



# INSIGHTSIAS

SIMPLIFYING IAS EXAM PREPARATION

## SPACE MAITRI

ISRO is set to launch the 450kg Optimus spacecraft, Australia's largest designed and built spacecraft, on its Small Satellite Launch Vehicle (SSLV).

24 JUNE - 29 JUNE 2024

# WEEKLY CURRENT AFFAIRS

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## GENERAL STUDIES – 1

Topics: Indian culture will cover the salient aspects of Art Forms, Literature and Architecture from ancient to modern times.

### 1. INDIA'S GEOLOGICAL-HERITAGE SITES

#### Context:

India's extensive geo-heritage, ranging from towering peaks to coastal plains, reveals a rich geological history. Despite this, the country's **regard for its geo-heritage is poor.**

#### About Geo-heritage Sites:

Geo-heritage refers to the **geological features which are inherently or culturally significant offering insight into earth's evolution** or history to earth science or that can be utilized for education. Sites are designated as Geo-heritage Sites (GHS) by the **Geological Survey of India (GSI)**. India, as a member of the **UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage**, safeguards such sites through appropriate legislation, as done by other countries worldwide.

#### What are Geo-Relics?

**Geo-relics are geological formations, rocks, minerals, and fossils** that provide significant scientific, educational, and historical insights into the Earth's history and processes. They **include unique and rare geological features** that help us understand the evolution of our planet, climate changes, and the development of life. Preserving geo-relics is crucial for studying natural history and educating future generations.

#### Examples:

Category	Site Name	Location	Significance
Geo-Heritage	Lonar Crater	Buldhana District, Maharashtra	Hyper-velocity impact craters formed around 576,000 years ago.
Geo-Heritage	Bhimbetka Rock Shelters	Raisen District, Madhya Pradesh	Natural rock formations with prehistoric cave paintings.
Geo-Heritage	St. Mary's Islands	Udupi District, Karnataka	Columnar basaltic lava formations, are over 60 million years old.
Geo-Heritage	Ambenali Ghat	Maharashtra	Exposed Deccan Trap formations showcasing volcanic activity.
Geo-Relics	Fossil Park	Sirmaur District, Himachal Pradesh	Fossilized remains of ancient trees from the Shiwalik range.
Geo-Relics	Akal Fossil Wood Park	Jaisalmer District, Rajasthan	Fossilized tree trunks dating back to the Jurassic period.
Geo-Relics	Varkala Cliff	Thiruvananthapuram District, Kerala	Sedimentary formations with fossils dating millions of years.
Geo-Relics	Jhamarkotra Rock Phosphate	Udaipur District, Rajasthan	Mineral deposits with significant geological history.
Geo-Relics	Salkhan Fossil Park	Sonbhadra District, Uttar Pradesh	Fossilized tree trunks from the Upper Jurassic period.
Geo-Relics	Mandla Plant Fossils National Park	Mandla District, Madhya Pradesh	Fossilized plants from the Mesozoic era, around 40-150 million years old.

**These sites and relics contribute to the scientific understanding of Earth's history and processes in several ways:**

1. **Geological Evolution:** Geo-heritage sites and relics provide a window into the Earth's past, allowing scientists to reconstruct the geological history of a region.
  - a. Fossils, rock layers, and mineral deposits found in these sites offer insights into ancient ecosystems,

- climate changes, and geological events.
- b. E.g. The **Siwalik Fossil Park in Himachal Pradesh**
2. **Plate Tectonics and Continental Drift:** Certain geological formations and features found at geo-heritage sites provide evidence for plate tectonics and the movement of continents over time. These sites help scientists understand the dynamic processes that have shaped the Earth's surface.
    - a. **For instance, Deccan Traps.**
  3. **Volcanic and Tectonic Activity:** Volcanic landscapes, fault lines, and igneous formations found at geo-heritage sites offer insights into the processes of volcanic and tectonic activity, shedding light on the Earth's internal forces and their effects on the surface.
    - a. E.g. **Lonar Lake in Maharashtra.**
  4. **Paleoenvironmental Studies:** Fossilized plants, animals, and other organic materials preserved in geological formations provide clues about past environments, ecosystems, and biodiversity. These records contribute to our understanding of how life on Earth has evolved.
    - a. E.g. **fossil-rich sedimentary rock formations of Jaisalmer.**
  5. **Climate Change and Earth's History:** The study of sedimentary rock layers and glacial features in geo-heritage sites helps scientists reconstruct past climates and understand the Earth's history of climatic changes.
    - a. **The Lignite Fossil Park in Gujarat** contains well-preserved fossilized wood and leaves.
  6. **Mineralogical and Geological Processes:** Geo-heritage sites often host unique mineral deposits, crystals, and rock formations that offer insights into geological processes such as mineral formation, erosion, and metamorphism.
    - a. For example, The mineral-rich caves of **Meghalaya, like the Mawsmai Cave**

### Difficulties in Preserving Geological Sites in India

1. **Limited Traction and Awareness:** Geo-conservation lags global efforts and lacks public awareness. **Examples:** Dhala meteoritic impact crater, Lonar crater.
2. **Impact of Development and Mining:** Many fossil sites are destroyed by development and mining activities.
3. **Lack of Specific Legislation:** No specific laws for geo-heritage conservation, unlike Canada and China.
4. **Lack of Adequate Power:** The Geological Survey of India (GSI) identified sites but can't enforce preservation. Example: Varkala Cliff was partially demolished despite being a heritage site.

5. **Half-hearted Government Measures:** Withdrawal of National Commission for Heritage Sites proposal. No progress on the 2022 geo-heritage preservation bill.

### Way Forward and Conclusion

India should recognize its **geological history as non-cultural heritage** and compile a comprehensive list of potential geo-sites beyond those identified by the Geological Survey of India. Legislation for geo-conservation, modelled after the **Biological Diversity Act of 2002**, is essential. Additionally, a National Geo-Conservation Authority should be established to ensure independent oversight, avoid bureaucratic delays, and protect the autonomy of researchers and private collectors.

### About the Geological Survey of India:

Headquartered in **Kolkata, it was set up in 1851** primarily to find coal deposits for the Railways. Presently, GSI is an attached office to the Ministry of Mines. The main functions of the GSI relate to the **creation and updation of national geoscientific information** and **mineral resource assessment**.

### Mains Link:

**Q.1 Safeguarding the Indian Art Heritage is the need of the moment. Discuss. (UPSC 2018)**

### Prelims Link:

**Q1. Consider the following historical places:**

1. Ajanta Caves
2. Lepakshi Temple
3. Sanchi Stupa

**Which of the above places is/are also known for mural paintings?**

- (a) 1 only
- (b) 1 and 2 only
- (c) 1, 2 and 3
- (d) None

**Ans: (b)**

## GENERAL STUDIES - 2

Topics: Indian Constitution- historical underpinnings, evolution, features, amendments, significant provisions and basic structure; Comparison of the Indian constitutional scheme with that of other countries.

### 1. PATNA HIGH COURT STRIKES DOWN 65% QUOTA IN BIHAR

#### Context:

The Patna High Court recently struck down Bihar's at-

tempt to raise Backward Classes (BC) reservation to 18%, Extremely Backward Communities (EBC) to 25%, and adjusted quotas for Scheduled Castes and Scheduled Tribes, **resulting in a total reservation of 65%.**

### Background of the case:

The Bihar government decided to increase reservations for Backward Classes, Extremely Backward Classes (EBC), Scheduled Castes (SC), and Scheduled Tribes (ST) following a caste-based survey, which showed these **castes constituted 84% of the population of Bihar.** This decision aimed to **address the inadequate representation of these groups** without adhering to a proportionate basis. The move, which included a **10% quota for Economically Backward Classes (EWS), raised reservations in Bihar to 75% (65% for backward castes and 10% for EWS),** surpassing the 50% ceiling mandated by the Supreme Court. Subsequently, a Public Interest Litigation (PIL) challenging this increase was filed in the Patna High Court.

### The Patna High Court struck down amendments to Bihar's reservation system for the following reasons:

- Violation of Constitutional Equality:** The amendments were deemed to violate [Articles 14, 15, and 16](#) of the Constitution, which guarantee equality before the law and prohibit discrimination on various grounds including caste.
- Exceeding 50% Reservation Limit:** The amendments raised reservations in Bihar to 65%, which exceeded the 50% ceiling set by the **Supreme Court in the Indra Sawhney case (1992).** The court upheld the **50% limit as a legal restriction on total reservations.**
- Lack of Proportionate Basis:** The reservation increase was not based on a proportionate representation framework, which is required for reservation policies to align with constitutional principles.
- Absence of Adequate Study:** The state government did not conduct a thorough analysis or in-depth study to justify the need for and impact of the increased reservations, raising concerns about the rationale behind the amendments.
- Judicial Precedents:** The court referred to previous judgments and constitutional interpretations that underscored the importance of maintaining a balance between affirmative action and constitutional limits on reservations.

### What was Indra Sawhney's judgment?

**The 1992 Indra Sawhney judgment by a 9-judge Constitution bench** of the Supreme Court established that reservations for SCs, STs, and OBCs must not exceed 50% of total seats in legislatures, higher education, and public employment. This limit was considered **fair and reason-**

**able, with flexibility** allowed only in extraordinary situations.

### Other judgement:

- Maratha Reservation:** Increased total reservations in Maharashtra to 68%, struck down by the SC in 2021 for exceeding the 50% ceiling.

### Exceptions:

- State Exceptions:** Despite the limit, some states, notably **Tamil Nadu with 69% reservation,** and occasionally the Union government and the Supreme Court itself, have breached this ceiling.
- Economically Weaker Sections (EWS) Reservation:** Upheld by a 3:2 majority in 2023, stating the 50% ceiling is flexible but applies primarily to SCs, STs, and OBCs reservations.

### Current reservation % in central government:

Reservation Category	Reservation Quota (%)
ST	7.5
SC	15
OBC	27
EWS	10
<b>Total</b>	<b>59.50%</b>

### Arguments in favour of the 50% Ceiling:

- Contradiction with Equality:** Critics argue exceeding the 50% reservation limit contradicts the principle of equality.
- Balance Needed:** Maintaining a balance between reservations for affirmative action and equality under the law is crucial.
- Reservations as Exceptions:** Reservations should be exceptions to ensure equality, as warned by Dr B R Ambedkar in the Constituent Assembly.

### Criticism of the 50% Ceiling and Support for Reservations:

- Arbitrary Limit:** Critics view the 50% reservation limit as arbitrary, imposed by courts despite legislative attempts to exceed it.
- Debate on Legitimacy:** Ongoing debate questions the legitimacy and flexibility of the 50% reservation ceiling established through judicial interpretation.
- Reservations as Fundamental Right:** Some argue reservations are integral to the fundamental right to equality and a part of the Constitution's basic structure.
- Judicial Perspective:** The Supreme Court's 2022

ruling upheld the OBC quota in NEET, affirming that reservations enhance merit distribution rather than undermine it.

### Conclusion:

**The Patna High Court's decision underscores the challenge of balancing social justice** initiatives with constitutional limits on reservation quotas, highlighting the importance of rigorous study and adherence to judicial precedents in policy-making.

### Insta Links:

- 2) [Reservation System in India](#)

### Mains Link:

**Q. Whether the National Commission for Scheduled Castes (NCSC) can enforce the implementation of constitutional reservation for the Scheduled Castes in the religious minority institutions? Examine. (UPSC 2018)**

### Prelims Link:

**Q. Consider the following statements: (USPC 2020)**

1. The Constitution of India defines its 'basic structure' in terms of federalism, secularism, fundamental rights and democracy.
2. The Constitution of India provides for 'judicial review' to safeguard the citizens' liberties and to preserve the ideals on which the Constitution is based.

**Which of the statements given above is/are correct?**

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Ans: (d)**

## 2. HUMAN DIGNITY VS. RELIGIOUS PRACTICES

### Context:

The Madurai Bench of the Madras High Court allowed the **resumption of "annadhanam" and "angapradakshanam"** at Nerur Sathguru Sadasiva Brahmendral's resting place.

### What is "annadhanam" and "angapradakshanam"?

**Annadhanam** is the practice of offering **free food to devotees**. **Angapradakshanam** involves **circumambulation by rolling on the ground around a sacred site**, in this context, **rolling over plantain leaves left by other devotees after eating**, is believed to confer spiritual benefits. **These practices were halted in 2015** due to concerns over human dignity.



### What did HC say?

1. **Right to Privacy and Article 25(1):** Justice Swaminathan invoked these constitutional rights to reinstate the

practices.

- a. **Article 25(1) of the Constitution guarantees** the right to freely profess, practice, and propagate religion.
2. **Spiritual Orientation:** Argued that the right to privacy includes spiritual orientation, similar to gender and sexual orientation.
3. **Communal Harmony:** Highlighted that the practice at Nerur involved all devotees, regardless of caste, promoting communal harmony and social integration.
4. **Comparison to Supreme Court Order:** Noted that the Karnataka case (which was banned by SC) involved only Brahmins' leftovers, while at Nerur, all devotees participated.
5. **Communal Amity:** Observed that the practice points to communal amity and social integration.

However, critics argue that **such practices, rooted in superstition, conflict with human dignity and the duty to promote scientific temper and humanism.**

**Ethical Issues with Such Practices:**

1. **Human Dignity:** Practices like "angapradakshanam" may degrade human dignity by requiring participants to roll on leftovers.
2. **Health Risks:** Rolling on leftover food can pose significant hygiene and health risks.
3. **Equality and Non-Discrimination:** These practices may perpetuate social hierarchies and discrimination, violating principles of equality.
4. **Scientific Temper:** Promoting superstitious practices conflicts with the constitutional duty to foster scientific temper, humanism, and the spirit of inquiry.
5. **Consent and Voluntariness:** Even if voluntary, there may be social pressures that undermine genuine consent.
6. **Public Morality:** Practices perceived as degrading or harmful may be against public order and morality.
7. **Cultural Relativism vs. Universalism:** The conflict between respecting cultural practices and upholding universal human rights standards.

In India, personal laws govern aspects like **religious rites, marriage, divorce, maintenance, and succession, among others**, based on religious affiliations, despite the country's secular nature. This pluralistic approach contrasts with the constitutional **guarantee of equality under the law**, creating a dual system where personal laws apply differently to individuals based on their religion. These laws have **remained static and outdated**, while constitutional rights have evolved to reflect modern values, **leading to inevitable conflicts between the two.**

**Other Contemporary incidents where personal laws have conflicted with Fundamental Rights:**

Incident	Conflict with Fundamental Rights	Court Ruling/Comments
<b>Triple Talaq Case</b>	Violated the Fundamental Right to Equality and the Right to Life and Personal Liberty under Article 21	Declared unconstitutional by the Supreme Court in the Shayara Bano Judgement (2017)
<b>Sabarimala Case</b>	Gender equality and the Right to Freedom of Religion under Article 25	Supreme Court in 2018 allowed women of all ages to enter the Sabarimala temple
<b>Female Genital Mutilation (FGM)</b>	Violated the Right to Life and Personal Liberty under Article 21	Criticized and challenged for violating fundamental rights
<b>Polygamy and Nikah Halala</b>	Violated the right to equality	Referred to a Constitution Bench in the case of Sameena Begum vs Union of India
<b>Uniform Civil Code Proposal</b>	Align personal laws with Fundamental Rights, potential infringement on religious freedoms	Proposed by the government, implementation remains slow and contentious

**Conclusion:**

There is a significant **divergence in judicial opinions regarding the applicability of Fundamental Rights to Personal Laws in India.** While some judgments assert that Personal Laws are outside Article 13 and immune to challenges based on Fundamental Rights violations, a contrasting view has emerged recently, advocating for such laws to be tested against Fundamental Rights. Achieving harmony through judicial consistency is crucial.

**Insta Links:**

[Strike a fine balance, have a just civil code](#)

**Mains Links:**

**Constitutional Morality' is rooted in the Constitution itself and is founded on its essential facets. Explain the doctrine of 'Constitutional Morality' with the help of relevant judicial decisions. (UPSC 2021)**

**Prelims Links:**

**Q1. Consider the following provisions under the Directive Principles of State Policy as enshrined in the Constitution of India: ( UPSC 2012)**

1. Securing for citizens of India a uniform civil code
2. Organising village Panchayats
3. Promoting cottage industries in rural areas
4. Securing for all the workers reasonable leisure and cultural opportunities

**Which of the above are the Gandhian Principles that are reflected in the Directive Principles of State Policy?**

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

**Ans: B**

[Topics: Appointment to various Constitutional posts, powers, functions and responsibilities of various Constitutional Bodies.](#)

### 3. NHRC NOTICE TO ODISHA GOVT ON CUSTODIAL DEATH

**Context:**

The National Human Rights Commission (NHRC) has issued a **notice to the Odisha government, demanding an explanation for not paying the recommended** compensation to the family of a person who died in custody.

**About Custodial Death:**

Custodial death, often a **result of custodial violence including torture and rape**, is a significant concern in India. Between **2017 and 2022, over 660 custodial deaths** were reported, with Gujarat recording the highest number at 80, followed by Maharashtra.

**Safeguards against custodial violence:**

1. **Article 14** ensures the right to equality before the law
2. **Article 21** guarantees the right to life
3. **Sections 330 and 331 of the IPC prescribe** punishments for injuries inflicted to extort confessions during custody
4. **Section 176 of the Cr. P.C. mandates** a magisterial inquiry in cases of custodial death.

5. **Sections 120 and 127 of the Bhartiya Nyaya Sanhita**, offer additional protections for the accused
6. **NHRC's 1993 guidelines**, which require reporting custodial deaths or rapes within 24 hours
7. **Supreme Court's directives in the DK Basu case**, outlining procedures for detainee protection and arrest protocols.

**About NHRC:**

The National Human Rights Commission (NHRC) is a **statutory body** established in India to safeguard and promote human rights in the country. It was established under the **Protection of Human Rights Act, 1993**, with a mandate to address human rights violations, provide remedies to victims, and create awareness about human rights principles among the public.

#### The mandate of the National Human Rights Commission (NHRC):

Mandate of NHRC	Description
Investigate Human Rights Violations	The NHRC is responsible for investigating and inquiring into complaints of human rights violations, covering civil, political, economic, social, and cultural rights.
Recommend Remedial Measures	After investigation, the NHRC has the authority to recommend remedial measures to the concerned authorities for the protection and promotion of human rights. This includes suggestions for compensation, rehabilitation, and legal action against the perpetrators.
Spread Awareness and Education	The NHRC is tasked with spreading awareness about human rights, promoting human rights education, and conducting research on various issues related to human rights in India.
Monitor State and Central Government Actions	The NHRC monitors the actions of both state and central government authorities to ensure compliance with human rights standards and principles.
Provide Assistance and Advice	The NHRC provides assistance and advice to individuals, groups, and organizations on human rights issues, offering guidance and support in addressing violations or concerns.

Promote Human Rights Culture	The NHRC aims to promote a culture of human rights by organizing seminars, workshops, and campaigns on various human rights issues. It collaborates with civil society organizations, academia, and other stakeholders to create awareness and advocacy for human rights.
Cooperation with International Bodies	The NHRC collaborates with international organizations, including the United Nations and its agencies, to exchange information, expertise, and best practices in the field of human rights. This fosters cooperation on a global scale to address and advance human rights concerns.

### Evaluation of its success in achieving its objectives:

#### Positives:

- **Investigation of Human Rights Violations:** The NHRC has been successful in investigating numerous cases of human rights violations in India.
  - As of September 2021, the **NHRC had registered over 17,000 cases** and completed inquiries in more than 13,000 cases.
- **Recommendations for Remedial Measures:** The NHRC's recommendations have led to positive changes and accountability in some cases.
  - One notable example is the **NHRC's intervention in the encounter killings in Manipur**, where it recommended the registration of FIRs, compensation to the victims' families, and disciplinary action against the involved security personnel. From 1993 to 2021, the NHRC awarded monetary relief amounting to over Rs. 200 crores in cases of custodial deaths.
- **Awareness and Education:** The NHRC has played a crucial role in spreading awareness about human rights through its campaigns, workshops, and publications.
  - As of 2020, the NHRC had organized **more than 5,000 human rights awareness programs** across the country.
- **Monitoring of Prisons and Jails:** The NHRC has the authority to visit and inspect prisons, jails, and detention centres to ensure the protection of the human rights of inmates.
  - **It conducts regular inspections and**

**takes appropriate** actions to address issues such as overcrowding, torture, and other forms of ill-treatment.

- **International Engagement:** The NHRC actively participates in international human rights forums and collaborates with international organizations. It engages in dialogue with various countries and shares best practices in the promotion and protection of human rights.

#### Negatives:

- **Implementation and Enforcement:** Despite its recommendations, the implementation of NHRC's directives by the concerned authorities has been a challenge. In some cases, the authorities have **failed to take adequate action, leading to a lack of accountability and justice.**
- **Limited Jurisdiction:** It does not have jurisdiction over human rights violations by non-state actors, such as private companies. NHRC is also limited by temporal jurisdiction of **cases violation limited to the past 1 year.**
- **Delayed Justice:** For instance, the NHRC's recommendations in cases of extrajudicial killings and custodial deaths have not always led to prompt action and redress for the victims and their families.
- **Limited Resources and Staffing:** The NHRC has often faced resource constraints, including limited budgetary allocations and understaffing. This hampers its ability to effectively handle a large number of complaints and conduct comprehensive investigations in a timely manner.

#### Conclusion:

The National Human Rights Commission (NHRC) plays a **crucial role in promoting and protecting human rights** in India. The Supreme Court has emphasized the need to provide the NHRC with greater autonomy, independence, and financial resources to enhance its effectiveness in addressing human rights issues.

#### Insta Links:

- [National Human Rights Commission](#)

#### Prelims Links:

**Q. Other than the Fundamental Rights, which of the following parts of the Constitution of India reflect/reflects the principles and provisions of the Universal Declaration of Human Rights (1948)? (UPSC 2020)**

1. Preamble
2. Directive Principles of State Policy
3. Fundamental Duties

**Select the correct answer using the code given below:**

(a) 1 and 2 only

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

**Ans: D**

**Q. Consider the following: (UPSC 2011)**

1. Right to education
2. Right to equal access to public service
3. Right to food.

Which of the above is/are Human Right/Human Rights under “Universal Declaration of Human Rights”?

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

**Ans: D**

Topics: Issues relating to development and management of Social Sector/Services relating to Health, Education, Human Resources.

## 4. ANTENATAL HEALTHCARE

Researchers have recommended that **oral glucose tolerance test (OGTT)** used to determine if a **pregnant woman** has developed gestational diabetes **should be replaced by an HbA1c test** that can also be used at the point of care .

About Antenatal / Prenatal healthcare:

**Antenatal healthcare** refers to the medical and **healthcare services provided to a pregnant woman** throughout her pregnancy. The primary goals of antenatal care are to **ensure the health and well-being of both the mother and the developing foetus.**

Key components of antenatal healthcare:

1. Regular Check-ups and Screening tests
2. Nutritional Guidance
3. Health Education
4. Management of Pregnancy Symptoms
5. Monitoring for Complications like gestational diabetes
6. Emotional Support

Government initiatives for pregnant women:

1. **Janani Suraksha Yojana (JSY)**, a demand promotion and conditional **cash transfer** scheme for promoting institutional delivery.
2. **Janani Shishu Suraksha Karyakaram (JSSK)** entitles every pregnant woman to **free delivery**, including for c-section, in public health institutions along with the provision of free transport, diagnostics, medicines, other consumables, diet and blood.
3. **Over 25,000 ‘Delivery Points’** across the country have been strengthened in terms of infrastructure, equipment, and trained manpower for provision of comprehensive **Reproductive, Maternal, Newborn, Child, Adolescent Health and Nutrition (RMNCAH+N) services.**
4. **Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA)** provides pregnant women a fixed day, free of cost assured and quality **Antenatal Care** on the 9th day of every month.
5. **LaQshya (Labour room Quality improvement Initiative)** to improve the quality of care in Labour room and Maternity operation theatres to ensure that pregnant women receive respectful and quality care during delivery and immediate postpartum.

Challenges with maternal Healthcare in India:

1. **Maternal mortality rate:** A **United Nations report** highlighted that India was among the top 10 countries respon-

sible for 60% of global maternal deaths, stillbirths, and new-born deaths. In **2020, India accounted for over 17% of such deaths**, making it the second-highest contributor after Nigeria.

2. **Antenatal care (ANC): Only 34.1% of mothers attended one, two, or three visits**, falling short of the World Health Organisation’s (WHO) recommendation of four visits.

3. **Postnatal care: 16% of women** in India did **not receive any postnatal health check-ups**, while 22.8% experienced delayed check-ups occurring two days after childbirth.

4. **Lack of skilled health providers:** 8% of Indian women did not receive tetanus shots, which are crucial for preventing infections during and after surgery. **In about 11% of cases, no skilled health providers were present at the time of delivery**, posing risks in detecting and managing complications.

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.

## 5. UN LAUNCHES FRAMEWORK TO COMBAT ONLINE MISINFORMATION

### Context:

The United Nations, led by Secretary-General António Guterres, has introduced the **Global Principles for Information Integrity, a framework to tackle misinformation**, disinformation, and hate speech online.

### Key terms:

Term	Definition	Example
<b>Misinformation</b>	False or inaccurate information is spread without malicious intent.	A person shares an outdated news article about a natural disaster, believing it to be a current event.
<b>Disinformation</b>	Deliberately false information is spread with the intent to deceive or mislead.	A fake news website publishes a fabricated story claiming a political candidate has committed a crime to sway public opinion against them.
<b>Hate Speech</b>	Any speech, gesture, conduct, writing, or display which may incite violence or prejudicial action.	A social media post using derogatory terms to incite hatred against a particular ethnic group or religious community.

### Key principles from the UN’s Global Principles for Information Integrity:

1. **Combating Disinformation and Hate Speech:** All stakeholders should avoid using, supporting, or amplifying disinformation and hate speech.
2. **Promoting Media Freedom:** Governments should ensure timely access to information, maintain a free, independent, and plural media landscape, and protect journalists and researchers.
3. **Enhancing Tech Company Responsibilities:** Technology companies should incorporate safety and privacy by design, apply policies consistently across countries and languages, and prioritize crisis response and support information integrity during elections.
4. **Ethical AI Development:** AI developers must ensure AI applications are designed, deployed, and used ethically and safely, upholding human rights.
5. **Reforming Business Models:** Tech companies should explore business models that do not rely on programmatic advertising and prioritize human rights, privacy, and safety. Users should have greater control over their online experiences and personal data.
6. **Transparency in Advertising:** Advertisers should demand transparency in digital advertising processes to ensure their budgets do not fund disinformation or hate and do not undermine human rights.
7. **Data Transparency and Accountability:** Tech companies and AI developers should ensure meaningful transparency, allow researchers access to data while respecting user privacy, commission independent audits, and co-develop accountability frameworks.
8. **Protecting Children:** Special measures should be taken to protect and empower children, with governments providing resources for parents, guardians, and educators.

### Initiatives Taken to Combat Misinformation

1. **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021:** Social media platforms must remove content deemed false by the Press Information Bureau’s fact-check unit.
2. **IT Act 2008:** Section 66 D regulates electronic communication offences. Penalizes individuals who send offensive or fake news messages through communication services or social media.

3. **Disaster Management Act 2005 and Epidemic Diseases Act 1897:** Regulate the circulation of fake news or rumours, especially during emergencies like Covid-19, to prevent public panic.
4. **Indian Penal Code of 1860:** Regulates fake news that causes riots and defamation. Holds individuals accountable for spreading fake news that incites violence or defames someone.
5. **Digital Personal Data Protection Bill 2023** has provisions to curb the misuse of individuals' data on online platforms.

**Other measures:** **Misinformation Combat Alliance (MCA):** The Misinformation Combat Alliance (MCA) is a group of 14 digital publishers that have proposed forming a self-regulatory body to provide fact-checking services to social media platforms.

#### **Way Forward: Battling Misinformation in India**

**India must prioritize verifying information sources**, with media organizations regularly fact-checking and raising public awareness. **Establishing fact-checking standards** based on international best practices, like the **IFCN code**, is crucial. A robust legislative framework is needed to **balance free speech and protect citizens from disinformation**. **Broad awareness programs** should educate society about the laws and harms of fake news. Law enforcement agencies need **capacity building to tackle fake content effectively**. Digital media regulation should be strengthened, with platforms like Facebook and Google forming an **Information Trust Alliance** to combat misinformation.

#### **Mains Link:**

**Q. What do you understand by the concept of “freedom of speech and expression”? Does it cover hate speech also? Why do films in India stand on a slightly different plane from other forms of expression? Discuss. (UPSC 2014)**

[Topics: India and its neighbourhood- relations.](#)

## **6. INDIA-BANGLADESH RELATIONS: STATE VISIT OF THE PRIME MINISTER OF BANGLADESH TO INDIA**

#### **Context:**

Recently, the Prime Minister of Bangladesh visited India for **2-day state visit**.

#### **Key Highlights of the Bilateral Meet:**

Key Highlights	Description
Promotion of Shared Vision	Peace, prosperity, and development focusing on connectivity, commerce, and collaboration.
Digital and Green Partnership	Collaboration on digital and green technologies, joint development of a small satellite.
Trade and Investment	Strengthening trade links, CEPA negotiations, and <b>operationalizing SEZs in Bangladesh</b> .
Power and Energy Collaboration	<b>Intra-regional electricity trade</b> and high-capacity grid interconnections.
Regional and Global Cooperation	Anchoring regional integration under <b>BIMSTEC, SAARC, and IORA</b> .
Cross-Border Travel	<b>E-Medical Visa facilities for Bangladeshi citizens</b> , new Assistant High Commission in Rangpur.
Water Resource Management	Renewing <b>Ganges Water Sharing Treaty</b> , managing Teesta River.
BBIN Motor Vehicle Agreement	Operationalization for <b>transit facilities to Nepal and Bhutan</b> .
Indo-Pacific Cooperation	Co-leading the ' <b>Disaster Risk Reduction and Management</b> ' pillar of IPOL.

#### **Dimensions of India-Bangladesh Relations:**

Dimensions	Description
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<b>Historical Ties</b>	India and Bangladesh share a <b>deep-rooted relationship</b> marked by historical ties and growing cooperation across multiple fronts. Initially forged during the <b>1971 Liberation War</b> , bilateral relations have evolved positively under <b>Sheikh Hasina's leadership since 1996</b> , culminating in significant agreements such as the <b>Ganga water-sharing treaty</b>
<b>Economic Cooperation</b>	Bilateral trade growth, reaching <b>USD 14 billion in 2023-24</b> . Bangladesh is <b>India's biggest trade partner in South Asia</b> and India is the <b>second biggest trade partner of Bangladesh</b> in Asia. Joint feasibility study for <b>Comprehensive Economic Partnership Agreement (CEPA)</b>
<b>Infrastructure</b>	Resolved <b>Land Boundary Agreement (LBA)</b> and maritime disputes. Inauguration of <b>Akhaura-Agartala Rail Link</b> . BIMSTEC Master Plan for Transport Connectivity. <b>Matarbari Port development</b> connecting Dhaka and Northeast India.
<b>Energy</b>	Bangladesh's electricity imports from India. Cooperation in the Rooppur Nuclear Power Plant project. <b>India-Bangladesh Friendship Pipeline</b> will transport <b>one million Metric Tonnes Per Annum (MMTPA) of High-Speed Diesel</b> from Siliguri, West Bengal, to Parbatipur, Dinajpur district, Bangladesh.
<b>Defence Cooperation</b>	Shared border of <b>4096.7 km</b> . Joint military exercises ( <b>Army - Exercise Sampriti, Navy - Exercise Bongo Sagar</b> ).
<b>Multilateral Cooperation</b>	Engagement in <b>SAARC, BIMSTEC, and IORA</b> forums. According to the India Tourism Statistics Report 2022 of the Ministry of Tourism, <b>Bangladesh has been the second-largest tourist-generating market for India</b> in the year 2021.

#### Issues between the two countries:

- Illegal Migration:** Concerns over illegal migration from Bangladesh to India, impacting resources and security, including Rohingya refugees and implications of **India's National Register of Citizens (NRC)**.
- Sharing of Transboundary River Waters:** Unresolved treaties for major rivers like Teesta and Feni despite sharing 54 rivers, impacting water management and bilateral relations.
- Growing Chinese Influence in Bangladesh:** Bangladesh's involvement in China's Belt and Road Initiative (BRI), raises concerns for India's regional influence and strategic interests.
- Drug Smuggling & Trafficking:** Challenges with cross-border drug smuggling, human trafficking (especially women and children), and wildlife poaching, affecting both countries' security and stability.

#### Way forward and Conclusion:

**Efforts to strengthen India-Bangladesh relations** should focus on establishing joint task forces to combat cross-border drug smuggling and human trafficking effectively. **Utilizing shared intelligence and coordinated operations** can disrupt illegal networks. Implementing **smart border management solutions**, leveraging artificial intelligence and data analytics will enhance security and efficiency. Furthermore, **creating a digital connectivity corridor** with high-speed internet and digital services will spur trade, collaboration, and technological exchange between the two nations.

#### Insta Links:

- [India-Bangladesh relations](#)

#### Mains Links:

Q. Analyse internal security threats and transborder crimes along Myanmar, Bangladesh and Pakistan borders including Line of Control (LoC). Also discuss the role played by various security forces in this regard. (USPC 2018)

Q. Project 'Mausam' is considered a unique foreign policy initiative of the Indian Government to improve relationships with its neighbours. Does the project have a strategic dimension? Discuss. (UPSC 2015)

#### Prelims Links:

**Q. With reference to river Teesta, consider the following statements: (UPSC 2017)**

1. The source of river Teesta is the same as that of Brahmaputra but it flows through Sikkim.
2. River Rangeet originates in Sikkim and it is a tributary of river Teesta.
3. River Teesta flows into Bay of Bengal on the border of India and Bangladesh.

**Which of the statements given above is/are correct?**

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

**Ans: (b)**

## 7. INDUS WATER TREATY AND RELATED ISSUES

### Context:

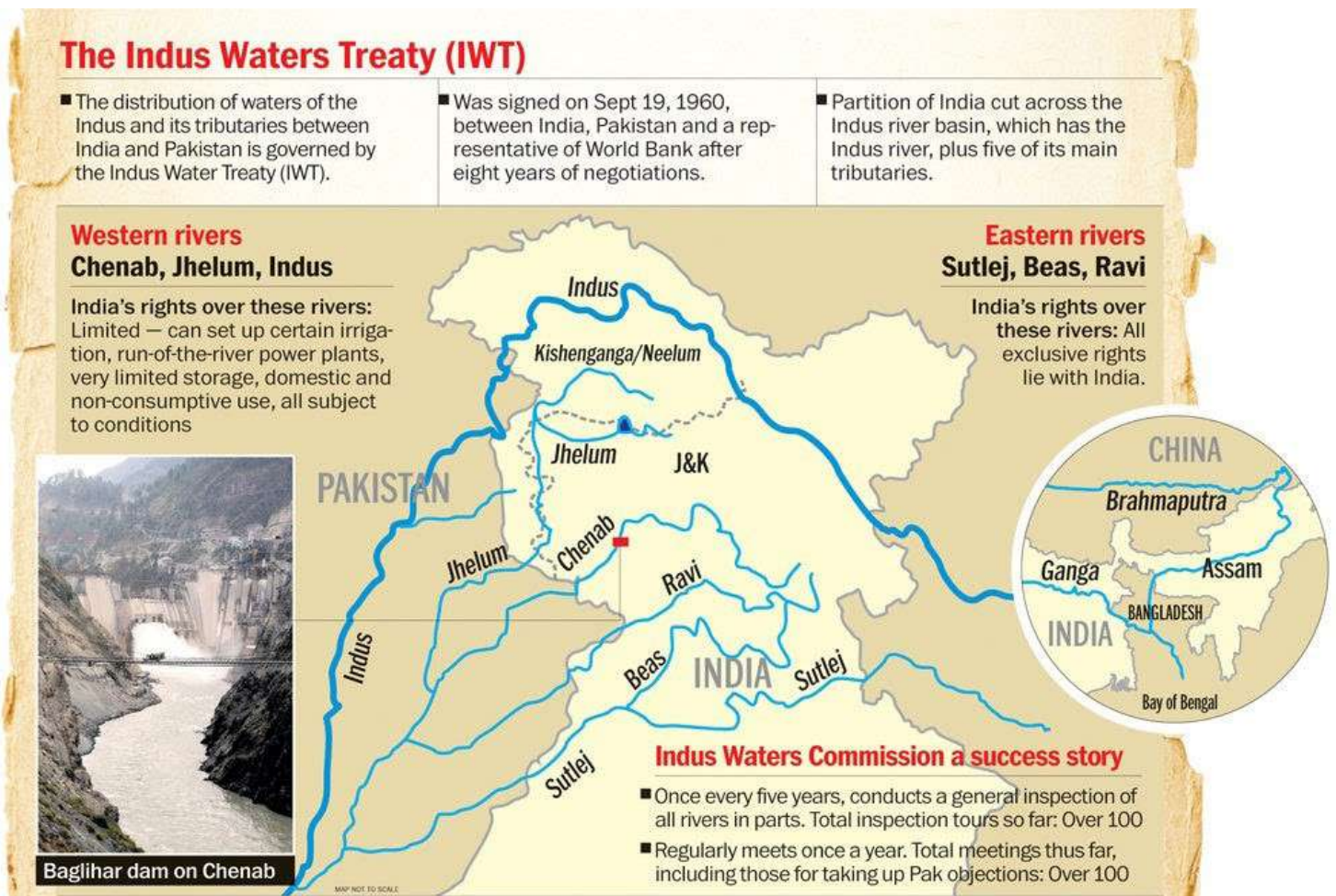
A Pakistani **delegation arrived in Jammu's Kishtwar district** to inspect hydroelectric power projects ([Kishanganga HEP](#) on the Jhelum River basin and [Ratle HEP](#) on the Chenab River) **under the Indus Water Treaty**, amidst ongoing disputes over technical objections raised by Pakistan regarding certain projects.

- This visit marks the **first inspection since the revocation of Jammu & Kashmir's special status in 2019**.

### What is the Indus Water Treaty?

The Indus Waters Treaty (IWT) is a **water-sharing agreement signed in 1960 between India and Pakistan**, mediated by the World Bank. It allocates the waters of the Indus River system between the two countries. Under the treaty:

- Pakistan receives the waters of the **Western Rivers** (Indus, Jhelum, Chenab)
- India receives water from the **Eastern Rivers** (Ravi, Beas, Sutlej).



Also, India can use the Western Rivers for limited purposes like **hydroelectric power generation**, with certain restrictions and a dispute resolution mechanism managed by a **Permanent Indus Commission and involving Neutral Experts** and a Court of Arbitration if necessary.

**Dispute Resolution Mechanism:** The treaty provides a structured mechanism for resolving disputes related to water-sharing:

**Step 1:** The Permanent Indus Commission (PIC) is mandated to meet at least once a year to discuss and resolve issues arising from the implementation of the treaty.

**Step 2:** If disputes remain unresolved after PIC discussions, a Neutral Expert is appointed to adjudicate on technical matters concerning the interpretation or application of the treaty's provisions.

**Step 3:** If disputes persist beyond the Neutral Expert's determination, the matter can be referred to a Court of Arbitration, consisting of a seven-member arbitral tribunal. This tribunal is tasked with providing a binding decision on the dispute.

### **Current Issue:**

India and Pakistan have **disagreements over the design features and operation of certain** hydroelectric projects, notably the Kishenganga and Ratle Hydroelectric Projects (HEPs), which are constructed on the Jhelum and Chenab rivers respectively.

### **Issues faced by the IWT:**

1. **Challenges for setting up new power projects:** The continuing dispute creates challenges for the setting up of new power projects
2. **Limits water usage:** The IWT permits Jammu and Kashmir to use the waters of the rivers in a limited manner, thus affecting water availability for agricultural purposes.
3. **Lack of collaboration** and mutual trust between countries
4. **No regular data sharing** as planned in the treaty.
5. **Limited to a conflict-resolution mechanism** instead of strengthening the interaction, trust and cooperation
6. **Dispute resolution:** The most crucial reason to alter the treaty is to **clarify Article IX of the treaty's dispute resolution system.**
  - a. Though India is rightful of **using the western rivers for non-consumptive purposes**, each time India plans a hydroelectric project, **Pakistan challenges it by calling for international arbitration.** E.g., the **hydroelectric power plants, Kishanganga and Ratle.**
7. **Climate change factor:** The treaty **did not consider climate change, global warming, environmental impact assessments and such issues.**
8. **Ineffectiveness of the Permanent Indus Commission**
9. **Does not cover groundwater:** The Treaty is no longer fit for its purpose as it only covers surface water but not groundwater.
  - b. **Groundwater depletion may increase by up to 75% in 2050**, putting further pressure on the upstream portions of the Indus River.

### **Way Forward:**

1. **Negotiation and Dialogue:** Use established mechanisms like the **Permanent Indus Commission (PIC)** to address and resolve disputes through direct discussions.
2. **Technical Solutions:** Employ technical experts to resolve disputes over the design, construction, and operation of water infrastructure, as seen in the Baglihar Dam case.
3. **Mediation:** Seek third-party mediation if negotiations fail, with potential assistance from the World Bank or other international organizations.
4. **Legal Recourse:** Utilize the treaty's arbitration panel for unresolved disputes after failed negotiations or mediation.
5. **Long-term Solutions:** Address larger political issues through sustained dialogue and cooperation for lasting resolution.

### **Conclusion**

As a document, the treaty may have certain weaknesses, but the larger problem is the fraught relationship between India and Pakistan. Experts are calling for the renegotiation of the treaty. There is a need for **both countries should revive the treaty** in such a way that the resources are equitably shared between both countries.

**Mains Link:**

**Q. Present an account of the Indus Water Treaty and examine its ecological, economic and political implications in the context of changing bilateral relations. (UPSC 2016)**

**Prelims Link:**

**Q1. With reference to the Indus river system, of the following four rivers, three of them pour into one of them which joins the Indus directly. Among the following, which one is such a river that joins the Indus direct? (UPSC 2021)**

- (a) Chenab  
(b) Jhelum  
(c) Ravi  
(d) Sutlej

**Ans: (d)**

**Q2. Consider the following pairs (UPSC 2019)**

	Glacier	River
1.	Bandarpunch	Yamuna
2.	Bara Shigri	Chenab
3.	Milam	Mandakini
4.	Siachen	Nubra
5.	Zemu	Manas

**Which of the pairs given above are correctly matched?**

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

**Ans: (a)**

Topics: Important International institutions, agencies and fora, their structure, mandate.

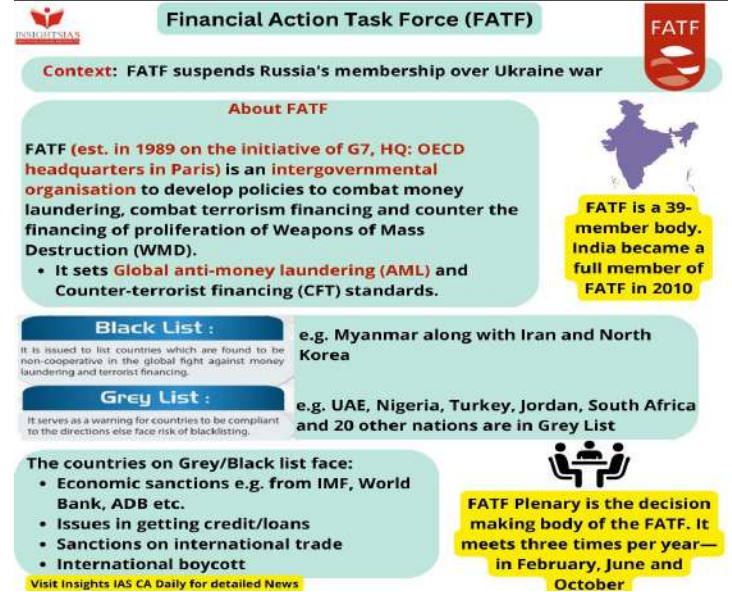
## 8. FINANCIAL ACTION TASK FORCE (FATF) AND MUTUAL EVALUATION REPORT

**Context:**

The **Mutual Evaluation Report of India**, adopted at the **FATF plenary** in Singapore from June 26 to 28, places India in the **“regular follow-up” category**, a status shared by only four other G-20 countries. This distinction highlights India’s significant **progress in combating money laundering (ML) and terrorist financing (TF)**.

**About Financial Action Task Force (FATF):**

- FATF** is an inter-governmental policy-making and standard-setting body dedicated to **combating money laundering and terrorist financing**.
- Objective:** To establish international standards, and to develop and promote policies, both at national and international levels, to combat money laundering and the financing of terrorism.
- Origin:** It was established in 1989 **during the G7 Summit** in Paris to develop policies against money laundering. **In 2001** its mandate **expanded to include terrorism financing**.
- Headquarters:** Paris, France.
- FATF members include 39 countries**, including the United States, India, China, Saudi Arabia, Britain, Germany, France, and the EU as such. **India became a member of FATF in 2010.**



**Financial Action Task Force (FATF)**

**Context:** FATF suspends Russia's membership over Ukraine war

**About FATF**  
FATF (est. in 1989 on the initiative of G7, HQ: OECD headquarters in Paris) is an intergovernmental organisation to develop policies to combat money laundering, combat terrorism financing and counter the financing of proliferation of Weapons of Mass Destruction (WMD).  
• It sets **Global anti-money laundering (AML) and Counter-terrorist financing (CFT) standards**.

**Black List:** e.g. Myanmar along with Iran and North Korea  
It is issued to list countries which are found to be non-cooperative in the global fight against money laundering and terrorist financing.

**Grey List:** e.g. UAE, Nigeria, Turkey, Jordan, South Africa and 20 other nations are in Grey List  
It serves as a warning for countries to be compliant to the directions else face risk of blacklisting.

**The countries on Grey/Black list face:**  
• Economic sanctions e.g. from IMF, World Bank, ADB etc.  
• Issues in getting credit/loans  
• Sanctions on international trade  
• International boycott

**FATF Plenary** is the decision making body of the FATF. It meets three times per year—in February, June and October

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**Mutual Evaluation Report of FATF:**

- The mutual evaluation report** is an assessment of a country’s measures to combat money laundering, financing of terrorism and proliferation of weapons of mass destruction
- The **reports are peer reviews**, where members from different countries assess another country.
- During a mutual evaluation, the **assessed country must demonstrate that it has an effective framework** to protect the financial system from abuse.
- The FATF conducts peer reviews** of each member on an ongoing basis to assess levels of implementation of the FATF Recommendations, providing an in-depth description and analysis of each country’s system for preventing criminal abuse of the financial system.

**Mutual Evaluations have two main components:**

- Effectiveness:** The most important part of a mutual evaluation is a country’s effectiveness ratings. During this visit, the **assessment team will require evidence** that demonstrates that the assessed country’s measures are working and delivering the right results.
- Compliance:** The assessed country must **provide information on the laws, regulations** and any other legal

instruments it has in place to combat money laundering and the financing of terrorism and proliferation.

**FATF has 2 types of lists:**

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

**Consequences of being on the FATF blacklist:**

- No financial aid** is given to them by the International Monetary Fund (IMF), the World Bank, the Asian Development Bank (ADB) and the European Union (EU).
- They also face a number of international economic and **financial restrictions and sanctions.**
- In addition to economic consequences, Black- and Grey-Listing **damages a country's reputation** and reduces its international standing.

**GENERAL STUDIES – 3**

Topics: Major crops cropping patterns in various parts of the country, different types of irrigation and irrigation systems storage, transport and marketing of agricultural produce and issues and related constraints; e-technology in the aid of farmers.

**1. GLOBAL IMPACTS OF HEAT AND WATER STRESS ON FOOD PRODUCTION AND SEVERE FOOD INSECURITY**

**Context:**

The report “Global impacts of heat and water stress on food production and severe food insecurity,” published in Scientific Reports, showed a **projected decline in food production by 2050 under various climate change scenarios.**

**What is Food Insecurity?**

**Food insecurity** is the lack of reliable access to sufficient, affordable, and nutritious food. **Severe food insecurity** is when individuals frequently run out of food, go hungry, and lack the means to eat regularly.

**Major Findings of the Report:**

- Global Food Production Decline:** Heat and wa-

ter stress could lead to a 6-14% decrease in global food production by 2050.

- Increase in Food Insecurity:** The number of people with severe food insecurity could rise by up to 1.36 billion by 2050 compared to 2020.
- Regional Food Production Decline:**
  - India: almost 16% decline
  - China: 22% decline
  - United States: about 12% decline
  - Africa: about 8-11% decline
  - Australia: about 14% decline
  - Central America: about 19% decline
- Shift in Food Trade:** Regions like China and ASEAN could become food importers by 2050.
- Food Price Increase:** Significant increases in food prices, especially under extreme warming scenarios and in regions with high water stress.
- Impact of Extreme Weather:** Weather extremes have been a major driver of acute food insecurity, affecting over 72 million people in 18 countries.
- Record-breaking Temperatures:** May 2024 was the warmest May on record, continuing a trend of record-breaking monthly temperatures.
- Persistent Acute Food Insecurity:** Nearly 282 million people faced high levels of acute food insecurity in 2023, with extreme weather being a significant factor.

**Other Impacts of climate change on the food system:**

Aspect of Food System	Impact of Climate Change
<b>Crop Production</b>	<ol style="list-style-type: none"> <li>Alters growing conditions, affecting crop yields and quality.</li> <li>Increased temperatures can lead to heat stress in crops.</li> <li>Changes in precipitation patterns can result in droughts or floods.</li> <li>Altered pest and disease dynamics affect crop health.</li> </ol>
<b>Food Availability</b>	<ol style="list-style-type: none"> <li>Unpredictable weather patterns disrupt seasonal food availability</li> <li>Extreme weather events can damage crops and disrupt supply chains</li> <li>Reduced food availability can lead to price fluctuations and shortages.</li> </ol>

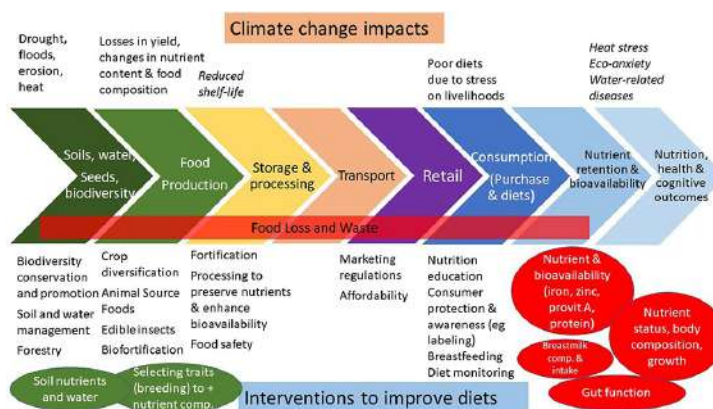
<b>Food Quality and Safety</b>	<ol style="list-style-type: none"> <li>1. Altered climate conditions affect the nutritional content of crops.</li> <li>2. Increased temperatures can lead to spoilage and food safety issues</li> <li>3. Changes in water availability impact food processing and safety.</li> </ol>
<b>Food Security</b>	<ol style="list-style-type: none"> <li>1. Climate-induced crop failures can lead to food insecurity</li> <li>2. Vulnerable populations are disproportionately affected by food shortages</li> <li>3. Migration and conflict may result from food-related stressors.</li> </ol>
<b>Food Distribution</b>	<ol style="list-style-type: none"> <li>1. Transportation routes may be disrupted due to extreme weather events.</li> <li>2. Increased energy costs for transportation impact food prices</li> <li>3. Changes in trade patterns affect global food distribution.</li> </ol>
<b>Food Waste</b>	<ol style="list-style-type: none"> <li>1. Climate change can exacerbate food waste due to spoilage from temperature fluctuations</li> <li>2. Resource-intensive food production contributes to waste.</li> </ol>
<b>Ecosystem Disruption</b>	<ol style="list-style-type: none"> <li>1. Climate change alters ecosystems and biodiversity, affecting pollinators and natural pest control</li> <li>2. Loss of biodiversity can disrupt food production and the ecosystem</li> </ol>

- **Adaptation Finance:** Multilateral banks, financial institutions, and the private sector should mobilize more resources for adaptation.
- **Multi-Pronged Approach:** Addressing the climate-hunger crisis involves creating resilient livelihoods, promoting climate-resilient food crops, empowering women, supporting small-holder farmers, and increasing knowledge about vulnerability and food security.
- **Sustainable Food Systems:** Sustainability should be integrated into production, value chains, and consumption.
  - **Cash transfers for sustainable agriculture** can be more effective than input subsidies.
- **Non-Agriculture Sector:** Labor-intensive manufacturing and services can reduce the pressure on agriculture, especially for **small-holders and informal workers**.
  - Strengthening rural MSMEs and the food processing sector is part of the solution.

**Insta Links:**  
[Climate change and agriculture](#)

**Mains Links:**  
**What measures should India take to weather-proof its food security in the face of climate change?**

Topics: Infrastructure: Energy, Ports, Roads, Airports, Railways etc.



**Solutions:**

- **Importance of Adaptation:** Scaling up support, including finance, capacity-building, and technology transfer, is urgent to enhance adaptive capacity and reduce vulnerability.
- **Crop diversification:** Diversifying cropping

**2. VADHAVAN PORT (INDIA'S FIRST MEGA PORT)**

**Context:**  
 The Vadhavan port, recently cleared by the Cabinet, will be India's first mega port, poised to significantly enhance the country's sea-based trade.

**Need:**  
 Currently, India handles about **4.6 million TEUs (twenty-foot equivalent units) of transshipment cargo, with approximately 4.2 million TEUs** processed outside the country due to geographical challenges. India's **long continental shelf results in expansive beaches**, preventing large vessels from docking near the coast. This forces **most cargo to be offloaded at Colombo or transferred mid-sea**. The Vadhavan project aims to **address these issues, allowing larger ships to dock directly at Indian ports.**

### Other major Challenges Faced by the Port Sector in India

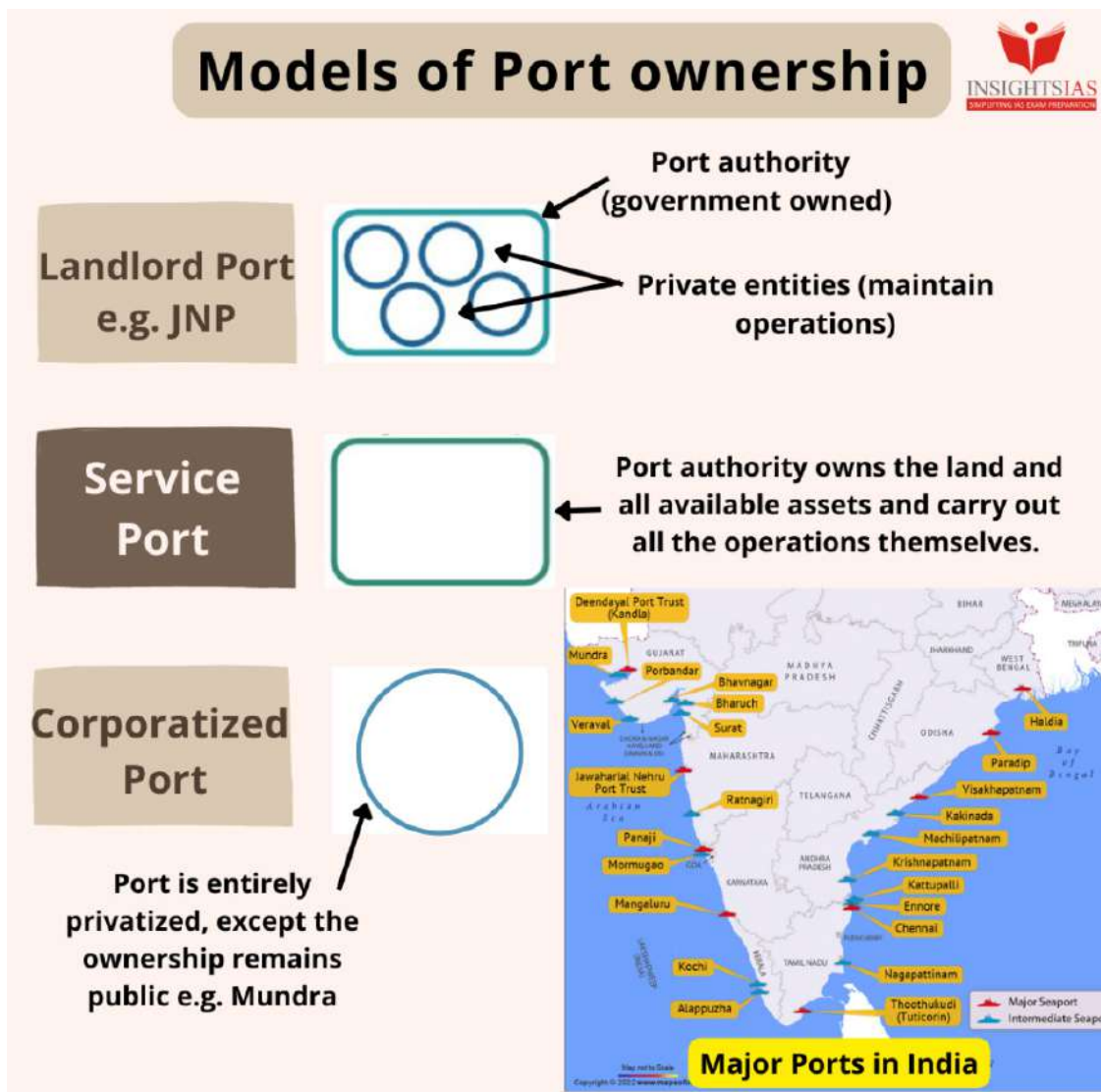
- 1. Infrastructure Deficiencies:** Many ports lack modern handling equipment and deep drafts. For instance, Kolkata Port faces draft limitations that restrict the entry of large vessels.
- 2. Capacity Constraints:** Indian ports lack enough room for capacity addition, existing capacity is being stretched thin.
- 3. Logistical Inefficiencies:** Poor hinterland connectivity and inadequate rail and road networks lead to high turnaround times.
- 4. Regulatory and Bureaucratic Hurdles:** Lengthy customs and clearance processes delay cargo handling. Ports like Jawaharlal Nehru Port Trust (JNPT) face procedural delays impacting efficiency.
- 5. Technological Lag:** Many ports are yet to fully adopt automation and advanced technologies.
- 6. Environmental Concerns:** Port expansion projects often face opposition due to environmental impact assessments.

### About VadHAVAN Port:

The VadHAVAN port will be **constructed through a Special Purpose Vehicle (SPV)** formed by the **Jawaharlal Nehru Port Authority and the Maharashtra Maritime Board**. It will be an **all-weather Greenfield deep draft** major port in Palghar District, aligned with the **PM Gati Shakti program**, and built on a **landlord-model through PPP**.

### Key Features:

- 1. Greenfield Infrastructure:** Developed on previously undeveloped land from scratch.
- 2. Construction:** To be built in 2 phases with a total capacity of 23.2 million TEUs and a 20-meter draft to handle mega vessels.
- 3. Landlord Model:** The Port authority acts as a regulatory body and landlord, with private companies managing operations.



## Significance of the VadHAVAN Port Project

### Economic Significance:

1. **Mega Port Status:** India's first true mega port with 300+ MMTPA capacity.
2. **Lower freight costs** per unit due to larger volumes.
3. **Ability to handle diverse cargo** types beyond dry and bulk goods.
4. **Promotes economies of agglomeration** by hosting suppliers, industrial complexes, and logistics firms.
5. **Competition among operators** reduces handling charges.
6. **Functions as a hub in a hub-and-spoke model**, managing global traffic and distributing cargo to smaller ports.

**Trade Implications:** Can handle projected **sea-based EXIM trade of \$1.6-2 trillion** by 2030; Reduces dependence on foreign ports for transshipment.

**Strategic Importance:** Key node [for IMEEC \(India-Middle East-Europe Economic Corridor\)](#) and [INSTC \(International North-South Transport Corridor\)](#).

### India's status in the Port sector:

1. **Major Ports:** Under the Union Ministry of Ports, Shipping, and Waterways. There are 12 functional major ports.
2. **Minor Ports:** Under State Maritime Boards/Governments. There are 200 non-major ports.
3. **India's trade heavily relies on maritime transport**, constituting over **95% by volume and 65% by value**.
4. The [2023 World Bank LPI Report](#) is promising for Indian ports and logistics. In the "International Shipments" category, India has advanced from **the 44th to the 22nd global rank since 2014**.
5. **Container Port Performance Index (CPPI) 2023:** Nine Indian ports have found their position among the top 100 global ports in CPPI in 2023

### Initiatives taken by the government for the Port sector:

Initiative	Description
<a href="#">Sagarmala Initiative</a>	Launched in 2015 to harness India's coastline and waterways for port-led industrialization.
Port Modernization and Expansion	<b>Capacity at 12 major ports increased from 871 MMT</b> in 2015 to 1,617 MMT in 2023.
Private Sector Participation	Encouragement of <b>public-private partnerships (PPPs) in port operations</b> . Brings investments, efficiency, and innovation.
New Captive Policy	Addresses renewal of concession periods, expansion scope, and dynamic business environment for port-dependent industries.
<a href="#">Harit Sagar Green Port Guidelines</a>	Aims for safe, efficient, and sustainable ports with sound environmental practices.
Liner Shipping Reforms	Introduced in 2016 to make the port sector more competitive, reducing shipping costs and improving efficiency. India's average turnaround time (TRT) of <b>only 0.9 days</b> is among the best globally.
<b>Legislative Changes</b>	
<a href="#">Major Port Authorities Act, 2021</a>	Grants greater autonomy to major ports.
<a href="#">Marine Aids to Navigation Act, 2021</a>	Increases safety and efficiency in vessel traffic services and training.
<a href="#">Indian Vessels Act, 2021</a>	Standardizes laws across all inland waterways.
<a href="#">Replacement of Indian Ports Act, 1908</a>	Updating legislation to meet present-day requirements.
Ease of Doing Business	<b>National Logistics Portal (Marine) and Sagar Setu app</b> facilitate seamless goods movement and enhance ease of doing business.

<b>FDI Policy</b>	<b>Allows 100% FDI under the automatic route</b> for port-related projects and offers a 10-year tax holiday for port development.
<b>India to Develop Six Mega Ports by 2047</b>	The <b>Ministry of Ports, Shipping, and Waterways has recently announced plans to develop six mega ports by 2047</b> . Four port clusters with capacities exceeding 300 MTPA include <b>Cochin-Vizhinjam, Galathea South Bay, Chennai-Kamarajar-Cuddalore, and Paradip</b> . Two clusters, Deendayal-Tuna Tekra and Jawaharlal Nehru-Vadhavan, will exceed 500 MTPA. These developments are part of the Maritime Amrit Kaal Vision, 2047

#### Way forward:

- 1. Integrated Connectivity:** Strengthening the integration of ports with railways, roadways, and inland waterways is essential to ensure seamless cargo movement from ports to hinterlands and vice versa.
- 2. Digital Transformation:** Implementation of advanced technologies like blockchain, Internet of Things (IoT), and artificial intelligence can streamline documentation, cargo tracking, and communication processes.
- 3. Investment Promotion:** Encourage private sector participation through well-structured public-private partnerships (PPPs) and investor-friendly policies.
- 4. Regional Connectivity:** Strengthen regional connectivity through strategic collaborations and agreements.
- Promoting transshipment and coastal shipping can enhance trade within the Indian Ocean region.
- 6. Safety and Security:** Ensure stringent safety and security measures at ports to prevent accidents, environmental hazards, and unauthorized activities. Compliance with international safety standards is vital.

#### Conclusion

The global recognition of the operational efficiencies of Indian ports and the Indian maritime sector is an important step in India's endeavour to become a global maritime power as envisaged in the [Maritime India Vision, 2030](#).

#### Insta Links:

- 3) [Draft Indian Port Bill](#)

#### Prelims Links:

**Q. Recently, which of the following States has explored the possibility of constructing an artificial inland port to be connected to the sea by a long navigational channel? (UPSC 2016)**

- Andhra Pradesh
- Chhattisgarh
- Karnataka
- Rajasthan

**Ans: (d)**

[Topics: Science and Technology- developments and their applications and effects in everyday life Achievements of Indians in science & technology; indigenization of technology and developing new technology.](#)

## 3. GM CROPS: BALANCING FOOD SECURITY AND ENVIRONMENTAL IMPACT

#### Context:

Genetically modified (GM) crops are touted as a solution for global food security, especially in the face of climate change. **The current "gene revolution" uses genetic editing** to improve crop resilience, aiming to support a growing population and combat climate-induced agricultural challenges.

#### What is a GM Crop?

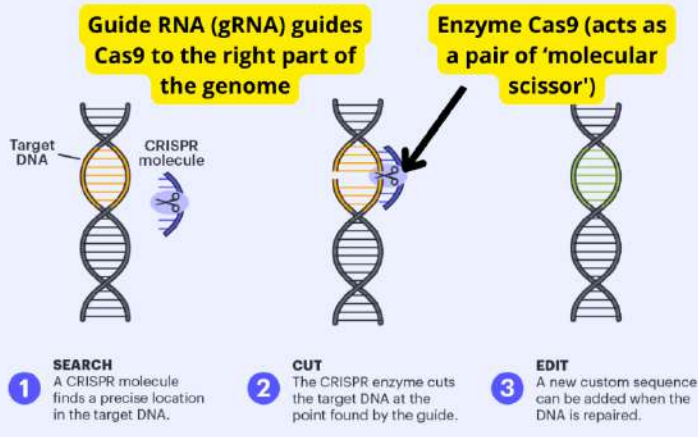
**A GM or transgenic crop is a plant that has a novel combination** of genetic material obtained through the use of **modern biotechnology**.

The new gene revolution, **driven by tools like CRISPR**, allows precise gene editing without introducing foreign genes. This technology helps develop new GM crop varieties, enhancing food security.

## 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



### Examples:

- Optimized Photosynthesis:** Research projects are focusing on optimizing photosynthesis in staple crops such as maize and rice. This aims to improve their ability to convert sunlight, water, and carbon dioxide into energy, thereby enhancing yields and reducing atmospheric carbon.
- Drought-Tolerant Maize:** Scientists are developing drought-tolerant transgenic maize by incorporating genes from a plant known as xerophyta viscosa, which can tolerate severe dehydration up to 95%.
- Insect-Resistant Cowpea:** Australian scientists are bioengineering cowpeas to have built-in resistance to insect pests, crucial for protecting this important legume staple in Africa from crop failure.

### Status of GM Crop in India:

In India, Bt cotton remains the sole GM crop approved for commercial cultivation. As of 2022, the Genetic Engineering Appraisal Committee (GEAC) has granted environmental release approval for the Mustard hybrid DMH-11, though its implementation is pending a Supreme Court decision. Additionally, ongoing research and field trials are underway for several other crops including chickpeas, pigeonpea, corn, and sugarcane.

### Regulations for GM Crop In India:

In India, GM crop regulations are governed by the 1989 Rules under the Environment Protection Act (1986). The Genetic Engineering Appraisal Committee (GEAC) under the Ministry of Environment, Forest, and Climate Change (MoEF&CC) handles the appraisal of GM crop proposals.

### GM Crops role in enhanced yields and resilience:

- Pest Resistance:** GM crops can be engineered to be more resistant to pests and diseases, which can lead to increased yields. This is important in a world where food security is a growing concern.
  - E.g. Bt cotton, engineered with a gene from the bacterium Bacillus thuringiensis, produces a protein toxic to certain pests.
- Drought Tolerance:** they contain genes that enable the plant to withstand water scarcity. This characteristic enhances crop resilience in regions prone to drought, ensuring more consistent yields.
  - E.g. Drought-resistant GM maize
- Nutritional Enhancement:** GM crops can be engineered to have higher levels of nutrients, such as vitamins and minerals. This can help to improve the health of people who consume these crops.
  - E.g. Golden rice, fortified with beta-carotene, addresses vitamin A deficiency.

### Ecological and food safety concerns associated with GM crops:

- Biodiversity Loss:** The cultivation of herbicide-tolerant GM crops can lead to the overuse of specific herbicides. This can result in the development of herbicide-resistant weeds, disrupting local ecosystems and reducing biodiversity.
- Biosafety concerns:** They can reduce **species diversity**.
  - For example, Insect-resistant plants might harm insects that are not their intended target and thus result in the destruction of that particular species.
- Cross-Pollination and Gene Flow:** GM crops, such as genetically modified canola, can cross-breed with wild relatives, potentially leading to the spread of modified genes in non-GM populations and affecting natural plant diversity.
- Unintended Consequences:** The introduction of GM crops resistant to **specific pests** might inadvertently disrupt ecological balances by affecting **non-target species**, leading to unanticipated ecological consequences.

### Food safety concerns:

- Allergenicity:** Transfer of allergenic genes into GM crops could potentially introduce new allergens or amplify existing allergenic properties, **posing risks to sensitive individuals**.
- Health Impacts:** Altered nutritional profiles in GM crops could impact human health in unforeseen ways. The **long-term effects** of consuming genetically modified foods need thorough investigation.
- Resistance Development:** Over-reliance on certain GM traits can lead to the evolution of resistant pests or diseases, necessitating more **intensive chemical treatments** and posing risks to the environment and human health.

**Way forward:**

Recommendation	Description
Scientific Evidence-Based Decisions	Governments should <b>base decisions on GM technologies on robust scientific evidence</b> , thoroughly evaluating benefits and risks before implementation.
Cultivating an environment of openness and transparency	<b>Open communication of scientific findings and regulatory processes</b> is crucial to address genuine fears and build public trust.
Involving stakeholders	<b>Participation of scientists, farmers, consumers, and environmentalists</b> in regulatory protocols enhances decision legitimacy and fosters trust in GM technology development.
Precautionary principle	<b>Given uncertainties over GM safety</b> , adopting this principle suggests waiting for a broader scientific consensus to minimize risks before widespread implementation.
Policy frameworks for equitable benefits	Improving policies to address concerns such as pricing, and input costs, and ensuring equitable benefits for all stakeholders involved in GM cultivation.
Strong liability laws	Implementing robust laws to hold parties accountable for environmental hazards or unforeseen consequences from GM technologies encourages responsible practices.

**Insta Links:**

- [GM food and sustainable food production](#)

**Mains Link:**

**Q. How can biotechnology help to improve the living standards of farmers? (UPSC 2019)**

**Prelims Link:**

**Q1. Other than resistance to pests, what are the prospects for which genetically engineered plants have been created? (UPSC 2012)**

- To enable them to withstand drought
- To increase the nutritive value of the produce
- To enable them to grow and do photosynthesis in spaceships and space stations
- To increase their shelf life

**Select the correct answer using the codes given below:**

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

**Ans: (c)**

**Q2. Bollgard I and Bollgard II technologies are mentioned in the context of (UPSC 2021)**

- (a) clonal propagation of crop plants
- (b) developing genetically modified crop plants
- (c) production of plant growth substances
- (d) production of biofertilizers

**Ans: (b)**

**4. GLOBAL TRANS-FAT ELIMINATION**

**Context:**

WHO has published its fifth milestone report on global [trans-fat elimination](#), covering 2018-2023.

**What are trans fatty acids?**

**TFA stands for trans fatty acids**, commonly known as trans fats. These are a type of **unsaturated fat that can be found in small amounts in nature** but are primarily produced industrially. Industrial trans fats are created through a process called **hydrogenation**, where **hydrogen is added to liquid vegetable oils** to make them more solid. These fats are commonly used in **processed foods, such as baked goods**, snacks, and margarine, to improve texture, shelf life, and flavour stability.

WHO's recommendation for adults is to **limit consumption of trans fat to less than 1% of total energy intake**.

**FATS, HEALTHY OR UNHEALTHY? THE FACTS!**

Trans fats are a man made fat, saturated is natural. Both are Non essential fats. The US banned trans fats in June 2018

Omega 3 & 6 fatty acids are the only fats we need from our diet. They are found in seeds, nuts, beans, sea veg and some species of fish

TRANS FAT	SATURATED FAT	UNSATURATED FAT
FAST FOODS FROZEN PIZZA VEGETABLE OILS MARGARINE BAKED FOODS STORE SANDWICH PROCESSED FOODS	BUTTER CHEESE RED MEAT PORK BAKED FOODS MILK COCONUT OIL	AVOCADO FLAX MEAL WALNUTS SEA VEGETABLES HEMP SEEDS CHIA SEEDS OLIVES
*Experts estimate that for every 1 percent of energy that comes from trans fats you increase the risk of heart disease by 12 to 13 per cent	*Natural saturated fats found mostly in animal foods are controversial. But most experts agree that consuming large amounts raises the risk in developing many diseases	*Polyunsaturated fats are essential fats vital for brain function, muscle movement, vitamin & mineral absorption and inflammation

**Key Highlights of the Report:**

- By late 2023, **WHO’s best-practice trans-fat elimination policies** were implemented in 53 nations, covering around 46% of the global population.
- **In India, approximately 4.63% of coronary heart disease** deaths are attributed to TFA intake.

**Harmful Effects of Trans Fats:**

Harmful Effects of Trans Fats	Description
<b>Heart Disease</b>	Raises total cholesterol and lowers HDL (good) cholesterol, increasing the risk of heart disease.
<b>Obesity</b>	Contributes to weight gain and obesity due to its adverse effects on metabolism.
<b>Type 2 Diabetes</b>	Increases the risk of developing insulin resistance and type 2 diabetes.
<b>Metabolic Syndrome</b>	This leads to conditions like high blood pressure, high blood sugar, excess abdominal fat, and abnormal cholesterol levels, raising the risk of heart attack and stroke.
<b>Infertility</b>	May negatively affect reproductive health and fertility.
<b>Cancer</b>	Associated with a higher risk of certain types of cancers.
<b>Compromised Fetal Development</b>	Can harm fetal development, leading to potential complications for the unborn baby.
<b>Insulin Resistance</b>	Impairs the body’s ability to use insulin effectively, contributing to metabolic disorders.

**Other Issues:** Trans fats **can harm brain function and the immune system**, lack nutritional value, strain health-care systems due to associated health costs, and contribute significantly to obesity.

**Challenges in Controlling TFA Usage:**

1. **Lack of Awareness:** The public and industry lack knowledge about TFA harms.
2. **Regulatory Gaps:** Incomplete or inconsistent regulations across regions.
3. **Industry Resistance:** Pushback from food manufacturers due to cost and convenience.
4. **Monitoring and Enforcement:** Difficulty in ensuring compliance with regulations.
5. **Global Trade Dynamics:** Variability in international trade policies affects consistency.
6. **Cost of Reformulation:** High expenses involved

in changing product recipes.

7. **Consumer Preferences:** Preference for taste and texture of TFA-containing foods.
8. **Inconsistent Policies:** Varied policies across countries complicate control efforts.

**Initiatives to tackle Trans-Fats:**

National Initiatives	Description
<b>ESSAI “Trans Fat-Free” logo</b>	Voluntary labelling promoting TFA-free products with TFA not exceeding <b>0.2g per 100g/ml</b> .
<b>“Heart Attack Re-wind” campaign</b>	Mass media effort to eliminate industrial trans fats, part of the broader “Eat Right” campaign initiated in 2018.
<b>Pledge by edible oil industries</b>	Commitment to reduce salt, sugar, saturated fat, and trans-fat content by 2%
<b>Swasth Bharat Yatra</b>	Pan-India cyclothon under the “Eat Right” campaign to engage citizens on food safety and healthy diets.
<b>Regulation of trans fats</b>	FSSAI regulations to cap TFA in oils and fats to 2% by 2022, down from 5% previously allowed.
<b>Eat Right Movement</b>	Initiative to transform India’s food system for safe, healthy, and sustainable food under “Eat Right India”.
<b>Green Purple initiative</b>	Program promoting trans-fat-free cooking and food safety among chefs and food establishments.
Global Initiatives	
<b>WHO “REPLACE” campaign</b>	The global campaign to eliminate trans fats from industrially produced edible oils by 2023.
<b>WHO Validation Programme for Trans Fat Elimination</b>	Recognizes and supports countries in eliminating TFA, driving policy progress globally.

**Key Recommendations of WHO report:**

1. **A mandatory national limit of two grams of industrially produced trans-fat per 100 grams of total fat in all foods**
1. **Sub-regional bodies should pass mandatory TFA** elimination policies binding on member states to facilitate trade and policy implementation.
2. **Food manufacturers should voluntarily elimi-**

**nate** industrially produced TFA across their product lines, beyond complying with national policies.

**More measures to eliminate trans fats in food:**

1. **Implement regulations:** Set limits on trans fats in food or ban partially hydrogenated oils.
2. **Increase public awareness:** Educate about health risks and how to avoid trans fats.
3. **Develop alternatives:** Research substitutes without health risks.
4. **Encourage reformulation:** Prompt food makers to reduce or remove trans fats.
5. **Promote healthy eating:** Advocate balanced diets low in trans fats.
6. **Taxation:** Consider taxing trans-fat products.
7. **Incentives:** Reward low-trans fat food production.

**Insta Links:**

- [5 billion people globally are exposed to toxic trans-fat linked to heart disease](#)

**Prelims Link:**

**Q. Regular intake of fresh fruits and vegetables is recommended in the diet since they are a good source of antioxidants. How do antioxidants help a person maintain health and promote longevity? (UPSC 2011)**

- A. They activate the enzymes necessary for vitamin synthesis in the body and help prevent vitamin deficiency.
- B. They prevent excessive oxidation of Carbohydrates, fats and proteins in the body and avoid unnecessary wastage of energy.
- C. They neutralize the free radicals produced in the body during metabolism.
- D. They activate certain genes in the cells of the body and help delay the ageing process

**Answer: C**

Topics: Conservation related issues, environmental pollution and degradation, environmental impact assessment.

## 5. PESA HAS BOOSTED FOREST CONSERVATION IN INDIA

**Context:**

The **Panchayat (Extension to Scheduled Areas) Act (PESA)** empowered Scheduled Tribes by mandating political representation in local governance, thereby linking their **livelihood needs with forest conservation**.


**What is PESA?**

The **Panchayat (Extension to Scheduled Areas) Act (PESA) of 1996** extended **Part IX of the Constitution, which pertains to Panchayats, to Scheduled Areas**. These areas, defined under **Article 244(1)**, receive special provisions

under the Fifth Schedule of the Constitution. PESA mandates **political representation for Scheduled Tribes (STs) in local governance**, ensuring they have a significant role in decision-making regarding their resources and livelihoods. This act applies in **ten states across India**, covering various districts under the Fifth Schedule, aiming to **empower ST communities economically and environmentally**.

**Panchayats (Extension to Scheduled Areas) Act (PESA Act) 1996**

PESA Act empowers the Gram Sabha with the rights to safe guard and preserve the Tribal Culture Heritage.




**Key objectives of PESA**

- Prevent panchayats at higher level from assuming powers of panchayats at lower level
- Extend provisions of Part IX with modifications
- Create administrative framework consistent with traditional practices
- Safeguard tribal traditions and customs
- Self-governance through gram sabhas

**Important Features of PESA-Act**

- Gram Sabha approves the plans, programmes and projects
- Gram Sabha is competent to safeguard and preserve the tradition & customs and cultural identity.
- Gram Sabha identifies the beneficiaries.
- Gram Sabha is endowed with the ownership of MFPIs.
- Approval of Utilisation Certificates in Gram Sabhas.
- Reservation of seats.
- Gram Sabha or PAL is consulted for land acquisition, management of minor water bodies, grant of licence or mining lease, prohibition/regulation of the sale & consumption of any intoxicant, power to prevent alienation of land, managing village markets and others.



**10 states have 5th scheduled areas but out of these only 8 states have notified PESA Rules. Jharkhand and Odisha is yet to frame and notify it.**

**Issues with conservation efforts in India:**

**The conflict in conservation efforts in India centres on balancing conservation with local resource extraction and economic development.** The government often prioritizes large-scale economic projects such as mining and dam construction over forest conservation, driven by the interests of the political elite.

**What are other laws which complement PESA?**

The **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 (FRA)** recognizes forest-dwelling communities' rights to forest resources and allocates forest land for community development. It protects tribes from eviction without rehabilitation and empowers Gram Sabhas to influence local policies.

The **Forest Rights Act (FRA) of 2006** and the **Panchayats (Extension to Scheduled Areas) Act (PESA) of 1996** were enacted to recognize and protect the historical connection of these communities with the forests, these legal frameworks aim not only to **prevent arbitrary evictions** but also to **empower these communities** in the sustainable management of their natural resources.

## Key aspects of the Forest Rights Act, 2006, and PESA 1996:

### Promoting Environmental Conservation:

- Empowering Forest-Dwelling Communities:** The Forest Rights Act recognizes and vests forest rights in the hands of forest-dwelling communities. By empowering these communities with ownership and access rights, FRA promotes sustainable forest management.
  - E.g. In **Mendha Lekha, Maharashtra, tribal communities** utilized FRA to gain control over their traditional forests.
- Conserving Biodiversity and Ecosystems:** The act emphasizes the conservation of biodiversity and ecological balance. By involving local communities in the conservation process, it contributes to maintaining diverse ecosystems.
  - For instance, the **Bishnois of Rajasthan**, under the FRA, has played a crucial role in **protecting the blackbuck**, an endangered species.
- Recognition of Community Forest Rights:** The act recognizes community forest rights, providing communities with the authority to protect and manage forests collectively. This communal approach fosters environmental conservation.
  - E.g. **The Dongria Kondh tribe in Odisha** used FRA to protect the **Niyamgiri Hills**, a biodiversity hotspot.

### Protection of Forest-Dwelling Communities' Rights:

- Local Governance and Decision-Making:** The Panchayats (Extension to Scheduled Areas) Act emphasizes local governance and decision-making. In tribal areas, it ensures that **communities have a say in matters related to land and resource management**, including forests.
  - E.g. observed in various parts of the country where **local tribal communities**, are under PESA.
- Cultural and Traditional Practices:** Both acts recognize the importance of traditional and cultural practices in environmental conservation. They safeguard the rights of indigenous communities to follow sustainable practices.
  - E.g. The **Soligas in the Biligirirangan Hills** of Karnataka have **preserved their sacred groves under FRA**.
- Protection against Exploitation and Encroachment:** The act protects forest-dwelling communities against exploitation and illegal encroachment. By ensuring the rights of these communities, FRA acts as a deterrent to activities that harm the environment.
  - E.g. In the **Sariska Tiger Reserve area of Rajasthan**, the FRA has been instrumental in preventing **illegal activities**, contributing to the protection of the tiger habitat.

### The success of both acts in forest conservation:

Aspect	Details
Increase in Tree Canopy	Areas with ST representation under PESA and FRA saw an average annual <b>increase in tree canopy by 3%</b> , indicating positive impacts on forest cover.
Reduction in Deforestation	Implementation of PESA and FRA correlated with a <b>significant reduction in deforestation rates in Scheduled Areas</b> , enhancing conservation efforts.
Resistance to Mining	ST communities empowered by PESA and FRA showed <b>increased capability to resist mining and large-scale commercial activities</b> that contribute to deforestation.
Comparison with FRA	PESA demonstrated more substantial conservation impacts compared to the Forest Rights Act (FRA), highlighting its effectiveness in <b>enhancing forest stewardship</b> .

### Limitations of the FRA and PESA:

- Implementation Challenges:** Despite its intentions, the Forest Rights Act faces challenges in implementation, leading to delays in the recognition of rights.
  - Procedural hurdles and lack of awareness** limit the effective protection of forest-dwelling communities.
- Inadequate Legal Protection:** The legal protection provided by FRA may not be sufficient in instances where there is a conflict with other environmental laws.
  - E.g. In **ecologically sensitive areas**, conflicts between **FRA and wildlife protection** laws have arisen, creating ambiguity in legal protection.
- Limited Involvement of Gram Sabhas:** While PESA empowers Gram Sabhas, the actual involvement of these local governance bodies in decision-making varies.
- Influence of External Entities:** The act does not provide clear mechanisms to prevent the influence of external entities or vested interests in local decision-making.
  - E.g. **mining companies**, have exerted pressure on local decisions, compromising the protection of forest rights.
- Limited Awareness and Capacity Building:** Inadequate awareness and capacity building among forest-dwell-

ing communities limit their ability to fully exercise their rights and actively participate in conservation efforts.

#### Way forward:

1. **Legal provisions should be strengthened to safeguard against external influences** on local decision-making. Transparent mechanisms and checks and balances can help protect the autonomy of Gram Sabhas and forest-dwelling communities.
2. **Awareness:** Government and non-governmental organizations should collaborate to conduct extensive awareness programs. These initiatives should focus on educating forest-dwelling communities about their rights under FRA and PESA.
3. Efforts should be made to **harmonize the Forest Rights Act with other environmental laws** to prevent conflicts.
4. **Enhanced implementation strategies:** Implementing agencies should adopt robust strategies to overcome procedural hurdles and expedite the recognition of forest rights.

#### Conclusion

The continuous refinement of these legislative frameworks will not only promote environmental conservation but also ensure the protection and empowerment of forest-dwelling communities, fostering a harmonious balance between conservation and the rights of those intricately connected to India's forests.

#### Insta Links:

- [Jharkhand issues PESA draft rules for consultations](#)
- [PESA Act](#)

#### Mains Link:

Q. The PESA Act is considered to be the backbone of tribal legislation in India, in this backdrop do you think proper implementation of it can rejuvenate self-governance in the tribal pockets of the country? Analyse.

## 6. ANDAMAN & NICOBAR (A&N) ISLANDS: STRATEGIC AND ECOLOGICAL SIGNIFICANCE

#### Context:

The Indian government must recognize the strategic and ecological significance of the [Andaman & Nicobar \(A&N\) islands](#).

#### Strategic Significance of Andaman and Nicobar Islands for India

1. **Forward Défense Position:** Crucial presence in the Bay of Bengal and the Andaman Sea. Key in monitoring and controlling maritime chokepoints

like the [Malacca Strait](#)

2. **Naval Power Projection:** Acts as India's first line of defence against eastern threats. Base for projecting naval strength into the eastern Indian Ocean and western Pacific, countering China's naval presence.
3. **Integrated Military Command:** Hosts the Andaman and Nicobar Command (ANC), India's only tri-service theatre command. Serves as a model for integrated military operations, vital for future conflicts.
4. **Exclusive Economic Zone Expansion:** Extends India's Exclusive Economic Zone (EEZ) and continental shelf under UNCLOS.
5. **Maritime Trade Hub Potential:** Development of [Galathea Bay in Great Nicobar Island](#) as a transshipment port. Could become a major hub for international maritime trade, rivalling ports like Singapore.

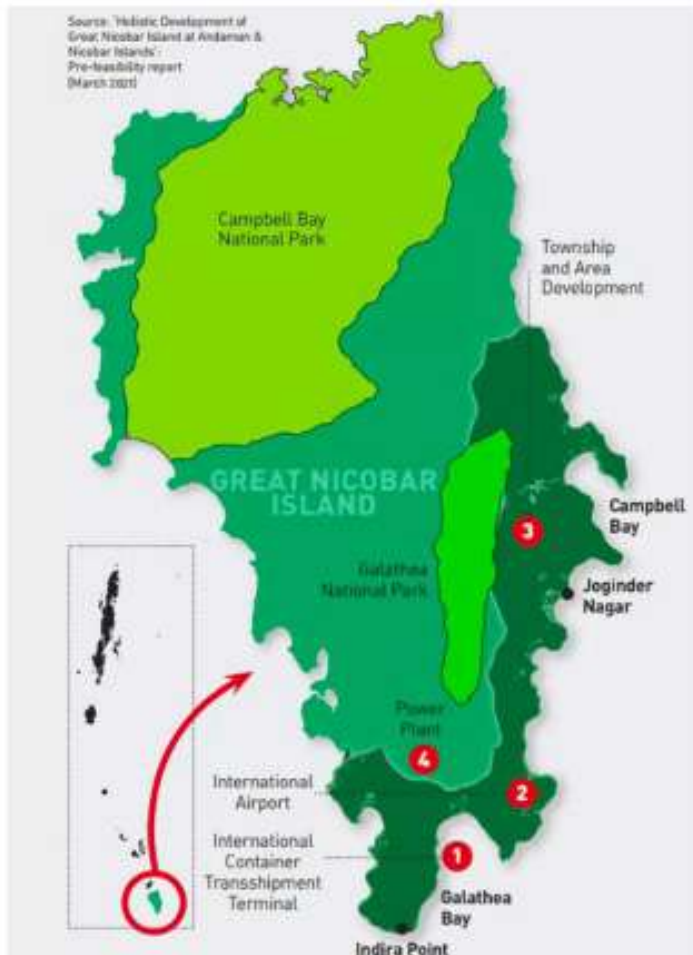
#### Ecological Significance of Andaman and Nicobar Islands for India

1. **Biodiversity Hotspot:** Home to over 2,200 species of plants, 270 species of birds, and numerous mammals and reptiles.
2. **Example:** Great Nicobar Biosphere Reserve, which hosts endemic species like the Nicobar Megapode.
3. **Marine Ecosystems:** Example: **The coral reefs around Havelock Island**, which support diverse marine species and protect against coastal erosion.
4. **Unique Fauna:** Several endemic species of animals and birds. Example: The Narcondam Hornbill, found only on Narcondam Island.
5. **Critical Habitats:** Important nesting sites for endangered species. Example: Leatherback turtles nest on the beaches of Great Nicobar Island.
6. **Mangrove Forests:** Extensive mangrove coverage providing vital ecosystem services.
7. **Eco-Tourism Opportunities:** Pristine beaches, coral reefs, and unique wildlife offer immense eco-tourism potential. Generates revenue, creates jobs, and boosts the Indian economy.
8. **Cultural and Anthropological Significance:** Home to indigenous tribes like the Shompen for millennia. Preserving their unique culture and way of life is crucial for the islands' identity.



### About the Great Nicobar Project:

It was introduced in the 1970s for **national security in the Indian Ocean Region** and has gained urgency due to increased Chinese activity in the Bay of Bengal and Indo-Pacific. The Rs 72,000 crore development includes a ₹35,000 crore **transshipment port at Galathea Bay**, a **dual-use military-civil international airport**, a power plant, and a **greenfield township**, overseen by the **Andaman and Nicobar Islands Integrated Development Corporation**.



### Challenges faced by A&N:

1. **Environmental vs. Developmental Balance:** Balancing strategic and economic growth with the protection of unique ecosystems and biodiversity, such as leatherback turtle nesting sites at Galathea Bay, presents significant challenges.
2. **Indigenous Rights and Preservation:** Development often conflicts with the preservation of the culture and rights of Indigenous tribes like the Jarawas, Onges, and Sentinelese, risking violations of protective laws.
3. **Infrastructure Challenges:** The remote location, difficult terrain, and seismic activity complicate infrastructure projects, including sourcing materials and skilled labour.
4. **Climate Vulnerability:** The islands' susceptibility to climate change impacts, such as rising sea levels, threatens both infrastructure and indigenous communities, necessitating long-term adaptive strategies.
5. **Surveillance Deficiencies:** Inadequate surveillance networks over the vast maritime expanse leave critical chokepoints like the Six Degree Channel vulnerable.

### Way forward:

To ensure balanced development in the Andaman and Nicobar Islands, **several strategic initiatives can be implemented**. These include establishing a **centre that integrates traditional tribal knowledge with modern science** to advance medicine, sustainable forestry practices, and **climate-resilient agriculture**. Additionally, creating a **startup incubator focused on maritime technologies** and sustainable island development will stimulate innovation and attract investment. Designating specific islands as diplomatic and cultural exchange zones for regional cooperation summits, coupled with implementing blockchain technology for transparent resource management, will enhance sustainability and international collaboration.

### Insta Links:

- [Andaman and Nicobar to establish wildlife sanctuaries](#)

### Prelims Link:

**Q1. Which one of the following pairs of islands is separated from each other by the "Ten Degree Channel"?** (UPSC 2014)

- (a) Andaman and Nicobar
- (b) Nicobar and Sumatra
- (c) Maldives and Lakshadweep
- (d) Sumatra and Java

**Ans: (a)**

**Q2. Which of the following have coral reefs? (USPC 2014)**

1. Andaman and Nicobar Islands
2. Gulf of Kachchh
3. Gulf of Mannar
4. Sunderbans

**Select the correct answer using the code given below:**

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

**Ans: (a)**

## GENERAL STUDIES - 4

### 1. ETHICS OF WHISTLEBLOWING

#### Context:

Julian Assange, WikiLeaks founder, **pleaded guilty to obtaining and publishing U.S. military secrets** in a deal with the U.S. Justice Department, allowing him to **avoid American prison** and return to Australia.

The agreement required **Assange to admit guilt to a single felony** but considered his five years spent in a UK prison. Assange expressed mixed feelings about the outcome, while his lawyer highlighted concerns for press freedom. The case involved publishing classified documents and raising issues about national security and journalism.

#### Ethical issues in the WikiLeaks case:

1. **Public right to information vs. government need for confidentiality:** Balancing citizens' right to know about government actions and the government's necessity to uphold confidentiality in matters of national security.
2. **Protection of whistle-blowers vs. national security:** Safeguarding individuals who expose wrongdoing while considering threats to national security.
3. **Media responsibility in handling classified information:** The media's moral duty is to inform the public about government actions while handling dangerous or sensitive information responsibly.

#### Ethical values demonstrated by Julian Assange:

Julian Assange demonstrated **ethical values of transparency and accountability** by exposing government secrets and military misconduct, emphasizing the public's right to know. He also highlighted the importance of press freedom and challenged the boundaries of journalistic responsibility in the digital age.

#### What is WikiLeaks?

WikiLeaks is a **non-profit media organization and publisher of leaked documents**, funded by donations and media partnerships. Founded in 2006 by Julian Assange, an Australian editor and activist, it has published classified documents from anonymous sources.

#### About Whistle-blowers:

Whistleblowing refers to **calling attention to wrongdoing happening** in an organization. Whistleblowing has to do with ethics because it represents a person's understanding, at a deep level, that an action his or her organization is taking is harmful—that it interferes with people's rights or is unfair or detracts from the common good.

#### Ethical issues with Whistleblowing:

Being disloyal towards an organization v/s sharing knowledge of wrongdoing for the benefit of others and moral commitment towards society. He may also gain mistrust of his fellow workers.



#### The values that are shown by whistle-blowers:

1. **Courage** – It takes moral courage to stand against your organization and be ready to lose out on stability in one's life.
2. **Self-sacrifice** – They work for the public interest at the cost of themselves.
3. **Duty bound and respecting the law** – However, there is a dilemma of breaching ethics by breaching the contract with the organization as well.

#### How can the government encourage whistle-blowing?

1. **Create a policy about reporting illegal or unethical practices**

- a. Formal mechanisms for reporting violations, such as hotlines and mailboxes.
  - b. Clear communications about the process of voicing concerns, such as a specific chain of command, or the identification of a specific person to handle complaints.
2. **Get endorsement of the policy from top officials** and publicize the organization's commitment to the process.
  3. **Elected and administrative leadership** must encourage ethical behaviour and hold everyone within the organization to the highest standards, including the disclosure of activities that would have a negative impact on the public's business.
  4. **Investigate and follow up promptly** on all allegations of misconduct. Report on these investigations to the council or board.

### Indian Examples:

One well-known Indian whistle-blower was **Satyendra Dubey, an IIT graduate** working on a segment of the National Highways Authority of India's (NHAI) Golden Quadrilateral in Bihar, who wrote directly to the Prime Minister's Office exposing corruption in the project. He paid with his life for doing so.

### Legislations in India regarding Whistleblowing:

1. The government introduced the **Public Interest Disclosure and Protection Of Informers (PID-PI) Resolution** for the logging of complaints against alleged corruption or misuse of office by a government officer or department.
2. **Whistle-blowers Protection Act** is aimed at providing a legislative route for people to file complaints on alleged corruption and misuse of office by public servants. The act has not come into force, and the Rules for it have not been finalised.

## 2. REGULATIONS ON FINANCIAL INFLUENCERS

### Context:

SEBI has barred regulated entities from making claims about investment returns, aiming to protect investors from misleading information. The regulator has also tightened criteria for stocks in the F&O market, requiring them to meet specific market value and trading volume thresholds.

### What are Fin-fluencers?

They are individuals **who use public social media platforms** to share advice and personal experiences about money, investments, stocks, budgeting, property buying, cryptocurrency, and financial trends.

### Need for Regulation:

The need for regulations arises due to the surge in unregistered investment advisors providing unsolicited stock tips on social media, alongside companies using influencers to manipulate share prices. This trend poses risks of **fraud, digital data theft, and financial crises**, impacting shareholder wealth, ethics, and corporate reputations.

### Ethical issues with finfluencers revolve around several key concerns:

1. **Conflicts of Interest:** Finfluencers may promote certain stocks or financial products without disclosing financial relationships or incentives from companies. This lack of transparency can mislead followers about the impartiality of the advice given.
2. **Misleading Advice:** Some finfluencers may offer financial advice based on personal gain rather than the best interests of their followers. For instance, promoting speculative investments without adequate risk disclosure can lead to financial losses for followers.
3. **Market Manipulation:** Influencers with large followings can potentially manipulate stock prices by promoting or disparaging certain investments. This was evident during the GameStop saga, where social media influencers contributed to volatile trading conditions.
4. **Lack of Qualifications:** Many finfluencers lack formal financial training or qualifications, yet their advice can carry significant influence. This raises concerns about the credibility and reliability of the information they provide.
5. **Regulatory Compliance:** Compliance with financial regulations, such as disclosure requirements and investment advice licensing, may be overlooked by some finfluencers. This can expose followers to risks associated with unregulated financial advice.

### To address ethical issues with finfluencers:

1. Implement stricter regulations and disclosure requirements.
2. Promote transparency in financial advice and conflicts of interest.
3. Educate the public on financial risks and promote literacy.
4. Enforce accountability through penalties for misconduct.
5. Establish industry standards for ethical conduct.

## 3. NET-NEET CRISIS: ETHICAL ASPECTS

**Context:** The **NET** (National Eligibility Test) and **NEET** (National Eligibility cum Entrance Test) controversy high-

lights **systemic failures and poor policy implementation** over the years. **Recurrent paper leaks**, exam cancellations, incorrect results, and unexplained grace marks have **eroded trust** in the National Testing Agency (NTA). The recurrent paper leaks and recruitment scams point to the **lack of fairness** in the governance which is one of the **4 principles of virtue ethics**.

**About Virtue ethics theory:**

1. **Aristotle** is one of the founders of the Virtue Ethics.
2. **Virtue Ethics** focuses on the development of **good character traits (virtues)** rather than on rules or consequences.
3. He says that the **human is a rational animal**. Human has got the ability to reason. This essential characteristic of being rational leads to achieve a particular goal or end which **Aristotle calls virtue**.
4. There are **4 important principles of virtue ethics**: Fairness, Courage, Temperance, Wisdom.
5. **Doctrine of Mean**: Aristotle also says that **virtue is a golden mean**, that which lies in the middle of the two extremes. For example, **courage** as a moral virtue lies **between the two extremes namely cowardice and fool-hardiness**.

**Virtues are of two types:**

1. **Intellectual virtues** are that which can be taught and learnt. Prudence is one such virtue. We can easily learn from others as to how to be prudent.
2. **Moral virtues** can be achieved by repeatedly doing an action that becomes a habit. These cultivated habits lead to achieving ultimate happiness.

**Application to Paper Leaks and Recruitment Scams in India:**

1. **Fairness**: Paper leaks and recruitment scams represent a significant **breach of honesty and integrity**. **Upholding honesty** in academic and recruitment processes **ensures fairness and trustworthiness**, which are essential for societal flourishing.
2. **Justice**: These scams create an **unjust advantage for some individuals**, undermining the principle of fairness. Ensuring just and fair practices in examinations and recruitments promotes equality and meritocracy, contributing to societal well-being.

**Impact on Individuals and Society:**

1. **Individual Character Development**: Engaging in or benefiting from such scams hampers the development of virtuous character traits, promoting greed and dishonesty.
2. **Social Trust and Cohesion**: Scams erode public trust in educational and recruitment institutions, leading to cynicism and societal fragmentation.

**Insta Links:**

[NET-NEET Crisis: The Reasons Behind India’s Failing Exam System](#)

**CONTENT FOR MAINS ENRICHMENT**

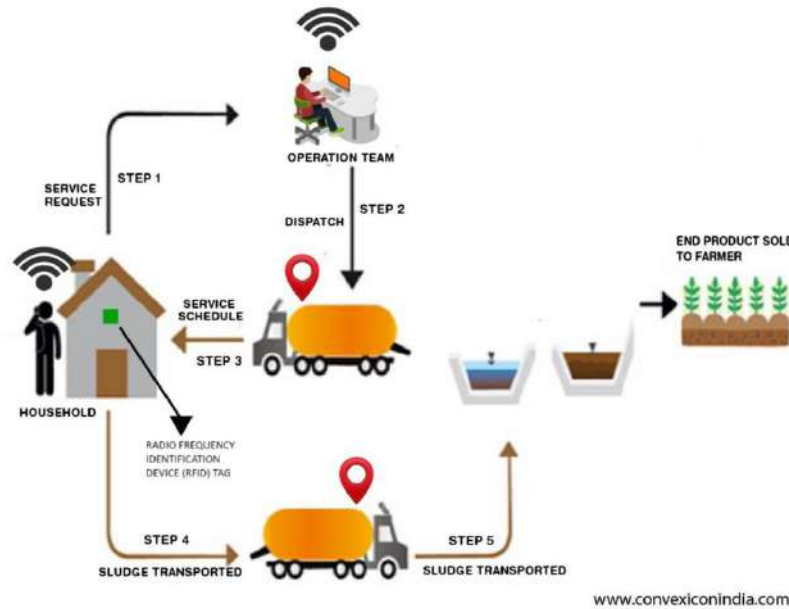
Topic in News	Usage in Answers
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<h3>1. KERALA'S GENDER-NEUTRAL SCHOOL TEXTBOOKS</h3>	<p><b>Context:</b> Kerala's government is promoting <u>gender neutrality</u> by revamping school textbooks to <b>depict men and other family members participating in domestic chores</b>, breaking traditional gender stereotypes.</p> <p>This initiative aims to <b>foster inclusivity among children from an early age</b>. New instructional materials, featuring <b>fathers engaged in kitchen activities</b> traditionally associated with women</p> <p><b>The initiative to revamp school textbooks and promote gender-neutral education depicts several ethical values:</b></p> <ol style="list-style-type: none"> <li>1. <b>Equality:</b> Promotes gender equality by challenging traditional roles and stereotypes.</li> <li>2. <b>Inclusivity:</b> Encourages an inclusive outlook by representing diverse family dynamics.</li> <li>3. <b>Shared Responsibility:</b> Highlights the importance of shared household responsibilities.</li> <li>4. <b>Respect:</b> Fosters respect for all genders by depicting men and women as equal contributors.</li> <li>5. <b>Empowerment:</b> Empowers children to question and reshape societal norms.</li> <li>6. <b>Fairness:</b> Advocates for fair treatment and opportunities for all genders in both public and private spheres.</li> </ol>
<h3>2. CRY LAUNCHES "POORI PAD-HAI DESH KI BHALAI" CAMPAIGN</h3>	<p><b>Context:</b> CRY's seven-week campaign aims to <b>raise awareness and increase girls' school participation</b>.</p> <p><b>Only 60% of girls are enrolled in higher secondary</b> education, per the Union Education Ministry. Only <b>three out of every five girls</b> in India reach 11th and 12th standards.</p> <p><b>About CRY:</b>  <b>Child Rights and You is an Indian non-governmental organization</b> that works towards ensuring children's rights. The organization was started in 1979 by <b>Rippan Kapur</b>, an Air India purser. CRY works with 99 grassroots projects across 19 states in India and has impacted the lives of over three million children.</p>
<h3>3. SKIN BANK</h3>	<p><b>Context:</b> The Army's Research and Referral Hospital in New Delhi has opened a state-of-the-art skin bank, <b>the first within the Armed Forces Medical Services</b>.</p> <p>The skin bank's main functions include <b>harvesting, processing, preserving, and supplying human skin allografts</b> for burn treatment and polytrauma centres.</p> <p>This initiative aims to <b>revolutionize treatment for severe burn injuries and other skin conditions</b> among service members and their families.</p>

## 4. DIGITALIZATION IS REVOLUTIONIZING FAECAL SLUDGE AND SEPTAGE MANAGEMENT (FSSM)

**Context:** Digitalization is revolutionizing faecal sludge and septage management (FSSM) in India, enhancing operational efficiency and sustainability.

Over 1,000 faecal sludge treatment plants (FSTP) have been implemented, but maintaining them remains challenging. Digital monitoring, using sensors, real-time data tracking, and GIS, optimize collection routes, manages treatment facilities, and ensures environmental compliance. Tools like GPS tracking, mobile apps, and GIS technology aid in efficient data collection and mapping.



### Examples:

1. **Odisha’s SUJOG Program:** Utilizes digital platforms for data collection and monitoring across the sanitation value chain.
2. **SaniTrack App (Maharashtra):** Monitors desludging services with GPS tracking.
3. **FSM Tool Box:** Provides comprehensive guidance on planning, designing, and implementing FSSM.
4. **Shit Flow Diagram (SFD):** Assesses sanitation situations for better planning and monitoring.
5. **Geographic Information System (GIS):** Maps sanitation infrastructure for effective planning.
6. **Mobile Apps (SaniTab, mWater):** Streamline field surveys and real-time data collection.
7. **Digital Sensors in Treatment Plants:** Monitor performance and ensure efficiency.
8. **Digital Helpline and Grievance Redressal:** Facilitate reporting and resolving sanitation issues.

**Usage:** The example can be used in E-governance questions of GS2

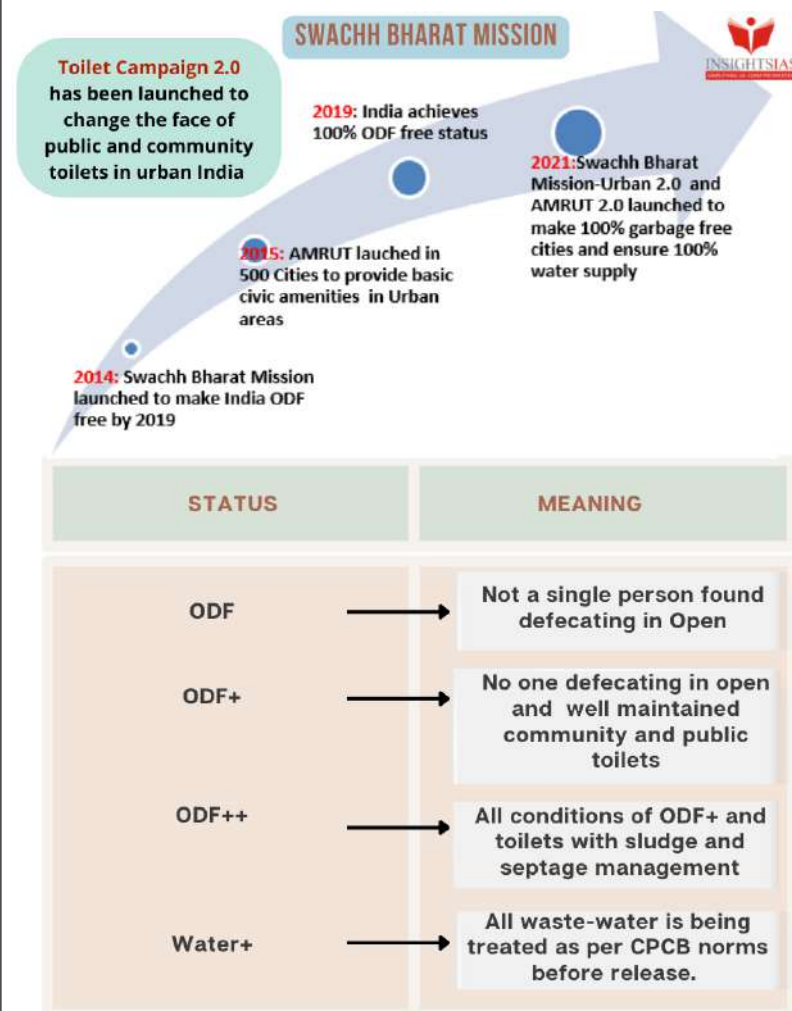
## 5. SAFAI AP- NAO, BIMAARI BHAGAO (SABB) INITIA- TIVE

**Context:** MoHUA has launched the **Safai Apnao, Bimaari Bhagao (SABB) initiative** under **SBM-U 2.0** to bolster Urban Local Bodies' readiness for monsoon challenges.

**Aim:** Aimed at mitigating health risks exacerbated by heavy rainfall, the initiative spans from July 1st to August 31st, 2024. It emphasizes comprehensive cleanliness drives, waste management, water quality assessments, and hygiene promotion across ULBs.

**The initiative demonstrates ethical values such as:**

1. **Community Care:** Prioritizing community health and well-being through proactive measures.
2. **Transparency:** Ensuring transparency in operations and resource allocation for sanitation efforts.
3. **Collaboration:** Encouraging inter-sectoral collaboration to tackle cleanliness and health challenges effectively.
4. **Equity:** Promoting equal access to sanitation and hygiene facilities across urban areas.
5. **Accountability:** Holding stakeholders accountable for maintaining cleanliness standards and health outcomes.



## FACTS FOR PRELIMS

### GS-1

## ART & CULTURE

### 1. KOZHIKODE: INDIA'S FIRST UNESCO 'CITY OF LITERATURE'

**Context:**

Kozhikode, Kerala, has been declared **India's first UNESCO 'City of Literature'**, a prestigious recognition that highlights its rich literary heritage and cultural contributions.

**About Kozhikode:**

It is located on the **Malabar coast of Kerala**, and was designated **India's first UNESCO 'City of Literature' in October 2023**, under the **UNESCO Creative Cities Network (UCCN)**. Known historically as **Calicut**, the city has a rich heritage dating back to medieval times when it was **ruled by the Samoothiris (Zamorins)** and traded spices with Jews, Arabs, Phoenicians, and Chinese. Renowned travellers like **Ibn Battuta and Vasco da Gama** visited its shores.

Today, **Kozhikode boasts over 500 libraries, 70 publishers**, and a strong literary education base, earning it the tag of **'City of Sculptures'** in 2012. June 23 has been declared **'City of Literature' Day in Kozhikode**, celebrating its literary achievements and cultural significance.

**Significance:** The city's designation opens up new avenues for exploration, cultural tourism and preservation.

**Other Indian cities in the UCCN include**

1. **Jaipur:** Crafts and Folk Arts (2015)
2. **Varanasi:** Creative City of Music (2015)
3. **Chennai:** Creative City of Music (2017)
4. **Mumbai:** Film (2019)
5. **Hyderabad:** Gastronomy (2019)
6. **Srinagar:** Crafts and Folk Art (2021)

**About UCCN:**

The **UNESCO Creative Cities Network (UCCN)**, established in 2004, fosters cooperation among cities that prioritize creativity for urban development. Aligned with **Sustainable Development Goal 11 on Sustainable Cities and Communities**, the network encompasses seven creative fields: crafts and folk arts, media arts, film, design, gastronomy, literature, and music.

### 2. ANNUAL AMBUBACHI MELA

**Context:**

Devotees are converging at **Guwahati's Kamakhya temple** for the annual Ambubachi Mela, with festivities underway.

**What is Ambubachi Mela?**

**The Ambubachi Mela is an annual Hindu fair** held at the **historic Kamakhya Temple** in Guwahati. It takes place during the **monsoon season, specifically** in the **Assamese month of Ahaar**, around the middle of June. The festival celebrates the **yearly menstruation course of goddess Maa Kamakhya** and is also known as **Ameti or Tantric fertility festival** due to its association with the Tantric Shakti cult prevalent in eastern India. It is managed jointly by the Assam government and the Kamakhya Temple Management Committee

**About Kamakhya temple:**

**It is situated on Nilachal hills (or Kamagiri)**, and was reconstructed in the **mid-16th century by the Koch dynasty** after being destroyed by **Kala Pahar**. It is revered as one of the **52 Shakti shrines**, where the reproductive organ of Goddess Sati is believed to have fallen. The temple is also a **significant centre for Tantrik worship**, symbolizing the convergence of beliefs and practices between Aryan and non-Aryan communities.



### 3. WORLD CRAFT CITY

**Context:**

**Srinagar** has been **officially recognized** as a **"World Craft City"** by the **World Crafts Council (WCC)**, highlighting its **rich heritage and the exceptional skills of its artisans.**

- This recognition underscores the **city's long-standing tradition of excellence in crafts** such as **papier-mâché, hand-knotted carpets, and pashmina shawls.**
- **Srinagar**, one of the oldest cities in South Asia,

has a history of around **1,500 years** and has been a significant hub on the **Silk Route, facilitating the exchange of arts, crafts, and knowledge.**

#### About WCC:

- Launched in **2014 by World Crafts Council- International.**
- Establishes a dynamic **network of craft cities across the globe**, aligning with the principles of creative economy.



## 4. DODOL

#### Context:

The **Goan dessert Dodol** is poised to **receive a Geographical Indication (GI) tag.**

- While GI tags are valuable for commercial purposes by linking products to their geographic origins and unique qualities, **they often overlook the dynamic and migratory nature of food culture.**



#### About GI Tag:

- A Geographical Indication (GI) is a designation used on products with **a specific geographical origin**, indicating qualities or reputation linked to that origin.
- Internationally recognized under the **Paris Convention, GI is part of Intellectual Property Rights (IPRs), covered by the WTO's TRIPS Agreement, Madrid Agreement, and Lisbon Agreement.**
- In India, GI registration is governed by the **Geographical Indications of Goods (Registration and Protection) Act of 1999.**
- Administered by the Registrar of Geographical Indications (RGI), it identifies agricultural, natural, or manufactured goods, **providing legal protection for 10 years, renewable.**
- The **Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, oversees GI registration**, offering protection against unauthorized use, promoting exports, and ensuring quality and distinctiveness.

## 5. INTERNATIONAL HYDROGRAPHIC ORGANISATION (IHO)

**Context:**

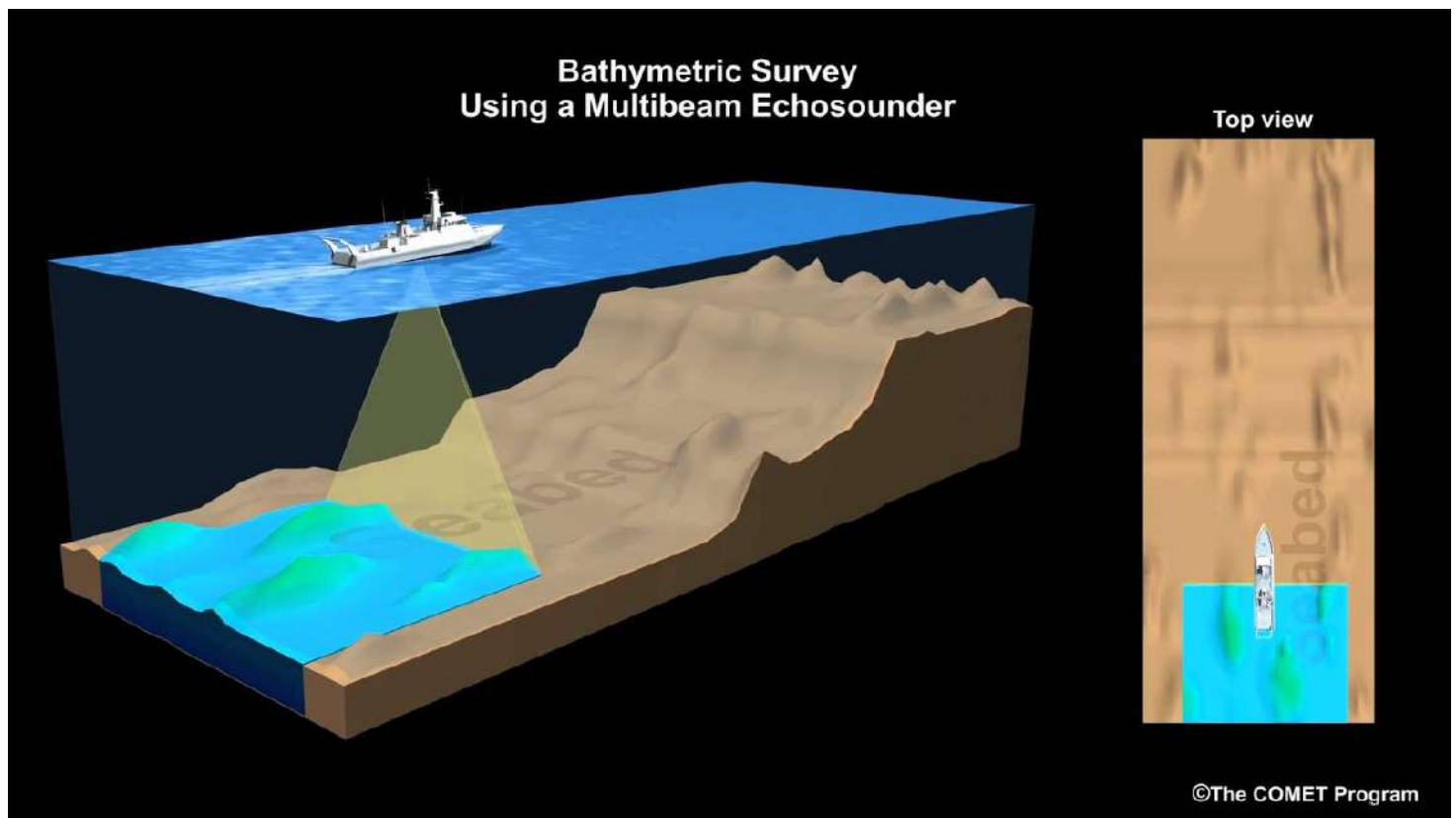
The **International Hydrographic Organisation (IHO) celebrates World Hydrography Day on June 21** each year to raise awareness about hydrography’s role in improving knowledge of seas and oceans.

**What is Hydrography?**

**Hydrography** is the science of measuring and describing the physical features of oceans, seas, coastal areas, lakes, and rivers. The **Indian Naval Hydrographic Department (INHD)**, under the Indian Navy, is responsible for hydrographic surveys and nautical charting in India.

**About the International Hydrographic Organisation (IHO):**

The International Hydrographic Organization (IHO) is an **intergovernmental organization** that ensures the world’s seas, oceans, and navigable waters are surveyed and charted. It coordinates the activities of national hydrographic offices. The IHO Secretariat has been based in **Monaco since its establishment in 1921**. The organization has **100 member states, including India**.



GS-2

Functioning of Parliament and State Legislatures

## 6. RENAMING THE STATES

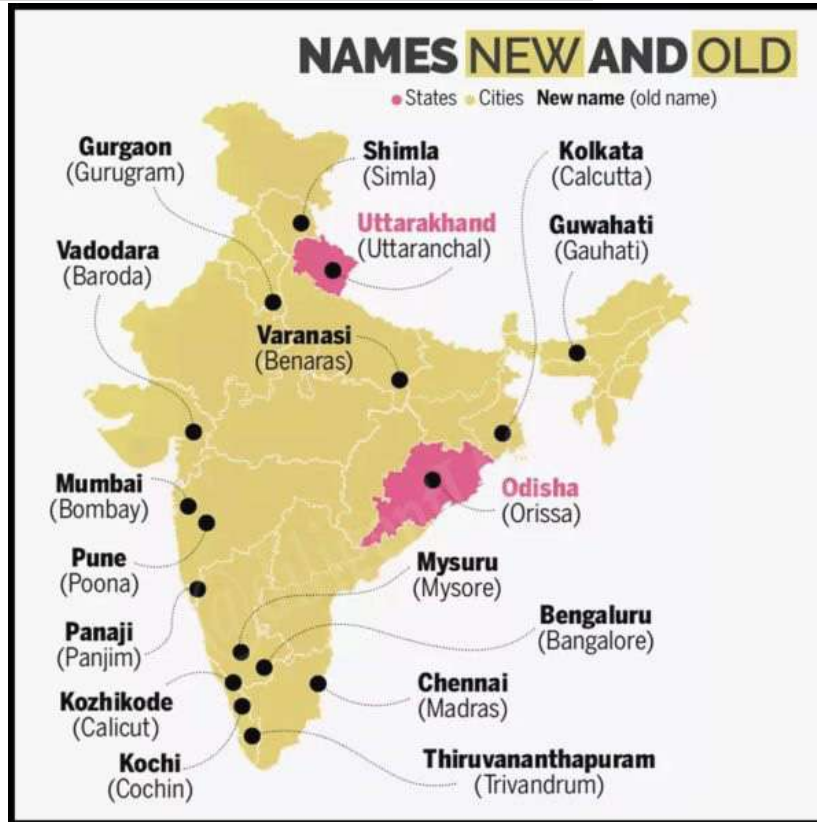
**Context:**

The **Kerala Legislative Assembly** unanimously passed a resolution, **to amend the Constitution** and change the **state’s name from ‘Kerala’ to ‘Keralam’**.

- This resolution, calls for **invoking Article 3 of the Indian Constitution** to update the name in **the First Schedule**.

### Procedure for renaming the states:

- Renaming a state in India is **governed by Article 3 of the Constitution**, which **empowers Parliament to alter the name of any state by law.**
- The process can be initiated by **either Parliament or the State Legislature.** A bill must **be introduced in Parliament on the recommendation of the President, who then refers it to the state legislature for their views.**
- The **bill is passed in each house by a simple majority.** Once the President assents, **the name change is recorded in the First and Fourth Schedules of the Constitution.**



## 7. DEPUTY SPEAKER

### Context:

The [Deputy Speaker](#) post in the Lok Sabha has been vacant from 2019 to 2024.

- With the **Opposition's increased strength**, they are pushing for this position, **which they held continuously from 1990 to 2014.**

### About Deputy Speaker:

- The **role of the Deputy Speaker**, outlined **in Articles 93 and 95(1) of the Constitution**, is to perform **the duties of the Speaker when the position is vacant.**
- The **Deputy Speaker is elected by a simple majority in the Lok Sabha**, typically during the second session of the new House.
- Despite the constitutional requirement for both Speaker and Deputy Speaker to be elected "as soon as may be," **there is no specified timeframe, allowing delays in appointment.**

## 8. LEADER OF OPPOSITION

### Context:

The position of [Leader of Opposition](#) in Lok Sabha has been filled, which was **vacant for 10 years** because **no party had numbers equalling a tenth of the strength of the House**, which has been by practice a requirement to lay claim to the post.

- The role of the Leader of Opposition in the Lok Sabha includes **representing the opposition in the House, voicing the opposition's views, and facilitating the smooth functioning of parliamentary business.**
- The position, **officially described in The Salary and Allowances of Leaders of Opposition in Parliament**

**Act, 1977**, is occupied by the **leader of the largest party in opposition**.

- In practical terms, **the Leader of Opposition participates in high-powered committees for key appointments, such as the Director of CBI and the Central Vigilance Commissioner.**
- This **role is crucial for ensuring checks and balances** within the government.
- The Leader of Opposition **sits in the front row and enjoys certain ceremonial privileges.**

Governance

## 9. E-SAKSHI MOBILE APPLICATION

**Context:**

The **Ministry of Statistics and Programme Implementation (MoSPI)** organized a two-day training workshop for the **revised fund flow procedure under the MPLAD Scheme** using the e-SAKSHI Portal.

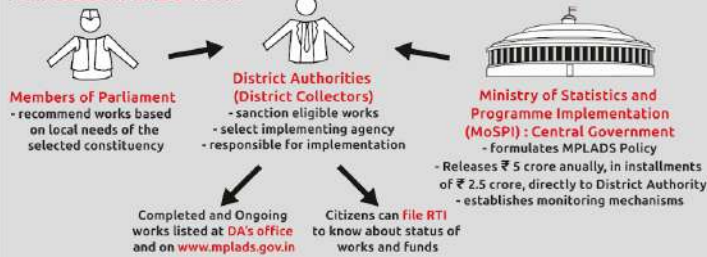
**What is the e-SAKSHI Portal?**

eSAKSHI portal is an **end-to-end solution for efficient and transparent implementation** of the MPLAD scheme.

**About MPLAD:**

1. **Type:** Central Sector Scheme
2. **Ministry:** Ministry of Statistics and Programme Implementation
3. **Allocation:** Rs. 5 crore per MP for developmental works to create durable community assets based on local needs.
4. **Funds:** Non-lapsable, carried forward to the next year.
5. **Allocation Targets:** At least 15% for Scheduled Caste areas and 7.5% for Scheduled Tribe areas.

**How does MPLADS work?**



## 10. FAST TRACK IMMIGRATION TRUSTED TRAVELLER PROGRAMME

**Context:**

The Union Home Minister inaugurated **the 'Fast Track Immigration Trusted Traveller Programme' (FTI-TTP)**.

- This initiative aims to **expedite immigration for pre-verified travellers, reducing airport crowding.**
- Jointly developed by the **Ministries of Home Affairs**

**and Civil Aviation** and the Bureau of Immigration, the **program uses e-gates for automated checks.**

Initially available at major airports, it will first serve Indian citizens and OCI cardholders, later expanding to foreign travellers.



## 11. ULLAS - NEW INDIA LITERACY PROGRAMME (NILP)

**Context:**

Recently **Ladakh** has been **declared fully functionally literate** under **the ULLAS - Nav Bharat Saaksharta Karyakram**, achieving a **literacy rate of over 97%.**

The **ULLAS - Nav Bharat Saaksharta Karyakram (New India Literacy Programme)**, a centrally sponsored scheme from 2022-2027 aligned with NEP 2020. **The scheme has five components**, namely;

- **Foundational Literacy and Numeracy,**
- **Critical Life Skills** (which include, financial literacy, digital literacy, legal literacy, healthcare and awareness, childcare and education, family welfare, etc.),
- **Basic Education** (includes preparatory (classes 3 - 5), middle (classes 6- 8), and secondary stage (classes 9-12) equivalency),
- **Vocational Skills** (Skill development will be a part of the continuous learning process for neo-literates to obtain local employment),
- **Continuing Education** (This includes engaging holistic adult education courses in arts, sciences, technology, culture, sports, recreation, as well as other topics of interest or use to local learners).



International Relations

## 12. DRAFT RECIPROCAL EXCHANGE OF LOGISTICS AGREEMENT (RELOS)

**Context:**

Russia has approved **a draft logistics agreement with India**, ending years of delays.

**About Reciprocal Exchange of Logistics Agreement (RELOS)**

RELOS is an **administrative arrangement between India and Russia** to enhance military cooperation.

**Purpose:** It streamlines military logistics support, making joint operations more efficient and cost-effective.

**Significance:**

- Sustained Operations:** Facilitates replenishment of supplies, providing berthing facilities for troops, warships, and aircraft during both wartime and peacetime missions.
- Strategic Advantages:** Enables smoother use of host nation's logistics networks, swift crisis response, and reduces overall mission costs.
- Expanded Military Reach:** Enhances India's maritime influence and awareness, and improves information exchange about maritime activities.
- Balancing Quad Agreements:** Balances India's logistics agreements with Quad countries and Russia's non-Quad stance, countering US and Chinese regional influence.
- Scientific Interconnections:** Supports India's Arctic research, focusing on links between Arctic Sea ice melt and Indian monsoon systems.

**India's Logistics Agreements with Various Countries:**

Country	Agreement Details
USA	<b>GSOMIA</b> (2002): Facilitates sharing military intelligence. <b>LEMOA</b> (2016): Allows mutual use of military logistics facilities. <b>BECA</b> (2020): Provides access to U.S. geospatial intelligence data. <b>COMCASA</b> (2018): Enables transfer of encrypted communication equipment.
France	Facilitates logistical support during joint exercises, port visits, humanitarian efforts and maritime intelligence sharing.
Australia	<b>MLSA</b> (2020): Emphasizes shared vision for Indo-Pacific maritime cooperation.
Japan	<b>ACSA</b> (2020): Allows close coordination of services and supplies between armed forces.

GS-3

Indian Economy

## 13. PRIORITY SECTOR LENDING (PSL)

**Context:**

Reserve Bank of India (RBI) revises Priority Sector Lending (PSL) norms

**What is Priority Sector Lending (PSL)?**

Priority Sector Lending (PSL) is a **mandate by the Reserve Bank of India (RBI)** to ensure that **vulnerable sectors receive adequate credit**. The purpose of PSL is to **promote inclusive development by directing funds** to sectors such as agriculture, MSMEs, education, housing, social infrastructure, renewable energy, and others.



**Formalized in 1972**, PSL ensures the flow of credit to creditworthy sectors that struggle to access formal financial institutions. Banks must allocate **a portion of their Adjusted Net Bank Credit (ANBC) or Credit Equivalent of Off-Balance Sheet Exposure (CEOBE)**, whichever is higher, towards PSL. The target is

- 40% for scheduled commercial banks** and foreign banks with 20 or more branches
- 75% for Regional Rural Banks (RRBs)** and Small Finance Banks (SFBs)
- 65% for Urban Cooperative Banks (UCBs)** in FY 2024-25, increasing to 75% in FY 2025-26.

It applies to **all commercial banks, including Regional Rural Banks (RRBs), Small Finance Banks (SFBs), Local Area Banks, and Primary (Urban) Cooperative Banks (UCBs)**.

## 14. PROHIBITION OF INSIDER TRADING (PIT)

### Context:

The **Securities and Exchange Board of India (Sebi)** has amended its **Prohibition of Insider Trading (PIT) regulations**, offering more **flexibility to senior executives of listed companies** who need to **submit a “trading plan” for dealing with their shares.**

- These insiders, **who typically have access to unpublished price-sensitive information (UPSI)**, must now specify **share price, amount, and transaction date in advance.**
- Key changes include **reducing the minimum cool-off period from six to four months** and allowing a **20% price range for share transactions.**

Criteria for Maharatna Status	Criteria for Navratna Status	Criteria for Miniratna Status
1. Shall have <b>Navratna status</b>	1. Miniratna Category - I or Schedule 'A' CPSEs	Miniratna Category-I status: <ul style="list-style-type: none"> <li>• <b>Made profit</b> in the last 3 years continuously</li> <li>• <b>Pre-tax profit</b> is Rs.30 crores or more in at least 1 of the 3 years</li> <li>• Having <b>Positive net worth status</b></li> </ul>
2. <b>Listed on the Indian stock exchange</b> with prescribed public shareholding	2. 'Excellent' or 'Very Good' rating in 3 of last 5 years	Miniratna Category-II status: <ul style="list-style-type: none"> <li>• <b>Made profit</b> for the last 3 years continuously</li> <li>• Having <b>positive net worth status.</b></li> <li>• <b>Not defaulted</b> in the repayment of loans/interest payment on any loans due to the Government.</li> <li>• <b>Not dependent upon budgetary support</b> or Government guarantees.</li> </ul>
3. <b>Average annual turnover</b> > Rs. 25,000 crore (last 3 years)	3. <b>Composite score of 60 or above</b> in the following 6 performance indicators including	
4. <b>Average annual net worth</b> > Rs. 15,000 crores (last 3 years)	Net Profit to Net Worth, Cost of Services, Earning per share, etc.	
5. <b>Average annual net profit after tax</b> > Rs. 5,000 crores (last 3 years)		
6. <b>Significant global presence/international operations</b>		

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## 16. INDIA'S FOREX RESERVE

### Context:

India's forex kitty jumps by USD 816 mln to USD 653.71 bln

- India's forex reserves witnessed an **increase of USD 816 million**, reaching **USD 653.711 billion** for the week ending June 21, according to the Reserve Bank of India (RBI).
- **Components of Forex Reserves**
  - **Foreign Currency Assets (FCA):** it is the major component of India's forex reserves.
    - It has decreased by USD 106 million to USD 574.134 billion.
    - FCA expressed in dollar terms reflects the effect of appreciation or depreciation of non-US currencies like the euro, pound, and yen.
  - **Gold Reserves:** it has increased by USD **988 million**. Total gold reserves stood at USD **56.956 billion** during the week.
  - **Special Drawing Rights (SDRs):** it decreased by **USD 57 million**. SDRs totaled USD **18.049 billion**.
  - **India's Reserve Position with the IMF:** Decreased by **USD 9 million**. The reserve position was **USD 4.572 billion**.



### Securities and Exchange Board of India (Sebi)



**Context:** The Securities and Exchange Board of India (Sebi) recently unveiled a new logo on the occasion of its **35th anniversary**.

<b>Securities and Exchange Board of India (est. 1988; HQ: Mumbai)</b> is the statutory regulatory body for securities and commodity market in India under the ownership of <b>Ministry of Finance</b> .	
Regulatory Authority	Primary market, Secondary Market, Mutual fund, Foreign Institutional Investment
Background	Initially a <b>non-statutory body</b> without any statutory power. It became autonomous and <b>given statutory powers</b> by <b>SEBI Act 1992</b>
Aim	To protect the interests of investors in securities and to promote the development of, and regulate the securities market
Powers & Functions	<ul style="list-style-type: none"> <li>• It is a <b>quasi-legislative and quasi-judicial</b> body that can draft regulations, conduct inquiries, pass rulings, and impose penalties.</li> <li>• Its primary objective is to <b>protect the interests of Indian investors</b> in the securities market and promote its development.</li> <li>• SEBI also <b>regulates the tasks entrusted to depositors, credit rating agencies, custodians of securities, foreign portfolio investors, and other participants.</b></li> <li>• It <b>educates investors about securities markets</b> and their intermediaries</li> <li>• It <b>prohibits fraudulent and unfair trade practices</b> within the securities market and related to it.</li> </ul>
Expansion of its powers	<ul style="list-style-type: none"> <li>• It can regulate <b>any money pooling scheme worth Rs. 100 crore</b> or more and attach assets in cases of non-compliance.</li> <li>• SEBI Chairman has the authority to order <b>"search and seizure operations"</b></li> </ul>
SEBI's structure	SEBI Board consists of a <b>Chairman</b> (for 3 years terms) and several other <b>whole time and part time members.</b>
Securities Appellate Tribunal (SAT)	It has been constituted to <b>protect the interest of entities</b> that feel aggrieved by SEBI's decision. SAT consists of a Presiding Officer and two other Members. It has the same powers as <b>vested in a civil court.</b>

## 15. 'MINI RATNA' STATUS (CATEGORY-1) FOR CENTRAL ELECTRONICS LIMITED (CEL)

### Context:

Recently **Central Electronics Limited (CEL)** has been granted **"Mini RATNA" status (Category-1).**

### Agriculture

## 17. UP-PRAGATI ACCELERATOR PROGRAM

### Context:

KisanKraft Ltd, an **agricultural firm based in Bengaluru**, has joined the World Bank's Water Resource Group's (WRG) **low methane rice project** to promote direct seeded rice (DSR) in Uttar Pradesh.

**KisanKraft's DSR varieties use less water, reduce the need for pesticides and fertilizers, and do not require stagnant water.** The initiative is part of the **UP-PRAGATI Accelerator program** aiming to promote DSR cultivation

on 250,000 hectares over the next five years, enhancing water efficiency and low-carbon practices.

**What is the UP-PRAGATI Accelerator program?**

The **Uttar Pradesh Program for Agricultural Transformation and Increased Incomes (UPPAP)** aims to enhance agricultural advancements and boost incomes by promoting water-use efficiency and low-carbon practices through technological and institutional innovations.

Launched by the **Uttar Pradesh Multi-Stakeholder Platform**, it is supported by the **2030 Water Resources Group (WRG)** and the Bill and Melinda Gates Foundation.

**About Low Methane Rice Project (LMRP)**

The LMRP is an initiative of the **World Bank’s 2030 Water Resources Group (WRG)**, a multi-donor trust fund hosted by the World Bank Group.

**About Direct Seeded Rice:**

Direct seeded rice is a **practice of sowing paddy which involves planting rice seeds directly into the field**, instead of the traditional method of growing seedlings in nurseries and then transplanting them into the fields.



Science & Technology

**18. CLAUDE 3.5 SONNET**

**Context:**

**Claude 3.5 Sonnet**, the latest AI model from Anthropic, represents a significant advancement in the field of large language models (LLMs).

**What is Claude 3.5 Sonnet?**

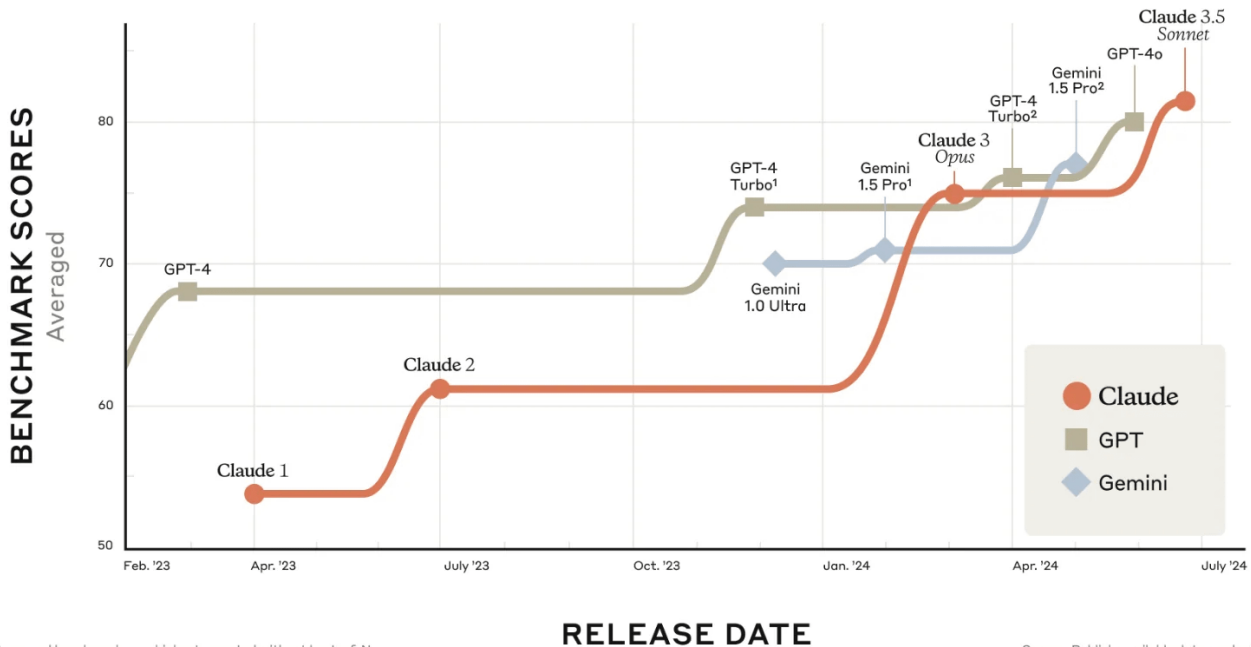
**It is the latest AI model developed by Anthropic**, positioned within their family of generative pre-trained transformers (GPTs).

**Comparative table outlining the key features and capabilities of Claude 3.5 Sonnet, GPT-4o, and Gemini-1.5 Pro:**

Feature	Claude 3.5 Sonnet	GPT-4o (OpenAI)	Gemini-1.5 Pro (Google)
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<b>Speed and Efficiency</b>	Operates at twice the speed of Claude 3 Sonnet	Optimal balance of speed and computational resources	Efficient processing of large datasets
<b>Performance</b>	Outperforms competitors in coding, reasoning tasks	Versatile in natural language understanding and generation	Strong in information retrieval and context understanding
<b>Benchmarks</b>	Leading in coding proficiency, reasoning, knowledge	Not specified, but designed for diverse text applications	Competes well in complex information environments
<b>Application Focus</b>	Suitable for nuanced understanding, humour, complex instructions	Widely applicable across domains, text generation	Integrates with Google ecosystem, multimedia processing
<b>Vision Capabilities</b>	Strong in visual reasoning, transcribing from images	Primarily text-based, lacks specific visual processing	Advanced AI for image recognition and multimedia contexts
<b>Company</b>	Anthropic	OpenAI	Google

## AI model release and capabilities timeline



Averaged benchmarks are highest reported without best-of-N: MMLU, GPQA, MATH, MGSM, DROP F1, HumanEval pass@1, MMMU, AIZD, ChartQA, DocQA, Mathvista

Source: Publicly available data; evaluation scores are the average of representative scores found online. 1 = Initial release; 2 = Second release

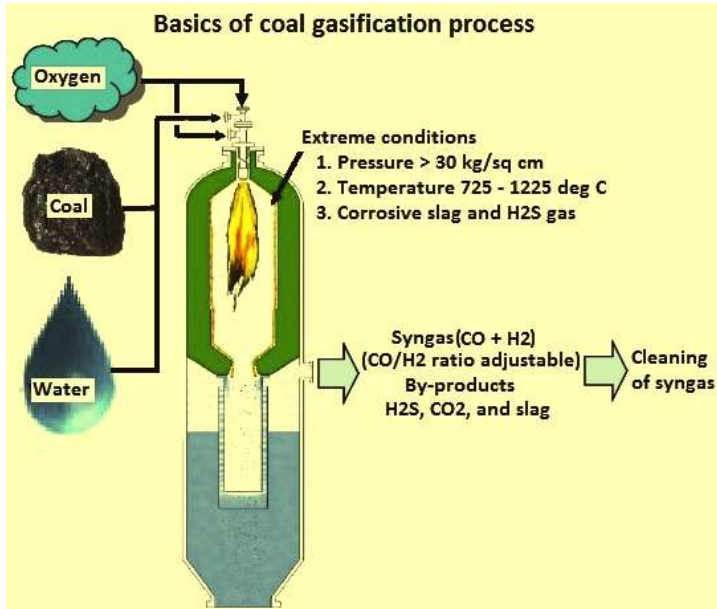
## 19. INDIA'S FIRST PILOT PROJECT FOR UNDERGROUND COAL GASIFICATION (UCG)

### Context:

The Ministry of Coal has initiated India's first pilot project for Underground Coal Gasification (UCG) in Jharkhand, aiming to revolutionize the coal industry.

### What is Coal Gasification?

Coal gasification is a process that **converts underground coal into valuable gases such as methane, hydrogen, carbon monoxide, and carbon dioxide**. This is achieved by partially oxidizing coal using air, oxygen, steam, or CO<sub>2</sub> under controlled conditions to **produce syngas, a mixture of carbon monoxide and hydrogen**. Syngas can be used for power generation and making methanol.



### Government Initiatives:

India has initiated the [National Coal Gasification Mission](#), aiming for 100 million tons of coal gasification by 2030, **allowed 100% FDI** in coal mining, and implemented the [Viability Gap Funding scheme](#) for promoting coal and lignite gasification projects.

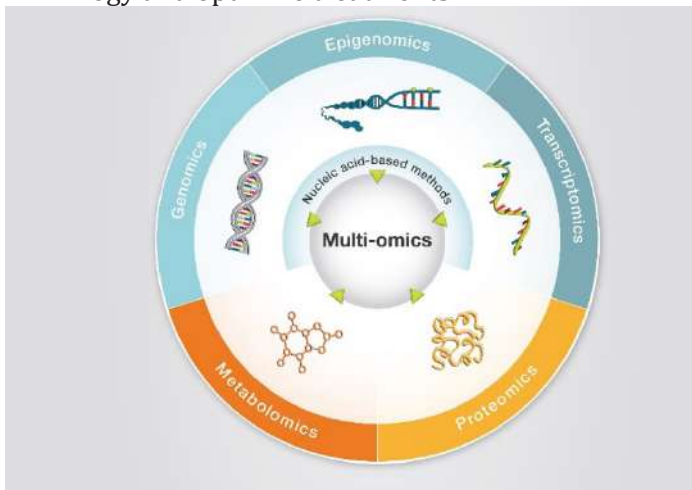
## 20. MULTI-OMICS

### Context:

India's use of **multi-omics—integrating genomics, metagenomics, proteomics, transcriptomics, and epigenomics**—is revolutionizing the **detection and treatment of diseases like tuberculosis (TB), cancers, and antimicrobial resistance**.

### Major initiatives include:

- **Genome India Project:** Sequenced 10,000 genomes from 99 ethnic groups to develop a reference genome, aiding in low-cost diagnostics and research.
- **IndiGen Project:** Sequenced genomes of 1,008 individuals to analyze genetic disease epidemiology and optimize treatments.



## 21. HYDROGEN GAS FROM A MIXTURE OF METHANOL AND PARA-FORMALDEHYDE

### Context:

Researchers at the [Indian Institute of Science Education and Research \(IISER\) Tirupati](#) have developed an **efficient method for generating hydrogen gas from a mixture of methanol and paraformaldehyde**.

- This innovative process, which operates under **mild conditions using commercially available nickel catalysts**, offers significant **potential for advancing the “Hydrogen economy.”**
- This method **does not require bases or activators** and has **shown exceptional performance, producing hydrogen effectively used in chemical synthesis**.

Supported by ANRF and published in *Catalysis Science & Technology*, this research highlights the **potential of methanol and paraformaldehyde as viable hydrogen carriers, contributing to sustainable and renewable energy solutions**.

## 22. SPACE MAITRI

### Context:

**ISRO** is set to **launch the 450kg Optimus spacecraft**, Australia's largest designed and built spacecraft, on its [Small Satellite Launch Vehicle \(SSLV\)](#).

- This mission, **named Space MAITRI (Mission for Australia-India's Technology, Research, and Innovation)**, marks a significant collaboration between **NewSpace India Limited (NSIL) and Australia's Space Machines Company**.
- The mission underscores the **strategic partnership between India and Australia**, focusing on **sustainable space exploration and debris management**.

### About Space MAITRI:

- It aims to **foster closer ties among commercial, institutional, and governmental** space organizations from **both countries in the space domain**.

### [Environment & Ecology](#)

## 23. GLOBAL ENVIRONMENT FACILITY (GEF)

### Context:

The Global Environment Facility (GEF) Council has **approved over \$736.4 million** in funding to address pressing environmental challenges worldwide.

Funding from the **GEF Trust Fund, Least Developed**

**Countries Fund (LDCE), and Global Biodiversity Framework Fund (GBFF)** supports diverse projects including:

1. **Great Green Wall (GGW)** for landscape restoration in Africa's Sahel region
2. **Sustainable Cities Integrated Program (SCIP)** spanning 20 countries to catalyze urban system transformation
3. **India: The CoHABITAT** Project focuses on conserving wetlands, forests, and grasslands along the **Central Asian Flyway**, implemented by UNDP in collaboration with the **Ministry of Environment, Forest, and Climate Change**.

#### About GEF

**GEF (est. during 1992 Rio Conference; HQ: Washington, D.C)** is a multi-stakeholder partnership to tackle various environmental issues. Its funding is provided by participating donor countries and is mobilized through a replenishment process every four years.

#### It funds:

1. Convention on Biological Diversity (CBD).
2. United Nations Framework Convention on Climate Change (UNFCCC)
3. Stockholm Convention on Persistent Organic Pollutants (POPs)
4. UN Convention to Combat Desertification (UNCCD)
5. Minamata Convention on Mercury

#### About Kunming-Montreal Global Biodiversity Framework:

It is a **global agreement adopted at the 15th Conference of Parties (2022)** to the UN Convention on Biological Diversity (CBD). It sets forth **four goals and 23 targets** to be achieved by 2030 to address the biodiversity crisis. The framework aims to restore and conserve ecosystems, reduce species extinction risk, mitigate pollution, promote sustainable practices, and allocate financial resources for biodiversity conservation. It also emphasizes the need for international cooperation and monitoring to track progress.

## 24. THREATS TO FLAMINGOS AT LAKE NATRON, TANZANIA

#### Context:

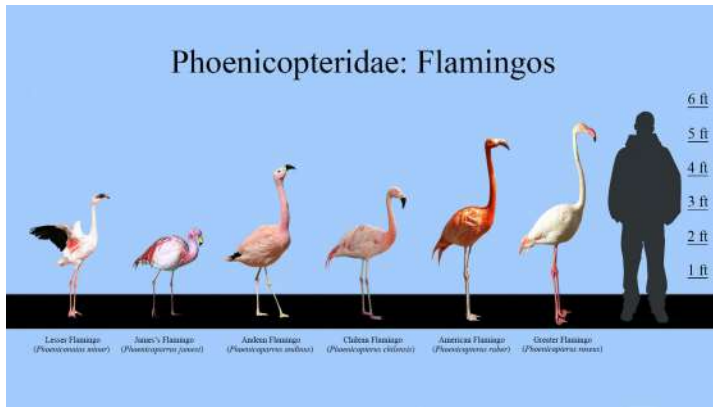
Millions of flamingos at Lake Natron in Tanzania face threats from climate change and human activities, which disrupt their habitat and food sources.

#### About Flamingos:

**They are wading birds in the family Phoenicopteridae**, the only family in the order Phoenicopteriformes. There are four species in the Americas, including the Caribbean, and two species native to Afro-Eurasia.

#### There are six extant species of flamingos:

1. **Greater flamingo** (Africa, southern Europe, southern and southwest Asia)
2. **Lesser flamingo** (Africa's Great Rift Valley, northwest India)
3. **Chilean flamingo** (temperate South America),
4. **James's or Puna flamingo** (high Andes in Peru, Chile, Bolivia, Argentina),
5. **Andean flamingo** (high Andes in Peru, Chile, Bolivia, Argentina)
6. **American or Caribbean flamingo** (Caribbean islands and Latin America)



## Lake Natron

Lake Natron, a salt or alkaline lake in northern Tanzania's Ngorongoro District, is part of the East African Rift and a Ramsar Site of international significance. It is the only regular breeding area for Africa's lesser flamingoes, though this habitat faces threats from planned development projects.



## 25. MAINLAND SEROW

**Context:** A **mainland serow**, a **vulnerable antelope-like mammal**, has been recorded at the **lowest elevation in Assam's Raimona National Park**.

- This discovery is significant as the **mainland serow typically inhabits altitudes between 200 and 3,000 meters, primarily in Bhutan.**
- Species of serow native to the **Himalayas, South-east Asia and China.**
- **IUCN Status- Vulnerable**  
**CITES- Appendix I**



## 26. RHISOTOPE PROJECT

**Context:**

**South African scientists make rhino horns radioactive to curb poaching**

**About the Rhisotope Project:**

- The Rhisotope Project, **initiated in 2021 by Prof. James Larkin**, involves **inserting measured quantities of radioisotopes** into the horns of live rhinos..
- **Aim :** By embedding **"two tiny little radioactive chips"** into the horn, the project aims to render the horn **"useless" and "poisonous"** for human consumption.
- The final phase includes **follow-up care and blood samples** to ensure animal protection. The radioactive material **lasts five years**, proving more cost-effective than dehorning every 18 months.
- **Benefits:** The procedure, conducted on sedated rhinos, is safe, with radiation doses low enough not to harm their health or the environment.
  - Additionally, radioactively treated horns are more likely to be **detected at international borders**, increasing the chances of **exposing and prosecuting smuggling syndicates** under anti-terrorism laws.
- **Need:**
  - Rhinoceros horns are **highly sought after on black markets**, where their price by weight rivals that of **gold and cocaine.**
  - Previous anti-poaching strategies like **de-horning and poisoning horns** have failed to deter poachers.

Defence

## 27. CYBER MERCENARIES

**Context:**

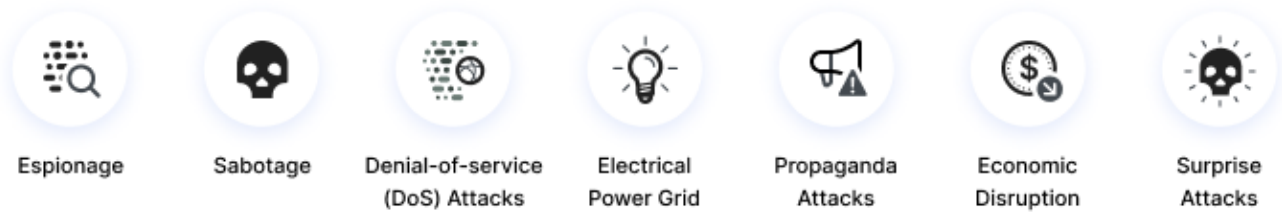
UN Secretary-General António Guterres warned about escalating cybersecurity threats and misuse of digital technology through Cyber Mercenaries, highlighting growing

sophistication in malware like trojans and AI-enabled cyber operations.

**About Cyber mercenaries:**

**They are individuals or private groups hired to conduct cyber operations**, both offensive and defensive, targeting specific networks and infrastructure. They facilitate **spying on internet-connected devices such as computers and phones**. Examples of cyber mercenaries include **Lazarus, Ocean Lotus group, and NSO group**. This practice operates in a legal grey area due to the absence of international conventions regulating their activities.

## 7 Types of Cyberwarfare Attacks



## 28. JAVELIN ANTI-TANK MISSILES

**Context:**

**India and the US recently** discussed the co-production of **American Javelin anti-tank missiles to meet Indian military needs**.

- The Javelin anti-tank weapon system is a **premier, single-man-portable, medium-range missile system**.
- It uses a **“fire-and-forget” principle**, automatically guiding **itself to the target after launch, allowing the gunner to take cover and avoid counter-fire**.



## 29. MEDIUM RANGE-MICROWAVE OBSCURANT CHAFF ROCKET (MR-MOCR)

**Context:**

The **Defence Research and Development Organisation (DRDO)** handed over the **Medium Range-Microwave Obscurant Chaff Rocket (MR-MOCR)** to the **Indian Navy**.

- It **obscures radar signals and creates a microwave shield**, reducing radar detection of platforms and assets.
- The rocket uses **special fibres to form a microwave obscurant cloud** in space when fired, **effectively covering a wide area**.
- Chaff is a **passive electronic countermeasure** consisting of electrically conducting **fine fibre of resonant length to act as a microwave dipole**



## MAPPING

### INTERNATIONAL

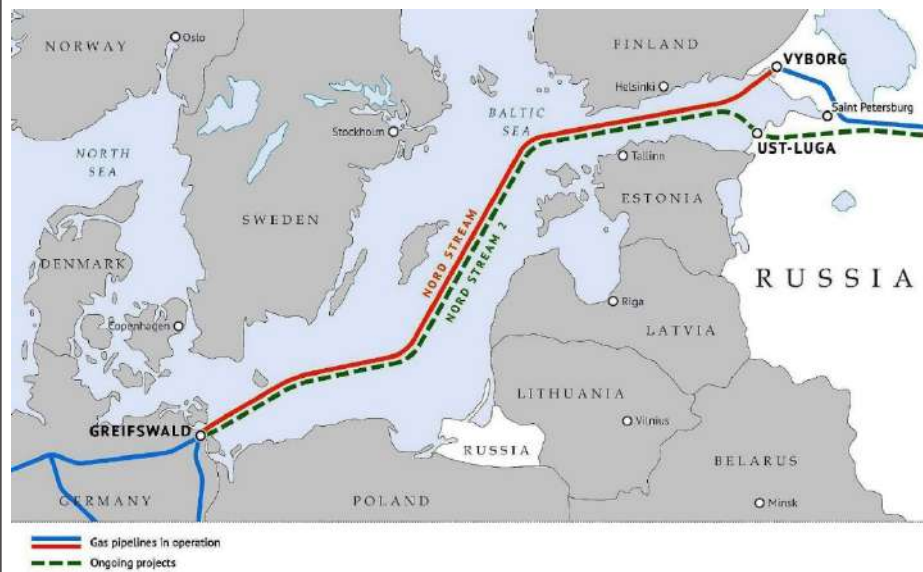
Place	Why in News?
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# 1. NORD STREAM METHANE LEAKS

**Context:** Thousands of tonnes of methane from the September 2022 Nord Stream pipeline explosions dissolved in the Baltic Sea, raising concerns about marine life and carbon cycles.

A study found that between 10,000 and 50,000 tonnes of methane likely dissolved in the water, potentially altering microbial life and local carbon budgets.

The Nord Stream pipelines are crucial conduits for transporting natural gas from Russia to Europe. Nord Stream 1, completed in 2011, runs from Vyborg in Russia to Lubmin near Greifswald, Germany, with majority ownership by the Russian state-owned gas company Gazprom. Before the war, this pipeline supplied 40% of Europe’s pipeline gas, which has now decreased to 9%. Nord Stream 2 is a 1,200-km pipeline extending from Ust-Luga in Russia to Greifswald in Germany, designed to carry 55 billion cubic meters of gas annually. This pipeline crosses the Exclusive Economic Zones (EEZs) of Russia, Finland, Sweden, Denmark, and Germany, as well as the territorial waters of Russia, Denmark, and Germany, highlighting its extensive reach and strategic importance.



## 2. NAMAQUAL- AND (AFRICA)

**Context:** Scientists recently discovered that termite mounds along the Buffels River in Namaqualand are the world's oldest inhabited, dating back 34,000 years.

### What is Namaqualand?

**Namaqualand is a desert region in southwestern Africa**, extending from the Karas region in Namibia to the Northern Cape province in South Africa. It stretches from the **Namib Desert in the west to the Kalahari Desert in the east**. The northern part, known as Great Namaqualand, is in Namibia, while the southern part, called Little Namaqualand, is in South Africa. This **arid area is known for its succulents and spectacular spring wildflower blooms** following winter rains. Historically, the **Nama people** lived there, mining copper and, later, diamonds were discovered in the early 1900s.



### 3. DENMARK TO INTRODUCE WORLD'S FIRST CO2 TAX ON FARMS

**Context:** [Denmark](#) will impose a **tax on livestock CO2 emissions from 2030**, the first country to do so, aiming to meet its 2030 goal of reducing greenhouse gas emissions by 70% from 1990 levels.

The government reached a compromise with farmers, industry, labour unions, and environmental groups. The tax will start at **300 Danish crowns per tonne of CO2, rising to 750 crowns by 2035**, with income tax deductions and subsidies to support farmers. This initiative is expected to inspire similar actions in other countries.

[Denmark](#) is a Nordic country, part of the **Jutland Peninsula**, shares a **territorial boundary with Germany** to the south and is bordered by the North Sea on the west coast and Kattegat Bay on the east coast. Geographically, Denmark is an archipelago of around 400 islands, with Zealand being the largest.



INDIAN

Place	Why in News?
<p><b>4. SRIKAKULAM (ANDHRA PRADESH)</b></p>	<p><b>Context:</b> Srikakulam boasts significant Buddhist sites, Neolithic caves, and ancient temples. Historians, academics, and enthusiasts are working to restore the prominence of Srikakulam’s ancient history.</p> <p>Srikakulam, formerly known as <b>Chicacole during British colonial</b> rule, boasts a rich history. It was once part of the <b>Kalinga Dynasty and later came under the Gajapati Kingdom</b> during the medieval period, followed by the Eastern Chalukyas of Vengi, and was also part of the <b>Kakatiya and Vijayanagara Empires</b>. The district is home to significant cultural sites, including the Buddhist locations of <b>Salihundam</b>, from where Buddhism spread to Sumatra and other eastern countries, and Danthapuri. Jainism is represented in <b>Tangamayyakonda and Rottavalasa</b> villages. Notable Hindu temples include <b>Srimukhalingam, Srikurmam, and Arasavilli</b>. Additionally, the district features Neolithic-era caves in <b>Nandi Hills</b>, showcasing its diverse and ancient heritage.</p> <div data-bbox="472 801 1257 1556" data-label="Image"> </div>