chains:</b> Changing ice conditions affect algae and krill availability, essential for many marine species.
<b>3. Impacts on Global Economy</b>	<b>Increased Predation and Competition:</b> Alters marine ecosystem balance, leading to increased competition and predation.
	<b>Coastal Infrastructure and Housing:</b> Rising sea levels necessitate significant investments in coastal infrastructure adaptation.
	<b>Impact on Fisheries:</b> Changes in marine ecosystems affect global fisheries and dependent economies.
	<b>Increased Insurance Costs:</b> Extreme weather events lead to higher insurance costs for businesses and governments.
	<b>New Shipping Routes:</b> Melting ice opens new Arctic shipping routes, altering global trade patterns.
	<b>Agricultural Changes:</b> Altered weather patterns influence agricultural productivity, impacting food prices and security.

**Suggestions**

1. **Mitigating Climate Change:**
  - a. **International Agreements:** Strengthening commitments under the **Paris Agreement**. For example, countries **increasing their Nationally Determined Contributions (NDCs) to reduce emissions**.
  - b. **Renewable Energy Initiatives:** **Germany's Energiewende program**, which aims to transition to renewable energy, serves as a model for reducing reliance on fossil fuels.
2. **Protecting Marine Ecosystems**
  - a. **Marine Protected Areas (MPAs):** The establishment of the **Great Barrier Reef Marine Park** in Australia demonstrates effective conservation of marine biodiversity.
  - b. **Sustainable Fishing Practices:** **Norway's implementation of sustainable fishing quotas** and strict regulations to protect fish stocks.
3. **Adapting Coastal Infrastructure**
  - a. **Flood Defense Systems:** The **Netherlands' Delta Works**, a series of **dams and storm surge barriers**, exemplify advanced coastal protection infrastructure.
  - b. **Managed Retreat Strategies:** The planned **relocation of the Alaskan village of Newtok** due to rising sea levels is an example of a managed retreat.
4. **Promoting Sustainable Economic Practices**
  - a. **Circular Economy Models:** Japan's focus on recycling and waste reduction under the concept of a **"Sound Material-Cycle Society."**
  - b. **Green Bonds and Sustainable Investments:** The issuance of green bonds, such as those by the World Bank, to fund environmental projects.
5. **Scientific Research and Monitoring**
  - a. **Polar Research Programs:** The **European Space Agency's CryoSat mission**, monitoring polar ice and snow, contributes valuable data on ice melt and sea level rise.
  - b. **Climate Research Institutes:** The **Scripps Institution of Oceanography in the USA** conducts cutting-edge research on climate change and its impacts.
  - c. There has been an increased focus on monitoring Greenland's ice loss through **satellite missions like NASA's ICESat-2**.

**Conclusion**

The melting of Arctic and Antarctic ice poses **serious challenges to our global climate system, marine ecosystems, and economies**. However, these challenges also present **opportunities to foster global cooperation, advance scientific understanding, and implement innovative solutions**.

**About WMO (World Meteorological Organization) (founded 1950; HQ: Geneva, Switzerland)**

It is an **Intergovernmental organization with 192 Member States** and Territories, including India. It is the **specialized agency of the United Nations** for meteorology, operational hydrology, and related geophysical sciences.

**Mains Links:**

Q. How do the melting of the Arctic ice and glaciers of the Antarctic differently affect the weather patterns and human activities on the Earth? Explain (UPSC 2021)

**Prelims Links:**

Q. Which of the following statements is/are correct about the deposits of 'methane hydrate'? (UPSC 2019)

1. Global warming might trigger the release of methane gas from these deposits.
2. Large deposits of 'methane hydrate' are found in the Arctic Tundra and under the sea floor.
3. Methane in the atmosphere oxidizes to carbon dioxide after a decade or two.

Select the correct answer using the code given below.

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

**Ans: D**

**3. IMPORTANT OUTCOMES OF COP28**

**Context:**

Recently concluded **COP28 to UNFCCC in Dubai, delivered significant outcomes**

**What is COP28?**

COP28 is the **28th annual United Nations (UN) climate meeting**, which took place from November 30 to December 12, 2023 in Dubai, United Arab Emirates (UAE). COP stands for the **28th Conference of the Parties to the United Nations Framework Convention on Climate Change**. The conference is where governments discuss how to prepare for and **limit future climate change**.

**Important outcomes of COP28:**

Highlights	Description
<b><u>Loss and Damage (L&amp;D) Fund</u></b>	COP28 countries <b>agreed to launch the Loss and Damage (L&amp;D) fund</b> , hosted by the <b>World Bank for four years</b> , aligning with <b>UNFCCC and the Paris Agreement</b> . All developing countries are eligible, and contributions are <b>voluntary</b> , with a specific percentage earmarked for <b>Least Developed Countries and Small Island Developing States</b> .

Global Stocktake	<p>COP28 released the <b>fifth iteration of the Global Stocktake (GST)</b>, adopting eight steps to limit global <b>temperature rise to 1.5 degrees C</b>. These steps include:</p> <ol style="list-style-type: none"> <li><b>Tripling renewable energy</b> capacity by 2030 (to at least 11,000 GW by 2030) and <b>collectively double</b> the global energy efficiency improvements from <b>around 2% to over 4%</b> every year until 2030.</li> <li>Phase-down of <b>unabated coal power</b></li> <li>Accelerating efforts globally towards <b>net zero by around mid-century</b></li> <li><b>Accelerating zero and low emissions</b> technologies e.g., Nuclear, CCUS, Hydrogen</li> <li><b>Transitioning away from fossil fuels</b> in energy systems, in a just, orderly and equitable manner, so as to achieve net zero by 2050</li> <li><b>Reducing non-CO2 emissions</b> e.g., methane emissions globally by 2030</li> <li>Emissions reductions <b>from road transport</b></li> <li>Phasing out of inefficient <b>fossil fuel subsidies</b></li> </ol> <p>The text maintains <b>continuity with COP26</b>, balancing global aspirations while recognizing diverse energy needs</p>
	<p><b>What is Global Stocktake?</b> Global stocktake is a <b>process for countries to see where they're collectively making progress</b> towards meeting the goals of the Paris Agreement. As per the Paris Agreement (2015), it was decided that <b>countries would assess their progress for the first time in 2023</b> and, then, every five years.</p> <p>It noted that there is a <b>need to cut 43% of GHG emissions</b> by 2030, compared to 2019 levels and countries are off-track in meeting their climate goals.</p>
	<p>66 national signatories committed to a <b>68% reduction in cooling-related emissions by 2050</b></p>

Climate Finance	<p>UNCTAD estimates that <b>developed nations owe developing countries \$500 billion in 2025</b> under the <b>New Collective Quantified Goal (NCQG)</b> for climate finance, confirmed in the Paris Agreement.</p> <p>The goal, starting <b>at \$100 billion annually</b>, allocates \$250 billion for mitigation, \$100 billion for adaptation, and \$150 billion for loss and damage.</p> <p>With the <b>current \$100 billion goal unmet</b>, developing countries face debt distress.</p>
Global Goal on Adaptation (GGA) framework	<p>Draft text introduced to <b>enhance climate change adaptation</b> like Climate-Induced Water Scarcity Reduction, Climate-resilient food and Agriculture Production and Strengthening Resilience Against Climate-Related Health Impacts</p>
Triple Nuclear Energy	<p>The text calls <b>to triple global nuclear energy capacity by 2050</b></p>
Powering Past Coal Alliance (PPCA)	<p>PPCA, a coalition involving <b>governments, businesses, and organizations</b>, focuses on transitioning from unabated coal power to clean energy. At COP28, PPCA welcomed <b>new national and sub-national governments</b>, advocating for cleaner energy alternatives. <b>India is not part of PPCA</b> as it has not committed to phasing out of coal.</p>
Coal Transition Accelerator	<p>Introduced for <b>knowledge-sharing and financial support</b> in transitioning from coal.</p>
Coalition for High Ambition Multilevel Partnership (CHAMP)	<p>65 national governments signed commitments for <b>enhanced cooperation with subnational governments</b> in climate strategies.</p>
Buildings Breakthrough Initiative	<p>The goal of the Buildings Breakthrough Initiative is to <b>make near-zero emissions and resilient buildings the new normal by 2030</b>. The initiative is <b>co-led by France and the Kingdom of Morocco</b>, coordinated under the umbrella of UNEP, and hosted by the <b>Global Alliance for Buildings and Construction</b> (Global ABC)</p>

**COP28 Shortcomings:**

- **Lacked clear timelines** for fossil fuel phase-out
- **Ambiguity in the tripling of renewable energy** capacity, raising uncertainty
- Absence of specific measurement criteria for the **phase-down of coal**

- Opposition from countries hindering **progress on methane emission cuts including India**. India is not a part of the **Global Methane Pledge**
- Challenges in meeting **urgent climate action expectations**
- **The global adaptation framework** adopted **lacks financial provisions** and requires further development
- With the current \$100 billion goal of Climate Finance unmet, **developing countries face debt distress**
- **Loopholes Criticized**: Some stakeholders, including the **Alliance of Small Island States**, criticize the agreement for containing “**a litany of loopholes**,” challenging its transformative potential.
- **Compromise on Absolute Phase-Out**: The **absence of language mandating** an absolute phase-out of hydrocarbons underscores the challenging negotiations and compromises made to secure the agreement.
- **Call for Greater Ambition**: Climate leaders like **Manuel Pulgar-Vidal** stress the need for enhanced ambition and implementation to limit global warming effectively.

**Azerbaijan and Brazil** will host COP29 (2024) and COP30 (2025), respectively

#### India's Stance:

**India expressed dissatisfaction**, particularly **opposing methane emission mandates**. India highlights the **necessity of using coal for developmental needs** and emphasizes adherence to nationally determined contributions (NDCs).

#### Initiatives India opposes for climate action:

1. **Coal phase-out**: Despite commitments to expand non-fossil fuel and renewable energy, India stands firm on **not phasing out coal-generated electricity** in the near term.
2. **Global Methane Pledge**: Because of worries about the potential effects on agriculture and the supply of electricity, the nation has continuously opposed international initiatives of the Global Methane Pledge.
3. **Global Renewables and Energy Efficiency Pledge**: India did not join the “Global Renewables and Energy Efficiency Pledge” at COP28, emphasizing **its own climate equity** concept that addresses unequal burdens on nations.
4. **Loss and Damage Fund**: Citing historical responsibility and objecting to the World Bank’s temporary management of the fund, China and India both refuse to contribute to the Loss and Damage Fund.

#### India's climate action initiatives during the COP28 summit:

1. **Global River Cities Alliance (GRCA)**: led by the National Mission for Clean Ganga (NMCG) under the **Ministry of Jal Shakti**, was launched at COP28.
  - a. It is a unique alliance **covering 275+ global river cities in 11 countries**, international funding agencies and knowledge management partners and is the first of its kind in the world.

- b. The launch of GRCA signifies a **momentous step in global efforts** toward river conservation and sustainable water management.
2. **Green Credit Initiative**: The Initiative aims to create a global trade forum facilitating the exchange of innovative environmental programmes and instruments.
    - a. The **Green Credit Initiative**, launched at COP28, aligns with **Mission LiFE** which aims to **minimise per capita carbon footprint** by promoting mindful utilisation instead of wasteful consumption.
  3. **LeadIT 2.0**: launched at COP 28, focuses on **co-development and transfer** of low-carbon technology and financial assistance to emerging economies.
  4. **Green Development Pact**: it provides pathways for nations in their journey towards achieving **energy, climate, environment and disaster resilience**-related objectives.
    - a. Green Development Pact includes key ambitions such **as tripling of global renewable capacity by 2030**.

#### Conclusion:

Developing nations urge **wealthy countries to attain negative carbon emissions**, not just reach net zero by 2050. They assert that affluent nations, **having used over 80% of the global carbon budget**, should grant developing nations their equitable portion of future emissions. Emphasis is placed on the principles of **common but differentiated responsibilities and respective capabilities (CBDR-RC)** in the fight against climate change.

Also, experts advocate for **global financial architecture reform to address structural issues** and support sustainable development.

#### Insta Links:

- [Climate Finance: 'Loss and damage' fund](#)
- [The Bonn Climate Change conference](#)

#### Mains Links:

Q. Discuss global warming and mention its effects on the global climate. Explain the control measures to bring down the level of greenhouse gasses which cause global warming, in the light of the Kyoto Protocol, 1997. (UPSC 2022)

Q. Describe the major outcomes of the 26th session of the Conference of the Parties (COP) to the United Nations Framework Convention on Climate Change (UNFCCC). What are the commitments made by India in this conference? (2021)

Topics: Challenges to internal security through communication networks, role of media and social networking sites in internal security challenges, basics of cyber security; money-laundering and its prevention

## 4. ISSUES WITH UAPA

**Context:**

The [article](#) discusses a recent judgment by the Division Bench of the Jammu and Kashmir High Court in the **case of journalist Fahad Shah**, highlighting issues related to **personal liberty** and the application of the **Unlawful Activities (Prevention) Act (UAPA)**, India's primary anti-terror statute.

**What did the court say?**

The court **granted bail to Fahad Shah** and partially **set aside the charge against him**. It emphasized the **need for circumspection in enforcing anti-terror laws** that allow vast interference with personal liberty. The High Court raised concerns about the UAPA's **procedural aspects, specifically, Section 43-D(5), which restricts bail if accusations are deemed 'prima facie true.'**

The judgment **rejected the government's argument** that **publishing an article** could be considered an act of terror, emphasizing the **need for common sense in criminal law**. It underscored that the **UAPA should not extend to punishing alleged defamation** of the country.

**What is UAPA?**

The **Unlawful Activities (Prevention) Act (UAPA)** is an **anti-terrorism law** enacted in India (in 1967) with the aim of **preventing unlawful activities and combating terrorism**. The Act assigns **absolute power to the central government**, by way of which if the Centre deems an activity as unlawful then it may, by way of an Official Gazette, declare it so.

**Key features of UAPA:**

- Under UAPA, **both Indian and foreign nationals** can be charged.
- It will be applicable to the offenders in the same manner, **even if the crime is committed in a foreign land**, outside India.
- It has the **death penalty and life imprisonment** as the highest punishments.
- Under the UAPA, the investigating agency can file a charge sheet in **maximum of 180 days** after the arrests and the duration can be extended further after intimating the court.
- As per **amendments of 2019**: The Act empowers the Director General of **National Investigation Agency (NIA)** to grant approval of seizure or attachment of property when the case is investigated by the said agency.
- The Act empowers the **officers of the NIA, of the rank of Inspector or above**, to investigate cases of terrorism in addition to those conducted by the DSP or ACP or above rank officer in the state.
- It also included the provision of **designating an individual as a terrorist**.

**Arguments in Favour:**

Arguments	Description
<b>National Security</b>	UAPA empowers the government to <b>preventively act against individuals and organizations</b> involved in or supporting terrorism, safeguarding the nation's security.
<b>Counterterrorism Measures</b>	Designation of individuals and organizations like <b>Masood Azhar, Hafiz Saeed, and Lashkar-e-Taiba</b> as terrorists under UAPA, enabling asset freezes, travel bans, and sanctions.
<b>Preventive Detention</b>	UAPA enables the preventive detention of individuals suspected of unlawful activities, <b>crucial for averting potential threats</b> in cases lacking sufficient evidence for formal trials.
<b>Global Commitments</b>	UAPA amendments align with the <b>United Nations Convention for the Suppression of the Financing of Terrorism</b> , showcasing India's commitment to international efforts against transnational terrorism.
<b>Effective Prosecution</b>	Use of UAPA in prosecuting and <b>convicting Ajmal Kasab, the lone surviving terrorist of the 26/11 Mumbai attacks</b> , based on intercepted communications, electronic evidence, and modern investigative techniques.
<b>Deterrence</b>	Severe penalties under UAPA in the case of the <b>2001 Parliament attack</b> , discouraging individuals from engaging in or supporting activities detrimental to the nation's security, as seen in the hanging of Afzal Guru.

**Issues with UAPA:**

Issues with UAPA	Description
<b>The broad and vague definition of 'Terrorism'</b>	The UAPA's definition of <b>'unlawful activities'</b> is <b>broad and vague</b> , potentially encompassing legitimate political activities or dissent under the label of 'terrorism.'
<b>Pre-emptive Arrests and Detentions</b>	UAPA allows <b>pre-emptive arrests and prolonged detentions</b> without bail, permitting arrests based on suspicion or the anticipation of potential offences.
<b>Poor conviction</b>	A 2022 PUCL report revealed that <b>less than 3 per cent of UAPA arrests resulted in convictions between 2015 and 2020</b> , raising concerns about the legitimacy and effectiveness of the charges.

<b>State Over-reach</b>	The Act includes acts <b>“likely to threaten” or “likely to strike terror,”</b> granting broad powers to label individuals, including ordinary citizens or activists, as terrorists without the actual commission of such acts.
<b>Denial of Rights</b>	<b>Section 43(D)(5) of UAPA prevents the release of bail</b> if the police charge sheet indicates reasonable grounds for believing the accusation is prima facie true. <b>Only a small percentage of detainees secured bail</b> according to the PUCL report.

<b>Promote Dialogue and Reconciliation</b>	Emphasize the <b>use of dialogue, negotiation, and reconciliation</b> as preferred methods to address conflicts and grievances, avoiding unnecessary use of the UAPA.
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**Conclusion**

Drawing the line between individual freedom and state obligation to provide security is a case of classical dilemma. It is up to the state, judiciary, and civil society, to strike a balance between constitutional freedom and the imperative of anti-terror activities.

**Court’s Perspective on UAPA:**

- **Justice Rohinton Nariman** urged the SC to **strike down “the offensive portions of the UAPA”**.
- **SC: Arup Bhuyan vs State Of Assam (2011):** Mere membership in a banned organization is not incriminating; involvement in violence or incitement is necessary.
- **SC: The People’s Union for Civil Liberties v. Union of India (2004):** Combating terrorism with human rights violations is self-defeating.
- **SC: Union of India v. K A Najeeb (2021):** Constitutional courts can grant bail, overriding UAPA restrictions, if the fundamental rights of the accused are violated.
- **SC: Mazdoor Kisan Shakti Sangathan v. Union of India (2018):** Legitimate uprisings against governmental actions are recognized, emphasizing peaceful and non-violent protests.

**Mains Link:**

Q. Do you agree that the Unlawful Activities (Prevention) Amendment Act could prove catastrophic for fundamental rights? Is sacrificing liberty for national security justified? Discuss and provide your opinion. (15M)

**GENERAL STUDIES – 4**

**1. MEDICAL ETHICS: ‘CASH-FOR-KIDNEY’ SCAM**

**Context:**

The Health Ministry is investigating **Indraprastha Apollo Hospital** over allegations of a ‘cash-for-kidney’ scam, following reports that the hospital is involved in a racket enticing **impoverished individuals from Myanmar** to sell their organs.

**What is Organ transplantation?**

It is a medical procedure in which an **organ or tissue is removed from one person (the donor) and transplanted into another person** (the recipient) to replace a damaged or failing organ. Common organ transplants **include kidneys, heart, liver, lungs, and pancreas.**

**Status:**

**Huge Gap: Only 6000 renal transplants** annually against over 2 lakh persons suffering from renal failure.

**Government Regulations:**

- Organ donation and transplantation in India are regulations through the **Transplantation of Human Organs Act (THOA), 1994.**
- **National Organ Transplant Programme (NOTP)** to promote organ donation and transplantation.
- **Modified National Organ Transplantation Guidelines:** It allows those **above 65 years of age** to receive an organ for transplantation from deceased donors. It also removed the **domicile requirement to register as an organ recipient**

**Way forward:**

Reform Measures	Brief Description
<b>Amend the Law</b>	Narrow down vague definitions like <b>“unlawful activity” and “terrorist act”</b> to exclude constitutionally protected activities such as peaceful protests and dissenting opinions.
<b>Shift the Burden of Proof</b>	Ensure the <b>burden of proof lies with the prosecution</b> , not the accused. The current UAPA reverses the normal principle of criminal law, making it challenging for the accused to get bail or a fair trial.
<b>Establish a Review Mechanism</b>	Create an <b>independent review mechanism</b> to monitor and challenge government decisions on designations. The existing process lacks transparency and can be biased.
<b>Use the Law as the Last Resort</b>	Reserve UAPA for <b>extreme cases and avoid using it as the primary response to security threats or social unrest.</b> It should not suppress dissent, criticism, or opposition, respecting citizens’ rights and freedoms.

**Ethical Issues concerned in the case are:**

Ethical Issues	Implications
<b>Organ Trafficking</b>	If the allegations are true, it is against human ethics as it involves exploiting <b>impoverished individuals for organ sales</b> .
<b>Informed Consent</b>	Questions arise about the <b>adequacy of informed consent</b> , particularly given the financial vulnerability of donors from Myanmar.
<b>Equity and Justice</b>	Concerns emerge over the <b>exacerbation of global healthcare disparities</b> , as wealthy patients potentially exploit the impoverished for organs.
<b>International Medical Tourism</b>	The involvement of international patients raises ethical dilemmas about <b>prioritizing affluent patients over local healthcare needs</b> .
<b>Patient Safety</b>	Ensuring the safety of <b>both donors and recipients is critical</b> ; any compromise in safety would be ethically problematic.

**Several ethical thinkers have contributed to the field of medical ethics:**

- **Hippocrates:** Often regarded as the **father of Western medicine**, his principles, such as the Hippocratic Oath, emphasize the **ethical duties of physicians**.
- **Immanuel Kant:** Known for his deontological ethics, Kant’s ideas on treating individuals with **respect and dignity**
- **Beauchamp and Childress:** Joseph Beauchamp and James Childress proposed the widely used principles of biomedical ethics - **autonomy, beneficence, non-maleficence, and justice**.
- **Tom L. Beauchamp and James F. Childress:** They developed the influential framework known as the **“Four Principles of Biomedical Ethics,”** which has had a significant impact on contemporary medical ethics.

**CONTENT FOR MAINS ENRICHMENT**

**1. DELHI’S INITIATIVES FOR CLIMATE CHANGE**

**Context:**

The Delhi Government presented its initiatives for climate action at COP28 (at the C40 meeting)

**Initiatives:**

- **‘City of Lakes’ project** for water body rejuvenation. It creates **eco-tourism opportunities** and enhances **heat resilience**, particularly during extreme weather events. It led to an increase of **up to 2 meters in**

groundwater levels.

- **The ‘3i model’ for Electric Vehicles** focus on inclusion, incentivization, and innovation.

**C40 is a global network** of nearly **a hundred mayors of the world’s** leading cities that are united in action to confront the climate crisis.

**2. ODISHA’S TRANSFORMATION IN FOOD SECURITY**

**Context:**

The [article](#) discusses **Odisha’s successful transformation** in addressing food security and climate resilience, offering a potential model for other regions facing the challenges of the **global climate crisis**.

**Odisha’s journey:**

1. **Agricultural Transformation:** Over the past two decades, Odisha has shifted from **importing rice to becoming a significant producer**, achieving its highest food grain production in 2022. Productivity has tripled. Schemes like **Krushak Assistance for Livelihood and Income Augmentation (KALIA)** and the **Odisha Millet Mission** have focused on **increasing income for small farmers** and promoting crop diversification for climate resilience.
2. **Resilience and Sustainability:** Odisha, being vulnerable to climate change, has proactively developed a **comprehensive Climate Change Action Plan** covering various sectors E.g., **Crop Weather Watch Group** monitoring and responding to adverse weather conditions.
3. **Social Protection:** In the **State Ranking Index for the National Food Security Act**, Odisha emerged as the **top-ranked state in 2022**, showcasing its commitment to food security, livelihood, and climate resilience initiatives.

**Usage:** The example can be used in Governance/ Social Justice Qn to showcase a state’s transformation from food scarcity to surplus.

**3. 40 YEARS OF INDIA’S PRESENCE IN ANTARCTICA**

**Context:**

In December 1983, India established its **first permanent base in Antarctica**, **Dakshin Gangotri**, during the **Project Gangotri mission**.

Led by Harsh Gupta, the expedition faced challenges, including a helicopter accident. Despite setbacks, the team, comprising defence personnel and scientists, achieved the goal of setting up the **permanent base within 60 days**. The base, equipped with laboratories, living quarters, and recreational

facilities, marked **India's year-round presence in Antarctica**. The mission showcased **India's commitment to scientific exploration** and the challenges overcome to establish a permanent foothold in the icy continent.

**Usage:** The story reflects **values of determination, resilience, and commitment** to scientific exploration.

**Other initiatives**

- Dakshin Gangotri (abandoned in 1990)
- Maitri (operational since 1988)
- Bharati (operational since 2012)
- **National Centre for Polar and Ocean Research**, Goan autonomous institute under the Ministry of Earth Sciences (it manages India's Antarctic program)
- India is a party to the **Antarctic Treaty**, which seeks it shall be used for peaceful purposes only.
- **Indian Antarctic Act, 2022**, provides measures for protecting the Antarctic environment and associated ecosystems etc.



### 4. ANARCHO-CAPITALISM

**Context:**

Anarcho-capitalism is a political philosophy advocating for the **abolition of the state** and **the privatization of law and order** through free-market competition among private companies.

Recently gaining attention with **Javier Milei winning the presidency in Argentina**, anarcho-capitalists believe that private firms, driven by market forces, can offer policing and legal services more efficiently and at better quality than state-run systems.

However, critics argue that this **ideology is impractical**, leading to conflicts and favouring the rich.

**Ethical Issues with Anarcho-Capitalism:**

Issues	Description
<b>1. Justice Inequality:</b>	Critics argue that a <b>privatized legal system could favour the wealthy</b> , allowing them to manipulate the legal process with financial influence, leaving the poor at a disadvantage.
<b>2. Lack of Accountability:</b>	In a system driven by profit, concerns arise about the <b>accountability of private firms in upholding justice</b> , as their primary allegiance may be to those who can afford their services.
<b>3. Access to Services:</b>	There are worries that the <b>less affluent may face challenges in accessing services</b> , creating a system where justice is available only to those who can afford it.
<b>4. Monopoly Concerns:</b>	Instead of promoting competition, critics argue that <b>privatization could lead to monopolies</b> where a few powerful entities control the legal and security services, limiting choices for consumers.
<b>5. Public Goods:</b>	Privatizing basic services may <b>infringe on the principles of equal access and societal well-being</b> .

### 5. MOHINIYATTAM

**Mohiniyattam**



**Context:** The 17th-century **German science fiction novel "Somnium,"** written by Johannes Kepler, is set to be adapted into the classical Indian dance form **Mohiniyattam**.



This unique initiative, titled **"Nilakkanavu" (Moonlit Chronicle)**, will be premiered at the national dance-music festival Samanwayam 2023 in Palakkad on December 25.

**"Nilakkanavu"** is envisioned as a tribute to the scientists who contributed to the success of **India's historic Chandrayaan Mission**.

**Aim**  
It aims to **blend astronomy, mythology, and science fiction**. The initiative strives to cultivate a **scientific understanding** by presenting scientific concepts through the **language of dance, music, and poetry**.

**About Mohiniyattam:**  
**Name:** Dance of Mohini ( a form of Lord Vishnu)  
**Theme:** Story of dance of Vishnu in Mohini form

- Features:**
- Performed by **Women** (mostly solo)
  - **Gentle footwork** (no thumping of footsteps)
  - **Beauty and grace** is dominant (Lasya aspect)
  - Integrates some elements of Bharatanatyam (grace) and Kathakali (vigor)
  - Revived by **V N Menon and Kalyani Amma**
  - **Costume:** Kasavu Saree (white colored with gold brocade) and Ghungroo

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The Sangeet Natak Academy recognizes eight classical dance in India- Bharatanatyam, Kathak, Kuchipudi, Odissi, Kathakali, Sattriya, Manipuri and Mohiniyattam

### 6. BUDHINI MANJHIYAIN

**Context:**

The **article** narrates the life of **Budhini Manjhiyain**, a tribal woman from the Indian state of Jharkhand, who faced **exile from her community** for garlanding India's first Prime Minister, Jawaharlal Nehru.

In 1959, when Budhini **was just 15 years old**, she garlanded India's first prime minister Jawaharlal Nehru at the inauguration of a Dam. However, **the act of exchanging garlands** is considered **equivalent to marriage in Santhal Tribe customs**, leading to her ostracization.

After the garlanding incident, she was declared the bride of Nehru (often referred to as **"Nehru's first tribal wife"**) by her village headman.

Budhini Manjhiyain **spent her entire life in exile**, facing hardships and social isolation, and remained largely unknown until her recent death last month.

**Usage:** The story highlights ethical values such as **empathy, justice, and the recognition of individual dignity**. It sheds light on the **consequences of societal norms and patriarchal traditions**, emphasizing the need for compassion and support for those facing hardship.

## FACTS FOR PRELIMS

### GS-1

## 1. INDIAN ART, ARCHITECTURE & DESIGN BIENNALE 2023

### Context:

The **first Indian Art, Architecture & Design Biennale (IAADB) 2023** was inaugurated at the **Red Fort in Delhi**.

- The event includes the **inauguration of the Aatmanirbhar Bharat Centre for Design (ABCD)** and the **student Biennale, Samunnati**.
- The IAADB aims to **celebrate India's diverse heritage and vibrant culture**, providing a platform for **artists, architects, designers, and the public to engage in a cultural dialogue**.
- The **Aatmanirbhar Bharat Centre for Design** is expected to **promote unique and rare crafts of India, fostering innovation and collaboration** between artisans and designers.

## 2. KOYA TRIBES

### Context:

The indigenous Koya tribe in Andhra Pradesh, residing in the **Papikonda hill range**, has embraced eco-friendly practices to conserve the **Indian Bison (Bos gaurus)**.

- Koyas have replaced **traditional Indian Bison horns** with palm leaves to craft their traditional flute, **Permakore**.

### What is Permakore?

Permakore is **a traditional flute**, originally made from Indian Bison horns, and is now created using palm leaves as an

eco-friendly alternative. The flute serves as a communication tool during hunting, celebrations, and festivals.

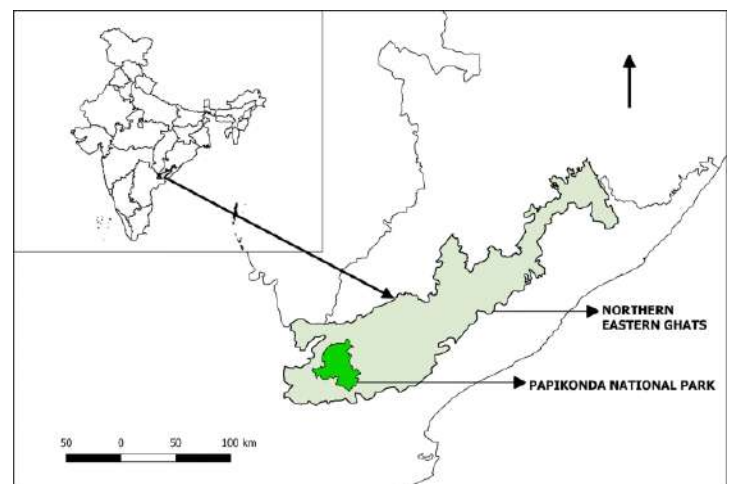
### About

**Papikonda National Park** is situated near **Rajamahendravaram** in the Papi Hills of Andhra Pradesh. Since 2014, no part of Papikonda has extended beyond East and West Godavari districts due to the **construction of the Polavaram Dam**.

The **Papikondalu Hill Range**, also known as the **Bison Hill Range**, was declared a sanctuary in 1978 and upgraded to a national park in 2008, with the Indian Bison as its mega-fauna species.

### About Koya Tribes:

Aspect	Details
<b>Koya Tribe Overview</b>	The Koya tribe is the <b>largest Adivasi tribe in Telangana</b> , listed as a Scheduled Tribe in the region. The community is widespread across the Telugu-speaking states of <b>Telangana and Andhra Pradesh</b> .
<b>Self-Identification</b>	Koyas commonly refer to themselves as <b>Dorala Sattam</b> (Lords group) and <b>Putta Dora</b> (original lords). In their dialect, they are known as <b>"Koitur,"</b> akin to Gonds.
<b>Habitat and Livelihood</b>	The <b>Godavari and Sabari rivers</b> significantly influence the economic, social, and cultural life of the Koyas. Primarily <b>settled cultivators</b> , they grow crops like Jowar, Ragi, Bajra, and other millets.
<b>Language</b>	Telgu
<b>Religion and Festivals</b>	Key deities for the Koyas <b>include Lord Bhima, Korra Rajulu, Mamili, and Potaraju</b> . Major festivals include <b>Viji Pandum</b> (seeds charming festival) and <b>Kondala Kolupu</b> (festival to appease Hill deities).
<b>Traditional Dance</b>	Koyas engage in a vibrant dance called <b>Permakok ata</b> (Bison horn dance) during festivals and marriage ceremonies.



### 3. CAUVERY BASIN

**Context:**

The Cauvery basin has witnessed the loss of approximately 12,850 sq. km of natural vegetation between 1965 and 2016, with **Karnataka** accounting **for three-fourths of the decline**, according to a study by scientists at the Indian Institute of Science (IISc), Bengaluru.

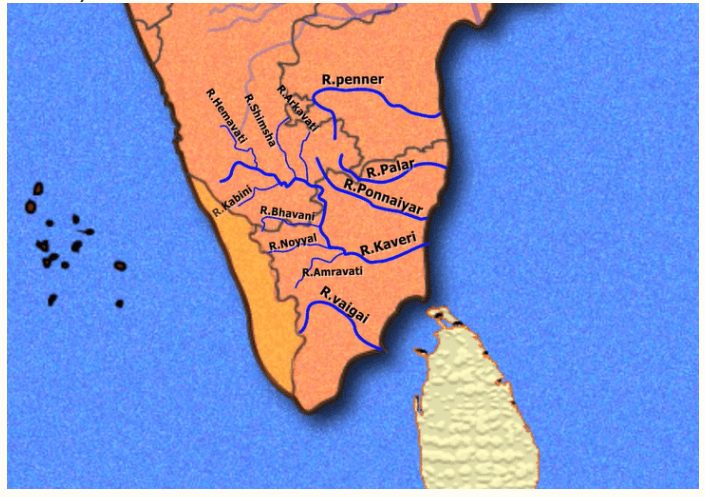
- Karnataka has just around **20% of the area under forest cover**

**More about the Research:**

- **46% reduction in natural vegetation cover**, with dense vegetation decreasing by 35% and degraded vegetation by 63%.
- **Adverse changes in forest cover** in areas such as the **Brahmagiri Wildlife Sanctuary** and national parks like Bandipur and Nagarhole.
- **Recommendations:** Integrated catchment management, sustainable agricultural practices

**About Cauvery River**

It is the **third largest river** – after Godavari and Krishna – in southern India, and the largest in the state of Tamil Nadu, known as **‘Ponni’ in Tamil**. Originates in Karnataka (**Talakaveri in the Brahmagiri range** in the Western Ghats, Kodagu district) and eventually drains into the Bay of Bengal. Its left **bank tributaries** include Arkavathi, Hemavathi, Shimsa, and Harangi, while **right bank tributaries** consist of Lakshmantirtha, Suvarnavati, Noyil, Bhavani, Kabini, and Amaravathi.



### 4. INDIRA GANDHI PEACE PRIZE

**Context:**

The **Indira Gandhi Peace Prize for 2023** has been jointly awarded to classical pianist Daniel Barenboim and peace activist Ali Abu Awwad.

- The award acknowledges their **efforts in promoting mutual social and cultural understanding through music, dialogue, and people’s participation**

Person	Achievements and Contributions
Daniel Barenboim	Known for <b>distinguished musical achievements</b>
	Recognized for <b>using music to foster harmony in the Middle East</b> , especially in the Israel-Palestine conflict
	Established the <b>West-Eastern Divan Orchestra and the Barenboim-Said Akademie</b>
	Aimed to bring together youth from Israel, Palestine, and other Arab countries through unity and understanding
Ali Abu Awwad	Eminent <b>Palestinian peace activist</b>
	Worked tirelessly for a <b>peaceful resolution to the Middle East conflict</b>
	Co-founded <b>initiatives like Roots and Taghyeer</b>
	Committed to non-violent action in <b>line with Gandhian principles</b>
	Emphasizes that <b>non-violence is the art of practising humanity</b>

### 5. BHAGAT SINGH

**Context:**

The recent serious **breach of security in Parliament** brought to light the **revolutionary activities of Bhagat Singh**.

**Background:**

- Over **94 years ago, on April 8, 1929, Bhagat Singh and Batukeshwar Dutt** threw feeble bombs and pamphlets in **Delhi’s Central Assembly** (now referred to as the Indian Parliament) to **protest against the oppressive British rule**.
- The revolutionary act **aimed to expose the ineffectiveness of the Indian Parliament**, which lacked autonomy and **failed to address nationalist demands**.
- The **Hindustan Socialist Republican Association**, led by **Chandrashekhar Azad**, orchestrated the action to **“make the deaf hear”** and draw attention to the repressive measures imposed by the British government.
- The well-planned event resulted in **Bhagat Singh and Dutt’s arrest**, and they were later sentenced to **life in prison**. Bhagat Singh, ultimately facing charges related to the **murder of a British police officer, was hanged in 1931**.

**GS-2**

### 1. UNIVERSAL DECLARATION OF HUMAN RIGHTS AT 75

**Context:**

The UDHR, marking its 75th anniversary, remains a foundational document in the quest for global human rights and dignity.

**About the Universal Declaration of Human Rights (UDHR):**

Aspect	Description
<b>Approval Date</b>	December 10, 1948
<b>Purpose</b>	To establish a <b>global framework</b> guaranteeing the rights and freedoms of individuals worldwide.
<b>Key Features</b>	Recognizes <b>inherent dignity</b> as the foundation of freedom, justice, and peace.
	Declares human rights as <b>universal, applicable to all people</b> regardless of location or identity.
<b>Components</b>	<b>Preamble and 30 articles</b> outlining fundamental rights and freedoms.
	Covers civil, political, economic, social, and cultural rights.
<b>Drafting Committee</b>	Chaired by <b>Eleanor Roosevelt</b> ; included members from eight countries, reflecting global diversity.
<b>Participating Countries</b>	Over 50 U.N. member countries contributed to the drafting including India
<b>Achievements</b>	Inspirational foundation for over <b>70 global and regional human rights</b> treaties.
	Influenced movements like <b>decolonization, anti-apartheid</b> , and freedom struggles worldwide.
<b>Challenges</b>	<b>Not legally binding</b> , leading to misuse and abuse.
	Faces challenges in conflicts like <b>Israel-Hamas, Russia-Ukraine</b> , and internal conflicts in Myanmar and Sudan.
<b>India's Contribution</b>	At various stages of drafting, India was represented by <b>Hansa Mehta, M.R. Masani and Lakshmi Menon</b> , who made a series of substantive contributions to the numerous articles that made up the UDHR
	Hansa Mehta, also a member of <b>India's Constituent Assembly</b> , is credited with altering " <b>All men are born free and equal</b> " to " <b>All human beings are born free and equal</b> " in Article 1 of the UDHR

## 2. DELTA RANKING OF ASPIRATIONAL BLOCKS PROGRAMME (ABP)

**Context:**

NITI Aayog released the first Delta Ranking of the Aspirational

al Blocks Programme (ABP), with **Tiriyani Block in Telangana securing the top position and Kaushambi Block in Uttar Pradesh** ranked second.

**What is the Aspirational Block Programme (ABP)?**

Aspect	Details
<b>Program</b>	The Aspirational Blocks Programme (ABP) (built on the <b>Aspirational District Programme</b> (ADP)) is an initiative launched by <b>NITI Aayog in January 2023</b> .
<b>Objective</b>	Enhance governance and <b>improve the quality of life in challenging</b> and relatively underdeveloped blocks across India.
<b>Geographic Coverage</b>	<b>500 blocks from 329 districts</b> in 27 states and 4 Union Territories
<b>Key Themes</b>	Health and Nutrition - Education - Agriculture and Allied Services - Basic Infrastructure - Social Development
<b>Program Strategy</b>	<b>Convergence</b> (of Central and state Schemes) <b>Collaboration</b> (between NITI Aayog, Central Ministries, State Departments, District and block Administration) <b>Competition among blocks</b> driven by a spirit of mass Movement
<b>Nodal Officers</b>	Block Officials are identified as <b>Leaders of Change</b> , working under the guidance of their respective state and district administrations.
<b>Relationship with ADP</b>	Built on the foundation of the <b>Aspirational District Programme (ADP)</b> , which was launched in 2018.
<b>ADP Overview</b>	Launched in 2018, ADP focuses on the <b>strength of each undeveloped district</b> , identifying <b>low-hanging fruits</b> for immediate improvements and measuring progress by ranking districts.

## 3. RAJAMANNAR COMMITTEE FOR CENTRE-STATE RELATIONS

**Context:**

The [article](#) discusses the **enduring relevance of the Rajamannar Committee's work** in the current political context.

**About the Committee:**

Formed in 1969 by the **Tamil Nadu government**, the committee, headed by **P.V. Rajamannar**, made critical recommendations for greater devolution of powers to states.

Recommendation	Description
<b>Inter-State Council</b>	Proposed the <b>creation of a council to facilitate coordination</b> and cooperation among different States. ISC was established in 1990

Devolution of revenues	Suggested a <b>broader distribution of financial resources to empower States</b> economically.
Excise duties and cesses shareable	Recommended the <b>compulsory division of certain taxes</b> between the Union and the States.
Transfer of subjects to State List	Advocated the <b>shift of specific subjects</b> , like mineral oil resources, from the <b>Union List to the State List</b> .
Legislative Competence for States	Emphasized the need for States to have the <b>authority to amend Central laws</b> enacted by Parliament.
Consultations with States	Urged <b>obligatory discussions with States</b> before making decisions that impact their interests.

**Significance:** It played a **significant role in articulating the States' viewpoint** on Centre-State relations.

#### 4. ACCEPTANCE OF AWARDS FROM PRIVATE ORGANIZATIONS

**Context:**

The Indian government **issues new guidelines** mandating **prior approval from competent authorities**, such as ministry secretaries or the **cabinet secretary for higher officials**, for **government employees accepting awards from private organizations**.

- The move, prompted by non-compliance with existing norms, emphasizes that **awards should lack monetary benefits and must come from reputable institutions**.
- The guidelines aim to ensure **strict adherence to regulations outlined in the Central Civil Services (Conduct) rules of 1964** and subsequent orders, prioritizing government recognition over private awards.

#### 5. ASYMMETRIC FEDERALISM

Asymmetric Features of Indian Federalism

**Context:** Recently Supreme Court ruled **Article 370 as part of asymmetric federalism**, not internal sovereignty

Aspects	Description
What is Federalism?	It is a form of government where <b>there is a division of power between different units</b>
Federalism Vs Unitary Form of Government	A unitary system governed constitutionally as <b>one single unit</b> with a single legislature. Federalism allows for the distribution of powers between the federal and state levels.
What is Asymmetric federalism?	Symmetric federalism is one where there is <b>no distinction among the different constituent units</b> , whereas <b>Asymmetric Federalism</b> is federalism based on <b>unequal powers and relationships in political, administrative and fiscal arrangements</b> . E.g., Special status demand from Bihar and SC verdict on Art 370 highlight asymmetric federalism in India.
Vertical Asymmetry (Between Centre/States)	E.g., <b>Article 3 of the IC</b> : Centre can alter state names and boundaries unilaterally; Union List grants more powers; <b>Emergency powers</b> ; Integrated judiciary and single citizenship at the national level; <b>Governor</b> represents the Centre in the state; All India Services like IAS
Horizontal Asymmetry (Between States/UTs)	Unequal <b>representation in Rajya Sabha</b> based on states' populations; <b>Art 371A-371J</b> for special position, powers, and protection in north-eastern states; Schedule 5 and Schedule 6
Asymmetry within UTs	Puducherry and Delhi have legislatures; Art 371 allows <b>separate development boards for regions in Maharashtra and Gujarat</b>
Fiscal Asymmetry	<b>Devolution among states</b> uses criteria like income distance, demographic performance, forest and ecology; <b>Centrally sponsored schemes (CSS)</b> receive higher funding for special category status states; Special Category States
Need for Asymmetric Federalism	It <b>accommodates India's multicultural and diverse society</b> <b>Allows for self-rule within shared rule</b> (ensuring differentiated equality) <b>Protects minorities</b> by giving power to regions where they are concentrated Addresses <b>state-specific issues</b> with attention and resources
Visit Insights IAS Daily CA	<b>Strengthens federalism</b> by decentralizing power based on the needs of states

### GS-3

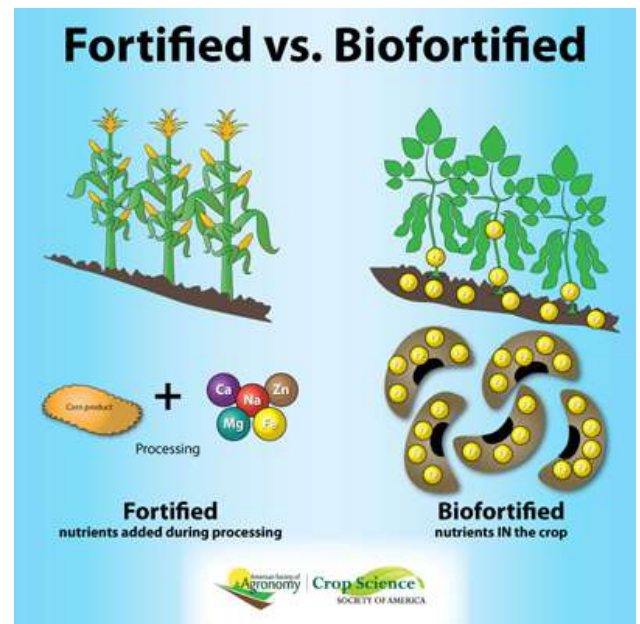
#### 1. BIOFORTIFIED SEEDS

**Context:**

The Indian Council of Agricultural Research (ICAR) has developed **142 biofortified seed varieties**, including **124 for field crops and 18 for horticultural crops, since 2014**.

- These varieties cover a **range of crops**, such as rice, wheat, maize, pearl millet, sweet potato, amaranthus, and more.
- The biofortified varieties developed by ICAR have demonstrated **equal or better yields compared to conventional varieties**, with no added cultivation costs.

Biofortified seeds are **bred varieties that aim to enhance nutritional content** without adverse effects on soil and water ecology.



#### 2. SICKLE CELL DISEASE

**Context:**

The **U.S. Food and Drug Administration (FDA)** has granted approval for **two gene therapies for sickle cell disease**.

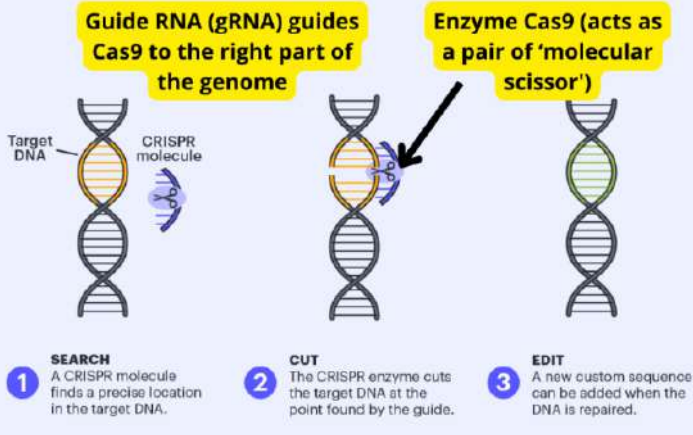
- Developed by Vertex Pharmaceuticals and **CRISPR Therapeutics, Casgevy**, and **bluebird bio's Lyfgenia** have been approved for individuals aged 12 years and older.
- One of the approved therapies, **Casgevy**, is based on the **CRISPR gene editing technology**, making it the **first treatment in the U.S. to utilize the Nobel Prize-winning CRISPR gene editing technology**.

**Sickle cell disease** is an **inherited blood disorder** causing **flawed, sickle-shaped hemoglobin**, affecting the **oxygen-carrying ability of red blood cells**.

### CRISPR-Cas9 system



**CRISPR-Cas9** is a unique technology that enables editing parts of the genome by removing, adding or altering sections of the DNA



### 3. BUDGETT'S FROG

**Context:**

Researchers from the Indian Institute of Science's molecular biophysics unit have conducted a study revealing that peptides derived from the skin of Budgett's frog possess the ability to combat enzymes produced by disease-causing pathogens.

- The frog's skin secretions contain LL-TIL, a specific peptide studied by the researchers.
- LL-TIL was found to inhibit two key enzymes, subtilisin carlsberg and proteinase K, which are produced by pathogens and play a crucial role in promoting infections by breaking down specific protective proteins in the host.

The study provides insights into the inhibitory action of the frog-derived peptide, offering a potential framework for developing specific and potent inhibitors against various pathogenic enzymes.

**About Budgett's frog:**

Budgett's frog (Lepidobatrachus laevis) is a species of frog in the horned frog family, Ceratophryidae.

Size: They can grow to be 4–5 in (10–13 cm) in size, with females being larger than males.

Habitat: Their natural habitat is the semiarid Gran Chaco region of South America.



### 4. DE-EXTINCTION OF DODO



**De-extinction of Dodo**



**Context:** Geneticists and conservationists are collaborating on an ambitious project to reintroduce the extinct dodo to its native habitat in Mauritius

About Mauritian Dodo	
About	The Mauritian Dodo, scientifically known as <u>Raphus cucullatus</u> , was a large <u>flightless bird</u> native to Mauritius, an island in the Indian Ocean.
Physical Characteristics	Standing approximately <u>one meter tall and weighing 10-18 kilograms</u> , the dodo had distinctive physical features, including a large beak and stubby wings
Habitat	<u>Endemic</u> to Mauritius; lived in forests and possibly coastal areas.
Discovery	Discovered by <u>Dutch Colonists</u> in the late 16th century; extinct by the late 17th century, last sighting around 1662.
Extinction	Due to <u>Human hunting</u> and introduction of species like rats, pigs, and monkeys.
Diet	Likely fruits, nuts, seeds, bulbs, and possibly small animals.
Behaviour	Exhibited <u>no fear of humans</u> due to lack of natural predators.
Science of De-Extinction	<u>Genetic Blueprint:</u> Paleo-geneticists have successfully <u>sequenced the dodo's genome</u> using DNA from a museum specimen. The project involves <u>editing the primordial germ cells (PGCs)</u> of the Nicobar pigeon, the dodo's closest living relative, to express dodo traits. <u>Interspecies Surrogacy:</u> Edited PGCs will be inserted into <u>chicken embryos</u> , with chickens acting as interspecies surrogates to potentially birth a dodo offspring. The aim is to <u>create a bird physically indistinguishable</u> from a dodo
Challenges	<u>Mauritius' transformed landscape</u> poses challenges for reintroducing the dodo, necessitating the control or removal of invasive species. The project considers reintroducing dodos to more pristine, uninhabited islands like <u>Round Island and Aigrettes.</u>
Significance	<u>Ecosystem Restoration:</u> Reintroducing the dodo could help restore mutualistic relationships in Mauritius' ecosystem, particularly in seed dispersal. <u>Conservation Technology:</u> The techniques developed could aid in conserving and restoring other endangered avian species.
To know more Visit Insights IAS Daily CA	<u>Symbolic Value:</u> The project is driven by a desire to create 'conservation optimism,' using the dodo as a symbol of hope in the face of human-caused extinctions.
Reintroducing other species	Woolly Mammoth (Arctic Tundra); Northern White Rhino; Tasmanian Tiger (Australia); Pyrenean Ibex; Quagga etc.

### 5. OPERATION STORM MAKERS II

**Context:**

Interpol's "Operation Storm Makers II" has exposed a growing trend where human trafficking victims are forced to commit cyber fraud.

- The operation, involving Indian enforcement agencies, led to the arrest of 281 individuals across different countries on charges including human trafficking, passport forgery, corruption, telecommunications fraud, and sexual exploitation.
- The trend of trafficking victims being coerced into cyber fraud was first highlighted by Interpol in June, revealing a global issue with billions of dollars in annual revenue generated by scam syndicates.

## 6. GLOBAL RIVER CITIES ALLIANCE (GRCA) AT COP28

**Global River Cities Alliance (GRCA) at COP28**

**Context:** The National Mission for Clean Ganga (NMCG) launched the Global River Cities Alliance (GRCA) at COP28 in Dubai, UAE.

Aspects	Description
<b>About GRCA</b>	The Global River Cities Alliance (GRCA) was launched at COP28 (UNFCCC), led by <b>India's National Mission for Clean Ganga</b> . The alliance has been expanded from <b>River Cities Alliance (RCA)</b> with 143 member cities in India to membership of <b>267 global river-cities</b> including USA and Denmark
<b>Coverage</b>	Covering <b>275+ river-cities in 11 countries</b> (first-of-its-kind global alliance) it focuses on river conservation and sustainable water management.
<b>Lead Organization</b>	Secretarial role by <b>National Mission for Clean Ganga (NMCG)</b> , Ministry of Jal Shakti and <b>National Institute for Urban Affairs (NIUA)</b> under Ministry of Housing and Urban Affairs (MoHUA).
<b>Key Participating Countries</b>	India, Egypt, Netherlands, Denmark, Ghana, Australia, Bhutan, Cambodia, Japan
<b>Participating River-Cities</b>	The Hague (Den Haag), Adelaide, Szolnok, among others
<b>International Funding Agencies</b>	World Bank, Asian Development Bank (ADB), Asian Infrastructure Investment Bank (AIIB)
<b>Vision and Integration</b>	Globalizing <b>river-centric development</b> , integrating urban water management into urban planning
<b>Collaboration</b>	Acknowledged collaboration between <b>Namami Gange</b> and <b>Mississippi River Cities and Towns Initiative (MRCTI)</b>
<b>Significance</b>	Enhancing river basin cities for better river health and liveability. Implementing <b>sustainable urban river management</b> . Urban River Management Plans
<b>About River Cities Alliance (RCA)</b>	RCA was <b>established in 2021</b> by NMCG in joint collaboration with MoJS & MoHUA. It aims to connect river cities and focus on <b>sustainable river centric development</b>
<b>About NMCG</b>	NMCG (a society under Societies Registration Act 1860; started in 2011) acts as implementation arm of <b>National Ganga River Basin Authority (NGRBA)</b> (which was constituted under Environment (Protection) Act (EPA) 1986)

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## 7. CLOUD FACILITY FOR THE FINANCIAL SECTOR IN INDIA

### Context:

The Reserve Bank of India (RBI) is in the process of **setting up a cloud facility for the financial sector in India**, aiming to bolster the **security, integrity, and privacy** of financial sector data.

- The facility will be similar to **an Aadhaar or NPCI-like setup** for domestic financial data and reporting
- Initially operated by the RBI's subsidiary, **Indian Financial Technology & Allied Services (IFTAS)**, the cloud facility will later transition to a **separate entity** owned by financial sector participants.

### Other measures taken by RBI:

Measures	Details
<b>Enhancing UPI Transaction Limit</b>	Proposed increase in UPI limit for payments to hospitals and educational institutions <b>from ₹1 lakh to ₹5 lakh per transaction</b> . The current UPI limit is capped at ₹1 lakh, except for specific categories like <b>Capital Markets, Collections, Insurance</b> , etc., where the limit is ₹2 lakh.

<b>Setting up of Fintech Repository</b>	The repository will be operationalized by the <b>Reserve Bank Innovation Hub</b> in April 2024 or earlier.
<b>Regulatory Framework for Web-Aggregation of Loan Products (WALP)</b>	WALP aims to increase transparency in the operations of loan aggregators. It involves <b>aggregating loan offers from multiple lenders on an electronic platform</b> , allowing borrowers to <b>compare and choose the best available option</b> for obtaining a loan from one of the lenders.

## 8. INDIAN FOREST & WOOD CERTIFICATION SCHEME (IFWCS)

### Context:

The Ministry of Environment, Forests, and Climate Change has introduced the **Indian Forest & Wood Certification Scheme** to encourage **sustainable forest management** and agroforestry practices in India.

### What is sustainable forest management and agroforestry?

**Sustainable Forest management** involves **the responsible and balanced use of forest resources** to meet present needs without compromising the ability of future generations to meet their own needs.

Agroforestry is a **land-use system that integrates trees or shrubs with crops or livestock on the same piece of land**. It combines agricultural and forestry practices to achieve environmental, economic, and social benefits.

### What is the Scheme about?

This national certification scheme comprises three types of certifications:

- Forest management certification**
- Tree Outside Forest Management Certification**
- Chain of custody certification (to trace forest products)**

**Aim:** It aims to provide **market incentives** for entities, including **state forest departments, farmers, and wood-based industries**, adhering to responsible forest and agroforestry practices.

**The Forest Management certification** is based on **the Indian Forest Management Standard**, and a **new Trees Outside Forests Standard** has been introduced.

**Applicability:** IFWCS is applicable across the country, **both in forest areas and TOF plantations** on government, private, agroforestry and other lands. Certification is applicable for both **timber and non-timber forest produce**.

**Nodal Agency:** The scheme will be overseen by the **Indian Forest and Wood Certification Council (advisory)**, involving various stakeholders, and managed by the **Indian Institute of Forest Management (overall management of the scheme)**

**Working:** Independent audits will be conducted by the **National Accreditation Board for Certification Bodies under the Quality Council of India** to assess compliance with the scheme's standards. Complying agencies will be given a **third-party certification** of compliance. Complying individuals/agencies can then avail of available incentives based on their certification.

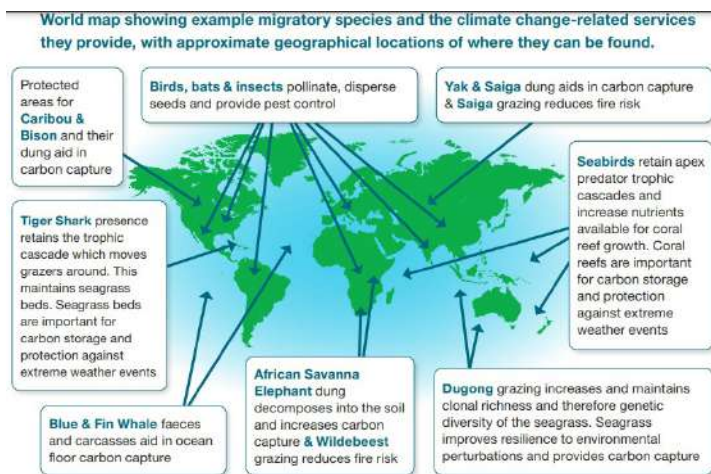
## 9. CLIMATE CHANGE AND MIGRATORY SPECIES

### Context:

The "Climate Change & Migratory Species: A Review of Impacts, Conservation Actions, indicators and Ecosystem Services" report has been released by the **Conservation of Migratory Species of Wild Animals (CMS)**

### The key message of the report:

Migratory species play a **crucial role in ecosystems, offering essential services that mitigate climate change impacts** and enhance resilience to climatic hazards. Examples include **whales aiding nutrient transfer** and storing carbon, and **antelopes reducing wildfire risks through grazing**. Climate change **poses severe threats to migratory species**, impacting their habitats, migration patterns, and reproductive success



### Key recommendations:

- **Global Conservation:**
  - **Reduce Land Change:** Minimize land change for biodiversity and CO2.
  - **Protective Networks:** Create linked protected areas for migratory species.
  - **Advocate for Benefits:** Promote climate advantages of species conservation.
- **CMS Specific Actions:**
  - **Evaluate Ecosystem Functions:** Assess and

share species' ecosystem roles.

- **Adaptation Proposals:** Suggest measures for species adaptation.
- **Indicators Development:** Create climate impact indicators.
- **Research and Monitoring:**
  - **Identify Vulnerable Species:** Recognize negatively impacted species.
  - **Prioritize Route Changes:** Highlight species changing migration routes.
  - **Ecosystem Service Research:** Study species' services in climate change.
  - **Human Adaptation Impact:** Investigate human adaptation effects on species.

### About CMS:

The **Convention on Migratory Species (CMS)** (enforced since 1983; HQ: Bonn (Germany), also known as the **Bonn Convention**, is an environmental treaty of the United Nations (UNEP provides support) that provides a **global platform for the conservation and sustainable use of terrestrial, aquatic and avian migratory animals and their habitats**. It has 133 members **including India**. It consists of two appendices: **Appendix I** (migratory species that are in danger of extinction) and **Appendix II** (Migratory species that will benefit from conservation)

## 10. 'AMRIT' TECHNOLOGY

### Context:

Indian Institute of Technology (IIT) - Madras has developed the 'AMRIT' technology for removing arsenic and metal ions from water

### What is AMRIT Technology?

It has been **developed by IIT-Madras**, and focuses on **removing arsenic and metal ions** from water to address water quality issues. Using **nano-scale iron oxy-hydroxide**, it selectively eliminates arsenic when water passes through it. This technology is **suitable for both domestic and community-level water purification**, aligning with the objectives of the Jal Jeevan Mission.

- The **'Standing Committee' of the Department of Drinking Water and Sanitation** has recommended AMRIT for consideration in **addressing water and sanitation challenges**.

### What is Arsenic?

Arsenic is **a chemical element (symbol: As)** that occurs naturally in the Earth's crust. Arsenic can be found in various forms, including **inorganic and organic compounds**. Inorganic arsenic is often considered **toxic and can pose serious health risks** to humans when present in drinking water, leading to issues like **arsenic poisoning**.

**What is Jal Jivan Mission?**

The Jal Jeevan Mission, **launched in 2019**, aims to provide safe and sufficient drinking water through **individual household tap connections** to all rural households in India by 2024. It targets supplying **55 litres of water per person per day through Functional Household Tap Connections (FHTC)** by 2024. The mission also covers urban areas, ensuring universal water supply through functional taps in all statutory towns.

Progress shows an increase **from about 17% to approximately 71% of rural households** with tap water connections by December 2023. Additionally, all 378 arsenic-affected habitations awaiting tap water supply have received safe drinking water through Community Water Purification Plants (CWPPs).

**11. PATENT EXCLUSIONS**

**Context:**

The recent judgments from **Justice Senthilkumar Ramamoorthy of the Madras High Court** raised concerns regarding **exclusions to patentability in pharmaceutical and medical patents** under **Section 3 of the Patents Act, 1970**, in India.

Case	Focus	Key Points
<b>Novozymes vs Assistant Controller of Patents and Designs</b>	Section 3(e) - Exclusion of mere aggregations	Known aggregates can be <b>patent-eligible</b> if individual components <b>meet patent criteria</b> ; evidence is required to demonstrate synergistic properties.
<b>Hong Kong and Shanghai University vs Assistant Controller of Patents</b>	Section 3(i) - Exclusion of medical treatment processes	Exclusion extends beyond in vivo/invasive diagnoses; and includes processes for disease diagnosis.

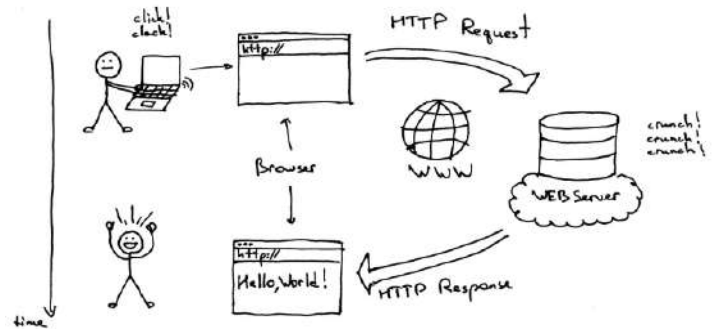
The court emphasizes the **need for clear, bright-line rules in patent law for consistency**, certainty, and **efficiency in decision-making by the Indian Patent Office**.

**12. WORKING ON WEB BROWSERS**

Web browsers work by **translating code into the dynamic web pages** that users interact with online

Steps	Description
<b>1. User Input</b>	Users enter a <b>website's address (URL)</b> into the browser's address bar or click on a link.

<b>2. Request and Response</b>	The browser sends a <b>request to the server</b> for the contents of the specific web page.
<b>3. Deconstructing the Response</b>	The response consists of files encoded in <b>HTML, CSS, and JavaScript</b> . HTML defines the structure, CSS adds style, and JavaScript provides dynamic functionality.
<b>4. Rendering</b>	Browser <b>deciphers</b> HTML, applies CSS, and executes JavaScript. Assembles the final webpage presented to the user.
<b>5. Managing Data</b>	Browsers use <b>cookies to store data</b> like login status and preferences. <b>Cache</b> stores frequently accessed files, speeding up page loading times.
<b>6. Security</b>	Browsers use <b>encryption protocols (e.g., HTTPS)</b> for secure data exchange.



**Web 3.0**

**Web 3.0: It is decentralised, privacy-oriented, blockchain-driven and crypto-asset friendly. It is also known as the "Semantic Web". It allows for more intelligent, context-aware, and personalized interactions between humans and computers. It advocates decentralized data storage systems.**



**Semantic web allows combining information from various websites to create new and authentic knowledge resources.**

Comparison of Web 1.0, Web 2.0, and Web 3.0:

	Web 1.0	Web 2.0	Web 3.0
<b>Period</b>	1989-2005	1999-2012	2006-ongoing
<b>Focus</b>	Content Publishing	User Interaction and Participation	Intelligent Web
<b>User Role</b>	Passive Consumer	Active Participant and Co-Creator	Co-Creator and User of Intelligent Content
<b>Data Access</b>	Read-Only	Read and Write Access	Read, Write and personalized
<b>Technology</b>	HTML	Ajax, RSS, and JavaScript Frameworks	Artificial Intelligence, Machine Learning, NLP, Ontology
<b>Design</b>	Basic, Static Pages	Interactive, Dynamic Pages	Customizable, User-Centric Pages
<b>Examples</b>	Early websites	Social Media, Blogs, Wikis, Online Collaboration	Virtual Reality, Personalized Search, Intelligent Agents

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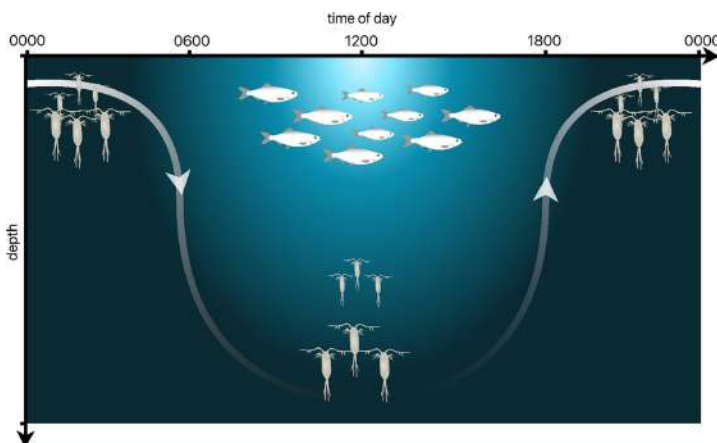
### 13. DIEL VERTICAL MIGRATION (DVM)

**Context:**

The [article](#) discusses **Diel Vertical Migration (DVM)**, a synchronized movement observed in **deep-sea marine animals**, particularly **zooplankton**, where they swim up to the **ocean's surface at night** and return to **deeper waters during the day**.

**Significance of the DVM:**

- This migration serves as a **survival strategy**, allowing them to feed on **phytoplankton in the safer darkness** while avoiding daytime predators.
- **DVM is a crucial player in the Earth's carbon cycle.** Animals in the **mesopelagic (middle water between 200m to 1000m) layer actively remove carbon from the upper ocean** as they consume surface-dwelling plankton. When these organisms return to deeper waters, they transport the **carbon with them**.
- DVM is the **largest daily migration** on the planet by biomass, occurring in all oceans.
- DVM contributes to **carbon sequestration**, as migratory animals become part of the food chain in the twilight zone, passing on carbon to their predators.
- The **carbon-rich waste** produced by these predators eventually **sinks to the ocean floor**



### 14. IUCN RED LIST UPDATION 2023

**Context:**

The **latest update to the IUCN Red List of Threatened Species** reveals that **climate change poses a threat to numerous species**, including Atlantic salmon and green turtles.

- The report, **released at the COP28 UN climate conference**, also includes the first global **assessment of freshwater fish**.

**Key Findings:**

- The assessment **indicates that 25% of freshwater fish species** are at **risk of extinction**, with at least **17% affected by climate change**.
- The report highlights various threats, including **decreasing water levels, rising sea levels, shifting seasons, pollution, dams, overfishing, and invasive**

**species.**

- Additionally, the update features conservation successes, **such as the scimitar-horned oryx and the saiga antelope**, but notes that changing climatic conditions could undermine their future.
- The report also **reveals the impact of illegal logging and trade on big-leaf mahogany**, which has moved from **Vulnerable to Endangered on the Red List**.

**IUCN:**

The **IUCN Red List of Threatened Species**, also known as the **Red Data Book**, is a **list of the global conservation status and extinction risk** of biological species. It was **founded in 1964** and is the **world's most comprehensive information** source on the global **extinction risk status of animal, fungus, and plant species**.

### 15. NATURE-BASED SOLUTIONS

**Context:**

**Six new countries and a United Nations** agency have joined the **ENACT Partnership**, a global initiative aimed at coordinating efforts to **address climate change, land and ecosystem degradation, and biodiversity loss through Nature-based Solutions**.

- **ENACT, launched at COP27 in 2022**, involves **working with nature** to deliver climate, biodiversity, and land restoration action.

The partnership, led by the International Union for Conservation of Nature (IUCN), aims to enhance **the protection and resilience of at least 1 billion vulnerable people, secure up to 2.4 billion hectares of healthy ecosystems, and increase global mitigation efforts**.

Nature-based solutions are based on the notion that **when ecosystems are healthy and well-managed**, they provide **essential benefits and services to people**, such as reducing greenhouse gas emissions, securing safe water resources, making air safer to breathe, or providing increased food security.

**Examples:** Protecting and restoring coral reefs, Building greener cities etc.

### 16. MYANMAR WORLD'S BIGGEST OPIUM PRODUCER

**Context:**

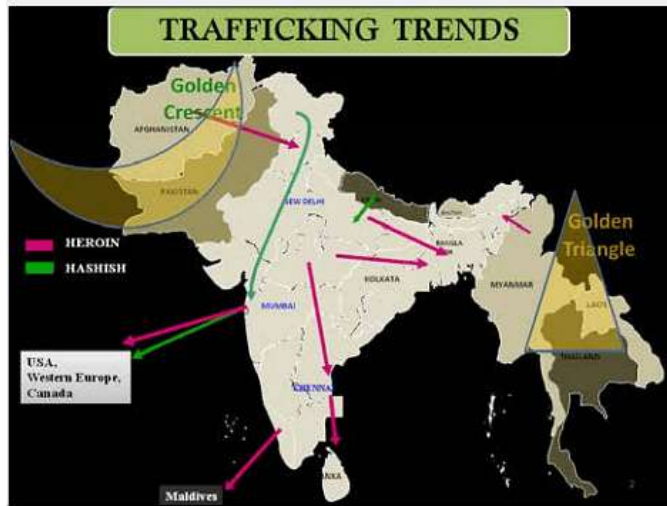
**Myanmar has become the world's largest producer of opium in 2023**, surpassing Afghanistan, according to a **United Nations Office on Drugs and Crime report**.

- Myanmar's opium production is estimated at 1,080 metric tonnes, while **Afghanistan's production has plummeted by 95% to around 330 tonnes due to the Taliban's ban on poppy cultivation**.
- **Conflict, instability, poor market access, and infla-**

tion have driven farmers in Myanmar to cultivate poppy, **contributing to the highest opium production in over 20 years.**

**Opium:**

It is a **highly addictive non-synthetic narcotic** that is extracted from the **poppy plant, Papaver somniferum.** The opium poppy is the key source of **many narcotics, including morphine, codeine, and heroin.**



**17. AKTOCYTE**

**Context:**

Scientists from the **Department of Atomic Energy (DAE) and M/s. IDRS Labs Pvt. Ltd.** in Bengaluru have collaboratively developed a **breakthrough nutraceutical named AKTOCYTE tablets.**

- These tablets aim to **enhance the quality of life for cancer patients** undergoing radiotherapy by **minimizing the side effects associated with the treatment.**
- AKTOCYTE tablets have shown remarkable results, **particularly in pelvic cancer patients** undergoing **radiotherapy-induced Cystitis**, leading to **extraordinary recovery** and eliminating the need for **surgical interventions like the removal of the urinary bladder.**
- The tablets, designed as an **adjuvant to cancer radiotherapy**, act as a **regenerative nutraceutical, immunomodulator, and antioxidant**, representing a significant advancement in cancer care.
- AKTOCYTE has received **approval from the Food Safety and Standards Authority of India (FSSAI)**, ensuring its safety and compliance with quality standards.

**18. DOMESTICATION OF YAK**

**Context:**

The **oldest evidence of yak domestication** by humans has been **discovered in Bangga**, a settlement in the **Shannan prefecture of the Tibetan Autonomous Region in China,**

near the **Brahmaputra River and the Indian border.**

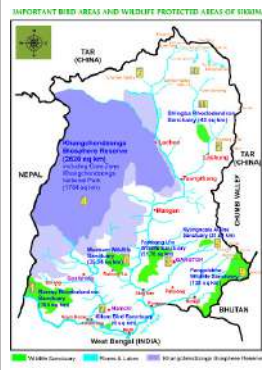
- The study reveals that around 2,500 years ago, **residents of Bangga not only domesticated yaks but also taurine cattle**, a variety distinct from **Indian Zebu breeds.**
- The researchers found evidence of **hybrid offspring produced by crossing yaks and cattle.**
- Genetic analysis of bones indicated the **presence of male yaks and female taurine cattle.**
- The surprising proximity of taurine cattle to the Indian subcontinent suggests they may have **reached central and eastern Tibet via the Silk Route.**

**19. PANGOLAKHA WILDLIFE SANCTUARY**

**Context:**

A tiger has been spotted at a **record-high elevation of 3,640 meters** in the **Pangolakha Wildlife Sanctuary** in Sikkim. This marks the **highest elevation in India** where tigers have been observed, surpassing the previous record of 3,630 meters in Arunachal Pradesh.

**About Pangolakha Wildlife Sanctuary**

Topic	Details
<b>Location</b>	The Pangolakha Wildlife Sanctuary is situated at the <b>tri-junction of Sikkim, Bengal, and Bhutan.</b> The Pangolakha range in the east separates Sikkim from Bhutan. 
<b>Size</b>	It is the <b>largest wildlife sanctuary</b> in Sikkim.
<b>Connectivity</b>	Linked to <b>Neora Valley National Park of West Bengal</b> , forests of Samtse and Haa district in Bhutan.
<b>Biodiversity</b>	Home to various species, <b>including red pandas, snow leopards</b> , Himalayan musk deer, goral, and black bears.
<b>Lakes</b>	Features high-altitude lakes, including <b>Lake Tsongmo</b> , a biodiversity hotspot for migratory birds.
<b>Rivers</b>	Major rivers like <b>Rangpo and Jaldhaka</b> originate from nearby lakes within the sanctuary.
<b>Biogeographic Realm</b>	Falls at the junction of the <b>Palaearctic realm and the Indomalayan realm</b> , supporting diverse species.

<b>Ecoregions &amp; Biomes</b>	Encompasses various ecoregions, including the <b>Terai-Duar savanna</b> , <b>Eastern Himalayan broadleaf forests</b> , Himalayan subtropical pine forests, Eastern Himalayan subalpine conifer forests, and Eastern Himalayan alpine shrub and meadows.
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## 20. E-CIGARETTES

**Context:**

The **World Health Organization (WHO)** states that **e-cigarettes**, as consumer products, have **not been proven effective** for **quitting tobacco use** at the population level.

Aspect	Description
<b>What are e-cigarettes?</b>	<b>E-cigarettes</b> are <b>battery-powered devices that heat a liquid into an inhalable aerosol</b> . The liquid typically contains <b>nicotine</b> , propylene glycol, glycerin, flavourings, and other chemicals.
<b>Alternative Names</b>	E-cigarettes are also known as <b>vape pens</b> , <b>vapes</b> , <b>electronic nicotine</b> delivery systems (ENDS), electronic non-nicotine delivery systems (ENNDS), etc.
<b>Concerns</b>	E-cigarettes contain nicotine, <b>causing addiction</b> .
	E-cigarettes are <b>highly addictive and harmful</b> , with potential long-term health effects, including the generation of toxic substances linked to cancer and increased risks of heart and lung disorders
	Aerosols may contain <b>metals</b> (lead, chromium, nickel) and chemicals (formaldehyde)
	<b>Children aged 13–15</b> are using e-cigarettes at rates higher than adults. Rates among 16–19-year-olds have doubled from 2017 to 2022.
<b>Nicotine</b>	A <b>plant alkaloid</b> found in tobacco and synthesized. It acts as a sedative and stimulant.
	Used in e-cigarettes with content up to <b>36 mg/mL</b> (compared to 1.2 to 1.4 mg/mL in regular cigarettes).
	Recently classified as <b>Class A poison in Karnataka</b> .
<b>Regulation in India</b>	The <b>Prohibition of Electronic Cigarette Act (PECA) 2019</b> in India prohibits the production, manufacture, import, export, transport, sale, distribution, storage, and advertisement of e-cigarettes.

## 21. MOVING OFF INFORMATION SYSTEMS (MOIS)

**Context:**

The government’s technical committees, including the **Central Motor Vehicle Rules-Technical Standing Committee (CMVR-TSC)** and the Automotive Industry Standards Committee (AISC), are working on formulating **standards for Moving Off Information Systems (MOIS) in vehicles**.

**What is MOIS?**

Moving Off Information Systems (MOIS) is an **advanced driver assistance system** designed to aid drivers during **low-speed moving-off manoeuvres**, particularly in situations involving vehicles carrying passengers or goods.

The system **detects and informs the driver of the presence of pedestrians and cyclists** in the close-proximity forward blind spot of the vehicle, aiming to enhance road safety.

Additionally, the **National Highways Authority of India (NHAI)** has developed a **Computer Aided Dispatch System** and **NHAI ERS Mobile Application** to expedite emergency response calls, aligning with the broader focus on improving traffic safety as per the **Motor Vehicles Act, 1988**.

**About NHAI:**

The National Highways Authority of India is an **autonomous agency** (under the Ministry of Road Transport and Highways) **set up in 1995** and is responsible for the management of a road network of over 50,000 km of National Highways out of 1,32,499 km in India.

## 22. BARRACUDA

**Context:**

India’s fastest **solar-electric boat, named Barracuda**, was launched at the Navalt Solar and Electric Boats yard in Aroor, Alappuzha (Kerala).

Designed by Navalt, the eco-friendly vessel is **capable of carrying 12 passengers** and cargo, with a top speed of 12.5 knots and a range of seven hours on a single charge. The boat is built to navigate waves up to four meters high and **was commissioned by Mazagon Dock Limited** for use in Mumbai under the same **Saur Sakthi**. Navalt Solar and Electric Boats received the **world’s best start-up award in the mobility and transportation category** at the Berlin Start-up Energy Transition Awards 2023.

MAPPING

### 1. KAMBALAKONDA WILDLIFE SANCTUARY (ANDHRA PRADESH)

**Context:**

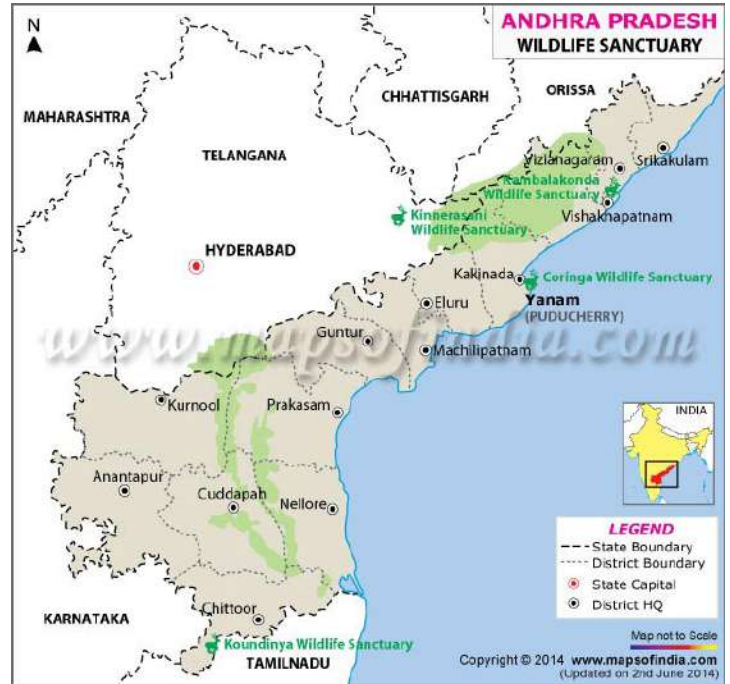
The Eastern Ghats Nature Interpretation Centre in Visakhapatnam, a **first-of-its-kind project by the Andhra Pradesh Forest Department (in the Kambalakonda Wildlife Sanctuary)**, offers an immersive experience highlighting the diverse ecosystems of the **Eastern Ghats**, stretching from Odisha to Tamil Nadu.

The Nature Interpretation Centre aims to **inform, educate, and inspire visitors** to care about the rich biodiversity of the **Eastern Ghats**. The project, scheduled for completion by the end of December, is part of the larger **Eastern Ghats Biodiversity Centre**.

The centre is a collaboration between **wildlife artists, illustrators, sculptors, architects, wildlife biologists, translators,** and content creators.

**About Kambalakonda Wildlife Sanctuary:**

Kambalakonda Wildlife Sanctuary	
<b>Location</b>	Near Visakhapatnam, Andhra Pradesh
<b>Name</b>	Refers to the local hill, <b>Kambalakonda</b>
<b>Terrain</b>	Hilly with <b>steep slopes</b>
<b>Forest Type</b>	<b>Dry evergreen forest</b> mixed with scrub and meadows
<b>Flora</b>	Notable flowers include the Indian screw tree, flowers of the Bush plum tree, Jungle berry bunches
<b>Fauna</b>	<b>Rare animals:</b> Indian leopard, Indian pangolin, Madras treeshrew, Barking Deer, Jackal; <b>Rare snake:</b> Russel’s viper or Daboia russelii; <b>Uncommon birds:</b> Indian Golden oriole, Indian peafowl, Banded Bay Cuckoo



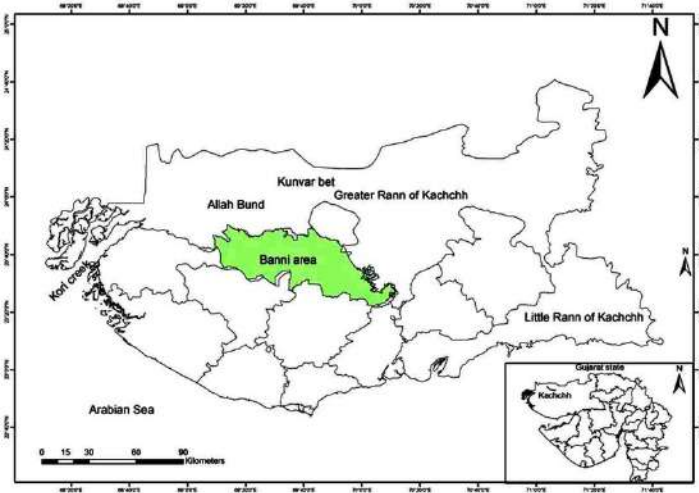
### 2. BANNI GRASSLAND

**Context:**

The central government has approved a proposal to establish a **cheetah conservation breeding centre in Gujarat’s Kutch district’s Banni grassland**.

Aspect	Details
<b>Location</b>	Banni Grassland is situated near the Great Rann of Kutch in Gujarat.
<b>Size</b>	It is considered to be the <b>largest Grassland in Asia</b> , spreading over 2,618 kilometres and accounting for almost <b>45% of the pastures in Gujarat</b> .
<b>Formation</b>	The land in Banni was formed from the <b>sediments deposited by the Indus and other rivers</b> over thousands of years.
<b>Ecosystem</b>	Two ecosystems, wetlands, and grasslands, coexist in Banni.
<b>Vegetation</b>	The vegetation is sparse and highly <b>dependent on rainfall</b> . It is dominated by <b>low-growing forbs and graminoids</b> , many of which are halophiles (salt-tolerant). The grasslands were traditionally managed by a system of rotational grazing.
<b>Flora and Fauna</b>	Rich biodiversity with <b>192 species of plants, 262 species of birds</b> , several species of mammals, reptiles, and amphibians. It is also known for the Banni breed of buffaloes

<b>Reserve Forest Status</b>	In 1955, the court notified the grassland as a reserve forest. In 2019, the National Green Tribunal (NGT) ordered to demarcation of the boundaries of Banni grassland and <b>restricted non-forest activities</b> .
	Most of the <b>livestock keepers in Banni</b> belong to the <b>Maldhari community</b> . They rear the Banni or Sindhi buffalo, <b>Kankrej cattle</b> , sheep, goats, horses, donkeys and camels
<b>Significance</b>	The Wildlife Institute of India (WII) has identified Banni Grassland as one of the <b>last remaining habitats of the cheetah in India</b> .



### 3. ALMORA FAULT

**Context:**

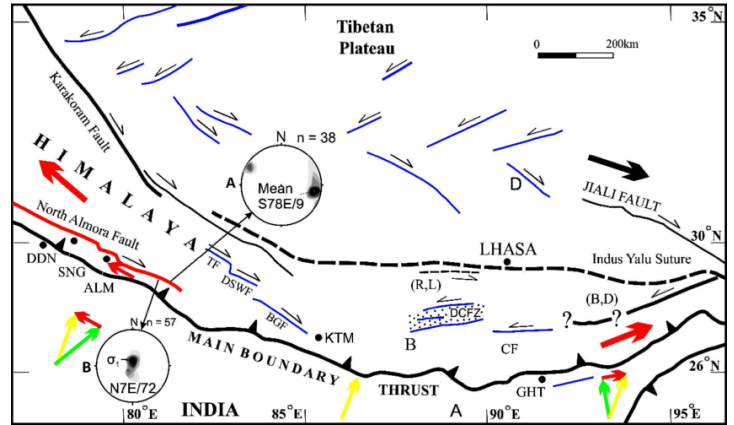
Union Earth Sciences Minister reported an increased number of earthquakes in 2023, attributing it to the **activation of the Almora Fault** in Western Nepal.

However, experts dispute this claim, asserting that **tectonic collisions, not the Almora Fault**, cause earthquakes in the Himalayan region.

**What is the Almora Fault?**

It is a geological fault located in **Western Nepal** and extends to the **Uttarakhand region** in India. It lies on the **Main Boundary Thrust (MBT)** in the Himalayan fault zone. There are two thrusts in Kumaon, Uttarakhand: One is the **South Almora Thrust** and the other is the **North Almora Thrust**.

**MBT (Main Boundary Thrust):** It is a significant fault in the Himalayas, marking the boundary between the **Lesser Himalayas and the Sub-Himalayas**.



### 4. VALPARAI PLATEAU

**Context:**

In preparation for the **annual migration season of elephants in the Valparai plateau**, the Forest Department, NGOs like the **Nature Conservation Foundation (NCF)**, and local residents are taking measures to **facilitate the free movement** of the elephants.

**About Annual Migration:**

Elephants in the Valparai plateau undertake an **annual migration** that typically starts in **September and continues until March**. The elephants usually migrate from the Kerala side to the **Valparai plateau (Tamil Nadu)**

**What is Valparai plateau?**

It is a region located in the **Western Ghats mountain range of India**, specifically in the Coimbatore district of Tamil Nadu. Valparai is a **hill station known for its tea, coffee plantations, and cardamom plantations**. The area serves as a **crucial habitat for wildlife, including elephants** that undertake an **annual migration** through the region. The Valparai plateau is part of the **Anamalai Tiger Reserve (ATR)**, contributing to its biodiversity and ecological significance.

### 5. SURAT DIAMOND BOURSE (SDB)

**Context:**

Surat is set to launch the **Surat Diamond Bourse (SDB)**, claimed to be the **“world’s biggest workspace”** with 4,200 diamond trading offices, surpassing the capacity of the Pentagon.

**Aim:** The SDB aims to **shift the entire diamond trading business from Mumbai to Surat**. It also aims to **boost business, attract international clients, and create a significant economic impact** on the region.

The project is part of the **Diamond Research and Mercantile (DREAM) City**, a greenfield project spread over nearly 700 acres.

**Surat** is the **hub of diamond cutting and polishing**. It is the **world's biggest centre** for cutting and polishing, **accounting for 90% of the diamonds** traded globally.

Surat is located beside the **Tapi River** in the west Indian state of Gujarat. Historically it was known for **silk weaving** and remains a commercial center for textiles.

