



ENSURE IAS

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A. POLITY & GOVERNANCE

1. Return of Coalition Government in India

1. After a **decade** in power, the Bharatiya Janata Party (BJP) was unable to secure a majority in the Lok Sabha (Lower House of Parliament) in the recent elections.
2. However, they are set to form a government with the support of coalition partners under the National Democratic Alliance (NDA). This marks a return to coalition Government in India.

Understanding Coalition Government

1. **Etymology:** The term coalition is derived from the Latin word *coalitio* meaning to grow together.
2. **Definition:** When **several political parties join hands to form a government** and exercise political power based on a common agreed programme/agenda, we describe the system as coalition politics or coalition government.
3. **Purpose:** Coalitions **usually Occur in modern parliaments** when no single political party can muster a majority of votes. **‘Two or more parties**, who have enough elected members, between them to form a majority, may then be able to agree on a common manifesto that does not require too many drastic compromises with their individual policies, and can proceed to form a government.
4. **Cooperative Arrangement:** Coalition denotes a cooperative arrangement under which distinct political parties, or at all events members of such parties, unite to form a government or ministry.

Features of coalition politics

The features or implications of coalition politics or coalition government are summarized by **J.C. Johari** in the following ways:

1. It is a phenomenon of a **multi-party government** where several minority parties join hands for the purpose of running the government. A coalition is formed when many **splinter groups in a House** agree to join hands on a common platform by sinking their broad differences and form a majority.

2. Coalitions are formed for the sake of some **reward, material, or psychic** motive. A coalition implies the existence of at least two partners.
3. The underlying principle of a coalition system stands on the simple fact of temporary conjunction of specific interest.
4. Coalition politics **is not a static but a dynamic affair** as coalition players and groups dissolve and form new ones.
5. A coalition government **works based on a minimum programme**, which may not be ideal for each partner of the coalition.
6. The purpose of **coalition adjustment** is to seize power.

Coalitions are of two types:

Pre-Poll Coalition: A pre-poll alliance is a political arrangement where two or more political parties agree to cooperate and support each other before an election. This alliance is typically formed with the aim of improving their chances of winning by consolidating votes, avoiding vote splitting, and presenting a united front against common opponents.

- The pre-poll coalition is considerably advantageous because it provides a common platform to the parties to woo the electorate based on a joint manifesto.

Post Poll Coalition: A post-poll alliance is a political arrangement where two or more political parties agree to cooperate and form a coalition after the election results have been announced. This type of alliance is typically formed when no single party secures an outright majority, necessitating collaboration to achieve the numbers required to govern.

-The post-election union is intended to enable constituents to share political power and run the government.



Coalition Politics in India:

Phase 1: 1947-67

1. Indian politics in the period between 1947 to 1967 was coalitional in nature. Political scientists like Rajni Kothari, Morris Jones and Myron Weiner developed a theoretical model for this level in the late sixties through the idea of a **one-party dominant system or Congress system**.
2. Rajni Kothari has also highlighted the consensual politics based on pluralism, accommodation and bargaining followed by Congress party.

Phase 2: 1967-77 Coalition at state level

1. Coalition by non-congress opposition parties, and formation of government in 9 states.
2. Morris Jones calls that coalition led to the emergence of a ‘market polity’ leading to a **‘pretty regular and continuous defectors market’**.
3. Divergent ideologies helped in winning elections by providing a mass base, but also led to crisis in governance.

Phase 3: 1977-79

1. Defeat of the Congress in 1977 parliamentary as well as assembly elections (in six States).
2. The introduction of populist, bureaucratic and authoritarian mode of politics in the party had led to

the emergency imposed by the Congress government. Which became the reason for the debacle of congress.

Phase 4: Decline of coalition Politics (1980-89)

1. The failure of coalition experiment (failure of Janata coalition government to complete its full term) gave an opportunity to Congress-recovering from a split in 1978 under the leadership of Indira Gandhi to capture power in the 1980 elections.
2. Congress received a massive victory in 1984 general elections also. Thus, for a decade the coalition politics came to an end at the center. It however continued at the state level.

Phase 5: 1989-99

1. Further decline of coalition politics, immature coalitions leading to hung assemblies and minority government at the Centre and rise of bipolar regional politics at state assemblies.

Phase 6: 1999-2014

1. Mature coalitions that are stable.

Phase 7: 2014-24

1. **Return of single party dominant system**, the coalition exists, but since BJP had a majority on floor, it was not dependent on coalition partners to fulfill its manifesto commitments, and not committed to a common minimum programme.

Merits and demerits of coalition form of government:

Feature	Merits	Demerits
1. Diversity and Representation	Accommodates diverse interests and ensures broader representation of various groups and regions.	Can lead to instability due to disagreements among coalition partners and potential for smaller parties to act as “kingmakers.”
2. Decision-Making	Promotes consensus-based politics and reduces the risk of abrupt policy changes .	Can slow down decision-making due to the need for consultations and compromises among coalition partners.
3. Federalism	Strengthens the federal structure by being more sensitive to regional demands and concerns.	Regional parties may prioritize regional interests over national ones , potentially hindering national unity.
4. Accountability	Checks on the concentration of power and reduces the risk of authoritarian rule .	May lead to lack of accountability and blame games among coalition partners, eroding public trust.
5. Leadership	May encourage collaborative leadership and shared responsibility.	Can curtail the Prime Minister’s power and lead to less decisive leadership .



Conclusion

The return of coalition politics in India signals a shift in the political landscape. While coalitions offer several advantages, such as broader representation and consensus-based decision-making, they also come with challenges, such as instability and potential policy gridlock. The success of the new government will depend on the ability of its coalition partners to cooperate effectively and address the nation's challenges.

2. Parliamentary Oath and Council of Ministers

In June 2024, the 1st session of the 18th Lok Sabha begins. Before the House starts its legislative activities, newly elected members must take the oath of Members of Parliament (MP), as outlined in the Constitution.

Bhartruhari Mahtab's Role

1. Bhartruhari Mahtab is re-elected for the seventh time from Cuttack, Odisha, was the first to take the oath as a Lok Sabha MP at Rashtrapati Bhavan in front of President Droupadi Murmu.
2. The President appointed him as the **Speaker (pro tem)** under **Article 95(1)** of the Constitution until a new Speaker is elected.
3. Mahtab will preside over the House during the oath-taking of his colleagues.

Term of an MP

1. The five-year term of a Lok Sabha MP starts when the Election Commission of India (ECI) declares the results, according to **Section 73** of the **Representation of the People Act, 1951**.
2. MPs receive their salary and allowances from the date of the ECI notification. For instance, after the 2024 general elections, the ECI declared the results on June 6.
3. MPs must also follow the **anti-defection law**; switching party allegiance can lead to disqualification if requested by their political party.

What is an Anti-Defection Law?

1. The anti-defection law penalizes Members of Parliament (MPs) and Members of the Legislative Assembly (MLAs) for switching from one party to another.
2. Parliament introduced this law into the Constitution as the **10th Schedule in 1985** to ensure government stability by preventing legislators from changing parties frequently.
3. Commonly referred to as the **Anti-Defection Act**, the 10th Schedule was added to the Constitution through the **52nd Amendment Act, 1985**.
4. This law provides the grounds for disqualifying elected members who defect to another political party.
5. It was enacted in response to the frequent toppling of state governments by party-switching MLAs following the 1967 general elections.

Parliamentary Oath

1. **Definition:** The parliamentary oath is the pledge taken by elected representatives to the Parliament.
2. **Constitutional Provision:** The **3rd Schedule of the Indian Constitution** includes the text of the parliamentary oath.
 - a. This schedule outlines the forms of oaths and affirmations for various constitutional roles, such as the President, Ministers, Judges, and Members of Parliament and State Legislatures.
 - b. Through this oath, members swear or affirm to uphold the Constitution of India, maintain India's sovereignty and integrity, and fulfil their duties faithfully.

How Has the Oath Evolved Over the Years?

1. **Initial Draft Constitution:** The original draft did not include the invocation (mention) of God in any oaths. It was prepared by the drafting committee, chaired by **Dr. B.R. Ambedkar**.
2. **Invocation of God:** During the discussion on the President's oath in the Constituent Assembly, members like **K.T. Shah** and **Mahavir Tyagi** proposed amendments to **include God in the oath**.



- a. Despite disagreements, the inclusion of God was **accepted** in the final draft.
3. **Recent Amendments:** The last amendment to the oath was the **Constitution (16th Amendment) Act 1963**, which added the **commitment to uphold India's sovereignty and integrity**.

Authority

1. Traditionally, the MP with the most terms served is appointed as the pro-tem Speaker for the first two days to administer the oath to all newly elected MPs.
2. This was **not followed** in the 18th Lok Sabha.
3. The President assigns the duties of the Speaker (pro-tem) under **Article 95(1)** of the Constitution until a new Speaker is elected.
4. MPs take their oath or affirmation in the presence of the pro-tem Speaker.

Prerequisite

1. Before taking the oath, MPs must present their election certificate to the Lok Sabha staff.
2. This safeguard was introduced after a 1957 incident where a mentally unsound individual posed as an MP and took the oath in the House.
3. MPs must use the name on their election certificate and follow the exact text of the oath; deviations are not recorded, and MPs may be asked to retake the oath.
4. In 2019, when an MP added a suffix to her name while reading the oath, the presiding officer ruled that only the name on the election certificate would be recorded.

Multilingualism in Oath Taking

1. After verification, MPs can take the oath or affirmation in **English or any of the 22 languages** specified in the Constitution.
2. About half the MPs take their oath in Hindi or English.
3. In the last two Lok Sabhas, Sanskrit has also been a popular language for taking oaths.
4. While oaths and affirmations are a personal choice, **87%** of MPs swore in the name of God in the last Lok Sabha, with the remaining **13%** affirming allegiance to the Constitution.

Council of Ministers

1. In June 2024, the President Droupadi Murmu administered oaths to the **Central Council of Ministers** of the new NDA government.
2. The council is led by PM Narendra Modi.
3. The new Council of Ministers is larger in size compared to the previous term.
4. It includes: 30 Cabinet Ministers; 5 Ministers of State (Independent Charge); 36 Ministers of State.

About Union Council of Ministers (CoM)

1. The Union Council of Ministers (CoM), also known as the Central Council of Ministers, is a key component of the executive branch of the Union Government.
2. It functions as the real executive authority within India's Parliamentary System, as established by the Constitution.
3. The Council advises the President of India and plays a crucial role in decision-making, policy formulation, and implementation.

Constitutional Provisions Related to the Union Council of Ministers (CoM)

Article	Subject-Matter
Article 74	Council of Ministers to aid and advise the President of India.
Article 75	Other provisions for Ministers
Article 77	Conduct of business of the Government of India
Article 78	Duties of the Prime Minister regarding the furnishing of information to the President
Article 88	Rights of Ministers regarding the Houses

Composition of the Union Council of Ministers

The Union Council of Ministers is headed by the Prime Minister and includes the following categories of ministers:

1. **Cabinet Ministers**
 - a. Lead major ministries such as Home, Defence, and Finance.
 - b. Participate in Cabinet meetings and are instrumental in policy decisions.
2. **Ministers of State (MoS)**
 - a. Can be attached to Cabinet Ministers or have independent charge of Ministries/Departments.
 - b. **When attached:**
 - May oversee departments within ministries led by Cabinet Ministers.

- Handle specific tasks related to those ministries.
- c. In both cases, they work under the supervision of Cabinet Ministers.
 - d. **With independent charge:**
 - Perform similar functions and exercise similar powers as Cabinet Ministers but are not part of the Cabinet and attend its meetings only if invited.
3. **Deputy Ministers**
 - a. Do not have independent charge of Ministries or Departments.
 - b. Assist Cabinet Ministers or Ministers of State.
 - c. Are not Cabinet members and do not attend Cabinet meetings.
 4. **Parliamentary Secretaries**
 - d. Not part of the Central Council of Ministers (CoM).
 - e. Appointed by the Prime Minister.
 - f. Do not control any departments but assist senior ministers in their duties.

Appointment of Ministers

1. The Prime Minister is appointed by the President of India.
2. Other ministers are appointed by the President on the advice of the Prime Minister.
3. Only those recommended by the Prime Minister can be appointed as ministers.
4. A non-member of Parliament can be appointed as a minister but **must become a member within six months** to retain the position.

Oaths and Affirmations of Ministers

1. Administered by the President of India.
2. **Oath of Office:** In his/her Oath of Office, the Minister swears:
 - a. to bear true faith and allegiance to the Constitution
 - b. to uphold the sovereignty and integrity of India
 - c. to faithfully and conscientiously discharge the duties of his office
 - d. to do right to all manner of people in accordance with the Constitution and the law, without fear or favour, affection or ill-will.

3. **Oath of Secrecy:** In his/her Oath of Secrecy, the Minister swears:
 - a. that he/she will not directly or indirectly communicate or reveal to any person any matter that is brought under his consideration or becomes known to him as a Union Minister, except as may be required for the due discharge of his duties as such minister.

Collective Responsibility

1. Article 75 states that the CoM is collectively responsible to the Lok Sabha.
2. If a No-Confidence Motion is passed, all ministers must resign.
3. Can advise the President to dissolve the Lok Sabha for fresh elections.
4. Decisions bind all ministers; dissenting ministers must resign if they cannot support decisions.

3. Joint Sitting of Parliament

1. In June 2024, the **President of India** addressed the joint session of both houses of Parliament. It was his 1st address to the newly elected 18th Lok Sabha.

About the Joint Sitting of Parliament

1. A joint sitting involves both houses of Parliament (Lok Sabha and Rajya Sabha) meeting together.
2. **Types of Joint Sittings in the Constitution:** There are two main types of joint sittings in the Indian parliamentary system:
 - a. Presidential address under Article 87
 - b. Resolution of legislative deadlocks under Article 108
3. **Article 87:**
 - a. It outlines when the President addresses both Houses of Parliament.
 - b. **Constitution (1st Amendment) Act of 1951** modified Article 87 to specify that the President addresses the Rajya Sabha and Lok Sabha at the beginning of the 1st session after each general election and at the beginning of the 1st session of each year.
4. **Significance of Joint Sitting:**
 - a. Allows the President to outline the **government's policy priorities and legislative agenda.**



- b. The address after general elections is especially important as it **reflects the mandate and priorities of the newly elected government.**
5. **Article 108 can be invoked in the following scenarios:**
- When a bill is passed by one house but rejected or not returned by the other.
 - When the President returns a bill for reconsideration.
 - When more than six months have passed since the bill was received by the other House without being passed.
6. **Key Provisions for Joint Sittings:**
- The **Speaker of the Lok Sabha presides** over the session.
 - If the Speaker is absent, the Deputy Speaker of the Lok Sabha takes over. If both are unavailable, the Deputy Chairman of the Rajya Sabha presides.
 - The **Chairman of the Rajya Sabha does not preside** over the joint session under any circumstances.
 - The **Secretary-General issues summons** to each member, specifying the time and place for the joint sitting.
 - The duration and adjournment of the joint sitting are determined by the Speaker.

Previous instances of Joint sittings

Only **3 bills** have been passed through joint sittings since 1950:

- Dowry Prohibition Bill, 1960
- Banking Service Commission (Repeal) Bill, 1977
- Prevention of Terrorism Bill, 2002

- Follows Lok Sabha rules of procedure.
- The procedures followed during joint sessions can be modified or varied as deemed necessary or appropriate by the Speaker.
- A quorum for a joint sitting requires the presence of one-tenth of the total number of members of both Houses.
- Used as a last resort to resolve legislative deadlocks.

7. **Exceptions to Joint Sittings:**
- Money Bills (Article 110)
 - Constitution Amendment Bills (Article 368)

Leader of the House (LOH)

- Current LOH in Rajya Sabha:** On the first day of the Rajya Sabha's 264th session, **Health Minister Jagat Prakash Nadda** was officially designated as the Leader of the House in the Rajya Sabha.
- Legal Backing:** The term Leader of the House is defined in the **Rules of Procedure** for both the Lok Sabha and the Rajya Sabha.
- Appointment Process:**
 - The Leader of the House is a **minister and a Rajya Sabha member, nominated by the Prime Minister.**
 - The Leader of the House can also appoint a Deputy Leader of the House.
 - In the United States, a similar position is called the 'majority leader.'
- Responsibilities:**
 - Conducts overall proceedings, especially debates and discussions
 - Maintains harmony among members
 - Upholds the dignity of the Rajya Sabha
 - Ensures standard procedures during parliamentary debates
- LOH in Lok Sabha:**
 - In the Lok Sabha, the Leader of the House is typically the **Prime Minister** if they are a member. If not, a Minister who is a member and is nominated by the Prime Minister takes on this role.
 - By convention, the **Prime Minister is always the Leader of the Lok Sabha.**

4. First Past The Post (FPTP) vs. Proportional Representation electoral system

In June 2024, many citizens and political parties in India have agreed that the current **First-Past-The-Post (FPTP)** electoral system should be replaced with a **Proportional Representation (PR)** electoral system.

About First-Past-The-Post (FPTP) Electoral System

- Voters cast a vote for a single candidate, and the candidate with the most votes wins the election.

2. Also called the **simple majority system** or **plurality system**.
3. One of the **oldest and simplest** electoral systems, used in the UK, the US, Canada, and India.

Features of FPTP

1. Voters are given a list of candidates from various political parties or independent candidates.
2. Voters select one candidate by marking their ballot paper or using an electronic voting machine.
3. The candidate with the most votes in a constituency wins.
4. The winner **does not need a majority (over 50%) of votes** but just a plurality (the largest number) of votes.
5. This system often results in disproportionate outcomes in assemblies or the Parliament, where parties may not be represented according to their share of the overall vote.

Advantages of FPTP

1. **Simplicity:** Easy for voters to understand and for officials to manage, making it cost-effective and efficient.
2. **Clear and Decisive Winners:** Provides results with a definitive winner, contributing to stability and credibility in the electoral system.
3. **Accountability:** Candidates directly represent constituents, offering better accountability compared to Proportional Representation (PR) systems where candidates may be less known.
4. **Candidate Selection:** Voters can choose between parties and specific candidates, whereas the PR system requires selecting a party, with representatives elected based on party lists.
5. **Coalition-Building:** Encourages different social groups to unite locally, promoting broader unity and preventing fragmentation into numerous community-based parties.

About the Proportional Representation (PR) Systems

1. Proportional Representation (PR) is an electoral system where political parties receive seats in the legislature proportional to the votes they get in elections.

2. Features:

- a. It represents political parties fairly based on their vote share.
- b. It ensures every vote contributes to seat allocation in Parliament or other elected bodies.

Types of the Proportional Representation Systems

1. Single Transferable Vote (STV):

- a. Voters rank candidates in order of preference and cast only one vote.
- b. PR by STV allows voters to select their preferred party candidate and vote for independents.
- c. The President of India is elected through PR by STV, using a **secret ballot**.
- d. The electoral college, including State Legislative Assemblies, the Council of States, and members of Rajya Sabha and Lok Sabha, participates in this process.

2. Party-List PR:

- a. Voters cast their vote for a party rather than individual candidates, and seats are allocated to parties based on their vote share.
- b. A minimum threshold of 3-5% vote share is usually required for a party to win a seat.

3. Mixed-Member Proportional Representation (MMP):

- a. MMP balances stability and proportional representation in a political system.
- b. One candidate is elected from each territorial constituency through the First-Past-the-Post (FPTP) system, with additional seats allocated to parties based on their national vote percentage.
- c. This system allows for diverse representation while maintaining individual representatives from specific areas.
- d. Countries like New Zealand, South Korea, and Germany use MMP.

Advantages of Proportional Representation Systems

1. **Ensures Every Vote Counts:** In proportional representation (PR), each vote is counted when allocating seats in Parliament. This boosts voter engagement in the democratic process.



2. **Diverse and Representative Government:** PR promotes representation of smaller parties and minority groups, leading to a broader range of perspectives and ideas in Parliament.
3. **Reduces Manipulation:** PR systems minimize gerrymandering (manipulation) because seats are distributed based on the proportion of votes received by each party, rather than manipulated district boundaries.
 - a. This prevents parties from unfairly altering the electoral map to their benefit.

Disadvantages of Proportional Representation Systems

1. **Unstable Governments:** PR can result in unstable governments as it increases the likelihood of smaller parties and minority groups being represented, making it difficult to form stable coalitions and govern effectively.
2. **More Complex:** PR systems are often more complex than First-Past-The-Post (FPTP) systems, which can be harder for voters to understand and for governments to implement.
3. **Expensive:** Operating PR systems can be costly, requiring significant resources and funds to conduct elections.
4. **Neglect of Local Needs:** PR can cause leaders to prioritize party agendas over local needs since multiple representatives share a constituency.
 - a. This diffusion of accountability may result in selfish political behaviour and neglect of specific constituency concerns.

Need to Shift from FPTP System to the PR System

1. **Over or Under Representation:** The FPTP system can lead to over or under representation of political parties in terms of seats compared to their vote share.
 - a. For example, in the first three elections after independence, the Congress party won nearly 75% of seats in the Lok Sabha with just 45-47% of the vote share.
 - b. Similarly, in the 2019 Lok Sabha Elections, the Bharatiya Janata Party (BJP) received 37.36% of the vote but won 55% of the seats.

c. If the PR system is applied for the 2024 elections, then:

Political formation	% of votes	Actual number of seats	Seats as per PR
National Democratic Alliance (NDA)	43.3%	293*	243
INDIA bloc	41.6%	234	225
Others/ independents	15.1%	16	75
Total	100%	543	543

Lack of Representation for Minority Groups:

In a two-party FPTP system, a party with a small percentage of votes may not win any seats, leaving a significant portion of the population unrepresented in the government.

- a. While countries like the UK and Canada also use FPTP, their Members of Parliament (MPs) have greater accountability to their local constituencies.
2. **Strategic Voting:** Voters may feel compelled to vote for a candidate they do not fully support to prevent a disliked candidate from winning. This can result in voters not truly expressing their preferences.
3. **Disadvantage for Smaller Parties:** Smaller parties struggle to win in the FPTP system and often have to align with national parties, which can undermine local self-government and federalism.

Other Alternative Electoral Systems

1. **Ranked Voting Systems:** These systems let voters rank candidates in order of preference rather than selecting just one.
2. **Score Voting Systems:** These systems enable voters to rate candidates on a numerical scale instead of selecting or ranking them.
3. **International Practices**
 - a. **Presidential democracies** like Brazil and Argentina, and **parliamentary democracies** such as South Africa, the Netherlands, Belgium, Spain, Germany, and New Zealand use various proportional representation (PR) systems.



- b. Germany:** Uses the **Mixed Member Proportional Representation (MMPR) system**. Half of the 598 Bundestag seats are filled from constituencies using the First-Past-The-Post (FPTP) system, while the other half is allocated to parties that secure at least 5% of the votes.
- c. New Zealand:** 60% of the 120 House of Representatives seats are filled through the FPTP system from territorial constituencies. The remaining 40% are distributed to parties with at least 5% of the votes.

- b.** This would empower southern, northeastern, and smaller northern states by giving them a stronger voice in Parliament, even with an increased total number of seats.

Conclusion

As India evolves as a democracy, exploring electoral reforms like proportional representation and MMPR can lead to a more balanced and fair system. Implementing these changes thoughtfully, considering India's unique federal and diverse nature, can enhance the democratic process and ensure that every vote counts.

5. Constitutional Morality: Principles, Challenges, and Indian Case Studies

The arrest of a serving chief minister on corruption charges brings up several legal, political, and constitutional questions. It also challenges the adherence to constitutional morality in a parliamentary democracy like India.

Allahabad High Court Judgment in Kiran Rawat vs State of UP

1. The Allahabad High Court's ruling in the case of **Kiran Rawat vs State of UP** is viewed as a breach of constitutional morality.
2. The court denied protection to an inter-faith couple in a live-in relationship from police harassment and implied that their relationship was immoral, illegal, and against personal laws.

What can be done in future?

1. Recommendations of the Law Commission

- a.** The Law Commission's **170th report (1999)** proposed introducing the MMPR system on a trial basis.
- b.** Suggested that 25% of Lok Sabha seats be filled using a PR system by increasing the Lok Sabha's size.
- c.** It recommended considering the entire nation as one unit for PR based on vote share.
- d.** Alternatively, it suggested doing this at the state or UT level, recognizing India's federal structure.

2. Upcoming Delimitation Exercise

- a.** The upcoming delimitation exercise will redraw constituencies based on population shifts.
- b.** This could disadvantage states with slower population growth, potentially violating federal principles and causing resentment in states losing representation.
- c.** A mechanism is needed to ensure fair representation for all states, regardless of population growth:
 - Considering current representation levels to create a fair balance.
 - Exploring alternative systems like the MMPR.

3. Recommendation for MMPR System

- a.** To achieve a more equitable power distribution, the MMPR system could be implemented for additional seats or at least a quarter of the existing seats in each state/UT.

About the Constitutional Morality

1. **Constitutional morality** refers to the principles and values embedded (included) in a constitution that guide the actions of both the government and its citizens.
2. The concept was introduced by **British Classicist George Grote** in the 19th century, who defined it as a **"paramount reverence for the forms of the Constitution."** [paramount = supreme]
3. In India, **Dr. B.R. Ambedkar** was the 1st to use the term.

Core Elements of Constitutional Morality

1. **Constitutional Values:** Uphold the core values enshrined in the Constitution, such as justice, liberty, equality, fraternity, secularism, and individual dignity.



2. **Rule of Law:** Ensure that everyone, including government officials, is subject to and accountable under the law.
 3. **Democratic Principles:** Facilitate the functioning of a representative democracy where citizens participate in decision-making and hold their representatives accountable.
 4. **Fundamental Rights:** Respect and protect the fundamental rights guaranteed by the constitution, such as equality, freedom of speech, and the right to life and personal liberty.
 5. **Separation of Powers:** Maintain a balance of power among the legislative, executive, and judicial branches to prevent any single branch from becoming too powerful.
 6. **Checks and Balances:** Implement mechanisms and institutions that prevent abuse of power and protect individual rights.
 7. **Constitutional Interpretation:** Interpret the constitution in ways that promote its principles and adapt to changing societal needs.
 8. **Ethical Governance:** Ensure ethical conduct, transparency, accountability, and integrity in public service.
2. **SP Gupta Case (First Judges Case), 1982:** The Supreme Court recognized a constitutional breach as a severe violation of constitutional morality.
 3. **Naz Foundation v. Government of NCT of Delhi, 2009:** Decriminalized **consensual same-sex relationships** between adults.
 - a. The court emphasized that “constitutional morality” should prevail over societal norms, protecting individual rights.
 4. **Indian Young Lawyers Association v. State of Kerala (Sabarimala Case), 2018:** The court struck down the practice of excluding women of a certain age group from the Sabarimala temple.
 - a. It highlighted that “constitutional morality” encompasses justice, equality, liberty, and fraternity, which surpass religious customs that restrict women’s entry.
 5. **Navtej Singh Johar v. Union of India, 2018:** This judgment read down **Section 377** of the **Indian Penal Code**, which criminalized homosexuality.
 6. **Joseph Shine vs Union of India (2018):** Struck down the law on adultery, declaring it an infringement on the rights to equality, dignity, privacy, and autonomy.
 7. **Shafin Jahan vs Asokan K.M. (2018):** Upheld the right to marry a person of one’s choice regardless of religion or caste, overturning the annulment of a Hindu-Muslim marriage.
 8. **Shakti Vahini vs Union of India (2018):** Condemned honour killings and violence against inter-caste and inter-religious couples, setting guidelines for their prevention and protection.

Constitutional Morality and the Indian Constitution

1. The term “**constitutional morality**” is **not explicitly** stated in the Indian Constitution.
2. The concept is intrinsic (essential) to the Constitution’s core values, such as justice, equality, and liberty.
3. These values are embedded in various sections of the Constitution, including the Preamble, Fundamental Rights, and Directive Principles of State Policy.
4. The essence of constitutional morality is also evident in numerous Supreme Court judgments.

Major Judgments Upholding Constitutional Morality

1. **Kesavananda Bharati v. State of Kerala, 1973:** Established the “**basic structure doctrine**,” limiting Parliament’s power to amend the Constitution and ensuring its core principles remain intact.
 - a. This case is an early example of the court upholding the Constitution’s spirit.

Challenges of Upholding Constitutional Morality

1. **Absence of a Precise Definition:** The concept of constitutional morality lacks a precise definition, causing diverse interpretations influenced by individual viewpoints.
2. **Encouragement of Judicial Dominance:** Emphasizing constitutional morality can elevate (raise) judicial authority, leading to judicial involvement in legislative functions.
 - a. This involvement breaches the separation of powers principle.



3. Clashes with Popular and Religious Values:

Constitutional morality can sometimes oppose popular morals or religious beliefs.

- a. Such clashes may trigger social unrest and opposition.
- b. Notable instances include the Supreme Court's decisions on decriminalizing homosexuality and permitting women's entry into the **Sabarimala temple**, which faced protests from certain societal groups.

4. Impact of Political and Personal Influences:

Constitutional morality can be swayed (swing) by political motives or personal biases.

- a. These influences can compromise the objectivity and integrity of constitutional principles.
- b. For instance, the recent changes to the appointment committee for the **Election Commission of India** and the amended **IT Rules 2023** have faced criticism for political interference.

5. Judicial Activism vs. Judicial Restraint: Finding a balance between judicial activism and judicial restraint is challenging.

- a. While judicial activism can uphold rights and constitutional values, excessive activism can intrude on executive and legislative domains.
- b. Judicial activism and Judicial restraint are the two terms used to describe the philosophy and motivation behind some judicial decision.
- c. **Judicial activism** refers to a theory of judgment that takes into account the spirit of the law and the changing times, while **judicial restraint** relies on a strict interpretation of the law and the importance of legal precedent.
- d. Judicial Restraint is a theory of judicial interpretation that encourages judges to limit the exercise of their own power. It asserts that judges should hesitate to strike down laws unless they are obviously unconstitutional.

6. Enforcement and Compliance Issues: Despite a strong constitutional framework, effective enforcement and adherence are challenging.

- a. Problems such as implementation gaps, delays in justice delivery, and lack of public awareness about constitutional rights contribute to these challenges.

Steps Need to be Taken to Uphold Constitutional Morality

1. **Clear Definition and Understanding:** Establish a clear and comprehensive definition of constitutional morality to provide a solid foundation for its interpretation and application.
2. **Public Awareness and Education:** Promote public awareness and education about constitutional morality.
 - a. Enhance civic education, conduct public discussions, and engage with various stakeholders to foster a deeper understanding of its principles.
3. **Judicial Restraint and Respect for Separation of Powers:** Focus on judicial restraint and respect for the separation of powers to address concerns about judicial supremacy.
 - a. The judiciary should exercise caution in legislative matters and maintain a balance between upholding constitutional values and respecting other branches of government.
4. **Strengthening Institutions:**
 - a. Uphold constitutional morality by strengthening the independence, integrity, and effectiveness of institutions like the Election Commission, National Investigation Agency (NIA), and Central Bureau of Investigation (CBI).
 - b. Ensure transparent appointments, reduce political interference, and enhance accountability mechanisms.
5. **Promoting Civic Education:** Increase public awareness and understanding of constitutional rights and values, especially among the youth.
 - a. Implement civic education programs in schools and colleges to instil (inculcate) a sense of constitutional responsibility and empower citizens to participate meaningfully in democratic processes.
6. **Enhancing Access to Justice:** Improve access to justice, particularly for marginalized and vulnerable communities, to uphold constitutional principles.
 - a. Expand legal aid services, reduce judicial backlog, simplify legal procedures, and promote alternative dispute resolution mechanisms.



7. Encouraging Ethical Leadership: Promote ethical leadership and governance practices at all levels to uphold constitutional values.

- a. Leaders and public officials should demonstrate integrity, accountability, and a commitment to serving the public interest, setting a positive example for society.

8. Adapting to Evolving Challenges

- a. Continuously adapt legal and institutional frameworks to address emerging challenges to constitutional morality.
- b. These include technological advancements, globalization, and environmental concerns, ensuring relevance and effectiveness.

Do Chief Ministers in India Lack Immunity from Arrests?

1. Constitutionally, only the President of India and Governors of states have immunity from civil and criminal proceedings until their terms conclude.
2. Article 361 of the Constitution states that these officials are not liable to any court for acts performed in their official duties.
3. This immunity does not extend to Prime Ministers or Chief Ministers, who are subject to the principle of equality before the law as advocated by the Constitution.
4. However, arrest alone does not lead to disqualification.

6. Mercy Petition: Pardoning Power of President & Governor

President of India Droupadi Murmu has rejected the **mercy petition** of Mohammad Arif alias Ashfaq (Pakistani national) who is a member of Lashkar-e-Taiba. He was sentenced to death in the December 2000 Red Fort attack where three Army personnel were killed.

Background

1. The Red Fort attack case dates back to 2000, in which three Army personnel were killed.
2. Arif was sentenced to death in 2005 by a trial court, which was confirmed by the Delhi High Court in 2007 and the Supreme Court in 2011.

3. Arif had filed several petitions, including a review petition and a curative petition, which were rejected by the Supreme Court.

What is Mercy Petition?

1. A mercy petition is a **formal request** made by someone who has been sentenced to death or imprisonment seeking mercy from the **President or the Governor**, as the case may be.
2. The idea of Mercy Petition is followed in many countries like the U.S., the U.K, Canada, and India Constitutional Provisions related to Mercy Petitions to the President.

Process of making a Mercy Petition

1. **There is no statutory written procedure** for dealing with mercy petitions, but in practice, after extinguishing all the reliefs in the court of law, either the convict in person or his relative on his behalf may submit a written petition to the President.
2. The **petitions are received by the President's secretariat** on behalf of the President, which is then **forwarded to the Ministry of Home Affairs** for their comments and recommendations.

Constitutional Provisions related to Mercy Petitions

1. **Article 72 of the Constitution** empowers the President to grant pardons, reprieves, respites or remissions of punishment or to suspend, remit or commute the sentence of any person convicted of any offence –
 - In all cases where the punishment or sentence is by a Court Martial.
 - In all cases where the punishment or sentence is for an offence against any law relating to a matter to which the executive power of the Union extends.
 - In all cases where the sentence is a sentence of death.
2. Similarly, the power to grant pardon is conferred upon the Governors of States under Article 161 of the Constitution of India.
 - a. **Earlier**, the Governor cannot pardon the death sentence that was the exclusive power of the Indian President.



- b. **But in August 2021**, the Supreme Court held that the Governor of a State can pardon prisoners; including death row ones, even before they have served a minimum of 14 years of a prison sentence.

Feature	Article 72 (President)	Article 161 (Governor)	Key Differences
Scope of Power	Extends to offenses against laws relating to matters under the executive power of the Union (central government).	Extends to offenses against laws relating to matters under the executive power of the State.	President's power is broader in scope, covering Union matters, while Governor's is limited to state matters.
Court Martial Cases	Yes , can pardon/commute sentences in cases where punishment is by a Court Martial (military court)	No , does not have the power to pardon/commute sentences in Court Martial cases	President holds exclusive power in cases involving the military.
Death Sentence Cases	Yes , can pardon/commute death sentences	Yes , can pardon/commute death sentences	Both have the power to grant mercy in death penalty cases.
Minimum Sentence Served	No specific requirement for minimum sentence served before pardon	No specific requirement for minimum sentence served before pardon (as per 2021 Supreme Court ruling)	Both can pardon even before a minimum sentence is completed.
Judicial Review	Pardoning power is subject to judicial review on limited grounds (e.g., mala fide exercise, non-application of mind)	Pardoning power is subject to judicial review on similar grounds as the President's power	Both powers are not absolute and can be reviewed by the courts, although the scope for review is limited.

Grounds for filing Mercy Petition

- The mercy or clemency is granted on the grounds based on his health, physical or mental fitness, and his family's financial conditions considering if he is the only sole earner of bread or butter or not.
 - The Supreme Court in cases such as *Shatrughna Chauhan vs Union of India (2014)* held that Right to seek for mercy under **Article 72/161** of the Constitution is a constitutional right and not at the discretion or whims of the executive.

Judicial Review:

- President must act based on the advice of Council of Ministers in mercy petitions (*Maru Ram vs UOI case, 1981*).
- In *Kehar Singh case (1988)*, the Supreme Court examined the pardoning power of the President and

laid down the following principles:

- The petitioner for mercy has no right to an oral hearing by the President:
- The President Can examine the evidence afresh and take a view different from the view taken by the court.
- The power is to be exercised by the President on the advice of the union cabinet.
- There is no need for the Supreme Court to lay down specific guidelines for the exercise of power by the President.
- The exercise of power by the President is not subject to judicial review except where the presidential decision is arbitrary, irrational, *mala fide* or discriminatory.



What are the Different Types of Pardoning Power?

Type of Pardoning Power	Description	Example
Pardon	Completely absolves the convict of the crime, erasing the conviction and all associated penalties.	The President grants a pardon to a person wrongly convicted of treason.
Commutation	Substitutes a harsher punishment with a lighter one	The President commutes a death sentence to life imprisonment.
Remission	Reduces the period of the sentence without changing its nature	The Governor remits one year from a two-year sentence of rigorous imprisonment.
Reprieve	Temporarily postpones the execution of a sentence, usually for a short period.	The President grants a reprieve to a condemned prisoner to allow time for the filing of a mercy petition
Respite	Similar to reprieve, but for a longer period and often for medical reasons.	The Governor grants a respite to a terminally ill prisoner to allow them to spend their final days at home.

What do the Laws of other Countries Provide?

- USA:** The Constitution of America gives the President the similar powers to grant reprieves or pardon for offences under Federal law, except in cases of impeachment. However, in cases of violation of state law, the power has been given to the concerned Governor of the state.
- UK:** In the UK, the Constitutional monarch can pardon or reprieve for offences on ministerial advice.
- Canada:** The National Parole Board under the Criminal Records Act is authorised to grant such reliefs.

Proposed Changes under Bharatiya Nyaya Sanhita:

- The Bharatiya Nyaya (Second) Sanhita, 2023, which is set to replace the Indian Penal Code, 1860, has introduced several changes to the procedure for filing mercy petitions.
- The new law limits the right to file a mercy petition to the convicts or persons related to them, which could adversely impact death row convicts.
- The law provides for several time limits, including a 30-day limit for the convict to submit a mercy petition to the Governor or the President.
- However, no time limits have been prescribed for consideration of mercy petitions by the President and Governor.

- The law also stipulates that the President’s decision on a mercy petition is final and cannot be appealed against, which could severely restrict judicial oversight and result in a violation of the convict’s fundamental rights.

Conclusion:

The President’s power to pardon death sentences is an important aspect of the Indian Constitution. However, it is essential to ensure that this power is exercised in a fair and transparent manner, and that the decision is not arbitrary or mala fide. Judicial review plays a crucial role in ensuring that the President’s decision is in accordance with the Constitution and the law

7. Donald Trump becomes 1st ex-U.S. President convicted of felony crimes

- Donald Trump has become the 1st former American President to be convicted of felony crimes.
 - In the U.S., a **felony** is a serious crime punishable by death or imprisonment for more than one year.
- New York jury found him guilty illegally influencing the 2016 election through a hush money.
 - Hush money** is a payment made to someone to prevent them from disclosing embarrassing or damaging information.
- In this context, let us compare the eligibility conditions for the office of President in **case of USA and India.**



Features	United States of America	Republic of India
1. Citizenship	Natural-born citizen.	Citizen of India
2. Age	At least 35 years old.	At least 35 years old
3. Residency	Resident of the United States for 14 years.	No specific residency requirement
4. Other qualifications	None specified in the Constitution.	a. Qualified for election as a member of the Lok Sabha (lower house of Parliament). b. Must not hold any office of profit under the government.
5. Criminal record	No constitutional or federal bar based on criminal history.	a. Disqualified if convicted of an offense resulting in imprisonment for two or more years. b. Additional disqualifications under the Representation of People's Act, 1951 (e.g., electoral offenses, corrupt practices, etc.)
6. Re-election	Limited to 2 terms in office (22nd Amendment).	Eligible for re-election to the office any number of times (Article 57 of the Constitution).
7. Nomination requirements	Must register with the Federal Election Commission once campaign spending exceeds \$5,000.	a. Nomination must be subscribed by at least 50 electors as proposers and 50 electors as seconders. b. Must make a security deposit of Rs. 15,000 (forfeited if the candidate fails to secure one-sixth of the votes polled).

8. The Delayed 2021 Census

The postponement of India's 2021 Census has raised significant concerns across various sectors, sparking debate about its underlying motives and potential consequences. One plausible explanation offered is the strategic delay by the Bharatiya Janata Party (BJP) to influence the upcoming delimitation process in anticipation of the 2029 Lok Sabha elections.

Understanding the Census

- Definition:** A census is a comprehensive enumeration of a country's entire population, providing essential data on size, distribution, socioeconomic characteristics, and demographics.
- Mandate:** In India, the Office of the Registrar General and Census Commissioner, under the Ministry of Home Affairs, is responsible for conducting the decennial census (every 10 years).
- Legal Framework:** The Census Act, 1948, governs the census process in India.
- Historical Context:** India has successfully conducted 15 censuses since 1872.

5. Unique Features of the 2021 Census (as planned):

- Digital Census:** This was planned to be the first digital census in India, using a mobile application for data collection.
- More Languages:** The census questionnaire was to be available in 16 of the 22 scheduled languages and English.

Understanding Delimitation

- Delimitation is the periodic readjustment of electoral constituencies to ensure equitable representation by considering population shares, geographical factors, and reserved seats.
 - It is carried out by the Delimitation Commission as per the Delimitation Commission Act, 1972, and aims to uphold the principles enshrined in Article 81 of the Indian Constitution.

Reasons for the Delay

- Official Reasons:** The government has cited the COVID-19 pandemic and subsequent disruptions as the primary reason for the delay.
- Strategic Timing:** The 84th Amendment to the Constitution mandates that delimitation be based on



the first census after 2026. Delaying the census until at least 2026 would align the delimitation process with the 2029 Lok Sabha elections.

3. **Electoral Advantage:** The Bharatiya Janata Party (BJP), with a stronger base in the northern states, may benefit from the expected shift in seat allocation following delimitation.

Consequences of the Delay

1. **Impact on Welfare Schemes:** The absence of updated census data hampers the effective implementation of welfare programs like the National Food Security Act, which relies on accurate population figures to determine beneficiary eligibility.
2. **Legal Challenges:** The prolonged delay could be interpreted as an abuse of governmental privilege, potentially violating fundamental rights and inviting legal action.
3. **Impact on Women's Reservation:** The implementation of the 106th Amendment, mandating one-third reservation of seats for women in Lok Sabha and state assemblies, is also dependent on the census data.

Also, the upcoming delimitation, ideally based on the 2021 census, is expected to favour states with higher population growth since 1973, potentially altering the balance of power between northern and southern states.

Benefits of a Timely Census

1. **Comprehensive Data:** The census provides a wealth of information on demographics, socio-cultural factors, economic activities, and more, essential for evidence-based policymaking.
2. **Planning and Governance:** Census data is the bedrock for effective planning at all levels of government, from national to local.
3. **Tracking Demographic Trends:** Regular censuses enable the monitoring of demographic shifts, aiding in forecasting and long-term planning.
4. **Fair Representation:** Accurate census data ensures equitable distribution of resources and political representation.

The Way Forward

1. **Opposition's Role:** The opposition can play a crucial role by advocating for a timely census, potentially seeking legal recourse if necessary.
2. **Public Awareness:** Raising public awareness about the importance of the census and its potential impact on governance and representation is essential.

Conclusion

The delay in the 2021 census is not merely a procedural issue; it has profound implications for India's democracy, governance, and development. It is imperative that the census be conducted expeditiously to ensure accurate data for policy formulation, resource allocation, and fair representation for all citizens.

9. Enemy Agents Ordinance vs. UAPA

Recently, Jammu and Kashmir's Director General of Police (DGP) proposed using the **Enemy Agents Ordinance of 2005**, which includes penalties such as **life imprisonment or the death penalty**, to prosecute militant supporters instead of the **Unlawful Activities Prevention Act (UAPA)**.

- The Enemy Agents Ordinance is a more stringent law with harsher penalties and fewer procedural safeguards compared to the UAPA.

What is the Enemy Agent Ordinance?

1. **Origin and Evolution**
 - a. Introduced in 1917 by the Dogra Maharaja of Jammu and Kashmir (J&K).
 - i. The term 'ordinance' reflects the nomenclature for laws used during the Dogra era.
 - b. The ordinance was re-enacted in 1948 as a law by the Maharaja in exercise of his law-making powers conferred by Section 5 of the Constitution Act of Kashmir, 1939.
 - c. **Legal Basis:** The Enemy Agent Ordinance was subsequently protected by inclusion in the Jammu and Kashmir Constitution of 1957, particularly under Section 157.
 - d. **After Abrogation of Article 370** Enemy Agents Ordinance were retained.

2. Key Provisions of Enemy Ordinance:

a. Definition of Enemy Agent:

- i. Enemy agent ordinance targets **agents or friends of the enemy** rather than the enemy itself. It defines the **enemy in the context of the 1947 tribal invasion of Kashmir**.
- ii. Anyone who conspires with another person to act intended to aid the enemy is regarded as an enemy agent.

b. Punishment:

- i. Enemy agents shall be punished with death or rigorous imprisonment for life or with rigorous imprisonment for a term which may **extend to 10 years and shall also be liable to fine**.

c. Judicial Validation and Trial:

- i. In *Rehman Shagoo vs State of Jammu and Kashmir Case*, 1959, the **Supreme Court** upheld the enemy agent ordinance.
- ii. The trial under the Enemy Agents Ordinance is conducted by a special government-appointed judge in consultation with the High Court.
 - o Accused under the ordinance cannot **engage a lawyer unless permitted by the court** and there is **no provision for appeal against the verdict**.

What is the Unlawful Activities Prevention Act (UAPA)?

1. **The Unlawful Activities Prevention Act (UAPA)**, enacted in **1967** and initially aimed at addressing **secessionist movements and anti-national activities**.
2. It has undergone multiple amendments, most recently in **2019**. These amendments include provisions concerning **terrorist financing, cyber-terrorism, individual designation, and asset seizure**.
3. The UAPA grants authority to the **National Investigation Agency (NIA)** for nationwide investigation and prosecution under its purview and imposes severe penalties such as the **death penalty and life imprisonment** for terrorist acts.
4. It allows for the detention of suspects without charge or trial for up to **180 days and denies bail** unless the **court finds the accused not guilty**.

5. Terrorism under the UAPA encompasses acts causing or intending to cause harm to **individuals, property damage, or threats to the unity, security, or economic stability of India or any other nation**.

Comparison between Enemy Agents Ordinance and UAPA

Feature	Enemy Agents Ordinance (J&K)	Unlawful Activities Prevention Act (UAPA) (Central)
Year of Enactment	1948 (originally 1917)	1967
Jurisdiction	Jammu and Kashmir	Whole of India
Target	Individuals aiding or conspiring with “enemies” as defined in the context of the 1947 tribal invasion of Kashmir	Individuals involved in “unlawful activities” that threaten India’s integrity and security
Definition of Offense	Broad and vague, focusing on aiding the enemy	More specific, defining various terrorist activities
Punishment	Death penalty, life imprisonment, or rigorous imprisonment up to 10 years, along with fines	Death penalty, life imprisonment, or varying terms of imprisonment based on the offense
Trial Process	Special judges appointed by the government; no automatic right to legal representation; no provision for appeal	Regular courts; right to legal representation; provision for appeal
Recent development	Proposed by J&K DGP as an alternative to UAPA for prosecuting militant supporters.	Amended in 2019 to expand powers of investigation and prosecution.



Conclusion

The debate over the use of the Enemy Agents Ordinance highlights the complex challenges of balancing security concerns with human rights and the rule of law in Jammu and Kashmir. It is crucial for policymakers and law enforcement agencies to carefully consider all aspects before deciding to rely on this controversial law.

10. Patna High Court Strikes Down 65% Quota in Bihar

The Patna High Court has set aside the amendments passed by the Bihar legislature in 2023 to increase the reservation for Backward Classes (BC), Extremely Backward Classes (EBC), Scheduled Caste (SC), and Scheduled Tribe (ST) from 50% to 65% in educational institutions and government jobs.

Background

- Gazette Notifications:** The Nitish Kumar Government issued gazette notifications on November 21, 2023, raising the quota for deprived castes from 50% to 65%.
- Caste-Based Survey Report:** The government decided to increase the reservation based on the caste-based survey report.
- PIL Petition:** A Public Interest Litigation (PIL) petition was filed in the Patna High Court on November 27, 2023, challenging the decision of the Bihar Government to increase reservation in the State from 50% to 65%.

Patna High Court's Decision

- Division Bench:** A Division Bench of Chief Justice K.V. Chandran heard the petitions filed by Gaurav Kumar and others.
- Argument:** Advocate General P.K. Shahi argued on behalf of the State Government, stating that the reservation was given due to a lack of adequate representation of these classes.
- Decision:** The Patna High Court set aside the amendments passed by the Bihar legislature in 2023 to increase the reservation from 50% to 65%.

Arguments Against the Reservation

- Article 14 and 15(6)(b):** Advocate Dinu Kumar argued that cancelling 10% reservation for EWS (Economically Weaker Sections) in the general category is against Article 14 and Article 15(6)(b) of the Indian Constitution.
- Indira Sawhney Case:** The Supreme Court had imposed a restriction of 50% on the limit of reservation in the Indira Sawhney case.
- Caste Survey:** The decision of reservation was taken on the basis of the proportion of castes, and not on the basis of adequate representation in government jobs.

Bihar Reservation Amendment Bill

- Legislation:** The Bihar Assembly unanimously passed a Bill to increase reservation for Backward Classes, Extremely Backward Classes, Scheduled Castes, and Scheduled Tribes from the existing 50% to 65%.
- Quota Increase:** The quota for Extremely Backward Classes (EBC) was raised from 18% to 25%; for Backward Classes (BC) from 12% to 18%; for Scheduled Castes (SC) from 16% to 20%; and for Scheduled Tribes (ST), the quota was doubled from 1% to 2%.
- Governor's Approval:** Governor Rajendra Vishwanath Arlekar approved the Bills on November 18, 2023, followed by the State Government issuing its notification in the gazette on November 21, 2023.

Implications

- Social Justice:** The decision has implications for social justice in Bihar, as it affects the representation of different castes and communities in government jobs and educational institutions.
- Governance:** The decision also has implications for governance in Bihar, as it affects the way the State Government implements its reservation policy.

What are Reservations?

Reservations in India are governed by the Constitution of India, which provides for special provisions for the advancement of certain classes of citizens, including Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs).



Constitutional Provisions

- Part XVI:** Deals with the reservation of SC and ST in Central and State legislatures.
- Article 15:** Empowers the State to make special provisions for the advancement of certain classes of citizens, including women and children, SCs and STs, and OBCs.
- Article 16:** Provides for the grounds of positive discrimination or Reservation in government jobs.
- Article 16(4):** Provides for the reservation of appointments or posts in favour of any backward class of citizens.
- Article 16(4A):** Provides for reservation in promotion for SCs and STs.
- Article 16(4B):** Allows states to consider unfilled reserved vacancies from a previous year meant for SCs and STs.
- Article 16(6):** Provides for the reservation of appointments or posts in favour of any Economically Weaker Sections (EWS).
- Article 233T:** Provides reservation of seats for SCs and STs in every Municipality.
- Article 243D:** Provides reservation of seats for SCs and STs in every Panchayat.
- Article 335:** Says that the claims of STs and STs shall be taken into consideration consistently with the maintenance of efficacy of the administration.
- Articles 330 and 332:** Provide for specific representation through the reservation of seats for SCs and STs in the Parliament and in the State Legislative Assemblies respectively.

Developments Related to Reservations in India

- Indra Sawhney Judgment, 1992:** The court upheld the constitutionality of the 27% reservation for OBCs but put a ceiling of 50% unless exceptional circumstances warranted the breach.
- 85th Amendment Act (2001):** Introduced the concept of consequential seniority for SC/ST candidates promoted through reservations.
- M. Nagaraj Judgment, 2006:** Partially overturned Indra Sawhney's judgment and introduced a conditional extension of the "creamy layer" concept to SC/ST communities seeking promotions in government jobs.

- Jarnail Singh vs Union of India, 2018:** The SC reversed its stance on data collection, ruling that states no longer needed to collect quantifiable data to prove the backwardness of the SC/ST community when implementing reservation quotas for promotions.
- 103rd Constitution (Amendment) Act, 2019:** Provides for reservation to EWS in jobs in central government jobs as well as government educational institutions.
- Janhit Abhiyan v. Union of India, 2022:** Challenged the 103rd Constitutional Amendment, but the Court upheld the amendment.

What Should Be Done

- Focus on Merit with Relaxation:** Promoting a system that emphasizes merit while allowing for some relaxation in qualifying marks for SC/ST/OBC candidates in promotions.
- Data-Driven Approach:** Needed to assess the current representation of SC/ST/OBCs across different levels and departments.
- Addressing Concerns:** Acknowledge concerns about unqualified candidates getting promoted due to reservations and propose solutions like rigorous training and mentorship programs.
- Long-Term Vision:** Emphasize that reservations are a temporary measure to achieve long-term social justice and equal opportunity in promotions.

Conclusion

The Patna High Court's decision to strike down the 65% quota in Bihar has sparked a debate on the reservation policy in the State. The decision has implications for social justice and governance in Bihar, and it remains to be seen how the State Government will respond to the High Court's order.

11. Kerala or Keralam? Resolution to change the State's Name

The Kerala Assembly has unanimously passed a resolution urging the Centre to rename the state as "Keralam" in the Constitution. This is the 2nd time in the past year that such a resolution has been passed.



Pinarayi Vijayan (Kerala Chief Minister): “The name of our state in Malayalam is Keralam... However, the name of our state in the First Schedule of the Constitution has been written as Kerala. This Assembly is unanimously requesting the Union Government to take immediate steps under Article 3 of the Constitution to change the name of the state to Keralam.”

Background

1. The word “Kerala” has its roots in Emperor **Ashoka’s Rock Edict II**, dated to 257 BCE, which mentions “Ketalaputra” or “son of Kerala” in Sanskrit.
2. **Keralaputra**: Refers to the dynasty of the **Cheras**, one of the three main kingdoms of southern India.
3. **Linguistic Origins**: The word “keram” is **Canarese (or Kannada)** for “cheram”, which is used to refer to the coastal land between **Gokarna (in Karnataka)** and **Kanyakumari (Tamil Nadu, India’s southern tip)**.

Demand for Renaming

1. **Resolution**: The resolution, moved by **Kerala Chief Minister**, demands the Centre to rename the state as “Keralam” in the Constitution.
2. **Technical Issues**: The Chief Minister stated that the previous resolution, passed on August 9 last year, needed reintroduction due to some technical issues.
3. **Modified Resolution**: The modified resolution seeks to amend the **First Schedule of the Constitution** (list of various states) and the **8th Schedule** (list of official languages).

Story of Statehood

1. **Demand for a United Malayalam-speaking State**: The demand for a united Malayalam-speaking state first gathered momentum in the 1920s, aiming to integrate the princely states of **Travancore** and **Cochin**, and the **Malabar district** of the Madras Presidency.
2. **Integration of Travancore and Cochin**: After independence, on July 1, 1949, the two Malayalam-speaking princely states were integrated to form the state of **Travancore-Cochin**.
3. **Creation of Kerala**: The state of Kerala was finally created after the **State Reorganisation Commission’s** recommendation creating states on linguistic bases,

which included the district of Malabar and the taluk of Kasargod to the Malayalam-speaking people’s state.

Conclusion

The demand to rename Kerala as Keralam is a significant development in the state’s history, reflecting its cultural and linguistic identity. The resolution has been passed unanimously by the **Kerala Assembly**, and it remains to be seen how the Centre will respond to this demand.

12. e-Shram Portal Showcased at International Labour Conference

1. The e-Shram portal, a **“One-Stop-Solution”** for India’s unorganized workers, was recently showcased by an Indian delegation led by the Secretary, Ministry of Labour & Employment.
2. This took place during the 112th International Labour Conference held on June 4th, 2024, in Geneva, Switzerland.

e-Shram Portal: Key Features

1. **Launched in 2021**: e-Shram was launched as a comprehensive national database for migrant and unorganized workers across India.
2. **Facilitates Access to Social Security**: The portal aims to make it easier for workers to access various social security schemes.
3. **Integration with Other Platforms**: e-Shram is integrated with the National Career Service (NCS) Portal, Skill India Digital Hub (SIDH), myScheme portal, and the Pradhan Mantri Shram Yogi Mandhaan (PMSYM) scheme.
4. **Future Integration**: The government plans to integrate additional schemes like Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Suraksha Bima Yojana (PMSBY), Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY), and PM-SVANidhi into the e-Shram portal.

India’s Informal Labour Market

1. **Vast Majority**: India’s informal labor market accounts for approximately 85% of the nation’s workforce.
2. **Self-Employed and Casual Laborers**: Over 90% of these workers are self-employed or employed as casual laborers.



13. Post Office Act, 2023: Replacing Colonial Legislation

1. The Post Office Act of 2023 came into force on June 18 repealing the 125-year-old **Indian Post Office Act, 1898**.

It had been passed in the Rajya Sabha last year, on December 4, and in the Lok Sabha on December 18.

Indian Post Office Act, 1898

1. Came into force on 1st July 1898.
2. Aimed to consolidate and amend laws relating to Post Offices in India.
3. Provided for the regulation of postal services offered by the central government.
4. Granted the Central government exclusive privilege over conveying letters, establishing a monopoly.

What are the Key Highlights of the Post Office Act 2023?

1. **Interception and Detention of Items:**
 - a. **Section 9:** Allows the center to authorize interception or detention of postal items for reasons like state security, foreign relations, etc.
 - b. Items suspected of containing prohibited goods or items liable for customs duty can be handed over to **customs authorities**.
2. **Exemption from Liability:**
 - a. **Section 10:** The Post Office and its **officers are exempt from liability for loss, misdelivery, delay, or damage** during the course of providing services, except as prescribed.
3. **Removal of Penalties and Offences:** The new Act **eliminates all penalties** and offences outlined in the 1898 Act, including those related to misconduct, fraud, and theft by postal officials.
 - a. It includes provisions to **recover unpaid service charges** as arrears of land revenue.
4. **Penalty under Section 7:** Every person who avails of a service provided by the Post Office **shall be liable to pay the charges** in respect of such service.
5. **Removal of Centre's Exclusivity:** The new Act **removes the exclusive privilege** of the Centre to convey letters, a privilege which was effectively obsolete by the rise of private courier services in the 1980s.

- a. The Act now **explicitly brings private courier services** under its regulatory ambit, **recognizing the government's loss of exclusivity** while expanding the scope to intercept and detain any postal article, not just letters.

6. **Director General of Postal Services:** The new Act authorises the Director General of Postal Services to **make regulations** pertaining to activities essential for offering various additional services as may be prescribed by the central government, as well as for fixing charges for these services.

- a. It **eliminates the need for parliamentary approval** while revising the set charges for any services provided by post offices.

7. **Identifiers and Post Codes: Section 5(1)** of the Act states that "The Central Government may prescribe standards for addressing on the items, address identifiers and usage of postcodes".

- a. This provision is a **forward-looking concept** and will **replace physical addresses** with digital codes based on geographical coordinates for precise identification of a premise.

What are the Issues in the Post Office Act 2023?

1. **Removal of all Offences and Penalties:** The 2023 Act eliminates penalties for offenses like illegally opening mail, which were present in the 1898 Act. This raises concerns about potential harm to privacy rights.
2. **Lack of Procedural Safeguards Violates Fundamental Rights:** The Bill lacks specific procedural safeguards against intercepting postal articles. This could violate the right to privacy and freedom of speech and expression.
 - *The Supreme Court in PUCL vs Union of India, 1996* emphasized the necessity of fair procedures for interception to protect citizens' rights under Articles 19(1)(a) and 21.
3. **The Ground of 'Emergency' is Beyond the Reasonable Restrictions:** Like the 1898 Act, the 2023 Act doesn't explicitly define "emergency," potentially leading to misuse and exceeding reasonable restrictions.



4. Exemption from Liability for Lapses in Services:

The Act's framework contrasts with railway laws that address service complaints through the Railway Claims Tribunal Act of 1987. This raises concerns about accountability for lapses in postal services.

5. Regulation of Postal Services Different from Courier Services:

The Consumer Protection Act, 2019 applies to private courier services but not to India Post. This disparity continues in the 2023 Act, potentially affecting consumer rights.

Way Forward

- Strengthen Safeguards:** Establish clear procedures for interception of postal articles, including judicial oversight and timely notification to affected parties.
 - This should include oversight mechanisms, judicial warrants, and adherence to constitutional principles to protect the freedom of speech, expression, and the right to privacy of individuals.
- Clarify Definitions:** Define "emergency" and other grounds for interception precisely, ensuring they align with constitutional principles.
 - The Supreme Court in *Distt. Registrar & Collector, Hyderabad & Anr vs Canara Bank, 2005* ruled that the right to privacy remains intact when confidential documents are given to a bank or personal items to a post office, and that privacy requires written reasons for any search and seizure.
- Balance Liability:** Define clear liability rules for the Post Office while providing an accessible compensation mechanism for users.
- Protect Privacy:** Enforce penalties for unauthorized opening of mail and establish whistleblower protection mechanisms.
- Equal Consumer Protection:** Extend consumer protections to India Post services to ensure fair treatment for all users.

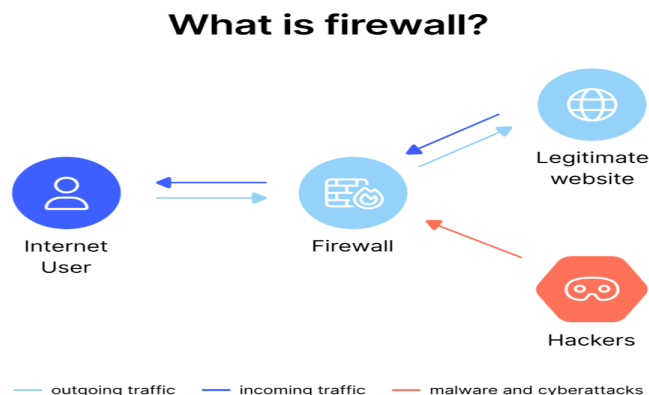
14. Is Pakistan using a Firewall to censor social media platforms?

- Pakistani media outlets** have reported that the country is planning to implement a **Chinese-style**

firewall to block access to social media platforms such as **X (formerly Twitter), Facebook, and YouTube**.

- The reports suggest that the government is setting up a '**National Firewall**' to filter keywords and block unwanted content, even for users accessing the internet through **virtual private networks (VPNs)**.

What is firewall?



A **firewall**, in simple terms, is a security system for your computer network. Imagine it like a bouncer at a club. The firewall monitors all the incoming and outgoing **traffic** (people entering and leaving the club), deciding whether to allow it or block it based on certain rules (like age requirement at the club).

How a firewall work?

- Traffic monitoring:** The firewall constantly checks all the **data** flowing through your network. This data is divided into packets, like individual pieces of information being sent.
- Rule-based filtering:** The firewall has pre-defined **security rules** set by the user. These rules specify what kind of traffic is allowed (like browsing safe websites) and what's blocked (like accessing suspicious sites).
- Allowing or blocking:** Based on the rules, the firewall decides what happens to each data packet. It can either allow it to pass through (like letting someone enter the club), reject it with an error message (like telling someone they're underage), or simply drop it without any notification (like silently stopping a suspicious program from connecting).

Firewalls typically operate between a trusted network (like your home network) and an untrusted network (like the internet). Their main purpose is to block unwanted



traffic from entering your network and potentially harming your devices. This unwanted traffic could be **malicious software (malware)**, hackers trying to steal information, or even just spam emails.

History of Internet Censorship in Pakistan

1. **Pakistan** has a history of **curtailing** people's access to the internet, either through website or social media blocks.
 - **Examples** include a **Twitter block in 2017**, **internet disruptions** during the country's elections, and blocking of around **20,000 websites**, including **YouTube**, in 2012.
2. Talks of a Chinese-style national firewall in Pakistan have been making rounds since around 2012, though not much verified data is available regarding the status of this project and its financial details.
3. In 2017, Jack Dorsey-led Twitter posted on its **Global Government Affairs** account that it was aware of reports that the "Pakistani government has taken action to block Twitter service, as well as other social media services."
4. More recently, in the first two months of 2024, as Pakistan prepared for its elections and the results, the government throttled access to **Elon Musk-owned X** for days on end. Internet service was also largely affected during this time period.

How Does a Digital Firewall Work?

1. A **digital firewall** is a security tool that stops online traffic from reaching certain sites.
2. It can prevent **malicious actors** from targeting individual users' computer systems or home networks, and even thwart **cyber threats** on specific websites.
3. A firewall can be a **physical device** or a **software-based tool**, depending on the user's needs.
4. Large firewalls like the **Great Firewall of China** are highly complex cybersecurity tools maintained at scale to prevent people from accessing large sections of the internet.

Impact of Government-Imposed Firewalls

1. Government-imposed firewalls impede **activists**, **journalists**, **dissidents**, and regime critics from obtaining information critical of the government.

2. **Internet shutdowns** and social media blocks also prevent governments or military authorities from being held accountable during periods of **civil unrest** and violence.
3. Internet shutdowns can disrupt **education**, **healthcare**, and **economic activities**, resulting in significant economic losses.
4. "Pakistani authorities have already imposed multiple shutdowns that disrupted opposition activities during this election cycle. At least 11 Internet shutdowns were imposed during the last election year of 2018, and the authoritarian use of shutdowns has only emboldened through 2022, 2023, and now 2024," said **digital rights advocacy group Access Now**, in a statement in February.

Pakistan's Internet Shutdowns

1. According to estimates from the digital privacy research group **Top10VPN**, Pakistan has shut down the internet for **1,752 hours** so far in 2024.
2. The **economic cost** of internet shutdowns worldwide last year was **\$9.13 billion**, with Pakistan's restrictions being the costliest election-related shutdown, costing **\$351 million**.

Concerns and Criticisms

1. Firewalls raise **antitrust concerns** as they hurt competition and can lead to the promotion of **government-approved alternatives** with lower privacy and service standards.
2. Firewalls can also stifle **innovation** and limit access to information, leading to a degradation of the internet user's experience.
3. Setting up and maintaining a firewall is a complex and expensive task, requiring constant monitoring to thwart bad actors and patch security vulnerabilities.
4. Firewalls also bring up antitrust concerns because they hurt competition. Well-performing companies and businesses that would normally gain more users may be blocked and replaced by government-approved alternatives with lower privacy and service standards, degrading the Internet user's experience even further.



Comparison with Other Countries

1. **India** has also blocked access to the internet **116 times** in 2023, according to a report by the **Keep It On coalition**.
2. Other countries, such as **China**, have also implemented firewalls to control access to the internet and censor online content.
3. According to the 2023 **Freedom House report**, India's score on the internet freedom index was **50**, which indicates a "partly free" internet. This is a slight improvement from 2021, when India scored 51, but a decline from 2016 and 2017, when India scored 59. The index is based on a scale of 1–100, with 100 representing the highest digital freedom and 1 representing the worst repression. Iceland, with a score of 94, was ranked the country with the best internet freedom in 2023.

Right to Internet in India:

1. In the **Anuradha Bhasin v/s Union of India 2020**, the Supreme Court ruled that the **right to freedom of speech and expression** and the **freedom to practise any profession or carry on any occupation, trade or business over the internet** are protected under **Article 19 (1) (a)** and **Article 19 (1) (g)** of the Indian Constitution, respectively.
2. This essentially means that the court recognised **internet access as a fundamental right**, integral to a democratic society for its proper functioning.

Conclusion

The implementation of a **digital firewall** in Pakistan raises concerns about **censorship, internet freedom**, and the impact on the country's **economy** and citizens. The lack of clarity regarding the current status of Pakistan's potential firewall and its implementation highlights the need for **transparency** and **accountability** in government policies related to internet governance.

15. FSSAI Cracks Down on Misleading "100% Fruit Juice" Claims

Recently, the **Food Safety and Standards Authority of India (FSSAI)** has directed manufacturers (**Food Business Operators (FBOs)**) to remove **"100% fruit juice"** claims from products made with reconstituted juice.

1. **Reconstituted juices** are made by adding water back to concentrated fruit juice.
2. FSSAI aims to prevent misleading consumers who might believe they're getting pure, undiluted juice.
3. **Key Regulations:**
 - a. **No "100% Juice" Claims:** As per **Advertising and Claims Regulations (2018)**, such claims are **not allowed** for any fruit juice product.
 - b. **"Reconstituted" Labeling: Food Products Standards & Additives Regulations (2011)** mandates that reconstituted juices must clearly state "reconstituted" in the ingredient list.
 - c. **Sweetener Transparency:** Juices with added nutritive sweeteners exceeding 15 gm/kg must be labeled "Sweetened Juice."





B. INTERNATIONAL RELATIONS

1. 50th G7 Summit

In June 2024, the Prime Minister of India attended the historic 50th G7 Summit in Italy, marking his first foreign trip after securing a third term in office. This participation underscores India's growing importance in the global arena. Let's delve into the key highlights of the summit and their implications for India and the world.

What is the G7?

1. The **G7 comprises 7 advanced economies**: France, Germany, Italy, the United Kingdom, Japan, the United States, and Canada.
2. It operates as an informal grouping, with summits held annually and hosted by rotating members.
3. The G7 originated in 1975 due to the oil crisis and financial instability, initially with six members before Canada joined in 1976.
4. **Russia was expelled** in 2014 following its annexation of Crimea.

Key Highlights of the 50th G7 Summit:

1. **Partnership for Global Infrastructure and Investment (PGII):**
 - a. The G7 pledged to accelerate PGII initiatives, a US-led program aimed at bridging the \$40 trillion infrastructure gap in developing nations.
 - b. G7 members will mobilize \$600 billion by 2027 for infrastructure projects in low and middle-income countries.
2. **Support for India-Middle East-Europe Economic Corridor (IMEC)**
 - a. **G7 nations committed** to advancing IMEC, a multi-modal corridor connecting India, the Middle East, and Europe through rail, road, and sea routes.
 - b. **Objective:** Create a comprehensive transportation network connecting India, the Middle East, and Europe via rail, road, and sea routes.

c. IMEC Details:

- i. Signed at the G20 Summit, New Delhi, September 2023.
- ii. **Comprises two corridors:** 1) East Corridor: India to the Arabian Gulf. 2) Northern Corridor: Gulf to Europe.
- iii. Includes electricity cable, hydrogen pipeline, and high-speed data cable.
- iv. **Signatories:** India, US, Saudi Arabia, UAE, EU, Italy, France, Germany.

3. Support for Infrastructure Projects

- a. **Lobito Corridor:** Extends from Lobito (Angola) to DRC and Zambia.
- b. **Luzon Corridor:** Strategic corridor on Luzon island, Philippines.
- c. **Middle Corridor:** also referred to as the **Trans-Caspian International Transport Route (TITR)**, Connects Europe and Asia, an alternative to traditional routes.

4. Great Green Wall Initiative

- a. **Objective:** Combat desertification in the Sahel region, Africa.
- b. **Aim:** Create a wall of trees across Africa to prevent Sahara Desert spread, improve biodiversity, and provide economic opportunities.

5. Enhancing Interoperability of AI Governance

- a. **Commitment:** G7 leaders aim to enhance interoperability in AI governance.
- b. **Focus:** Manage risks to support innovation, ensuring certainty, transparency, and accountability for inclusive, sustainable growth.

6. Extraordinary Revenue Acceleration (ERA) Loans for Ukraine

- a. **Financial Support:** G7 agreed to provide approximately \$50 billion in additional funding to Ukraine by the end of 2024.

Why is India's Role in the G7 Important?

1. **Economic Significance:** India's GDP surpasses that of 4 G7 members, and it is a fast-growing economy with a skilled workforce and favorable investment climate.



- 2. Strategic Importance in the Indo-Pacific:** India is a key strategic partner for the West in countering China's influence in the region.
- 3. Role in European Energy Crisis:** India has helped alleviate the European energy crisis caused by the Ukraine war by refining and supplying Russian oil to Europe.
- 4. Potential Mediator in Russia-Ukraine Conflict:** India's neutral stance and relationships with both Russia and the West make it a potential mediator in the conflict.

Challenges to India in Balancing Power Conflict Between West and China-Russia:

- 1. Defence Dependence on Russia:** Over 60% of India's military equipment comes from Russia, potentially leading to disruptions in supply chains if the West-Russia relationship deteriorates further.
- 2. Economic Interdependence:** India's economic ties with both the US and China make it vulnerable to decoupling pressures.
- 3. Divergent Approaches:** Disagreements within the West on how to handle Russia and China create uncertainty for India's strategic choices.
- 4. Domestic Political Turmoil:** Internal political divisions in Western democracies could lead to policy inconsistencies, affecting India's strategic calculations.
- 5. Geopolitical Rivalry:** The escalating US-China rivalry in the Indo-Pacific may force India to take sides on issues that might not align with its national interests.

Conclusion:

India's participation in the G7 Summit underscores its rising global influence and its importance as a bridge between the West and the East. However, it also faces complex challenges in navigating the geopolitical landscape amid the ongoing power struggles between major powers. The future of international cooperation hinges on India's ability to leverage its unique position and contribute to a more stable and prosperous global order.

2. Russia Sends First Coal Trains to India via INSTC

- Russia has dispatched two trains loaded with coal to India through the International North-South Transport Corridor (INSTC).
- The INSTC, a 7,200 km (4,500 miles) multimodal route, connects St. Petersburg in Russia to Mumbai in India, traversing Iran and utilising a network of railways, roadways, and seaports.

Member countries

INSTC membership has expanded to a **total of 13 countries** - India, Iran, Russia, Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Ukraine, Syria, Belarus, and Oman.

INSTC routes and Modes

- 1. Central Corridor:**
 - a. Starting Point:** Jawaharlal Nehru Port in Mumbai, India
 - b. Route:** Connects to Bandar Abbas port in Iran, then passes through Nowshahr, Amirabad, and Bandar-e-Anzali in Iran.
 - c. Path:** Runs along the Caspian Sea to reach Olya and Astrakhan Ports in Russia.



- 2. Western Corridor:**
 - a. Rail Connection:** Links the railway networks of Azerbaijan and Iran.
 - b. Cross-Border Points:** Astara (Azerbaijan) to Astara (Iran).
 - c. Sea Route:** Extends to Jawaharlal Nehru Port in India via the sea.

3. Eastern Corridor:

- a. **Connection:** Links Russia to India.
- b. **Through Central Asia:** Passes through Kazakhstan, Uzbekistan, and Turkmenistan.

Significance of INSTC for India

1. Diversification of Trade Routes

- a. **Bypassing Chokepoints:**
 - i. INSTC allows India to avoid strategic chokepoints like the Strait of Hormuz and the Red Sea (via the Suez Canal), enhancing trade security.
 - ii. Recent conflicts, such as the Israel-Hamas tensions and Houthi attacks in the Red Sea, emphasize the need for alternative routes.

2. Bypassing Pakistan and Afghanistan:

- a. The INSTC enables India to circumvent unstable regions like Pakistan and Afghanistan, ensuring more reliable access to Central Asia.

3. Enhanced Connectivity with Central Asia

- a. **Direct Market Access:**
 - i. The corridor connects India to Russia, the Caucasus, and Eastern Europe, boosting trade and cooperation in energy, defense, counter-terrorism, and culture with Central Asian Republics through initiatives like “Connect Central Asia”.
 - ii. It reduces transit time by 20 days and freight costs by 30% compared to the Suez Canal route.

4. Energy Security

- a. **Access to Resources:**
 - i. INSTC facilitates India’s access to energy resources in Russia and Central Asia, reducing dependency on the Middle East.
 - ii. Following the Russia-Ukraine war, India’s imports of metallurgical coal from Russia have tripled and are expected to grow amid declining imports from Australia

5. Strengthening Ties with Iran and Afghanistan

- a. **Chabahar Port Investment:**
 - i. India’s investment in Chabahar Port in Iran’s Sistan-Balochistan province and its agreement on the INSTC aim to enhance trade with Central Asian countries.
 - ii. Chabahar Port provides India, Iran, and Afghanistan with direct sea access and trade opportunities in the region.

Challenges to INSTC Materialization: Strategic Solutions

Challenges	Strategic Solution
1. Lack of significant financial backing from major international institutions	Founding members (India, Russia and Iran) should actively seek funding from diverse sources , including international organizations, private investors, and member states.
2. Re-imposition of sanctions on Iran	Founding members should engage in diplomatic efforts to mitigate the impact of sanctions , explore alternative financial channels, and promote trade through barter systems.
3. Security threats from terrorist organizations in Central Asia	Enhance security cooperation among member states, including intelligence sharing, joint military exercises, and capacity building for counterterrorism.
4. Variations in customs regulations and tariff structures	Establish a unified customs system with standardized procedures and documentation, harmonize tariff structures, and implement mutual recognition agreements.
5. Uneven infrastructure development, particularly underdeveloped rail networks in Iran	Prioritize infrastructure development along the corridor, focusing on upgrading rail networks, expanding port facilities, and improving road connectivity. Explore public-private partnerships to attract investment in infrastructure projects.



3. India-Russia Relation : RELOS Deal Finalized

Recently, the India-Russia mutual logistics agreement named the **Reciprocal Exchange of Logistics Agreement (RELOS)** is now ready for finalisation. It will facilitate military cooperation between India and Russia, including **joint exercises, training, and disaster relief efforts.**

What is Reciprocal Exchange of Logistics Agreement (RELOS)?

1. **About:** An administrative arrangement facilitating military logistics support.
2. **Purpose:** Streamline joint operations and long-distance missions, making them more efficient and cost-effective.
3. **Significance:**
 - a. Enables sustained military operations by replenishing essential supplies.
 - b. Provides berthing facilities for troops, warships, and aircraft during both peacetime and wartime missions.
 - c. Enhances military reach and maritime domain awareness, especially in strategically important regions.
 - d. Counterbalances India's Quad agreements and strengthens Russia's presence in the Indo-Pacific.
 - e. Facilitates scientific collaboration in the Arctic.

What are India's Logistics Agreements with Various Countries?

1. **India and USA:**
 - a. **General Security of Military Information Agreement (GSOMIA):** It was signed in 2002, to facilitate sharing military intelligence between **India and the USA.**
 - b. **Logistics Exchange Memorandum of Agreement (LEMOA), 2016:** Allows mutual use of military logistics facilities.
 - c. **Basic Exchange and Cooperation Agreement (BECA), 2020:** Provides India access to U.S. geospatial intelligence data.
 - d. **Communications Compatibility and Security Agreement (COMCASA), 2018:** Enables the transfer of encrypted communication equipment.

2. **India and France:**
 - a. Facilitates **logistical support during joint exercises**, port visits, and humanitarian efforts
 - i. Promotes stability in the Pacific and **Indian Ocean regions.**
 - ii. Enables maritime intelligence sharing.
3. **India and Australia:**
 - a. Comprehensive **Mutual Logistics Support Agreement (MLSA), 2020.**
 - i. Emphasises shared vision for Indo-Pacific maritime cooperation.
4. **India and Japan:**
 - a. **Allows Close Coordination of Services (ACSA), 2020** and supplies between armed forces.

Evolution of India-Russia Relations

1. **Historical Genesis:**
 - a. **The Indo-Soviet Friendship Treaty of 1971:** In the wake of the Indo-Pak war (1971), Russia supported India while the US and China supported Pakistan.
 - b. **Declaration on the India-Russia Strategic Partnership:** In October 2000, India-Russia ties acquired a qualitatively new character with enhanced levels of cooperation in almost all areas of the bilateral relationship.
 - c. **Special and Privileged Strategic Partnership:** During the visit of the Russian President to India in December 2010, the **Strategic Partnership** was elevated to the level of a **"Special and Privileged Strategic Partnership"**.
2. **Bilateral Trade:** Bilateral trade reaching USD 13 billion in 2021-22, with Russia as India's seventh largest trading partner.
3. **Political Engagement:**
 - a. Politically, both countries engage through annual meetings of two **Inter-Governmental Commissions: One focused on Trade, Economic, Scientific, Technological, and Cultural Cooperation (IRIGC-TEC)** and another on **Military-Technical Cooperation (IRIGC-MTC).**



4. **Defence and Security Relations:** Both countries regularly conduct the Tri-Services exercise ‘INDRA’.
- The joint military programs between India and Russia include:
 - BrahMos cruise missile** program
 - 5th generation fighter jet program
 - Sukhoi Su-30MKI programme
 - The **military hardware purchased/leased** by India from Russia includes:
 - S-400 Triumph**
 - Kamov Ka-226** 200 to be made in India under the **Make in India** initiative
 - T-90S Bhishma**
 - INS Vikramaditya aircraft carrier program**
 - AK-203 Rifles**
5. **Science and Technology:**
- The partnership dates back to the early days after India’s independence when Soviet assistance was pivotal in establishing institutions like the **Bhilai Steel Plant and supporting India’s space program**.
 - Today, collaboration extends to advanced fields such as **nanotechnologies, quantum computing,** and India’s manned spaceflight program (**Gaganyaan**).

Key Challenges in India-Russia Relations and Potential Solutions

1. Strategic Shifts:

- Challenge:** Russia’s closer ties with China and improved relations with Pakistan affect India’s regional strategy.
- Solution:** India should continue its multi-alignment policy, engaging with all major powers while maintaining strategic autonomy. This includes strengthening ties with other regional players like Japan and ASEAN to counterbalance China’s influence.

2. India’s Diplomatic Balancing Act:

- Challenge:** India’s close ties with both the US and Russia create a diplomatic dilemma, especially when their interests diverge.
- Solution:** India needs to prioritize its national interests and adopt a pragmatic approach. This involves maintaining open communication

channels with both countries, clearly articulating its stance on global issues, and finding areas of cooperation where possible.

3. Russia-Ukraine Crisis:

- Challenge:** India’s neutral stance on the Ukraine crisis led to criticism from the West and strained relations.
- Solution:** India can emphasize its commitment to international law and peaceful conflict resolution. Engaging in diplomatic efforts to mediate between Russia and Ukraine could help improve its image in the West.

4. Declining Defense Imports:

- Challenge:** India’s diversification of defense imports poses a challenge for Russia’s defense industry.
- Solution:** India and Russia can explore collaborative export strategies, leveraging India as a manufacturing hub for Russian defense equipment. This would expand market reach for both countries and strengthen their defense ties.

Way Forward:

- Enduring Defense Partnership:** Maintaining and modernizing the existing defense cooperation while exploring joint development and production of advanced military technologies.
- Diversification of Economic Ties:** Expanding collaboration beyond defense into sectors like energy, technology, space, and trade.
- Strategic Balancing:** Continuing engagement with multilateral forums like BRICS and SCO while strengthening ties with Quad nations.
- Space Collaboration:** Deepening cooperation in space exploration and technology through joint missions and research initiatives.

4. Fast Track Immigration - Trusted Traveler Program

In June, 2024 Ministry of Home Affairs (MHA) has launched Fast Track Immigration - Trusted Traveler Program (FTI-TTP) with the aim to fast track the immigration process at airports for pre-verified Indian nationals and people of Indian origin having the status of Overseas Citizens of India (OCI).



What is the Overseas Citizen of India (OCI) Scheme?

1. The **OCI scheme is for individuals of Indian origin who are foreign passport holders. It provides long-term visa-free travel and stay in India, along with various other privileges.**
2. Introduced in 2005 by amending the Citizenship Act, 1955, it **does not grant Indian citizenship.**

About Fast Track Immigration - Trusted Traveler Program

1. **Purpose:** To provide faster, smoother, and safer immigration clearance for Indian citizens and Overseas Citizen of India (OCI) cardholders.
2. **Benefits:**
 - a. Free of cost
 - b. Minimizes human intervention
 - c. Enhances travel convenience and efficiency
 - d. Makes international travel easy and secure
3. **Implementation:**
 - a. **Two phases:**
 - i. Phase 1: Indian citizens and OCI cardholders
 - ii. Phase 2: Foreign travelers
 - b. Online portal **managed by the Bureau of Immigration**
 - c. White List of 'Trusted Travellers' generated after verification
 - d. TTP registration valid for 5 years or till passport validity, whichever is earlier
 - e. E-gates used for automated clearance
4. **Airports:**
 - a. Launched at 21 major airports in India
 - b. First phase includes Delhi, Mumbai, Chennai, Kolkata, Bengaluru, Hyderabad, Kochi, and Ahmedabad.

Additional Notes:

1. FTI-TTP is a visionary initiative of the Government of India under the leadership of Prime Minister Narendra Modi.
2. It is a key agenda for Viksit Bharat @2047.
3. It reflects the government's commitment to enhance travel convenience and efficiency for all.

5. Issues of Indian Migrants in Gulf Countries

1. In June 2024, a devastating fire erupted in an apartment building near Kuwait City, resulting in the tragic loss of at least 49 lives, approximately 40 of whom were Indian nationals.
2. The apartment complex housed over 195 employees, primarily Indian nationals hailing from various regions of India, including the northern states of Tamil Nadu and Kerala.
 - **Others Similar incidents:** Similar events have happened in 2022, including the unfavourable working conditions and human rights violations during the FIFA World Cup in Qatar.

What is the condition of Indian labourers in the Gulf countries?

1. **Indian diaspora in the GCC nations** - According to a report, published in 2021, of the Ministry of External Affairs, there are 8.88 million Non-Resident Indians (NRIs) residing in 6 Gulf countries.
 - a. In the United Arab Emirates (UAE), approximately 2.59 million NRIs live, 1.02 million in Kuwait, 0.74 million in Qatar, 0.77 million in Oman, and 0.32 million in Bahrain. In all, 3.41 million NRIs live abroad.
2. With around 30% of the region's overall expatriate workforce, Indians make up the largest expatriate community in the GCC countries.
3. **State-by-state worker migration trend:** According to the Kerala Migration Survey (KMS) 2023, 2.2 million individuals have left the state, with 80% of them now living in the Gulf Cooperation Council (GCC) nations.
 - a. Kerala, which was a major contributor of blue-collar workers from India to the Gulf Cooperation Council (GCC) region, has been gradually replaced by Uttar Pradesh and Bihar. The UAE-based organization Huntr has brought attention to this.

What is the GCC?

1. **Regional Alliance:** The Gulf Cooperation Council (GCC) is a political and economic alliance of six Arab nations: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates (UAE).

2. Established in 1981: Its main goals include fostering economic cooperation and integration, promoting political stability, and enhancing security in the region.

Challenges faced by Indian workers in Gulf countries include:

1. Exploitative Working Conditions:

- **Challenge:** Migrants face withheld pay, poor working conditions, and labor rights violations.
- **Solution:** Strengthen labor law enforcement, conduct regular inspections, and ensure access to legal aid for migrant workers. Establish clear minimum wage standards, overtime regulations, and mechanisms for anonymous reporting of abuses.

2. Recruitment Procedures:

- **Challenge:** Recruitment agents charge excessive fees, contracts are changed upon arrival, and passports are confiscated.
- **Solution:** Regulate recruitment agencies, cap recruitment fees, and enforce transparent contracts with fixed terms. Educate migrants on their rights before departure and establish mechanisms to hold agencies accountable for violations.

3. Legal and Visa Issues:

- **Challenge:** Issues with visas and work permits make migrants vulnerable to deportation threats and exploitation. The “kafala” system restricts worker mobility.
- **Solution:** Reform visa systems to delink them from employers, abolish the “kafala” system, and provide clear paths to legal residency. Offer accessible legal assistance and information on migrant rights.

4. Lack of Data and Invisibilization:

- **Challenge:** Insufficient data on migrants hinders effective policymaking and addressing their needs.
- **Solution:** Improve data collection and sharing between origin and destination countries, focusing on disaggregated data by gender, nationality, and sector. Invest in research to understand the specific challenges faced by different migrant groups.

5. Poor Living Environment:

- **Challenge:** Migrants often live in overcrowded and substandard housing, impacting their health and well-being.
- **Solution:** Enforce housing standards, provide affordable housing options, and conduct regular inspections of migrant accommodations. Ensure access to clean water, sanitation, and healthcare facilities.

6. Legal Frameworks and Redressal Mechanisms:

- **Challenge:** Long legal processes, high costs, and lack of legal aid make it difficult for migrants to seek redress.
- **Solution:** Simplify legal procedures, offer free legal aid and interpreters, and establish specialized migrant courts. Create mechanisms for fast-track resolution of labor disputes and ensure access to compensation for victims of exploitation.

7. Cultural Barriers and Languages:

- **Challenge:** Language differences and cultural gaps lead to social isolation and difficulties in accessing support.
- **Solution:** Offer language training programs and cultural orientation for both migrants and host communities. Promote intercultural dialogue and understanding through community events and initiatives.

8. Discrimination and Racism:

- **Challenge:** Migrants face discrimination and racism in the workplace and society, limiting opportunities and well-being.
- **Solution:** Enact and enforce anti-discrimination laws, conduct awareness campaigns, and provide diversity training in workplaces and communities. Encourage reporting of discrimination and ensure access to redress mechanisms.

9. Mental and Cognitive Health:

- **Challenge:** Migration-related stress leads to mental health problems like anxiety, depression, and isolation.
- **Solution:** Provide accessible mental health support services, counseling, and community-



based programs for migrants. Raise awareness about mental health issues and reduce stigma associated with seeking help.

10. Strain in Family Relationships:

- **Challenge:** Long separations due to sponsorship rules and financial pressures strain family bonds.
- **Solution:** Implement flexible family reunification policies, offer affordable communication options, and provide financial literacy programs for migrants.

6. New Non-Permanent Members of UNSC

1. In June 2024, Pakistan, Somalia, Denmark, Greece, and Panama were **elected as non-permanent** members of the United Nations Security Council (UNSC). They **will replace** the following countries:
 - Mozambique (African Group), Japan (Asia-Pacific Group), Ecuador (Latin America and Caribbean Group), Malta (Western European and Others Group), Switzerland (Western European and Others Group).
 - These outgoing members will complete their two-year terms on December 31, 2024.
2. Newly elected members two-year term will commence on January 1, 2025, and conclude on December 31, 2026.

The UNSC comprises 15 members:

1. **Five Permanent Members (P5):** China, France, Russian Federation, the United Kingdom, and the United States., and 10 **Non-Permanent Members (Elected for Two-Year Terms)**

Election Procedure and Regional Representation

The UNSC election process is based on regional groupings, ensuring diverse global representation. The four regional groups are:

1. **African Group:** Represented by Somalia in this election.
2. **Asia-Pacific Group:** Represented by Pakistan in this election.
3. **Latin America and Caribbean Group (GRULAC):** Represented by Panama in this election.

4. Western European and Others Group (WEOG):

Represented by Denmark and Greece in this election. Each group typically agrees on candidates for a two-year term, presented to the General Assembly for voting.

The Security Council's Mandate and Functions

The UNSC is the primary organ of the United Nations responsible for maintaining international peace and security. Its mandate encompasses a wide range of functions, including:

1. **Maintaining International Peace and Security:** The Council can convene at any time when peace is threatened, recommending peaceful resolutions or enforcing measures like sanctions or military action.
2. **Investigating and Mediating Disputes:** The Council can investigate complaints, mediate disputes, and dispatch missions to promote peaceful settlements.
3. **Authorizing Peacekeeping Operations:** The Council can deploy military observers or peacekeeping forces to reduce tensions and create conditions for peace.
4. **Enforcing Measures:** The Council can impose economic sanctions, arms embargoes, financial penalties, travel bans, and even authorize collective military action in extreme cases.

India's Role and the Need for UNSC Reforms

1. **India has been a non-permanent member of the UNSC for 8 terms** (periods of 1950-51, 1967-68, 1972-73, 1977-78, 1984-85, 1991-92, 2011-12, and 2021-22).
2. **India's growing global influence**, economic power, and commitment to multilateralism make it a strong contender for a permanent seat on the UNSC.
3. However, the current structure of the UNSC has faced criticism for its lack of representation and the veto power held by the P5 members. The call for UNSC reforms aims to address these issues and make the Council more democratic, transparent, and representative of the 21st-century world order.

Conclusion

The election of new non-permanent members to the UNSC is a significant event in international diplomacy. It highlights the importance of regional representation and the ongoing efforts to reform the Council to better reflect

the changing global landscape. As India continues to play a prominent role on the global stage, its aspiration for a permanent seat on the UNSC remains a key foreign policy objective.

What is KAFALA system?

- The kafala system, a legal framework that has long regulated the relationship between migrant workers and their employers in Jordan, Lebanon, and all Arab Gulf states except Iraq, was established to provide affordable and abundant labor during periods of significant economic growth.
- Supporters claim it benefits local businesses and promotes development.
- However, the system has become increasingly controversial due to its widespread exploitation. The absence of regulations and protections for migrant workers often leads to low wages, poor working conditions, and abuse.
- Racial discrimination and gender-based violence are common issues. Global anti-racism movements, the COVID-19 pandemic, and preparations for the 2022 FIFA World Cup in Qatar have highlighted the system's flaws, but the prospects for reform remain uncertain.
- The kafala, or sponsorship, system defines the relationship between foreign workers and their local sponsor, or kafeel, typically their employer. It is utilized in Gulf Cooperation Council (GCC) countries—Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates—as well as in Jordan and Lebanon. Although Bahrain and Qatar assert that they have abolished the system, critics argue that reforms are inadequately enforced and do not truly eliminate it.

Initiative by the Indian government to ensure welfare of migrant workers?

1. **Emigration Act of 1983:** This Act provides the legal framework to regulate emigration of Indian workers. Except this, It also mandates recruitment agencies to register and follow regulations on emigration procedures.

2. **E-Migrate System:** An online system that facilitates skilled and semi-skilled workers to get emigration clearances and track their immigration status. It prevents exploitation by recruiting agents and unregistered subagents.

- **e- Migrate** is also integrated with Bureau of Immigration (BoI) system of MHA, used at Immigration Check Post (ICP) and airports for online validation of the ECs granted by PoEs to ECR category of workers proceeding for employment purposes to ECR Countries.

3. **Labor Mobility Partnerships :**India has entered into multiple labor agreements and Memorandums of Understanding (MoUs) with Gulf Cooperation Council (GCC) countries such as UAE, Saudi Arabia, Kuwait, and Bahrain. These agreements aim to strengthen safeguards for workers and encompass aspects such as employment contracts, standard labor policies, and the protection of worker rights.

4. **Pre-Departure Orientation Programs (PDOS):** The initiative concentrates on enhancing the soft skills of Indian migrant workers, particularly those bound for the Gulf region and Malaysia. This involves acquiring knowledge about the culture, language, customs, and legal framework of the destination country.

5. **Indian Community Welfare Fund (ICWF):** Established in 2009, the Indian Community Welfare Fund (ICWF) is designed to aid Overseas Indian nationals during periods of distress and emergencies, prioritizing the 'most deserving cases' based on financial need. The ICWF has played a crucial role in facilitating emergency evacuations of Indian nationals from conflict areas, regions hit by natural disasters, and other challenging circumstances. Recognizing its significant utility, ICWF has been expanded to encompass all Indian Missions and Posts worldwide.

6. **Awareness Campaign:** A campaign titled 'Surakshit Jaaye Prasikshit Jaaye' (Go Safe, Go Trained) was initiated to advocate for safe and lawful migration practices.

The Way Forward

To ensure the well-being and rights of Indian migrant workers in the Gulf countries, a multi-pronged approach is crucial. This includes:



- Strengthening legal and regulatory frameworks** in both India and the Gulf countries to protect workers from exploitation and ensure fair recruitment practices.
- Enhancing diplomatic channels to advocate** for the rights of Indian workers and negotiate bilateral agreements for better protection and recourse.
- Improving grievance redressal mechanisms** to make it easier for workers to file complaints and seek justice.
- Expanding welfare measures** like the Indian Community Welfare Fund and establishing more Indian Workers Resource Centers to provide essential support services.
- Investing in skill development programs** to improve the employability and job prospects of migrant workers.
- Promoting social integration** to foster a more inclusive environment for migrant workers and bridge cultural divides.

Conclusion

Protecting the rights and welfare of Indian migrant workers in the Gulf is not just a moral imperative but also an economic necessity. By prioritizing their well-being and empowering them with the necessary tools and resources, India can ensure that migration remains a mutually beneficial process for both the workers and the host countries. A collaborative effort involving governments, NGOs, and international organizations is essential to achieve this goal and build a more equitable and sustainable migration ecosystem.

7. India's Leadership in the Colombo Process

- India has recently assumed the chairmanship of the Colombo Process, a significant **regional consultative forum** focused on the rights and welfare of migrant workers from South and Southeast Asia.
- This marks **India's first time** leading the group since its inception in 2003, and it will hold this leadership role for the **period 2024-2026**.

Why Does it Matter?

- Regional Leadership:** India's leadership of the Colombo Process signals its commitment to regional cooperation and its growing role in shaping migration policies in Asia.
- Migrant Worker Welfare:** The **Colombo Process plays a crucial role in addressing the challenges faced by migrant workers**, including ethical recruitment, skills recognition, and remittance flows. India's leadership offers a unique opportunity to drive progress in these areas.
- Economic Implications:** The large number of migrant workers from South and Southeast Asia contributes significantly to the economies of both origin and destination countries. India's chairmanship could promote policies that maximize the benefits of labor migration for all stakeholders.

What is the Colombo Process?

- Members:** The Colombo Process comprises **12 Asian member states**, including major labor-sending countries like **India, Bangladesh, Nepal, and the Philippines**.
- Objectives:** The forum aims to share best practices, address challenges faced by migrant workers, and promote ethical recruitment and fair treatment.
- Five Thematic Areas:** The Colombo Process focuses on skills recognition, ethical recruitment, pre-departure orientation, remittance transfer, and labor market analysis.

India's Priorities as Chair

India has outlined several priorities for its chairmanship:

- Strengthening ethical recruitment practices** to protect migrant workers from exploitation and abuse.
- Enhancing skills development and recognition** to improve employability and ensure fair wages.
- Facilitating faster and cheaper remittance flows** to benefit migrant workers and their families.
- Expanding collaboration** with other regional and global forums to address cross-border migration challenges.

Key Points

1. The Colombo Process **is a crucial platform** for advancing the rights and well-being of migrant workers in Asia.
2. **India's chairmanship marks** a pivotal moment in the forum's history and presents a unique opportunity for regional leadership.
3. India's **priorities as chair align** with its broader goals of promoting safe, orderly, and regular migration.

Way Ahead

India's leadership of the Colombo Process is expected to bring renewed focus and energy to the forum's work. It could potentially lead to significant policy changes and improvements in the lives of millions of migrant workers across the region.

8. Biopharmaceutical Alliance: A Strategic Partnership for Global Health

1. In June 2024, South Korea, India, the United States, Japan, and the European Union (EU) formed the Biopharmaceutical Alliance, aimed at creating a resilient supply chain in the biopharmaceutical sector.
2. The first meeting of the Alliance took place in San Diego (USA) at the Bio International Convention 2024.

Overview

1. The Biopharmaceutical Alliance aims to build a resilient and sustainable supply chain for biopharmaceuticals through collaborative efforts among member countries.
2. It recognizes the importance of coordinating biopolicies, regulations, and research and development support measures to ensure the availability of essential medicines.

Key Objectives

1. **Resilient Supply Chain:** Harmonize regulations, policies, and research efforts to create a robust supply chain for biopharmaceuticals.
2. **Collaborative Research and Development:** Encourage collaboration to accelerate the discovery and development of new biopharmaceuticals.

3. **Knowledge Sharing and Best Practices:** Facilitate the exchange of knowledge, best practices, and technological advancements to enhance manufacturing and distribution.
4. **Risk Mitigation:** Diversify sources of raw materials and ensure continuity of production to mitigate risks and prevent supply chain disruptions.
5. **Global Access to Biopharmaceuticals:** Promote equitable distribution and affordability to improve global access, particularly in underserved regions.

Significance

The Biopharmaceutical Alliance is crucial in addressing global healthcare challenges by ensuring the timely and equitable availability of biopharmaceuticals. It provides a platform for international collaboration, knowledge sharing, and innovation, advancing the healthcare sector and ultimately benefiting patients worldwide.

9. Protests and Riots in New Caledonia

Widespread protests and riots erupted in New Caledonia in response to the French parliament's decision to amend the voters' list.



Why Are Protests Happening?

1. The new amendment bill will pave the way for incorporating citizens who were either born or lived in the territory for at least 10 years.
2. **Kanaks, the indigenous community of the territory, opposed this on claims that it diluted their electoral power thus marginalising them.**



- a. The Kanaks comprise 43% of the 1,45,000 population, while the European (French loyalists), Wallisians and Futunians comprise 37%.
3. **The new voting amendment will give majority to the loyalists undermining the Kanaks' future towards decolonisation.**
4. This would also mean an **alteration of the internal political environment towards French settlers.**

Brief History of the Archipelago

1. New Caledonia had **Kanaks as the original inhabitants.**
2. **France gained control of the territory in 1853** and governed the Kanaks with reservations.
3. After the Second World War, colonial laws were abolished, and the Kanaks were granted French citizenship.
4. **In the 1960s, increased migration from France turned the Kanaks into a minority in New Caledonia.**
5. Angered by their deteriorating socio-economic status and lack of economic and political involvement, an independence movement grew in the island.

10. Maitri Setu: A Bridge to Strengthen India-Bangladesh Ties

The Maitri Setu, also known as the **India-Bangladesh friendship bridge**, is set to open by September, connecting India's **landlocked Northeast** to the Bay of Bengal.

Key Facts about the Maitri-Setu

- a. The bridge is **1.9 kilometres long** and connects **Sabroom in Tripura** with **Ramgarh in Bangladesh.**
- b. Maitri Setu is constructed over the **Feni River**, which acts as a **boundary** between India (in Tripura) and Bangladesh.
- c. The name '**Maitri Setu**' signifies the **strengthening of bilateral relations** and friendly ties between India and Bangladesh.
- d. It is a **pre-stressed concrete bridge** with a single-span structure that facilitates smooth traffic and cargo flow.
- e. The construction of the bridge has been supervised by the **National Highways and Infrastructure Development Corporation Ltd. (NHIDCL).**

- i. NHIDCL is a **government-owned company** established in 2014 for the **development & maintenance of National Highways & Strategic Roads** of India. It operates as a **nodal agency** of the Ministry of Road Transport and Highways (MoRTH).

Significance:

1. The bridge will play a **central role** in allowing India to transport goods from **West Bengal to Northeast India** through the **Chittagong and Mongla Ports** in Bangladesh.
 - a. **Cargo movement** through the bridge is **strategically important** as Bangladesh's Chittagong port is just 80km from Tripura's Sabroom.
2. It would serve as a new trade corridor between the two countries, helping in the development of **Northeastern states**. It will also enhance **people-to-people connect between India's northeast and Bangladesh.**
3. Bangladesh is the **biggest trade partner** of India in South Asia and an integral part of India's **Act East Policy**.
 - a. The completion of Maitri Setu bridge will strengthen **India's strategic ties** as well as **bilateral trade** with Bangladesh.
4. The **new maritime route** from **Kolkata to Chittagong** will provide the quickest way for the movement of goods and an **alternative to the Sittwe Port-Kaladan route.**

Key Facts about Feni River

1. It **originates** in the **South Tripura district**, passes through Sabroom town in India, and flows into Bangladesh before **meeting the Bay of Bengal.**
2. The river is **116 kilometres long** from its source to the Bay of Bengal.
3. Some **notable tributaries** of the Feni River include the **Muhuri River, Raidak River, Chandkhira River, Ryang River, and Kushiyara River.**

Maitri Setu is not just a bridge; it's a symbol of friendship, cooperation, and progress. It represents a significant step towards a more integrated and prosperous South Asia.





C. SECURITY

1. Minilateralism: A Rising Force in Global Governance

Recently, the rise of **Chinese aggression** in the **Indo-Pacific region** has prompted the formation of the ‘Squad’ highlighting the growing importance of “minilateralism.”

- A squad is a **multilateral group** consisting of the US, Japan, Australia, and the Philippines.

What is Minilateralism?

1. **About:** Minilaterals are informal, focused initiatives involving a small group of states (usually three or four) with shared interests. These collaborations aim to address specific threats or issues within a limited timeframe. They lack a permanent or formal structure, and outcomes are voluntary and non-binding.

2. Reasons for Rise:

- a. The **changing global order** and threats challenge the relevance of multilateral frameworks in resolving local conflicts.
- b. **Inconsistent US global leadership** and a multipolar world have exposed cracks in multilateral organizations like the UN Security Council and WTO.
- c. Global problems often have **regional variations**, and minilaterals can tailor solutions to specific challenges.

3. **Contrast with Multilateralism:** Multilateralism involves formal efforts by multiple states to build trust and avoid conflict through institutionalized rules and norms. Multilateral frameworks emphasize broad participation, unlike the focused nature of minilaterals.

4. Key Differences:

- a. **Minilateralism vs. Multilateralism:** Multilateralism involves formal agreements and broader participation among states to build trust and avoid conflict. Minilaterals are more flexible and focused on specific issues.

- b. **Minilateralism vs. Regional Organizations:** Regional organizations address a wide range of issues through formal structures, while minilaterals are ad hoc coalitions formed to address specific, often urgent, concerns.

Squad and QUAD

1. **Formation and Role of the ‘Squad’:** The “Squad” (US, Japan, Australia, Philippines) was formed to enhance maritime security in the South China Sea and counter Chinese aggression.
2. **Comparison with the Quad:** The Quad (US, Japan, Australia, India) focuses on broader Indo-Pacific security, while the “Squad” addresses specific concerns in the South China Sea.

What are the Advantages of Minilaterals?

1. **Bypass Stagnation:** Allow countries to circumvent stalled multilateral frameworks and address pressing issues.
 - o For example, the **Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement (MVA)** was conceived even the SAARC failed to facilitate a similar initiative.
2. **Flexibility:** Offer a modular approach, enabling quick formation and adaptation to changing circumstances.
 - o This flexibility is evident in trade agreements like the **Trans-Pacific Partnership (TPP)** and the **Regional Comprehensive Economic Partnership (RCEP)**, which were concluded as minilateral agreements.
3. **Rapid Decision-Making:** Voluntary and non-binding nature facilitates swift decision-making.
4. **Targeted Partnerships:** Enable the creation of issue-specific partnerships and strategic alliances, especially in regions like the Indo-Pacific.
 - a. Examples include the **Quadrilateral Security Dialogue (Quad)** and the **Trilateral Cooperation and Oversight Group (TCOG)**, which address regional security concerns more effectively than larger, more formal organisations.



5. **Rapid Response to Crises:** Regional minilateral forums can promptly come to the rescue of affected nations.
 - a. **For example**, India has sent the **Indian Naval Ship (INS) Kesari**, carrying **food items and medical assistance teams**, to countries in the **southern Indian Ocean** to deal with Covid-19 pandemic as part of a **Mission Sagar initiative**.
2. **Forward-Looking Perspectives:** Anticipate the impact of minilaterals on regional security and strategic outcomes.
 - a. Ensuring **plurality and diversity** in minilateral institutions can help accommodate different groupings' needs, and address issues of shared interest.
 - b. **For example**, under **Security and Growth for All in the Region (SAGAR)** India seeks to **deepen economic and security cooperation with its maritime neighbours** and assist in building their maritime security capabilities.

What are the Issues Associated With Minilateralism?

1. Minilaterals can lead to **forum shopping**, undermining **critical international** organisations, and **reducing accountability** in global governance.
 - By promoting voluntary commitments rather than legally binding ones, minilaterals may **weaken the enforcement** of international norms and standards.
2. Preference for minilaterals may **reduce the incentive for countries to engage with multilateral frameworks**.
 - This can impact the relevance and effectiveness of organizations like the **World Health Organization (WHO)** and the **United Nations Children's Fund (UNICEF)**, which rely on multilateral cooperation for their programs.
3. Minilateral success often **depends on leadership, political will**, and bilateral relations among members.
 - **Changes in political leadership or strained relations can derail minilateral initiatives**, as seen with the initial failure of the Quad due to leadership changes in Japan and Australia.
4. Minilateral alliances may have **negative impacts** on countries **not part of the negotiations**, reducing their incentive to engage with existing multilateral efforts.
 - This was observed in the **Doha trade negotiations**, where the focus on plurilateral initiatives hindered broader multilateral progress.

Way Forward

To harness the benefits of minilateralism while mitigating its risks:

1. **Integration with Multilaterals:** Minilaterals should complement, not replace, the work of larger organizations.

3. **Clear Objectives:** Define concrete and measurable objectives to maximize effectiveness.

Conclusion

The rise of the "Squad" and similar minilateral groupings reflects a strategic adaptation to the evolving geopolitical landscape. By integrating minilaterals with multilateral frameworks, embracing a forward-looking perspective, and setting clear objectives, countries can leverage this tool effectively for addressing shared challenges and promoting global cooperation.

2. Why India Needs 3rd Aircraft Carrier?

Cochin Shipyard Limited (CSL) is reportedly gearing up to construct another Vikrant-class aircraft carrier, weighing approximately 40,000 tonnes, to fulfill the Indian Navy's long-standing demand for a third carrier.

Aircraft Carriers: Guardians of the Seas

Aircraft carriers are formidable warships that serve as mobile airbases, equipped with a full-length flight deck and facilities for aircraft operations. They play a crucial role in projecting power, coordinating maritime operations, and ensuring national security.

History of Aircraft Carriers in India

1. Since its independence, India recognized the importance of aircraft carriers to establish itself as a blue-water navy. From the 1960s, the Indian Navy has uniquely operated all variants of aircraft launch and recovery systems.
2. **INS Vikrant (R11)**- India's first aircraft carrier served from 1961 to 1997. Initially constructed by the British as HMS Hercules, this 19,500-tonne carrier played a crucial role in the 1971 war.



3. **INS Viraat**- Originally commissioned by the British Royal Navy as HMS Hermes, it was pivotal in Operation Jupiter (1989, Peacekeeping Operations in Sri Lanka) and Operation Parakram (post-2013 terrorist attack on the Indian Parliament). It was decommissioned in 2017.
4. **INS Vikramaditya**- This refurbished Russian Admiral Gorshkov was commissioned into the Indian Navy in November 2013. A state-of-the-art ship, it can operate a variety of high-performance aircraft, including MiG-29K fighters, KM 31 AEW helicopters, multi-role Seaings, and utility Chetaks.
5. **INS Vikrant (IAC-1)**- India's first indigenous aircraft carrier, inducted by 2020, can operate an air wing of 30 aircraft, including MiG-29K fighter jets, Kamov-31, MH-60R multi-role helicopters, Advanced Light Helicopters, and Light Combat Aircraft (Navy). It employs the STOBAR (Short Take-Off but Arrested Recovery) method with a ski-jump for launches and three arrestor wires for recovery.
6. **IAC-II**- A second indigenous aircraft carrier, similar to Vikrant but with modifications and newer technologies, often referred to as India's third aircraft carrier.

The Future Scope of IAC-2 (India's Third Aircraft Carrier)

1. **Operational Versatility:** IAC-2 would enhance the Indian Navy's operational flexibility, allowing it to conduct diverse missions like power projection, maritime security, and humanitarian assistance.
2. **Technological Advancement:** The construction and operation of IAC-2 would drive technological innovation in India's defense industry, promoting self-reliance and technological sovereignty.
3. **Strategic Deterrence:** IAC-2 would serve as a powerful deterrent against potential adversaries, reinforcing India's maritime posture and commitment to safeguarding its interests in the Indo-Pacific region.

The Need for a Third Aircraft Carrier

India's vast coastline, growing economic interests, and increasing maritime challenges necessitate a robust naval capability. A third aircraft carrier would:

1. **Enhance Maritime Security:** Strengthen India's ability to protect its 7,500-kilometer coastline and project power in the Indian Ocean region.
2. **Demonstrate Indigenous Capability:** Showcase India's expertise in designing and building complex warships.
3. **Boost Economic Growth:** Stimulate domestic industries, create jobs, and enhance technical skills.
4. **Safeguard Seaborne Trade:** Protect India's vital seaborne trade, which accounts for over 90% of its total trade volume.
5. **Counterbalance China's Influence:** Help counterbalance China's growing naval presence in the Indian Ocean.

Associated Concerns

1. **Budgetary Constraints:** The high cost of building and operating IAC-2 raises concerns about resource allocation, particularly given competing defense priorities.
2. **Operational Vulnerabilities:** The carrier's large size and visibility make it susceptible to modern anti-access/area denial (A2/AD) strategies, posing challenges to its operational effectiveness.
3. **Strategic Alignment:** Questions persist about the carrier's relevance in addressing contemporary security threats, with some advocating for alternative defense investments.

The Way Forward

To ensure the successful integration of IAC-2, India must:

1. **Conduct a Strategic Assessment:** Evaluate the necessity and impact of a third carrier on India's maritime security.
2. **Embrace Technological Advancements:** Incorporate cutting-edge technologies to enhance IAC-2's capabilities and counter emerging threats.
3. **Foster International Collaboration:** Explore partnerships for technology transfer, joint exercises, and operational training.
4. **Optimize Resource Allocation:** Ensure efficient allocation of resources to maintain a balanced fleet composition.
5. **Develop Indigenous Capabilities:** Focus on building domestic expertise in carrier construction and maintenance.



6. Strengthen Regional Cooperation: Collaborate with regional partners to enhance collective maritime security.

The world's top 10 biggest aircraft carriers

Rank	Name	Country
1	Gerald R. Ford Class	United States
2	Nimitz Class	United States
3	Queen Elizabeth Class	United Kingdom
4	Admiral Kuznetsov	Russia
5	Fujian	China
6	Shandong	China
7	Liaoning	China
8	INS Vikramaditya	India
9	Charles de Gaulle	France
10	INS Vikrant	India

3. Joint Doctrine For Cyberspace Operations

The Chief of Defence Staff (CDS) released **India's first Joint Doctrine for Cyberspace Operations.**

About Cyber Space

- 1. Definition:** Cyberspace refers to the global volume of entities (such as Information and communication technology (ICT) systems) processing, storing, and transmitting digital information and code, regardless of whether they are connected or not.
- 2. Military Advantages:** Real-time intelligence gathering, offensive and defensive operations, improved communication, signal intelligence, etc.
- 3. Vulnerabilities:** Cyber warfare or cyber-attacks can disable official websites and networks, disrupt or disable essential services, steal or alter classified data, cripple financial systems, etc.

Significance of the doctrine

- 1. Guidance:** Provides conceptual guidance to commanders of armed forces, staff, and practitioners in planning and conducting Cyberspace Operations.

- 2. Jointness and Integration:** Promotes Jointness and Integration of three services (Army, Navy, and Air Force), a pre-requisite to the creation of functional integrated theatre commands.
- 3. Global Competition:** Enables India to compete globally, as countries like China have developed significant cyberwarfare capabilities, including cyberweapons to degrade or destroy adversaries' military assets and strategic networks.
- 4. Prevention of Hostile Actions:** Helps prevent hostile actions in cyberspace, which can impact the nation's economy, cohesion, political decision-making, and ability to defend itself.

More on the news

- 1.** The Joint Doctrine for Cyberspace Operations (JDCO) lays emphasis on understanding military aspects of cyberspace operations.
- 2.** The move highlights how Cyberspace has emerged as a crucial domain in modern warfare, in addition to traditional domains of Land, Sea, and Air.

Other Measures taken for Strengthening cyberspace capabilities in India

- 1. Defence Cyber Agency (DCA):** Established in 2019, the DCA is a tri-service agency responsible for handling cybersecurity threats and coordinating cyber defense efforts across the three services.
- 2. Exercise Cyber Suraksha – 2024:** Conducted by the Defence Cyber Agency to develop Cyber Defence Capability of all Cyber security organisations and promote synergy amongst all stakeholders.
- 3. Cyber Emergency Response Teams (CERTs):** Established by Defence Services to prevent and react to cyber attacks.
- 4. Cyber Security Operations Centre (CSOC):** Monitors and manages cyber threats, ensuring the protection of defense-related information and communication systems, especially in Assam Rifles.

Conclusion

The doctrine is poised to shape future military strategies and operations, reinforcing the integral role of cyberspace in national defence.



4. NAGASTRA-1: Indian Army's First Indigenous Loitering Munition

The Indian Army has received its first batch of Nagastra-1, an indigenously developed loitering munition, also known as a suicide drone.

About Nagastra-1

- Developer:** Solar Industries' Economic Explosives Ltd (EEL), Nagpur
- Precision Strikes:** Can neutralize hostile threats in 'kamikaze mode' with GPS-enabled precision strikes, achieving an accuracy of up to 2 meters.
- Kamikaze Mode:** While the term "kamikaze" refers to suicidal attacks, Nagastra-1 allows for precision strikes without endangering soldiers' lives.
- Surveillance:** Equipped with day-and-night surveillance cameras.
- Warhead:** Carries a 1 kg high-explosive fragmenting warhead.
- Unique Features:** Offers abort, recover, and reuse capabilities, facilitated by a parachute recovery mechanism.

5. Exercises/Operations In News

Name	Type	Participants	Brief Description
1. JIMEX	Maritime exercise	India & Japan	<ul style="list-style-type: none"> Host Country: Japan Edition: 8th The Indian Navy was represented by INS Shivalik.
2. Red Flag	Air exercise	India, Singapore, United Kingdom, Netherlands, Germany, USA.	<ul style="list-style-type: none"> Conducted at Eielson Air Force Base, Alaska of the United States Air Force. Edition: 2nd (held four times in a year by the US Air Force).
3. TARANG SHAKTI	Air exercise	India & 10 countries	<ul style="list-style-type: none"> India has announced in June 2024 that it will conduct its 1st multinational air exercise which will be held in August, 2024. Scheduled in 2 phases – 1st will be held in Southern India and 2nd will be in the Western Sector. Inspired by the Red Flag exercise hosted by the US.
4. HOPEX	Air exercise	India & Egypt	<ul style="list-style-type: none"> Host Country: Egypt Edition: 4th IAF's Rafale fighter jets, C-17 Globemaster and IL-78 tankers participated.
5. FREEDOM EDGE	Multi-domain exercise	South Korea, US & Japan	<ul style="list-style-type: none"> Edition: 1st Held: South Korea's southern island of Jeju.
6. RIMPAC	Naval Exercise	Multiple Nations	<ul style="list-style-type: none"> Edition: 29th Biennial Rim of the Pacific exercise was held in Hawaii (USA). World's largest international multilateral exercise. The Indian Navy was represented by INS Shivalik.





D. ECONOMY

1. RBI's Repatriation of Gold from UK to India

- In July 2024, the Reserve Bank of India (RBI) has taken a strategic step by bringing back over 100 tonnes of gold from the UK to its domestic vaults.
- This is the largest repatriation since the early 1990s and reflects the RBI's evolving approach to managing its gold reserves.

Historical Background

- During the **1990-91 foreign exchange crisis**, India pledged part of its gold reserves to the Bank of England to secure a USD 405 million loan.
- Although the loan was repaid by November 1991, the RBI kept the gold in the UK for logistical reasons, as gold stored abroad can be easily used for trading, entering into swaps, and earning returns.
- Repatriation means to send or bring money or other property, back to the country.
- The repatriation of gold reserves does not affect India's GDP, tax collections, or the RBI's balance sheet, as it only involves a change in the storage location (the total gold asset of the RBI remains the same).
- There are no customs or GST implications associated with this transfer, as the gold being repatriated is already owned by India.

Liability	Asset
<ul style="list-style-type: none"> Currency Deposits of Government Banks Loans (including securities) Other Liabilities Capital Account Paid-up Capital Reserves 	<ul style="list-style-type: none"> Gold Loans and advances to Government Banks Investments in Government securities Foreign Assets Other Assets

How Much Gold Does RBI Have?

1. Gold Stock:

- The **Reserve Bank of India Act, 1934** provides the legal framework for the deployment of reserves in foreign currency assets and gold within parameters of currencies, instruments, issuers, and counterparties.
- As of March 2024, the RBI held 820 tonnes of gold, with 410 tonnes stored domestically and 410 tonnes still held with foreign institutions like the Bank of England and the Bank for International Settlements (BIS).
- As of April 2024, the share of gold is USD 54 billion in India's current forex reserve of USD 650 billion.

2. History of Gold Purchasing:

- According to the **World Gold Council**, the RBI is among the top five central banks buying gold.
- The RBI purchased 200 tonnes of gold during the global financial crisis in 2009.
- In FY 2022, the RBI bought 65 tonnes of gold, 34 tonnes in FY 2023, and 19 tonnes in FY 2024.

Gold Reserves in India

- Total Reserves:** According to the **National Mineral Inventory**, India had 500 million tonnes of gold ore reserves as of 2015.
- Distribution of Resources:**
 - Bihar: 44%
 - Rajasthan: 25%
 - Karnataka: 21%
 - West Bengal: 3%
 - Andhra Pradesh: 3%
 - Jharkhand: 2%
- Karnataka** contributes around **80%** of the country's total gold production. The **Kolar Gold Fields (KGF) in Kolar** district are among the oldest and deepest gold mines globally.



Other Major Buyers of Gold

- 1. People's Bank of China:** This bank remains a significant gold purchaser. As per the **World Gold Council (WGC) report** (April 2024), China led gold purchases among central banks in the first quarter of 2024.
- 2. Central Bank of Turkey:** By April 2024, the **Central Bank of Turkey** had bought 8 tonnes of gold, increasing its total holdings to 578 tonnes.
- 3. Emerging Market Economies:** Central banks from emerging economies consistently lead the gold-buying trend, as highlighted by the WGC report.

Why Did the RBI Decide to Move the Gold Back to India?

- 1. Protection Against Inflation:** Gold retains value well during high inflation. Unlike currencies, gold can appreciate in price during inflation, offering the RBI potential returns even in tough economic times.
- 2. Hedge Against Geopolitical Uncertainty:** Current geopolitical events, like the Russia-Ukraine war and the subsequent sanctions on Russia, prompted the RBI to secure its assets within India.
 - a. Gold is considered a safe haven during geopolitical uncertainties.
- 3. Diversification and Liquidity:** Adding gold to its reserves helps the RBI diversify its foreign exchange holdings.
 - a. Gold is a secure and liquid asset, easily traded on the international market at transparent prices.
 - b. This provides the RBI with flexibility and additional options for managing its reserves.
- 4. Strength and Confidence:** Moving gold back demonstrates India's strong economic growth and its capability to protect its financial assets.
 - a. It signifies confidence in the Indian economy's stability, contrasting with the 1991 economic crisis when India had to pledge gold reserves for foreign currency.
- 5. Storage Charges:** Returning the gold to India eliminates the storage costs paid to the Bank of England.

Significance of Gold in the Economy

- 1. Limited Supply & Intrinsic Value:** Gold has a finite (limited) supply due to geological limitations, unlike currencies that can be printed at will by central banks.
 - a. Its scarcity (shortage), unique physical properties, and historical significance give gold intrinsic value.
- 2. Hedge Against Inflation:** Gold holds its value well during inflation, making it a reliable hedge.
 - a. A **2023 World Gold Council** study found a positive correlation between gold prices and US inflation over 50 years.
- 3. Diversification & Stability:** Gold diversifies a country's foreign reserves, reducing dependence on a single currency and offering stability during economic challenges.
 - a. Holding gold reserves signals international investors' confidence in a country's economy.
- 4. Jewellery & Cultural Significance:** The demand for gold in jewellery remains strong globally, especially in regions like India and China.
 - a. Gold holds cultural significance in many societies, further influencing its value and demand.

Historical Regime of Exchange Rate Management

The Gold Standard (1870-1914)

- a. Currencies were directly tied to the value of gold, and each country held gold reserves to back their currency.
 - b. Stable exchange rates made international trade easier and more predictable.
- 1. Drawbacks:**
 - a. Limited gold supply made it difficult to expand the money supply to meet economic growth.
 - b. Countries lost gold reserves when they had trade deficits, potentially harming their economies.
 - c. Gold discoveries or losses could cause sudden fluctuations in exchange rates.



The Bretton Woods System (1944-1971)

- a. Established after World War II, it aimed to create a stable and predictable international financial system.
- 1. **Key Feature:**
 - a. Fixed exchange rates with the US dollar as the reserve currency, and other currencies pegged to the dollar at a fixed rate.
 - b. The US dollar was convertible to gold at a fixed price of USD 35 per ounce.
- 2. **Challenges:**
 - a. **The Triffin Dilemma:** The US couldn't maintain its gold reserves to support the system as the global economy grew.
 - b. US trade deficits created doubts about its ability to maintain the gold peg.

The Current Scenario (Multiple Regimes - Post-1971)

- a. Exchange rates are determined by market forces of supply and demand with various regimes.
- b. **Floating and Fixed Exchange Rates:** A floating exchange rate is determined by the private market through supply and demand.
 - A fixed, or pegged, rate is a rate the government (central bank) sets and maintains as the official exchange rate.
 - The reasons to peg a currency are linked to stability. Especially in today's developing nations, a country may decide to peg its currency to create a stable atmosphere for foreign investment.
- c. **Pegged Rates:** A country ties its currency to a strong currency (e.g., USD) or a basket of currencies.
- d. **Dollarization:** Some countries adopt the US dollar, eliminating exchange rate risk but giving up control over monetary policy.

Special Drawing Rights (SDRs)

- a. Created by the IMF as a supplement to gold reserves.
- b. SDRs are a basket of major currencies, not directly convertible to gold.
- c. The price of gold is determined by supply and demand in the free market, not by its connection to currencies.

Conclusion

The RBI's decision to repatriate over 100 tonnes of gold from the UK to its domestic vaults is a significant strategic move. This reflects the central bank's focus on logistical efficiency, diversified storage, and confidence in the Indian economy's stability. This action aligns with global trends among central banks seeking to enhance the security of their foreign exchange reserves during uncertain times.

2. Container Port Performance Index 2023

- 1. India's port development program achieved significant recognition as **9 Indian ports** were included in the **Global Top 100** for the first time in the Container Port Performance Index (CPPI) 2023.
- 2. Credit for this achievement has been given to the **Sagarmala programme**, which focuses on modernising ports and enhancing their efficiency.

Key Highlights of the CPPI 2023

- 1. The CPPI is a global index created by the **World Bank** and **S&P Global Market Intelligence**.
- 2. It evaluates and compares the **performance of container ports worldwide**.
- 3. The index ranks 405 global container ports based on **efficiency**, particularly the duration of port stays for container vessels.
- 4. The main objective is to **identify areas for improvement** to benefit stakeholders in the global trading system and supply chains, including ports, shipping lines, national governments, and consumers.

Port	Ranking
Yangshan Port (China)	1 st
Port of Salalah (Oman)	2 nd
Port of Cartagena (Spain)	3 rd
Tangier-Mediterranean	4 th

India's Position

- 1. **Visakhapatnam Port** climbed from 115 in 2022 to 19 in 2023, marking the 1st time an Indian port reached the Global Top 20.



2. **Mundra Port** improved its rank from 48 last year to 27 this year.
3. **Seven other Indian ports in the top 100 are:**
 - a. Pipavav (41)
 - b. Kamarajar (47)
 - c. Cochin (63)
 - d. Hazira (68)
 - e. Krishnapatnam (71)
 - f. Chennai (80)
 - g. Jawaharlal Nehru (96)

Sagarmala Programme

1. Launched in 2015, the Sagarmala programme is a flagship initiative by the **Ministry of Ports, Shipping and Waterways**.
2. It aims to transform India's maritime sector by leveraging the country's extensive coastline, navigable waterways, and strategic trade routes.
3. The programme seeks to promote port-led development and uplift coastal communities.
4. It aims to improve logistics performance by reducing costs for domestic and international trade.
5. By utilizing coastal and waterway transportation, the it aims to minimize the need for extensive infrastructure investments, thus enhancing logistics efficiency and boosting the competitiveness of Indian exports.

Scenario of India's Port Ecosystem

1. **Maritime Transport:** The Ministry of Shipping states that maritime transport handles about 95% of India's trade by volume and 70% by value.
2. In November 2020, the Ministry of Shipping was renamed the **Ministry of Ports, Shipping and Waterways** by the Prime Minister.
3. The Indian Government supports the ports sector by allowing up to **100% Foreign Direct Investment (FDI)** under the automatic route for port and harbour construction and maintenance projects.

Major Ports vs Minor Ports

1. **Classification:** Ports in India are classified as Major and Minor based on the **jurisdiction of the Central and State governments** under the **Indian Ports Act, 1908**.

2. **Major Ports:** There are **13 Major Ports** governed under the **Major Port Trusts Act, 1963**, owned and managed by the **Central Government**.
3. **Minor Ports:** Minor Ports are governed under the **Indian Port Act, 1908**, and are owned and managed by the **State Governments**.
4. **National Perspective Plan for Sagarmala:** Six new mega ports are planned under this initiative.
 - a. **The Sagarmala National Perspective Plan** identifies specific opportunities for transportation of commodities such as thermal coal, fertilisers, foodgrains, cement and steel by coastal shipping and inland waterways.



Related Statistics

1. **Global Standing:** India ranks as the 16th-largest maritime country with a coastline of 7,516 km.
2. **Economic Impact:** The ports and shipping industry is crucial for the growth of India's trade and commerce.
3. **Trade Growth:** The Ports sector is driven by high growth in external trade.
 - a. In FY23, major ports handled 780 million tonnes of cargo, with a CAGR of 3.26% from FY16-23.
 - b. In FY24 (April-January), major ports handled 680 million tonnes of cargo.
4. **Cost-effective Transport:** Domestic waterways are recognized as a cost-effective and environmentally sustainable mode of freight transportation.
5. **Future Plans:** The government aims to operationalize **23 inland waterways by 2030**.



Major Initiatives

1. **Indian Ports Bill 2023:** Proposed to enhance transparency in port tariffs and update penalties.
 - a. It empowers the **Maritime States Development Council (MSDC)** for integrated planning and introduces a three-tier dispute resolution mechanism for conflicts between state maritime boards.
2. **Shipbuilding Financial Assistance Policy (SBFAP):** Launched to support the shipbuilding industry under the **Make in India initiative**.
 - a. The policy, operational until March 2026, provides financial aid to Indian shipyards to enhance competitiveness and secure global orders.

India's Ship Breaking Industry

1. **Largest Ship Breaking Facilities:** India has the **largest ship breaking facilities globally**, with over 150 yards along its coast.
2. **Annual Scrapping:** India scraps approximately 6.2 million GT (Gross Tonnage) each year, accounting for **33% of the world's total scrapped tonnage**.
3. **Recycling Statistics:** India recycles around **70 lakh GT annually**, followed closely by Bangladesh, Pakistan, and China.
4. **Alang Ship Breaking Yard:** Located in Gujarat, it is the **world's largest ship recycling facility**.

Challenges Faced by Port Sector in India

1. **Limited Global Presence of Indian Fleet:** Despite a vast coastline and strategic location, Indian ships constitute **less than 1%** of the world's shipping fleet. In contrast, **China** holds around **19%**.
 - a. **Seafarer Supply:** India **ranks 3rd** globally in supplying sailors, providing nearly **10% of the world's seafarers**, following China and the Philippines.
2. **High Turnaround Times at Indian Ports:** High turnaround times at Indian ports **reduce efficiency** and **increase costs** for shipping companies.
 - a. The average turnaround time at major Indian ports was approximately 2.48 days in 2022, compared to the global average of 0.97 days.

- b. Poor performance at ports disturbs schedules, increases import/export costs, reduces competitiveness, and hampers economic growth.
 - c. This particularly affect Landlocked Developing Countries (LLDCs) and Small Island Developing States (SIDS).
3. **Infrastructure and Operational Inefficiencies:** Ports face issues like **poor road and rail connectivity** within the port area and lack of cargo handling equipment and machinery.
 - a. Insufficient hinterland (far from port area) connectivity and dredging capacity, along with a shortage of technical expertise, are significant challenges.
 - b. Limited access to supporting infrastructure, such as insurance and financing companies predominantly based outside India.
 - c. For example, many marine insurance companies are headquartered in London, posing challenges for Indian shipping firms to access cost-effective and reliable services domestically.

What are the steps need to be taken to improve India's shipping sector?

1. **Digitalisation:** Integrating digital and physical connectivity can enhance port and shipping operations. Technologies like Artificial Intelligence (AI), the Internet of Things (IoT), and blockchain offer significant benefits.
2. **Port Modernisation:** Ports need to invest continuously in technological, institutional, and human capacities to provide fast, reliable, and cost-efficient services.
 - a. Collaboration between public and private sectors is crucial for achieving modernisation goals.
3. **Widen the Hinterland:** Ports should aim to attract cargo from neighbouring countries and domestic production centres.
 - Investments in corridors, regional trucking markets, and cross-border trade and transit facilitation can help expand ports' hinterlands.
4. **Promote Sustainability:** Port stakeholders, including shipping lines, traders, social partners, and the port-city community, demand that ports fulfil their social, economic, and environmental sustainability obligations.



3. Fintech companies leading India's startup ecosystem

Fintech companies remain a popular choice for entrepreneurs in the start-up ecosystem. According to data from **Tracxn**, fintechs have secured over **15%** of the total equity funding into start-ups in FY24 so far.

About Fintechs

1. **Fintech** is a combination of 'financial' and 'technology,' refers to businesses that use technology to improve or automate financial services and processes.

Types

1. **Digital Payments:** These provide **digital payment solutions** such as mobile wallets, online payment gateways, and peer-to-peer (P2P) payments. **Examples** include **PhonePe** and **Paytm**.
2. **Alternative Lending:** Known as **marketplace lending** or **Peer-2-Peer (P2P lending)**.
 - a. Peer-to-peer lending is a **form of direct lending** of money to individuals or businesses without an official financial institution participating as an intermediary in the deal.
 - b. P2P lending is generally done through online platforms that match lenders with the potential borrowers, with investors seeking high-yield investments.
 - c. **Examples** include **Lending Club, Prosper, PayPal Working Capital, and GoFundMe**.
3. **Insurance:** These offer digital insurance solutions such as **health insurance, life insurance, and car insurance**. **Examples** include **Digit Insurance** and **Policybazaar**.
4. **InvestmentTech:** These provide digital investment solutions such as **stock trading, mutual funds, and cryptocurrency trading**.
 - a. **Examples** include **Zerodha** and **Groww**.
5. **Other Types:** These include **crop loan risk management** (e.g., Satsure), **online fraud detection** (e.g., Tutelar), **debt management** (Debt Nirvana), and **Banking-as-a-Service platforms** (e.g., FidPay).

State of the Fintech Industry in India

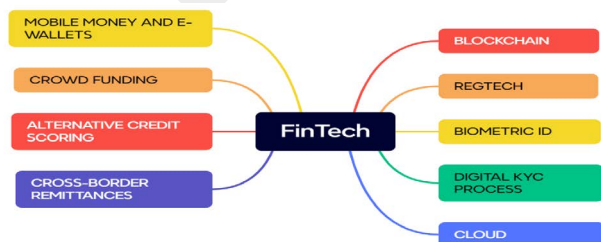
1. **FinTech Ecosystem:** India is a global leader in fintech, ranking **3rd globally** after the US and UK, with a combined valuation of over USD 155 billion.
 - a. Nearly a 3rd of the **soonicorn universe** (soon to be unicorns) consists of fintechs.
 - b. According to **Startup India** (Ministry of Commerce and Industry), the market size of India's fintech industry is projected to reach USD 150 billion by 2025.
2. **High Adoption Rate:** The **Economic Survey 2022-23** reported that fintech companies in India experienced an **87% adoption rate** across various user bases, compared to the **global average of 64%**.
3. **Driving Digital Payments:** Fintech companies in India account for **70% of digital payment transactions**, doubling their share in FY22 compared to FY19.
4. **Financial Inclusion:** More than **10 million people** and small businesses gained access to savings accounts, insurance, investment options, and credit facilities through mobile-based services and digital platforms.
5. **Democratising Lending Process:** Peer-to-peer lending platforms are democratizing lending by providing individuals and small businesses access to funds without traditional financial institutions.
6. **Rise in Public Investment:** Investment platforms and robo-advisors are making investments in stocks, mutual funds, and other financial instruments more accessible.
 - a. A robo-advisor is a type of automated financial advisor that provides algorithm-driven wealth management services with little to no human intervention.

Government Initiatives Driving the Growth of FinTech

1. **Digital Identity Infrastructure (JAM Trinity)**
 - a. **Jan Dhan Yojana (PMJDY):** This financial inclusion program has provided bank accounts to over **450 million people**.
 - It creates a large customer base for FinTech companies to offer new financial products like remittances, credit, insurance, and pensions directly through these accounts.



- b. **Aadhaar:** A World Bank study reveals that Aadhaar has enabled over **570 million** previously **unbanked adults** in India to open bank accounts.
 - The **Aadhaar Enabled Payment System (AePS)** allows users to conduct financial transactions using their Aadhaar number and biometric authentication (fingerprint or iris scan).
 - c. **Unified Payments Interface (UPI):** UPI transaction volume has increased by **49% year-on-year**.
 - The number of integrated banks has grown from 414 in April 2023 to 581 in April 2024, boosting UPI transaction growth.
2. **Regulatory Support and Innovation:** In 2017, the RBI recognized P2P lending platforms as **Non-Banking Financial Companies (NBFCs)**, which authorized the sector and expanded credit access for individuals and small businesses.
 3. **Regulatory Sandbox (RS) and Fintech Repository:** The Regulatory Sandbox (established by the RBI in 2017) allows FinTech companies to live test their products or solutions before regulatory approval, saving time and costs.
 - a. The Fintech Repository (launched in 2021) serves as a centralized information hub for fintech companies, promoting transparency and regulatory compliance.
 4. **Self-Regulatory Organizations (SRO) Framework:** Introduced by the RBI in 2023, this framework promotes responsible growth and industry-led self-regulation.
 - a. SROs act as guardians within the industry, establishing and enforcing a code of conduct, grievance redressal mechanisms, and consumer protection standards.



Potential Growth Areas for the Fintech Sector in India

1. **SME Lending: Small and medium enterprises (SMEs)** face challenges accessing traditional credit channels.
 - a. Fintech solutions using alternative data sources and AI-powered credit scoring can streamline lending processes and make credit more accessible for SMEs.
2. **Supply Chain Financing:** Traditional supply chain financing methods are often complicated and lack transparency.
 - a. Blockchain-based fintech solutions can streamline payments, improve traceability, and enhance working capital management for businesses within the supply chain.
 - b. Supply chain finance is a financing solution in which suppliers can receive early payment on their invoices.
 - c. It reduces the risk of supply chain disruption and enables both buyers and suppliers to optimize their working capital.
3. **AgriTech:** Fintech solutions can provide crop loan risk management, micro-insurance for farmers, and digital marketplaces for agricultural products, supporting and empowering rural communities.
4. **Regulatory Landscape and Long-Term Stability:** The RBI’s framework for managing “user harm” within the fintech sector may create a cautious investment climate in the short term.
 - a. However, clear and well-defined regulations will enhance consumer protection, build trust, attract long-term investors, and promote sustainable growth.

Steering Committee Recommendations Related to Fintech

1. The Steering Committee led by **Subhash Chandra Garg** on Fintech Related Issues, submitted its report to the Finance Minister in 2019. It aimed to make Fintech regulations more flexible and promote entrepreneurship.



Recommendations

1. **Expanding Fintech Services:** Encourage the use of Fintech to strengthen cybersecurity, fraud control, and money laundering prevention.
 - a. Explore virtual banking and the dematerialisation of financial instruments (converting physical certificates to electronic form).
2. **Policy Actions for Promotion:** Government and public sector institutions should use AI for back-end automation.
 - a. Collaborate with MSMEs to implement blockchain solutions in trade finance.
3. **Financial Inclusion:** Develop a credit registry for farmers using AI/ML-based credit scoring to facilitate easier loan access.
 - a. Use Fintech to manage claims and premium payments in agricultural crop insurance schemes.
 - b. Create a common digital platform for small savings products, micro-pension schemes, and government pensions to enable digital subscriptions.
4. **Collaboration and Coordination:** Form an advisory council on Fintech with industry experts for each financial sector regulator.
 - a. Establish an inter-regulatory technical group for better coordination between regulatory bodies.
 - b. Set up an inter-ministerial group to explore potential applications of Fintech-enabling technologies.
 - c. Collaborate with other countries to share knowledge on Fintech risks and benefits.
5. **Data Protection:** Establish a task force within the **Ministry of Finance** to address data protection challenges specific to the financial sector.

What are Startups?

1. Startups are newly established companies or businesses characterized by innovative ideas, scalable business models, and high growth potential.
2. These ventures are typically created by entrepreneurs or small groups aiming to introduce new products, services, or technologies to the market.

Significance of Startups

1. **Employment Creation:** Startups can generate a substantial number of jobs, often more than established companies. This is crucial for developing nations like India, where high unemployment rates are common.
2. **New Investments:** Established companies often outsource tasks to startups, enabling them to focus on their core competencies. This opens opportunities for new investments into the country.
3. **Boost to the Economy:** Startups create jobs and stimulate economic activity. By employing locals and purchasing goods and services, they contribute to economic growth and increased government revenue.
4. **Fostering Entrepreneurship and Innovation:** The startup ecosystem promotes entrepreneurship and promotes a culture of innovation, contributing to social capital and technological advancements, benefiting the economy.

What is a Unicorn?

1. A unicorn is a privately owned firm with a market capitalization exceeding \$1 billion. Unicorns develop innovative solutions and technologies, creating large-scale employment.
2. One out of every ten unicorns globally originate from India. Unicorns are predominantly active in **Tier I cities**, with Bengaluru being India's unicorn capital.

Startups in India

1. The Indian startup ecosystem has dynamically evolved over the past two decades, emerging in fields such as IT, agriculture, aviation, education, energy, health, and space sectors.
2. Since the launch of the Startup India initiative in 2016, the **Department for Promotion of Industry and Internal Trade (DPIIT)** has recognized 92,683 entities as startups as of 28th February 2023.

Economic Survey 2021-22 Highlights

1. India is the **3rd-largest startup ecosystem** in the world, following the US and China.



2. Most startups are in the services sector, with **49%** from tier-2 and tier-3 cities.
3. In 2021, 44 Indian startups achieved unicorn status, bringing the total number of startup unicorns in India to 83.
4. Notable Indian unicorns include **Lenskart, Cred, Meesho, PharmEasy, Licious, and Grofers.**

Government Initiatives

Startup India Initiative: This flagship initiative by the Union Government aims to catalyze startup culture and build a strong, inclusive ecosystem for innovation and entrepreneurship in India.

Fund of Funds for Startups (FFS) Scheme: The Union Government has established FFS with a corpus of Rs. 10,000 crores to meet the funding needs of startups.

Startup India Seed Fund Scheme: Provides financial assistance to startups for proof of concept, prototype development, product trials, market entry, and commercialization.

International Market Access to Indian Startups: Startup India has launched bridges with over 15 countries, providing a soft-landing platform for startups from partner nations and promoting cross-collaboration.

Startup India Hub: An online platform for all stakeholders in India's entrepreneurial ecosystem to discover, connect, and engage with each other.

National Startup Awards: Recognizes and rewards outstanding startups and ecosystem enablers contributing to economic dynamism by stimulating innovation and competition.

Innovations for Defence Excellence (iDEX): Aims to boost innovation among startups and encourage their participation in the Indian defense and aerospace ecosystem.

Atal Innovation Mission: Union Govt has set up Atal Incubation Centres (AIC) to incubate startups in various sectors. It also launched the **Atal New India Challenge** to seek and select, support, and nurture technology-based innovations.

4. Project Nexus of Bank for International Settlements

1. In July 2024, the Reserve Bank of India (RBI) has joined Project Nexus. It is a multilateral initiative to enable instant cross-border retail payments by interlinking domestic **Fast Payments Systems (FPSs)**.
 - a. A **faster payment** is a payment that enables **real-time or near real-time availability of funds** to the payee and is available nearly **24x7** in most supported payment schemes and systems across the globe.
 - b. Fast payments are facilitated by the **faster payment scheme** and **faster payment systems (FPS)**.
 - c. An FPS is an electronic payments system which facilitates **inter-bank fund transfer** and sends confirmation of payment to the receiver and originator within a minute or less.
 - d. These payments are irrevocable – i.e. they cannot be reversed by the payer or the financial institution once the transaction has been successful.
2. The RBI is collaborating bilaterally with various countries to link India's Fast Payments System (FPS) – UPI, with their respective FPSs for cross-border **Person to Person (P2P)** and **Person to Merchant (P2M)** payments.
3. A multilateral approach could further enhance the RBI's efforts to expand the international reach of Indian payment systems.
4. In over 70 countries, domestic payments are instant and nearly free. Connecting these Instant Payment Systems (IPS) globally can enable cross-border payments within 60 seconds.

BIS-Led Project Nexus

1. **Agreement: Bank for International Settlements (BIS) and central banks of India, Malaysia, Philippines, Singapore, and Thailand** signed an agreement on June 30, 2024, in Basel, Switzerland.
 - a. **Special Observer:** Indonesia (will join in the future)

2. **Background: BIS Innovation Hub (BISIH)** Singapore Centre developed a blueprint in 2021. A working prototype was built in 2022, connecting **Eurosystem’s TIPS, Malaysia’s RPP, and Singapore’s FAST** payment systems.
3. **Aim:** To enhance cross-border payments by connecting multiple global domestic **instant payment systems (IPS)**.

Benefits

Parameters	Current system	Nexus
Speed	Traditional payments are slow due to multiple banks and central banks’ operating hours.	Payments can be completed in 60 seconds or less, operating 24/7/365.
Cost	High costs due to need for the correspondent accounts and larger number of banks.	Lower transaction fees and reduced administrative costs.
Access	Limited by financial inclusion and correspondent banking relationships.	Access through non-bank Payment Service Provider (PSPs) and simplified processes using proxies like mobile numbers.
Cross Border Payments	Currently, cross border payments mostly occur through banks.	With Nexus, anyone who can send/receive domestic payments should be able to do so cross-border payments.
Transparency	Variable fees and uncertainty about the final amount received.	Upfront (in advance) fee calculation and immediate payment status updates.
Safety, Security, and Resilience	Cross-border credit risk due to correspondent banking relationships.	Builds on existing risk management frameworks, reducing reliance on correspondent banking and mitigating cross-border credit risk.
Connectivity	Custom connections needed for each new country.	Centralised connections through a single platform.
Reach	Limited to bilateral agreements with individual countries.	Single connection reaches all countries on the Nexus network.
Collaboration	RBI collaborates bilaterally with countries like Bhutan, UAE, France, Sri Lanka, Mauritius.	Multilateral approach involving multiple countries simultaneously.

Bank for International Settlements (BIS)

1. **Established:** 1930
2. Owned by **63 central banks**, representing countries from around the world, representing about **95% of world GDP**
3. **Head Office:** Basel, Switzerland
4. **Representative Offices:** Hong Kong SAR and Mexico City as well as **Innovation Hub Centres** around the world
5. **Innovation BIS 2025:** Medium-term strategy leveraging technology and new collaboration channels for central banking in a fast-changing world.
6. **Basel Banking Accords** are global rules set by the **Basel Committee on Banking Supervision (BCBS)** and it operates under BIS in Basel, Switzerland, providing guidelines for best practices in banking.
7. **Services to Central Banks:**
 - a. **Dialogue and Cooperation:** Provides a forum for broad international cooperation.
 - b. **Innovation and Knowledge-Sharing:** Offers a platform for responsible innovation.
 - c. **Policy Analysis:** Provides in-depth analysis and insights on core policy issues.
 - d. **Financial Services:** Delivers sound and competitive financial services.



5. Digital Payments Intelligence Platform

1. The Reserve Bank of India (RBI) has formed a committee led by **A.P. Hota** to explore setting up a **Digital Payments Intelligence Platform**.
2. This platform will use advanced technologies to mitigate payment fraud risks.

Rise in Domestic Payment Frauds

1. Domestic payment frauds increased by 70.64% to Rs 2,604 crore in the six months ending March 2024.
2. The number of fraud cases rose to 15 lakh from 11 lakh.

Other Proposals

1. **Bulk Deposits Limit Raised:** The RBI plans to increase the bulk deposits threshold from Rs 2 crore to Rs 3 crore for commercial banks and small finance banks.
 - a. For local area banks, the limit is set at Rs 1 crore.
 - b. Banks will have the flexibility to set interest rates based on their needs and **Asset-Liability Management (ALM)** projections.
2. **Automatic e-Mandate:** The RBI plans to allow automatic balance replenishment for **Fastag** and **National Common Mobility Card (NCMC)** under the e-mandate framework.
 - a. This will exempt the need for a 24-hour pre-debit notification.
3. **UPI Lite e-Mandate:** The RBI plans to integrate UPI Lite into the e-mandate framework.
 - a. This integration will enable automatic reloads of the wallet when its balance drops below a user-set threshold.
 - b. It will eliminate the need for extra authentication or pre-debit notifications.
4. **Export-Import Norms:** The Reserve Bank plans to update rules for exporting and importing goods and services.
 - a. This update aims to streamline procedures and make business easier for everyone involved.

Local Area Banks

1. Local area banks are small private banks with low-cost structures.
2. They provide financial services limited to their area of operation.
3. They usually function in rural and semi-urban areas, covering three main contiguous districts.
4. **Objectives:**
 - a. Mobilise rural savings through local institutions.
 - b. Create new investment opportunities in the same local areas.
5. **Operation:**
 - a. Operate as non-scheduled banks.
 - b. Regulated and controlled by the Reserve Bank of India.

Asset Liability Management (ALM)

1. Asset Liability Management (ALM) relates to managing and balancing risks arising from a bank's assets, such as loans, and liabilities, such as deposits. Banks must manage various risks, including:
 - a. **Credit Risks**
 - b. **Market Risks** (including interest rates)
 - c. **Liquidity Risks**
2. In India, banks follow guidelines prescribed by the **Reserve Bank of India (RBI)** for ALM.
3. RBI's rules are based on global norms prescribed by the **Bank for International Settlements**, a body of central banks worldwide.

6. India leads the fastest-growing major economy as per GEP Report 2024

1. In June 2024, the **World Bank** released 'Global Economic Prospects (GEP) Report 2024'.
2. **India** is predicted to remain the **fastest-growing major economy globally** with a projected GDP growth rate of **6.6% for FY25**, according to the report.

Key Findings of the Report

Global

1. **Growth Outlook:** The **global economy is stabilizing** for the first time in three years, with GDP growth



anticipated at 2.6% for 2024-25.

- a. For FY26 and FY27, global growth is expected to be **2.7%**, amid modest growth in trade and investment.
2. **Projection for Global Inflation:** The World Bank forecasts a slower moderation of global inflation, averaging 3.5% this year.
 - a. Central banks from the advanced and emerging market economies are expected to be cautious about easing monetary policy due to ongoing inflationary pressures.
 3. **Challenges to Global Growth:**
 - a. Geopolitical tensions, trade fragmentation (divided into parts), higher interest rates, and climate-related disasters are hindering (hampering) growth.
 - b. Global cooperation is needed to safeguard trade, support green and digital transitions, provide debt relief, and enhance food security.

South Asian Region (SAR)

1. Growth Outlook:

- a. South Asia's GDP growth is expected to drop from 6.6% in 2023 to 6.2% in 2024, mainly due to India's slowdown.
- b. Bangladesh is expected to maintain robust growth, but at a slower pace.
- c. Pakistan and Sri Lanka are expected to see strengthened economic activities.

2. Poverty Reduction:

- a. Per capita income growth in South Asia will decrease from 5.6% in 2023 to 5.1% in 2024-25, then slightly rise to 5.2% in 2026.
- b. This slowdown is due to **weaker private consumption** and **fiscal adjustments** that may reduce household income.

India

1. Economic Trajectory:

- a. India is the largest economy in South Asia and a major contributor to regional growth.
- b. India's growth rate for FY24 is estimated at 8.2%, driven by industrial and services sectors, offsetting a slowdown in agriculture due to

monsoon disruptions.

2. Fiscal and Trade Balances:

- a. India's fiscal deficit relative to GDP is expected to decrease due to increased revenues from a broader tax base.
- b. Narrowing trade deficits are contributing to overall economic stability in South Asia.

3. Factors Driving Growth:

- a. **Investment Growth:** Strong public and private sector investments will likely sustain robust growth. Public investment will play a particularly significant role.
- b. **Private Consumption:** Improved agricultural production and decreasing inflation rates will boost private consumption.
- c. **Government Expenditure:** Government spending is expected to grow slowly as efforts focus on reducing current spending relative to GDP.

4. **Increase in FDI Flows:** In 2022, FDI flows to India increased by 10%. India became the **third-largest recipient country** for announced greenfield projects.

5. **Government Spending and Infrastructure:** Increased government spending on infrastructure projects like roads, railways, and renewable energy is driving fixed capital formation.

a. **Gross Fixed Capital Formation (GFCF)** is the total amount of money spent on investment.

6. **Challenges in Accessing Financing:** Developing countries, including India, face challenges in accessing financing due to increasing external debt and interest rates.

7. Labor Market Improvement:

- a. India's labour market is showing improvement.
- b. There is a higher labour force participation rate.
- c. The unemployment rate is the lowest in a year at 7.1%.

8. Consumer Price Inflation:

- a. Consumer price inflation in India is expected to decrease.
- b. It is anticipated to align with the Central Bank's



target range of 2 to 6 percent.

7. Trends in Remittances Inflow

1. According to the latest report by the **World Bank**, the growth in remittances to India is expected to halve (reduce by 50%) in 2024 compared to 2023.
2. This slowdown is due to **reduced outflows from GCC** (Gulf Cooperation Council) countries, amid declining oil prices and production cuts.
 - a. The **Gulf Cooperation Council (GCC)** is a political and economic alliance of six Middle Eastern countries: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

What are Remittances?

1. Remittances are funds or goods that migrants send back to their families in their home country to provide financial support.
2. **Sources:**
 - a. **Migrant Workers:** Migrant workers are the primary source of remittances, sending money back to their families.
 - b. **Diaspora Communities:** Diaspora community members often send remittances to support their relatives and community projects in their home countries.
3. **Channels:**
 - a. **Formal Channels:** These include banks, money transfer operators like Western Union and MoneyGram, and mobile money services.
 - b. **Informal Channels:** These include methods like hand-carry, hawala systems, and other informal networks.
4. **Types:**
 - a. **Personal Remittances:** Funds sent by individuals to their families or friends.
 - b. **Collective Remittances:** Contributions from diaspora communities for community development projects.
5. They are a significant source of income and foreign exchange for many developing countries, especially in South Asia.
6. Remittances help reduce poverty, improve living standards, support education and health care, and stimulate economic activity.

7. In 2023, India had **18.7 million emigrants**.

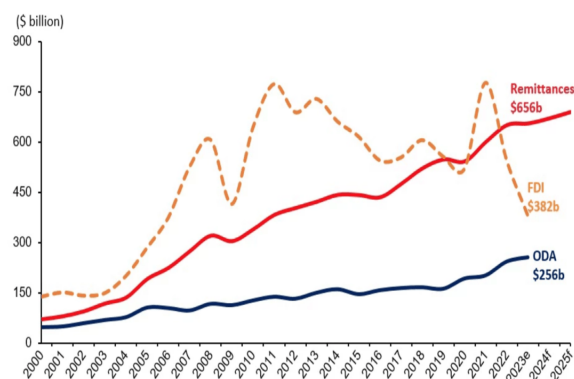
Growth of Remittances

1. India received **USD 120 billion** in remittances in **2023**, with a **growth rate of 7.5%**.
2. The **forecast for 2024** is a growth rate of **3.7%**, reaching USD 124 billion.
3. For 2025, the growth estimate is 4%, expected to reach USD 129 billion.

Remittances Inflows in Countries

1. In 2023, **India topped the remittances inflow list**, followed by Mexico (USD 66 billion), China (USD 50 billion), the Philippines (USD 39 billion), and Pakistan (USD 27 billion).
2. According to RBI data, **India's foreign assets increased more than liabilities** in 2023-24.

Figure 2: Remittances Larger than FDI and ODA in 2023



Note: f = forecast; FDI = foreign direct investment; ODA = official development assistance.

Sources: World Bank/KNOMAD staff estimates; World Development Indicators; IMF Balance of Payments Statistics.

Migration Trends

1. In 2023, the **global count of international migrants** reached approximately **302.1 million**, as per World Bank data. Economic migrants formed about 252 million of this total.
2. According to the **United Nations High Commissioner for Refugees (UNHCR)**, the number of refugees and asylum seekers stood at around 50.3 million in 2023.

Top Sources of Remittances for India

1. Around **36%** of total remittance flows to India come from **high-skilled Indian migrants** in high-income countries such as the **United States, the United**

Kingdom, and Singapore.

2. Post-pandemic recovery led to a tight labour market in these regions, resulting in wage hikes that boosted remittances.
3. Among other high-income destinations, the **Gulf Cooperation Council (GCC)** countries are significant contributors.
 - a. The **UAE** accounted for **18%** of India's remittance flows, while Saudi Arabia, Kuwait, Oman, and Qatar collectively accounted for 11%.

Reason for Consistent Remittance Inflow

1. **Strong Economic Conditions:** Developed economies like the US, UK, and Singapore have **lower inflation** and **strong labor markets**, benefiting skilled Indian professionals and increasing remittance inflows to India.
 - a. **High employment growth** and **decreasing inflation** in Europe have also contributed to the rise in global remittances.
2. **Diversified Migrant Pool:** India's migrant pool is diversified, with a significant portion residing in the Gulf Cooperation Council (GCC) countries. This diversification offers a buffer during economic downturns in either region.
 - a. Favourable economic conditions in the GCC, such as **high energy prices** and **controlled food price inflation**, have positively impacted employment and incomes for Indian migrants, especially those in less-skilled sectors.
 - b. In 2023, **India** and the **UAE** signed a pact to establish a **Local Currency Settlement System (LCSS)** to promote the use of the Indian rupee (INR) and UAE Dirham (AED) for cross-border transactions.
 - c. This has further boosted remittance flows.
3. **Improved Remittance Channels:** Initiatives like **Unified Payment Interface (UPI)** have enabled **real-time fund transfers**, allowing remittances to be sent and received instantly.
 - a. The **National Payments Corporation of India (NPCI)** has enabled NRIs to use UPI in several countries, including Singapore, Australia, Canada, Hong Kong, Oman, Qatar, USA, Saudi Arabia, UAE, the United Kingdom, Sri Lanka,

Bhutan, Mauritius, France, and Nepal.

How to Increase Remittance Inflow in India

1. **Boosting Financial Inclusion:** World Bank data shows that only 80% of Indians have bank accounts.
 - a. Expanding formal financial services, especially in rural areas, can make remittance transfers easier through a broader network of bank branches, ATMs, and digital platforms.
2. **Reducing Remittance Costs:** According to World Bank data, remittance costs in India are high (5-6%).
 - a. Introducing competition among remittance service providers and promoting digital channels can reduce transaction costs.
 - b. Additionally, government incentives for using formal channels can encourage more people to adopt them.
3. **Enhancing Remittance Infrastructure:** Upgrading payment systems and leveraging new technologies like blockchain can streamline the remittance process.
 - a. The Reserve Bank of India has implemented the **Centralized Payment System**, including **Real Time Gross Settlement (RTGS)** and **National Electronic Funds Transfer (NEFT)**, to achieve this goal.
4. **Targeted Diaspora Engagement:** Increased government engagement with the Indian diaspora through programs like **Pravasi Bharatiya Divas** and the **Know India Programme** can strengthen connections.
 - a. Offering attractive investment options and tax breaks, as suggested by International Monetary Fund (IMF) data, can encourage higher remittance inflows.
5. **Promoting Economic Stability:** Implementing sound macroeconomic policies, improving the ease of doing business, and addressing corruption are crucial for building diaspora confidence.
 - a. This can create a more attractive environment for remittance flows.

Conclusion

Remittance inflows are crucial for the economies of many developing countries, offering significant support to millions of households. By enhancing financial access, lowering transaction costs, and assisting migrants, countries can optimize the benefits of remittances, boosting



economic growth and improving social outcomes.

Local Currency Settlement System (LCSS)

1. **India and the UAE** have signed a pact to establish the Local Currency Settlement System (LCSS) to promote the use of the Indian rupee (INR) and UAE Dirham (AED) for cross-border transactions.
2. This agreement was finalized during the Prime Minister's recent visit to Abu Dhabi, UAE.
3. Covers all current account transactions and permitted capital account transactions.
4. Enables exporters and importers to pay in their respective domestic currencies.
5. Facilitates the development of an INR-AED forex market.
6. Reduces transaction costs and settlement time, including for remittances by Indians in the UAE.
7. Allows India to use this mechanism for paying for oil and other commodity imports from the UAE, its fourth largest energy supplier (in FY 22-23).

8. National Health Claim Exchange

In July 2024, the **National Health Authority (NHA)** and the **Insurance Regulatory and Development Authority of India (IRDAI)** have launched the **National Health Claim Exchange (NHCX)** to facilitate the exchange of claims-related information among stakeholders in the healthcare and health insurance ecosystem.

About National Health Claim Exchange (NHCX)

1. NHCX is a **digital platform** designed to **streamline health insurance claims** processing in India.
2. It acts as a centralized hub for all health claims, reducing the administrative burden on hospitals and providing a seamless, paperless, and secure contractual framework.
3. The system accommodates India's dynamic and diverse healthcare system, aligning with IRDAI's goal of achieving '**Insurance for All by 2047**'.

Advantages

1. NHCX simplifies and expedites (speed up) the cashless claims process, potentially reducing waiting times and out-of-pocket expenses for patients.

2. It streamlines claim processing by eliminating the need for multiple portals and manual paperwork, reducing administrative burdens for hospitals.
3. The platform can lead to a more standardized approach to healthcare pricing through uniform data presentation and centralized validation.
4. The system helps detect and prevent fraudulent claims through data verification.

Out-of-Pocket Expenditure (OOPE)

1. Out-of-Pocket Expenditure (OOPE) refers to the direct payments made by households for healthcare services at the time of receiving care.
2. It excludes individuals who are covered under any public or private insurance or social protection schemes.

Status of Insurance in India (IRDAI)

1. **Health Insurance:** Contributes to approximately **29%** of the total general insurance premium income in India.
2. **Life Insurance:** India ranks **10th** in the world in the life insurance sector. India's share in the global life insurance market was **2.73%** in 2019.
3. **Non-Life Insurance:** India ranks **15th** in the world in the non-life insurance sector. India's share in the global non-life insurance market was **0.79%** in 2019.

Insurance Penetration and Density

1. **Insurance Penetration:** Defined as the percentage of insurance premiums to GDP. Increased from 2.71% in 2001 to 3.76% in 2019 (Life insurance at 2.82% and Non-Life insurance at 0.94%).
2. **Insurance Density:** Calculated as **the ratio of premiums to population** (per capita premium). Increased from USD 11.5 in 2001 to USD 78 in 2019 (Life insurance at USD 58 and Non-Life insurance at USD 20).

Government Initiatives Related to Health Insurance

1. **Pradhan Mantri Jeevan Jyoti Yojana (PMJJBY)**
2. **Pradhan Mantri Suraksha Bima Yojana (PMSBY)**
3. **Ayushman Bharat: Pradhan Mantri Jan Arogya Yojana**
4. **Bima Sugam, Bima Vistar, Bima Vaahaks**
5. **National Health Policy 2017:** Envisions health insurance as a key quality service and aims to increase population coverage to reduce catastrophic health expenditure.



Need for the National Health Claim Exchange in India

- High Out-of-Pocket Expenditure:** Health insurance is crucial in reducing out-of-pocket expenses, as highlighted by a study.
 - Data shows a significant reliance on private insurance for hospitalization, especially in rural areas (73.5 cases per 100,000 people).
 - Streamlined claims processing through NHCX can lead to faster claim settlements, reducing financial burdens for patients.
 - This incentivizes more people to use health insurance, reducing reliance on out-of-pocket payments and improving financial security.
- Inefficiencies in Claim Processing:** Different insurance companies have varying requirements and processes, leading to delays, errors, and a lack of transparency for patients regarding claim approvals or denials.
- High Operational Costs for Hospitals:** Hospitals in India face administrative burdens due to multiple portals for different insurance companies and manual processes for submitting and tracking claims.

Challenges in the Adoption of the National Health Claim Exchange (NHCX)

- Digital Adoption Gap:** Encouraging both hospitals and insurance companies to fully integrate with the NHCX platform requires ongoing efforts and training.
 - Example:** Smaller hospitals, especially in rural areas, may lack the necessary IT infrastructure or trained staff to fully integrate with the NHCX platform.
- Building Trust and Collaboration:** For NHCX to succeed, building trust among policyholders through efficient services and streamlined claim processes is essential.
 - Example:** Historically, communication gaps and complexities between hospitals and insurance companies have led to claim processing issues.
- Data Security Concerns:** Robust measures are essential to ensure data privacy and prevent security breaches.

- Example:** With a centralized platform handling sensitive health and financial data, strong cybersecurity measures are crucial to prevent data breaches.

Conclusion

The NHCX is not just a technological advancement; it is a critical step towards improving healthcare accessibility and affordability in India. By addressing current inefficiencies and complexities, NHCX has the potential to empower patients, hospitals, and insurance companies for a healthier future.

9. E-commerce As Export Hub

- The **Commerce Ministry's 100-day agenda** for the new government includes plans to utilize e-commerce for exports.
- India aims to **reach USD 1 trillion in merchandise exports by 2030**, with cross-border e-commerce identified as a critical strategy to achieve this target.

About the 100-day E-Commerce Agenda

- Key Focus:** The program focuses on developing e-commerce hubs to support online exports.
 - The Commerce Department collaborates with the **Department of Revenue** on duty-free returns and faster customs clearances.
- Economic Potential:** In 2023, cross-border e-commerce trade was around USD 800 billion and is projected to reach USD 2 trillion by 2030.
 - China's e-commerce exports are about USD 350 billion, while India's online shipments are only USD 2 billion.
- Return Logistics Challenge:** In e-commerce, about 25% of goods are re-imported, requiring duty-free imports for these items.
 - Identifying these items for duty-free status poses a challenge.

About E-Commerce

- E-commerce involves buying and selling goods and services over the Internet.
- As of 2023, India ranks as the **8th-largest e-commerce market** globally.



3. E-commerce includes a range of activities, from online retail platforms to digital payment systems for secure and convenient transactions.

Types of E-Commerce Models

1. **Market-based Model:** Involves an e-commerce entity providing an IT platform to connect buyers and sellers, like Amazon and Flipkart.
2. **Inventory-based Model:** Involves an e-commerce entity owning and directly selling goods and services from its inventory to consumers, as seen with platforms such as Myntra and Nykaa.
 - a. Foreign Direct Investment (FDI) is not allowed in inventory-based e-commerce models.

Current Trends

1. India’s e-commerce platforms achieved a **Gross Merchandise Value (GMV)** of USD 60 billion in fiscal year 2023, a **22% increase** from 2022.
2. The export of Indian toys has grown at nearly **30% Compound Annual Growth Rate (CAGR)** over the last seven years.
 - a. **Gross merchandise value (GMV)** is the total value of merchandise that’s sold over a given period through a customer-to-customer (C2C) exchange site.
3. In the fiscal year 2022-23, the **Government e-Marketplace (GeM)** reached its highest-ever GMV of USD 2011 billion.
 - a. **Government e-Marketplace (GeM)** is a one stop portal to facilitate online procurement of common use Goods & Services required by various Government Departments / Organizations / PSUs.
4. As of 2023, the Indian e-commerce sector is valued at USD 70 billion, making up about **7%** of the country’s total retail market.
5. India has approximately **800 million internet subscribers**, including around 350 million mature online users actively engaging in transactions.

Future Prospects

1. The Indian e-commerce industry is projected to reach USD 300 billion by 2030.
2. Third-party logistics providers are expected to manage approximately 17 billion shipments within the next seven years.

3. It is expected to surpass the United States, becoming the world’s **2nd-largest e-commerce market**.
4. The e-retail market in India is projected to exceed USD 160 billion by 2028.

Major Types of E-Commerce

Type of E-commerce	Description
B2B (Business-to-Business)	Involves transactions between businesses. Examples include manufacturers selling to wholesalers, and wholesalers selling to retailers.
B2C (Business-to-Consumer)	Involves businesses selling directly to consumers. Examples include online retail stores like Amazon and Flipkart.
C2C (Consumer-to-Consumer)	Involves consumers selling to other consumers. Examples include platforms like eBay and OLX.
B2G (Business-to-Government)	Involves businesses providing goods or services to governments. Examples include companies providing IT services or infrastructure to government agencies.
C2B (Consumer-to-Business)	Involves individuals selling products or services to businesses. Examples include freelance platforms like Upwork where individuals offer services to businesses.

Significance of the E-Commerce Industry in the Indian Economy

1. **Job Creation:** The e-commerce sector in India creates significant job opportunities, both directly and indirectly, across various sectors like MSMEs, textiles, leather, agriculture (farmers), and craftsmanship.
 - a. It also supports forward linkages such as logistics, packaging, transport, storage, and advertising, driving economic growth and job creation.



- b. Fashion, grocery, and general merchandise are expected to dominate the Indian e-commerce market, making up nearly two-thirds of the market share by 2027, highlighting the sector’s vital role in India’s retail landscape.
- 2. Boosting Indian Products in Global Markets:** E-commerce allows Indian manufacturers and sellers to display their products on international platforms, expanding their reach and exposure to global markets.
- a. Industry reports show that e-commerce exports from India reached approximately USD 49 billion in the financial year 2022-23.
- 3. Driving Export Expansion:** The growth of e-commerce has greatly increased India’s export potential, offering Indian businesses access to international markets.
- a. According to the Reserve Bank of India, major export destinations include the USA, UAE, China, Hong Kong, and several European countries.
- 4. Improving Service Accessibility:** Services such as online education, telemedicine, and professional consultations have become more accessible, overcoming geographical barriers.
- a. Industry estimates predict that the online education sector in India will grow at a CAGR of around 20% from 2020 to 2025.
- 5. Enhancing Logistics and Supply Chains:** Government initiatives like the National Logistics Policy have improved delivery processes, enhancing logistical efficiency and cost-effectiveness.

Various Regulatory Frameworks for E-commerce in India

- 1. Taxation Related:** E-commerce entities operating in India must comply with the **Income Tax Act, 1961**.
 - a. **Goods and Services Tax (GST)** applies to transactions within India.
 - b. **Double Taxation Avoidance Agreements (DTAA)** help facilitate international transactions.
- 2. Business Regulation:** The B2B e-commerce sector in India is governed by the **Foreign Direct Investment (FDI) policy** and the **Foreign Exchange Management Act (FEMA)**, which regulates foreign investments and business setups.

- a. Additional regulations include the **Companies Act 2013, Payment and Settlement Act 2007, RBI regulations on payment mechanisms, and rules on labelling and packaging.**
- 3. Data and Associated Issues:** The **Information Technology Act, 2000 (IT Act)**, regulates aspects of e-commerce, including electronic contracts, digital signatures, and cybercrime prevention.
- b. **Sections 84A and 43A of the IT Act** impose obligations on entities handling sensitive personal data or information.
 - c. **The Information Technology (Guidelines for Intermediaries and Digital Media Ethics Code) Rules, 2021**, introduce regulations for digital media intermediaries, including e-commerce platforms.

Government Initiatives Related to the E-Commerce Sector in India

- 1. National E-Commerce Policy
- 2. FDI Policy
- 3. Open Network for Digital Commerce (ONDC)
- 4. The Consumer Protection (E-commerce) Rules, 2020
- 5. Digital India initiative

Challenges and Solutions in E-Commerce Sector

Challenges	Solutions
<p>1. Logistics and Supply Chain Inefficiencies: The infrastructure is under development which leads to inefficiencies and higher costs, affecting export competitiveness.</p>	<p>1. Continued Investment in Logistics Infrastructure: Investments in dedicated freight corridors, modern warehousing facilities, and seamless multimodal connectivity. Adoption of advanced technologies like automation, IoT, and data analytics to optimize supply chain operations.</p>
<p>2. Cross-Border Trade Facilitation Complexities: Procedures such as customs clearance, documentation, and payment gateways can hamper e-commerce exports.</p>	<p>2. E-commerce under WTO: Need to update the WTO e-commerce moratorium (1998) to regulate e-commerce under WTO rules, facilitating cross-border trade.</p>



<p>3. Cybersecurity: E-commerce websites are vulnerable to cyber-attacks, leading to the loss of sensitive information and damaging business reputation.</p>	<p>3. Developing a Strong Data Privacy Network: Build a robust cybersecurity framework and promote consumer awareness campaigns to introduce confidence in e-commerce platforms.</p>
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10. Base Erosion and Profit Shifting

- In June 2024, the **Organisation for Economic Co-operation and Development (OECD)** appreciated the commitment of 147 Members of the **Inclusive Framework on Base Erosion and Profit-Shifting (BEPS)**.
- These members are dedicated to continuing efforts in resolving any remaining issues in the signing process of the Multilateral Convention (MLC).

About Base Erosion and Profit Shifting (BEPS)

- BEPS refers to tax strategies that **exploit differences in tax rules across countries** to minimize overall corporate tax payments.
- This initiative is approved by the G20 which aims to provide **standardized tax rules globally**.
- Objective:** The primary goal is to **reduce corporate tax liability** by making profits seem to disappear or by shifting them to low-tax regions with minimal real economic activity.
- Legality:** BEPS tactics take advantage of differences in international tax rules, even though they are often legal.
- Impact on Developing Countries:** Developing countries are particularly vulnerable due to their dependence on corporate income tax, especially from multinational corporations.

What is the OECD?

- The OECD is an intergovernmental economic organization established in 1961.
- Headquarters:** Paris, France.
- Membership:** 38 countries.
- India is not a member** but a key partner of the OECD.
- The OECD's mission is to **promote economic progress** and world trade.
- Most OECD members are high-income economies and are considered developed countries.

Inclusive Framework on BEPS

- Establishment and Purpose**
 - Formation:** The Inclusive Framework was established by the **OECD and G20** in 2016.
 - Members:** It includes **147 countries** and jurisdictions.
 - Objective:** The framework aims to **combat tax avoidance and promote equitable tax practices** through two main pillars.
- First Pillar**
 - Focus:** Addresses cross-border profit shifting by multinational and digital companies.
 - Objective:** Ensures that large enterprises pay taxes where they generate profits.
 - Impact:** Potentially reallocates over USD 100 billion annually to market jurisdictions.
- Second Pillar**
 - Proposal:** Introduces a global minimum corporate tax rate, currently suggested at 15%.
 - Objective:** Prevents harmful tax competition among countries.
 - Impact:** Expected to raise significant revenues, up to USD 192 billion per year, for both developed and developing countries.

What is the Global Minimum Tax (GMT)?

A globally agreed-upon minimum tax rate, currently proposed at 15%, aims to reduce tax base erosion while ensuring companies are not financially disadvantaged.

Objectives of GMT:

- To prevent multinationals from shifting profits to low-tax jurisdictions, regardless of where their actual sales occur.
- To address the trend of companies moving income from intangibles like patents, software, and IP royalties to tax havens, avoiding higher taxes in their home countries.
- The G20 and the OECD will lead critical decisions regarding this global minimum tax initiative.

Significance of BEPS

- Equitable Tax Contributions:** **Multinational enterprises (MNEs)** are required to pay their fair share of taxes in every country where they operate.
 - For example, a global coffee chain** would pay taxes in each country where it sells products, not just where its headquarters are located.
- Fiscal Healing:** It helps governments raise essential funds to repair public finances forced by unforeseen events like man-made or natural disasters.



- a. **For example**, a country can use the additional tax revenue to reduce debt incurred during a pandemic, improve healthcare facilities, or expand broadband access.
- 3. **Competitive Balance:** It reduces the tax advantages of larger corporations over smaller, domestic businesses.
- 4. **Adaptation to Digital Commerce:** Tax systems are updated to address online commerce.
 - a. **For example**, an e-commerce platform pays taxes where customers shop, even without having physical stores in those locations.
- 5. **Global Cooperation:** Promotes international cooperation to address cross-border tax challenges.

India's Position on Global Tax Reform

1. **Commitment to Global Tax Reform:** Indian multinational enterprises must review and account for any additional tax liabilities as per the global tax reform signed by India.
 - a. **For example**, in 2015, India joined the **Multilateral Competent Authority Agreement on Automatic Exchange of Financial Account Information**.
 - b. It is to exchange a wide range of financial information collected from financial institutions in various jurisdictions.
 - c. The Multilateral Competent Authority Agreement is a multilateral framework agreement that provides a standardised and efficient mechanism to facilitate the automatic exchange of information.
 - d. It avoids the need for several bilateral agreements to be concluded.
2. **Support for Consensus-Based Solutions:** India supports a consensus-driven solution that is easy to implement and comply with.
 - a. India advocates for a broader implementation of the new tax law so that it doesn't collect less than its current equalisation levy revenue.
3. **Emphasis (focus) on Market Jurisdiction:** India emphasises that the solution should allocate substantial and sustainable revenue to market jurisdictions, especially developing and emerging economies.
 - a. The **Two-Pillar Plan** aligns with India's stance on granting markets a larger profit share and incorporating demand-side elements in profit allocation.
 - b. India has ratified the **Multilateral Convention to Implement Tax Treaty-Related Measures to Prevent Base Erosion and Profit Shifting**.

Digital Services Tax in India

India initiated a **6% levy on online advertisement services by non-residents** in 2016. From 1st April 2020, a **2% levy** was imposed on digital transactions by foreign entities operating in India or accessing the local market.

Concerns Related to Global Tax Reform and solutions

Concerns	Solutions
<ul style="list-style-type: none"> • The reform may violate a nation's right to set its own tax policies. • A global minimum tax rate could limit countries' ability to use tax policies to promote their interests. 	<ul style="list-style-type: none"> • Allow countries to adapt the rules to their economic contexts while maintaining the agreement's spirit. • For example, a developing country might be given a grace period before fully implementing the minimum tax rate.
<ul style="list-style-type: none"> • Some argue that concerns about tax competition prevent governments from imposing high taxes on citizens to fund excessive spending. 	<ul style="list-style-type: none"> • Enhance information sharing and joint audits to address complex cross-border tax issues. • For example, the Multilateral Competent Authority Agreement on Automatic Exchange of Financial Accounts.
<ul style="list-style-type: none"> • Critics, including organizations like Oxfam, question the reform's ability to eliminate tax havens. Multinational companies may still engage in aggressive tax planning to exploit regulatory gaps. • For example, a multinational tech company might sell intellectual property rights (like patents or trademarks) to a subsidiary in a low-tax jurisdiction at a price that undervalues these assets. 	<ul style="list-style-type: none"> • Encourage or mandate public country-by-country reporting by large multinationals. • For example, a tech giant could disclose the revenue earned and tax paid in each country of operation.





E. SCIENCE & TECHNOLOGY

1. Chang'e-6: 1st Mission to return samples from the far side of the Moon

- China's Chang'e-6 mission successfully landed an uncrewed spacecraft on the far side of the moon on June 1st, 2024 and returned with valuable samples on June 25, 2024, concluding its 53-day-long mission.
- Chang'e-6 is the **1st mission in human history** to return samples from the far side of the moon
 - The **Chang'e-6** craft touched down in a gigantic impact crater called the **South Pole-Aitken Basin** on the moon's space-facing side.
 - This region is of particular scientific interest due to its unique geological features, including a thicker crust and a greater number of craters than the near side.
 - The Chang'e-6 probe, launched in May 2024 on China's Long March 5 rocket.

Mission Objectives

- The mission aims to collect **2 kg (4.4 pounds)** of lunar material over two days and bring it back to Earth.
- Analyze these samples to gain insights into the **moon's 4.5 billion-year history**, the solar system's formation, and the differences between the moon's dark and light sides.
- The mission will also allow for an unprecedented comparison between the dark, unexplored region with the moon's better understood **Earth-facing side**.

Why Explore the Far Side of the Moon?

- The Moon's **far side** is often referred to as the **dark side** because it cannot be seen from the Earth, not because it does not catch the Sun's rays.
- The far side has a **thicker crust**, more **craters** and fewer **maria**, or plains where lava once flowed.
- Examining the samples from the far side can help scientists solve mysteries about the origin and evolution of the Moon.
- The far-side samples can also give answers to the longstanding question: why is it different from the near side?

- "Going to the far side, getting samples and doing different kinds of **geophysical measurements** is really important to figuring out this really long, long-standing mystery," Brett Denevi, a planetary geologist at the **Johns Hopkins University's Applied Physics Lab**, told CNN.

Challenges and Solutions

- Landing on the far side of the moon presents significant challenges due to the lack of direct communication with Earth.
- To overcome this, **the mission relied on a relay satellite to maintain contact** and employed advanced automation for navigation and sample collection.
- A **simulation lab was also used** prior to the mission to develop and test sampling strategies and equipment control procedures, ensuring the mission's success.

Significance of the Mission

- The successful mission elevates China's space power status in a global rush to the moon, where countries including the **United States** are hoping to exploit lunar minerals to sustain long-term astronaut missions and moon bases within the next decade.
- China's lunar strategy includes its first astronaut landing around **2030** in a programme that counts **Russia** as a partner.

China's Lunar Exploration Program

- The Chang'e-6 mission builds upon **China's previous successes in lunar exploration**, including the Chang'e-4 mission, which landed on the far side in 2019 and deployed a rover to explore the Von Kármán crater.
- These missions are part of China's broader lunar exploration program, which aims to establish a long-term presence on the moon and utilize its resources.

Comparison with Other Countries

- The **United States** is the only country to have landed humans on the moon, starting in 1969.
- Other countries that have sent spacecraft to Earth's nearest neighbour are the then-**Soviet Union**, **India**, **Japan**, and the United States.



3. Japan's **SLIM lander** touched down in January, followed the next month by a lander from U.S. startup **Intuitive Machines**.

Future Plans

1. The U.S. **Artemis programme** envisions a crewed moon landing by late 2026 or later.
2. **NASA** has partnered with space agencies including those of Canada, Europe, and Japan, whose astronauts will join U.S. crews on an Artemis mission.
3. **Elon Musk's SpaceX** aims to attempt the first astronaut landing since NASA's final Apollo mission in 1972 with its **Starship rocket**.

Conclusion

China's Chang'e-6 mission represents a major leap forward in lunar exploration and scientific discovery. By successfully landing on the far side of the moon and returning with valuable samples, China has solidified its position as a leader in space exploration and opened up new avenues for research and understanding of our celestial neighbor.

2. Armenia joined the Artemis Accords

Armenia joined the NASA's Artemis Accords as the 43rd signatory nation, furthering international cooperation in lunar exploration.

About Artemis Accords

1. **Established:** 2020 by NASA, the U.S. Department of State, and seven other nations.
2. **Grounded in:** Outer Space Treaty of 1967 and other agreements.
3. **Objective:** Sets non-binding principles for peaceful civil exploration and use of outer space, the Moon, Mars, comets, and asteroids.
4. **Signatories:** Include India and now Armenia.

Key Principles of the Artemis Accords

1. All activities will be conducted for **peaceful purposes**
2. Partner nations shall ensure **transparency** by publicly describing their own **policies and plans**
3. Join Registration Convention and avoiding **harmful interference**

4. Partner nations shall utilize existing **international standards**, develop **new standards**, and strive to support interoperability
5. **Timely and open sharing of scientific data** to ensure that the entire world can benefit from exploration and discovery
6. Preservation of **outer space heritage** with historic value

Existing Outer Space Governance Framework

1. **UN COPUOS:** Established by the UN General Assembly in 1958 to govern space exploration for the benefit of all humanity, supported by UNOOSA.
2. **Key International Space Treaties:**
 - a. Outer Space Treaty 1967
 - b. Rescue Agreement 1968
 - c. Liability Convention 1972
 - d. Registration Convention 1976
 - e. Moon Agreement 1979 (India is a signatory but hasn't ratified)

Need for Reform in Outer Space Governance

1. **Space Debris:** 130 million objects larger than 1 mm, posing a growing threat without a dedicated international monitoring or removal mechanism.
2. **Resource Activities:** Lack of international framework on space resource exploration and utilization, despite the growing interest in space mining.
3. **Space Traffic Coordination:** Inconsistent standards and coordination among national and regional entities create challenges, especially for countries with limited space capacity.
4. **Prevention of Conflict:** Need for additional frameworks to prevent armed conflict and weaponization of space, given the dual-use nature of many technologies.
5. **Increased Satellite Launches:** Exponential growth driven by government and private sectors, creating more complex challenges for governance.

Way Forward

The UN's policy brief "**For All Humanity – the Future of Outer Space Governance**" recommends:

1. **New Treaty for Peace and Security:** To prevent arms races in outer space.



2. **Space Debris Removal:** Developing norms and principles for safe and effective removal.
3. **Space Traffic Management:** Creating an effective framework for coordination and situational awareness.
4. **Space Resource Activities:** Developing a framework for sustainable exploration and utilization of celestial bodies, building upon existing treaties.
5. **Inclusiveness:** Facilitating participation of commercial actors, civil society, and other relevant stakeholders in intergovernmental processes.

3. 2025: International Year of Quantum Science And Technology

The UN designated 2025 as the International Year of Quantum Science and Technology.

More about the News

1. **Year 2025:** Chosen to recognize 100 years since the initial development of quantum mechanics by German physicist Werner Heisenberg.
2. **Global Initiative:** Aims to strengthen national capacities in basic sciences and science education.
3. **Significance:** Highlights the contribution of quantum science to our understanding of the physical universe and its critical role in developing sustainable solutions.

About Quantum Mechanics and Its Key Applications

1. **Definition:** Explains how extremely small objects simultaneously have characteristics of both particles and waves.
2. **Quantum Computing & Simulations:**
 - a. Uses qubits (subatomic particles) as the basic unit of information.
 - b. Applications in healthcare (medical imaging, drug development), AI (data processing, complex calculations), logistics (optimization problems), and more.
3. **Quantum Communications:**
 - a. Includes post-quantum cryptography and quantum key distribution (QKD).
 - b. QKD uses photons to transmit a secret key for secure communication.

4. **Quantum Sensing & Metrology:**
 - a. Uses individual particles as highly sensitive sensors for measuring forces, gravitation, electric fields, etc.
5. **Quantum Material & Devices:**
 - a. Design and synthesis of quantum materials (superconductors, semiconductors, topological materials) for quantum device fabrication.
 - b. Applications in energy-efficient solar cells, low-emission LEDs, and climate modeling.

India's Initiatives in Quantum Technology

1. **National Quantum Mission (2023):** Aims to foster scientific and industrial R&D, create a vibrant quantum technology ecosystem, and position India as a global leader.
2. **Quantum Enabled Science & Technology (QuEST):** A research program to build quantum capabilities.
3. **Quantum Computing Applications Lab (QCAL):** Accelerates quantum computing research and development.
4. **Other Initiatives:**
 - a. National Mission on Quantum Technologies & Applications (NMQTA)
 - b. Qsim – Quantum Computer Simulator Toolkit
 - c. Quantum Frontier mission of PM-STIAC
 - d. Dedicated labs and centers at a military engineering institute in Mhow

Challenges in Development and Adoption

1. **Regulation:** Need for standards and protocols, intellectual property frameworks.
2. **Infrastructure:** Requires significant resources and continuous upgrades.
3. **Scalability:** Maintaining coherence and low error rates while scaling up quantum computers.
4. **Colder Environments and Error Correction:** Qubits need extremely cold environments, and error correction techniques are essential.
5. **Other Challenges:** New programming languages, tools, and increased R&D investment are needed.

Way Forward

1. **Attract Private Investment:** Incentivize private companies through tax breaks, grants, and partnerships.



2. **Promote Regional Infrastructure:** Develop quantum research infrastructure across India.
3. **Establish Regulatory Body:** Create a central body for drafting and implementing regulations.
4. **Facilitate Technology Transfer:** Bridge the gap between research and commercialization.
5. **IPR Regime:** Establish frameworks for intellectual property ownership, licensing, and transfer.

India's First Quantum Diamond Microchip Imager

1. **Developed by:** TCS in partnership with IIT-Bombay
2. **Aligned with:** National Quantum Mission (NQM)
3. **Uses:** Nitrogen-Vacancy (NV) centers in diamond for detecting anomalies in semiconductor chips
4. **Benefits:** Reduces chip failures, improves energy efficiency, promotes semiconductor industry

4. Kavli Prize 2024

Recently, 8 scientists were awarded with **2024 Kavli Prize** for their contributions to **Astrophysics, Neuroscience, and nanoscience**.

All 8 scientists awarded the Prize this year are professors at leading American universities.

Kavli Medal

1. The Kavli Medal, distinct from the Kavli Prize, is **awarded annually** for excellence in **environmental science and engineering**.
2. It is open to **UK, Commonwealth, or Irish Republic** citizens or residents with at least three years of residency.
3. The award **targets early career scientists within 15 years of their PhD**, excluding career breaks.
4. Recipients are chosen by the Royal Society Council based on recommendations from the Joint Physical and Biological Sciences Awards Committee. Nominations remain valid for five years, after which candidates must wait a year before being re-nominated.

What is the Kavli Prize?

1. About:

- a. The Kavli Prize is an **international award** that recognizes **scientists** for their outstanding achievements in the fields of **astrophysics, nanoscience, and neuroscience**.

- b. This prize, awarded **biennially**, was started in **2008**. It is named after Norwegian-American businessman and philanthropist **Fred Kavli**.
- c. Awarded by the **Norwegian Academy of Science and Letters** in partnership with the **Kavli Foundation** and the **Norwegian Ministry of Education and Research**.

2. Comparison with Nobel Prize:

- a. The Kavli Prize is similar to the Nobel in the fields of astrophysics, neuroscience, and nanoscience.
- b. The key difference is that the Nobel Prize is awarded for achievements made **“during the preceding year,”** while the Kavli Prize recognises achievements without the restriction of being made in the preceding year.

3. Winners 2024:

Field	Winners	Contribution
Astrophysics	David Charbonneau of Harvard University, and Sara Seager , of the Massachusetts Institute of Technology.	<ul style="list-style-type: none"> • Achievements: Discoveries and characterisation of exoplanets and their atmospheres. • Contributions: Pioneered methods for detecting atomic species in planetary atmospheres and measuring thermal infrared emissions, crucial for identifying molecular fingerprints in planetary atmospheres
Nanoscience	Robert Langer of MIT, Armand Paul Alivisatos of the University of Chicago, and Chad Mirkin of Northwestern University	<ul style="list-style-type: none"> • Langer: Nano-engineering for controlled drug delivery systems. • Alivisatos: Development of semiconductor quantum dots for bio-imaging. • Mirkin: Concept of spherical nucleic acids (SNAs) for applications in gene regulation and immunotherapy.



Neuroscience	<p>Nancy Kanwisher (MIT), Winrich Freiwald (Rockefeller University), Doris Tsao (University of California, Berkeley)</p>	<ul style="list-style-type: none"> Mapping brain functions related to facial recognition using neuroimaging and neuronal recording techniques, identifying brain centres and neural architectures involved in face processing.
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5. Pushpak, ISRO's Reusable Launch Vehicle

The **Indian Space Research Organisation (ISRO)** has successfully completed the 3rd and final **Reusable Launch Vehicle (RLV) Landing Experiment (LEX)** on June 23 at the **Aeronautical Test Range (ATR)** in Chitradurga, Karnataka.

Key Points:

- RLV LEX-03:** The **RLV LEX-03** mission re-demonstrated the autonomous landing capability of the **RLV** under more challenging release conditions and more severe wind conditions.
- Pushpak:** The winged vehicle, **Pushpak**, was released from an **Indian Air Force Chinook Helicopter** at an altitude of 4.5 km and autonomously executed cross-range correction manoeuvres, approached the runway, and performed a precise horizontal landing at the runway centreline.
- Landing Velocity:** The landing velocity of **Pushpak** exceeded 320 kmph, compared to 260 kmph for a commercial aircraft and 280 kmph for a typical fighter aircraft.
- Brake Parachute:** After touchdown, the vehicle velocity was reduced to nearly 100 kmph using its **brake parachute**, after which the landing gear brakes were employed for deceleration and stop on the runway.
- Ground Roll Phase:** During the ground roll phase, **Pushpak** utilises its rudder and nose wheel steering system to autonomously maintain a stable and precise ground roll along the runway.

- Mission Objective:** The mission simulated the approach and landing interface and high-speed landing conditions for a vehicle returning from space, reaffirming **ISRO's** expertise in acquiring the most critical technologies required for the development of a **Reusable Launch Vehicle (RLV)**.
- Guidance Algorithm:** The advanced guidance algorithm catering to longitudinal and lateral plane error corrections, which is essential for the future **Orbital Re-entry Mission**, has been validated.
- Multisensor Fusion:** The **RLV-LEX** uses multisensor fusion including sensors like the **Inertial sensor, Radar altimeter, Flush air data system, Pseudolite system, and NavIC**.
- Reusability:** The **RLV-LEX-03** mission reused the winged body and flight systems as such without any modification, from the **LEX-02** mission, demonstrating the robustness of **ISRO's** capability of design to reuse flight systems for multiple missions.

Significance:

- Reusable Launch Vehicle:** The successful completion of the **RLV LEX-03** mission marks a significant milestone in **ISRO's** efforts to develop a **Reusable Launch Vehicle (RLV)**.
- Cost-Effective:** A **reusable launch vehicle** can significantly reduce the cost of access to space, making it a cost-effective option for launching satellites and other spacecraft.
- Future Missions:** The success of the **RLV LEX-03** mission paves the way for future missions, including the development of a **reusable launch vehicle** capable of carrying payloads to orbit.

Historical Context:

- ISRO's RLV-TD:** Resembling an aircraft, it consists of a fuselage, nose cap, double delta wings, and twin vertical tails.
- 2016 Maiden Test Flight:** The space agency conducted the maiden test flight of **RLV Demonstrator** at **Satish Dhawan Space Centre** at Sriharikota in Andhra Pradesh. The spacecraft achieved a speed of **Mach 5** (five times the speed of sound) during re-entry into the earth's orbit and traveled 450 km before falling down in the Bay of Bengal.



Future Implications:

1. **ISRO's Advancements:** ISRO's advancements in **RLV technology** pave the way for cost-effective and sustainable space exploration.
2. **Progress in Aerospace:** The continued development and testing of the **RLV** reflects India's progress in aerospace engineering and innovation.

Previous Mission:

1. **RLV LEX:** ISRO demonstrated the **Reusable Launch Vehicle Autonomous Landing Mission (RLV LEX)** on April 2, 2023, at the **Aeronautical Test Range (ATR)** in Chitradurga, Karnataka.
2. **Autonomous Landing:** The autonomous landing was carried out under the exact conditions of a **Space Re-entry vehicle's landing:** "high speed, unmanned, precise landing from the same return path" as if the vehicle arrives from space.
3. **Landing Parameters:** Ground relative velocity, the sink rate of landing gears, and precise body rates, as might be experienced by an orbital re-entry space vehicle in its return path, were achieved.
4. **State-of-the-Art Technologies:** The **RLV LEX** demanded several state-of-the-art technologies, including:
 - a. Accurate Navigation hardware and software
 - b. Pseudolite system
 - c. Ka-band Radar Altimeter
 - d. NavIC receiver
 - e. Indigenous Landing Gear
 - f. Aerofoil honey-comb fins
 - g. Brake parachute system

Conclusion:

In conclusion, the successful completion of the **RLV LEX-03** mission is a significant achievement for **ISRO**, demonstrating its expertise in developing critical technologies required for a **Reusable Launch Vehicle (RLV)**. The mission's success paves the way for future missions, including the development of a **reusable launch vehicle** capable of carrying payloads to orbit, and marks a significant milestone in India's space programme.

6. AI Model Predicts Alzheimer's with 80% Accuracy

1. Researchers at **Boston University** have developed an **artificial intelligence (AI) tool** that can predict with nearly **80% accuracy** whether someone is at risk of developing **Alzheimer's disease** based on their speech patterns.
2. Alzheimer's disease is a progressive neurological disorder that affects memory, thinking, and behavior.

The Research

1. The researchers used a **natural language processing model** to analyze the speech patterns of **166 people**, including **107 women** and **59 men**, between the ages of 63 and 97 who had some level of cognitive complaints.
2. The participants were part of the **Framingham Heart Study**, led by Boston University, and had been recorded for an hour-long interview.
3. The **AI tool** was able to track connections between speech patterns and cognitive decline, based on **biomarkers** associated with cognitive decline.
4. The model predicted significant cognitive decline with **78.5% accuracy**.

What is Alzheimer?

1. **Alzheimer's disease** is a progressive brain disorder that gradually destroys memory and thinking skills and, eventually, the ability to carry out even the simplest tasks. It is the most common cause of dementia, a general term for loss of memory, language, problem-solving, and other thinking abilities that are severe enough to interfere with daily life.
2. Alzheimer's disease is named after **Dr. Alois Alzheimer**, a German psychiatrist who first described the disease in 1906.
3. The **exact cause of Alzheimer's disease is unknown**, but it is thought to be related to abnormal changes in the brain. These changes include the buildup of **plaques and tangles** in the brain.
 - a. Plaques are deposits of a protein called **beta-amyloid**.
 - b. Tangles are twisted fibers of another protein called **tau**.



4. There is **no cure for Alzheimer's** disease, but there are treatments that can help manage the symptoms. These treatments can help people with Alzheimer's disease live longer, more fulfilling lives.

Implications

1. The ability to identify potential cognitive decline early has significant potential for mitigating the progression of Alzheimer's.
2. Early intervention with treatments can slow the disease, improve accessibility to cognitive assessments, and facilitate personalized care plans.
3. The **AI tool** can help healthcare providers prioritize patients needing intensive monitoring, optimize resource allocation, and provide valuable data for refining predictive models and developing new treatment strategies.

Benefits of AI in Alzheimer's Detection

1. The AI model can provide more **accurate predictions** than current methods, which are often based on the presence of **amyloid in the brain**.
2. A large portion of people who test positive for amyloid in the brain don't go on to develop cognitive symptoms, making the AI model a more reliable predictor.
3. The AI model **can help identify individuals who are at risk** of developing Alzheimer's, allowing for early intervention through lifestyle modifications such as a heart-healthy diet, exercise, and treating depression.
4. The AI model **can also help reduce the burden** on healthcare systems by identifying high-risk individuals and providing targeted interventions.

Concerns

1. The sample size was small, and the tool is not meant to be used on its own.
2. There is a risk of **false positives** or **negatives**, which could lead to undue stress or false reassurance.
3. There is a risk that clinicians might over-rely on AI predictions without considering the broader clinical context, leading to potential misdiagnoses.

Future of AI in Healthcare

1. The use of AI in healthcare has the potential to revolutionize certain areas of healthcare.

2. It is essential to ensure that AI tools are used in conjunction with other methods to provide a more accurate picture of an individual's health.
3. Speech is a readily available and easy-to-gather data point that can be used to track changes over time, providing a more individualized baseline for each person.

Conclusion

The development of an **AI model** that can predict **Alzheimer's** with 80% accuracy by analyzing speech patterns is a significant breakthrough in the field of healthcare. While there are concerns about the use of AI in healthcare, the potential benefits of early intervention and personalized care plans make this technology an exciting development in the fight against Alzheimer's disease.

7. World First Epilepsy Device Fitted in UK Boy's Skull

1. **Oran Knowlson**, a 13-year-old boy from **Somerset**, England has become the first patient in the world to trial a new device fitted in his skull to control seizures.
2. The **neurostimulator**, which sends electrical signals deep into his brain, has reduced Oran's daytime seizures by 80%.

Oran's Condition

1. Oran has **Lennox-Gastaut syndrome**, a treatment-resistant form of **epilepsy** which he developed at the age of three.
2. He has suffered several daily seizures ranging from two dozen to hundreds, including those where he falls to the ground, shakes violently, and loses consciousness.
3. Oran is autistic and has **ADHD**, but his epilepsy is by far the biggest hurdle.
4. His mother, Justine, says that his epilepsy has "robbed him of all of his childhood."

The Surgery

1. The surgery, which lasted around eight hours, took place in October 2023 as part of a trial at **Great Ormond Street Hospital** in London.
2. The team, led by consultant paediatric neurosurgeon **Martin Tisdall**, inserted two electrodes deep into Oran's brain until they reached the **thalamus**, a key relay station for neuronal information.



- The ends of the leads were connected to the **neurostimulator**, a 3.5cm square and 0.6cm thick device which was placed in a gap in Oran's skull where the bone had been removed.
- The neurostimulator was then screwed into the surrounding skull, to anchor it in place.

How the Device Works

- Epilepsy seizures are triggered by abnormal bursts of electrical activity in the brain.
- The device, which emits a constant pulse of current, aims to block or disrupt the abnormal signals.
- The device can be recharged wirelessly using a headphone.

What is Epilepsy Disorder?

- Epilepsy is a central nervous system (**neurological**) disorder in which brain activity becomes abnormal, causing seizures or periods of unusual behaviour, sensations, and sometimes loss of awareness.
- It is caused by abnormal electrical activity in the brain.
- The disease has no identifiable cause in nearly 50% of the cases.
- It is more common in young children and older adults, and occurs slightly more in males than in females.

Available Treatment of Epilepsy

- Anti-seizure medications:** These are the first line of treatment, aiming to control seizure frequency and severity.
- Ketogenic diet:** A high-fat, low-carbohydrate diet can be remarkably effective, particularly in children with medication-resistant epilepsy.
- Epilepsy surgery:** Doctors can carry out brain surgery to remove a portion of the brain where the seizures originate.
- Corpus Callosotomy:** In this surgical procedure, doctors remove the corpus callosum (a part that connects both halves of the brain) that will not allow abnormal electrical signals to travel from one half of the brain to another, preventing abnormal electrical discharges from spreading and causing seizures.

What is the DBS Brain Implant Technology to Treat Epilepsy?

- Deep Brain Stimulation (DBS)** involves implanting a medical device with electrodes that deliver mild electrical currents to specific brain regions linked to seizures.
- DBS is considered for patients with medication-resistant epilepsy, where traditional medications haven't controlled seizures.
- Unlike surgery that removes brain tissue, DBS offers a more targeted approach with potentially fewer side effects.

The Future of Brain Implants

- NeuraLink (American neurotechnology company):** Neuralink's brain implant aims to help people with traumatic injuries control computers using only their thoughts.
- Brainware:** It integrates brain organoids with microelectrodes and can be used to study human brain development and brain-related diseases.

Epilepsy Day

- Every year the **2nd Monday of February** is observed as **International Epilepsy Day (IED)**, and this year it was celebrated on 12th February (2024).
- Theme for this (2024) year:** Milestones on My Epilepsy Journey.
- National Epilepsy Day is celebrated every year in India on **17th November** to raise awareness about the **brain disorder and bust myths surrounding the disease**.

8. Progress towards HIV vaccine

- Researchers at the Scripps Research Institute and the Massachusetts Institute of Technology have outlined **2 nanoparticle-based vaccine candidates: N332-GT5 and eOD-GT8**.
- These novel vaccines could help the body make two classes of broadly neutralising antibodies to attack HIV.



HIV and AIDS:

1. HIV (human immunodeficiency virus) is an **RNA virus**. It belongs to the retrovirus family, which is characterised by the presence of RNA as its genetic material.
2. HIV **damages the immune system** and attacks cells that help the body fight infection, making a person more vulnerable to other infections and diseases. If left untreated, HIV can lead to the disease **AIDS (acquired immunodeficiency syndrome)**.
3. HIV primarily targets **CD4 cells**, which are a type of white blood cell essential for the proper functioning of the immune system.
4. **Transmission:**
 - a. Contact with certain bodily fluids (infected blood, semen, or vaginal fluids) of a person with HIV, most commonly during unprotected sex or sharing injection drug equipment.
 - b. Can also transmit from an HIV-positive mother to her child during childbirth, breastfeeding, or pregnancy.
 - c. Mosquitoes or any other insect vector cannot transmit HIV, unlike malaria (HIV can only survive in human blood).
5. **Treatment:** Human body cannot get rid of HIV and no effective HIV cure exists. Medications like **antiretroviral therapy or ART** can control the infection and prevent disease progression.

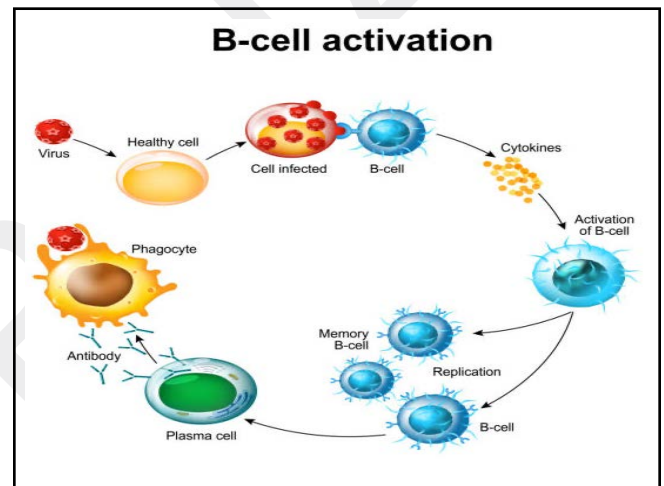
No vaccine for AIDS

1. AIDS still has **no vaccine** or cure. The reason is that the replication of the human immunodeficiency virus (HIV) is an **incredibly error-prone process** that results in multiple **variants** of the virus circulating.
 - a. HIV has **more variants circulating in a single patient** at any given point of time than **influenza cumulatively generates in one year** in all influenza patients around the world combined. And influenza is the second-best virus in terms of genetic variation.

Starring role for B-cells

1. When the immune system encounters a virus, one of its responses is to **produce antibodies highly specific to proteins on the virions' surface**.

2. The immune system does this with the help of a **pool of specialised cells (B-cells)** that produce antibodies. **Each B-cell produces an antibody unique to one protein fragment**.
3. These antibodies then bind to **corresponding proteins on the viral surface**, rendering them incapable of further infection.
 - a. The body then retains some of these specific antibody-producing cells in case of a future infection.
4. A vaccine aims to **generate these antibodies** prior to viral infection so that whenever a virus enters the body, the antibodies can neutralise the virus and prevent it from initiating an infection.



Broadly neutralising antibodies (bNAb):

1. However, when **multiple variants of the same virus exist**, generating antibodies against all the different variants simultaneously becomes very difficult.
 - a. In case of HIV, the **sheer volume of different variants of the virus** circulating overwhelms the immune system's ability to generate new antibodies.
 - b. Additionally, by the time the immune system makes antibodies against a few strains, the virus will have produced hundreds more variants.
2. **Broadly neutralising antibodies (bNAb)** are a kind of antibody that can neutralise a large number of circulating viral strains. These **antibodies (bNAb)** worked by targeting areas of the viral proteins that the virus could not afford to change, since doing so would

make it lose infectivity. Scientists have discovered many bNAbs, and they are classified into different groups based on the region of HIV they target.

The challenge and the way forward

1. A **body usually takes years to make bNAbs**, and by then the virus has already evolved to escape them. It takes years because the **parental B-cells that make the bNAbs** are incredibly rare.
2. The immune system can produce these bNAbs in large numbers in response to a vaccine by **germline targeting**. It has three steps.
 - a. In the first step, those B-cells that can mature into cells that can produce bNAb are identified and engaged to increase their population.
 - b. In the second-step, a booster dose will guide these cells into generating stronger bNAbs against HIV.
 - c. The final step is to refine these bNAbs such that they can neutralise a wide range of HIV strains.

Progress

1. Researchers have developed two promising nanoparticle-based vaccine candidates: N332-GT5 and eOD-GT8. Using these novel vaccines, it may be **possible to engage B-cells to make two different classes of bNAbs**.
2. The antibodies generated in response to the vaccines **bind to the HIV proteins** in a manner similar to that of established bNAbs. The candidate vaccines are currently being evaluated in a phase-1 clinical trial to assess their performance in humans.

9. GMO Mosquitoes Released in Djibouti to Fight Malaria

1. Tens of thousands of genetically modified (GMO) mosquitoes have been released in Djibouti as part of a pilot project to combat the spread of malaria, a deadly disease that kills hundreds of thousands of people every year.
2. This is the 1st time GMO mosquitoes have been released in East Africa and the 2nd time on the continent.

About Malaria

1. Malaria is a life-threatening disease caused by the *Plasmodium parasite*, transmitted to humans through the bites of infected female Anopheles mosquitoes.

2. It primarily affects tropical and subtropical regions, including sub-Saharan Africa, Southeast Asia, and South America.
3. While there are different types of malaria parasites, Plasmodium falciparum is the deadliest, and Plasmodium vivax is the most widespread.
4. **Symptoms and Severity:** After entering the human body, the parasites multiply in the liver and then infect red blood cells. This leads to a range of symptoms, including fever, chills, headache, muscle aches, and fatigue. In severe cases, malaria can cause organ failure, coma, and even death.

World Malaria Day 2024

Observed on 25 April (Every Year).

Theme: Accelerating the fight against malaria for a more equitable world.

How it Works

1. The released mosquitoes are *non-biting male Anopheles stephensi* mosquitoes, developed by the UK-based biotechnology company Oxitec.
2. These modified males carry a self-limiting gene that ensures their female offspring do not survive to adulthood.
3. As only female mosquitoes bite and transmit malaria, this intervention effectively breaks the disease transmission cycle. The male offspring also inherit the gene, leading to a gradual reduction of the mosquito population over time.

Background: Djibouti's Malaria Crisis

1. Since the invasive *Anopheles stephensi* species was first detected in Djibouti in 2012, malaria cases have skyrocketed from a near-elimination state of 30 cases to a staggering 73,000 in 2020.
2. This species, an urban mosquito resistant to chemical insecticides, bites both day and night, posing unique challenges for control.

Successful Precedents and Global Impact

1. **GM Mosquitoes:** GM mosquitoes have been successfully used in parts of Brazil, the Cayman Islands, Panama, and India to control *Aedes aegypti* mosquitoes. Since 2019, over 1 billion mosquitoes have been released.



2. **Djibouti's Initiative:** Djibouti's initiative follows Burkina Faso's release of GM mosquitoes in West Africa, highlighting a growing trend in using biotechnology to combat malaria.

Addressing Concerns

1. **Environmental Concerns:** Genetically modified organisms have always been a controversial subject in Africa, with environmental groups and campaigners warning of consequences to ecosystems and existing food chains.
2. **Safety:** However, Oxitec claims that no adverse effects on environmental or human health have been documented for over 10 years, during which the company has released a billion modified mosquitoes.

Vaccines

1. The World Health Organization (WHO) has set a **benchmark efficacy of 75%** for malaria vaccines. While **no vaccine has reached this target yet**, the **WHO has approved the RTS,S** vaccine for use in high-transmission African countries. This vaccine, developed through a collaborative effort, **has a relatively low efficacy of 30-40%**, but it represents a significant step forward in malaria control.
 - **Bharat Biotech has been licensed** to manufacture this vaccine in India.
 - Another promising vaccine, R21, developed by Oxford University, is awaiting WHO approval. It has been approved for use in Ghana and Nigeria and is being **manufactured by the Serum Institute of India**.

India's Initiatives

1. **National Vector-Borne Disease Control Programme:** It is an umbrella programme for prevention and control of vector borne diseases viz. Malaria, Japanese Encephalitis (JE), Dengue, Chikungunya, Kala-azar and Lymphatic Filariasis.
2. **National Malaria Control Programme:** Launched in 1953, it is built around 3 key activities:
 - I. Insecticidal residual spray (IRS) with DDT
 - II. Monitoring and surveillance of cases
 - III. Treatment of patients

3. **National Framework for Malaria Elimination 2016-2030:** Based on WHO Global Technical Strategy for Malaria 2016–2030 (GTS), the goals of the NFME are:

- Eliminate malaria (**zero indigenous cases**) throughout the entire country by 2030.
 - Maintain malaria-free status in areas where malaria transmission has been interrupted and prevent re-introduction of malaria.
4. **High Burden to High Impact (HBHI) Initiative: It was started in four states (West Bengal, Jharkhand, Chhattisgarh and Madhya Pradesh) in July 2019.**
 - Distribution of Long-Lasting Insecticidal Nets (LLINs) to high burden areas has led to a reduction in endemicity in these 4 very high endemic states.
 5. **Malaria Elimination Research Alliance-India (MERA-India):** It has been established by Indian Council of Medical Research (ICMR) with the conglomeration of partners working on malaria control.

10. India Plans to Start Large-Scale Production of Bio-Bitumen

India is planning to initiate **large-scale production of bio-bitumen**. Derived from biomass or agricultural waste, bio-bitumen aims to reduce reliance on imports of traditional bitumen, a crucial component in road construction, and tackle the issue of stubble burning.

What is Bitumen?

1. **Bitumen** is a dense, **viscous hydrocarbon** found in natural deposits like oil sands and pitch lakes, or obtained as a residue during the distillation of crude oil.
2. **Applications:** Bitumen is extensively used in the construction industry, particularly for roads and highways, waterproofing boats and other marine vessels, roofing products, and sealing and insulating various building materials.

The Current Bitumen Landscape in India

1. **Import Dependency:** India relies on imports for roughly half of its annual bitumen needs, with consumption reaching 7.7 million tonnes over the past 5 years.

- 2. **Rising Demand:** As India expands its national highway network, the demand for bitumen continues to grow.
- 3. **Environmental Concerns:** The extraction and use of traditional bitumen raise environmental concerns, and the disposal of agricultural waste, often through burning, contributes to pollution.

Bitumen vs. Bio-bitumen

Feature	Bitumen	Bio-Bitumen
Source	Crude Oil	Biomass, agriculture waste
Environment Impact	Higher (fossil fuel-based)	Lower (renewable resources)
Sustainability	Non-renewable	Renewable
Cost	Currently lower	Potentially higher (but decreasing)
Performance	Well-established	Requires further research and standardization
Benefits	Proven durability, widespread use	Reduced emissions, sustainable resources utilization

India’s Bio-Bitumen Initiative: Objectives and Key Points

- 1. **Reducing Import Dependency:** The primary goal is to replace imported bitumen with domestically produced bio-bitumen over the next decade. This would significantly reduce India’s reliance on foreign oil and conserve valuable foreign exchange.
- 2. **Addressing Environmental Concerns:** Utilizing agricultural waste like stubble for bio-bitumen production offers a **dual benefit**: reducing pollution from stubble burning and promoting a circular economy.
- 3. **Pilot Project and Technological Development:** The Central Road Research Institute (CRRI) and the Indian Institute of Petroleum are collaborating on a pilot project to construct a 1-km road stretch using

bio-bitumen. This will assess the performance and feasibility of bio-bitumen for large-scale adoption.

- 4. **Large-Scale Production and Government Support:** The government aims to commence large-scale bio-bitumen production by late 2025, with commercial production expected by the end of 2026. The Ministry of Road Transport and Highways is providing funding and closely monitoring the project’s progress.

Key Advantages of Bio-Bitumen

- 1. **Reduced Import Dependency:** India can save significant foreign exchange by producing its own bio-bitumen.
- 2. **Environmental Benefits:** Utilizing agricultural waste as feedstock addresses stubble burning and promotes sustainability.
- 3. **Economic Growth:** Developing domestic production capabilities can stimulate economic growth.

Impact and Benefits of Bio-Bitumen Adoption

- 1. **Sustainability:** Bio-bitumen production aligns with India’s commitment to sustainable development and reducing carbon emissions. It contributes to a greener and more environmentally friendly road construction industry.
- 2. **Economic Growth:** By reducing import dependency and promoting domestic production, bio-bitumen can boost the economy, create jobs, and save foreign exchange.
- 3. **Technological Advancement:** The initiative fosters research and innovation in sustainable materials, positioning India as a leader in green infrastructure technologies.

Challenges and Future Outlook

While bio-bitumen presents a promising future, challenges remain. These include:

- 1. **Cost:** Current production methods can be more expensive than traditional bitumen.
- 2. **Performance:** Further testing is needed to assess long-term durability.
- 3. **Standardization:** Establishing clear industry standards is crucial.

Despite these challenges, India’s commitment to bio-bitumen is a significant step towards sustainable



road construction. With government support and ongoing research, bio-bitumen could transform the nation's infrastructure and contribute to a greener future.

Other Innovation Methods in Road Construction

1. **Steel slag road technology** is a novel method of using steel slag, the waste generated during steel production, to build more robust and more durable roads.
 - a. **For example, Steel Slag Road technology was first used in Surat.**
2. In Hamburg, Germany, companies have developed **100% recycled asphalt pavement (RAP)** to reduce costs, save energy, and lower carbon emissions.
3. India has built more than 2,500 km of **plastic roads** and globally too, **plastic roads** are proliferating in more than 15 countries.
 - a. **For example, it is mandatory to make use of at least 10% of plastic waste for road construction in Ladakh.**

Conclusion

India's ambitious bio-bitumen initiative reflects a commitment to sustainability, economic growth, and environmental stewardship. By embracing this innovative approach, India sets an example for the global construction industry and paves the way for a greener future. It aligns with India's commitments to the Sustainable Development Goals (SDGs), particularly **SDG 7** (Affordable and Clean Energy), **SDG 9** (Industry, Innovation and Infrastructure), and **SDG 12** (Responsible Consumption and Production).

11. Superhydrophobic Catalyst: For Affordable Biodiesel

A team of scientists from **India, China, and the UK** has developed a novel **superhydrophobic catalyst** that can significantly reduce the cost of producing **biodiesel**, a renewable and clean-burning alternative fuel.

What is Biodiesel?

Biodiesel is a renewable fuel derived from natural fats or vegetable oils. It can be used as a direct substitute for or blended with conventional diesel fuel. Biodiesel is produced through a chemical process called transesterification, where the feedstock reacts with an alcohol in the presence of a catalyst.

Biodiesel Production Process:

1. **Feedstock Selection:** Selecting the right feedstock for biodiesel production is crucial.
2. **Transesterification:** The feedstock is reacted with an alcohol in the presence of a catalyst to produce biodiesel and glycerin.
3. **Separation:** The mixture is separated into two layers: biodiesel and glycerin.
4. **Washing:** Biodiesel is washed to remove impurities and residual catalyst.

The Challenge of Biodiesel Production

1. While biodiesel offers numerous advantages over fossil fuels, its **production has been hampered by high costs.**
2. A major hurdle has been the poisoning of traditional catalysts by water, a byproduct of the transesterification process.
 - This poisoning reduces the catalyst's efficiency and increases production expenses.

The Superhydrophobic Solution

1. **Cost Reduction:** The new catalyst can cut the cost of biodiesel production from **\$1.2 per liter to 37 cents per liter**, making it more competitive with fossil fuels.
2. **Superhydrophobic Catalyst:** The catalyst is derived from **biomass (cellulose)** and has **water-repellent properties**, preventing the poisoning of active sites by water, a by-product of biodiesel production.
3. **Robust and Reusable:** The catalyst is highly effective and can be reused multiple times, making the catalytic process more efficient and cost-effective.
4. **Ecologically Benign:** The catalyst is environmentally friendly, abundant, and highly affordable, making it a game-changer in the field of biodiesel production.
5. **Biodiesel Production:** Biodiesel is produced from natural fats or vegetable oils through a process called **transesterification**, which involves reacting the feedstock with an alcohol in the presence of a catalyst.

Advantages of Biodiesel

1. **Renewable:** Biodiesel is produced from renewable resources, reducing reliance on finite fossil fuels.
2. **Reduced Emissions:** Biodiesel produces fewer greenhouse gas emissions than conventional diesel, contributing to a cleaner environment.
3. **Biodegradable:** Biodiesel is biodegradable and non-toxic, minimizing its environmental impact.
4. **Compatibility:** Biodiesel can be used in existing diesel engines with minimal modifications.

Biodiesel Classification

Biodiesel can be classified into 3 generations based on feedstock, blending ratio, and production standards. The Indian government is promoting the use of **second-generation biodiesel** derived from non-food sources like used cooking oil.

1. 1G (First Generation) Biodiesel:

- a. Produced from **edible vegetable oils** like palm oil, soybean oil, or jatropha oil.
- b. Readily available, but raises concerns about “**food vs. fuel**” competition and land-use change.
- c. Examples: biodiesel produced from soybean oil, palm oil, or rapeseed oil.

2. 2G (Second Generation) Biodiesel:

- a. Derived from **non-food sources** like used cooking oil (UCO), waste animal fats, and non-edible oilseeds like *Jatropha curcas* (non-fruiting variety).
- b. Considered more sustainable as it doesn't compete with food production.
- c. Examples: biodiesel produced from used cooking oil, waste animal fats, or non-edible oilseeds like *Jatropha*.

3. 3G (Third Generation) Biodiesel:

- a. Under development, explores potential feedstocks like **algae oil**.
- b. Offers high yields and doesn't require dedicated land use.
- c. Examples: biodiesel produced from algae oil, which is still in the research and development stage.

Government Initiatives:

1. **National Policy on Biofuels (2018):** The policy aims to increase the use of biofuels in the transportation sector and reduce dependence on fossil fuels.
2. **Biodiesel Purchase Policy (2006):** The policy mandates oil marketing companies to purchase a specific quantity of biodiesel for blending purposes.
3. **Direct Sale of Biodiesel (2015):** The initiative allows bulk consumers to directly buy biodiesel for blending with regular diesel.
4. **Repurpose Used Cooking Oil (RUCO) Program:** The program promotes the collection and conversion of used cooking oil into biodiesel, tackling waste management and promoting a sustainable feedstock source.
5. **Pradhan Mantri JI-VAN Yojana (2019):** The scheme aims to create an ecosystem for establishing commercial 2G ethanol projects and fostering research and development in advanced biofuel production technologies.
6. **India's Biodiesel Policy:** The Indian government has set a target of **5% blending of biodiesel in diesel by 2030** and has implemented various initiatives to promote biodiesel production, including feedstock diversification, production incentives, and pricing mechanisms.

Conclusion:

The development of a **superhydrophobic catalyst** for biodiesel production is a significant breakthrough that can contribute to a more sustainable and environmentally friendly energy future. The cost reduction and increased efficiency of the catalytic process can make biodiesel a more competitive alternative to fossil fuels, promoting a greener and more sustainable economy.

12. Optical Atomic Clock

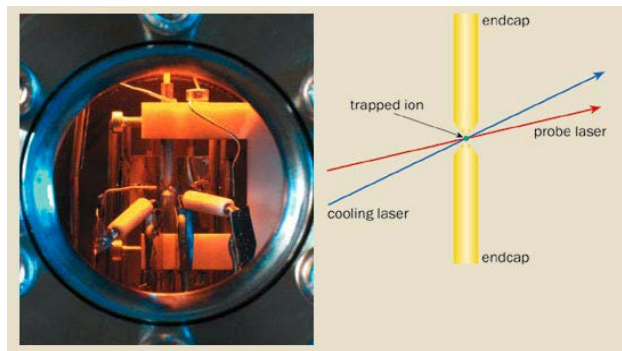
Researchers have developed an **miniaturised Optical Atomic Clock** which can be placed in a ship. This Optical Atomic Clock is considered to be more accurate as compared to Caesium based Atomic clocks.

About Atomic Clock

1. Optical atomic clocks are a cutting-edge technology in precise timekeeping, offering superior accuracy compared to traditional atomic clocks.



- They utilize optical frequencies (visible, ultraviolet, and infrared light) for time measurement, leading to higher precision.



Principle of Operation

- Atomic Transitions:** Operate on the same principle as traditional atomic clocks, but with transitions stimulated by lasers.
 - Resonance Frequency:** In the optical range, leading to more precise and stable measurements.
- Lasers:** Coherent light sources used to stimulate atomic transitions with high precision.
 - Coherent Light:** Emitted light waves have the same frequency and stable wavelength relationships.
- Higher Frequency:** Optical clocks operate at much higher frequencies than microwave-based atomic clocks, enabling finer time resolution.

Common Atoms Used

- Strontium (Sr):** Preferred for its stable optical transitions and narrow linewidths.
- Ytterbium (Yb):** Also used for its similar properties to strontium.
- Iodine (I2):** Used in the new portable optical atomic clock for its robustness and relatively high accuracy.
- Caesium (Cs-133):** Traditional atomic clocks often use caesium for its stability and natural occurrence.

Advantages of Optical Atomic Clocks

- Accuracy:** Optical atomic clocks can lose or gain only one second over 300 billion years, compared to traditional atomic clocks' 1.4 million years.
- Stability:** Higher operating frequencies and narrower linewidths lead to exceptional long-term stability.
- Precision:** Ability to measure smaller time increments more accurately.

Development and Application of a New Portable Optical Atomic Clock

- New Portable Design:** Recent study published in *Nature* introduces a portable optical atomic clock that uses molecular iodine as the frequency standard.
- Miniaturization:** The clock's components were miniaturized to fit within a standardized rack (35 liters, 26 kg, 85 W power consumption).
 - Spectrometer:** Volume reduced to 2.5 liters.
 - Laser System:** Constructed using optical fibers, reducing volume to 1 liter.
 - Frequency Comb:** Occupies 0.5 liters.
- Autonomous Operation:** Equipped with a software control system for autonomous initialization and monitoring.
- Testing and Performance:** Conducted initial tests at the U.S. National Institute of Standards and Technology (NIST), operating autonomously for 34 days.
 - Accuracy:** Outperformed NIST's hydrogen maser ST05 in short-term accuracy and had 10x lower long-term drift compared to rubidium atomic clocks.
- Field Tests:** Deployed on a ship at Pearl Harbor, Hawaii, maintaining stability despite environmental fluctuations (motion, temperature, humidity).

Applications

- Maritime and Navigation:** Enhances navigation and communication at sea.
- Scientific Research:** Facilitates precise monitoring of underwater seismic and volcanic activity.
- Space Exploration:** Aids in conducting experiments on the theories of relativity and can potentially reduce satellite-based navigation costs.

Challenges and Future Prospects

- Portability:** Continued efforts to make optical atomic clocks more portable without compromising accuracy.
- Cost:** Reducing the cost of optical atomic clocks to make them more accessible for widespread use.
- Integration:** Integrating optical atomic clocks into existing infrastructure for navigation, communication, and scientific applications.



Conclusion

1. Optical atomic clocks represent a significant advancement in timekeeping technology, offering unparalleled accuracy and stability.
2. The development of portable optical atomic clocks opens up new possibilities for practical applications in navigation, scientific research, and space exploration.
3. Ongoing research and development aim to further enhance their portability, reduce costs, and expand their applications, making them a vital tool for the future.

13. KAVACH: India's Shield for Railway Safety

The recent train accident in Odisha has highlighted the need for advanced safety mechanisms to prevent such tragedies.

What is KAVACH?

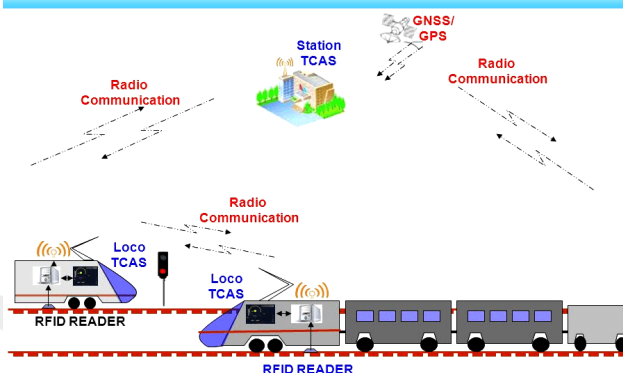
1. KAVACH is an indigenously developed **Automatic Train Protection System (ATPS)** by the Research Design and Standards Organisation (RDSO) in collaboration with Indian industry.
2. It is a **state-of-the-art electronic system** with Safety Integrity Level-4 standards with the probability of an error being one in 10,000 years.

Key Features of Kavach

1. **Safety Integrity Level-4 (SIL-4) Standards:** Kavach boasts the highest level of safety integrity, with a probability of error of only one in 10,000 years.
2. **Traffic Collision Avoidance System (TCAS):** The system utilizes TCAS, combining onboard locomotive equipment with station-based transmission towers and Radio Frequency Identification (RFID) tags. This enables real-time, two-way communication between the station master and loco-pilot to exchange crucial emergency messages.
3. **Automatic Braking System:** Kavach automatically activates the train's brakes if the driver fails to adhere to speed restrictions or if a red signal is jumped.

4. **Emergency SOS Messages:** The system can relay SOS messages during emergencies, ensuring timely assistance.
5. **Centralized Live Monitoring:** Train movements are monitored in real-time through the Network Monitor System, providing a comprehensive overview of the railway network.
6. **Cost-Effective:** Kavach is one of the most affordable SIL-4 certified technologies, making it a financially viable solution for Indian Railways.

TCAS - System configuration



How Does Kavach Work?

Kavach's integrated system uses GPS and RFID technologies to prevent collisions and enhance railway safety:

1. **GPS Integration:** GPS continuously tracks the train's location, speed, and direction, relaying this real-time data to the central control system and other trackside equipment.
2. **RFID Implementation:** RFID tags are strategically placed along the tracks, and onboard RFID readers detect these tags to precisely identify the train's location.
3. **Integrated Functionality:** This combination of GPS and RFID technologies creates a comprehensive system for train tracking, collision avoidance, and overall safety. GPS data provides a broad overview of the train's movements, while RFID tags offer precise location references.



Government Initiatives and Implementation:

- 1. RDSO's Role:** RDSO has been instrumental in developing Kavach and continues to refine the system.
- 2. Railway Board's Priorities:** The Railway Board has identified High-Density Routes for prioritized Kavach implementation, followed by other networks.
- 3. Training and Capacity Building:** The Indian Railways Institute of Signal Engineering & Telecommunications (IRISET) is responsible for training railway staff on Kavach, ensuring effective implementation.

Conclusion

Kavach is a testament to India's commitment to modernizing its railway infrastructure and prioritizing passenger safety. By leveraging advanced technologies and cost-effective design, Kavach has the potential to transform train travel in India, making it safer, more efficient, and more reliable. As Kavach's implementation expands, it promises a future where train accidents are minimized, and passenger confidence in Indian Railways is strengthened.

14. TRISHNA: Indo-French Thermal Imaging Mission

TRISHNA (Thermal Infra-Red Imaging Satellite for High-resolution Natural Resource Assessment) is a collaborative mission between ISRO (Indian Space Research Organisation) and CNES (French Space Agency) aimed at monitoring surface temperature and water management on both regional and global scales.

About TRISHNA Mission

- 1. Objective:** The mission's primary goal is the detailed monitoring of energy and water budgets of the continental biosphere, enabling quantification of terrestrial water stress and water use and high-resolution observation of water quality and dynamics.
 - It will also help in a Comprehensive assessment of urban heat islands, Detection of thermal

anomalies linked to volcanic activity and geothermal resources, etc.

- 2. Primary Payloads:** TRISHNA carries two main instruments:
 - I. Thermal Infra-Red (TIR) payload:** Provided by CNES, this instrument features a four-channel long-wave infrared imaging sensor.
 - II. Visible – Near Infra-Red – Short Wave Infra-Red (VNIR-SWIR) payload:** Developed by ISRO, this instrument encompasses seven spectral bands designed for detailed mapping of surface reflectance.
- 3. Orbit and Lifespan:** TRISHNA will operate in a Sun-synchronous (SSO) orbit, ensuring consistent illumination conditions for imaging. The mission is designed for a 5-year operational lifespan.
- 4. Significance:** The data collected by TRISHNA will have wide-ranging applications, including:
 - a. Climate monitoring:** Improved understanding of droughts, permafrost changes, and evapotranspiration rates
 - b. Urban planning:** Creation of detailed urban heat island maps and heat alerts
 - c. Water resource management:** Assessment of water stress and efficient water use

India's International Space Cooperation

TRISHNA is just one example of India's robust international collaboration in space exploration. Other notable partnerships include:

- 1. India-France:** Strategic Space Dialogues, Letter of Intent on Defense Space Cooperation, space exchanges, and defense space industrial cooperation.
- 2. India-US:** Bilateral space situational awareness arrangement (2022), NASA-ISRO Synthetic Aperture Radar (NISAR) Mission.
- 3. Others:** Lunar Polar Exploration (LUPEX) Mission with Japan, South Asia Satellite (SAS) benefiting India's neighbors.





F. GEOGRAPHY & ENVIRONMENT

1. EU's Carbon Border Adjustment Mechanism (CBAM)

1. The European Union's Carbon Border Adjustment Mechanism (CBAM) is an instrument aimed at addressing carbon emissions associated with imported goods.
2. It's designed to create a level playing field for EU manufacturers who adhere to stringent climate policies and face competition from countries with less stringent regulations.

What is CBAM?

1. CBAM is a "landmark tool" that puts a "fair price" on the carbon emissions embedded in carbon-intensive goods entering the EU. By doing so, it incentivizes cleaner industrial production in non-EU countries, ultimately helping to combat climate change.
2. The core objective of CBAM is to prevent "carbon leakage," a phenomenon where EU manufacturers relocate their carbon-intensive production to countries with weaker environmental regulations, undermining the EU's climate goals.

How does CBAM work?

1. **Starting in 2026**, EU importers will be required to purchase CBAM certificates corresponding to the carbon price that would have been paid if the goods were produced within the EU.
2. However, **if a non-EU producer has already paid a carbon price or tax** in their own country, the corresponding cost will be deducted for the EU importer.
3. The European Commission, along with relevant member state authorities, will be responsible for reviewing and verifying declarations and managing the central platform for the sale of CBAM certificates.
4. Importers must submit annual declarations by the end of May, detailing the quantity and embedded emissions in the goods imported during the preceding year.

Why is CBAM necessary?

CBAM is a crucial component of the EU's broader climate strategy. It serves several key purposes:

1. **Preventing carbon leakage:** By making importers accountable for the carbon emissions associated with their products, CBAM discourages the offshoring of polluting industries.
2. **Leveling the playing field:** CBAM ensures that EU manufacturers are not disadvantaged by competing with imports from countries with weaker climate policies.
3. **Supporting the European Green Deal:** CBAM aligns with the EU's ambitious goal of reducing carbon emissions by 55% compared to 1990 levels by 2030 and achieving climate neutrality by 2050.

How will CBAM affect trade between India and the EU?

1. CBAM initially applies to a specific set of carbon-intensive goods, including cement, iron and steel, aluminium, fertilizers, electricity, and hydrogen. While the **immediate impact on India's exports** to the EU may seem limited, the long-term effects could be substantial due to the projected growth in these sectors.
2. Countries like **India have raised concerns about CBAM's** potential impact on their trade relationships and balance of payments. India has engaged in discussions with the EU on this issue, and both sides have agreed to intensify their cooperation on carbon border measures.

Did the EU already have a mechanism in place?

Yes, the EU had the Emissions Trading System (ETS), which aimed to decarbonize the region's industries. However, the ETS had limitations, including free allowances that could dampen incentives for greener production. CBAM is intended to address these shortcomings.



What are the implications of CBAM?

1. CBAM has far-reaching implications for global trade and production. It may lead to a shift in the global production landscape, with countries like India facing increased competition from EU producers. Additionally, it may increase production costs for Indian exporters, potentially affecting their competitiveness in the EU market.
2. Overall, CBAM represents a significant step in the EU's efforts to combat climate change. While it raises concerns for some countries, its long-term impact on global trade and environmental sustainability remains to be seen.

2. India is World's 2nd largest emitter of Nitrous Oxide

1. The alarming rise in nitrous oxide (N₂O) emissions, poses a significant threat to global climate goals and the ozone layer.
 - Nitrous oxide potent greenhouse gas with 300 times the heat-trapping capacity of carbon dioxide,
2. A recent study by the Global Carbon Project (GCP) reveals that human-induced N₂O emissions have surged by 40% between 1980 and 2020, primarily driven by agricultural practices such as the use of chemical fertilizers and animal manure.

Key Findings:

1. **Global N₂O emissions:** Increased by 40% (3 million metric tons per year) from 1980 to 2020.
2. **Top emitters:** China (16.7%), India (10.9%), US (5.7%), Brazil (5.3%), and Russia (4.6%).
3. **India's position:** Second-largest emitter globally, but with the lowest per capita emission.
4. **Atmospheric N₂O concentration:** Reached 336 parts per billion in 2022, exceeding pre-industrial levels by 25%.

Sources of N₂O Emissions:

1. **Natural:** Oceans, inland waters, and soil contribute 11.8%.
2. **Anthropogenic (Human-Induced):** Agriculture accounts for 74%, primarily due to fertilizers and animal waste. Other sources include industrial processes, combustion, and waste management.

Implications of Rising N₂O Emissions:

1. **Intensified global warming:** N₂O's high heat-trapping potential exacerbates climate change.
2. **Ozone layer depletion:** N₂O releases nitrogen oxides in the stratosphere, damaging the protective ozone layer.
3. **Food security concerns:** Increased food demand may lead to further N₂O emissions, creating a conflict between food security and climate goals.
4. **Challenge to Paris Agreement:** Rising N₂O levels hinder the achievement of global warming targets.

India's Specific Concerns

1. India's 2nd-place ranking in N₂O emissions, primarily from fertilizers, raises alarm.
2. Heavily subsidized fertilizers in India exacerbate the problem, polluting water bodies and contributing to climate change.
3. A shift towards sustainable agricultural practices and repurposing fertilizer subsidies are crucial for India.

Proposed Solutions

1. **Innovative agricultural practices:** Precision agriculture, nitrification inhibitors, cover cropping.
2. **Effective policy measures:** Emission trading schemes, targeted subsidies, research and development.
3. **Addressing emissions from other sources:** Stricter regulations on industrial processes, optimizing combustion, and improving waste management.

The Way Forward

Addressing the N₂O challenge requires a multi-faceted approach. Transitioning to sustainable agricultural practices, implementing effective policy measures, and investing in research and development are crucial steps. India, as a major contributor to N₂O emissions, must prioritize these solutions to mitigate its impact on climate change and achieve a more sustainable future.

3. No Outcome in Bonn Meeting

1. A recent **climate meeting in Bonn, Germany failed** to reach a consensus on the amount of money developed nations should provide to developing countries for climate action.
2. A new target, exceeding the current \$100 billion per year, needs to be finalized by the end of 2024.

3. An agreement on the New Collective Quantified Goal (NCQG) is expected to be reached at the 29th Conference of the Parties (COP29) later this year.

The Importance of Climate Finance

1. **Money is Key:** Financial resources are essential for both mitigation (reducing emissions) and adaptation (dealing with climate impacts) efforts.
2. **Data Collection:** Funding is also necessary for collecting and reporting climate data, a crucial requirement under the Paris Agreement.
3. **Capacity Gap:** Developing countries lack the resources to carry out this work, making financial assistance from developed nations vital.

The Current State of Climate Finance

1. **The \$100 Billion Promise:** In 2009, developed countries pledged to provide \$100 billion annually from 2020 onwards to support climate action in developing countries.
2. **Dispute Over Fulfillment:** While the OECD claims this goal was met in 2022, developing countries argue that creative accounting and double-counting inflate the figures.
3. **Growing Needs:** It is widely recognized that developing countries need trillions, not billions, of dollars each year to address the escalating climate crisis.

Proposals for the New Collective Quantified Goal (NCQG)

1. **Differing Demands:**
 - a. India proposes a minimum of \$1 trillion per year.
 - b. Arab countries call for at least \$1.1 trillion.
 - c. African countries demand \$1.3 trillion.
2. **Debate Over Contributors:**
 - a. The UNFCCC and Paris Agreement stipulate that only 25 countries listed in Annexure 2 are obligated to provide climate finance.
 - b. These countries are trying to shift the burden to others, arguing that many economies have grown significantly since the list was created in the early 1990s.

What is Climate Finance?

1. **Definition:** Large-scale investments for climate change mitigation and adaptation actions.

- **Mitigation:** Efforts to reduce greenhouse gas emissions (e.g., renewable energy, forest conservation).
- **Adaptation:** Measures to manage climate change impacts (e.g., coastal protection infrastructure).

Arguments for Climate Finance

1. Developing countries argue that **developed nations are responsible** for the majority of historical emissions, making them morally obligated to provide financial aid.
2. High-income countries have **not delivered on their climate finance** pledges, with most assistance in the form of loans.

Challenges in Climate Finance

1. Disagreement over contributors.
2. Disputes over definitions and nature of climate finance.
3. Emphasis on mitigation vs. adaptation, with developing countries prioritizing adaptation for their immediate needs.

The Role of the UNFCCC

1. **Global Treaty:** The UN Framework Convention on Climate Change (UNFCCC) aims to stabilize greenhouse gas concentrations and prevent dangerous human interference with the climate.
2. **Conference of the Parties (COP):** The annual meeting of UNFCCC parties to assess progress and make decisions on climate action.

Way Ahead: The Path to COP29

The establishment of a new climate finance goal is a critical priority for COP29. Successful negotiations will require finding common ground on the amount of funding, the sources of contributions, and the mechanisms for delivery.

4. Environmental Performance Index 2024

The Yale Center for Environmental Law and Policy and the Columbia Center for International Earth Science Information Network released the Environmental Performance Index (EPI) for 2024.



Key Highlights of EPI 2024

1. **Global Scenario:** Estonia leads the index by reducing its greenhouse gas emissions by 59% from 1990 levels.
 - a. Only 5 countries — **Estonia, Finland, Greece, Timor-Leste**, and the **United Kingdom** — cut their GHG emissions at the rate needed to reach net zero by 2050.
 - b. **Sub-Saharan Africa** and **Southern Asia** rank lowest among the 8 regions assessed.
2. **India's Performance:** India ranks **176th out of 180 countries** with 27.6 points, placing above only **Pakistan, Vietnam, Laos, and Myanmar**.
 - a. India performs poorly in **Air quality, Emissions, and Biodiversity Conservation**, largely due to its heavy reliance on coal, which contributes significantly to greenhouse gas emissions and air pollution levels.

Issues Related to EPI

1. Issues Raised By India:

- a. **Projected GHG Emissions Calculation:** The calculation of projected GHG emissions by 2050 is based on the average rate of change in emissions, which India considers insufficient.
- b. Measurement of **biodiversity loss** or **ecosystem health** can be challenging due to the intricate dynamics involved and the lack of standardized methodologies across all regions.
- c. **Carbon Sinks Exclusion:** India's forests and wetlands, which act as crucial carbon sinks, have not been factored into the computation of projected GHG emissions trajectory up to 2050 in the EPI 2024.
- d. **Ecosystem Condition Overlooked:** While the index computes the extent of ecosystems, it does not evaluate their condition or productivity.
- e. **Lack of Relevant Indicators:** The index does not include indicators like **agro-biodiversity, soil health, food loss, and waste**, which are important for developing countries with large agrarian populations.

2. Issues In General:

- a. **Balancing National Priorities:** Countries may prioritize economic development over environmental protection, leading to potential conflicts or resistance in implementing EPI recommendations.
- b. Nations heavily reliant on resource extraction or fossil fuel-based industries may face challenges in transitioning to more sustainable practices.
- c. **Funding and Resource Constraints:** Developing countries may struggle to allocate sufficient funds or expertise for environmental projects, hindering progress.
- d. **Cross-Border Environmental Impacts:** Addressing transboundary issues such as air pollution, water management, or wildlife protection may require multilateral agreements and joint efforts.

What is the Environmental Performance Index?

The **Environmental Performance Index (EPI)** is a biennial index, initially launched by the World Economic Forum in 2002 under the name **Environmental Sustainability Index (ESI)**.

- a. It evaluates nations' efforts to meet international environmental policy targets such as the **U.N. sustainability goals**, the **Paris Climate Change Agreement (2015)**, and the **Kunming-Montreal Global Biodiversity Framework**.
- b. The 2024 EPI leverages 58 performance indicators grouped into 11 issue categories with 3 policy objectives: **Environmental Health, Ecosystem Vitality, and Climate Change**.

Significance of EPI

1. **Good Governance:** Strong governance frameworks, characterized in the EPI framework such as transparency, accountability, and effective policymaking, are essential for promoting and enforcing environmental regulations and policies.
2. **Financial Resources:** Adequate financial resources play a pivotal role in implementing and sustaining environmental initiatives, enabling countries to invest in sustainable practices and infrastructure.

3. **Human Development:** Countries with higher levels of human development, including factors such as education, healthcare, and overall well-being, tend to prioritize environmental sustainability and can implement effective measures.
4. **Regulatory Quality:** Robust and well-designed environmental regulations, coupled with effective enforcement mechanisms, are critical for mitigating environmental degradation and ensuring compliance with sustainability standards.

Environmental Conservation Programmes in India

1. Climate Change: National Action Plan on Climate Change
2. Desertification: National Action Programme to Combat Desertification
3. Pollution Control: National Clean Air Program
4. Environmental Impact Assessment: Environment Management Plan
5. Forest Protection: National Afforestation Programme
6. Species Conservation: Project Elephant, Project Tiger

Way Forward

1. **Enhance Methodology and Carbon Sequestration:** Incorporate a longer time frame (e.g., 20-30 years) to calculate the projected GHG emissions trajectory, instead of relying solely on the average rate of change over the last 10 years.
 - a. Efforts to enhance carbon sequestration through initiatives like the **Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** should be recognized.
2. **Expand Set of Indicators:** Include indicators that are relevant to developing countries with large agrarian populations, such as **agro-biodiversity, soil health, food loss, and waste management.**
3. **Transparent Weighting and Funding:** Provide clear and transparent explanations for any changes in the weighting of indicators, addressing concerns raised by countries like India.

- a. Engage in consultations with stakeholders, including government representatives and experts, to ensure that the weighting of indicators aligns with global priorities and national contexts.

Challenges and Opportunities

1. Addressing the challenges of **climate change, biodiversity loss, and environmental degradation** requires a concerted effort from governments, civil society, and the private sector.
2. The EPI provides an opportunity for countries to assess their environmental performance, identify areas for improvement, and develop strategies to address environmental challenges.
3. The **index also offers a platform for international cooperation, knowledge sharing, and collaboration to address global environmental issues.**

5. UNESCO State of the Ocean Report 2024

1. The **UNESCO State of the Ocean Report (StOR) 2024**, released ahead of World Oceans Day (8 June).
2. The world's oceans are a crucial component of the Earth's climate system, absorbing vast amounts of heat and carbon dioxide.
3. However, the UNESCO StOR 2024 highlights the alarming rate at which human-induced climate change is impacting our oceans, underscoring the urgency for comprehensive action to mitigate and adapt to these changes.
4. The report also aligns with global initiatives like the **UN 2030 Agenda and SDG 14**, emphasizing the need for sustainable use of marine resources.

Key Findings

1. **Accelerated Ocean Warming:** The upper 2,000 meters of the ocean have warmed at an alarming rate, with a **doubling of the warming rate in the past 2 decades.**
 - This accelerated warming is driving irreversible changes in marine ecosystems and contributing to rising sea levels.



2. **Increased Ocean Heat Content:** The oceans have absorbed approximately 90% of the excess energy caused by the Earth's energy imbalance, resulting in a significant increase in ocean heat content (OHC).
 - This excess heat contributes to deoxygenation, disrupting marine ecosystems and impacting marine life.
3. **Ocean Acidification:** The global **mean ocean pH has declined**, indicating increased acidity, with limited long-term data highlighting the need for expanded monitoring to fully understand the extent and consequences of ocean acidification.
4. **Rising Sea Levels:** The global mean **sea level continues to rise** at an alarming rate, necessitating improved monitoring systems and adaptation strategies to address the threats to coastal communities and infrastructure.
5. **Limited Observational Data:** The report identifies insufficient observational data, particularly in the open ocean and coastal areas, as a major challenge to understanding the complex dynamics of ocean acidification and other processes.
 - Currently, **only 638 stations record ocean pH levels**, emphasizing the need for expanded monitoring networks.

2026 Edition

The next edition, set to launch in 2026, will demonstrate whether society will have deployed the information summarized in the StOR 2024 to design ocean observation and science to protect the ocean and secure our well-being.

Impact

The impacts of these changes are far-reaching and pose significant threats to both marine ecosystems and human society:

1. **Marine Ecosystems:** Ocean warming, deoxygenation, and acidification disrupt marine food webs, threaten biodiversity, and negatively impact marine life, including coral reefs, fish populations, and other vital organisms.
2. **Coastal Communities:** Rising sea levels and changes in marine ecosystems jeopardize livelihoods,

infrastructure, and food security for coastal populations, who are often highly dependent on the **ocean for livelihood and economic activities.**

3. **Global Climate:** The ocean's ability to regulate climate is compromised, leading to further intensification of climate change impacts worldwide.
4. **Impact on the Indian Ocean:**
 - a. The Indian Ocean is warming faster than other oceans, with the potential for **irreversible changes like cyclones and heatwaves.**
 - b. Warming can weaken upwelling, a process that brings cooler, nutrient-rich waters to the surface.
 - c. Disrupted fisheries, cyclones, and droughts all threaten food security for millions of people who depend on the Indian Ocean for their livelihood.

Solutions and Recommendations:

1. **Enhanced Research and Monitoring** to understanding the complex processes occurring in the ocean and developing effective solutions.
2. **Mitigation of Greenhouse Gas Emissions:** Addressing the root cause of ocean warming and acidification requires ambitious global efforts to reduce greenhouse gas emissions and transition towards renewable energy sources.
3. **Marine Protected Areas and Ecosystem Restoration** along with restoring degraded ecosystems like mangroves and seagrass meadows, can enhance ocean resilience and carbon sequestration.
4. **Development of Sustainable Technologies:** Carefully evaluating and implementing emerging technologies like marine carbon dioxide removal (mCDR) while prioritizing environmental safeguards is essential.
5. **Investment in Early Warning Systems** for tsunamis and other ocean-related hazards can save lives and protect coastal communities.
6. **International Cooperation** to develop effective and equitable solutions.

Steps Taken by India to Mitigate the Effects of Oceanic Heatwaves

1. **Monitoring and Research:** Indian National Centre for Ocean Information Services (INCOIS)



- Cyclone Preparedness:** National Disaster Management Authority (NDMA), IMD Cyclone Warnings
- Additional Measures:** National Missions on Climate Change, Coalition for Disaster Resilient Infrastructure, Renewable Energy Target, National Hydrogen Mission.

Conclusion

The UNESCO State of the Ocean Report 2024 serves as a stark reminder of the interconnectedness of human activities and the health of our oceans. By prioritizing research, mitigation, and international cooperation, we can work towards a healthier, more resilient ocean that supports both marine life and human well-being for generations to come.

World Ocean Day 2024

Date: June 8th.

Theme: Awaken New Depths

Objective: To raise awareness about the critical state of the ocean and mobilize action to protect and restore it. The focus is on changing our relationship with the ocean since current efforts have been insufficient.

6. Urban Flooding in India: A Growing Crisis

India's major cities are increasingly facing devastating floods, resulting in loss of life, livelihoods, and severe economic burdens on governments. A recent **study published in *Nature*** reveals a worrying trend: the rapid and continuous expansion of cities into flood-prone areas is a key factor exacerbating these risks.

Causes of Urban Flooding in India

Natural Factors

- Monsoon Rains:** Intense monsoon downpours (e.g., Chennai and Hyderabad) overwhelm drainage systems.
- Topography:** Cities like Bengaluru, with their undulating terrain, experience water accumulation in low-lying areas, worsened by urban development.
- Cyclones and Storm Surges:** Coastal cities like Chennai and Mumbai are vulnerable to cyclones and storm surges (e.g., Cyclone Ockhi in 2017).

- Soil Characteristics:** Clayey soils, prevalent in some areas, hinder water drainage.
- Sea Level Rise:** This amplifies flooding in coastal cities, especially during high tides and storm surges.
- Climate Change:** The increasing frequency and intensity of extreme weather events lead to unpredictable and heavier rainfall patterns (e.g., Kerala floods in 2018).
- Hills and Slopes:** Hill cities like Shimla face rapid runoff due to steep slopes, causing flash floods.
- Seasonal Variability:** Unpredictable rainfall patterns (e.g., in Lucknow) can overload drainage systems.

Anthropogenic Factors

- Rapid, Unplanned Urbanization:** Cities like Gurgaon have expanded without proper infrastructure, leading to waterlogging.
- Encroachment on Water Bodies:** In Chennai, encroachment on wetlands has reduced the city's capacity to absorb rainwater, exacerbating floods.
- Outdated Drainage:** Mumbai's aging drainage system struggles to handle high-intensity rainfall.
- Poor Waste Management:** Clogged drains (e.g., in Kolkata) worsen waterlogging.
- High Population Density:** Delhi's dense population strains drainage infrastructure.
- Illegal Construction:** Structures built along watercourses (e.g., in Hyderabad) obstruct water flow.
- Lack of Green Spaces:** Bengaluru's loss of lakes and green spaces reduces water absorption capacity.
- Water Mismanagement:** Poor coordination (e.g., during the 2006 Surat floods) exacerbates flooding.

Global Perspective and Study Findings

East Asia, particularly **middle-income countries like India**, is witnessing the highest rate of urban expansion into flood-prone zones. This alarming trend is linked to the growing urbanization of vulnerable areas and the increased use of impermeable concrete, which reduces soil absorption and worsens floods.

Disproportionate Impact on the Poor

The most vulnerable communities, often residing in informal settlements in low-lying areas, bear the brunt of urban flooding.



Governance Challenges

Weak governance and enforcement of environmental regulations have allowed construction in flood-prone areas, further increasing risks.

Solutions

- 1. Scientific Mapping of Flood-Prone Areas:** This is crucial for sustainable urban planning.
- 2. Improved Stormwater Management:** Implementing modern drainage systems and green infrastructure solutions like green roofs, permeable pavements, and rain gardens.
- 3. Resilient Housing:** Building flood-resistant structures, especially for low-income housing.
- 4. Innovative Solutions:** Exploring alternative housing models like stilt houses for riverside communities.

Conclusion

Addressing India’s urban flooding crisis requires a multi-faceted approach that tackles both natural and man-made factors. This includes sustainable urban planning, improved infrastructure, and stronger governance to protect vulnerable populations and build climate-resilient cities.

7. Cold Lava

Recently, a **cold lava** erupted at **Mt. Kanlaon Natural Park** in the Philippines, sending rivers of cold lava, or “**lahar**”, flowing through a village miles away from the summit on the Negros Island.

What is Cold Lava?

- 1. About:** Cold lava, known as **lahar** in Indonesian, is a phenomenon where rain mixes with volcanic materials like ash, sand, and pebbles, forming a concrete-like substance.
- 2. Characteristics:** Lahar primarily travels along river valleys and can reach extremely high speeds of up to 75-80 kilometers per hour or even faster.
- 3. Formation:** It can occur without volcanic eruptions, often triggered by heavy rainfall or landslides on the slopes of volcanoes covered in loose volcanic material.
- 4. Types:** There are two types of lahars: primary and secondary. **Primary lahars** are directly related to

volcanic eruptions, while **secondary lahars** occur when volcanic deposits are remobilized by rainfall or other factors.

Difference Between Cold Lava and Normal Lava

- 1. Temperature Variation:** Normal lava is extremely hot molten rock, while lahars are not molten and can vary greatly in temperature.
- 2. Mixtures:** Lava consists solely of molten rock, whereas lahars are a mixture of water and volcanic debris like ash, rocks, and sand.
- 3. Impact:** Lahars can be more destructive and deadlier compared to regular lava flows because they can affect and devastate a much larger area due to their fluid, flowing nature and ability to incorporate more debris as they travel.
- 4. Speed:** Lahars can travel at much faster speeds than normal lava flows, making them more unpredictable and dangerous.

Difference Between Cold Lava and Normal Lava

Feature	Normal Lava (Molten Rock)	Cold Lava (Lahars)
Temperature	Extremely hot	Varies (can be hot or cold)
Composition	Molten rock	Water, ash, rocks, sand, etc.
Impact	Destructive	More destructive, wider impact
Speed	Slower	Much faster

Magma vs Lava

- 1. Magma:** The term used to denote the molten rocks and related materials seen inside the earth.
- 2. Lava:** The magma above the earth’s surface. Once this magma comes out to the earth’s surface through the vent of a volcano, it is called the Lava.

Mud Volcano

- 1. Definition:** A **mud volcano** or mud dome is a landform created by the eruption of mud or slurries, water and gases.



2. **Characteristics:** Mud volcanoes are not true igneous volcanoes as they do not produce lava and are not necessarily driven by magmatic activity.
3. **Size:** Mud volcanoes may range in size from merely 1 or 2 meters high and 1 or 2 meters wide, to 700 meters high and 10 kilometers wide.
4. **Formation:** Mud volcanoes can form when mud and sediment are pushed up from underground deposits, often as a result of tectonic activity or the movement of fluids beneath the surface.

Challenge	Solution
Unpredictability: Cold lava flows can occur without eruption, triggered by rainfall or landslides.	Enhanced Monitoring: Implement early warning systems utilizing rain gauges, seismic sensors, and ground deformation monitoring to detect potential triggers and provide timely alerts.
Rapid Onset: Cold lava flows move quickly, leaving little time for evacuation.	Community Preparedness: Educate communities about the risks, evacuation routes, and safety measures. Conduct regular drills to practice evacuation procedures and ensure a swift response in the event of a flow.
Widespread Impact: Flows can extend far from the volcano, affecting larger areas.	Hazard Mapping and Zoning: Identify areas prone to cold lava flows and restrict development in high-risk zones. Implement land-use planning that accounts for volcanic hazards.
Destructive Power: Lahar can bury entire villages, destroy infrastructure, and cause loss of life.	Protective Infrastructure: Construct barriers, channels, and sabo dams to divert and contain cold lava flows.

Conclusion

The concept of **cold lava** is distinct from normal lava flows and requires a deeper understanding of its characteristics and impacts. By recognizing the differences between cold lava and normal lava, we can better prepare for and respond to volcanic events that involve cold lava flows.

8. India's Largest Leopard Safari Opens at Bannerghatta

South India's 1st and the country's largest leopard safari was inaugurated at the **Bannerghatta Biological Park (BBP) in Bengaluru, Karnataka.**

Leopard Safari

1. An area of **20 hectares** has been demarcated and fenced for the safari.
2. Currently, **eight leopards** have been released for the safari in the open forest area.
3. The facility has been created at a cost of **₹4.5 crore**.
4. The leopard safari area features undulating terrain with natural rocky outcrops and semi-deciduous forest.
5. The entire area is enclosed with a vertical chain-link mesh **4.5 metres high**, with MS sheets placed at a 30° inclined angle of **1.5 metres**.

Purpose of Leopard Safari

1. The safari aims to highlight the importance of leopards as top predators and educate visitors about human-animal conflicts and ways to protect the animals.
2. The park receives many rescued leopard cubs from across the State, which will be raised and shifted to the safari to help visitors learn about these big cats.

Indian Leopard and their Status:

1. The Indian leopard is a leopard subspecies widely distributed on the Indian subcontinent.
2. Unlike tigers, leopards have spots peppered on their bodies instead of stripes.
3. Leopards can kill for the pleasure of killing by continuously pouncing on their prey.
4. The species **Panthera pardus** is listed as **Vulnerable** on the IUCN Red List.
5. India's leopard numbers rose by **8%** from 12,852 in 2018 to **13,874 in 2022**.



6. The highest number of leopards were reported in **Madhya Pradesh (3,907)**.
7. Three other states reported over 1,000 leopards each: Maharashtra (1,985), Karnataka (1,879), and Tamil Nadu (1,070).
8. Uttarakhand reported a **22% decline** in the leopard population.
9. Odisha witnessed a sharp decline, losing approximately one-fourth of its leopard population due to poaching between 2018 and 2022.

Causes for Decline:

1. Major threats include poaching for bush meat, targeted poaching for skins and body parts, habitat loss due to mining and human activities, and road accidents.

Key Facts about Bannerghatta National Park:

1. Also known as the **Bannerghatta Zoo**, this zoological garden is located in Bengaluru.
2. The Biological Park and the National Park were bifurcated in **2002**.
3. It was declared a National Park in 1974.
4. **In 2006, India's first butterfly enclosure was established within the park.**
5. The main water source for the park's animals is the Suvarnamukhi stream, which runs through its center.
6. **The park involves three types of vegetation:** Dry Deciduous Scrub Forests, Southern Tropical Dry Deciduous Forests, and Southern Tropical Moist Mixed Forests.
7. Its flora includes **Narcissus latifolia, Schleicheria oleosa, sandalwood, neem, tamarind, bamboo, eucalyptus, and more.**
 - **Eucalyptus, belonging to the myrtle family (Myrtaceae),** is a genus of over 660 species of shrubs and tall trees. Originating from Australia, Tasmania, and nearby islands, some eucalyptus trees rank among the tallest in the world. Commonly known as gum trees or stringybark trees in Australia, many species are cultivated worldwide as shade trees or in forestry plantations.
8. The park serves as a prime habitat for various species, including the **endangered Asian elephant, Indian gaur, tiger, sambar deer, spotted deer, leopard, wild dog, wild pig, sloth bear, common mongoose, pangolin, slender loris, black-naped hare, and others.**

9. Conservation Breeding in Indira Gandhi Zoological Park

Recently, the Indira Gandhi Zoological Park (IGZP) in Visakhapatnam has been at the forefront of wildlife conservation in India, particularly in the successful breeding and nurturing of Striped hyenas and Asiatic wild dogs (Dhole).

Conservation Breeding of Striped Hyenas:

1. **Striped hyenas**, listed as near threatened by the **International Union for Conservation of Nature (IUCN)**, are being successfully bred in captivity at IGZP.
2. The zoo has established a protocol of hand-rearing of hyena cubs, which has led to the successful rearing of four instances of hyena cubs.
3. The zoo now has a good population of striped hyenas with a total of **nine adults and sub-adults**.

Conservation Breeding of Asiatic Wild Dogs:

1. IGZP is recognised by the **Central Zoo Authority (CZA)** for conservation breeding of **Asiatic wild dog** or dhole.
2. The zoo has received a sanction of ₹67 lakh from the CZA to create an off-display enclosure for the conservation breeding project.
3. The project aims to establish a founder population of dholes, which will be reintroduced in the wild.
4. The zoo has seen a massive increase in the population of wild dogs from just **two to 49**, the highest number of wild dogs in captivity in the country.

Other Conservation Breeding Successes:

1. IGZP has also seen successful conservation breeding of species such as the **Indian grey wolf, ring-tailed lemur, Indian bison, blue and gold macaw, jungle cat, and eclectus parrot.**

About Indira Gandhi Zoological Park:

1. IGZP is an ex-situ facility established in **1977**, located amidst **Seethakonda Reserve Forest** in the **Visakhapatnam** district of Andhra Pradesh.
2. It is a large category zoo recognised by the **Central Zoo Authority**.



- The zoo is surrounded by **Eastern Ghats** on three sides and the **Bay of Bengal** on the fourth side.
- It is also home to many free-ranging animals and birds due to its close proximity to **Kambalakonda Wildlife Sanctuary**.

About Asiatic Wild Dogs (Dhole)

- Scientific name:** *Cuon alpinus*
- Wild carnivores belonging to the Canidae family and Mammalia class.
- Historically widespread, now mainly found in south and southeast Asia.
- Endangered on the IUCN Red List, Schedule II under the Wildlife Protection Act, 1972, and Appendix II under CITES.

About Striped Hyenas

- Scientific name:** *Hyaena hyaena*
- Smaller and less social than the Spotted hyena.
- Face threats from habitat loss, human-wildlife conflict, poaching, and illegal trade.
- Listed as Near Threatened on the IUCN Red List and Schedule I under the Wildlife Protection Act, 1972.

Importance of Conservation Breeding:

- Conservation breeding programmes** are critical for the survival of several animal species in the wild.

- These programmes help to **increase the population** of endangered species, **reduce the risk of extinction**, and **reintroduce species into the wild**.
- Conservation breeding programmes also help to **educate visitors** about the importance of conservation and promote awareness about the plight of endangered species.

10. Nagi and Nakti Bird Sanctuaries Recognised as Ramsar Sites

- Recently, on World Environment Day (5 June), the **Nagi and Nakti Bird Sanctuaries** in Bihar have been recognized as wetlands of international importance under the **Ramsar Convention**. Both the Ramsar Sites are **manmade reservoirs** located in Jhajha forest range of Jamui district in Bihar.
 - This brings the total number of such wetlands in India to 82.
 - Currently, United Kingdom (UK) has most number of Ramsar Sites in the world with 175 Ramsar sites followed by Mexico with 144 sites.
 - India and China have the **third largest number of Ramsar Sites** at 82 sites each.

Key Characteristics of Nagi and Nakti Bird Sanctuaries

Feature	Nagi Bird Sanctuary	Nakti Bird Sanctuary
1. Type of wetland	Man-Made	
2. Formation	after the construction of Nagi Dam on the Nagi River.	after the construction of Nakti Dam on the Nakti River. (Nakti River is a tributary of Koel River).
3. Location	Jamui District, Bihar	
4. Recognition as Bird Sanctuary	In 1984	
5. Biodiversity	Over 150 species of birds, mammals, fish, aquatic plants, reptiles, and amphibians	
6. Important Species	Indian Elephant (Endangered), Native Catfish (Vulnerable), largest congregations of red-crested pochard on the Indo-Gangetic plains	Baer's pochard (Critically Endangered), Steppe Eagle (Endangered), largest congregations of bar-headed goose on the Indo-Gangetic Plains



Ramsar Convention

1. The **Ramsar Convention** is an international treaty signed in 1971 in Ramsar, Iran, under the auspices of UNESCO, aimed at conserving wetlands of international importance.
2. In India, it came into force on 1st February 1982, under which wetlands of international importance are declared as Ramsar sites.
3. **Montreux Record** is a register of wetland sites of International Importance where changes in ecological character have occurred, are occurring, or are likely to occur as a result of technological developments, pollution, or other human interference. It is maintained as part of the Ramsar List.

Importance of Wetlands

1. Wetlands play a crucial role in maintaining biodiversity, regulating water cycles, and providing ecosystem services.
2. They provide habitat for a wide range of plant and animal species, many of which are threatened or endangered.
3. Wetlands also help to mitigate the effects of climate change by storing carbon, reducing flood risk, and improving water quality.

India's Initiatives for Ramsar Sites

1. Wetlands (Conservation and Management) Rules, 2017.
2. National Plan for Conservation of Aquatic Ecosystems (NPCA)
3. Amrit Dharohar Capacity Building Scheme
4. **National Wetland Conservation Programme (NWCP)**: It was launched in 1985, to tackle threats to vulnerable wetland ecosystems and enhance their conservation.

Note

1. **World Wetlands Day** is celebrated every year on the 2nd of February across the globe.
2. The **Kanwar Lake** in Bihar's Begusarai district was designated as the state's first Ramsar Site in 2020.

11. Gandhi Sagar Wildlife Sanctuary: India's Second Home for Cheetahs

1. The **Gandhi Sagar Wildlife Sanctuary** in **Madhya Pradesh** is set to become the second home for **cheetahs** in India, after the **Kuno National Park**.

Gandhi Sagar Wildlife Sanctuary:

1. The sanctuary spans **368.62 sq km**, in the districts of **Mandsaur** (187.12 sq km) and **Neemuch** (181.5 sq km), right on the border with **Rajasthan**.
2. It sits atop a flat rocky plateau, with the **Chambal river** cutting the sanctuary into two almost equal halves.
3. The **Gandhi Sagar dam**, constructed on the river in 1960, lies within the area of the sanctuary, and so do parts of its reservoir, **726 sq km** large and the third largest in the country.



Ideal Habitat for Cheetahs:

1. The rocky terrain and exposed sheetrock create a shallow topsoil, resulting in a **savanna ecosystem** with open grasslands and dry deciduous trees and shrubs.
2. **Riverine valleys** within the sanctuary are evergreen.
3. Madhya Pradesh's wildlife officials state that Gandhi Sagar offers a **"perfect" cheetah habitat**.

Preparation for Cheetah Introduction:

1. An area of **64 sq km** has been developed for the cheetahs at a cost of **₹17.72 crores**.
2. A **soft release enclosure** (boma) has been constructed to ensure a suitable and secure habitat for the cheetahs upon their arrival.
3. A **hospital** catering to the needs of cheetahs is also being built.

- Wildlife officials are conducting a comprehensive status assessment of **herbivores and predators** in the sanctuary to understand the existing ecological dynamics.

Challenges to Making Gandhi Sagar a Viable Cheetah Habitat:

- The primary challenge is **augmenting the prey base**, increasing the number of animals that cheetahs can hunt.
- Male cheetah siblings form coalitions of three to five members, while females live more solitary lives unless with their litter.
- A cheetah coalition is expected to make a kill every 3-4 days, requiring about **350 ungulates** for a single coalition family.
- Insufficient prey base** remains an issue, as seen in Kuno.
- Other challenges include **competition with leopards** and other predators, poaching, and **human habitation and highways** near the protected area.

Future Development of Gandhi Sagar:

- The first phase of augmentation will target the section west of the Chambal river to enable cheetah reintroduction as soon as a sufficient prey base is available.
- Developments within Gandhi Sagar will initially focus on the **“Neemuch side of Chambal”**.
- The eastern side (Mandsaur side) has more human activity and houses the **Gandhi Sagar township**.
- The **Chambal river** acts as a barrier to casual wildlife movement between the two halves of the sanctuary.

Project Cheetah:

- Project Cheetah** aims to restore the population of cheetahs in India, declared extinct in 1952.
- The project involves **translocating cheetahs** from **South Africa and Namibia** to **Kuno National Park** in Madhya Pradesh.
 - Phase-1 of Project Cheetah:**
 - Started in 2022, with the goal of reintroducing cheetahs to India.

- Implemented by the **National Tiger Conservation Authority (NTCA)** in collaboration with the **Madhya Pradesh Forest Department** and the **Wildlife Institute of India (WII)**.

b. Phase-2 of Project Cheetah:

- Considering sourcing cheetahs from **Kenya** due to similar habitats.
- Cheetahs will be translocated to **Kuno National Park** and **Gandhi Sagar Wildlife Sanctuary**.

3. Importance of Project Cheetah:

- Aims to restore the cheetah population in India, essential for maintaining ecological balance.
- Highlights the importance of **conservation efforts** and protecting endangered species.

4. Challenges faced by Project Cheetah:

- Availability of **suitable habitat** for cheetahs.
- Risk of **poaching** and **human-wildlife conflict**.
- Challenges in terms of **funding and resources**.

Some Facts about Cheetahs:

- Breeding and Maturity:** Cheetahs breed year-round, with a peak during the rainy season. Females mature at 20-24 months, males at 24-30 months.
- Gestation and Litters:** Gestation lasts about 90-95 days, with litters of 3-5 cubs.
- Vocalizations:** Unlike other big cats, cheetahs do not roar. They communicate with high-pitched chirps or barks.
- Territorial Behavior:** Generally solitary, cheetahs use scratch marks, scent marking, and vocalizations like the “stutter bark” to establish territory.
- Speed and Hunting:** The fastest land animals, cheetahs can reach speeds up to 120 km/h in short bursts and accelerate from 0 to 100 km/h in just 3 seconds. Their hunting success rate is about 40-50%.
- Protection Status of Cheetah:**
 - IUCN Red List:** Vulnerable
 - Wild Life (Protection) Act, 1972:** Schedule 2
 - CITES:** Appendix I



12. Rhisotope Project: Radioisotopes into the Horns of live Rhinos

Recently, South African scientists injected radioactive material into live rhinoceros horns to make them easier to detect at border posts in a pioneering project aimed at curbing poaching.

What is the Rhisotope Project?

1. The **Rhisotope Project** is a pioneering initiative aimed at curbing poaching by making **rhino horns radioactive**.
2. The project involves administering measured quantities of **radioisotopes** into the horns of live rhinos.
3. The radioisotopes make the horn **“useless”** and **“poisonous for human consumption.”**

How does the project work?

1. The project involves inserting **“two tiny little radioactive chips”** into the horn of a rhinoceros.
2. The radioactive material would **“render the horn useless., essentially poisonous for human consumption.”**
3. The procedure is performed on sedated rhinoceroses

and is **safe for the animals**, with a radiation dose low enough not to affect their health or the environment.

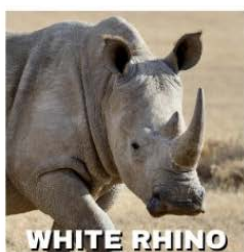
4. The radioactive material would last **five years** on the horn, resulting in a cost lower than dehorning every **18 months**.

Impact of the project

1. The project aims to use **nuclear science** in a novel way for conservation.
2. The non-lethal yet powerful solution aims to **radically reduce the demand** from end-users and save rhinos from the very real threat of extinction.
3. **Radioactively treated horns** are more likely to be detected at international borders, making it more likely that smuggling syndicates are exposed, prosecuted, and convicted under anti-terrorism laws.

Need for the project

1. **Rhinoceros horns** are highly valuable on black markets, with prices comparable to **gold and cocaine**.
2. Previous anti-poaching strategies like **dehorning** and **poisoning horns** have failed to deter poachers.
3. Despite government efforts, **499 rhinoceroses** were killed in 2023, an **11% increase** from 2022, primarily in state-run parks.



IUCN Estimated Population:

16,803

DECREASING

IUCN Status:

NEAR THREATENED



IUCN Estimated Population:

4,014

INCREASING

IUCN Status:

VULNERABLE



IUCN Estimated Population:

6,487

INCREASING

IUCN Status:

CRITICALLY ENDANGERED



IUCN Estimated Population:

76*

STABLE

*Indonesia's Ministry of Environment and Forestry has reported that 12 of these individuals may be missing.

IUCN Status:

CRITICALLY ENDANGERED



IUCN Estimated Population:

34-47

DECREASING

IUCN Status:

CRITICALLY ENDANGERED



Legal Frameworks for Wildlife Conservation

Global Wildlife Conservation Efforts to which India is a Party:

1. Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
2. Convention on the Conservation of Migratory Species of Wild Animals (CMS)
3. Convention on Biological Diversity (CBD)
4. The Wildlife Trade Monitoring Network (TRAFFIC)
5. United Nations Forum on Forests (UNFF)
6. International Union for Conservation of Nature (IUCN)
7. Global Tiger Forum (GTF)

Domestic Framework:

1. Wildlife (Protection) Act, 1972
2. Environment Protection Act, 1986
3. The Biological Diversity Act, 2002

Conservation Efforts Specifically for Rhinos:

1. New Delhi Declaration on Asian Rhinos
2. DNA Profiles of all Rhinos
3. National Rhino Conservation Strategy
4. Indian Rhino Vision 2020
5. **Translocation:** Rhino translocations to Manas National Park set for the beginning of 2023 were rescheduled for 2024 while security measures were reinforced after a poached rhino was discovered in January.
6. **Rhino Corridor:** In 2022, the Assam government finalized the addition of approximately 200 sq km to Orang National Park in north-central Assam, more than doubling the size of this protected area and key rhino habitat.

13. Indian House Crows and Kenya's Plan to Eliminate Them

The **Kenyan government** has announced an **action plan** to eliminate a million **Indian House Crows (Corvus splendens)** by the end of 2024 due to their significant **negative impact** on local ecosystems and **nuisance** to the public, particularly in the **Kenyan coastal region**.

- a. This decision highlights the importance of addressing **invasive species** and their impact on biodiversity and ecosystem balance.

Invasive Indian House Crows

1. **Origin and Introduction:** Indian House Crows, native to India and parts of Asia, are considered an invasive alien species in East Africa. Their introduction is believed to be linked to shipping activities.
2. **Ecological Impact:** These crows are aggressive predators that prey on endangered local bird species, destroy nests, and consume eggs and chicks. This predatory behavior has led to a significant decline in indigenous bird populations. The resulting imbalance in the ecosystem allows pests and insects to flourish, further harming the environment.
3. **Past Efforts:** Kenya has attempted to control the Indian House Crow population before. Over 20 years ago, a similar effort managed to temporarily reduce their numbers, but the problem has resurfaced.

Kenya's Action Plan

The Kenyan government's action plan involves a multi-pronged approach to eliminate the invasive crows:

1. **Mechanical and Targeted Culling:** This involves physically removing crows through trapping and targeted elimination.
2. **Licensed Poison:** The government plans to use a licensed poison to control the crow population. This method is controversial due to potential risks to other species, but the government believes it's necessary to address the scale of the problem.

Key Facts About Indian House Crows:

1. **Scientific Name:** Corvus splendens
2. **Common names:** Indian house crow, house crow, Indian crow, grey-necked crow, Ceylon crow, Colombo crow
3. **Family:** Corvidae
4. **Taxonomy:** The nominate race of Corvus splendens (C. splendens) exists in India, Nepal, and Bangladesh and has a grey neck collar.
5. **Conservation Status:**
 - a. **IUCN Status:** Least Concerned
 - b. **Legal Status:** Schedule II under the Wildlife Protection Act (India)



- Habitat and Distribution:** Indian House Crows are found in urban and rural areas, including forests, grasslands, and agricultural lands.
- Behavior and Diet:** They are **omnivores**, feeding on a wide range of food sources, including insects, fruits, grains, and small animals.

14. Parapatrechina neela: A New Ant Species

Indian researchers have made a significant discovery by identifying a new ant species, *Parapatrechina neela*, in the remote Siang Valley of Arunachal Pradesh.

About *Parapatrechina neela*:

- Discovery:** *Parapatrechina neela* is a newly discovered ant species found in the Siang Valley of Arunachal Pradesh.
- Classification:** This new species belongs to the rare genus *Parapatrechina*, and its unique blue color has led to its name, “neela,” which means “blue” in many Indian languages.
- Historical Significance:** Its discovery marks the first new species of *Parapatrechina* in 121 years since the description of the only previously known species, *P. aseta* (Forel, 1902), in the Indian subcontinent.
- Features:**
 - It is a relatively small ant, measuring less than 2 mm in total length.
 - Its body exhibits a predominantly metallic blue color, with the exception of its antennae, mandibles, and legs.
 - The head is subtriangular in shape, featuring large eyes and a triangular mouthpart (mandible) with five teeth.
 - The distinct metallic blue color differentiates this species from others in its genus.

Antennae: Sensory Organs of Insects:

- Antennae, or singular antenna, are paired sensory organs located on the heads of insects.
- They are highly sensitive to touch, smell, and in some species, sound.
- Antennae comprise several segments, and their form varies across different groups of insects.

15. Protecting India's Only Ape: Canopy Bridges to Safeguard Hoolock Gibbons in Assam

The Northeast Frontier Railway (NFR) is taking a significant step to protect India's only ape, the Hoolock gibbon, by constructing canopy bridges across a railway track that divides its habitat in Assam's Hoolongapar Gibbon Sanctuary.

About hoolock gibbons :

The hoolock gibbons are 3 primate species of genus Hoolock in the gibbon family, Hylobatidae, native to eastern Bangladesh, Northeast India, Myanmar, and Southwest China.

- Scientific name:** Hoolock
- Class:** Mammalia
- Family:** Hylobatidae
- Domain:** Eukaryota
- Genus:** Hoolock; Mootnick & Groves, 2005
- Kingdom:** Animalia
- Western hoolock :** Endangered in the International Union for Conservation of Nature (IUCN) Redlist
- Eastern hoolock :** Vulnerable in the International Union for Conservation of Nature (IUCN) Redlist.

In India, both species are listed on Schedule 1 of the Indian (Wildlife) Protection Act 1972.

Hoolock Gibbon Sanctuary Divided :

- The sanctuary, home to the largest concentration of Hoolock gibbons globally, is currently split by a 1.65-km railway track slated for expansion and electrification.
- This fragmentation poses a threat to the arboreal apes, hindering their movement and increasing the risk of accidents while crossing the track.

Canopy Bridges: A Lifeline for Gibbons

- To mitigate this risk, the NFR, in collaboration with the Assam State Forest Department and the Wildlife Institute of India (WII), will install specially designed canopy bridges at strategic points within the sanctuary.



2. These bridges aim to **provide safe passage for the gibbons between the two halves of their habitat, separated by the Mariani-Dibrugarh railway line.**

Bridge Design and Safety Measures:

1. **The canopy bridges, designed by the WII in consultation with the NFR, will be constructed using high-grade materials and techniques, ensuring the safety and security of the gibbons.**
2. **Safety nets will be installed beneath the bridges as a precautionary measure.**
3. Additionally, vines and creepers will be encouraged to grow along the **bridges to create a natural landscape and encourage gibbon birds to use them.**

Past Efforts and Lessons Learned:

1. **Previous attempts to construct an artificial canopy bridge proved unsuccessful as the gibbons did not utilise it.**
2. However, a **natural canopy bridge built by the State Forest Department and Aaranyak was successfully used by the apes.**
3. This experience has informed the design and placement of the new canopy bridges, increasing the likelihood of their adoption by the gibbons.

16. Rare 4-Horned Antelope Sighted In Veerangana Durgavati Tiger Reserve

For the first time, a rare four-horned antelope has been spotted in the Veerangana Durgavati Tiger Reserve (formerly known as Nauradehi Sanctuary) in the Sagar district.

Four-Horned Antelope:

1. **Scientific Name:** Tetracerus quadricornis
2. **Size and Appearance:** The 4-horned antelope, also known as the Chousingha, is a small bovid antelope, recognized as the smallest antelope species found in Asia. They have a yellowish-brown to reddish coat and are slender, with small legs and a short tail.

3. **Horns:** The distinguishing feature of this antelope is its **four horns**, which set it apart from most other bovids. **Only male four-horned antelopes grow horns**, with one pair located between the ears and the other on the forehead.
4. **Habitat:** These antelopes prefer open, **dry, deciduous forests in hilly terrain.** They are often found in areas with significant cover from grasses or heavy undergrowth and close to water bodies.
5. **Behaviour:** 4-horned antelopes are typically diurnal and solitary by nature, but they can be spotted in loose groups of three to four individuals.

Conservation Status:

The International Union for Conservation of Nature (IUCN) has listed the **four-horned antelope as a “Vulnerable” species**, highlighting the need for conservation efforts to protect this unique bovid.

Veerangana Durgavati Tiger Reserve: A Diverse and Important Ecosystem

1. **Location:** The **Veerangana Durgavati Tiger Reserve is spread across the Sagar, Damoh, and Narsinghpur districts of Madhya Pradesh.**
2. **Area:** Covering an area of 2,339 square kilometers, it is the **7th tiger reserve in Madhya Pradesh.**
3. **Significance:** The reserve encompasses areas within the **Nauradehi Wildlife Sanctuary and Durgavati Wildlife Sanctuary.** It serves as a crucial habitat for a **diverse range of flora and fauna, including tigers, leopards, wolves, jackals, Indian foxes, striped hyenas, Nilgai, Chinkara, Chital, Sambhar, Black Buck, Barking deer, Common Langur, and Rhesus Macaque, among others.**
4. **Flora:** The reserve has a rich floral diversity, with chief floral elements including **Teak, Saja, Dhaora, Ber, and Amla, among others.**





G. SOCIETY AND CULTURE

1. India Slips to 129 on Global Gender Gap Index

In June, 2024 the **World Economic Forum** released the **18th edition** of its annual **Global Gender Gap Report for 2024**, comprehensively benchmarking gender parity across **146 economies** worldwide.

What is the Global Gender Gap Index?

- It, an **annual report**, benchmarks countries on their progress towards gender parity in **4 Key dimensions with Submatrices**. The Global Gender Gap Index Framework
 - Economic Participation and Opportunity
 - Educational Attainment
 - Health and Survival
 - Political Empowerment
- On each of the 4 sub-indices as well as on the overall index the GGG index **provides scores between 0 and 1**, where 1 shows **full gender parity** and 0 is **complete imparity**.
- Objectives:**
- To serve as a compass to **track progress** on relative gaps between women and men in health, education, economy and politics.

Key Findings of the Report

- The 2024 Index shows that while no country has achieved full gender parity, 97% of the economies included in this edition have closed more than 60% of their gap, compared to 85% in 2006.
- The **global gender gap score** in 2024 is **68.5%**, meaning **31.5%** of the gap remains unaddressed. **Progress** has been **extremely slow**, with only a 0.1% point improvement from 2023.
- At the current rate, it will take **134 years, until 2158, to reach full gender parity** globally far beyond the **2030 Sustainable Development Goal (SDG) target**.
- The gender gaps remain largest in **Political Empowerment (77.5% unaddressed)** and Economic Participation & Opportunity (39.5% unaddressed).

Top-Ranking Countries:

- Iceland (93.5%)** remains the **world's most gender-equal society** for the **15th** consecutive year. It also continues to be the only economy to have closed over 90% of its gender gap.
- It is **followed by Finland, Norway, New Zealand** and Sweden in the top 5 rankings.
- 7 out of the top 10** countries are from **Europe** (Iceland, Finland, Norway, Sweden, Germany, Ireland, Spain).
- Spain and Ireland** made notable jumps into the top 10 in 2024, climbing 8 and 2 ranks respectively compared to 2023.

Regional Performance:

- Europe leads with 75% of its gender gap closed**, followed by Northern America (74.8%) and Latin America & Caribbean (74.2%).
- The Middle East and North Africa region ranks last at 61.7% of its gender gap closed.
- Southern Asia** region ranks 7th out of 8th regions with a gender parity score of **only 63.7%, an improvement of 3.9 percentage points since 2006**.
- However, 6 out of the 7 economies in this region, including India, are ranked below the top 100. **Only Bangladesh**, for the 1st time in the region, has achieved a double-digit rank of 99.

Economic & Employment Gaps:

- Women's workforce** representation lags behind men's across **nearly every industry** and economy at 42% overall and only 31.7% in senior leadership roles.
- The "leadership pipeline" shows a 21.5% point drop from entry-level to managerial level for women globally.
- Women's hiring into leadership roles deteriorated in 2023-24 due to worsening economic conditions.



Technology & Skills Gaps:

1. Women remain underrepresented in **STEM (Science, Technology, Engineering, and Mathematics)** at 28.2% of that workforce versus 47.3% in non-STEM roles.
2. Gender gaps exist in skills like **AI, big data and cybersecurity** which will be crucial for the future of work.

India Fared in the Gender Gap Report 2024?

1. India has slipped two places in the global rankings to **129th in 2024** from **127th in 2023** out of **146 countries**.
 - i. **Within South Asia, India ranked 5th** after Bangladesh, Nepal, Sri Lanka, and Bhutan. Pakistan ranked last in the region.
2. **Economic Parity:** India is among the countries with the **lowest levels of economic parity**, with less than 30% gender parity in estimated earned income.
3. **Political Empowerment:** India ranked **65th globally** in **political empowerment of women** and 10th in parity of years with female/male heads of state over the past 50 years.
4. **Gender Gap Closure:** India has closed 64.1% of its gender gap as of 2024. The slip in ranking from 127th to 129th was primarily due to **small declines in 'Educational Attainment'** and **'Political Empowerment'** parameters, although 'Economic Participation' and 'Opportunity' scores saw slight improvements.

Indian Initiatives to Reduce Gender Gap in Social, Economic and Political Life

1. Beti Bachao Beti Padhao
2. Mahila Shakti Kendra
3. Mahila Police Volunteers
4. Rashtriya Mahila Kosh
5. Sukanya Samridhi Yojna
6. Kasturba Gandhi Balika Vidyalaya
7. **Political Reservation:** The government has reserved 33% of the seats in **Panchayati Raj Institutions** for women.
 - a. The **Constitution (106th Amendment) Act, 2023**, has also reserved **one-third of all seats**

for women in **Lok Sabha, State legislative assemblies**, and the Legislative Assembly of the **National Capital Territory of Delhi**, including those reserved for SCs and STs.

8. **Female Entrepreneurship:** To promote female entrepreneurship, the Government has initiated Programmes like **Stand-Up India** and **Mahila-e-Haat** (an online marketing platform to support women entrepreneurs/SHGs/NGOs), Entrepreneurship and Skill Development Programme (ESSDP).

2. The Marriage Penalty in India: Barriers to Women's Employment

1. Recently, an investigation highlighted anomalies related to **hiring of women employees in Apple iPhone maker Foxconn** assembly plant in Tamil Nadu.
2. It was alleged that **married women's are being rejected** on grounds of pregnancy, family commitment and greater number of leaves.
3. Though Foxconn came up with the clarification statement in which it highlighted that 25% of its new recruitment comprises women and around women constitute 70% of its total workforce.

However, this news article discusses in depth several factors responsible for low female LFPR in India.

Labour force Participation rate (LFPR)

1. The LFPR is the measure to evaluate working-age population in an economy.
2. LFPR is defined as the percentage of working population in the age group of 15- 64 in the economy, currently employed or seeking employment.
3. As per OECD, it is calculated as the labour force divided by the total working-age population.

Status of Female Labour Force Participation Rate

1. **As per the Periodic Labour Force Survey 2022-23:** LFPR for male in India increased from 75.8% in 2017-18 to 78.5% in 2022-23 and corresponding increase in LFPR for female was from 23.3% to 37.0%.

Now as per the findings of the report Female LFPR is rising. However, It is still concerning when we focus on



- I. **Gender disparity** – Male (78.5%) i.e. more than double of that of Women.
- II. **Rural Urban Gap** – Higher in rural areas – reflects feminization of agriculture; lower in urban areas – Lack of formal employment opportunities
- III. **Comparison with developed economy** – Europe and central Asia – 52%; North America – 56% ; East Asia and Pacific – 59%. FLFPR in India is below the global average of 47 percent for several years.

Comparative Challenges and Solutions for Low Female LFPR in India

Challenge	Underlying Cause(s)	Solution(s)
Unpaid Care Work	Traditional gender roles, lack of societal recognition for caregiving.	National Women's Urban Employment Guarantee Act (WUEGA) with childcare provisions , invest in care infrastructure (childcare, elder care, domestic work), promote flexible work arrangements.
Societal Norms & Cultural Expectations	Deep-rooted gender bias, limited career aspirations for women.	Education and awareness campaigns challenging stereotypes , promote female role models in diverse fields, legal protections against workplace discrimination .
Lack of Education & Skills	Poverty, early marriage, family responsibilities.	Ensure girls' access to quality education , and financial incentives for education.
Limited Job Opportunities	Discrimination in hiring and promotions, occupational segregation.	Identify and promote niche sectors for women's employment (healthcare, social work), enforce anti-discrimination laws , encourage female entrepreneurship.
Safety Concerns	Inadequate public safety measures, harassment in public spaces and workplaces.	Improve public transportation safety, strict enforcement of laws against harassment , create safe workplace environments with zero-tolerance policies.
Rising Household Incomes	Paradoxical effect where higher income allows women to opt out of low-paying jobs.	Targeted social programs to support working women, promote the value of women's work, create opportunities for higher-paying jobs accessible to women.
Lack of Rural Connectivity	Limited access to transportation, lack of non-agricultural job opportunities in rural areas.	Improve rural infrastructure , expand public transportation networks to connect villages to towns, promote rural entrepreneurship and skill development.
Nuclear Families & Lack of Support	Increased burden of childcare without extended family support.	Affordable childcare options, parental leave policies for both parents , promote shared parenting responsibilities.
Lack of Supportive Policies	Inadequate parental leave, lack of flexible work arrangements, limited childcare options.	Enact comprehensive policies supporting work-life balance (parental leave, flexible hours, remote work), incentivize companies to adopt family-friendly policies.

Government initiatives to Improve Female Work Participation:

1. For Survival and Education of Females

- a. **Beti Bachao Beti Padhao Scheme:** For creating awareness among the people to educate all girl children in the country. The initiative intends to tackle the issue of the diminishing sex ratio in recent years, raise social awareness, and improve the effectiveness of welfare benefits for girls.

- b. National Education Policy (NEP), 2020:** The policy prioritises gender equity and envisions ensuring equitable access to quality education to all students, with a special emphasis on Socially and Economically Disadvantaged Groups (SEDGs).
- 2. For Safe and Convenient Accommodation**
- a. Working Women Hostel:** One of the main difficulties faced by working women is lack of safe and conveniently located accommodation. The objective of the scheme is to promote availability of safe and conveniently located accommodation for working women, with day care facilities for their children, wherever possible, in urban, semi urban, or even rural areas where employment opportunities for women exist.
- 3. For Supporting Women affected by violence**
- a. One Stop Centre (OSC) and Universalization of Women Helpline:** To provide 24 hours immediate and emergency response to women affected by violence through referral (linking with appropriate authority such as police, One Stop Centre, hospital) and information about women related government schemes programs across the country through a single uniform number. Women Helpline (WHL) will be integrated with One Stop Centre Scheme (OSC) under which one OSC shall be established in every State/UT to provide integrated support and assistance to women affected by violence, both in private and public spaces under one roof.
- 4. Codification of the Labour Laws for harmonizing the needs of job seekers, workers and employers**
- a. Labour Codes:** The four Labour Codes namely, the Code on Wages, 2019, the Industrial Relations Code, 2020, the Code on Social Security, 2020 and the Occupational Safety, Health and Working Conditions Code, 2020. Codification of the Labour Laws provides a policy framework for harmonizing the needs of job seekers, workers and employers.
- b.** The Labour Codes will, inter-alia, reduce multiplicity of definitions & authorities, facilitate implementation and use of technology in enforcement of labour laws and bring transparency and accountability in enforcement, promote setting up of more enterprises, catalyzing the creation of employment opportunities in the country.
- 5. Equal Opportunity and Congenial Work Environment**
- a. Maternity Benefit (Amendment) Act, 2017:** The Act increased the paid maternity leave from 12 weeks to 26 weeks, also made a provision for mandatory crèche facility in establishments having 50 or more employees, permitting women workers in the night shifts with adequate safety measures, etc.
- b. The Sexual Harassment of Women at Workplace Act, 2013:** To provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment and for matters connected therewith or incidental thereto.
- 6. Promoting Entrepreneurship**
- a. Female Entrepreneurship:** To promote female entrepreneurship, the Government has initiated schemes like MUDRA, Stand Up India and Mahila e-Haat.
- b. Rashtriya Mahila Kosh:** Provides micro-credit at concessional terms to poor women for various livelihood and income generating activities.
- c. Prime Minister's Employment Generation Programme (PMEGP):** Under the scheme, women entrepreneurs are provided 25 per cent and 35 per cent subsidies for the project set up in urban and rural areas respectively.

Japan's 'womenomics'

1. Japan was grappling with falling fertility rates, a declining population, and stagnant growth, a series of reforms on "womenomics" were introduced as part of the "Abenomics" era.
2. Women's labour force participation rate (WLFPR) in Japan has grown by ten percentage points, from 64.9 percent in 2013 to 75.2 per cent in 2023.
3. Majority of the "womenomics" reforms have been linked to investments in the care economy and rebalancing gender norms.



3. Six Months Maternity Leave for Surrogates

- In June, 2024 The Indian government notified an amendment to the **Central Civil Services (Leave) Rules, 1972** to grant maternity leave and other benefits to government employees who opt for surrogacy.
 - Until now, there were no rules to grant **maternity leave** to women government employees in case a child was born through surrogacy.
- This move aims to address the existing gap in the leave policies for government employees choosing surrogacy.

Amended Rules

- The new rules provide for **maternity leave, paternity leave, and child care leave** for government employees who opt for surrogacy.
- Maternity Leave:** Women government employees who have children through surrogacy can avail **180 days of maternity leave**.
- Paternity Leave:** Male government employees who are intended fathers can avail **15 days of paternity leave** within six months of the child's birth.
- Child Care Leave:** Intended mothers with less than two surviving children can avail child care leave, as per the existing provisions in the Central Civil Services (Leave) Rules.

What is Surrogacy?

Surrogacy is an arrangement where a woman (the surrogate) carries and delivers a baby for another person or couple (the intended parents). This is often chosen when the intended parents are unable or unwilling to carry a pregnancy themselves.

- Surrogate Mother:** A woman who bears a child on behalf of the intended parents.
- Intended Parent:** The person who intends to become the parent of the child born through surrogacy.

Types of Surrogacy

- Traditional Surrogacy:** The surrogate's own egg is used, making her the genetic mother of the child.
- Gestational Surrogacy:** The embryo is created using the eggs and sperm of the intended parents or donors, and then transferred to the surrogate. The surrogate has no genetic link to the child.

Comparison of Traditional and Gestational Surrogacy

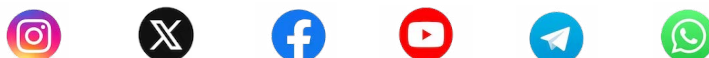
Traditional Surrogacy	Gestational Surrogacy
1. The father's sperm is used to fertilize the surrogate's egg.	The intended father's sperm and the intended mother's eggs are combined, creating an embryo which is then implanted into a surrogate.
2. Typically costs less than gestational surrogacy.	Typically costs more than traditional surrogacy, which may require careful financial planning.
3. May pose more legal issues since the baby is genetically related to the surrogate.	The baby is genetically related to both parents, making this method a more safe and risk-free option.
4. The surrogate undergoes IUI, Intrauterine Insemination, where the sperm cells are placed in the surrogate's uterus.	IVF, In-Vitro Fertilization is used, where the egg is harvested from the intended mother or donor and fertilized with the father's sperm outside of the womb.

The difference between commercial surrogacy and altruistic surrogacy
1. Commercial surrogacy: where the surrogate mother receives a fee.
2. Altruistic surrogacy: where the surrogate mother does not receive a fee for her own use; she is only reimbursed for outofpocket expenses (food, clothing, medication, lost wages, etc.).

Indications for Surrogacy:

Surrogacy is often considered when women have medical conditions that make pregnancy impossible or risky, such as:

- Abnormal uterus or absence of uterus (congenitally or due to hysterectomy)
- Medical conditions like cervical cancer, endometrial cancer, heart or kidney disease



Criteria for Surrogacy:

To avail of surrogacy, a couple must meet certain criteria:

- a. They must be **married for at least five years**.
- b. The wife must be between **25-50 years old**, and the husband must be between **26-55 years old**.
- c. They must not have any living child, unless the child has disabilities or a life-threatening illness.
- d. They must have certificates of **eligibility and essentiality**, proving infertility and a court order for parentage and custody of the surrogate child.
- e. They must provide **insurance coverage** for the surrogate mother for 16 months.

Comparison of Surrogacy Practices in India

Practice of Surrogacy in India Prior to Regulation Act, 2021	Surrogacy Regulation Act, 2021
1. India was a commercial hub for surrogacy due to poor socioeconomic conditions of women.	Allows only altruistic surrogacy; bans commercial surrogacy.
2. Presence of several middlemen and brokers.	Punishable offense.
3. Not formally regulated.	To be observed under registered medical professionals.
4. Lack of provisions for an abandoned child.	Abandonment is a punishable offense (10 years of jail/10 lakh fine).
5. Surrogacy option available to any couple.	Option only if either partner has proven infertility.
6. No regulations regarding prostitution or sale of the child.	Punishable offense (10 years of jail/10 lakh fine).
7. Abortion possible with consent of intended parents.	Abortion only with consent of surrogate mother and per the MTP Act.
8. No specific criteria for intended couple.	Provisions for eligibility: Married couple with 5 years of marriage.
9. No certificate required to opt for surrogacy.	Male 26-55 years old, female 25-50 years old.
10. No requirement of any order to be issued.	No living child (biological, adopted, surrogate), except in cases of mental disability.
11. Anyone could become a surrogate.	Prior certificate to be issued by District Medical Board (DMB).
12. No criteria for becoming a surrogate.	Order to be issued by the Magistrate.

Regulation of Surrogacy

1. The **National Surrogacy Board** and **State Surrogacy Boards** are responsible for regulating surrogacy clinics and enforcing standards.
2. The Act prohibits practices like **commercial surrogacy, embryo selling, and exploitation or abandonment** of surrogate mothers or children.
3. Violations can lead to imprisonment for up to **10 years** and a fine of Rs. **10 lakh**.

Why regulations on Surrogacy?

India as Surrogacy hub

1. India has emerged as a hub for infertility treatment, attracting people from the world over with its state-of-the-art technology and competitive prices to treat infertility



Socio-economic conditions:

1. Soon enough, due to prevailing socio-economic inequities, underprivileged women found an option to rent their wombs and thereby make money to take care of their expenses
2. This was often practiced to facilitate marriage, enable children to get an education, or to provide for hospitalisation or surgery for someone in the family.

Rising middlemen

Once information of the availability of such wombs got out, the demand also picked up.

1. Unscrupulous middlemen inveigled themselves into the scene and exploitation of these women began.
2. Several instances began to emerge where women, in often desperate straits, started lodging police complaints after they did not receive the promised sum

Other issues

1. in 2008 a Japanese couple began the process with a surrogate mother in Gujarat, but before the child was born they split with both of them refusing to take the child.
2. In 2012, an Australian couple commissioned a surrogate mother and arbitrarily chose one of the twins that were born

Criticisms

Too restrictive regulations

1. For instance, it does not allow single women, or men, or gay couples to go in for surrogacy. This deprives homosexuals and single parents.

Lack of clarity

1. Bill doesn't define "close relatives" as it is hard to regulate commercial surrogacy in this context

Reproductive rights:

Reproductive Rights of women are restricted as State deciding mode of Parenthood.

1. It Restricts basic human right (of Having a Child) and article 14 because of the discriminatory approach on the basis of nationality, marital status and sexual orientation and Violates freedom of Choice and Declaration of Human Rights 1948.

2. The Act doesn't address issues like Postpartum problems.

Rights of women surrogates:

1. The act is criticised for curtailing the rights of women surrogates under the garb of curbing exploitation.
2. Prohibition of payment can lead to more exploitation of Women.
3. Eg. Several villages in Gujarat are known for commercial surrogacy. As per reports, Anand, known for Amul's dairy factory, has also acquired fame as India's 'surrogacy capital, offering lucrative monetary opportunities for impoverished women.
4. Such practices have now been thrown into a quandary with the passage of this Act

Global Perspectives on Surrogacy

1. **Countries allowing commercial surrogacy:** Iran, some US states
2. **Countries banning all forms of surrogacy:** France, Finland, Italy, Japan, Spain, Sweden, Switzerland, Hungary, Ireland
3. **Countries with similar regulations to India's proposed bill:** Australia, Canada, Israel, Netherlands, New Zealand, South Africa, UK, Vietnam, Thailand, Cambodia, Nepal, Mexico

India's Middle Path

India seeks to strike a balance by:

1. **Banning commercial surrogacy**, including for foreigners
2. **Allowing and regulating altruistic surrogacy** for Indian citizens

Laws Related to Surrogacy

1. Relevant laws and acts include:
 - **Surrogacy (Regulation) Act, 2021**
 - **Surrogacy (Regulation) Rules, 2022**
 - **Assisted Reproductive Technology (ART) (Regulation) Act, 2021**

Way Ahead

1. Surrogacy is legal in India. But making it commercial is illegal. It is a humanitarian act and is recognized by law.



2. Surrogacy comes under the reproductive choices of women and it is included as a fundamental right under the purview of Article 21 of the Indian Constitution.
3. If a critical mass builds up, amendments might have to be resorted to in order to resolve the grievances and ensure access for all categories of parents.
4. Rather than penalising surrogacy, the person providing a womb for surrogacy must be secured with a contract, ensuring proper, insurance and medical checks.
5. The issues like middlemen will have to be handled with a stern visage, even as sensitivities of people are factored in.

4. Nata Pratha: Human Rights Concerns

The National Human Rights Commission (NHRC) issued notices to the Union Ministry of Women and Child Development and the States of Rajasthan, Madhya Pradesh, Uttar Pradesh, and Gujarat over a practice known as 'Nata Pratha'.

What is Nata Pratha

1. It is a **centuries-old social practice**, where girls are **sold by their family members** under the guise of marriage in parts of **Rajasthan, Madhya Pradesh, Uttar Pradesh, and Gujarat**.
2. It is usually practiced by the **Bhil/Bheel tribe**, the one of the **largest tribes in South Asia**.
3. It is a practice in which two persons can enter into a relationship similar to marriage **without any legal and religious/social obligation by getting a divorce from existing marriage** or otherwise.
4. The practice involves **monetary dealing in which a bride price** is usually paid to the woman or her parents or previous husband by the new groom.
5. This involves selling "on a stamp paper" or marrying off underage girls from some communities. These "sales and marriages" **are usually conducted by their own families**.
6. In this custom woman typically goes to live with the man, leaving behind the children from her previous marriage. The custom allows men to live with as many women resulting in children being abandoned by their parents.

7. Traditionally, **both the man and the woman are supposed to be married or widowed**, but the custom has evolved to include single people as well.

About Bhil/Bheel Tribe

1. **Location:** The tribe live in the states of Gujarat, Madhya Pradesh, Chhattisgarh, Maharashtra, Rajasthan, West Bengal, Tripura, Karnataka and Andhra Pradesh.
2. **Scheduled Tribe Status:** Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tripura.
3. **Language:** The commonly spoken language by Bhils is Bhili. **Bhili is a subgroup of the Western Zone of the Indo-Aryan languages**. Many Bhils now speak the dominant language of the region they reside in, such as Marathi, Gujarati and Bengali.
4. **Population:** Bhil is the **largest tribal group in India** as per 2011 Census. They constitute **approximately 38% of the total scheduled tribal population of India**.
5. **Culture:**
 - a. **Art: Pithora Painting** is a well-known art form.
 - These ritualistic paintings were done by **Badwas or specially appointed male members**.
 - b. **Dance: Ghoomar** is a traditional **folk dance of the Bhil tribe**. Ghoomar is the symbol of womanhood. Young girls take part in this dance.
 - c. Another **folk art** is Swang, which consists of storytelling combined with dancing and music.
 - d. **Baneshwar fair** is the **main festival** celebrated among the Bhils. The fair is dedicated to Baneshwar Mahadev also known as Lord Shiva.
6. **During the British Rule:**
 - a. The Bhils who lived in the **Khandesh region of the present-day Dhule district of Maharashtra**, revolted against Company rule in 1818, as they had to face famine, economic distress and misgovernment.
 - i. **The rebellion was led by Bhil leaders: Kazi Singh and Bhima Naik.**
 - ii. It was against the **deprivation of traditional rights over forest resources and land**.



- iii. The British used both force and conciliatory efforts to control the uprising.
- b. During the colonial rule, the Bhils were designated as a criminal tribe by the British colonial government under the **Criminal Tribes Act 1871**, which meant that a Bhil could be 'randomly picked up, tortured, maimed or even killed' by the colonial authorities.
- c. A reformer, **Govind Guru led the Bhils of south Rajasthan (Banswara, South states) to organise themselves to fight for a Bhil Raj by 1913.**

5. Tamil Nadu's Hooch Tragedy

1. In June, 2024 Many people have died after **consuming hooch**, or spurious liquor, in Tamil Nadu's Kallakurichi.
2. This tragedy highlights the dangers of consuming poorly made and adulterated liquor, which can be deadly due to the presence of toxic substances like **methanol**.

What is Hooch?

1. **Hooch** is a commonly used term for poor quality alcohol, derived from **Hoochinoo**, a native Alaskan tribe that was known to produce very strong liquor.
2. It is often produced in **unregulated and unsanitary conditions**, unlike branded liquor which is produced in factories with sophisticated equipment and rigorous quality control.

How is Hooch Produced?

1. **Fermentation:** Yeast reacts with sugar to ferment and produce a mixture containing alcohol.
2. **Distillation:** The process of physically separating alcohol from a fermented mixture using evaporation and condensation.
3. **Crude Setup:** **Hooch** production involves a crude setup, with a big vat where the mixture is boiled, a pipe that captures and carries the alcoholic fumes, and another pot where concentrated alcohol condenses.

Why Can Hooch Be Dangerous?

1. **Methanol Content:** The fermented mixture which is distilled contains **methanol**, an industrial alcohol which is highly toxic for human beings.

2. **Lack of Temperature Control:** **Hooch**-makers have no temperature control, which means that the process of distillation lacks the accuracy that is crucial to make it safe and effective.
3. **Adulteration:** **Hooch**-makers often add adulterants like organic waste, battery acid, and industry-grade methanol, which are highly toxic.
4. **Impurities:** **Hooch** can contain impurities like lead, copper, and other heavy metals, which can be harmful to human health.

Risks Associated with Hooch

1. **Improperly Prepared Alcohol:** Can kill due to the presence of toxic substances like methanol.
2. **Adulteration:** Can make **hooch** far more intoxicating, producing effects such as blackouts, memory loss, and high drunkenness even on consumption of low quantities of liquor.
3. **Long-Term Health Effects:** Can cause long-term health effects like liver damage, kidney failure, and neurological disorders.

How Does Hooch Impact the Body?

1. **Methanol Toxicity:** Can cause impaired vision, high toxicity, and metabolic acidosis, a condition in which the body produces excessive acid that cannot be flushed out by kidneys.
2. **Organ Damage:** Can cause damage to organs like the liver, kidneys, and brain.
3. **Neurological Effects:** Can cause neurological effects like seizures, coma, and even death.

Treatment

1. **Fomepizole and Ethanol:** Administered intravenously to treat methanol toxicity.
2. **Ethanol and Water Mixture:** Administered in cases where fomepizole is unavailable, to inhibit methanol's conversion into toxins and help in flushing it out of the body.
3. **Dialysis:** May be required in severe cases of methanol toxicity.

Prevention

1. **Regulation:** Stricter regulations and enforcement are needed to prevent the production and sale of spurious liquor.



2. **Awareness:** Public awareness campaigns are necessary to educate people about the dangers of consuming **hooch**.
3. **Alternative Livelihoods:** Alternative livelihoods should be provided to those involved in the production and sale of **hooch**.

Conclusion

The Tamil Nadu **hooch tragedy** highlights the need for stricter regulations and enforcement to prevent the production and sale of spurious liquor. It also emphasizes the importance of awareness about the dangers of consuming poorly made and adulterated liquor, which can be deadly due to the presence of toxic substances like **methanol**.

6. Nalanda University: An Ancient Centre of Learning

In June 2024, Prime Minister Narendra Modi inaugurated the new campus of Nalanda University, marking a significant step in the revival of this ancient seat of learning.

History and Revival Efforts of Nalanda University

A. History:

1. **Founding:** Established in the 5th century CE, possibly with earlier origins, and expanded under the patronage of Gupta Emperor Kumaragupta I (and potentially other Gupta rulers).
2. **Global Appeal:** A renowned center of Buddhist learning and scholarship for over 700 years, from the 5th to the 12th century CE. Attracted students and scholars from across Asia, including China, Mongolia, Tibet, Korea, and other countries.
3. **Famous Visitors:** Notable Chinese scholars like Xuan Zang and I-Tsing studied at Nalanda.
4. **Attacks:**
 - I. **First Attack:** Nalanda was likely first attacked by the Huns under Mihirakula in the 5th century CE.
 - II. **Second Attack:** It was then attacked again in the 7th century CE, possibly by the Gauda ruler Shashanka.

- III. **Final Destruction:** Primarily destroyed by **Turkic Muslim invaders in the late 12th century**, with the most devastating attack attributed to **Bakhtiyar Khilji** in 1193 CE.
5. **Rediscovery:** Rediscovered in the 19th century by European explorers and archaeologists.

B. Revival

1. The idea for the revival of Nalanda University did emerge in the early 2000s, with several key figures and organizations advocating for its return.
 - I. **A.P.J. Abdul Kalam:** In 2006, then-President Kalam proposed the revival of Nalanda University in a speech to the Bihar Legislative Assembly.
 - II. **Singapore Government:** The Singapore government also expressed interest in supporting the project.
 - III. **East Asia Summit (EAS):** Leaders of the EAS countries endorsed the idea during their summits in 2007 and 2009.
2. **Nalanda University Act:** The Indian Parliament passed the **Nalanda University Act** in 2010, providing a legal framework for the new institution.
3. **Collaborative Effort:** Nalanda University is envisioned as a collaborative effort between **India** and other **East Asian nations**, symbolising a renewed focus on regional knowledge exchange.
4. **Campus:** The university has a **455-acre campus** near the ancient ruins, designed by architect **B.V. Doshi**, and features modern amenities like a **solar plant, domestic and drinking water treatment plant, and water recycling plant**.

The New Campus

1. **Location:** The campus is situated in **Rajgir, Bihar**, about 90 km east of Patna.
2. **Design and Amenities:** The 455-acre campus, designed by architect B.V. Doshi, features modern amenities like a solar plant, water treatment plants, smart classrooms, a state-of-the-art auditorium, and a fully equipped sports complex. Only 8% of the campus is built up, preserving the natural environment.



3. **Courses:** The university offers **Post Graduate** and **Doctoral programmes** in Buddhist studies, philosophy and comparative religions, languages and literature, ecology and environmental studies, sustainable development and environment, and international relations and peace studies.

Significance and Importance

1. **Cultural Heritage:** Nalanda University is a symbol of India's rich cultural heritage and its historical contribution to education.
2. **Global Hub of Learning:** As a center of research and learning, the university offers a platform for students from around the world to engage in intellectual discussions and debates.
3. **International Cooperation:** The involvement of 17 countries in its establishment showcases Nalanda as a model of international cooperation.

Challenges

1. **Funding:** The university faces challenges in terms of **funding**, with the need for sustained investment to maintain its infrastructure and facilities.
2. **Faculty Recruitment:** The university faces challenges in recruiting and retaining **faculty members**, particularly in specialized fields.
3. **Infrastructure:** The university faces challenges in terms of **infrastructure**, with the need for continued investment in its facilities and amenities.

UNESCO's Heritage Sites Related to Buddhism:

1. **Archaeological Site of Nalanda Mahavihara:** Declared as a UN Heritage Site in **2016**.
2. **Buddhist Monuments at Sanchi:** Located in Madhya Pradesh.
3. **Mahabodhi Temple Complex:** Located in Bodh Gaya, Bihar.
4. **Ajanta Caves:** Located in Aurangabad, Maharashtra.
5. **Buddhist Chanting of Ladakh:** Included in UNESCO's Representative List of Humanity's Intangible Cultural Heritage in **2012**.

Conclusion

The revival of **Nalanda University** is a significant milestone in India's educational landscape, and a testament to the country's rich cultural heritage. The university's commitment to providing a platform for intellectual discussions and debates, and its focus on international cooperation, make it an important institution in the field of education.

7. Portion of Hampi's Virupaksha Temple Collapses

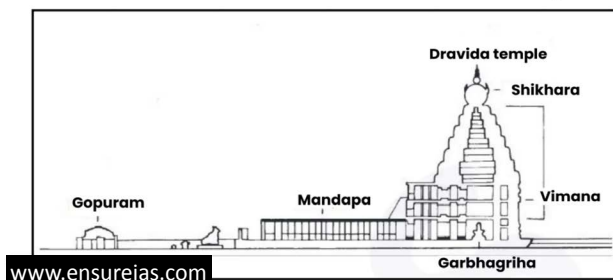
A portion of the **Virupaksha temple** in Karnataka, a nationally protected monument and UNESCO World Heritage Site, collapsed following torrential rains. The Archaeological Survey of India (ASI) is set to commence restoration work on the collapsed 'Saalu Mandapa or Pavilion'.

Key Points:

1. **History:** The Virupaksha temple originated in the 7th century and gained prominence during the Vijayanagara Empire (1336 to 1646), serving as a vital center for religious and cultural activities.
2. **Significance:** The temple exemplifies Dravidian architecture and is dedicated to Sri Virupaksha (Lord Shiva), also known as Pampapathi, with Pampadevi (associated with the Tungabhadra River) also worshipped.
3. **Construction and Expansion:** Initially a modest shrine, it was expanded under Vijayanagara rule, particularly by Lakkan Dandesha, a chieftain under Deva Raya II.
4. **Architectural Influences and Style:** Primarily built in the Vijayanagara style, the temple features grand **gopurams** (towering gateways), the shikhara towering over the sanctum sanctorum, intricate carvings, and pillared halls, with some influences from the late Chalukyan and Hoysala periods.
5. **Continuous Worship:** Despite the city's destruction in 1565, the temple maintained continuous worship due to the enduring religious significance of the Virupaksha-Pampa sect.
6. **Location and Recognition:** The temple is located in Hampi, the former capital of the Vijayanagara Empire, situated along the banks of the Tungabhadra River. The Group of Monuments at Hampi, including the Virupaksha temple, was recognized as a **UNESCO World Heritage Site in 1986**.



The Virupaksha Temple
An Architectural Marvel and a Victim of Nature's Fury



Importance:

- Cultural Significance:** The Virupaksha temple is a vital part of India's cultural heritage and a symbol of the country's rich history and architecture.
- Tourism:** The temple is a popular tourist destination, attracting visitors from all over the world.
- Conservation:** The conservation and protection of the temple are essential to preserve India's cultural heritage for future generations.

8. Kozhikode: India's first UNESCO 'City of Literature'

Kozhikode has recently been recognized by UNESCO as the first Indian 'City of Literature' under the UNESCO Creative Cities Network (UCCN).

What is the UNESCO Creative Cities Network (UCCN)?

- About:**
 - Established in 2004**, the UCCN fosters cooperation among cities that prioritize creativity and cultural industries as drivers of sustainable urban development.
 - It encompasses 7 creative fields:** Crafts and Folk Art, Design, Film, Gastronomy, Literature, Media Arts, and Music.
 - The network's annual conference brings together mayors and stakeholders to strengthen ties and share best practices. The **2024 conference was held in Braga, Portugal.**

2. Objective:

- In 2024, 350 cities make up this network which aims towards a common objective of placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.
- The UNESCO Creative Cities aims to achieve Sustainable Development Goals 11 through innovative thinking and action to benefit communities at the urban level.

Kozhikode: A Literary Hub

- Kozhikode hosts many prominent personalities of Kerala's literary and cultural world, leading media houses, several libraries (over 500 libraries) and has also produced many films and theatre professionals over the years.
- The **first Malayalam novel Kundalatha** was written by Appu Nedungadi in Kozhikode in 1887
- Many renowned writers like S. K. Pottekkatt, Thikkodiyam and P. Valsala Sanjayan, along with poets, scholars, and publishers have contributed to the diversity and vibrancy of Malayalam literature and culture.

Other Indian cities in the UCCN:

- Jaipur:** Crafts and Folk Arts (2015),
- Varanasi:** Creative City of Music (2015),
- Chennai:** Creative City of Music (2017),
- Mumbai:** Film (2019),
- Hyderabad:** Gastronomy (2019), and
- Srinagar:** Crafts and Folk Art (2021).

9. Srinagar: India's 4th World Craft City

- Recently, Srinagar has become the **4th Indian city** to be recognised as a 'World Crafts City' by the World Craft Council (WCC).
 - Jaipur, Malappuram and Mysore are the other 3 Indian cities that have earlier been recognised as World Craft Cities.
- In 2021, Srinagar city was designated a creative city as part of the **UNESCO Creative City Network (UCCN)** for crafts and folk arts.



About World Craft City:

Launched in 2014 by the **World Crafts Council AISBL (WCC-International)**, to acknowledge the significant contributions of local authorities, craftspeople, and communities to cultural, economic, and social development globally.

World Craft Council (WCC) international:

1. A **Kuwait-based**, non-government organisation working to empower artisans and safeguard craft heritage globally.
2. It was founded by Ms. Aileen Osborn Vanderbilt Webb, Ms. Margaret M. Patch, and **Smt Kamaladevi Chattopadhyay in 1964**.
3. The Council aims to promote fellowship among craftsperson by offering them **encouragement, help, and advice**.
4. It has been affiliated with UNESCO under Consultative Status for many years.

10. 350th Anniversary Chhatrapati Shivaji Maharaj Coronation

1. In June 2024, the Indira Gandhi National Centre for the Arts (IGNCA) and the National Gallery of Modern Art (NGMA) jointly organized an exhibition featuring oil paintings of Chhatrapati Shivaji Maharaj to commemorate the 350th anniversary of his coronation.
2. **Chhatrapati Shivaji Maharaj** was crowned as the **king of the Marathas** on 6th June 1674, at **Raigad**.

About Chhatrapati Shivaji Maharaj

1. **Founder of the Maratha Empire** in western India.
2. **Born on February 19, 1630**, to **Shahaji Bhosle** and **Jijabai** in the fort of **Shivneri**, near the city of **Junnar** in the **Pune** district.
3. **Rise to Power:** With his valor and great administrative skills, Shivaji carved out an enclave from the declining **Adilshahi sultanate of Bijapur**, which eventually became the genesis of the Maratha Empire.
4. **Naval Pioneer:** Known as the **Father of the Indian Navy**, he was the first to realize the importance

of having a naval force and established a navy and forts at the coastline to defend the Konkan side of Maharashtra.

5. A **secular ruler** accommodating all religions, he had numerous **Muslim soldiers** in his army.
6. Shivaji was a dependable **supporter of women** and their honor; anyone under his rule caught violating women's rights was severely punished.
7. He had a **council of ministers (Asht Pradhan)** to advise him on state matters but was not bound by it.
8. **Military Genius:** Widely known for his **guerrilla warfare tactics**, he was called the 'Mountain Rat'.

Raigad Fort: The Capital of the Maratha Empire

1. **Location:** Hill fort situated in **Raigad district, Maharashtra**, in the **Sahyadri mountain ranges** or the western ghats.
2. Known as the '**Gibraltar of the East**', one of the strongest-ever fortresses of the Deccan Plateau.
3. Seized by **Chhatrapati Shivaji Maharaj** in 1656 from **Chandraroji More**, the King of Jawali.
4. Developed several structures and constructions in Raigad, making it his capital in 1674 after being crowned as the king of the entire Maratha Kingdom, and later the Maratha Empire.
5. The fort was the location for an armed campaign by the **British East India Company** in 1765 and was looted and destroyed by British forces on May 9, 1818.
6. Overlooks an artificial lake known as the '**Ganga Sagar Lake**'.

Who was Ashta Pradhan?

1. The **Ashta Pradhan** (also termed Asta Pradhan or the Council of 8) was a council of eight ministers that administered the Maratha empire.
2. Formed in 1674 by their king, **Shivaji**.
3. Discharged functions similar to a modern council of ministers, regarded as one of the first successful instances of ministerial delegation in India.





H. ETHICS

1. ETHICS OF ARTIFICIAL INTELLIGENCE

Recently, European Union (EU) has brought in a law to regulate Artificial Intelligence (AI), in this context it has become important to discuss the various issues emerging out use of AI and ethics principles of AI.

About artificial Intelligence

Artificial intelligence (AI) is the ability of a digital computer or computer-controlled device to perform tasks commonly associated with intelligent beings.

Difference Between Human Intelligence And Artificial Intelligence

Criteria	Human Intelligence	Artificial Intelligence
Nature and Scope	Human intelligence encompasses broader cognitive abilities like creativity, perception, and memory.	Focuses on specific tasks & problem-solving
Versatility	Multitask and adopt to various situations	Excels at specialized application.
Learning	Influenced by experiences, emotions, social interactions, and neuroplasticity.	Learns from data, algorithms, computational adjustments
Emotional a social intelligence	Involves emotional depth and social interactions.	Lacks emotional intelligence.
Learning and adaptation	Adapt through experiences emotions, and social context	AI relies on algorithm and data for learning and adaptation.
Creativity	Creates original art, ideas, solutions through inspiration	Creativity is based on recombination and manipulation of existing data, lacking genuine inspiration or intuition.
Moral reasoning	Applies principles of morality based on ideas of thinkers and philosophers and provide solutions based on inspiration, intuition, and subconscious processes.	Ethical behavior is programmed or learned, lacks empathy

About AI Ethics

1. Ethics is a set of moral principles which help us distinguish between right and wrong.
2. AI ethics is a multidisciplinary field that studies how to optimize AI’s beneficial impact while reducing risks and adverse outcomes. Key areas of concerns of AI ethics are:

Artificial Intelligence (AI) presents significant ethical challenges:

1. **Bias and Discrimination:** AI can inherit and amplify human biases, leading to unfair treatment in areas like hiring, lending, and criminal justice.
2. **Transparency and Accountability:** The inner workings of AI are often unclear, making it difficult to understand how decisions are made and who is responsible for mistakes.
3. **Privacy and Security:** The vast amounts of data AI needs raise concerns about privacy breaches, misuse of information, and increased surveillance.
4. **Job Loss and Inequality:** AI-powered automation could lead to significant job losses and economic disruption, potentially widening the gap between the rich and the poor.



- 5. Safety and Malfunctions:** AI systems can malfunction or be manipulated, posing risks in critical areas like transportation or healthcare.
- 6. Superintelligence Concerns:** The possibility of AI surpassing human intelligence raises questions about potential dangers and the long-term impact on humanity.

Examples of AI Bias Across the Globe

- 1. 2018, USA:** Google's facial recognition software exhibited bias against African Americans, with image recognition algorithms in Google Photos misclassifying them as "gorillas."
- 2. 2020, UK:** A student enrolment algorithm favoured students from private schools and affluent areas, disproportionately impacting high achievers from free, state-funded schools.
- 3. 2022, India:** Following communal clashes in Delhi's Jahangirpuri area, police employed facial recognition technology to identify and arrest suspects. Most of those charged were from Muslim communities, drawing criticism regarding the technology's potential to target poor, minority, and marginalized groups.
- 4. 2023, India:** Police record registers are increasingly utilized for AI-assisted predictive policing, aiming to identify individuals likely to commit crimes. The Punjab and Haryana high court faced criticism for using ChatGPT to determine whether or not to grant bail in a murder case.

Key Steps for Responsible AI in India

- 1. Understand and Address Bias:** Thoroughly analyze and mitigate biases in AI data collection to prevent discriminatory outcomes.
- 2. Develop AI Laws:** Formalize existing ethical guidelines into comprehensive AI legislation based on fairness, justice, respect, and accountability.
- 3. Learn from Global Practices:** Adapt principles from international AI regulations, such as the EU's, to suit India's unique context.
- 4. Invest in Workforce Training:** Prioritize upskilling and reskilling programs to prepare workers for AI-driven job market changes.

2. LAWYER ADVERTISING ONLINE: ETHICAL CONCERNS

- 1. The Madras High Court** has ruled against lawyers advertising and seeking work through online portals, emphasizing the need to maintain the dignity of the legal profession.
- 2. The Bar Council of India (BCI) has directed state bar councils to ban advertising** of lawyers through online portals.
- 3. The ruling has sparked a debate** within the legal community, with some seeing it as necessary to uphold the profession's dignity, while others argue it is outdated and fails to recognize the benefits of technology.
 - Some lawyers argue that online platforms offer wider reach and accessibility, while others worry about the potential for client exploitation and the commodification of legal services.

Ethical Issues

- 1. Selling Legal Services:** Lawyers advertising their services online can make legal services seem like a product rather than a professional service.
- 2. Lack of Personal Touch:** Online legal services may lack the personal touch and expertise that clients need.
- 3. Unfair to Clients:** This can be unfair to clients who may not receive the best advice or representation.
- 4. Economic Barriers:** The cost of online legal services can create economic barriers for people who cannot afford them. While online services might be cheaper than traditional firms, they could still be out of reach for low-income individuals, limiting their access to justice.
- 5. Professional Ethics:** The ruling highlights the tension between making money and following professional ethics.

Ethical Principles

- 1. Respect for Clients:** Lawyers must respect their clients and provide them with the best possible service. This could mean being transparent about fees, potential outcomes, and limitations of online services.
- 2. Professional Integrity:** Lawyers must maintain their professional integrity and not compromise their values for money. Avoiding misleading advertising and prioritizing client interests over profit are examples of upholding this principle.



3. **Fairness and Justice:** Lawyers must ensure that their actions promote fairness and justice.
4. **Empathy and Compassion:** Lawyers must show empathy and compassion towards their clients.
5. **Accountability:** Lawyers must be accountable for their actions and decisions.

Recommendations

1. **Regulate Online Services:** Online legal services must be regulated to ensure they meet ethical standards.
2. **Ethical Guidelines:** Lawyers must follow ethical guidelines when providing online services.
3. **Access to Justice:** Efforts must be made to ensure that access to justice is not limited by economic barriers.
4. **Professional Education:** Legal education must emphasize the importance of professional ethics.
5. **Collaborative Governance:** A collaborative governance framework is needed to ensure that the legal profession is regulated in a way that prioritizes the collective good.

Conclusion

The Madras High Court ruling and the ensuing debate highlight the complex ethical challenges posed by lawyer advertising online. By upholding ethical standards, prioritizing fairness and justice, and embracing technology responsibly, lawyers can ensure that the legal profession continues to serve the public good in the digital age.

3. PUJA KHEDKAR CONTROVERSY AND RULES FOR CIVIL SERVANTS

Key Points:

Puja Khedkar Controversy:

1. **Puja Khedkar**, a newly appointed IAS officer, faces scrutiny over her appointment under special categories for **backward classes and people with disabilities**.
2. The government has established a committee to review the **documents** she submitted to secure her position.

Rules Governing Civil Servants:

1. Khedkar's conduct as a civil servant is regulated by the **All India Services (Conduct) Rules, 1968**, and the **Indian Administrative Service (Probation) Rules, 1954**.

Rules on 'Integrity' of Services:

1. The **All India Services (Conduct) Rules, 1968**, mandate that every civil servant must be **honest and dedicated** to their duties.

2. **Rule 4(1)** prohibits officers from using their position to secure jobs for family members in private companies or NGOs.
3. The rules emphasize **honesty, fairness, and transparency** in their work.
4. Officers must uphold **high ethical standards**, including **political neutrality, accountability, and transparency**.
5. They are required to declare any private interests related to their public duties and avoid financial or other obligations that may influence them.

Role of Ethics:

1. **Ethics** are crucial in guiding the behavior and decision-making of civil servants.
2. They ensure decisions are made in the **best interests of the public and the country**, rather than personal interests.
3. Principles such as **honesty, integrity, and transparency** are essential for maintaining public **trust and confidence** in the government.
4. Ethics provide a framework for evaluating the **moral implications** of actions in complex situations.

Rules for New Officers:

1. The **Indian Administrative Service (Probation) Rules, 1954**, guide the behavior of new officers during their **training period**, which lasts at least two years.
2. During probation, officers receive a **fixed salary and travel allowance** but not all benefits of confirmed IAS officers.
3. **Rule 12** specifies reasons for removing a new officer from service, including **ineligibility or unsuitability** for the job.
4. A **summary enquiry** is conducted before an order of removal is passed.

Providing False Information:

1. If Khedkar's certificates for **backward classes and disabilities** are found to be fake, she can be removed from service.
2. A government circular from **1993** states that officers found providing false information should not continue working, even if they are not probationers and have been confirmed in their service.

About Puja Khedkar:

1. Khedkar secured her IAS position under **special categories** despite a low rank.



2. Her **backward class status** is questioned due to her seemingly wealthy background.
3. Her father, **Dilip**, is a retired government officer now involved in politics.
4. Khedkar was involved in a legal battle at the **Central Administrative Tribunal (CAT)** regarding her disability status.
5. She did not appear for a medical examination at **AIIMS, New Delhi**, and instead submitted an MRI report from a private facility.

Conclusion:

The Puja Khedkar controversy underscores the importance of **honesty and transparency** in the civil services. The rules for civil servants ensure officers do not misuse their power for personal gain. The controversy also raises questions about the **reservation system** and its implementation. Ethics play a crucial role in the civil services, and adherence to ethical principles is essential for maintaining public **trust and confidence**.

4. SUHAS YATHIRAJ: TRIUMPH OVER ADVERSITY

Suhas Yathiraj, despite being born with a disability, has excelled in multiple fields, demonstrating the power of perseverance and determination. He is an engineer, a successful civil servant (IAS officer), and a world-renowned para-badminton player.

1. He is an **engineer**, an **IAS officer**, and a **para shuttler**, proving that nothing is impossible with determination.
2. Raised in a small village in **Karnataka**, he faced bullying and mockery, but his father's support helped him focus on his dreams.
3. He became an engineer and then cleared the civil exams on his first attempt.
4. **Badminton** changed his life, and he started playing in local tournaments, eventually representing India in the **SL-4** category at the Tokyo Paralympics.
5. He is a recipient of the **Arjuna Award** and is now preparing for the **Paris Paralympics**.

Key Takeaways

1. **Overcoming Obstacles:** Suhas's life story is an inspiring example of how one can overcome physical challenges and societal barriers to achieve their dreams.
2. **The Importance of Support:** The unwavering support of his father played a crucial role in his journey, emphasizing the significance of a strong support system.

3. **Balance and Time Management:** Suhas's ability to excel in diverse fields like administration and sports highlights the importance of balancing responsibilities and effective time management.
4. **Inspiration for All:** His achievements serve as an inspiration not only for people with disabilities but for anyone facing challenges in life.

Ethical Principles

1. **Respect and Equality:** Suhas Yathiraj's story promotes respect for human rights, including the right to equal opportunities and accessibility.
2. **Empowerment:** His story empowers individuals to overcome their limitations and achieve their goals.
3. **Perseverance and Hard Work:** His success is a result of his perseverance and hard work, demonstrating the importance of these values.
4. **Support and Inclusion:** His story highlights the importance of support and inclusion in helping individuals achieve their goals.
5. **Inspiration and Role Modeling:** Suhas Yathiraj's story inspires others to pursue their dreams and serves as a role model for individuals with disabilities.

Recommendations

1. **Accessibility and Inclusion:** Efforts must be made to ensure accessibility and inclusion in all aspects of life, including education and sports.
2. **Support Systems:** Support systems must be in place to help individuals with disabilities achieve their goals.
3. **Role Models:** Role models like Suhas Yathiraj can inspire others to pursue their dreams and overcome adversity.
4. **Perseverance and Hard Work:** Individuals must be encouraged to persevere and work hard to achieve their goals.
5. **Empowerment:** Empowerment is key to helping individuals overcome their limitations and achieve their goals.

Conclusion:

Suhas Yathiraj's inspiring journey teaches us valuable lessons about resilience, determination, and the importance of support. His story encourages us to challenge stereotypes, embrace diversity, and create a more inclusive world where everyone can achieve their dreams.



I. ESSAY

Thinking is Like a Game, It Does Not Begin Unless There is an Opposite Team

Imagine a game of **chess**. The board is set, the pieces are in their places, but there's only one player. The player could move the pieces around, but there's no **challenge**, no **strategy**, no **real game**. It's just a series of arbitrary movements. This is much like **thinking** without an **opposing view** or **challenge**.

Just as a game of chess truly begins when there's an **opponent** making moves, thinking starts when there's an opposing view or idea. This **opposition serves as the catalyst** for deep, **critical thinking**. It's the spark that ignites the fire of thought, the challenge that pushes us to **question, analyze, evaluate**, and form **arguments**.

This concept is not just limited to **intellectual debates** or strategic games. As we'll see throughout **history**, opposition has consistently served as the "opposite team" that stimulates deep thinking and leads to significant changes. From the **Cold War** to the **Scientific Revolution**, from the **Abolitionist Movement** to the **Manhattan Project**, and from the **Feminist Movement** to the ongoing fight against **climate change**, opposition has driven **human progress**.

Thinking and games have a lot in common. Both involve solving problems and making decisions, whether it's in a game or in real life. In thinking, we try to find answers to real-life problems, while in games, we try to overcome challenges and puzzles. Thinking is like a game in which we have to consider different **viewpoints**. We shape our thoughts based on our **preferences**, and in this "game," we always try to win. Thinking is the process of finding solutions to our problems.

Moreover, games always require an **opposing team** or a **challenge**. Without a specific goal or opponent, there is no game. Similarly, in thinking, we need a problem or a question to think about. **Strategic thinking** is important in

both games and real life. We need to come up with plans to achieve our goals, whether it's in a game or in real life. **Creativity** is also important in both contexts. We need to find new and **innovative solutions** to problems.

For instance, during the **Cold War**, the United States and the Soviet Union had different **ideologies**, which led to a period of tension. This opposition led to deep thinking and strategic planning. The two superpowers had to think critically and creatively to outmaneuver each other, which led to significant advancements in **technology, politics, and international relations**.

Similarly, during the **Scientific Revolution**, scientists like **Galileo** and **Copernicus** had to think deeply and critically to challenge established beliefs. They had to come up with creative solutions to prove their theories, which led to a fundamental shift in our understanding of the universe. The opposition they faced from the **Church** and other established authorities forced them to think outside the box and challenge conventional wisdom.

The **Abolitionist Movement** is another example of how opposition led to deep thinking and strategic planning. **Abolitionists** had to think creatively to counter the arguments of those who supported **slavery**. They had to come up with innovative solutions to address the complex issues surrounding slavery, which led to a significant shift in public opinion and eventually the abolition of slavery.

The **Manhattan Project** during World War II is another example. Scientists had to think deeply and creatively to develop the **atomic bomb** before Nazi Germany could. The opposition they faced from the Nazi regime forced them to think strategically and come up with innovative solutions to overcome the challenges they faced.

The **Feminist Movement** is also an example of how opposition led to deep thinking and strategic planning. **Feminists** had to think creatively to challenge and change societal norms and laws. They had to come up



with innovative solutions to address the complex issues surrounding **gender equality**, which led to significant changes in the way we think about gender and equality.

As **Bobby Fischer**, the great chess player, once said, “**Chess is life.**” This quote may seem simple, but it holds a profound truth. Just as a game of chess requires strategy, critical thinking, and problem-solving, so too does life. The “opposite team” in life may take many forms - challenges, obstacles, or opposing viewpoints - but it is how we respond to these challenges that defines us.

In the game of life, we must think critically, strategically, and creatively to overcome the obstacles that stand in our way. We must be willing to adapt, to learn from our mistakes, and to grow from our experiences. And just as a game of chess requires focus, concentration, and perseverance, so too does life.

As **C.S. Lewis**, the famous author, once said, “You don’t have a soul. You are a soul. You have a body.” This quote reminds us that our true essence is not our physical body, but our mind and spirit. And it is our mind and spirit that are shaped by the games we play and the challenges we face.

In the game of life, we often face opposition in various forms. This opposition can come from within ourselves, from others, or from external circumstances. However, one of the most pressing forms of opposition we face today is **climate change**. Climate change is a global problem that requires a collective response. It is a formidable opponent that threatens our very existence, and to address it, we need to think in new and innovative ways.

Climate change is the ultimate “opposite team” in life. It is a powerful and relentless force that is pushing our planet to the brink of disaster. **Rising temperatures, melting glaciers, and extreme weather events are just a few of the many challenges we face in the battle against climate change.** To overcome this opposition, we need to think creatively and strategically. We need to develop new technologies, new policies, and new ways of living that are **sustainable and environmentally friendly.**

We need to work together as a global community to address this problem, and to find solutions that are equitable and just. By embracing opposition and challenge, **we can stimulate deep thinking and achieve significant changes in our personal and professional lives.**

On a personal level, we face opposition in everyday situations. For instance, when we have a disagreement with a friend or family member, it forces us to think from different perspectives. We need to understand their viewpoint, analyze it, and come up with arguments to support our own position. This process helps us to refine our thinking and develop better communication skills.

In professional settings, opposition often comes in the form of competition. When competing for a job or a promotion, we need to think strategically about how to present ourselves and our abilities in the best possible light. We need to be creative in highlighting our strengths and finding ways to stand out from the competition. This type of opposition pushes us to improve our skills and to continually strive for excellence.

By recognizing the importance of opposition in stimulating deep thinking and driving significant changes, we can approach life’s challenges with a newfound sense of purpose and determination. We can learn to think critically, strategically, and creatively, and to respond to opposition in a way that leads to growth, development, and success.

In conclusion, the game of life is not just about physical survival, but about spiritual growth and development. The “opposite team” in life may try to defeat us, but it is how we respond that defines us. Do we let our spirits be crushed, or do we rise above the challenges and emerge stronger and wiser? The game of life is a journey of self-discovery, and it is through our struggles and triumphs that we come to know ourselves and our place in the world.

By embracing opposition and challenge, we can stimulate deep thinking and achieve significant changes in our personal and professional lives. We can learn to think critically, strategically, and creatively, and to respond to opposition in a way that leads to growth, development, and success.





J. SCHEME

1. Pradhan Mantri Awas Yojana (PMAY) - Boost for 'Ease of Living' and Dignity for Crores of Indians

1. India faces a significant **housing shortage**, particularly among the **Economically Weaker Section (EWS)** and **Low-Income Group (LIG)** categories.
2. Rapid urbanization has led to an increase in the demand for housing in urban areas.
3. PMAY-G aims to improve the living conditions of rural families and promote rural development.
4. The Government of India is committed to providing housing for all citizens, and PMAY is a significant step towards achieving this goal.

The Vision of PMAY

1. **Launched in 2015 (Urban) and 2016 (Rural)**, PMAY aims to provide pucca houses with basic amenities to improve the living conditions of poor people in both rural and urban areas.
2. **The scheme has 2 components:** PMAY-Urban (PMAY-U) and PMAY-Gramin (PMAY-G).
3. **As of June 2024**, PMAY has sanctioned an impressive 4.21 crore houses, with the Cabinet deciding to assist an additional 3 crore rural and urban households.

Key Features of Pradhan Mantri Awas Yojana (PMAY)

1. **Empowerment of Women:** PMAY mandates that the female head of the family be the owner or co-owner of the house, promoting women's empowerment.
2. **Environmentally Sustainable and Disaster-Resilient Construction:** The scheme emphasizes using eco-friendly and resilient construction methods, ensuring durable and safe houses.
3. **Training and Certification:** Pan-India programs train rural masons to construct quality houses using locally available materials.

PMAY-Urban (PMAY-U): Addressing Urban Housing Needs

Launched in 2015, PMAY-U specifically targets the urban housing shortage for EWS/LIG and Middle-Income Group (MIG) categories, including slum dwellers. By June 2024, PMAY-U had sanctioned 1.18 crore houses, with 83.67 lakh houses already completed. The scheme has witnessed significant progress across various states and Union Territories (UTs) in India.

PMAY-Gramin (PMAY-G): Transforming Rural Housing

1. **PMAY-G, launched in 2016**, aims to provide housing for the poorest segments of rural society. Beneficiaries are selected through a stringent three-stage validation process, ensuring transparency and fairness. Key features of PMAY-G include an increase in the minimum house size, construction of quality houses using local materials and trained masons, and beneficiary choice of house design.
2. As of June 2024, 2.94 crore houses have been sanctioned and 2.62 crore houses completed under PMAY-G. A significant portion of these houses are owned by women or have joint ownership, showcasing the scheme's focus on empowering women. The scheme also targets minority communities, Scheduled Castes (SC), and Scheduled Tribes (ST) to ensure inclusivity.

The Impact of PMAY

PMAY is a monumental scheme that has had a profound impact on the lives of millions of Indians. By providing affordable and quality housing, it has improved the living conditions of countless families and contributed to the overall development of both rural and urban areas. The emphasis on women's ownership, environmental sustainability, and disaster resilience has further strengthened the scheme's impact.

PMAY is not just a housing scheme; it is a symbol of dignity, empowerment, and progress. It represents the government's commitment to providing a better life for all citizens, ensuring that every Indian has a place to call home.



2. Restructuring AB-PMJAY to elevating health budget

The Indian government is considering **doubling** the **beneficiary base** under its flagship Ayushman Bharat health insurance scheme over the next three years.

- a. The proposal aims to cover more than **two-thirds** of the country's population with health cover.

Key Proposals

1. **Increase the beneficiary base:** The government plans to cover all individuals above **70 years** of age, adding around **40-50 million** more beneficiaries to the scheme.
2. **Increase the insurance coverage:** The proposal suggests **doubling** the coverage amount from Rs 5 lakh to Rs 10 lakh per year to cater for **inflation** and provide relief to families in case of **high-cost treatments**.
3. **Estimated additional expenditure:** The proposal would entail an additional expenditure of Rs **12,076 crore** per annum for the exchequer.

Background

1. Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) was launched in 2018 to provide health cover of Rs 5 lakh per family per year for **secondary and tertiary care hospitalization** to **12 crore families**.
2. The scheme aims to achieve **Universal Health Coverage (UHC)** and address the issue of **catastrophic expenditure** on medical treatment, which pushes nearly **6 crore Indians** into **poverty** each year.
3. In the interim Budget 2024, the government increased the allocation for AB-PMJAY to Rs **7,200 crore**, while Rs **646 crore** was allocated for the Ayushman Bharat Health Infrastructure Mission (PM-ABHIM).

NITI Aayog Report

1. The NITI Aayog report titled '**Health Insurance for India's Missing Middle**' (2021) suggested extending the scheme to cover the "**missing middle**" - around **30%** of the population that lacks health insurance.

2. The report highlighted the need for designing a **low-cost comprehensive health insurance** product for the missing middle segment.
3. The missing middle is not a monolith and contains multiple groups across all **expenditure quintiles**, including the **self-employed, informal sector, and formal sector workers**.

Ayushman Bharat-PMJAY

1. Ayushman Bharat is a flagship scheme of the Government of India, launched in 2018 to achieve **Universal Health Coverage (UHC)**.
2. The scheme has two inter-related components: **Health and Wellness Centres (HWCs)** and **Pradhan Mantri Jan Arogya Yojana (PM-JAY)**.
3. PM-JAY is the world's largest health insurance/assurance scheme, fully financed by the government, covering over **12 crore poor and vulnerable families** (approximately **55 crore beneficiaries**).

Key Features of PM-JAY

1. Provides a cover of Rs **5 lakh per family per year** for **secondary and tertiary care hospitalization** across **public and private empanelled hospitals** in India.
2. Covers up to **3 days of pre-hospitalization** and **15 days post-hospitalization expenses**.
3. No restriction on **family size, age, or gender**.
4. All **pre-existing conditions** are covered from day one.
5. Benefits are **portable** across the country.
6. Services include approximately **1,929 procedures** covering all the costs related to treatment, including but not limited to **drugs, supplies, diagnostic services, physician's fees, room charges, surgeon charges, OT and ICU charges**, etc.

Benefits of PM-JAY

1. Helps mitigate **catastrophic expenditure** on medical treatment, which pushes nearly **6 crore Indians** into **poverty** each year.
2. Provides **cashless access** to health care services for the beneficiary at the point of service, that is, the hospital. Covers up to **3 days of pre-hospitalization** and **15 days post-hospitalization expenses**.



Conclusion

The proposed changes to AB-PMJAY aim to increase the **beneficiary base** and **coverage amount**, providing relief to more families and addressing the issue of **catastrophic expenditure** on medical treatment. The move is expected to be announced in the upcoming Union Budget and is seen as a **key priority** for the Modi government in its third term. The restructuring of AB-PMJAY is a significant step towards achieving **Universal Health Coverage (UHC)** and ensuring that healthcare is accessible and affordable for all citizens.

3. National Forensic Infrastructure Enhancement Scheme (NFIES)

1. The scheme is a response to the new criminal laws that mandate **forensic investigation** for offences involving punishment of 7 years or more.
2. The scheme is part of the government's efforts to strengthen **forensic science** in India, which is essential for investigating crimes and ensuring justice.
3. The scheme addresses the challenges faced by forensic science laboratories in India, including **shortage of trained manpower, inadequate infrastructure, and lack of advanced technology**.

Key Points

1. **Cabinet Approval:** The Union Cabinet, chaired by Prime Minister Narendra Modi, has approved the proposal of the Ministry of Home Affairs for the Central Sector Scheme “**National Forensic Infrastructure Enhancement Scheme**” (NFIES).
2. **Financial Outlay:** The scheme has a total financial outlay of **Rs. 2254.43 crore** for the period from 2024-25 to 2028-29.
3. **Components:** The scheme consists of **three components**:
 - a. **Establishment of Campuses of National Forensic Sciences University (NFSU):** The

scheme aims to establish new campuses of NFSU in the country to increase the availability of trained forensic professionals.

- b. **Establishment of Central Forensic Science Laboratories (CFSLs):** The scheme aims to establish new CFSLs in the country to enhance the forensic examination capabilities.

- c. **Enhancement of Existing Infrastructure of Delhi Campus of NFSU:** The scheme aims to upgrade the existing infrastructure of the Delhi campus of NFSU to make it more efficient and effective.

4. **Objective:** The scheme aims to put in place an effective and efficient criminal justice system, based on **scientific** and **timely forensic examination** of evidence.
5. **Need for the Scheme:** The scheme is necessary due to the significant increase in the workload of forensic science laboratories expected with the enactment of new criminal laws, which mandate forensic investigation for offences involving punishment of 7 years or more.
6. **Shortage of Trained Forensic Manpower:** There is a significant **shortage of trained forensic manpower** in Forensic Science Laboratories (FSLs) in the country, which the scheme aims to address.
7. **Benefits:** The establishment of additional off-campus of NFSU and new CFSLs will:
 - a. Address the shortage of trained forensic manpower.
 - b. Alleviate the case load/pendency of forensic laboratories.
 - c. Align with the Government of India's goal of securing a high **conviction rate** of more than 90%.



8. Government's Commitment: The Government of India is committed to putting in place an effective and efficient criminal justice system, based on scientific and timely forensic examination of evidence.

9. Timely and Scientific Forensic Examination: The scheme underscores the importance of high-quality, trained forensic professionals in the **timely and scientific examination** of evidence for an efficient criminal justice process, leveraging the advancements in technology and evolving manifestations and methods of crime.

Importance:

- 1. Criminal Justice System:** The scheme will help to strengthen the criminal justice system in India by providing **timely and scientific forensic examination** of evidence.
- 2. Forensic Science:** The scheme will promote the development of **forensic science** in India, which is critical for investigating crimes and ensuring justice.
- 3. Capacity Building:** The scheme will help to build the capacity of forensic science laboratories and institutions, enabling them to handle a higher workload and provide better services.
- 4. Conviction Rate:** The scheme aims to increase the **conviction rate** in India, which is currently low due to various reasons, including lack of forensic evidence.

4. Saubhagya Scheme: Empowering Households with Electricity

The Meghalaya Lokayukta has issued notifications to former officials of the Meghalaya Energy Corporation Limited (MeECL) over alleged irregularities in implementing the Saubhagya scheme in the state.

About Saubhagya Scheme

- 1. Launch:** Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) was launched by the Government of India in October 2017.
- 2. Objective:** To achieve universal household electrification by providing electricity connections to all un-electrified households in rural areas and all poor households in urban areas across the country.
- 3. Free Provision:** Under the scheme, LED bulbs, wire, holders, switches, and other electrical materials are provided free of cost to BPL families.
- 4. Key Features:**
 - a. Providing last-mile connectivity and electricity connections to all un-electrified households in rural areas.
 - b. Providing Solar Photo Voltaic (SPV)-based standalone systems for un-electrified households in remote and inaccessible villages where grid extension is not feasible or cost-effective.
 - c. Providing last-mile connectivity and electricity connections to all remaining economically poor un-electrified households in urban areas.
 - d. Non-poor urban households are excluded from this scheme.
- 5. Connection Fees:**
 - a. In rural areas, families other than BPL families must pay Rs. 500 for an electricity connection. The amount can be paid in 10 equal installments of Rs. 50 each through monthly bills.
 - b. In urban areas, BPL families receive free power connections.
- 6. Solar Energy Solution:** For rural families where grid supply is not feasible, electricity assemblies are provided through solar energy.
- 7. Nodal Agency:** The Rural Electrification Corporation (REC) has been designated as the nodal agency for the Saubhagya scheme.




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