JULY 2024

KSG
An Institute For **IAS** Exam...

CURRENT CONNECT

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edition of this magazine.

MESSAGE FROM DR. KHAN ....

Dear Students,

After the recent culmination of the annual prelims examination and the subsequent reflection on the results, one needs to refocus and jump back. Just as **life presents challenges and setbacks**, akin to being at one end of a trampoline, it's crucial to remember that these phases can transform potential energy into kinetic energy. This transition propels individuals forward, much like launching toward their goal. Many a times, it becomes challenging to bounce back.

To reboot your system and stay on track, I would like to share the **Three P Formula: Passion, Purpose, and Perseverance**.

After all, it is all within you.

Passion serves as the energy that propels you towards your goals. It fuels your determination and maintains your focus, enabling you to remain undeterred by distractions or external noise. However, it is important to note that passion can be fleeting. It comes and goes, and its intensity may vary. When you find yourself lacking passion, it does not mean you no longer feel excited for your pursuits.

While your goals and aims provide a sense of direction, your **purpose** lies within the core of your aspirations. It is the personal "why" that attracts and drives you. It is a deeply personal connection that aligns you with your aspirations and helps you navigate challenges.

In the pursuit of any goal, **perseverance** plays a pivotal role. It is the quality that keeps you committed and resilient, ensuring you stay the course despite setbacks and obstacles. The ability to persevere differentiates those who succeed from those who falter. Many fail not due to a lack of passion or purpose but because they do not persevere long enough. By embracing the Three P Formula, you can reignite your drive and achieve remarkable success. Passion fuels your determination, purpose provides a personal why, and perseverance ensures you stay the course. **Trust in your abilities, stay committed to your goal, and embrace the challenges.**

My best wishes are always with you.

Stay Blessed!

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GS CONNECT

It gives us immense pleasure to present an innovative approach to mastering current affairs. Current is a passing wind and diverse issues happen at the same time. It is to an extent chaotic. Newspapers, magazines, and various other sources report the chaos per se. With our experience of current affairs, we have tried to give "the current'' a medium to travel. It is the syllabus of the UPSC with its components that are the medium through which the "Current is Passed" to the readers. **Ever since the new syllabus of the UPSC came into existence, the current has been gaining significance both at prelims as well as mains examination.** This book is meant to cover current affairs and related questions arising from those events. We have not only covered the current events for their factual contents but also presented them in such a way that any question asked from that topic gets covered. Moreover, topics are **also "peppered"** with the relevant facts/key concepts that are related to the theme.

It is a collection covering myriad sources yet in a manageable size. To use this book, we recommend you to, master the components of the General Studies (GS) syllabus as broken into rows and columns **(provided on the subsequent page)**. Each cell comprising the portion of GS becomes the connection for the current and every news subsequently covered guides the reader to the address of the syllabus. It is logical to expect that the same issue may be connected to more than one topic of the syllabus. Further, the news also has some additional vistas opened for the readers by adding a box with the title **"PEPPER IT WITH"** where we expect the students to build further around the theme. We are also trying to reach the remotest part of the country with our spirit and zeal of **"Mains Answer Writing''**, which has been admired by students, CSE rank holders, and other scholars. Continuing in line with the effort, we have started **programs like KTP Mains Test Series, Destinaire, Navigator, NEEV, AWSDP plus, KOL, DL& MP, Advance Foundation Course, Weekend Courses as well as Optional Courses (PSIR, Sociology, History, and Geography)**.

Additionally, this month, we are introducing a new section called "**SNAPSHOTS**," offering themes **inspired by** four monthly magazines to provide comprehensive coverage of various topics. We are also providing a **complimentary full-length test** with 100 objective questions. **Scan the QR code** to revise the previous month's current affairs and test yourself.

When it comes to evaluation, we are all together at a different level. We are also reaching every nook and corner with this expertise for the aspirants of CSE. Now you can write a Mains Answer and get it evaluated by our Expert Team and can get Feedback. Drop a mail at **evaluation@ksgindia.com** to register yourself in our race to perfection. Don't wait, it's your golden chance to crack this exam and fulfill your passionate dream.

Team KSG

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1	Indian Culture-Art Forms, Literature and Architecture from ancient to modern times.	Indian constitution- Amendments, acts and bills.	Various measures to boost Indian economy- planning, policies, management	Ethical issues related to family society, education, Corruption etc.	
2	Indian History significant events, personalities, issues and the Freedom Struggle.	Legislative, executive and judicial processes.	Government budgeting and issues related to budget.	Ethics in public and private administration	
3	Post independence issues, National boundary and disputes.	Constitutional, non-constitutional, judicial, quasi-judicial, administrative and other types of bodies.	Agriculture, animal husbandry and transport	Issues	
4	Indian society features, issues, globalization and diversity	Federal structure and local bodies. Their powers and functions.	Food security- measures to boost food security and food processing. Issues related to land- land reforms	Related laws and rules	
5	Women - issues and developments	Government policies and various governance issues like transparency, accountability and – governance	Industries and infrastructure- their growth and investment model	Governance/e-Governance	
6	Urbanization – problems and remedies	Committees and schemes.	Space and technology, IT space, robotics and computer	Ethics in international issues	
7	Distribution of industries and resources – India and world	Non-government issues, self-help groups and role of civil society	Disease, biotechnology and human welfare	Personalities and their teachings	
8	Geophysical phenomena such as earthquakes, Tsunami, Volcanic activity, cyclone etc	Vulnerable sections of our society and social sector issues like Poverty, Hunger, Education, and their initiatives.	Innovations, intellectual property, Awards, POI and other important aspects of S&T	Other important topics	
9		International Relation- India and other countries, various Indian and international agreements, effects of other countries on India and international institutions.	Environment; government initiatives, various judgment, pollution, degradation and conservation efforts		
10			Disaster & Disaster Management		
11			Challenges to internal security, Various Security forces and agencies and their mandate. Cybersecurity; money laundering and its prevention.		

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Contents

POLITY

Panchayati Raj Institutions

News Excerpt:

30 years after the 73rd Constitutional Amendment, Panchayati Raj institutions still leave a lot to be desired.

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About Panchayati Raj Institutions (PRIs):

- The **73rd Constitutional Amendment** granted PRIs a Constitutional status, aiming to fulfil **Article 40** of the Constitution.

> Article 40 is part of the **Directive Principles of State Policy**- It calls for the organization of village Panchayats and the delegation of necessary powers for them to function as self-governing units.

- Panchayats were established as the **third tier of decentralized governance** in India, with a focus on **local economic planning** and **social justice**.
- The Amendment introduced **uniform provisions** for **elections, composition, tenure, and financial status** across the country, with **some exceptions,** such as **tribal areas under Schedule V**, as well as states like **Nagaland, Meghalaya, and Mizoram**.
- The Amendment **mandated certain provisions**:
  - **Three-tier PRI system** at village, block, and district levels;
  - **Direct elections** for a **five-year term**;
  - **30% reservation for women** and proportionate **reservation for Scheduled Castes and Tribes**;
  - Establishment of **State Finance Commissions** and independent **state election commissions**.
- Prior to this Amendment, PRIs had varied legal statuses across different states.

Current Status of PRIs:

- Three decades after this significant change, the devolution of the **three Fs** — **Functions, Functionaries, and Finances** — remains uneven across Indian states.
- Despite a constitutional mandate, the **actual implementation** has been inconsistent.

Devolution Index of PRI:

- The **Union Ministry of Panchayati Raj** launched the **Panchayat Empowerment & Accountability Incentive Scheme (PEAIS)** in **2006-07** to assess the performance of states in empowering PRIs, developing a **Devolution Index (DI)** to measure progress.
- The **objective of PEAIS** was to arrive at a **DI** to assess the extent **to which 29 subjects** on framework, functions, finances, and functionaries were devolved to PRIs.

- The assessment under this scheme was carried out by independent organizations, such as the **National Council for Applied Economic Research (NCAER)** from **2006-07 to 2008-09** and the **Indian Institute of Public Administration (IIPA)** from **2009-10 to 2012-13**.
- However, the results have been **largely disappointing**.
  - A **2015-16 Devolution Report** by the **Tata Institute of Social Sciences** highlighted the gap between policy devolution and actual practice.
  - **Himachal Pradesh ranked 17th among 26 states** in the **Aggregate Index** of Policy adjusted against practice, indicating limited practical devolution despite policy changes.
  - Only a few states, such as **Kerala, Karnataka, Maharashtra, Tamil Nadu, and Gujarat**, have made notable progress.

Provisions at the discretion of the states:

- Matters related to **Functions, Functionaries, and Finances**—detailed from **Article 243A to Article 243G** of the Constitution—are entrusted to the **discretion of the states**.
- The **powers and functions of the Gram Sabha** (GS), which is crucial for grassroots democracy, as well as the **composition of Panchayats** and the **election of their chairpersons**, are **determined by state discretion**.
- State laws also define the **powers, authority, and responsibilities of Panchayats**, enabling them to operate as institutions of local self-government.
- These laws empower Panchayats to prepare plans for **economic development and social justice** and to carry out various **mandatory and discretionary functions** within their jurisdiction.
- Additionally, **state laws** are expected **to grant Panchayats the authority to implement schemes** related to **economic development and social justice**, particularly in relation to the **29 subjects listed in Schedule XI** of the Constitution, which cover matters of local concern affecting people's lives.

> **Himachal Pradesh: A Case Study**
> - The **Himachal Pradesh Panchayati Raj Act 1994** was enacted to align state laws with the **73rd Amendment**.
> - Yet, **after 30 years**, many Gram Panchayats (GPs) lack dedicated **Panchayat secretaries** and **technical assistants**.

Financial Dependency

- PRIs typically implement central or state government schemes in a limited capacity, **reliant on grants from the Central Finance Commission (CFC)**, **State Finance Commission (SFC)**, their own revenue sources, and other funding avenues.

- However, their **financial independence is minimal**, as their own source revenue is low.
- The **15th CFC provided untied grants to PRIs**, but even these are often restricted by state-imposed conditions.
- **Most funds are earmarked for specific tasks** without considering local contexts, such as the **Swachh Bharat Mission** grant for toilets, which is insufficient in remote areas due to high transportation costs.

Lack of Awareness:

- Despite training programs, many **PRI representatives** lack awareness of their powers and functions. The **Institute of Chartered Accountants of India** and the **Comptroller and Auditor General of India** have developed **training courses for PRI accountants**, yet the **Skill India program** has not capitalized on this to create quality accountants for PRIs.

Way Forward:

- There is a pressing **need to sensitize all stakeholders**, including **elected representatives**, **line departments**, and **village residents**, about the role of PRIs as local self-government institutions, in line with the 73rd Constitutional Amendment.

> **PEPPER IT WITH**
>
> Directive Principles of State Policy, PRI, Constitutional Amendment, NCAER

- Currently, **PRIs are subordinate to state bureaucracy and politicians**, hindering the realization of **participatory governance, decentralized planning,** and **grassroots democracy**. This issue **needs to be fixed** in order to properly implement PRI.

Exit Polls

News Excerpt:

India's **wildly inaccurate exit polls** predicted a landslide Lok Sabha election victory for the ruling party sparked dramatic public apologies from polling companies following the result.

More about the news:

- Almost all of the exit polls released on June 1, forecasted the BJP and its allies would win more than 350 seats in the Lower House of the Parliament. The final results put the **coalition's tally at just 293 seats**.
- This is **not the first time exit polls have gotten it wrong**. In 2014 and 2016, they underestimated NDA's numbers.
- Experts have raised questions about the inaccuracy of exit polls, suggesting that either the voters lied to the pollsters or the polls employed flawed methodologies.

What are exit polls?

- Exit polls are surveys **conducted immediately after voters leave the polling stations**. Pollsters use probability and statistics to forecast election results based on the exit poll data.
- Exit polls can **provide insights into voter behavior and early projections of election outcomes**. It also analyzes how different socio-economic groups voted by providing demographic breakdowns.
- This is to make sure that the **polls do not influence people while they are still voting,** but also still allows for immediate analysis and discussion once the process is complete.

Parameter	Opinion Poll	Exit Poll
Timing	Conducted before the actual voting day	Conducted on the same day as voting or after.
Respondents	Survey respondents are potential voters.	Survey respondents are actual voters.
Methodology	Conducted through phone, online, or in-person interviews.	Conducted through in-person interviews at polling stations.
Objective	Predicts voter preferences before elections	Predicts election outcomes immediately after voting.
Margin of Error	Generally higher due to uncertainty of voter turnout and last-minute changes.	Lower, as it involves actual voter behavior.
Reliability	Prone to changes in voter preferences leading up to election day.	More reliable in predicting actual election outcomes.
Purpose	Provides insights into public opinion and potential voting trends.	Offers immediate indications of election results.

Exit poll regulations in India

- **Section 126A of the Representation of the People Act, 1951** states unequivocally, "prohibits conduct of Exit poll and dissemination of their results by means of print or electronic media during the period mentioned therein, i.e. between the hour fixed for commencement of poll in the first phase and half an hour after the time fixed for close of poll for the last phase in all the States."
- The **Election Commission is responsible for regulating the use of exit polls**. According to the ECI, exit polls can only be conducted during a specific period. **This period starts from the time when the polling booths close and ends 30 minutes after the last booth has closed.** Exit polls cannot be conducted during the voting period or on polling day.

Factors Contributing to the Rise of Exit Polls in India:

- The unpredictability of Indian elections increased in the 1980s, along with the **rise of regional politics**.
- Despite Congress's historic win in 1984, their mandate was reversed by 1989. **This unpredictability made exit polls more popular,** as the Indian voter became a mystery to the political class.

- The **proliferation of electronic media** in the 1990s further popularized election surveys and exit polls in India.
- Exit polls are **primarily for public consumption and media interest,** with minimal direct impact on the election process itself.

Political Affiliations of Judges

News Excerpt:

A retiring judge of the Calcutta High Court (HC) openly acknowledged his longstanding membership to a right-wing volunteer organization during his farewell speech.

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Appointment of judges:

Pre collegium system:	During collegium system:
• Prior to the 1970s, the political ideology of judicial candidates was not significant for the judicial appointments process. • However, this changed following setbacks faced by the Indira Gandhi government in the Supreme Court (SC) during cases such as **Golak Nath, bank nationalization, and privy purses.**	• Since the **1990s**, the appointment process for judges in the SC and HCs has been governed by the **Collegium system,** in which judges participate in selecting new judges. • In contemporary India, there exists a presumption of judicial neutrality, with judges generally expected to refrain from overt political affiliations. • However, a controversy arose with the **appointment of Lekshmana Chandra Victoria Gowri** as an **additional judge of the Madras HC**, owing to her prior role as the national general secretary of the BJP women's wing. • The **SC asserted** that the **judiciary should refrain from delving into questions of the suitability of judicial appointments.**

Global Picture:

United States: A highly Political Judiciary:

- The American system places **judicial appointments in the hands of politicians.** The **President appoints judges** to the higher judiciary, and the appointments are confirmed by the United States Senate.
- However, **Canon 5C of the American Bar Association Model Code of Judicial Conduct, 1990 prohibits judges from engaging in political activity** except "on behalf of measures to improve the law, the legal system or the administration of justice".
- **Canon 4 of the 2007** model code provides that a **"judge shall not engage in political activity that is inconsistent with the independence, integrity, or impartiality of the judiciary**".

United Kingdom: Selection on Merit:

- The system relies on senior members of the judiciary and others who are acquainted with the judiciary to choose judges, whose "selection must be on merit".
- The UK judiciary's **"Guide to Judicial Conduct"** states: "**Any judicial office holder who is known to hold strong views on topics relevant to a case, by reason of public statements or other expression of opinion, should consider whether it would be appropriate to hear the case irrespective of whether the matter is raised by the parties.** The risk will arise if a judicial office holder has taken part publicly in a controversial or political discussion."
- **Judges** in the UK **are expected to avoid any appearance of political ties,** e.g., by attending political gatherings, political fundraising events, contributing to political parties, or speaking at political fora.
- Judges are p**rohibited from running for Parliament** under th**e House of Commons (Disqualification) Act, 1975**.

Singapore:

- The Singapore Supreme Court's Judicial Code of Conduct says "that an independent and competent judiciary must interpret and apply the laws of the country and do justice **without any fear or favour, affection or ill-will to the best of its ability."**
- Moreover, the judges should conscientiously **ensure that the level of their associations with members of the Legislature and/or the Executive,** if any, **do not give rise to any doubts about their independence** or any unintended appearance that the Judiciary may be beholden to others in any way by such associations.
- Judges should **not be members of clubs or associations** having "any real or ostensible **links with any political party**."

Australia:

- **Australia's Guide to Judicial Conduct** states that it is prohibited to give the appearance of continuing ties by

attending political gatherings, political fundraising events, or making contributions to a political party.

● Moreover, the code says that if a judge is known to hold strong views on topics relevant to issues in the case because of public statements or other expressions of opinion, the possible disqualification of the judge may have to be addressed, whether or not the matter is raised by the parties.

Ethical concerns related to Judges joining politics:

Judicial Impartiality:

● Judges should be neutral and decide cases based only on facts and laws, not personal biases or outside pressures.

● A judge's decision to join a political party after being in controversies may make people doubt if he can be fair in cases involving politics.

● This makes people lose trust in the court's ability to give fair justice.

Judicial Independence:

● It's important for judges to be free from outside influence, especially from politics, to keep the law and democracy strong.

● If a judge joins a political party right after leaving the bench, it makes people wonder if politics affected their past decisions.

● This raises doubts about whether the court can work without being influenced by politics.

Conflict of Interest:

● Judges must avoid situations where they might have conflicting interests and keep the legal process fair.

● When a judge gets involved in politics after making controversial rulings, it raises concerns about fairness.

Public Trust and Confidence:

● The public needs to trust the courts to work effectively in society.

● If judges' actions make people doubt their fairness and honesty, it harms trust in the whole justice system.

● When a judge moves from the bench to politics, people might start to question if the courts can remain independent and fair.

Way Forward:

● **Improving Judicial Ethics and Standards:**
  ○ Making the rules and standards for judges stricter, both while they're serving and after they retire, can help keep the judiciary fair and honest.

PEPPER IT WITH

High Court, Collegium system, Appointment of Judges, Indian Judiciary

○ Judges should focus more on earning the public's trust in the court system rather than their own personal interests.

● **Increasing Transparency:**
  ○ We need to be more open about how we pick retired judges for new jobs after they leave the bench.
  ○ This means telling people how we choose them, letting everyone apply for these jobs equally, and explaining why each person gets picked.

National Coalition Government

News Excerpt:

In the recently concluded general elections, voters did not give the Bharatiya Janata Party (BJP) a complete majority. The BJP, with its 240 Lok Sabha seats, formed the government along with its coalition partners, the National Democratic Alliance (NDA).

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● While some say that coalition governments generate more inclusive policies, others believe that coalitions impose constraints on policymaking.

Background of National Coalition Government:

● **1977-1979: India's first coalition government**
  ○ After the Congress party's defeat in the 1977 elections, following the Emergency imposed by Indira Gandhi, a diverse alliance called the Janata Party formed the country's first coalition government.
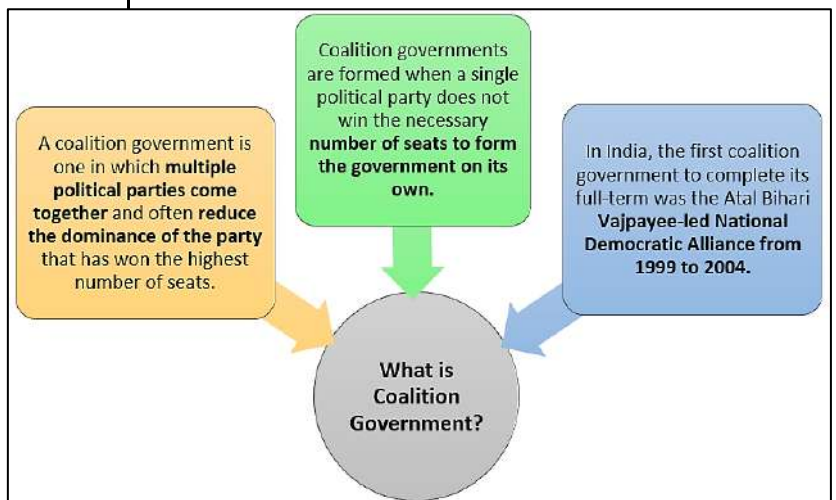
● Morarji Desai became the Prime Minister of this coalition government.

● **1999-2004:**
  ○ The NDA coalition led by Vajpayee won the 1999 elections and completed its full term.

● **2004-2014: The United Progressive Alliance (UPA)**
  ○ The Congress party, led by Sonia Gandhi, formed the UPA coalition and chose **Manmohan Singh as prime minister**.

○ The UPA alliance was re-elected in 2009 and ruled until 2014, with the Congress as the head of the coalition without a majority on its own.

● **2019 Election Victory**
  ○ In the 2019 Indian general elections, **the National Democratic Alliance (NDA), led by the Bharatiya Janata Party (BJP)** under Prime Minister Narendra Modi, secured a historic mandate.
  ○ The BJP won 303 seats on its own but still relied on its allies, including the Shiv Sena and Janata Dal (United) (JDU), to form the coalition government.

● **2024 LS Election and Coalition**
  ○ In the most recent election, the NDA, once again led by the BJP, won a third consecutive term.
  ○ This time, the coalition included regional parties like **the JDU and the Telugu Desam Party (TDP**), highlighting the BJP's continued strategy of forming alliances with regional entities to maintain a broad-based support system across India.

Advantages of Coalition Government:

● **Promotion of Federalism**
  ○ Coalition governments promote federalism by recognizing and accommodating the **diverse interests of various states and regions**. This leads to policies that are more tailored to **regional needs, fostering a sense of inclusion and participation among different states.**
  ○ The inclusion of regional parties like the Telugu Desam Party (TDP) in the NDA helps ensure that the specific interests of states like Andhra Pradesh are considered at the national level.

● **Plurality and Representation of Diverse Views**
  ○ Coalitions bring in a **plurality of views and can be more representative of the country's diversity.**
  ○ The inclusion of regional parties like the **Shiv Sena and the Janata Dal (United)** in the NDA highlights how coalitions can incorporate a wide range of perspectives, ensuring that various **regional and local interests are represented at the national level.**

● **Accommodation of Regional Interests**
  ○ **Regional parties** representing different states and interests can be accommodated in coalition governments, ensuring greater representation.
  ○ This inclusivity helps address regional issues more effectively, as seen in the NDA and UPA governments, which included **multiple regional parties addressing local concerns within the national policy framework.**

● **Deliberation and Moderation of Policies**
  ○ Coalitions can foster more deliberation and act as a check on radical policies.
  ○ **The presence of multiple parties with varying ideologies** ensures thorough debate and consideration before implementing significant policies, potentially preventing drastic measures like **demonetization that might face greater scrutiny in a coalition setup.**

● **Proportional Representation for Smaller Parties**
  ○ Coalition governments provide an avenue for smaller parties to have a say in governance proportionate to their strength.
  ○ This proportional representation ensures that **even smaller political entities can influence policy decisions and governance, contributing to a more balanced and inclusive political environment.**

Challenges of Coalition Government:

● **Lack of Coherent Policy Agendas**
  ○ Coalitions of convenience, without **ideological coherence, tend to lack coherent policy agendas and can be divided from within.**
  ○ For instance, the Janata Party government (1977-1979) splintered due to ideological differences among its diverse alliance members, leading to its collapse after only two years in power.

● **Increased Likelihood of Corruption and Overspending**
  ○ Coalition governments are more likely to be **corrupt and overspend to satisfy the demands of various coalition partners.**
  ○ This was evident in the early coalition governments like the Janata Party, where internal divisions and power struggles led to inefficiency and instability, ultimately causing the government to fall apart.

● **Difficulty in Agreeing on a Common Minimum Programme**
  ○ It can be challenging for coalition partners to agree on **a common minimum programme,** as their primary goal is often just to keep the incumbent party out of power.
  ○ The National Front coalition under VP Singh in 1989, supported by the BJP, fell apart when the BJP withdrew its support due to ideological differences and specific issues like the Ram Temple movement.

● **Prioritization of 'Club Goods' Over Broader Public Goods**

> **PEPPER IT WITH**
> Coalition government, Election commission, National and State parties, Anti-defection

  ○ Regional parties in coalitions may prioritize the distribution of **'club goods' (benefits for specific communities they represent) over broader public goods spending.**
  ○ For example, the United Front government (1996-1998) faced challenges in maintaining a unified policy direction due to the varied interests of its regional partners, leading to its eventual downfall.

Related:

- President Droupadi Murmu had accepted advice from the Cabinet to **dissolve the 17th Lok Sabha**.
- The President signed the Order dissolving the 17th Lok Sabha in exercise of the powers conferred upon her by **Sub-clause (b) of Clause (2) of Article 85 of the Constitution.**
- Earlier, the Prime Minister met the President at the Rashtrapati Bhavan and **tendered his resignation along with the Union Council of Ministers.**
- The President accepted the resignation and asked the Prime Minister and the Union Council of Ministers to **continue in office till the new Government is formed.**

Why can accused persons in prison contest polls but not vote?

News Excerpt:

Section 62 of the Representation of People Act, 1951 (RP Act) provides a series of restrictions on the **right to vote**.

The legal status of the right to vote and the right to be elected:

- The right to vote and the right to stand for election are considered **"statutory rights."**
- In **1975**, the Supreme Court's decision in **Indira Gandhi v Raj Narain** established that **free and fair elections are integral to the Constitution of India**'s 'basic structure' and that any laws or policies contradicting this principle could be invalidated.
- While free and fair elections hold the highest constitutional significance, the **Supreme Court has differentiated** between the **status of the right to vote and to be elected**.
- For instance, in the **2006 case of Kuldip Nayar v. Union of India**, a five-judge constitution Bench ruled that the **right to vote, or the right to elect, is "pure and simple, a statutory right."** This implies that **voting is not a fundamental right** and can be subject to statutory regulations.
- Similarly, the **right to stand for election was also deemed a statutory right** by the Bench, affirming that laws enacted by Parliament could govern both of these statutory rights.

Bar against contesting elections after conviction:

- **Section 8 of the Representation of the People Act, 1951 (RP Act)** deals with **"Disqualification on conviction for certain offences."** (A person convicted of any offence and sentenced to imprisonment for not less than two years)

- If an individual is convicted of any of the offences listed in this provision, **they are disqualified from contesting elections to Parliament** or **state legislatures** starting from the date of their conviction.
- Additionally, **they face a further six-year disqualification** from participating in elections, **starting from the date of their release.**
  - This disqualification **applies only after a person has been convicted** and **does not extend to those who have merely been charged with criminal offences.**

Recent developments in criminal cases against MPs and MLAs:

- Recently, **Section 8 of the RPA, 1951** has faced significant legal challenges in the Supreme Court.
- In **2011, the Public Interest Foundation** petitioned the court, arguing that individuals with criminal charges framed against them or those who provide false affidavits regarding their criminal history should also be disqualified.
- However, a five-judge bench unanimously ruled that **only the legislature could amend the RP Act to bring about such changes.**
- In **2016**, a petition was filed seeking permanent disqualification for convicted individuals.
  - This case is ongoing. In November 2023, the Supreme Court, acknowledging delays in criminal cases involving MPs and MLAs, directed the Chief Justices of all High Courts to initiate a suo motu case titled "**In Re: Designated Courts for MPs/MLAs.**"
  - The purpose was to issue directives for the expedited and effective disposal of these cases.
  - However, as of April 2024, a report submitted to the court indicates that 4,472 such cases remain pending.

Exceptions to disqualification under RPA:

- The **Representation of the People Act, 1951 (RP Act)** provides certain exceptions for individuals **facing disqualification from contesting elections.**
- Firstly, the **Election Commission of India (ECI)** has the authority under **Section 11 of the RP Act to "remove" or "reduce"** the period of disqualification.
- This power was **exercised in 2019** when the ECI reduced the disqualification period for **Sikkim Chief Minister Prem Singh Tamang,** who had been released after serving a one-year prison sentence for misappropriating funds.
- Another exception arises when a **disqualified MP or MLA appeals their conviction to a higher court and obtains a stay on their conviction.**
- In 2019, the Supreme Court ruled that **once a conviction is stayed,** the **disqualification stemming from the conviction cannot take effect.**

- However, even with these exceptions, courts may not always grant relief.
  - For instance, in **2020, former BSP MP Dhananjay Singh** sought a stay on his seven-year sentence for kidnapping to enable him to contest in Lok Sabha elections.
  - While the court granted him bail, it declined to stay the conviction, emphasising the importance of maintaining integrity in politics.

Why an individual behind bars cannot vote in an election?

- **Representation of the People Act of 1951** imposes several **restrictions on the right to vote.**
  - **Section 62 (5) of the Act** states that "**No person shall vote at any election if he is confined in a prison, whether under a sentence of imprisonment or transportation or otherwise or is in the lawful custody of the police.**"
- This provision **effectively prohibits individuals with criminal charges against them from voting unless they have been released on bail or acquitted**.
- **There is also an exception for those in preventive detention.**

Judicial review of the Section 62(5):

- In 1997, the Supreme Court rejected a challenge to Section 62(5) in the case of **Anukul Chandra Pradhan, Advocate, Supreme Court v. Union of India.**
- The **petitioners contended that the rule violated the right to equality** by **denying voting rights** to **undertrials** and those detained for inability to furnish bail while allowing those released on bail to vote.
- The court **dismissed this argument** on several grounds.
  - Firstly, it reiterated that the **right to vote is a statutory right** and can be **subject to statutory limitations.**
  - Secondly, it cited **resource constraints,** including the need for **infrastructure and police deployment,** as reasons for upholding the restriction.
  - Thirdly, it argued that **individuals in prison, due to their conduct, cannot claim equal freedom of movement, speech, and expression.**
  - Finally, it asserted that restrictions on **prisoners' voting rights** are **reasonable** as they aim to keep individuals with criminal backgrounds away from the electoral process.
- This decision has been cited by both the **Supreme Court (in 2023)** and the **Delhi High Court (in 2020)** to dismiss pleas seeking voting rights for prisoners.

Way Forward:

- Despite a blanket ban, we can adapt to some global practices, such as allowing undertrials or convicts on a case-by-case basis.
- Granting prisoners voting rights would compel policymakers to address prison conditions and prisoner's needs.

> **PEPPER IT WITH**
> RPA, Right to vote, Judicial Review, Disqualification of MPs & MLAs, ECI, Prisoners right

Proportional Representation

News Excerpt:

The results of the Lok Sabha elections show that the ruling **National Democratic Alliance (NDA)** has won **293** seats with a **43.3%** vote share, while the Opposition bloc **INDIA (including Trinamool Congress**) has secured **234** seats with a **41.6%** vote share.

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What is proportional representation?

- This system ensures that all parties are represented **based on their share of votes received**.
- The most commonly used form of **PR is the party list system**, where voters cast their vote for a party rather than an individual candidate, and parties are allocated seats in proportion to their overall vote share.
- There is usually a **minimum threshold of 3-5% of the total votes for a party to be eligible to secure a seat under the PR system.**
- The PR system could have resulted in better representation of parties according to their **vote share.**

If the PR system is applied for the 2024 election

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**

What are some international practices?

Presidential democracies like **Brazil and Argentina** have the party list PR system.	**Parliamentary democracies** like South Africa, the Netherlands, Belgium, and Spain also follow the party list PR system.	**New Zealand and Germany** on the other hand follow the **Mixed Member Proportional Representation (MMPR) System.**

Criticism of Proportional Representation

- **The main criticism against the PR system** is that it could potentially result in instability as no party/coalition may obtain a majority to form the government in our **parliamentary democracy**.

- The PR System may also result in the proliferation of political parties based on **regional, caste, religious, and linguistic considerations**, which may promote casteist or communal voting patterns.
- However, the **second criticism** is not well founded since the present FPTP system has also not **inhibited the formation of parties based on caste or communal considerations.**

Solution for the Criticism:

- To address the **potential proliferation of caste—or communal-based parties under the Proportional Representation (PR) system,** a **minimum threshold for votes** polled can be specified to make a party eligible for seats in legislative houses.
- By setting a **minimum vote share requirement, such as 3-5%** of the total votes, parties with narrow caste or communal agendas that fail to garner substantial support from the broader electorate would not be able to secure representation in the legislative bodies.
- The system of mixed member proportional representation **(MMPR) can be considered to address potential instability while maintaining proportional representation**.
- Under the MMPR system, one candidate is elected through the **FPTP system** from each territorial constituency, while additional seats are allocated to parties based on their overall percentage of votes received.

Way forward:

> **PEPPER IT WITH**
> Proportional representation, FPTP system, MMPR

- The **Law Commission, in its 170th report (1999**), recommended introducing the **Mixed Member Proportional Representation (MMPR)** system on an experimental basis.
  - It suggested **filling 25%** of seats through a **PR system** by increasing the strength of the Lok Sabha.
- While it is recommended **that the entire nation be considered as one unit for PR based on vote share,** the appropriate approach would be to consider it at every state/UT level, given **India's federal policy.**
- The **delimitation exercise** for increasing the number of seats is due based on the **first Census after 2026.**
- The population explosion has been uneven among various regions, and determining Lok Sabha seats solely based on population may go against **federal principles** and lead to disenchantment in certain states.
- In the event of increasing seats **during the delimitation exercise, the MMPR system may be considered** for incremental seats or at least 25% of the total seats to be filled from each State/UT.
- This could assuage the **apprehension of southern, northeastern, and smaller northern states** by limiting the domination of larger states with increased seats solely through the FPTP system.

What is the First Past the Post System (FPTP)?

- We follow the **FPTP system for elections to the Lok Sabha and Legislative Assemblies** in India.
- Under FPTP, the candidate **who polls more votes than any other in a constituency is declared elected.**
- This system is followed in democracies like the **U.S., U.K., and Canada.**
- **Advantages of the FPTP system:**
  - The **primary advantage of FPTP** is that it is simple and the most feasible method in a large country like India.
  - **Secondly, FPTP provides greater stability** to the executive in our parliamentary democracy because the ruling party/coalition can enjoy a majority in the Lok Sabha/Legislative Assembly without obtaining a majority of the votes (more than 50%) across constituencies.
- **Issues with the FPTP system:**
  - The issue with **FPTP** is that it may result in over or under representation of political parties when compared to their vote share.
  - In the first three elections after independence, the Congress party won close to 75% of seats in the then Lok Sabha with a 45-47% vote share.

Personality Rights

News Excerpt:

A famous Hollywood actor, accused **OpenAI** for using her voice, despite rejecting the licensing requests from the company. It raises the question of infringing celebrities' personality rights.

Background:

- OpenAI launched its latest AI model called **GPT-4o ("o" for "omni")** which introduced voice mode, letting the users have voice conversation with the AI chatbot. It includes choosing voices from five different kinds.

What are personality rights?

- Personality rights or publicity rights are a subset of **"celebrity rights"** claimed by celebrities.
- The **name, voice, signature, images,** or any other **feature easily identified by the public as markers of a celebrity's personality** lie at the heart of personality rights. These could include poses, mannerisms, or any other distinct aspect of their public persona.
- Celebrities sometimes register aspects of their personalities as trademarks to use them commercially. **For example**, footballer **Gareth Bale** trademarked the heart sign he made with his hands while celebrating a goal.

- The idea behind such rights is that **only the creator or owner of the unique features can gain commercial benefit from them.**

Cases of Personality Rights in India:

- The Delhi High Court, while relying on its judgment **D.M. Entertainment Pvt. Ltd. v. Baby Gift House,** protected the personality and publicity rights of **Jackie Shroff** while restraining various e-commerce stores, AI chatbots, etc. from misusing the actor's name, image, voice, and likeness without his consent.

- In a case involving **Anil Kapoor**, the Delhi HC **granted an ex parte**, **omnibus injunction** restraining 16 entities from using the **actor's name, likeness, and image** using technological tools like **AI, face morphing, and GIFs** for commercial purposes.

  ○ An **omnibus injunction** is granted against any unauthorized use, including against persons not mentioned in the plea.

Way forward:

- **Enact Specific Legislation:** India should develop dedicated legislation that explicitly addresses personality rights, covering aspects such as name, voice, image, and likeness.

PEPPER IT WITH

OpenAI, personality rights, omnibus injunction, Generative AI

- **Regular Review and Updates:** The legislation should be subject to regular review and updates to ensure it remains effective and relevant in the face of evolving technologies and societal changes.

- **Enforcement Mechanisms:** Implement effective enforcement mechanisms to ensure compliance with the new legislation and provide recourse for individuals whose personality rights have been violated.

SOCIAL ISSUES

Kerala introduces gender-neutral textbooks

News Excerpt:
The Kerala government has introduced updated school textbooks, aiming to instill the concept of a gender-neutral society in young minds.

More about the news:

- Gender-neutral textbooks are one among the many changes introduced by the **Kerala government in school textbooks,** as **they aim to shatter patriarchal gender norms.**

- The curriculum encompasses teachings on **POCSO rules, democratic values, secularism, and scientific thinking.**

- The changes are part of the Kerala government's **proposed reforms in 2022** to **promote gender awareness, gender neutrality,** and **gender justice** in the education sector.

What are some of the changes introduced?

- **Pictorial representations** show **fathers/men involved in cooking** and kitchen chores, such as **grating coconut and cooking snacks for their daughters.**

- The textbook also illustrates **three girls playing football,** a game conventionally played by men.

- The social science textbook for Class 5 tells the **story of Neenu, a girl with a disability** who **uses a wheelchair,** portraying her as empowered and not discriminated against.

Objectives of the gender-neutral textbooks:

- They **aim to introduce concepts of gender neutrality** and **equality at a young age** to impact the thought processes of children.

- The new content conveys the **message that cooking and household duties** are the **collective responsibility of both fathers and mothers.**

- They also convey that **children can aspire to any career,** regardless of gender.

- Questions **initiate discussions** on unpaid labour at home and conventional gender roles that need to change.

- The portrayal of Neenu aims to break **attitudinal barriers and stigma around disabilities**, sending a message of an accessible and disability-friendly environment for them.

Significance of the gender-neutral textbooks:

- **They sensitize language and conversations** by using gender-neutral pronouns like "they/them" instead of "he/she" and portraying characters beyond conventional gender norms (e.g., a **girl wanting to be a fighter pilot).**
- They **help widen children's horizons** and teach them to respect and accept people across the gender spectrum.

Gender Neutrality beyond-textbooks:

- In addition to textbook revisions, **several state-run schools** in Kerala have **introduced gender-neutral uniforms,** marking a departure from the traditional dichotomy in school attire.
  - However**, schools in Kerala have embraced a more inclusive approach, adopting uniforms consisting of knee-length pants and shirts for all students.**
- Furthermore, in a landmark move, the **state child rights panel** directed schools to **phase out single-gender institutions, promoting co-education.**
- Additionally**, efforts to replace traditional honorifics like 'sir' and 'madam'** with the universal term **'teacher'** have been explored, albeit with varying degrees of implementation.

Way Forward:

- **Teacher Training:** Implement professional development programs to equip educators with the skills and knowledge to teach gender-neutral content effectively.

> **PEPPER IT WITH:**
> Gender Sereotyping, Gender Equality, Inclusive Growth, SDG-5

- **Community Engagement:** Conduct workshops and seminars to educate parents and the wider community about the importance of gender equality and inclusivity in education.
- **Monitoring and Evaluation:** Establish mechanisms to collect and analyze feedback from students, teachers, and parents to assess the impact of gender-neutral textbooks and policies.
- **Inclusive School Policies:** Adopt policies that create safe spaces, establish anti-bullying programs, and provide access to gender-neutral facilities.
- **Inclusive Representation in Media and Resources:** Ensure educational materials reflect diverse and inclusive gender representations.
- **National Integration:** Advocate for adopting gender-neutral education policies at the national level, using Kerala as a model.
- **Long-Term Commitment:** Secure funding, political support, and sustained efforts to maintain momentum and achieve gender equality in education.

4/5th of medical colleges fails minimum standards

News Excerpt:

During the inspection of several medical schools, it was found that nearly **80% of Indian medical colleges** do not meet even the **minimum criteria** laid down by the medical education regulator **National Medical Commission (NMC).**

More about the News:

- The **inspection of medical colleges** is a crucial activity for ensuring and enhancing the **quality of medical education** in India.
- National Medical Commission (NMC) found **absenteeism of faculties, inadequate and poor infrastructure, and student grievances** on issues such as ragging, inadequate hostels, poor student-teacher relationship.
- There are about **700 government** and **private medical schools** approved by NMC that provide courses such as MBBS, MD/MS, and diplomas at the UG & PG levels.

New regulations:

- Last year, the NMC issued a new regulation called the **Maintenance of Minimum Standards of Medical Education Regulations (MSMER), 2023** under which

Maintenance of Standards of Medical Education Regulations 2023

The required conditions prescribed by NMC for evaluation will include the following process:

- Verification of Physical Infrastructure.
- Availability of Qualified Faculty for Actual Teaching and Research.
- Availability of Adequate Clinical Material.
- Laboratory Investigations.
- Radiological Investigations and Other Relevant Investigations;
- Assessment of Teaching Methodology Adopted.
- Methods and Modes of Assessment of Students.
- Methods and Modes of Grading of Students.
- Review of Feedback from Students.
- Other Parameters as Mentioned by Respective Boards Or NMC.

colleges are supposed to give self-declaration and attendance of faculties.

- **UG or PG medical colleges** have to meet the requirements for the board to give a **renewal certificate** for the continuation of the courses and admission of MBBS students for the next coming academic year.

Penalties for Non-Compliance:

- NMC can impose **penalties ranging from Rs10 lakh to Rs50 lakh**, which may even go **up to Rs1 crore** for **non-compliance of minimum criteria**.
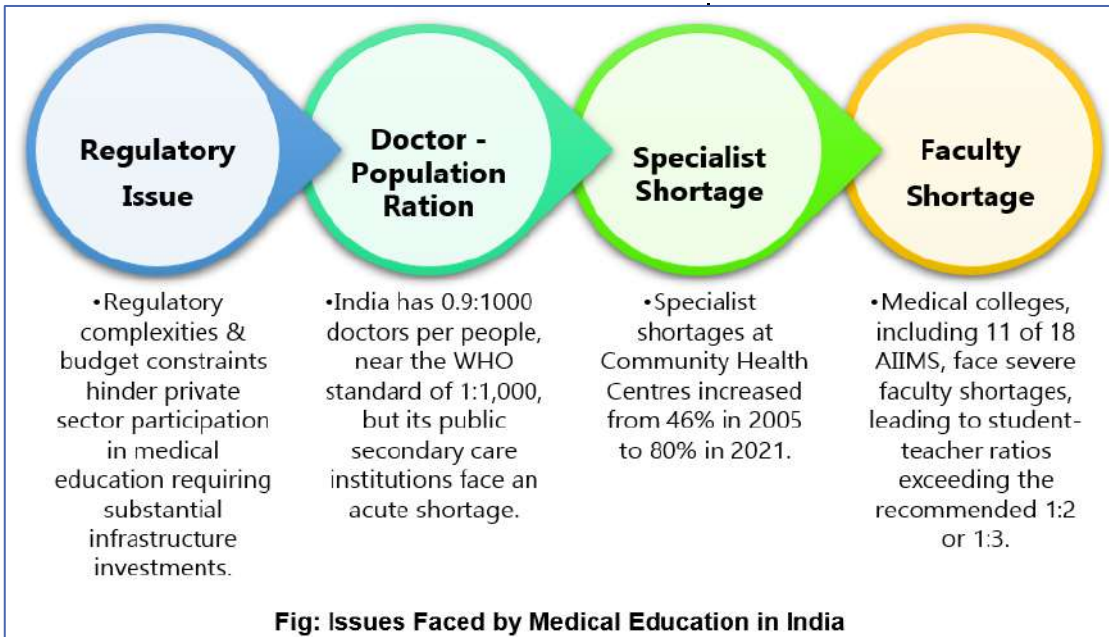
Fig: Issues Faced by Medical Education in India

Regulatory Issue
- Regulatory complexities & budget constraints hinder private sector participation in medical education requiring substantial infrastructure investments.

Doctor - Population Ration
- India has 0.9:1000 doctors per people, near the WHO standard of 1:1,000, but its public secondary care institutions face an acute shortage.

Specialist Shortage
- Specialist shortages at Community Health Centres increased from 46% in 2005 to 80% in 2021.

Faculty Shortage
- Medical colleges, including 11 of 18 AIIMS, face severe faculty shortages, leading to student-teacher ratios exceeding the recommended 1:2 or 1:3.

PEPPER IT WITH:
National Medical Commission, National Health Policy, Reforms for Medical Education in India.

- **Ensuring Availability of Infrastructure and Faculty:** Efforts should be made to ensure the availability of adequate infrastructur e, including well-equipped facilities and a sufficient number of qualified teaching faculty in medical colleges.

- **If these colleges do not improve** on these parameters, the regulator may reduce **the number of seats in these colleges**.

Measures Taken by Institutions:
- Since last year, all medical colleges have been strictly mandated to implement the **Aadhaar Enabled Biometric Attendance System** (AEBAS) to keep a tab on the attendance of faculty & students.
- To make the inspection transparent and free from bias, NMC engages **third-party assessors** to examine the deficiencies.

Medical Education Expansion in India:
- India has **added 225 new medical colleges** in the last 5 years (from 2018-19 to 2023-24).
- The total **number of medical colleges** increased from 479 in 2017-18 to 704 in 2023-24 **(47% increase).**
- **Number of MBBS seats** grew from 67,025 in 2017-18 to 107,950 in 2023-24 (**61% increase**).
- The number of **postgraduate medical seats** in the country **doubled** from 25,850 in 2015-16 to 52,935 in 2023-24.

Reasons for Vacancies:
- **Complex hiring processes and administrative issues** are cited as the main reasons for these high vacancy rates in teaching positions.
- There is also the **opportunity cost of taking up a teaching role compared to practising as a doctor**, which often discourages medical professionals from transitioning to teaching roles in medical colleges.

Way Forward:
- **Increased Investment:** There is a need for increased investment in medical education infrastructure, faculty recruitment, and retention to improve the quality of medical education.

- **Increased Private Sector Participation:** Encouraging increased participation from the private sector, especially in postgraduate medical education and specialist training, which requires high investments in infrastructure.
- **Focus on Specialist Training**: The focus on producing more specialists is increasing, as there is an acute shortage of specialists in secondary care public health institutions, particularly for non-communicable diseases.
- **Improving Student-Teacher Ratios:** Addressing the issue of high student-teacher ratios, which exceed the recommended norms, by increasing the number of teaching faculty and potentially limiting student intake.
- **Addressing Administrative and Hiring Challenges:** Simplifying administrative processes and addressing complexities in hiring procedures to reduce faculty vacancies in medical colleges.
- **Incentives for Rural Service:** Providing incentives and addressing concerns related to quality of life and professional networks to encourage doctors to practice in rural areas, addressing the urban-rural imbalance in healthcare delivery.

Investing in breastfeeding efforts can help save environment

News Excerpt:

Global health researchers propose to recognize that **women contribute to sustainable food production**, and **breastfeeding infrastructures** deserve to be invested in as **'carbon offsets'.**

Breast Milk vs Milk formula food:
- Commercial milk formula food is part of the **multibillion-dollar baby food industry** and is linked to **poor child and maternal health.**

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○ It generates around **11-14 kilograms of greenhouse gas emissions** (more than that of eggs, poultry, and vegetables combined).

○ It also uses more than **5,000 litres of water** during its life cycle.

● Breast milk, on the other hand, is **economically valuable, leaves a low carbon footprint, and is essential for well-being.**

○ Breastfeeding women nourish half the world's infants and young children.

Environmental Benefits	Nutritional and Health Benefits
It produces **zero garbage**, minimal **greenhouse gasses**, and a tiny **water footprint**.	Nutrition in the early stages of life produces healthier outcomes associated with **infant and maternal health outcomes.**
It is **better for the environment** even if breastfeeding mothers eat and drink more.	As per the WHO, exclusive breastfeeding is a **"child's first immunization"** against **respiratory infections, obesity, diarrhoeal disease,** and other potentially life-threatening ailments.
A **British Medical Journal (BMJ)** study showed that **exclusive breastfeeding** for **six months** saves an estimated **95-153 kg CO_2** equivalent per baby compared with formula feeding.	A lack of breastfeeding support is linked to **increased disease prevalence in women also, adding to the healthcare cost and deepening the caregiver burden.**

Fig: Breastfeeding and associated benefits

Significance of recognizing the economic value of breastfeeding:

● This will benefit **"the populations in developing countries most burdened by the harms of the commercial milk formula industry".**

● It will also acknowledge **"the value of women's breastfeeding efforts for mitigating greenhouse gas emissions".**

Arguments for recognizing the ecological and economic value of breastfeeding:

● **Commercial milk formulas are a maladaptive practice** in the context of **emerging population and environmental crises.**

○ In contrast, breastfeeding is a **renewable, economical, and environmentally friendly natural resource** that is often neglected in terms of sustainable food production and climate change.

○ Globally, **21.9 billion litres of human milk is annually lost** because governments fail to invest in supporting breastfeeding.

● Adequate recognition and resources through international climate change financing **"can support**

new public investments in breastfeeding as a carbon offset."

○ It will bring significant gains and co-benefits for **women's, children's and planetary health.**

● The **United Nations Clean Development Mechanism (CDM)** allows **lower-middle-income countries** to access financing from high-income countries for new policies and programmes that generate offsets to carbon emissions.

○ **CDM** could be a **"potential platform"** for recognizing breastfeeding as a carbon offset.

Breastfeeding as carbon offset:

● Considering breastfeeding as a carbon offset could **divert funds from commercial milk formula markets to environments where women operate.**

● Considering breastfeeding as a carbon offset isn't about coercion or shifting climate change responsibility but rather about directing funds to governments **recognizing the environmental impact of commercial milk formula markets, facilitating a gender-just transition** to **sustainable development,** and **creating an enabling environment for women who wish to breastfeed.**

Way forward:

● The governments should consider breastfeeding as the **"highest quality, local, sustainable first-food system for generations to come".**

> **PEPPER IT WITH:**
> Vatsalya, MAA- Mothers Absolute Affection

● They need to **better recognize women's contributions to sustainable food production, including breastmilk,** in international and national food balance sheets.

● This consideration must seep within the systems of value and measurement adhered to in the international order.

○ New metrics, such as **Mothers' Milk Tool,** are being developed to measure the **economic contribution of breastfeeding mothers.**

○ In India, one-seventh of breast milk produced was lost in three years due to a lack of investment.

● Policies such as **funding skilled birth attendance, maternity care**, and **social protections** like **paid maternity leave would support higher breastfeeding rates** while also redirecting financial resources away from carbon-emitting activities.

● Breastfeeding is a timely illustration of how "current thinking and systems undervalue what matters, inequitably distort investment priorities and strengthen commercial drivers of health.

REPORTS IN NEWS

Child Nutrition Report: UNICEF

News Excerpt:

The UNICEF released a report titled **"Child Food Poverty Report,"** which sheds light on a distressing reality that demands urgent attention and action regarding severe child food poverty.

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Child Food Poverty:

- This global report examines the status, trends, inequities and drivers of child food poverty in early childhood, including the **impact of global and local food and nutrition crises.**
- The report focuses on **low- and middle-income countries,** where most children living in child food poverty reside, and on the implications of child food poverty for undernutrition and poor development.
- The analyses used data from the **UNICEF Global**

Child food poverty is measured using the UNICEF and World Health Organization (WHO) dietary diversity score. To meet the *minimum dietary diversity* for healthy growth and development, children need to consume foods from **at least five out of the eight** defined food groups.

If children are fed:	0–2 food groups/day they are living in **severe child food poverty**	3–4 food groups/day they are living in **moderate child food poverty**	5 or more food groups/day they are **not living in child food poverty**

Breastmilk | Grains, roots, tubers and plantains | Pulses, nuts and seeds | Dairy products | Flesh foods (meat, poultry and fish) | Eggs | Vitamin A-rich fruits and vegetables | Other fruits and vegetables

Database on Infant and Young Child Feeding, comprising data from 670 nationally representative surveys conducted in 137 countries and territories, and representing more than 90 percent of all young children globally.

- Analyzed **national survey data** to understand severe child food poverty's link to undernutrition. Additionally, rapid assessments in affected communities explored feeding challenges during food crises.

Steps to be taken:

To end severe child food poverty, **all stakeholders**, including governments, organizations, civil society, media, academia, research bodies, and the food industry, must commit to a **comprehensive response** and hold each other accountable for transforming food, health, and social protection systems.

Government:

- **Ensure policy and regulatory frameworks** support actions to address severe child food poverty, free of conflicts of interest.
- **Set time-bound targets** in sectoral plans, allocate resources, assign accountabilities, and review progress annually to reduce severe child food poverty.

- **Invest in data systems to track progress** and conduct rapid assessments, particularly in fragile contexts and during humanitarian crises.

Development and humanitarian organizations:

- Reduced severe child food poverty is essential for **achieving national and global nutrition targets and protecting children's nutrition rights.**
- **Build the capacity of governments** and partners to develop, implement, monitor, and evaluate policies and programs to reduce severe child food poverty.
- Support a global mechanism to track progress and develop rapid detection and monitoring approaches for severe child food poverty in fragile settings and crises.

Civil society and media:

- **Advocate with governments and influential leaders** for political support and resources to eliminate child food poverty and build public awareness and opinion on the imperative to act.
- T**rack investments and monitor the actions of governments**, partners and donors to end severe child food poverty and bring attention to major shortfalls.
- **Ensure food and beverage companies** comply with standards protecting children from unhealthy products and highlight any violations.

Asia-Pacific Employment and Social Outlook 2024

News Excerpt:

The International Labor Organisation (ILO) has released the annual **Asia-Pacific Employment and Social Outlook 2024.**

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About the report:

- This is the **fifth edition** of the report.
- It pulls together the **most recent statistics to depict the state of the labour market** and its impact on the 3.4 billion people living in the **Asia-Pacific** region.
- The **2024 report** examines the **implications of population ageing for labour markets and society.**

Key Findings of the report:

- **Stable Labor Market Amid Subdued Growth**: Employment in Asia and the Pacific is projected to grow at its long-term average rate, with **unemployment remaining nearly unchanged.**
- **Gender Inequality in Employment:** Women's employment rates are significantly lower than men's, particularly among youth, where **young women are**

almost three times more likely to be not in employment, education, or training.

- **Low Overall Unemployment, High Youth Unemployment:** The **region's unemployment rate is low (4.2% in 2023) as compared to the global unemployment rate,** but youth unemployment remains high at 13.9%.
- **Need for Stronger Labor Market Performance:** Widespread decent work deficits persist, with slow progress in reducing informality and working poverty.
- **Unequal Productivity Growth:** From 2004 to 2021, productivity growth led to increased labour income, but this **growth was uneven across countries. Most workers remain far from the labour income levels of high-income countries.**
- **Declining Productivity and Income Growth:** Over the past decade, **growth rates for labour productivity and income have declined.** Enhancing productivity requires revitalizing structural transformation and investing in physical and human capital and technological progress.
- **Insufficient Decent Work Opportunities:** The **lack of job opportunities** that meet decent work criteria **threatens social justice and the labour market outlook in the** region.

Labour force participation in the region:

- **The region's labour force participation rate (LFPR) fell from 67.0 per cent in 1991 to 60.9 per cent in 2023** and is projected to decline further over the coming years.
- Increased educational attainment and ageing populations are among the main drivers of declining LFPR. However, the **employment levels in absolute numbers have been steadily growing, reaching 2 billion in 2023.**
- LFPR in South Asia is 54%, 63 % in the Pacific and 66 % in East and South-East Asia.
- **South Asia's low aggregate LFPR is largely due to a significant gender gap: 77% for men and 31% for women.**

Challenges Highlighted

Aging Population: The region's population is projected **to age as much over the next 27 years** as the populations in high-income countries worldwide have **aged over the past 60 years.**

Rise in Dependency Ratio: This ratio, defined as the ratio of those not employed to those employed among the region's working-age population (aged 15 years and above), is projected **to rise from 0.72 in 2023 to 0.90 in 2050.**

Global Food Policy Report 2024

News Excerpt:

A new global report has raised **concerns about dietary habits in India**, highlighting a **significant increase in the consumption of unhealthy foods** compared to nutritious options.

More about the Report:

- **'Food systems for healthy diets and nutrition'** was released by **International Food Policy Research Institute (IFPRI).**
- The **consumption of calorie-dense** and **nutrient-poor foods** was not only high but was also increasing, while the consumption of vegetables and other micronutrient-rich foods was low.

Emerging trends in Indian diets

- At least **38%** of the Indian population ate **unhealthy foods**, while only **28%** ate all **five recommended food groups**, which include at least one **starchy staple food**, one **vegetable**, one **fruit**, one **pulse**, **nut** or **seed** and one **animal-source food**.
- In India, the proportion of the **population suffering from malnutrition** increased from **15.4% in 2011** to **16.6% by 2021**.
- This means that nearly **17%** of the **Indian population's regular food consumption** was **insufficient to provide the dietary energy levels** needed to live an active and healthy life.
- The **prevalence of overweight** in adults increased from **12.9% in 2006 to 16.4% in 2016**.
- **India's total annual household expenditure on paid meals** consumed away from home increased from **Rs 619 billion** ($8.8 billion) **in 2015** to **Rs 820 billion** ($11.6 billion) **in 2019**, a real-term increase of approximately $3 billion.
- Similarly, the **share of packaged** (highly processed and calorie-dense) **foods** in household food budgets nearly **doubled during this period**, to **12 per cent from 6.5 per cent**.

Double Burden of Malnutrition

- Many countries were facing a **double burden of malnutrition**. This means that **undernutrition and micronutrient deficiencies coexist with overweight and obesity** or diet-related noncommunicable diseases (NCD).

- **More than two billion people**, many of them in Africa and South Asia, **cannot afford a healthy diet**.

- According to the **Food and Agriculture Organization**, more than half of **children under the age of five** and **two-thirds of adult women** were **affected by micronutrient deficiencies**.

- As a result, **high levels of undernutrition** (stunting and wasting) and **micronutrient deficiencies have increased**, even as the prevalence of overweight, obesity, and related NCDs has risen in South Asian countries such as **India, Pakistan, and Afghanistan**.

South Asia Specific Findings:

- In the **South Asian region**, the report highlighted that **micronutrient-rich foods were expensive**, whereas cereals, fats and oils, sugar, and sugary and salty snacks were relatively inexpensive.

- **South Asia had the highest cost premium, that** is, the additional cost for the least-cost nutrient-adequate diet over the lowest-cost source of calorie adequacy.

- **Dark green leafy vegetables** and **vitamin A-rich fruits and vegetables** cost **22 times more per calorie** than starchy staples and twice as much per calorie as sugary and salty snacks.

- In addition, **calories from fats, oils, and sugar cost even less** than those from staples in India and other South Asian countries.

Cereal-centric agriculture and food policies

- **Agriculture and food policies in South Asia** continue to prioritize the affordability of **starchy staples** over the diverse diets required for long-term health.

- **Rice, wheat, and sugarcane growers** are eligible for **price guarantees in India**. Similarly, rice farmers in Sri Lanka have preferential access to subsidized fertilizer.

- This bias also extends to **public investments in agricultural research** and **development**, which have prioritized enhancing the productivity of rice and wheat while neglecting coarse grains and pulses.

Dietary Guidelines by ICMR

- **Indian Council of Medical Research** (ICMR) recently released **dietary guidelines** warning that the information presented on packaged food can be misleading.

- Among the **17 dietary guidelines**, ICMR asked consumers to read information on food labels **to make informed** and **healthy food choices**.

- It also suggested **minimizing the consumption of high-fat, sugar, sodium and ultra-processed foods**.

International Food Policy Research Institute (IFPRI)

- **IFPRI** was **established in 1975**.

- It is a **research centre** of The **Consultative Group on International Agricultural Research (CGIAR),** the world's largest agricultural innovation network.

- IFPRI provides **research-based policy solutions** to **sustainably reduce poverty** and **end hunger** and **malnutrition** in **developing countries**.

Global Gender Gap Index

News Excerpt:

India has slipped two places on the **World Economic Forum's (WEF) Global Gender Gap index to 129th place**, while Iceland retained its top position in the rankings.

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Key findings from the Global Gender Gap Index:
Global:

- **Iceland** was **ranked first** in the Global Gender Gap Index, followed by Finland, Norway, New Zealand, and

Global Gender Gap Report 2024
Global Gender Gap
WORLD ECONOMIC FORUM
68.5% closed
The gender gap is narrowing, but the collective rate of progress has slowed down. Without a bold push forward, it will take 134 years to reach full parity.
Source: Global Gender Gap Report 2024

Sweden in the top five.

- **Sudan** was ranked last on the Index of 146 countries, while **Pakistan slipped three places to 145th.**

Largest Gender Gap:

- Overall, the most significant shift occurs in **Political Empowerment**, where parity has jumped a total of 8.3 percentage points to 22.8% over the past 18 editions.

- In **Economic Participation, Opportunity, and Educational Attainment**, parity has gained 4.8 and 4.2 percentage points, respectively.

- In Political Empowerment, Europe shows a **consistent upward trajectory, achieving the highest level of political parity** among all regions in 2024, with 36%. Latin America and the Caribbean follow closely behind, with 34%.
- The **Economic Participation and Opportunity** score for the region is 71.7%, showing progress since 2023 but revealing significant disparities between countries in labour-force participation rates and workforce representation.
- Despite North America leading in the **Economic Participation and Opportunity subindex**, its economic parity score has declined slightly to 76.3%, reflecting disparities in earned income and women's representation in senior leadership positions.

Global Gender Gap Report 2024
Largest gender gaps
WORLD ECONOMIC FORUM

The two largest gaps to bridge are in Economic Participation and Opportunity, and Political Empowerment

60.5% Economic
22.5% Political
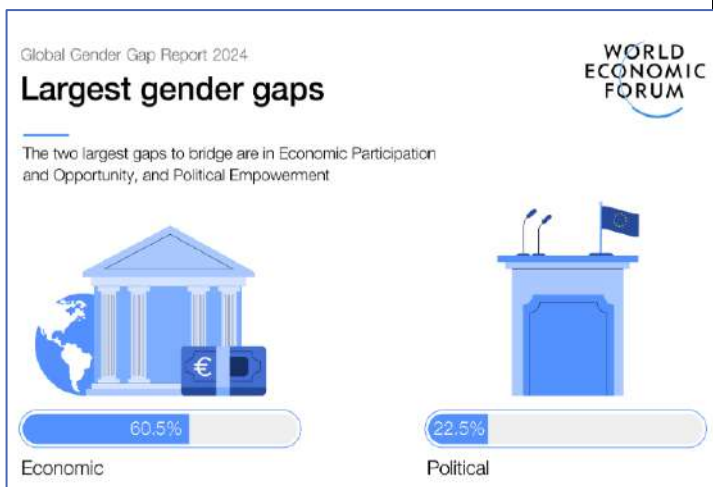
India-Specific Observations:

- India was ranked **127th out of 146 countries** in the **Index.**
- **Within South Asia,** India was ranked **fifth** after Bangladesh, Nepal, Sri Lanka, and Bhutan, while Pakistan was ranked last.
- India showed **the best gender parity** in terms of **enrollment in secondary education and scored well on the political empowerment of women,** ranking 65th globally.
- India was ranked **10th in terms of parity in the number of years with female/male heads** of state for the last 50 years.
- India has closed **64.1% of its gender gap in 2024,** a decline of two places from 127th last year mainly due to small declines in **'Educational Attainment'** and **'Political Empowerment'** parameters.
- India's economic parity score has trended **upward for the past four years.**
- India scored within the **top 10 on the head-of-state indicator** but has relatively low scores for women's representation at the federal level, in **Ministerial positions (6.9%), and in Parliament (17.2%).**

Global Gender Gap Index

- The Global Gender Gap Index was first introduced by the **World Economic Forum in 2006** to benchmark progress toward gender parity across **four dimensions: economic opportunities, education, health, and political leadership.**

Subindex 1
Economic Participation and Opportunity

Subindex 2
Educational Attainment

Subindex 3
Health and Survival

Subindex 4
Political Empowerment
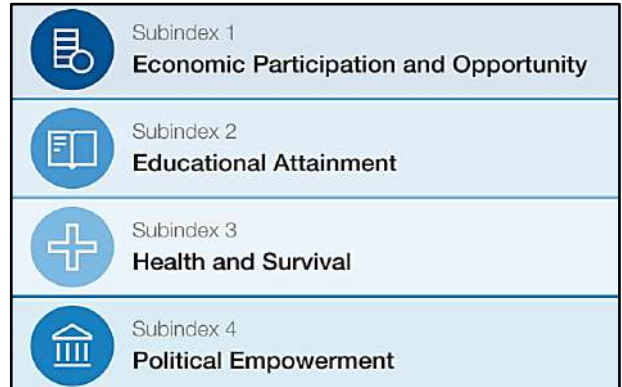
- Throughout its **18 editions,** the Index has intended to offer a stable metric for the assessment of changes in **gender parity indicators** over time.
- Using the methodology introduced in **2006**, the Index focuses on benchmarking parity between women and men at global, regional, and economic levels based on the latest available data.
- The level of progress toward gender parity (**the parity score**) for each indicator is calculated as the **ratio of the value of each indicator for women to the value for men.**
  - A **parity score of 1** indicates full parity.
  - The **gender gap** is the distance from full parity.

ECONOMY

Why the new government should embrace global markets

News Excerpt:

This article provides an overview of **India's Trade policy** which is attempting to strike a balance between **liberalization and protectionist trends**.

Conflicting policy:

- More than **thirty years after liberalization**, India still exhibits **protectionist tendencies**.
- As the nation aims to become a **key player in global geopolitics**, its hesitation to integrate into **global value chains** is counterproductive.
- India faces a **dual challenge**. Promoting its **vision of Atmanirbhar Bharat**, which emphasizes **self-reliance** and **prioritizing domestic goods** over imports, while

achieving the target of **$1 trillion in exports is not an easy task**.

- India's path to free trade and multilateralism has been challenging. The country pursued **aggressive import substitution in the 1980s** but found it **contradictory to export promotion**.
- Without boosting trade, India cannot replicate the successes of its **East Asian counterparts**, nor can it compete effectively without **enhancing its competitiveness**.

Emergence of Protectionist Trends:

- The **Global Financial Crisis of 2008**, the **Euro Zone struggles of 2010**, and the recent economic downturn due to the **COVID-19 pandemic** have led many governments to **reevaluate their global engagements**.
- The pandemic underscored the **impact of import disruptions**. While diversifying **GVCs is a long-term goal**, it incurs short-term costs.
- India is relying on initiatives like **production-linked incentives (PLIs)**, which offers financial rewards for local production.
- As of November 2023, **PLIs** have resulted in **production/sales of Rs 8.61 lakh crore** and created over **6.78 lakh jobs**.

Free Trade Agreement and India:

- Previously, India withdrew from the **Regional Comprehensive Economic Partnership (RCEP)** negotiations due to its **trade deficit with China**, unmet demands on **professional cross-border movement**, and concerns from its **farm and dairy sectors** about competition from countries like **New Zealand and Australia**.

India's Stance on liberal trade policy:

- **Post the 1991 crisis**, India adopted a **liberal trade policy** but hesitated on further trade reforms due to **trade deficits** with countries it had agreements with. This cautious approach **slowed its liberalization** and **participation in GVCs**.
- However, India's strategy has improved. It has **signed several Free Trade Agreements (FTAs)**, **including four since 2021** after a nine-year hiatus. These include agreements with **Mauritius, the UAE, Australia, and the EFTA countries**.
- Despite this progress, **India remains ambivalent** about regional trade agreements like the **Regional Comprehensive Economic Partnership Agreement (RCEP)** and The **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**, preferring multilateralism through the WTO.
- Geopolitically, India seeks to position itself as an **alternative manufacturing hub to China**, competing with countries like **Vietnam, Cambodia, and Bangladesh**.

Way Forward:

- Despite positive economic indicators, India needs **open global markets** more than ever to **boost exports** and **foster domestic market efficiency**.

> **PEPPER IT WITH**
> DPI, FTA, CPTPP, Atmanirbhar Bharat, RCEP

- **Digital public infrastructure (DPI)** is gaining attention as a transformative tool using digital technologies to connect people and devices in India. It has **attracted global interest**, enhancing its **soft power**.
- However, India must balance this approach carefully. To become a "**rule-shaper**" rather than a "**rule-taker**," India must fully **embrace global markets**.
- For a **labor-abundant economy**, **subsidizing job creation** is preferable to subsidizing industries. Now is the time to shed inhibitions and repeat the **bold reforms of 1991** without waiting for a crisis to prompt action.

NaBFID: Financing India's Infrastructure Development

News Excerpt:

The National Bank for Financing Infrastructure and Development (NaBFID) has lined up a **Rs 20,000 crore credit line** from multiple banks and is negotiating with multilateral agencies for long-term funds.

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New hope for Infrastructure development:

- NaBFID closed the financial year 2024 with **Rs 1 trillion in sanctions,** disbursing Rs 36,000 crore by March and Rs 45,000 crore by the end of May.
- Its portfolio **predominantly consists of renewable and traditional power generation projects, followed by roads and railways.**
- The institution is also making inroads into telecom, city gas distribution, and power transmission.
- It aims to meet the **Finance Minister's ambitious target of a Rs 5 lakh crore lending portfolio within three years.** By leveraging the corpus of insurance, pension, and provident funds, along with market-raised funds, NaBFID is positioning itself as a comprehensive solution to India's infrastructure woes.
- As India's fastest-growing economy, the success of NaBFID could mark a **new chapter in infrastructure financing,** paving the way for sustained economic growth and development.

Mandate and Funding:

- Its mandate includes **financing infrastructure through loans and equity investments and developing long-term bond and derivatives markets.**

- Its paid-up capital stands at Rs 20,000 crore, supplemented by a Rs 5,000 crore grant.
- Plans are also underway **to raise external commercial borrowings in the last quarter of the current year.**

Providing solutions for the past problems in infra financing:

Historically, infrastructure financing in India has faced significant challenges.

- **Development Finance Institutions (DFIs) like Industrial Finance Corporation of India Ltd and ICICI faced severe asset-liability mismatches** in the 1990s when their access to cheap funds was cut off.
- The **Infrastructure Development Finance Company Ltd and India Infrastructure Finance Company Ltd** also struggled to sustain their operations.

NaBFID is poised to succeed where others have failed.

- **The ecosystem for infrastructure financing is evolving,** and a new class of investors is emerging.
- **Infrastructure projects** are now viewed as a new asset class offering healthy returns, especially those that have been completed and are up for asset monetization.

Government push to infra investment:

- In October 2022, Union Minister for Road Transport and Highways marked the **retail entry through the listing of NHAI InvIT (National Highways Infra Trust) non-convertible debentures (NCDs).**
  o This move demonstrated the potential for retail investors to engage in infrastructure investments, with the NCDs being **oversubscribed almost seven times within seven hours of their opening.**
- Despite previous failures in project financing due to environmental clearances, stalled projects, and accumulating bad assets, the current ecosystem shows promise.
- The **Insolvency and Bankruptcy Code of 2016** and proactive government measures in allocating resources and clearing project hurdles have created a more resilient banking system.

> **PEPPER IT WITH**
> InvIT, DFIs, NaBFID, IBC, NHAI

> **NaBFID**
> - The National Bank for Financing Infrastructure and Development (NaBFID), **established by the 2021 Act of Parliament**, is a specialized **Development Finance Institution** dedicated to bolstering India's infrastructure sector.
> - NaBFID aims to address the critical gaps in **long-term, non-recourse financing for infrastructure projects.**
> - Its objectives include **developing robust bond and derivatives markets** and sustainably enhancing the nation's economy.
> - By providing attractive financial instruments and channeling investments, NaBFID supports the growth of India's infrastructure, **ensuring a steady credit flow essential** for the sector's expansion and the country's economic progress.

RBI's Digital Rupee Faces Multiple Hurdles

News Excerpt:

The Reserve Bank of India (RBI) has been striving to boost the adoption of its **Retail-Central Bank Digital Currency (R-CBDC) or e-rupee**.

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What is e-rupee?

- E-rupee is a **digital form of the Indian rupee**, introduced by the **RBI**.
- It was launched to **promote digital payments** and reduce dependence on physical currency.
- RBI launched the first pilot of **Digital Rupee- Retail segment (e₹-R)** on **December 01, 2022**.
- Unlike UPI, the e-rupee is a **digital alternative to cash**, exchangeable via wallets or the UPI infrastructure.

Initiatives taken by RBI

- RBI aims to expand the digital rupee's reach by including more **non-bank payment service providers** and **making the e-rupee compatible** with India's **Unified Payments Interface** (UPI).
- Earlier this year, RBI engaged with **bankers and fintech officials** to strategize on **boosting consumer adoption** and **integrating the digital currency** into the mainstream financial system.
- Despite these efforts, overall **adoption of the e-rupee remains limited**.

Circulation of e-rupee

- As of the **week ending 31 May 2024**, RBI data shows the e-rupee in circulation stood at **₹323.5 crore**, up from **₹100 crore in December 2023**.
- However, this is still a **minuscule portion of the ₹35.4 trillion in banknotes** currently in circulation.
- By April, **within 16 months of its December 2022** launch, **4.6 million consumers** and **400,000 merchants** had **signed up** for the e-rupee.
- However, **transaction volumes** remain a small fraction of those on UPI, which was launched in 2016 and supports real-time inter-bank peer-to-peer and merchant transfers via mobile phones.
- RBI Deputy Governor noted a **decline in daily e-rupee transactions** in April.

Reason for low adoption

Several **common obstacles** hinder their adoption.

- **Firstly,** existing online payment systems in India reduce the demand for CBDCs.
- **Secondly**, a lack of robust digital infrastructure complicates seamless CBDC transactions, and regulatory ambiguity further deters adoption.
- **Thirdly**, trust in the system is generally lacking. It offers **no significant additional value** to end-users compared to UPI, leading to low adoption rates.

Trend in other countries

- This trend is **not unique to India**; other countries have also seen slow uptake of retail Central Bank Digital Currencies (CBDCs).
- The **DCash pilot** by the **Eastern Caribbean Central Bank**, launched in 2019, was discontinued in January due to low adoption, exacerbated by a technical outage in January 2022 that halted the system for over a month.
- The **Bahamas' Sand Dollar**, **Nigeria's eNaira**, and **Jamaica's Jam-Dex** also face similar issues. Despite extensive promotional efforts, the **Sand Dollar** had only $1.1 million in circulation by September 2023, representing 0.19% of total currency.
- **Nigeria's eNaira**, launched in October 2021, has seen usage by only about 0.5% of Nigerians.
- **Jamaica's Jam-Dex**, introduced in 2022, initially surged due to user incentives but stalled at $1.64 million (0.11% of total currency).
- These pilot projects struggled due to **weak internet connectivity**, **poor digital infrastructure**, **integration issues** with traditional banking systems, **low public awareness**, and **inadequate incentives** for adoption. **China's e-CNY** has seen limited adoption due to the dominance of **Alipay and WeChat Pay**.

Challenges in India

- India's **e-rupee faces** challenges against the **popular UPI system**.
- Efforts to **integrate e-rupee wallets with UPI** and explore **government-to-person (G2P) transactions** and **cross-border payments** have not yet created a compelling value proposition for the digital currency.

Way Forward:

- While the **e-rupee is considered safer than UPI** as it is a **direct liability of RBI**, this subtle benefit is not easily understood by most users.
- To increase e-rupee popularity, **RBI is collaborating with lenders** to introduce **programmability**, which allows for **specific usage instructions**. For instance, IndusInd Bank used a programmable e-rupee to pay farmers for carbon credits.
- Similarly, the **Bahamas and Nigeria** are utilizing CBDCs for **government disbursements** and **welfare transfers**.
- **Jamaica** is considering using its CBDC for **seasonal work payments**, and in **China**, civil servants in Jiangsu province have been receiving wages in **e-CNY** since May 2023.

> **PEPPER IT WITH**
> CBDC, UPI, Programmable Money, RBI

- While **RBI** aims to make the **e-rupee as cash-like as possible**, programmability could challenge its **fungibility and liquidity**, potentially affecting **privacy and public trust**.
- Experts caution that **programmable money** might **alter economic behavior and exacerbate inequality**.
- Overall, RBI must approach the **e-rupee's implementation with caution** and further study in this direction is very necessary.

PM is a **centralized digital currency** issued and controlled by a **central authority**.

It can be programmed to **execute specific transactions** or **conditions automatically** when **certain criteria are met**.

This is made possible through **smart contracts**, which are **self-executing contracts** with the **terms of the agreement written directly into code**.

PM includes a variety of **financial instruments**, such as **central bank digital currencies** (CBDCs), **stablecoins**, digital representations of **traditional assets** (tokenized securities), and more.

Fig: Programmable Money

New arbitration guidelines

News Excerpt:

The **Finance Ministry** recently announced **that arbitration clauses will be removed** from future contracts involving the government or government-controlled entities, **except for minor disputes worth Rs 10 crore or less**.

Arbitration: Arbitration is an **alternative dispute resolution** method for various **contractual disputes**, including those involving private sector parties.

Advantages of Arbitration

- It is a **faster and more convenient resolution** compared to litigation. It involves technical experts.
- CJI Chandrachud has also advocated for resolving complex commercial matters through dialogue-driven meetings rather than courtrooms and urged India to promote a culture of commercial arbitration.

Challenges with Arbitration:

- Arbitration can be **lengthy, expensive, and prone to errors**.
- Many arbitration decisions end up being **challenged in high courts**, negating the intended efficiency.

The government believes that arbitrators often **lack integrity and collude with private parties**, making it hard to challenge arbitration awards legally.

The new policy, detailed in an **Office Memorandum**, advises government departments and agencies to settle as many disputes as possible amicably.

More about News:
- These guidelines aim to make dispute resolution more **efficient and cost-effective**, addressing specific challenges faced by government entities.
- To help with this **amicable settlement process**, the government will set up **"high-level" committees** made up of **former judges** and **retired senior officials**.

Why are these changes now?
- Experts are of the view that the **government's perceived lack of trust in arbitrators is the reason** behind these changes as most of the arbitration decisions go against the government.
- But the fact is that the government, its agencies and officials have fallen short in meeting their legal obligations in putting forward the case of government and cannot be trusted to do the right thing.
- Moreover, the arbitrators are rule-bound and cannot fearlessly sign off and agree to liability which can run into several hundred crores.
- The government's current attitude can be seen from its **2023 Vivad se Vishwas – II scheme** for contractual disputes, which stipulates that even when an arbitral award is rendered, the government may, instead of honouring the award, agree to a 35 per cent discount on the sum awarded by way of a settlement.
- Finally, if there is no settlement, the aggrieved party is left to the mercy of the courts. There can be no two opinions that the courts are not equipped to handle heavy commercial disputes in any sensible way.

Assessment of New Guidelines

	Positive Impact	Negative Impact
Foreign Investment	**Clarity and Predictability:** The guidelines offer clear procedures and thresholds for dispute resolution, which can provide foreign investors with a predictable legal framework, potentially increasing their confidence in the Indian market. **Preference for Mediation:** Encouraging mediation over arbitration for high-value disputes may be seen positively by foreign investors as mediation can be less	**Restrictive Arbitration Clauses:** Limiting arbitration to disputes valued under Rs. 10 crores could deter foreign investors who prefer arbitration over Indian courts because of its perceived neutrality and efficiency. **Perception of Bias:** Foreign investors might perceive the preference for institutional arbitration within India and the involvement of government-appointed High-Level Committees as potentially biased against non-domestic parties.
	adversarial and more conducive to maintaining business relationships.	
Ease of Doing Business	**Streamlined Dispute Resolution:** The guidelines aim to expedite dispute resolution through mediation or litigation by promoting mediation and limiting arbitration. However, this has not had much of a positive impact. **Pragmatic Approach:** Encouraging pragmatic decision-making and avoiding unnecessary litigation aligns with global best practices and can improve the business climate.	**Increased Scrutiny:** The necessity for approvals from high-ranking officials for arbitration clauses exceeding Rs. 10 crores may introduce bureaucratic delays, potentially complicating contract negotiations and execution. **Uncertainty in High-Value Contracts:** Businesses involved in high-value contracts may face uncertainty due to the stringent conditions under which arbitration can be invoked, possibly leading to hesitations in large-scale investments.
Arbitrations in India	**Promotion of Mediation:** The push for mediation, especially under the Mediation Act 2023, can reduce the backlog of cases relating to arbitration and arbitration appeal in courts, leading to quicker dispute resolution. **Institutional Arbitration Preference:** Promoting institutional arbitration can enhance the quality and reliability of arbitration proceedings, ensuring better standards and accountability.	**Restrictive Arbitration Environment:** Limiting arbitration for high-value disputes can reduce the attractiveness of India as an arbitration-friendly jurisdiction. **Challenges in Enforcement:** The historical challenge of enforcement of arbitration awards in India might not be fully addressed, leading to continued hesitations by foreign investors regarding the efficacy of arbitration.

Way Forward:

Arbitrations may not be perfect, but they are clearly more workable than court litigation. To ask the private party to take its dispute to court is to turn a blind eye to reality and throw the litigant under the bus. Effective dispute-resolution methods are a necessary adjunct to economic growth.

PEPPER IT WITH
Vivad se Vishwas scheme, Arbitration, Foreign Investment, Ease of Doing Business

Travel & Tourism Development Index 2024

News Excerpt:

India's global travel & tourism index rank up at 39th: WEF Index

More about the news:

- India's rank on the **World Economic Forum's Travel & Tourism Development Index 2024** has risen to **39th place,** with global tourism activities returning to pre-pandemic levels.
- The report was compiled in collaboration with the UK-based **University of Surrey**.
- India is **ranked highest in South Asia** and among the **lower-middle-income economies.**
- The **US, Spain, Japan, France, and Australia figure among the top five** in the 2024 list.

About the report:

- The **biennial index** showcased the travel and tourism sectors of **119 countries** across a spectrum of factors and policies.
- The index is comprised of **5 dimensions, 17 pillars, and 102 individual indicators,** distributed among the different pillars. However, the five dimensions are not factored into the calculation of the index
- The findings underscored that **high-income economies typically maintain more favorable conditions** for travel and tourism development.

- This was attributed to **conducive business environments,** dynamic labour markets, open travel policies, robust transport, and tourism infrastructure, as well as well-developed natural, cultural, and non-leisure attractions.

Status of India:

- India has **climbed to the 39th position** in the latest World Economic Forum's Index.
- India was **54th in 2021**, but changes in index criteria limit its direct comparison with 2022 and 2023.
- India demonstrates **high price competitiveness** (18th) and **possesses competitive air transport** (26th) and **ground and port infrastructure** (25th) India's robust natural (6th), cultural (9th), and non-leisure (9th) resources contribute to its travel appeal, with the **country being one of only three to secure a top 10 ranking across all resource pillars.**
- The country's overall Travel and Tourism Development Index (TTDI) score is **2.1 percent lower than its 2019 level.**

Developing countries:

- Among the 71 economies that have seen enhancements in their TTDI scores since 2019, 52 belong to low to upper-middle-income brackets.
- **Only Saudi Arabia** (+5.7%, moving from 50th to 41st) and the **United Arab Emirates** (+4.4%, climbing from 25th to 18th) from high-income economies rank among the **top 10 most improved** between 2019 and 2024.

Travel & Tourism (T&T) Development Index framework

DELHI VN: 9717380832 & **DELHI ORN:** 9811293743 | **JAIPUR:** 8290800441 | **BHOPAL:** 7509975361| **INDORE:** 9893772941
| **BENGALURU:** 7619166663 | **KOLKATA:** 9007709895 | **www.ksgindia.com**

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- The rest are developing nations such as Uzbekistan (+7.8%, advancing from 94th to 78th), Côte d'Ivoire (+6.4%, progressing from 116th to 114th), Albania (+5.9%, moving from 78th to 66th), Tanzania (+4.5%, rising from 88th to 81st), and Indonesia (+4.5%, jumping from 36th to 22nd).

Recovery rates in international tourist arrivals

- **West Asia** demonstrated the highest recovery rates in international tourist arrivals, surpassing the 2019 levels by **20 percent**.
- **Europe, Africa, and North and South America** all exhibited robust recoveries of approximately **90 percent** in 2023.
- International tourist arrivals and the travel and tourism sector's contribution to global gross domestic product (GDP) are expected to return to pre-pandemic levels this year.

Leveraging the T&T sector to address global challenges:

- Aside from improving readiness to handle future external **global challenges** including **economic inequality, environmental threats** linked to climate change and pollution, **technological innovation,** and **global connectivity**, the T&T sector can also play a significant role in addressing them.
- To fully realize T&T's potential in solving some of these global challenges, governments, and key stakeholders need to proactively shape the sector to become more resilient, inclusive, and sustainable for the future.
- **Potential key focus areas,** derived from the TTDI 2024 results as well as other research, are:

Leveraging T&T for environmental sustainability by:
 – Providing greater value for nature conservation efforts
 – Leading on the energy transition
 – Driving responsible consumption

Leveraging T&T for socioeconomic prosperity by:
 – Investing in skilled, inclusive and resilient workforces
 – Putting local communities at the centre of T&T development
 – Strategically managing visitor behaviour and infrastructure development

Leveraging T&T for global connectivity and peace by:
 – Increasing travel openness
 – Encouraging cultural exchange between visitors and the local community

Leveraging T&T and technology for positive impact by:
 – Adopting technology for sustainable and resilient T&T management
 – Bridging the digital divide and creating opportunities
 – Ensuring responsible and safe use of technology

Way Forward:

- India's ascent to the 39th position on the World Economic Forum's Travel & Tourism Development Index 2024 reflects its **potential as a global tourism destination**.
- Despite challenges posed by the pandemic, India's rich natural, cultural, and non-leisure resources have bolstered its appeal among travelers. However, the slight decline in its overall TTDI score compared to 2019 **suggests areas for improvement, particularly in infrastructure and competitiveness.**
- While India's progress is commendable, sustained efforts are needed to enhance its standing further and ensure the **resilience of its tourism sector** in the face of future disruptions.

> **PEPPER IT WITH**
> TTDI, World Economic Forum, GDP

World Economic Forum:

- The World Economic Forum is an organization that promotes public-private cooperation and was founded in **January 1971**.
- **Headquarters: Geneva**, Switzerland.
- **Funding:** It is mainly provided by collaborating companies, usually with yearly sales of more than USD 5 billion.
- **Annual Davos Meeting:** Approximately 3,000 people attend Davos to engage in 500 sessions of discussion on global issues with investors, corporate executives, political figures, economists, celebrities, and other participants.

Pump and Dump Scheme

News Excerpt:

The **Securities Exchange Board of India** (SEBI) on June 1 slapped a fine of **Rs 7.75 crore** on **11 individuals** for allegedly operating a **'pump and dump' scheme** in the scrip of **Svarnim Trade Udyog**.

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What is a pump and dump scheme?

- In the **stock market**, a pump and dump scheme is a type of **manipulation activity** that involves **artificially inflating the price** of a stock through **false and misleading information**, only **to sell the stock at the inflated price** and leave investors with significant losses.
- This manipulative tactic is particularly prevalent in the **micro-cap** and **small-cap sectors**, where companies often have **limited public information** and **trading volumes are lower**.

How does pump and dump work?

- First, a **significant amount of stock** in a relatively **small or thinly traded company** is acquired. These stocks are often referred to as **'penny stocks'** because they trade

at **low prices** and are **more susceptible to price manipulation** due to **low trading volumes**.

- Then the stock is **aggressively promoted** to create a buzz and attract investors. This promotion can take various forms, including sending out **mass emails or newsletters** with exaggerated claims about the company's prospects, as well as **misleading social media posts**. Promoters aim to **create buzz** and **drive interest in the stock**.

- As the promotion gains traction, **more investors buy into the stock**, driving up its price due to increased demand. Sometimes, **fraudsters may also engage in coordinated buying** to further boost the price. During this phase, the stock often experiences **rapid and significant price increases**, creating the **illusion of a hot, high-potential investment**.

- Once the stock price has been pumped up sufficiently, the **sell-off begins at the inflated prices**. This selling pressure causes the **stock price to plummet**, often leaving unsuspecting **investors with significant losses** as the stock returns to its actual value or even lower.

Impact on investors and the market:

- Those who bought into the hype and purchased the stock at inflated prices typically **face substantial losses** when the stock price crashes.

- These schemes **undermine confidence of long term investors** in the financial markets, making **legitimate investors wary of potential fraud**.

SEBI's Regulations around pump and dump

- Under the **SEBI guidelines**, pump and dump schemes are **completely banned**.

- Participants in pump and dump manipulation can face **severe legal penalties**, including **fines, disgorgement of profits,** and **imprisonment**.

- In November 2022, the **SEBI** indicated that it was **framing rules to govern** the growing base of **financial influencers on social media**, to strengthen the regulatory regime on tips by **unregistered persons**.

- Recently, the markets regulator also took **action against a prominent actor and his wife** categorising them as **volume creators**. They bought and sold shares, contributing to a **rise in trading volumes and interest in the scrip**. Their method involved buying **thinly-traded stocks** and then publishing videos on the platform disseminating false information.

Impact of Social Media

- The **steady rise of social media influencers** in India doling out **financial and investment advice**,

> **PEPPER IT WITH**
> Stock market, pump and dump scheme, SEBI

without being qualified to do so, has been detrimental at times, especially in the case of recent **start-up listings**.

- With the **proliferation of social media channels** on platforms like Telegram and Instagram etc., the task for the regulators is cut out.

Pre-Packed Insolvency Resolution Process (PPIRP)

News Excerpt:

The Pre-packaged Insolvency Resolution Process (PPIRP) has resulted in the full settlement of operational creditors' claims in five cases.

About the Pre-Packed Insolvency Resolution Process (PPIRP):

Background:

- Micro, small, and medium enterprises (MSMEs) are crucial for India's economy but have been hit hard by the COVID-19 pandemic. To address their financial stress, the government introduced the **Pre-packaged Insolvency Resolution Process (PPIRP)** under the Insolvency and Bankruptcy Code (Amendment) Ordinance, 2021.

- PPIRP offers a faster, cost-effective alternative to traditional insolvency resolution for corporate MSMEs, focusing on **preserving jobs and business continuity.** It applies to defaults of **at least ₹1 crore**, as well as for smaller defaults between March 25, 2020, and March 24, 2021.

- PPIRP combines debtor-in-possession and creditor-in-control elements, ensuring stakeholder rights while minimizing court and Insolvency Professional intervention. The process is outlined in a brochure, detailing steps, responsibilities, timelines, and required forms.

What is insolvency:

- Insolvency is a situation where individuals or companies are unable to repay their outstanding debt.

Insolvency and Bankruptcy Code, 2021:

- The Code **provides a time-bound process for resolving the insolvency of corporate debtors** (within 330 days) called the **corporate insolvency resolution process (CIRP)**, as well as **introduced** an alternate **insolvency resolution process for micro, small, and medium enterprises (MSMEs), called the pre-packaged insolvency resolution process (PIRP).**

- **The Corporate Insolvency Resolution Process (CIRP)** is a method provided by the Indian Insolvency and Bankruptcy Code, 2016 (IBC) to help struggling companies.

- Its main aim is **to address a company's financial problems and ensure that its assets are utilized properly to benefit everyone concerned**.

- During CIRP, an insolvency professional steps in to manage the company and develops a plan that creditors agree to and the National Company Law Tribunal (NCLT) approves.

Objectives:

- To be a quicker and more efficient way to deal with struggling companies. Instead of taking over the management like in CIRP, PPIRP encourages the company and its creditors to come up with a plan before the insolvency process officially starts. This helps avoid the delays and uncertainties of CIRP and offers a faster and cheaper solution for everyone involved.

- It is expected to be a faster process, with a maximum time of 120 days for the submission and approval of the prepackaged plan.

Eligibility for PPIRP

- A Corporate Debtor (CD), which is an MSME under **sub-section (1) of the section 7** of the **Micro, Small and Medium Enterprises Development Act, 2006,** is

- eligible to apply for initiation of PPIRP, if it-

  (i)   has committed a **default of at least ₹10 lakh;**

  (ii)   is eligible to **submit a resolution plan** under section **29A of the Code;**

  (iii)   has not undergone a PPIRP during the three years preceding the initiation date;

  (iv)   has not completed a CIRP during the three years preceding the initiation date;

  (v)   is not undergoing a CIRP; and

  (vi)   is not required to be liquidated by an order under section 33 of the Code.

Governing Framework

- The provisions governing PPIRP are available in:

- **The Insolvency and Bankruptcy Code, 2016,** as amended by the Insolvency and Bankruptcy (Amendment) Ordinance, 2021;

- **The Insolvency and Bankruptcy (Pre-packaged Insolvency Resolution Process) Rules, 2021;** and

- **The Insolvency and Bankruptcy Board of India (Pre-packaged Insolvency Resolution Process) Regulations, 2021.**

Way Forward:

- This Ordinance marks a significant step towards providing a **quicker and more efficient solution** for distressed micro, small, and medium enterprises (MSMEs) in India.

- By **streamlining the resolution process and promoting stakeholder collaboration,** PPIRP offers a promising avenue for revitalizing struggling businesses and bolstering the overall economy.

PEPPER IT WITH
PPIRP, CIRP, MSMEs, IBC, NCLT

AGRICULTURE

Dal imports have hit a seven-year high

News Excerpt:

The **Food inflation pressures** have **reversed the relative self-sufficiency that the country has achieved in pulses**, leading to a rise in the import of pulses.

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Retail food inflation:

- In April 2024, the **Consumer Price Index** (**CPI**) for **cereals was 8.63%** higher than that in April 2023.
  - The government's food security scheme, which **provides rice and wheat** to 813.5 million people, may have mitigated the impact of rising cereal prices.

- The same cannot be said about **pulses,** which posted an **annual retail inflation** of **16.84% in April 2024** — nearly **twice that for cereals.**

- According to the **Department of Consumer Affairs,** the average all-India modal (most-quoted) price of **chana (chickpea) — the cheapest available dal** — was Rs 85 per kg on May 23, as against Rs 70 a year ago.
- The corresponding price rise has been even more for **arhar/tur** (from Rs 120 to Rs 160 per kg) but less (from Rs 110 to Rs 120 per kg) for both **urad (black gram) and moong** (green gram). The modal retail price **of masoor or red lentil** has actually eased from Rs 95 to Rs 90 per kg.

Causes of the drop in Pulses production:

- The main reason is the **El Niño-induced patchy monsoon and winter rain**, causing a **decline in domestic pulses production.**
- The two pulses to register the highest inflation have both seen sharp output falls: **Chana** (from 13.54 mt in 2021-22 to 12.16 mt in 2023-34) and **Arhar/tur** (from 4.22 mt to 3.34 mt).
- Experts say the decline in domestic output is also because of **erratic climate conditions** in key producing regions.
  - The **poor crops** — especially in **Karnataka, Maharashtra, Andhra Pradesh** and **Telangana,** where farmers also **planted less area due to irregular/deficient rainfall** has also caused shooting up of Dal prices.

Government actions amid declining pulse production:

- **Renewed food inflation pressures** have forced the central government to phase out **tariffs and quantitative restrictions (QR)** on imports of most pulses.
  - In May 2021, the **annual QRs on Arhar/tur, urad & moong imports**, along with a **10% basic customs duty, were lifted**.
  - In July 2021, the **duty on imports of masoor was slashed from 10% to nil.**
  - Yellow/white pea imports, till quite recently, were subject to a **yearly QR of 0.1 mt,** in addition to a

Value of Pulses Imports ($ Million)
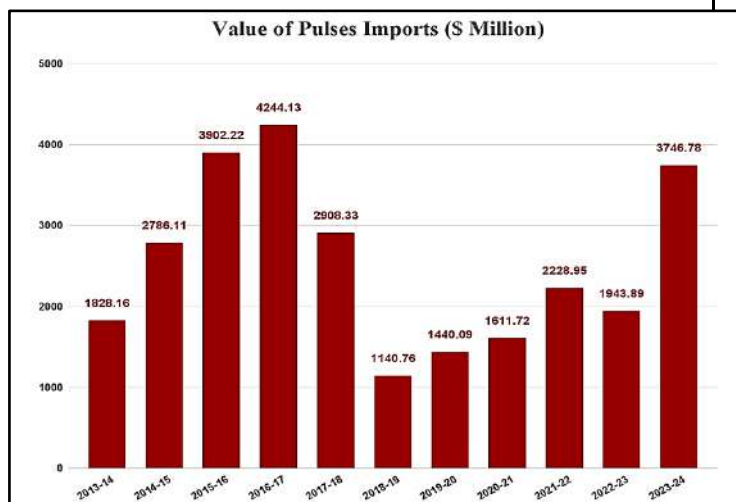
50% duty and a **minimum price of Rs 200/kg,** below which no consignment was cleared.
  - **All these curbs were removed in December, 2023**. On May 3 this year, the 60% import duty on desi (small-sized) chana was done away with.

Increase in import of pulses:

- **India's pulses imports were valued at $3.75 billion in 2023-24** (April-March), the **highest since the record $3.90 billion and $4.24 billion in 2015-16 and 2016-17.**
- In quantity terms, **the import of major pulses totalled 4.54 mt in 2023-24,** up **from 2.37 mt and 2.52 mt in the preceding two fiscals.**
  - Although it was lower than the all-time highs of 5.58 mt, 6.36 mt and 5.41 mt in 2015-16, 2016-17 and 2017-18, respectively.
- **Imports of masoor,** mainly from **Australia and Canada,** touched a record 1.7 mt in 2023-24.
- **Yellow/white pea imports** — from **Canada, Russia and Turkey** — surged from virtually nothing to 1.2 mt.
- **Chana imports (mostly from Tanzania, Sudan and Australia) rose as well.**
- On the other hand, **imports of arhar/tur (from Mozambique, Tanzania, Malawi and Myanmar) and urad (predominantly from Myanmar) have been flat.**

Past Government initiatives to increase pulse production:

- The resurgence in imports marks a **reversal of the relative self-sufficiency** achieved by the country, with **domestic pulse production increasing from 16.32 mt to 27.30 mt between 2015-16 and 2021-22.**
- The increase in production was enabled by government policy measures incentivizing farmers to grow pulses.
  - These included **MSP-based procurement** and **levying of duties** leading to a **near stoppage of imports,** particularly of **yellow/white peas (matar)** and **chana, by 2022-23.**
- **Domestic production got a further boost with the breeding of short-duration chana** and **moong varieties**, making it possible to cultivate these with little or no irrigation, using the residual soil moisture left by the previous crops.
- The **50–75-day varieties of moong now allow the planting of as many as four crops a year: kharif (post-monsoon), rabi (winter), spring and summer.**

Way Forward:

- Dal inflation in the coming months would largely depend on the **southwest monsoon.**
  - **Global climate models are pointing to El Niño transitioning to a "neutral" phase next month.**
  - There could even be **La Niña —** associated with **good rainfall activity** in the subcontinent — by the second half of the four-month season (June-September).

- But the **precarious domestic supply position** (government agencies have procured barely any chana from this year's crop, compared to 2.13 mt in 2023 and 2.11 mt in 2022) and monsoon uncertainties make higher imports inevitable.
- The government has already permitted **duty-free imports of Arhar/tur, urad, masoor and desi chana till March 31, 2025.**
  - It **may have to extend the same for yellow/white peas imports, too — beyond October 31, 2024 now.**
- Yellow/white peas, being imported at Rs 40-41/kg, are **a cheaper substitute** for chana, just as masoor dal is replacing arhar/tur for making sambar in many restaurants and canteens.

> **PEPPER IT WITH:**
> Tariffs, Quantitative Restrictions (PM-AASHA), Minimum Support Price (MSP),

- It is imports of these pulses — grown in Canada, Australia and Russia — that are likely to go up more than arhar/tur and urad shipped from East Africa and Myanmar.

Policy changes tether ethanol blending

News Excerpt:

The **slowdown** in **ethanol output** has consequences, putting the **20% ethanol-blended petrol** (EBP) **target by 2025-26** out of range and leaving India dependent on more polluting, expensive fossil fuel imports.

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More about News:

- In the first half of the November 2023 - October 2024 ethanol supply year (ESY), the ethanol blending ratio averaged **12.1%**, the **same as the entire ESY 2022-23**.
  - This contrasts with the previous years, which saw a 1.9 percentage point increase in 2021-22 from 2020-21 and a 2.1 percentage point increase in 2022-23 from the preceding ESY.

Challenges in achieving Ethanol goals:

- **Policy and Pricing Issues:** India's ambitious plans for an agri-derived ethanol-fuelled transport sector rest on **remunerative rates for ethanol** and **improved agricultural yields.**
  - The current pricing structure for ethanol made from **sugarcane juice/B-heavy molasses** does not adequately reflect the production costs and investments made by the sugar industry.
  - The **minimum support price** for sugar has remained unchanged for more than five years,
- The **revenue share ratio (of sugar) for Indian cane farmers** is **75%**, which is far higher, as opposed to 70% in other important cane-growing countries.
- **Industry and Agricultural Constraints:**

- The lack of **remunerative pricing** has prompted some major industry players to review their investment plans, further accentuating the **shortfall in ethanol production capacity.**
  - The sugar industry is capable of meeting the ethanol supply for the **20% blending** target, but it is **contingent on stable policy, investment in sugarcane production, and farmer support.**
- **Government Policy Considerations and Production Targets:**
  - The government has pushed for **aggressive ethanol blending targets** without considering factors like **weather vagaries, low crop yields, and increasing sugar consumption.**
  - Such an aggressive expansion of ethanol capabilities needs better agricultural management.
- India requires 29 million tonnes (mt) of sugar annually, which is increasing by 1.5–2% per year.
  - A 20% blending target requires close to **10 bl of ethanol**, of which 5.5 bl has to come from **sugarcane;** 1.32 bl will go towards alcohol for industrial and portable purposes in 2024-25,
- **Weather Challenges and Prioritization**
  - **Inclement weather and lower yields** forced the government to divert more of the crop to sugar in an election season while placing restrictions on ethanol production for blending.
  - The government to prioritize sugar production against ethanol production for the ethanol blending programme in a situation of **limited availability of sugarcane.**

> **Fair and Remunerative Price (FRP):**
> - It is the **minimum price that mills have to pay** to sugarcane growers.
> - The sugarcane growers are offered FRP by the government under the **Sugarcane (Control) Order of 1966.**
> - The **Commission of Agriculture Costs and Prices (CACP)** annually formulates recommendations for FRP, encompassing various agricultural commodities, including sugarcane. The government **evaluates the recommendations before they are approved**.

Way forward:

- It's important to **fix** the **minimum support price** and **ethanol prices** along with **FRP** every year to establish financial viability.

> **PEPPER IT WITH:**
> Ethanol Blending, Biofuels, Crude oil, 2018 National Policy on Biofuels

- **Sugarcane production** needs to be enhanced from the **current productivity of** 76 tonnes per hectare to **83 tonnes per hectare** in the **next five years**, and the **cane production area** must increase from **5.7 million hectares (mha) to 6.2 mha.**

INTERNATIONAL RELATIONS

G7 Summit, 2024

News Excerpt:
The Prime Minister of India highlighted India's perspective on the world stage at the G7 Summit in Italy.

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India's Participation and Role at the G7 Summit:
- India was one of 12 countries invited to the resort town of **Fasano in Italy's Apulia region.**
- It is part of **Italy's push to involve the Global South with the G7** and India has always brought the issues of the **Global South to the forefront.**
- This is the **11th G7 summit attended by India;** PM Modi attended for the **fifth time in a row.**
- India's regular participation at the G7 summit points to the **increasing recognition of India's efforts** in resolving global challenges, including peace, security, development, and environment preservation.
- India's participation provided an opportunity to follow up on the outcomes of the **G20 summit** held under India's presidency last year and deliberate on issues significant for the **Global South.**

New Agreements and Collaborations between India and Italy:
- **Naval Visits:** Later this year, Italy's aircraft carrier ITS Cavour and training ship ITS Vespucci will visit India, strengthening maritime cooperation.
- **Cultural Exchange:** India has committed to upgrading the Yashwant Ghadge Memorial in Montone, Italy, showcasing enhanced cultural ties.
- **Academic Partnership:** The establishment of the **first Indian Council for Cultural Relations (ICCR)** chair on

> **PEPPER IT WITH**
> Indian Council for Cultural Relations (ICCR), G20, BRICS,

India studies at the University of Milan is planned, fostering academic exchanges and deeper understanding between the two nations.

Group of 7 (G7):
- The G7 is an informal grouping of **advanced democracies** that meets annually to coordinate **global economic policy and address other transnational issues.**
- It **was founded in 1975 in response to the oil crisis** and includes **Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States.**
- **Russia joined in 1998**, forming the G8, but **was excluded in 2014** (following the annexation of Crimea) returning the group to the G7 format.
- Initially focused on **global economic development**, the G7's agenda now encompasses a wide range of global issues, including foreign and security policy, trade, climate, and development.
- The G7 operates **as an informal forum** without a permanent secretariat or formal procedures, with the **presidency rotating annually** among member states.
- The type and topics of these meetings are also determined by the presidency, reflecting the group's flexible and adaptive approach to addressing global challenges.
- **Though the European Union is not a member of the G7, it attends the annual summit.**

Kuwait fire and the migrant workers

News Excerpt:
The death of 45 Indian workers in a fire in Kuwait is a reminder of the dismal working conditions of a large, and often ignored, section of the Indian Migrants.

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More About the News:
- Most of those who died in the **Kuwait fire** were **aged between 20 and 50** years old.
- This incident has brought attention to **the lack of safety and deplorable living conditions of migrants in destination countries.**
- It is not an **isolated event** in the **Gulf countries**. Two years ago, during the **World Cup in Qatar,** news reports highlighted **rising migrant deaths, harsh working conditions, and severe human rights violations.**
  - Similar issues were reported during the **Dubai Expo**, which heavily relied on migrant labor for rapid infrastructure development.
  - **During the COVID-19 pandemic,** Saudi Arabia's Ministry of Health reported that migrants made up

75% of positive cases by May 2020, with cramped living conditions contributing to the virus's rapid spread among them.

- These tragic incidents are a result of **chronic indifference towards addressing migrant rights, safety, and working conditions in destination countries**.
- The repetition of such incidents suggests that lessons have not been learned, and migrant issues are only in momentary focus during alarming situations.

Challenges faced by Indian migrants in Gulf countries

- The majority of these **migrants work in the unorganized sector**, such as construction sites and factories, where they often **face dangerous working conditions.**
- The availability of a large number of **unskilled and semi-skilled workers in the Gulf reduces the bargaining capacity of migrants**, despite the region offering significantly high salaries.
- Many migrants are recruited through the **visa sponsorship or kafala system,** which binds them to their employers and severely limits their capacity to seek better housing or occupational safety improvements.
- Although India has signed **Memoranda of Understanding with West Asian countries, including Kuwait**, to streamline recruitment procedures and provide legal protection, the l**egal redress process is prolonged and court processes are expensive.**
- Migrants, who are already vulnerable, have to contend with the absence of legal assistance and **a shortage of interpreters in an alien country.**
- Migrants in Gulf countries do not have the option of **permanent residency**, are **not adequately protected, and have very few rights.**
  - The lack of citizenship rights can lead to exploitative labor conditions, similar to what was observed in **Qatar** before the **World Cup.**
- **One major challenge** in addressing these issues is the **lack of data on migrants, both at their origin and destination countries.**
- While sources like the **Kerala Migration Survey** (**KMS) provide regular updates** on emigration, return migration, and remittances in Kerala and other states, **India still has a long way to go in systematically studying migration.**
  - The **Kerala Migration Survey (KMS)** 2023 estimates that 2.2 million people from Kerala have migrated, with 80% of them residing in the **Gulf Cooperation Council (GCC) countries.**

Way Forward:

- There is an urgent need, especially given the large number of migrants from India to various parts of the world, to **systematically study the conditions of their migration and their lives in the destination countries.**

- With a large **Indian diaspora,** especially in the migration corridor with **West Asia**, India **needs well-thought-out and effective policies** to ensure the safety and well-being of its migrants.
- **A national-level migration database is recommended as a necessary step** forward to adequately understand the various sections of migrants from India and the increasing trend of return migration.

- Regulate and monitor the recruitment practices of agencies to prevent exploitation and ensure fair treatment of migrant workers.
- Expedite the process of updating the Emigration Act to provide better legal protection and safeguards for migrant workers. **India's 40-year-old Emigration Act** leaves migrant workers at risk.

Ukraine Peace Summit in Switzerland

News Excerpt:

The two-day **Ukraine Peace Summit** concluded on **June 16** in **Burgenstock**, **Switzerland**.

Joint communiqué from the Peace Summit:

- The communiqué strongly **condemned the "ongoing war** of the Russian Federation against Ukraine" and **emphasized sovereignty, territorial integrity, and adherence to international law**.

1. Nuclear Safety

2. Food Security

3. **Exchange of all prisoners of war**, as well as displaced and detained Ukrainians.

Fig: Three key areas of consensus

- However, the **statement was relatively modest** in its scope, as the organizers aimed to garner broad support, particularly from the **Global South**, which they achieved to some extent.
- Despite **Ukrainian President Zelenskyy**'s praise of a "**historic victory**," there were notable drawbacks.

Drawbacks of Conference:

- Switzerland's decision not to invite **Russia**, and to base their negotiations on the **Ukraine Peace Formula and UN resolutions**, made the gathering appear **one-sided**.
- The **failure to secure even a delegation from China**, which has significant influence over Moscow, was a setback.

- Additionally, the fact that **no BRICS member**, current or prospective, **signed the statement** indicates limited appeal among emerging economies.

India's Stance

- **India attended** the Swiss conference but **did not vote**.
- **Switzerland, Ukraine, and other Western countries** made special efforts to gain India's support for the conference, including a last-minute appeal by **President Zelenskyy** to the **Indian Prime Minister** at the **G-7 outreach summit** in **Italy**.
- As a key **Global South player** and **close partner of Russia**, **India's participation** would have been a significant achievement for the organizers.
- However, while India sent its **National Security Advisor** to preparatory conferences in **Jeddah and Davos**, the **Indian delegation at this summit** was led by the **Secretary (West)** in the **External Affairs Ministry**.
- **India** has consistently **abstained** from **resolutions at the UN**, **Security Council**, **International Atomic Energy Agency (IAEA)**, **Human Rights Council**, and other multilateral forums criticizing Russia's invasion of Ukraine.
- Although **India may share concerns** over much of the conference's text, it could not support its overtly anti-Russian stance.

Way Forward:

- By **attending the conference without endorsing its outcome**, India demonstrated a willingness to participate in the process, especially if it leads to a more inclusive future conference with both **Russia and Ukraine** present.

> **PEPPER IT WITH**
> Russia- Ukraine War, Global South, G7

India- Norway Relations

News Excerpt:

Norwegian businesses are showing a lot of interest in India and the cooperation between the two countries is expected to increase manifold in the next 10 years.

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Historical Background:

- Ties between **Norway and India** have deep historical roots.

- As early as the 1600s, a **Danish-Norwegian trading station** was established in **Tranquebar (Tharangambadi), which today lies in the Indian state of Tamil Nadu.**
- Norway's **first Consulates** in India opened in Kolkata and Mumbai in 1845 and 1857, respectively.
- In 1952, the **"India Fund"** was established to provide development assistance with a focus on fisheries. The same year, Norway opened its Embassy in New Delhi.

Recent development in India-Norway Relations:

- Norwegian businesses are showing a lot of interest in India because **India is the fifth-largest and fastest-growing economy in the world.**
- The recently signed **trade pact between India and the four-nation European Free Trade Association (EFTA) bloc**, which includes Norway, has immense importance as it provides a **secure framework for Western businesses to operate within**.
- Norway will contribute significantly to promoting investments in India, as the **EFTA-India trade pact** is the **first trade treaty with an investment chapter.**
  - EFTA countries **(Iceland, Liechtenstein, Norway, and Switzerland)** have committed to creating a million jobs, and Norway will contribute a considerable part of that.
- Norway aims to strengthen relations between **the governments, including with State governments in India, as well as business-to-business and people-to-people ties.**
- Norway is keen on three sectors for cooperation with India: **renewable energy, maritime, and circular economy.**

> **PEPPER IT WITH:**
> Oslo Accords, European Free Trade Association (EFTA), India Fund

- Norway is set to host the **Third India-Nordic Summit** by the end of this year in Oslo, continuing the framework of the **India-Nordic Summits previously held in Stockholm and Copenhagen.**

Energy Sector

- Norway: 3rd largest gas producer, 7th largest oil exporter.
- Indian companies ONGC and Reliance have tie-ups with Norwegian firms.
- India benefits from Norwegian drilling and exploration technologies.

Investment and Funds

- Norway's $1 trillion government pension fund invested $12 billion in India; India seeks more investments.
- Norway's climate investment fund plans $1 billion investment globally in five years, with substantial investment expected in India.

Renewable Energy

- Norway interested in India's solar energy infrastructure.
- Exploring offshore wind energy opportunities with the National Institute of Wind Energy.
- Viable wind energy projects mainly in Tamil Nadu and Gujarat.

Maritime and Fisheries

- India interested in Norway's deep-sea fishing technology, port development, and shipbuilding.
- 30 vessels being built in Indian shipyards for Norwegian owners.
- Joint efforts on ship recycling, focusing on India's accession to the Hong Kong Convention.

Trade and Investment

- Bilateral trade doubled to $2 billion in the last two years.
- 100 Norwegian companies engaged in India, with steady growth in trade.

Academic and Cultural Cooperation

- Academic relations between Tamil Nadu institutions (IIT-Madras, Institute of Wind Energy) and Norwegian institutions.
- Norwegian company Piql creating digital archives for Indian monuments like the Taj Mahal, Dholavira, and Bhimbetka Caves.

Geopolitics and Conflict Resolution

- Norway supports India's bid for a permanent UN Security Council seat.
- Former Norwegian PM involved in 2002 Sri Lankan ceasefire, heads the Oslo Centre for Peace and Human Rights.

Death of Ebrahim Raisi and India-Iran ties

News Excerpt:

The **death of the Iranian President** has significant implications for India and the wider region.

More about the news:

- The president of the Islamic Republic of Iran, Ayatollah Ebrahim Raisi, met with an accident in the mountainous protected forest area of **Dizmar near the town of Varzaghan north west Iran.**
- The incident occurred while Raisi was returning from a trip to Iran's border with Azerbaijan.

Who was Ebrahim Raisi?

- Raisi was a hardliner who won **Iran's 2021 presidential polls** that saw the lowest-ever turnout in the **Islamic Republic's history.**
- Raisi was on the US sanctions lists for several charges including his role in the **mass execution of thousands of political prisoners in 1988** at the end of the **Iran-Iraq war.**
- A protégé of **Ayatollah Ali Khamenei,** Raisi was one of several contenders tipped to succeed him.
- Under Raisi, **Iran enriched uranium** to nearly weapons-grade.

What are the implications for India?

- **Oil Imports and Prices:** As India imports a significant portion of its oil requirements, any disruption in **global oil supplies** due to instability in Iran, which is the **third-largest oil producer in OPEC,** could impact **India's import bill**.
- **Safe-haven Asset Demand:** The news of Raisi's death led to an **increase in gold prices**, indicating a shift towards safer assets amid potential regional instability.
- **Chabahar Port Project:** India recently signed a crucial agreement with Iran to operate the Chabahar port, a strategic initiative to boost trade with Central Asia.
  - The progress of this project, which had been hindered by US sanctions on Iran due to its suspected nuclear activities, could be affected by the political developments in Iran.
- **Regional Stability and Trade**: India's External Affairs emphasized the regional benefits of the Chabahar port and urged a broader perspective, noting past US appreciation for its strategic importance.
  - The death of Raisi and the subsequent developments in Iran could impact **regional stability and trade relations,** affecting India's interests in the region.

India-Iran relations

- After the **Cold War ended**, India has tried to maintain cordial relations with most countries in **West Asia**. Iran, which shares borders with **Afghanistan and Pakistan**, is a key player in the region.
- The two countries signed a **friendship treaty in 1950**, marking the beginning of diplomatic relations.
- After the Iranian Revolution in 1979, a "new phase of engagement" began between the two nations, as per the **Ministry of External Affairs (MEA)**.
- India's PM last met the Iranian Presidentin August

2023, ahead of the **BRICS summit in Johannesburg**.

- New Delhi supported Tehran's bid to join BRICS (Brazil, Russia, India, China, South Africa). Iran joined the **intergovernmental alliance** in September 2023 during the South Africa BRICS summit.
- India and Iran share common concerns about **Taliban's Sunni extremism** and **Pakistan's role in Afghanistan,** as per Foreign Policy.

"For India, Iran is a stabilizing force in the Persian Gulf, and military and security cooperation between the two countries is on the rise

Impact on Iran's ties with the western countries:

- Iran's ties with the West are rocky over its suspect nuclear programme and its support to groups such as **Hamas and Houthis.**
- If a hardliner replaces the Iranian President, ties with the West are unlikely to improve.
- Talks with the West on removing sanctions over **Iran's nuclear programme s**talled during Raisi's term.
- Tensions with the West also rose after the 2022 death of **Mahsa Amini,** detained for wearing a loose headscarf.

PEPPER IT WITH:
Dizmar Protected Area, Chahabar Port, OPEC

Confederation of the Alliance of Sahel States (AES)

News Excerpt:

Three military-led West African countries **Burkina Faso, Mali, and Niger** have finalized plans to form a confederation after turning their backs on **former colonial ruler France to seek closer ties with Russia.**

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More about the news:

- The Foreign Ministers of three countries met in **Niger's capital Niamey** to agree on a text to establish the alliance named **L'Alliance des États du Sahel (AES).**
- The three countries in late January decided to quit the **Economic Community of West African States (ECOWAS)**, to create their own regional grouping.

About AES:

- It was established by signing the **Liptako-Gourma Charter**, named after the place where **all three countries' borders intersect.**
- It was established on September 16, 2023, as a **collaborative defense pact** among the three countries focused on **fostering economic development and political autonomy.**
- It pledges its members to **support one another militarily** should any of them come under attack and also obligates the three nations to **cooperate to end or prevent armed uprisings.**

Legend:
- Ecowas
- Alliance of Sahel States
- Other suspended members

Background of the formation of Alliance:
Series of Political Instability:

- All three countries faced a series of political upheavals with all of them experiencing coups.
- A primary catalyst for the series of coups is the **government's failure to quell rebel insurgencies effectively.** Inadequate equipment and training render military personnel vulnerable to insurgent attacks, leading to significant casualties.
- Persistent issues such as **poverty, inequality, and corruption** contribute to societal unrest, fueling discontentment in the nation.

United Nations Multidimensional Integrated Stabilization Mission in Mali (MINUSMA)

- **The MINUSMA** was established by the **Security Council in 2013** to support political processes in that country and carry out several **security-related tasks.**
- The Mission was asked to **support the transitional authorities of Mali** in the stabilization of the country.

ECOWAS:

- The governments of **fifteen West African Countries** established the Economic Community of West African States (ECOWAS) on the **28th of May 1975** in Lagos, Nigeria.
- The **only Arabic-speaking Member Mauritania withdrew** in December 2000.

The Community aims to promote cooperation and integration, **leading to the establishment of an economic union in West Africa** to raise the living standards of its people and maintain and enhance economic stability.

Impact on Franco-African Relations:

- France's role in the region has been met with **accusations of neo-colonialism,** with critics asserting that France exploits African nations' natural resources without providing commensurate benefits.
- The strained relations **led to France withdrawing its troops** from Burkina Faso and Mali. By December 2023, **French military operations in West Africa ceased**

entirely, with the final troop withdrawal from Niger, leading to a diminished French influence.

Conclusion of International Peacekeeping Efforts:

- The cessation of MINUSMA operations and the withdrawal of French troops underscore the precarious state of regional stability in West Africa.
- The **absence of international intervention mechanisms may worsen existing security challenges**, posing long-term ramifications for the affected countries and the broader region.

Way forward:

The **three landlocked countries** are among the poorest nations in the world. Despite the announcements, **without finance and technical capacity**, it won't be easy for them to build new institution

> **PEPPER IT WITH:**
> UN Peacekeeping Forces, Coups in African Nations

ENVIRONMENT

India is the World's Second Largest Emitter of Nitrous Oxide

News Excerpt:

India ranks as the **second-largest emitter** of **nitrous oxide (N2O)** globally, a **greenhouse gas** significantly more potent than **carbon dioxide** in terms of **atmospheric heating**.

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Key points from the Study:

The study was published on the **global assessment of N2O emissions** in the **Journal of Earth System Science Data**.

Top five N2O emitter countries	
China	16.7%
India	10.9%
United States	5.7%
Brazil	5.3%
Russia	4.6%

- **In 2020**, India accounted for nearly **11% of global man-made N2O emissions**, second only to **China**, which contributed **16%**.
- Atmospheric **N2O** concentrations reached **336 parts per billion in 2022**, about **25% higher** than **pre-industrial levels**. In contrast, **carbon dioxide** levels were **417 parts per million**, making carbon dioxide emissions a more immediate focus for climate change mitigation.

The primary source of emissions:

- Human activities have increased N2O emissions **by 40% over the past four decades**, with the highest rise from 2020 to 2022.

- Agricultural activities, especially nitrogen fertilizers and animal manure, contributed **74%** of these emissions in the last decade.
- While emissions from fossil fuels and the chemical industry are stable or declining, **aquaculture emissions**, although currently much lower, are rapidly increasing.

Impact of emission:

- N2O stays in the atmosphere **for about 117 years**, significantly impacting climate and ozone.
- It contributes **6.4% of greenhouse gas radiative forcing**, adding around 0.1°C to global warming.
- Recent N2O levels **exceed the worst-case IPCC projections**, potentially leading to temperatures above 3°C by century's end.
- To align with the **Paris Agreement** and keep global temperatures below 2°C, anthropogenic N2O emissions must decrease by at least 20% from 2019 levels by 2050.

Changing Food patterns:

- The rising **demand for meat and dairy products** has increased manure production and subsequent N2O emissions. Moreover, **nitrogen fertilizers** used in animal feed production contribute to the rise in emissions.

Way Forward:

- **Director of the Centre of Sustainable Agriculture**, emphasized the urgency of addressing this issue, noting that **India heavily subsidizes nitrogen fertilizers** by **over 80%**.

> **PEPPER IT WITH:**
> Paris Agreement, Global Heating Potential, IPCC

- He called for a **re-evaluation of fertilizer subsidies** to support **alternative production systems** that would reduce both **emissions and water pollution**.

> **Paris Agreement**
> - It is a **legally binding international treaty** on **climate change**.
> - It was adopted by **196 Parties** at the **UN Climate Change Conference** (COP21) in **Paris, France**, on 12 December 2015. It entered into force on 4 November 2016.
> - Its overarching goal is **to hold "the increase in the global average temperature** to well **below 2°C above pre-industrial levels"** and pursue efforts "to limit the temperature increase to **1.5°C above pre-industrial levels."**
> - To limit global warming to 1.5°C, **greenhouse gas emissions must peak before 2025** at the latest and **decline 43% by 2030**.

Treated Wastewater Reuse in India

News Excerpt:

India aims to reuse **half of its treated wastewater** from operational **sewage treatment plants (STPs) by 2025** and achieve **100% reuse by 2030** to address the urgent issue of **dwindling freshwater resources**.

Challenges related to freshwater resources:

- The current **infrastructure** is insufficient for this task.
- Many **STPs are overloaded** and can't treat wastewater to the high standards required for reuse.
- Additionally, **inadequate wastewater collection systems** hinder efficient delivery to treatment facilities.
- Concerns about the **quality and safety of treated wastewater** led to resistance and reluctance to use it.

Bengaluru: Secondary treated water is used to **recharge shallow aquifers** through natural percolation by filling lakes, increasing groundwater levels in nearby wells for irrigation and domestic use.

Delhi: Treated wastewater from **STPs is used to recharge lakes** as part of the 'City of Lakes' **program**, facilitating natural percolation and recharge of shallow aquifers.

Haryana's Kurukshetra District: The **Micro Irrigation Command Area Development Authority (MICADA)** established **Water Use Association Committees** (WUC) to disseminate information on use of treated wastewater for agriculture.

Innovative Methods Across India

Social Factors Hindering Reuse:

- **Perceived health risks:** Concerns about potential health risks deter use despite meeting safety standards.
- **Stigma and social acceptance:** Social stigma views recycled water as "dirty" or "contaminated."
- **Aesthetic concerns:** Negative reactions to the appearance, smell, or taste of recycled water persist even if it meets safety standards.

Way Forward:

- Raising awareness about the **benefits and safety of recycled water**.

PEPPER IT WITH:

Grey Water, 3Rs cycle, Sewage Treatment Plants

- **Innovative and collaborative efforts** to break **societal resistance** to treat wastewater reuse.
- **Engaging local communities** in decision-making and ensuring compliance and quality includes implementing wastewater reuse projects in a culturally sensitive and community-responsive manner.

Landmark Advisory Opinion on Climate Change Obligations

News Excerpt:

On May 21, 2024, the **International Tribunal for the Law of the Sea (ITLOS)** issued a significant advisory opinion on the obligations of states under the **United Nations Convention on the Law of the Sea (UNCLOS)** concerning climate change mitigation.

More about the News:

This milestone opinion was sought by the **Commission of Small Island States on Climate Change and International Law (COSIS),** a group established in 2021 to address the unique vulnerabilities of small island nations to climate change.

Key Findings of the ITLOS Opinion

- The Tribunal unequivocally stated that under **Article 194(1) of UNCLOS,** states are obligated to take all necessary measures **to prevent, reduce, and control marine pollution from anthropogenic greenhouse gas (GHG) emissions.**
- The Opinion also clarified that the release of carbon dioxide into the marine environment qualifies as a pollutant under Article 1(1)(4) of UNCLOS.
  - This reinforces the scientific consensus that the **ocean absorbs around a quarter of atmospheric CO_2, leading to ocean acidification and contributing to global warming through excess heat absorption.**

Implications for Global Climate Action

- By addressing the collective interest in climate change mitigation, the ITLOS opinion transcends the **traditional bilateral approach to transboundary environmental harm, emphasizing a global responsibility.**
- The Tribunal highlighted that necessary measures should **align with the best available science and international agreements**, including the Paris Agreement's goal of limiting global warming to 1.5°C.

Challenges and Limitations

- While the ITLOS opinion underscores that states **do not have unlimited discretion in addressing climate change, it stops short of defining concrete methodologies for assessing state mitigation actions.**

○ This generality echoes the symbolic but insufficient identification of obligations without stringent enforcement mechanisms.

- Environmental law expert noted that the real issue is not the existence of mitigation obligations but their specific content and applicable standards.
  ○ They cited the **Netherlands Supreme Court's Urgenda decision,** which **set a clear reduction target based on scientific data and legal standards.**
- The ITLOS Opinion does not provide similar concrete targets or methodologies, and it acknowledges that measures must consider states' capacities and equity principles.

Way forward:

- Despite lacking binding legal force, **they carry significant political weight** as authoritative judicial statements.

PEPPER IT WITH:
COSIS, ITLOS, Paris Agreement, Ocean Acidification

- It may influence **international climate policies and encourage stronger action**, particularly for vulnerable small island states.
- Emphasis on due diligence and **preventive measures could shape future climate litigation and policy-making**, highlighting the urgency and shared responsibility in combating climate change.

ITLOS
- **The International Tribunal for the Law of the Sea (ITLOS**) is an independent judicial body established by the 1982 **United Nations Convention on the Law of the Sea.**
- It has jurisdiction over any dispute concerning the interpretation or application of the Convention and over all matters specifically provided for in any other agreement which confers jurisdiction on the Tribunal.

Urban India needs to fix its water problem

News Excerpt:

The recurring water crises should compel rethinking on sustainable use of fast-depleting aquifers.

More details about the news:

- **In Karnataka,** the season kicked off earlier than usual, starting in March. This premature onset has intensified the water crisis in **Bengaluru,** the state capital, which has already been grappling with its most severe drought in decades.
- **In Delhi,** the scorching temperatures have led to a similar emergency, reigniting an old dispute over water allocation to the capital.

- **Chennai, too**, has experienced shortages in recent years. Several other Indian cities are under similar stress, indicating that water supply is rarely factored in urban planning.

Challenges of water crisis faced by urban India:

- **Reduced River Flows and Falling Water Tables**
  ○ **Reduced river flows and falling wate**r tables have made the summer harsher in several parts of the country, leading to water crises in cities like **Bengaluru and Delhi.**
- **Water Disputes Between States**
  ○ The water crisis in **Delhi has reignited an old dispute** over water allocation from the **Yamuna River**, leading to a Supreme Court intervention directing **Himachal Pradesh and Haryana** to facilitate water flow to the **National Capital Region (NCR).**
  ○ The Delhi government claims Haryana is not complying with the water-sharing directive, while **Haryana argues that water is "evaporating" in transit**.
- **Neglect of Aquifer Health and Supply-Side Focus**
  ○ While the government has focused on providing tap water connections, the **health of aquifers continues to be neglected.**
  ○ The country has historically tried to address water deficits by focusing on **supply-side parameters**, but more needs to be done to tackle **long-standing shortfalls.**
- **Lack of Coordination and Rainwater Harvesting**
  ○ There is very little coordination **between departments dealing with surface water, groundwater, irrigation resources, and drinking water.**
- **Data Gaps and Demand-Side Management**
  ○ Indian cities have a **daily per capita water requirement of 135 liters,** but people require only a fraction of this for drinking and cooking.
- **Urban Water Supply Issues**
  ○ Water quality deteriorates in the distribution network due to factors like old pipes, sediment buildup, accumulation of pathogens, leaky pipes, and proximity to sewer lines.

Potential Solutions:

- **Efficient Water Use in Agriculture:** Programs like the **Sahi Fasal Campaign, Pradhan Mantri Krishi Sinchayee Yojana, and Atal Bhujal Yojana** have taken early steps to encourage efficient water use in agriculture.
- **Incentives and Conservation Measures:** With climate vagaries imperilling the **country's already-stressed**

aquifers, the new government should prioritize comprehensive water management strategies.

- **Improved Urban Planning and Water Supply Integration:** Water supply considerations need to be integrated into **urban planning processes** to ensure sustainable and equitable access to water resources.
  - **For Example**, Singapore's Water Pricing Policy incentivizes conservation by increasing water tariffs for households with higher consumption levels.
- **Upgrading Water Infrastructure:** Investments are needed to upgrade ageing water infrastructure, such as **replacing old pipes, improving treatment facilities, and minimizing leakages in distribution networks.**
- **Promoting Decentralized Water Management: Decentralized water management approaches**, such as localized water treatment and distribution systems, can be more efficient and reduce the strain on centralized systems.

> **PEPPER IT WITH:**
> Aquifers, Rainwater Harvesting, Water Disputes

Bonn Climate Change Conference

News Excerpt:

Delegates from 198 countries are meeting in Bonn, Germany **to prepare for COP29 to be held in Baku, Azerbaijan in November 2024.**

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What is the Bonn Climate Change Conference?

- It is a significant event **hosted by the United Nations Framework Convention on Climate Change (UNFCCC) at its headquarters in Bonn, Germany.**
- This year, the conference is being held from 3 to 13 June and has gathered around 6,000 participants, including **national delegations and civil society groups including Intergovernmental organizations and UN agencies.**

Purpose and Importance:

- The Bonn Climate Change Conference **serves as a critical waypoint leading up to the annual COP.**
- It provides an opportunity for parties to negotiate mechanisms for implementing the agreements made at the previous COP.
- During these inter-sessional meetings, participants work on the language and draft conclusions to be submitted as formal recommendations at the next COP, ensuring the ongoing effectiveness of climate action discussions and decisions.

Key Issues on the Table:

- **Climate Finance:** Strategies for financing climate action and supporting developing countries in their climate efforts.

- **New Climate Finance Goal:** COP29 aims to set a new climate finance target for post-2025, focusing on mitigation, adaptation, and loss and damage.
  - **Intermediary Goals:** Discussions will include intermediate spending targets and the form of finance, such as grants or loans.
- **National Climate Action Plans:** Review and enhancement of countries' commitments and plans to reduce greenhouse gas emissions and meet climate targets.
- **Just Transition Away from Fossil Fuels:** Ensuring a fair and equitable transition for workers and communities affected by the shift from fossil fuels to renewable energy sources.
- **National Adaptation Plans:** Developing and implementing plans for countries to adapt to the impacts of climate change, enhancing resilience and reducing vulnerability.

Progress on Loss and Damage

- **Glasgow Dialogue**: The third and final session of the Glasgow Dialogue will occur in Bonn, focusing on **funding arrangements to address climate-related loss and damage.**
- **Loss and Damage Fund**: Operationalized at COP28, this fund is hosted by the World Bank with no obligatory contributions from developed countries.

Importance of Bonn Agreements

- Agreements in Bonn are crucial for defining **post-2025 climate finance** and **advancing loss and damage funding mechanisms.**
- Both parties and non-party stakeholders will contribute to ongoing discussions, impacting future climate finance strategies.

Proposals and Demands:

- India has proposed that **developed countries** commit to providing **at least $1 trillion annually after 2025**.
- **Arab countries** have suggested a minimum of **$1.1 trillion**, while **African** countries demand **$1.3 trillion.**
- Developed countries have not publicly offered any specific figures but acknowledge that the new target must exceed the current $100 billion per year.

Debate Over Contributions:

- Only Annexure 2 countries under the UNFCCC and Paris Agreement are mandated to provide climate finance to developing nations.

> **PEPPER IT WITH:**
> Climate Change, Glasgow Dialogue, Loss & Damage Fund

- These countries argue that the financial burden is now too large for them alone.
- Pressure mounts on non-Annexure 2 nations like China, wealthy Gulf states, and South Korea to contribute.
- China has declared it has no plans to increase its climate finance responsibilities despite its global climate efforts.

Water credit

News Excerpt:

A leading packaged water maker in India is pioneering the concept of water credits, analogous to carbon credits, to promote accountability in water usage within the beverage industry.

About the study:

- The company has partnered with **TERI School of Advanced Studies** to conduct a study that would **set a benchmark for the beverage industry's commitment to water conservation**.
- The study assumes significance given that **several large beverage makers have been criticized** for extracting water from water-stressed areas.

What is Water Credit?

- It is an initiative of **water.org** to provide **affordable financing for safe water and sanitation.**
- It first launched Water Credit **in India in 2004** through a partnership with the **Indian NGO Gramalaya**.
- Currently, **Water Credit** has scaled to **reach more than 8.5 million people** through 1.7 million loans.
- It provides the **water sector to generate green credits through water conservation, water harvesting, and water use efficiency**, including treatment and reuse of wastewater.

Benefits:	Challenges:
Enhanced Sustainability: Reduces water footprint, aiding environmental conservation.	**Implementation Complexity:** Difficult to establish a baseline water footprint due to varying scales and technologies.
Regulatory and Reputational Advantage: Lowers regulatory risks and boosts company reputation.	**Validation of Claims:** Ensuring long-term conservation validity is hard, especially for smaller units with limited technology.
International Acceptance: Improves market acceptance for sustainably produced products.	**Regulatory Overlap:** Existing regulations on groundwater usage may complicate new water credit **systems.**

Way forward:

- **Prevent Water Scarcity:** Beverage companies can combat water scarcity by focusing on conservation, harvesting, and efficiency, especially in areas projected to face water stress by 2025.

Green Credit Program:

- **Launch:** It was notified in October 2023.
- **Goal:** To lay an emphasis on sustainability, reduce waste, and improve the natural environment.
- **Nodal Agency:** An autonomous body of the Ministry, the Indian Council of Forestry Research and Education (ICFRE), is in charge of administering the program.

The GCP program presents itself as an "innovative, market-based mechanism" to incentivize "voluntary actions" for environmental conservation, according to a document of the Environment Ministry.

- **Embrace Accountability:** The beverage industry needs to take responsibility for its water usage. Implementing water credit systems should become standard practice to ensure sustainability.
- **Regulatory Enforcement:** Governments must enforce strict regulations on water extraction by beverage companies in water-stressed regions, with penalties for non-compliance.

PEPPER IT WITH:
Water Scarcity, Flash Floods, Green Credit

REPORTS IN NEWS

UN Report about Deforestation

News Excerpt:

A UN report titled **"Raising Ambition, Accelerating Action: Towards Enhanced Nationally Determined Contributions for Forests"** found major gaps in forest protection, management, and restoration in countries' **Nationally Determined Contributions (NDCs)** under the Paris Agreement.

Key findings from the UN Report about Deforestation:

- **Increased since the 2021** Glasgow Leaders' Declaration on Forests and Land Use, which **aimed to halt forest loss by 2030.**
- **Increase** mainly in Latin America and the Caribbean from 2019 to 2022, **except for Brazil**, which reduced deforestation by 22% annually.

About National Determined Contribution:

- Pledges between 2017 and 2023 **fail to meet global deforestation goals** for 2030.

- **Only 8 of the 20 countries** with the most tropical deforestation have targets to reduce tree cover loss in their NDCs.

Country-Specific Plans:
- ○ **Brazil:** Updated NDC lacks forest targets; separate PPCDAm plan aims to end deforestation by 2030.
- ○ **Indonesia:** No specific NDC commitments; FOLU Net Sink 2030 Plan targets net zero emissions by 2030.
- NDCs from top 20 tree cover loss emitters are inadequate for achieving deforestation goals.
- From 2019 to 2023, these countries emitted 5.6 billion tonnes of CO2 annually from deforestation, exceeding international aviation and shipping emissions by over 4.5 times.

Key Recommendations:
- **Deforestation Causes:** Driven by agriculture for commodities like oil palm, soybean, and beef.
- **Report Recommendations:**
  - ○ Strengthen and align forest measures in NDCs and define national policies.
  - ○ Increase forest carbon prices by $30-50 per tonne of CO2 to incentivize conservation.
  - ○ Include local communities and indigenous people, recognizing their rights to forest protection.
  - ○ Enforce laws more effectively, as seen with the successful deforestation reduction in the Brazilian Amazon in 2023 through intensified raids on illegal activities.

Way Forward:
- The 30th Conference of the Parties (COP30) to the **United Nations Framework Convention on Climate Change (UNFCCC)** in Brazil next year should prioritize ambitious forest protection goals.
- Countries, especially those with extensive forest cover, should include concrete, measurable targets on forests in their revised **NDCs (NDCs 3.0) for COP30,** extending to **2035.**

State and Trends of Carbon Pricing Report 2024

News Excerpt:
The **World Bank** has released the State and Trends of Carbon Pricing Report 2024.

About the report:
- The World Bank has been **tracking carbon markets** for around two decades, and this is its **eleventh annual carbon pricing report**.
- When the **first report** was released, **carbon taxes and Emission Trading Systems** (**ETSs**) covered only **7% of the world's emissions**. According to the **2024 report, 24% of global emissions are now covered**.

Findings of the Report:
- Report findings show **large middle-income countries** including **Brazil, India, Chile, Colombia, and Turkey** are making strides in carbon pricing implementation.
- While **traditional sectors** like **power and industry** continue to dominate, carbon pricing is increasingly being considered in new sectors such as **aviation, shipping, and waste**.
- The **EU's Carbon Border Adjustment Mechanism**, currently in a **transitional phase**, is also encouraging governments to consider carbon pricing for sectors such as **iron and steel, aluminium, cement, fertilizers, and electricity**.
- Despite new pledges, there is a **large gap** between the **target and the requirement** to meet the **1.5°C temperature reduction goal**.
  - ○ This includes a significant gap between the ambition stated in **government pledges** and the **emissions reductions** expected to be delivered by policies currently in place.
- **Carbon pricing instruments** play a critical role in addressing this gap, as they can **incentivize change across economies** and be tailored to align with **net-zero goals**.
- When combined with other policies, carbon pricing can help accelerate and ensure a **smooth transition to a low-carbon economy**.

Carbon Taxes and Emissions Trading Schemes:
- There are **75 carbon taxes and emissions trading schemes** (**ETSs**) in operation worldwide.
- There was a **net gain of two carbon pricing instruments** over the **past 12 months**.
- **Carbon pricing instruments** cover around **24% of global emissions**.
- **Carbon pricing** is mostly applied in the **power and industrial sectors** but is increasingly being considered in other sectors, such as **maritime transport and waste**. **Carbon pricing revenues in 2023 exceeded USD 100 billion** for the first time, driven by high prices in the EU.

Challenges and Requirements:
- Despite record revenues, global coverage and price **levels are insufficient for Paris Agreement goals.**
- Less than 1**% of global greenhouse emissions are covered** by a carbon price at levels recommended to meet climate targets.
- Bridging the gap **requires stronger political commitment to align climate policies with commitments.**

UNESCO's State of Ocean Report

News Excerpt:

UNESCO's State of Ocean Report calls for the provision of regular data on how ocean warming is evolving and its impacts; this is needed to support the decade-long challenge for healthy and resilient oceans.

About State of Ocean Report:
- The first State of the Ocean Report (StOR) was launched in 2022.
- The report aims to inform policymakers about the state of the ocean and stimulate research and policy actions toward achieving sustainable ocean management.
- It contributes to the 2030 Agenda and **Sustainable Development Goal 14 (Life Below Water) and** other **global frameworks** like **the UNFCCC, Convention on Biological Diversity, and Sendai Framework for Disaster Risk Reduction.**
- The report covers physical, chemical, ecological, socio-economic, and governance aspects of the ocean, providing insights on scientific activities and analyses related to the current and future state of the ocean.

Key takeaways from the Report:
- The **upper 2,000 meters of oceans warmed** at a rate of 0.32 ± 0.03 watts per square meter from 1960 through 2023, and this **rate has doubled to 0.66 ± 0.10 watts per square meter in the past two decades.**
  ○ The report calls for the provision of **regular data on how ocean warming is evolving and what its impacts are.**
  ○ This is needed to support the decade challenge for **healthy and resilient oceans.**
- Increased **greenhouse gas emissions** from human activities lead to a higher uptake of the **Earth's energy imbalance (EEI)** by oceans.
  ○ **EEI represents the balance between incoming solar energy and outgoing energy from the Earth.**
- Approximately **90% of the Earth's energy imbalance (EEI)** is absorbed by oceans, leading to a cumulative **rise in ocean heat content (OHC)** in the upper 2,000 meters.
  ○ **OHC represents the total heat stored by oceans.**
  ○ The increased OHC restricts **ocean layer mixing,** reducing **oxygen levels in near-surface high-latitude waters** reaching deeper ocean layers, termed **'deoxygenation.'**

Ocean Acidification and Mitigation Efforts:
- Another crisis highlighted in the report is the mean **global increase in ocean acidification in all ocean basins and seas.**
- Coastal waters can become **acidic due to natural processes** like freshwater influx, biological activity,

temperature change, and climate patterns such as **El Nino/Southern Oscillation (ENSO).**
  ○ Human activities, such as **nutrient input from agriculture and industry, a**lso impact the chemistry of coastal areas.
  ○ **Longer-term data sets are needed for coastal areas** compared to the open ocean to determine the emergence of ocean acidification trends.
- Sea levels rose in 2023, with the **global mean sea level increasing by 3.4 +/-0.3 mm/yr from 1993 to 2023.**
  ○ Further, there's a need to **enhance both space-based and in situ observing systems to monitor sea level rise at global, regional, and coastal levels.**
- It **discusses** recent advancements in **marine carbon dioxide removal (mCDR) technologies**, which involve capturing carbon dioxide from the air and storing it durably.
  ○ Techniques include altering **seawater's chemical compositio**n to **enhance carbon absorption or adding nutrient**s like iron to stimulate plankton growth, aiding in carbon storage.

'Silent Demise' of Vast Rangelands Threatens Climate, Food, Wellbeing of Billions: UNCCD

News Excerpt:
UN Research has found that half of the world's rangelands are degraded.

More about the news:
About half of the world's rangelands are degraded and need policy interventions, and communities depending on them need focused support, according to a new report of the **United Nations Convention on Combating Desertification (UNCCD).**

Key highlights of the report:
- Nearly 50% of the world's rangelands can be considered "degraded" and are facing a "silent demise".
- Primary reasons for degradation include **climate change, unsustainable land** and **livestock management practices, biodiversity loss**, and the **conversion of rangelands to farmlands.**
- Uncertainty over **land rights** among pastoralist communities, who depend on rangelands for their livelihood, also leads to their degradation.

Advantages of Rangelands:
- They **act as carbon sinks** (which absorb more carbon from the atmosphere than they release), **storehouses of fresh water**, and **prevent desertification of land**.
- Millions of people worldwide depend on rangelands for food security and livelihoods.
- According to the UNCCD "rangelands **generate 16% of global food production** and **70% of feed for**

domesticated herbivores, most significantly in **Africa and South America,"** the UNCCD report stated.

- **In India,** rangelands occupy about **1.21 million sq km**, from the **Thar Desert to Himalayan meadows,** as per the **UNCCD report.**

The economic viability of rangelands: Rangelands are an important economic engine in many countries and define cultures. It is **home to one-quarter of the world's languages,** it also hosts numerous **World Heritage Sites,** and has shaped the value systems, customs, and identities of pastoralists for thousands of years.

World areas most acutely affected by rangelands degradation (ranked in descending order):

- **Central Asia, China, Mongolia:** The replacement of government management and oversight with privatization and agricultural industrialization left herders abandoned and dependent on **insufficient natural resources causing widespread degradation**.

- **North Africa and Near East:** The impact of climate change in these regions is pushing pastoralists into poverty and degrading the rangelands on which they rely.

- **Sahel and West Africa**: Conflict, power balance, and border issues have interrupted livestock mobility leading to rangelands degradation.

- **South America: Climatic change, deforestation linked to industrialized agriculture and extractive activities,** and land use conversion are South America's main drivers of rangeland degradation.

- **East Africa:** Migration and forced displacement caused by competing uses of land (such as hunting, tourism, etc.) are evicting pastoralists from their traditional lands, causing unanticipated consequences of degradation.

- **North America:** The degradation of ancient grasslands and dry rangelands threatens the biodiversity of iconic North American ecosystems such as the tall-grass prairies or the southern deserts.

What are rangelands:

- According to the UNCCD report, rangelands are **natural or semi-natural ecosystems** that are **grazed by livestock or wild animals.**
- They contain **vegetation such as grasses, shrubs, bushes, open forests, and agroforestry systems** (land that contains trees and crops or pastures).
- The exact nature of rangelands' **vegetation is influenced by rainfall, temperature, and other climate phenomena.**
- As per UNCCD, **currently**, rangelands **cover 80 million sq km of Earth's terrestrial surface area** (over half of Earth's land), and are thus the **largest land cover** or land use type in the world.

- **Europe:** Policies favoring industrial farming over pastoralism and misguided incentives are causing rangelands and other open ecosystems to be abandoned and degraded.

- **South Africa and Australia**: Afforestation, mining, and the conversion of rangelands to other uses are causing the degradation and loss of rangelands.

Who are Pastoralists:

- According to the **UN's Food and Agriculture Organization**, Pastoralism is a livelihood system based on livestock production. This includes **livestock rearing, dairy production, meat production, wool production, and leather production.**
- **Globally,** an estimated **500 million pastoralists** are involved in livestock production and allied occupations.
- **In India**, while there are **no official figures,** research and advocacy groups peg their population at around **13 million people** across **46 groups**, including **Gujjars, Bakarwals, Rebaris, Raikas, Kurubas, Maldharis,** etc**.**

Their economic contribution to India:

- India is the largest producer of milk in the world, accounting for 23% of global dairy production.
- It is also the **largest producer of buffalo meat** and the **largest exporter of sheep and goat meat**, according to the **Department of Animal Husbandry and Dairying.**

Key recommendations:

- Integrate climate change strategies with sustainable rangeland management to enhance carbon storage and community resilience.
- Avoid land use changes that reduce rangeland diversity and functionality, particularly on indigenous and communal lands.
- Implement conservation measures to support biodiversity and improve livestock production systems.
- Support pastoral practices that mitigate threats to rangeland health, including climate change and overgrazing.
- Promote policies and participatory governance to enhance the benefits provided by rangelands and pastoralists.

Environmental Performance Index (EPI)

News Excerpt:

The 2024 Environmental Performance Index (EPI) is an analysis by researchers at **Yale University, USA**.

More details about the Index:

- Using **58 performance indicators** across **11 issue categories,** the EPI ranks **180 countries** on **climate change performance, environmental health, and ecosystem vitality.**
- The EPI offers a scorecard that highlights leaders and laggards in **environmental performance and provides practical guidance** for countries that aspire to move toward a sustainable future.
- In each iteration, the **EPI expands the scope of its sustainability scorecard to reflect advances in our scientific understanding of environmental issues**.
  - To make the metrics easy to interpret, it transforms raw environmental data into indicators that score countries on a **0–100 scale, from worst to best performance.**

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Rank and Scores

RANK	COUNTRY	SCORE	RANK	COUNTRY	SCORE
1	Estonia	75.3	6	Sweden	70.5
2	Luxembourg	75.0	7	Norway	70.0
3	Germany	74.6	8	Austria	69.0
4	Finland	73.7	9	Switzerland	68.0
5	United Kingdom	72.7	10	Denmark	67.9

- ○ **Estonia was placed in the 1st place in the index 2024.**
- **India, stands at 176th rank out of 180 countries, with only 4 countries below.**

Executive Summary of EPI Index:
- **Environmental Degradation:** The planet's life-supporting systems are deteriorating due to heavy reliance on fossil fuels, leading to pollution, ocean acidification, and increased greenhouse gases. This endangers species already at risk from habitat loss and threatens extinction.
- **Planetary Boundaries:** Humanity has exceeded six of nine critical planetary boundaries and is close to crossing a seventh.
- **Policy Importance:** Data-driven environmental policy-making is crucial. Well-designed metrics help track trends, identify effective policies, share best practices, and optimize environmental investments.
- **Global Goals:** These metrics are vital for monitoring progress toward the UN Sustainable Development Goals, the Paris Agreement climate targets, and the Kunming-Montreal Global Biodiversity Framework.
- **EPI Scores:** EPI scores highlight countries excelling in sustainability and identify those falling behind in addressing global environmental challenges.

Key findings:
- **The World is Failing to Address the Climate Crisis:**
  - ○ **Global Failure on Climate Goals:** Despite increased renewable energy use, global greenhouse gas (GHG) emissions continue to rise, putting us at risk of irreversible climate tipping points.
  - ○ **New Metrics Introduced:** The 2024 EPI introduces updated metrics to assess countries' progress in cutting GHG emissions. These metrics include tracking emission reduction rates and proximity to net-zero targets and reflect countries' contributions to the global carbon budget.
  - ○ **Challenges in Major Economies:** Emissions are decreasing too slowly in large economies like the United States and still rising in China, India, and Russia.
  - ○ **Slowdown in Decarbonization:** Countries like Denmark have seen a slowdown in decarbonization efforts, signaling that initial gains from easy policy changes are insufficient.
- **New and Refined Biodiversity Metrics:**

- ○ After climate change, biodiversity loss has emerged as the most **serious and irreversible environmental crisis**.
  - ■ Scientists warn that we may have unleashed the **sixth mass extinction in the planet's history.**
- ○ Responding to the urgency of halting biodiversity loss, the 2024 EPI **introduces new metrics to assess how well countries protect their most important habitats.**
  - ■ The 2024 EPI also introduces **pilot indicators** to measure the effectiveness and stringency of protected areas.
  - ■ These new metrics track key issues related to the expansion of protected areas to meet the **Kunming-Montreal Global Biodiversity Framework's goal of safeguarding 30 percent of lands and seas by 2030.**
  - ■ The 2024 EPI's analyses underscore the necessity of **providing protected areas** with adequate funding and of developing stricter regulations in partnership with local communities.
- **Tradeoffs in Environmental Performance:**
  - ○ **EPI scores are positively correlated with a country's wealth, although after a point, increasing wealth yields diminishing.**
    - ■ Some of the **poorest countries** in the world outperform some of the richest.
    - ■ In this regard, factors other than wealth, such as **investments in human development, rule of law, and regulatory quality, are stronger predictors of environmental performance.**
  - ○ With its broad set of metrics across a wide range of environmental issues, **the 2024 EPI reveals fundamental tradeoffs** across different aspects of environmental performance, underscoring that no country can claim to be on a fully sustainable trajectory.
    - ■ Wealth allows countries to make investments in the infrastructure required to **provide clean drinking water, safely manage waste, and rapidly expand renewable energy.** But wealth also leads to higher material consumption and its **associated environmental impacts**, such as higher rates of waste generation, GHG emissions, and ecosystem degradation.
  - ○ These tradeoffs underscore the **urgency of international cooperation and cultural changes in the type of development societies value.** Developing countries must be careful not to repeat the mistakes of nations that followed a dirty and unsustainable path to industrialization.
  - ○ On the other hand, **rich countries need to decouple their consumption from environmental degradation** and use their wealth to help developing countries.

SCIENCE & TECHNOLOGY

Flight Turbulence

News Excerpt:

The London to Singapore flight encountered sudden extreme turbulence over the Irrawaddy Basin [a river in Myanmar] at 37,000 feet, about 10 hours after departure.

What is turbulence?

- Turbulence occurs when a **plane flies through clashing bodies of air** moving at widely different speeds.

- With **light and moderate turbulence**, passengers might feel a strain against their seatbelts, and unsecured items could move around the cabin.

- But in **severe cases turbulence** can throw passengers around the cabin, causing severe injuries and occasionally death.

Reasons for the turbulence:

1. **Due to thunderstorms:**
   - Tropical thunderstorms can form **moisture quickly** in the early afternoon as the land heats up, especially near the coastline.
   - Such thunderstorms **may not appear on radar in their earliest stages**, even though the quick rising motion within them can still produce turbulence. The storm cells likely grew from **20,000-30,000 feet** to well over 50,000 feet in less than an hour.

2. **Due to cloud:**
   - Most turbulence occurs in clouds where there are **up and downdrafts of wind.**
   - Much of that will be fairly mild but in bigger clouds - such as the **Cumulonimbus thunderstorm cloud** - the chaotic movements of air can cause moderate or even severe turbulence.

3. **Clear Air Turbulence (CAT):**
   - This is **cloudless** and can't be seen, and happens around the **jet stream**, a fast-flowing "river" of air that's typically found at **40,000-60,000 ft.**
   - You can easily have a **100mph speed difference between the air in the jet stream and the**

surrounding air, this friction around the jet stream between the slower and faster air causes turbulence.

Threats involved:

- It can cause **structural damage** to a plane because of how strong the winds can be.

- It can be dangerous to air passengers because of the **violent motion** it can cause, which can throw anyone who is not wearing a seatbelt across the cabin.

Why is turbulence becoming frequent?

As per the research done on **clear air turbulence** by Reading University in the UK, the **turbulence has increased by 55%** between **1979 and 2020.** The reasons behind this
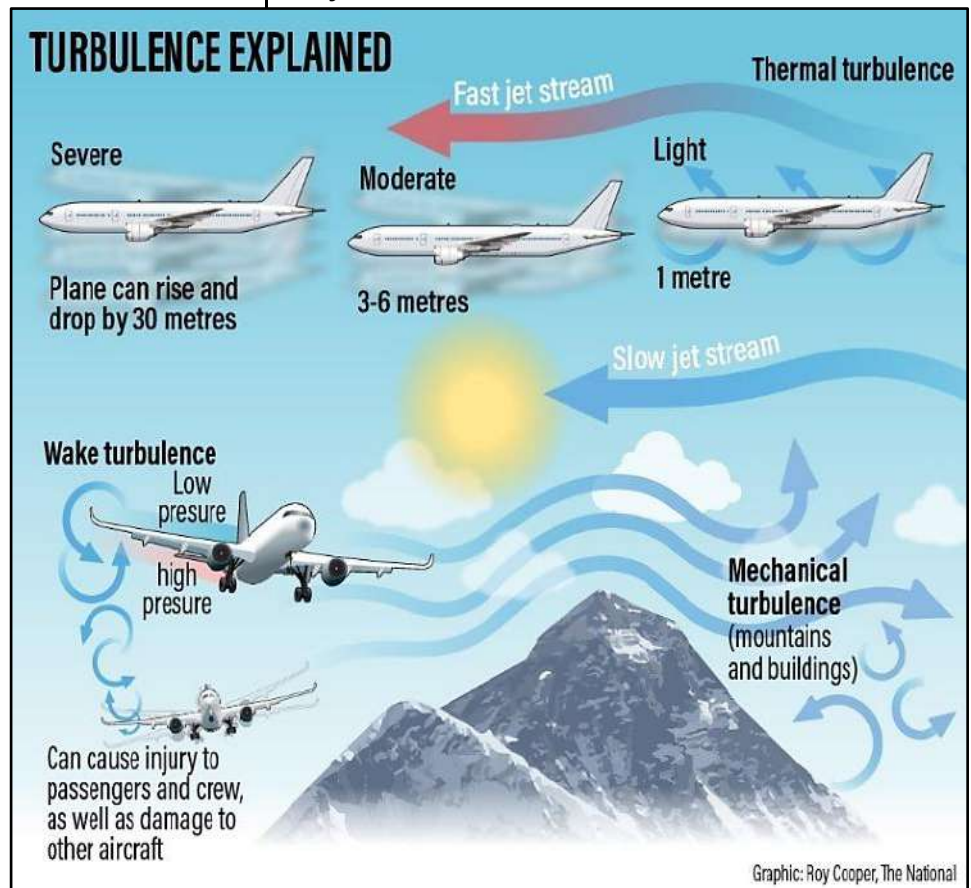
could be:

- **Changes in wind speed** at high altitudes due to **warmer air from carbon emissions.**

- Due to **climate change.**

Way forward:

- **Investing more in improved turbulence** forecasting and detection systems,

- Satellites can be used to **see the structure and the shape of the jet stream,** allowing it to be analyzed to understand any upcoming turbulence.

- **Proper training of the pilot and crews** after every interval to efficiently manage and deal with turbulence.

> **PEPPER IT WITH:**
> Jet Streams, Climate change, Wind circulation

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How SpaceX's Starship Could Revolutionize Space Travel and Exploration

News Excerpt:

SpaceX's Starship rocket achieved a significant milestone with its first fully successful test flight, its booster and spacecraft executed a gentle splashdown after an hour-long sub-orbital journey.

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More about the news:

This marked SpaceX's fourth attempt to launch the colossal Starship, bringing it one step closer to revolutionizing space travel and exploration.

> **Space travel and exploration**
>
> Indian-origin entrepreneur and **pilot Gopichand Thotakura** made history as the first Indian tourist to journey into space, participating in Amazon founder Jeff Bezos' **Blue Origin NS-25 mission.**

Starship:

- Starship is a two-stage heavy lift-off vehicle designed to transport crew and cargo to Earth orbit, the Moon, Mars, and beyond.
- It is the **largest rocket ever flown; its height is 120m** surpassing the **Saturn V which was 111m (**carried Neil Armstrong to the Moon).
- The rocket's lower stage, known as **Super Heavy, comprises 33 Raptor engines generating 74 meganewtons of thrust, nearly double that of NASA's Space Launch System (SLS)** and the Saturn V. These engines use a **mixture of liquid oxygen and liquid methane, enhancing efficiency and reusability.**

SPECIFICATIONS

Name: Starship
HEIGHT: 50m / 160ft
DIAMETER: 9m / 30ft
ENGINES: 6 Raptors
EMPTY MASS: 120,000 kg
GROSS MASS: 1,320,000 kg
THRUST: 12,000 kN
FUEL: Subcooled CH4 / LOX
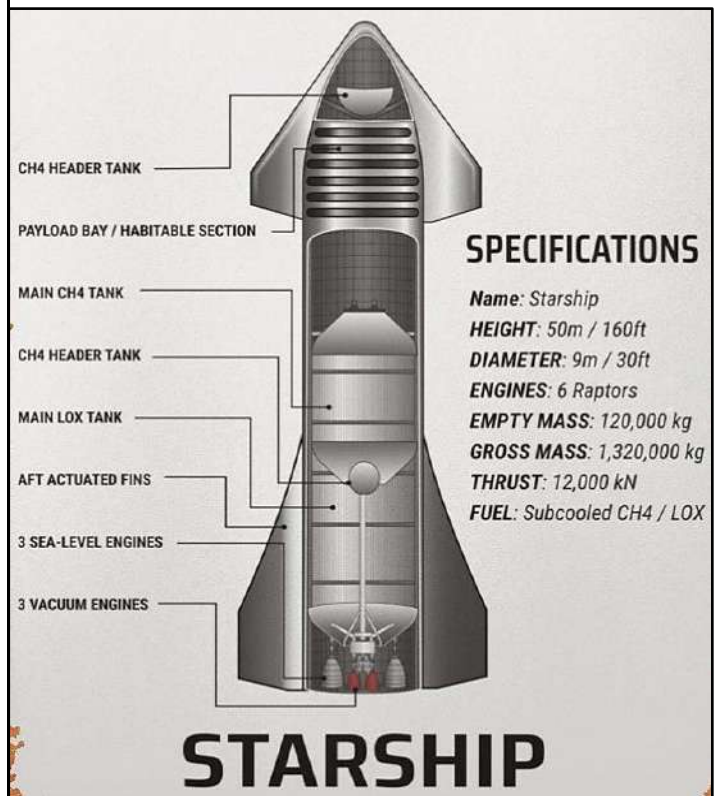
STARSHIP

Significance of the development:

Reducing the Cost of Space Travel facilitated by:

- **High Payload Capacity:** Starship is **expected to carry up to 150 tonnes of payload to low-Earth orbit and at least 100 tonnes to the Moon and Mars** which exceeds all previous missions, enabling more extensive scientific and commercial activities in space.
- **In-Orbit Refueling:** SpaceX is developing the capability to **refuel Starship** in Earth orbit using other Starships.

Implications for Healthcare and Space Exploration

Healthcare
- The pathogenic potential of microorganisms in space environments mitigates the **risks associated with opportunistic pathogens** in closed human-built environments on Earth.
- **Understanding these adaptations is crucial** given the formidable challenges posed by multi-drug-resistant pathogens in healthcare settings.

Space Exploration
- The presence of multi-drug resistant pathogens aboard the ISS adds a new layer of **complexity to health and safety protocols for astronauts.**
- Because of their **altered immune systems and restricted access to healthcare** facilities, astronauts face particular health difficulties in space.
- This research underscores the need for robust preventive measures to ensure the health and safety of astronauts, who operate under **altered immune conditions** with limited access to medical facilities.

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Fig: Private Space Companies

○ This innovation allows for increased payload capacity and the use of more advanced scientific instruments, effectively operating like an airplane that can be quickly refueled and redeployed.

● **Complete Reusability:** Unlike other launch systems where hardware is often discarded, Starship's principal components are designed to be fully reusable.

○ Both the **Super Heavy booster** and the **Starship spacecraft** can re-enter Earth's atmosphere and land back at the launch site, significantly reducing costs associated with building new rockets for each mission.

Facilitating Space Exploration

● This will enable scientists to launch larger and more sophisticated space telescopes, built from heavier but cheaper materials.

● Future missions to the Moon and Mars could carry substantial equipment, such as full-sized drilling rigs, to explore the planets' interiors and uncover valuable resources.

● Moreover, Starship's ability to return to Earth means **it can bring back large quantities of samples from the Moon and other planets,** aiding scientists in unraveling the mysteries of our solar system and the origins of life.

● The rocket system is also integral to **NASA's Artemis program**

○ **It aims to return astronauts to the Moon by 2030** and **to send humans to Mars by the end of the next decade.**

Challenges

● Historical challenges, such as those faced by NASA's Space Shuttle program, highlight the difficulty in making reusable spacecraft economical.

PEPPER IT WITH:

Artemis Program, SLS, Blue Origin NS-25 mission, ISS

● Additionally, while Starship's development has been rapid compared to other launch vehicles, it has not been without setbacks.

● Balancing rapid innovation with safety and reliability remains a critical challenge for SpaceX.

○ The accelerated pace of development at SpaceX has led to at least 600 previously unreported workplace injuries, raising concerns about the safety and well-being of employees.

Superbug on ISS Raises Health Concerns for Astronauts

News Excerpt:

Researchers from the **Indian Institute of Technology Madras** (IIT-M) and **NASA's Jet Propulsion Laboratory** (JPL) have conducted a joint study examining the behavior of multi-drug resistant pathogens on the International Space Station (ISS).

What is a Superbug?

● A superbug may be a **bacteria, virus, parasite, or fungi** that has become resistant to multiple drugs typically used to treat these infections.

● Superbugs **can't be stopped by the first line of drugs.**

● This resistance makes infections caused by superbugs particularly difficult to treat and control. The development and spread of superbugs pose a **significant public health threat worldwide.**

● Superbug infections can lead to **higher rates of death** from otherwise treatable diseases.

More about this research:

● Research on **Enterobacter bugandensis** offers potential for improving hospital infection management and enhancing astronaut health.

ESKAPE:

● The **ESKAPE** pathogens **Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa, and Enterobacter species are the primary culprits behind hospital-acquired infections globally.**

● These pathogens are notably **multidrug-resistant**, posing one of the biggest challenges in clinical settings.

● **Multidrug resistance ranks among the top three global public health threats and is often driven by excessive or improper drug use, misuse of antimicrobials, and low-quality pharmaceuticals.**

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- These factors contribute to the pathogens' ability to **survive traditional treatments**, making infections harder to control and increasing the need for new antimicrobial strategies.

- The study focused on the **genomic, functional, and metabolic adaptations** of **Enterobacter bugandensis,** a pathogen known for its resistance to third-generation cephalosporins and quinolones.

- These adaptations make Enterobacter infections particularly challenging to treat.

- **Enterobacter species** are part of the **ESKAPE group of pathogens**, which the World Health Organization (WHO) has identified as a priority for developing new antimicrobials.

Experiment environment and methodology

- The researchers investigated the mechanisms that enable Enterobacter bugandens is to thrive in the **unique environment** of the International Space Station (ISS).

> **PEPPER IT WITH**
> ESKAPE, Enterobacter species, ISS, WHO

- The ISS, with its **microgravity, heightened carbon dioxide levels, and increased radiation,** provides a distinctive setting for studying microbial dynamics.

- Researchers isolated **13 strains** of E. bugandensis from various surfaces within the ISS. These strains exhibited **accelerated mutations,** making them **genetically and functionally distinct** from their Earth counterparts.

- Strategies for controlling microbial contamination in enclosed spaces like spacecraft and hospitals can be guided by **understanding the persistence and succession patterns of E. Bugandensis in space**, according to the research.

New low-cost MRI machine

News Excerpt:

Scientists have designed a magnetic resonance imaging (MRI) scanner that costs a fraction of existing machines,

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setting the stage for improving access to this widely used diagnostic tool.

What is magnetic resonance imaging?

- MRI is a noninvasive medical imaging test that uses a large magnet and radio waves to produce detailed images of almost every internal structure in the body, including organs, bones, muscles, and blood vessels.

- It is particularly useful for imaging soft tissues and is important for observing and treating cancers like prostate and rectal cancer, as well as neurological conditions such as Alzheimer's, dementia, epilepsy, and stroke.

- MRI scanners use strong magnetic fields, typically ranging between 1.5 T and 3 T, to generate these images, helping doctors diagnose and select treatments for various disorders.

Advantages of the Low-Cost MRI Machine:

- **Affordability:** The low-cost machine is around 50 times cheaper than conventional 3T MRI machines costing between 9-13 crore rupees.

- **No specialized infrastructure required:** The machine uses 0.05 T magnets and doesn't need a shielded room or helium coolant to operate.

- **Standard power supply:** It can be plugged into standard wall power outlets, eliminating the need for specialized power sources.

- **Portability:** Being lighter and more portable, it can increase accessibility in remote areas.

- **Quieter operation:** The machine is less noisy during operation, making it suitable for use in pediatric settings.

- **Open scanning environment:** It can be set up in an open scanning environment, alleviating claustrophobia that sometimes arises in conventional enclosed MRI machines.

- **Reduced artifacts:** The lower magnetic field strength may generate fewer artifacts due to metal implants or prosthetics in the final image.

- **Safety:** The reduced magnetic field strength may prevent accidents involving metallic objects being pulled into the machine.

Disadvantages of the Low-Cost MRI Machine:

- **Lower image resolution:** It can only detect tissue damage as small as 4 mm, compared to 1 mm for a more costly 1.5T scanner.

- **Missing anatomical details:** Some anatomical areas from which information needs to be extracted may not show up.

- **Potentially lower image quality:** While comparable to 3T machines with AI enhancement, the image quality may still be lower for certain applications.

Way Forward:

- While the low-cost MRI machine may not match the image quality and resolution of high-field MRI machines for certain

> **PEPPER IT WITH:**
> MRI, CT-Scan, Diseases, Health Technology

applications, it offers several significant advantages in terms of affordability, accessibility, and safety.

- These advantages could "make a difference" by providing basic diagnostics in small centers and remote areas where high-cost MRI machines are currently unavailable.

- The low-cost machine could complement high-field scanners in radiology departments and be particularly useful in emergencies or for initial imaging before transferring patients to specialized centers.

TRISHNA Mission

News Excerpt:

In a major boost to global efforts to monitor and mitigate climate change, the **Indian Space Research Organization (ISRO) is collaborating with the French Space Agency (CNES)** on an ambitious new satellite mission called **TRISHNA.**

More about the mission:

- **Slated for launch in 2025**, Trishna (**Thermal Infra-Red Imaging Satellite for High-Resolution Natural Resource Assessment**) will be a game-changer in using space-based thermal infrared imaging.
- It is **focused on studying the impacts of climate change and supporting sustainable management of precious natural resources like water.**

Mission Objectives and Capabilities

- Detailed monitoring of the **energy and water budgets** of the continental biosphere and **quantification of terrestrial water stress and water use**.
- High-resolution observations of **water quality and dynamics in coastal and inland waters.**
- Assessment of **urban heat islands** and detection of thermal anomalies linked to **volcanic activity** and **geothermal resources**.
- Monitoring of **snow-melt runoff and glacier dynamics**.
- Collection of data on **aerosol optical depth, atmospheric water vapor, and cloud cover**.

TRISHNA Payload:

Primarily it will be equipped with two Payloads:

- **Thermal Infra-Red (TIR) payload provided by CNES:**
  - Four-channel long-wave **infrared imaging sensor capable of** high-resolution **surface temperature and emissivity mapping**.
- **Visible - Near Infra-Red - Short Wave Infra-Red (VNIR-SWIR) payload** provided by **ISRO includes Seven spectral bands for detailed mapping of surface reflectance.**

Operational details:

- It will be launched into a Sun-synchronous **orbit** at 761 km altitude. It has an **operational life of five years.**

Scientific and Societal Benefits:

- Assessment of irrigation water use, and issuance of advisories for water savings.
- Enhancement of crop water productivity through efficient practices and better micro-watershed management.
- **Tracking droughts**, **monitoring permafrost** changes, and **measuring evapotranspiration rates.**

- Detailed maps of urban heat islands and alerts for mitigating heatwave effects.
- Detection of pollution in coastal and inland water bodies.
- Identification of submarine groundwater discharge at coastal fringes.
- Detection of sub-surface fires.
- Assessment of geothermal resources.
- Understanding snow cover and snow-melt patterns.
- Contribution to improved hydrological models and water management strategies.

Global Contributions

- **Support for global initiatives like** the Group on Earth Observations Global Agricultural Monitoring **(GEOGLAM)** program, the United Nations' Sustainable Development Goals **(SDGs),** and the **Global Water Watch.**
- Outputs serve as Essential Agricultural Variables (EAVs) and Essential Climate Variables (ECVs).

> **PEPPER IT WITH:**
> CNES, ISRO, GEOGLAM, EAVs, EVCs, SDGs
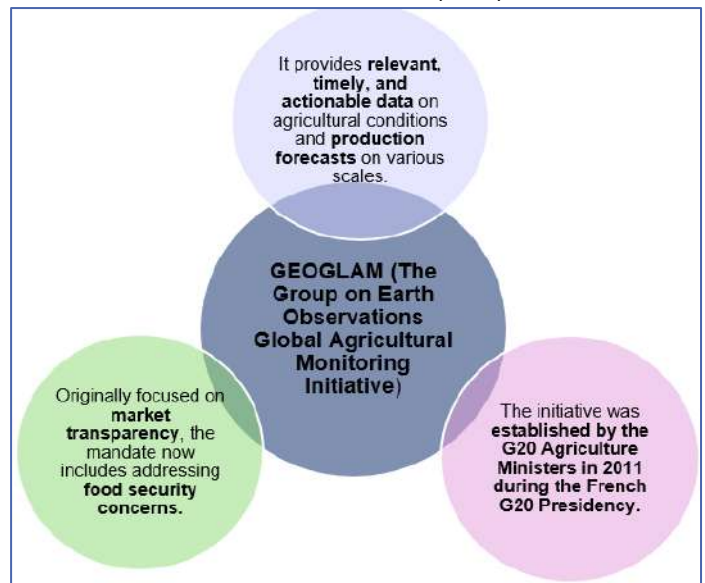
eVTOL

News Excerpt:

The advancements in eVTOL technology indeed hold tremendous promise for revolutionizing urban transportation and emergency services globally.

More About the News:

- Imagine a taxi that utilizes electric power to soar through the skies at **speeds of up to 200 kilometers per hour, capable of vertical takeoff, hovering, and landing** without the need for a traditional helipad.
- This **futuristic vehicle, known as an electric vertical takeoff and landing aircraft (eVTOL)**, offers the

promise of efficient urban air mobility without the high fuel and maintenance costs associated with conventional helicopters.

- The potential benefits in terms of reducing congestion, lowering emissions, and providing quicker access to critical services like medical care are truly remarkable.

What are electric aircraft?

The Union Aviation Minister while speaking at the seventh edition of the India Ideas Conclave in Bengaluru, stated that India is in 'conversation' with a number of eVTOL producers. But how are Electric Vertical Take off and Landing aircraft structured? And what are they capable of ?

Vertical Aerospace VA-X4
*Electric Vertical Take Off and Landing

Propulsion: Eight Rolls-Royce electric motors

Luggage hold

V-tail with rudders

Pilot and four passengers
Rear vertical rotors

Front rotors

Take-off and landing:
Rear vertical rotors fan out, front propellers orientate vertically

Stowed   Open

Flight: Rear rotors fold into *stowed* postion. Undercarriage withdraws. Front propellers tilt for forward motion

Cruise speed:	241km/h
Range:	161km
Payload:	450 kg
Wing span:	15m
Length	13m
Height:	4m

Sources: Vertical Aerospace, Future Flight, Business Wire Picture: Vertical © GRAPHIC NEWS

About eVTOL:

eVTOL, or Electric Vertical Takeoff and Landing aircraft, represents a significant advancement in aviation technology.

- **Technology Overview:** eVTOLs utilize electric power for propulsion, enabling them to hover, take off, and land vertically without the need for traditional combustion engines.
  - This technology involves integrating multiple electric motors throughout the aircraft's airframe, enhancing efficiency, maneuverability, and safety.
  - High-energy-density batteries power eVTOLs, providing the necessary electrical energy for flight. Many eVTOLs incorporate sensors, cameras, and radar for autonomous operation, enabling connectivity and enhancing safety.
- **Design Variations:** eVTOL designs vary widely, including multi-rotor configurations, fixed-wing designs, and tilt-wing configurations. Each design offers unique advantages and trade-offs in terms of efficiency, payload capacity, range, and operational flexibility.

Advantages:

- **Congestion Alleviation:** eVTOLs offer a promising solution to urban traffic congestion by providing a vertical alternative to ground transportation.
- **Direct Travel:** Their ability to take off and land vertically enables more direct travel routes, potentially reducing overall travel times.
- **Accessibility:** eVTOLs could extend air travel access to remote or inaccessible areas, enhancing connectivity.
- **Environmental Friendliness:** With zero direct emissions, eVTOLs present a greener alternative to traditional fossil fuel-powered aircraft, contributing to environmental sustainability.
- **Noise Reduction:** Their quiet operation mitigates noise pollution, especially in urban environments, enhancing public acceptance.
- **Cost Efficiency:** Lower operating and maintenance costs, coupled with simpler mechanics, make eVTOLs economically attractive compared to conventional aircraft.
- **Versatile Infrastructure:** eVTOLs can operate from various open areas, eliminating the need for dedicated infrastructure like airports or helipads.
- **Emergency Response:** eVTOLs can serve as rapid responders in emergencies, bypassing ground traffic and reaching affected areas more efficiently.

Challenges:

- **Safety:** Ensuring crash prevention systems and addressing concerns related to powerplant or rotor failure are critical for safe eVTOL operations.
- **Cybersecurity:** Protecting eVTOLs from cyberattacks is essential to safeguard their operation and data integrity.
- **Navigation and Flight Safety:** Operating eVTOLs in challenging terrain, adverse weather conditions, and unsafe environments require robust navigation systems and flight safety protocols.

> **PEPPER IT WITH:**
> Urban Air Mobility, Conventional helicopters

Copernicus Emergency Management Service

News Excerpt:

The European Union (EU) activated its **Copernicus Emergency Management Service (EMS) satellite mapping service** at Iran's request to locate the crashed chopper of its president.

What is Copernicus EMS & rapid response mapping service:

- Part of the EU's Copernicus program, established in 2012.
- Uses satellite remote sensing to provide crucial geospatial information for managing disasters and humanitarian crises.
- Comprises two main components: mapping (including rapid mapping and risk & recovery mapping) and early warning systems.
- Rapid mapping delivers timely geospatial intelligence post-disaster to aid decision-making and emergency response efforts.

What is the Copernicus program

The Copernicus program, a **part of the EU's space initiatives**, is designed to **monitor the Earth and its environment** by collecting data from a **constellation of satellites known as the Sentinels.**

It **provides processed and analyzed data for various applications**, including land management, marine environment monitoring, atmospheric studies, emergency response, security, and climate change adaptation.

It also **gathers data from other missions and sources such as ground stations.**

Named after the renowned **15th- century scientist Nicolaus Copernicus.**

The program was initially launched in 1998 as the **Global Monitoring for Environment and Security Program (GMES).**

How does rapid mapping work:

- Designed for fast provision of geospatial data post-disaster, aiding emergency response globally.
- Activation focuses on single events with multiple areas of interest (AOIs) for detailed analysis.

PEPPER IT WITH:
EMS, Cyber security, Copernicus Program, IRNSS, ISRO, NASA

- Products include a pre-event reference and three post-event assessments:
  - Reference Product: Baseline data for preparedness and response planning.
  - First Estimate Product: Initial assessment of severely affected areas for resource prioritization.
  - Delineation Product: Detailed analysis of disaster extent and impact evolution.
  - Grading Product: In-depth damage assessment to guide targeted interventions and decisions.

Venus water mystery

News Excerpt:

More than four billion years ago, **Venus** had enough water to **cover its surface with an ocean 3 km deep.** Today, the planet only has enough for this ocean to be **3 cm deep.**

More about News:

- Scientists have been able to account for a **lot of the water Venus lost** in this time but not all of it. Now, a team of scientists in the U.S. may have made a crucial advance.
- The team of scientists in the U.S. findings could plug a **long-standing gap** between the **amount of water scientists expected Venus** to have lost in the last 4.5 billion years and **how much satellite observations say the planet has lost**, which is a lot more.

Causes of Water loss:

- There are **two reasons** why Venus lost its water.
  - The **first** is its **hellish atmosphere** as a result of its **carbon dioxide-rich composition,** which causes a **strong greenhouse effect.**
    - The **planet's surface is hotter than water's boiling point**, simmering at 450 degrees C. So, water can only exist as vapor in Venus' atmosphere.
      - **Second**, water was a victim of the **planet's proximity to the Sun.**
    - The Sun's heat and ultraviolet radiation broke **water molecules into hydrogen and oxygen atoms** in Venus's ionosphere, where charged particles move rapidly.
- The **two theories** broadly blame **thermal and non-thermal processes for the water loss.**
  - **The thermal process** refers to **hydrodynamic escape**. As the Sun heated Venus's outer atmosphere, it expanded, allowing hydrogen gas to leak into space. This escape lasted until the outer atmosphere sufficiently cooled, about 2.5 billion years ago.
  - Research focused on how water loss occurs in the present day, specifically via a **non-thermal process.**
    - They focused on hydrogen atoms escaping Venus to space. Water levels drop as a result because the oxygen atoms left behind have fewer hydrogen atoms with which to form water.

Key Findings:

- **HCO+ dissociative recombination reaction (DR)** occurs at an altitude of about 125 km above the clouds of Venus, in the upper atmosphere.
  - This reaction was found to **accelerate the decline of water on Venus** after the hydrodynamic escape of **hydrogen gas ended.**
  - The **HCO+ DR reaction** could have doubled the rate at which Venus lost water through hydrogen escape.

- If **Venus** had oceans in the past, they could have lasted longer than expected due to the faster rate of hydrogen escape, which would have allowed more water to be lost in the same amount of time.
- According to the model, the amount of water on Venus would have stayed roughly the same from nearly 2 billion years ago until the period when the HCO+ DR reaction started influencing water loss.

Way Forward — Direct evidence of HCO+ ions and the HCO+ DR process in Venus's atmosphere is still lacking, and future missions are needed to confirm their presence and role in water loss. Understanding Venus's water loss could shed light on planetary habitability and whether Venus is abnormally dry or Earth is abnormally wet.
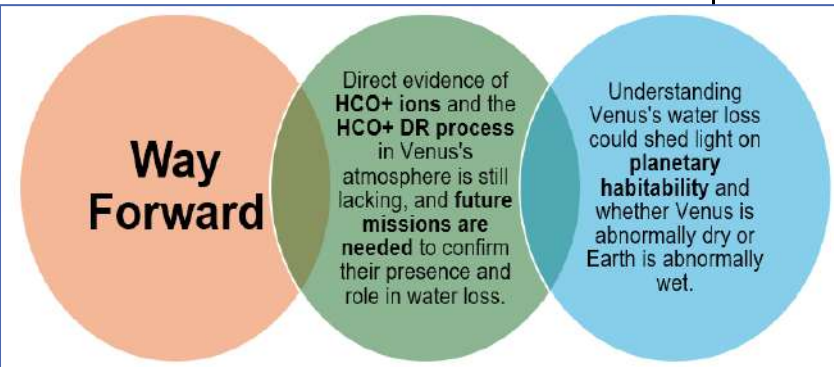
Alternatives to Hazardous Cookware

News Excerpt:

In the revised **Dietary Guidelines for Indians (DGIs), the Indian Council for Medical Research (ICMR)** and the **National Institute of Nutrition (NIN)** have advised **against Non-Stick Cookware** due to health risks.

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What is Non-Stick Cookware?

- It refers to kitchen utensils that have a **coating designed to prevent food from sticking to the surface during cooking**.
- This type of cookware typically features a **smooth, non-porous layer** made from materials such as polytetrafluoroethylene (PTFE), commonly known as **Teflon**.

- The non-stick coating allows for **easier cooking and cleaning**, as less oil or fat is required to prevent food from adhering to the pan.
- Non-stick cookware is popular for its **convenience and efficiency** in preparing a wide variety of dishes.

How to use non-stick cookware safely?

While at **normal temperatures, cooking in them is fine**, but at high temperatures, the coating can produce toxins or poisonous fumes, which can lead to contamination of your food with PFAS, micro-, and nano plastics. **The use of non-stick cookware safely is recommended in the following ways:**

- Preheating of an empty pan must be avoided as it can heat up very fast and this will result in the release of toxic fumes.
- Cooking on low to medium flame is ideal.
- Use of a chimney or exhaust fan is advised while cooking in non-stick pans.
- Avoid scratching the non-stick coating while washing. Wash gently with a soft sponge and soapy, warm water.
- Replace cookware when coating deteriorates.
- It is better to cook in stainless steel, cast iron, and ceramic cookware.

Risks Associated with Non-Stick Cookware:

Health Related:

- **Perfluorooctanoic acid (PFOA)** and **Perfluorooctanesulfonic acid (PFOS)** are used in **producing non-stick coatings such as Teflon.** When heated to high temperatures, these chemicals can release toxic fumes into the air.
- Inhalation of these fumes is linked to health issues such as **respiratory problems**, **thyroid disorders**, and **certain types of cancer.**
- Overheating **teflon-coated cookware** can release fumes causing flu-like symptoms in humans and **can be fatal to birds**.
- PFOA, previously used in making Teflon, is a **possible carcinogen.**
- Over time, non-stick coatings **can wear off, especially with high heat** or abrasive cleaning. As the coating deteriorates, there is a **risk of it leaching into food**, particularly when cooking acidic foods or using metal utensils.

Environment Related:

- The production and **disposal of non-stick coatings** involve the use of **chemicals** that can be **harmful to** the **environment** and **persist in** the **ecosystem** for extended periods.
- **Improper disposal** of **non-stick cookware** can further contribute to **pollution** and **environmental degradation**.

Eco-Friendly Alternatives recommended by ICMR:

Consumers are advised to turn to eco-friendly alternatives for their cooking needs due to concerns about harmful chemicals in Teflon-based cookware. Following are some alternatives:

- **Ceramic Cookware:**
  - Made from natural materials such as clay and sand.
  - Coated with a ceramic glaze, offering non-stick properties without harmful chemicals.
  - Durable, scratch-resistant, and safe for use at high temperatures.

What are PFOA and PFOS?

- Perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) are **part of a large group of lab-made chemicals** known as perfluoroalkyl and polyfluoroalkyl substances (PFAS).
- PFAS are very stable and don't interact much with other chemicals, making them **useful for products that resist oils, stains, water, and heat.**

Key facts

- They have **been used in non-stick cookware coatings and protective coatings** for carpets and fabrics.
- PFAS can be a health concern because they **don't break down easily and can remain in the environment and the human body** for a long time, earning them the nickname 'forever chemicals.'

- **Cast Iron Cookware:**
  - Known for excellent heat retention and even heat distribution.
  - Free from synthetic coatings and chemicals.
  - Requires seasoning and proper maintenance to prevent rusting.
  - Durable and versatile, used for centuries.
- **Stainless Steel Cookware:**
  - Made from durable and recyclable materials.
  - Free from harmful chemicals and coatings.
  - Resistant to corrosion and staining.
  - Long-lasting option for home cooks.

PEPPER IT WITH

NIN, ICMR, PFOA, PFOS, BIS, Environmental degradation

Universal Equation Predicting Wingbeat Frequency in Birds, Bats, and Insects

News Excerpt:

Three scientists from Roskilde University in Denmark have made a groundbreaking discovery: a universal equation that accurately predicts the flapping frequency of wings in almost all flying animals and many swimming creatures.

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More about the findings:

- **Their findings reveal that the frequency at which wings or fins beat is determined by a simple formula,** which relates the flapping frequency to the animal's mass and the size of its wings or fins.

The Formula:

- $f \propto \sqrt{m}/A$. ($\propto$ stands for 'is proportional to').
  - f is **flapping frequency,**
  - m is the **mass of the airborne animal**, and
  - A is the **area of the wings**

When the researchers calculated $\sqrt{m}/A$ number of various animals, birds, and insects and plotted it on the x-axis and their respective frequencies on the y-axis, **they found a nearly straight line as shown in the figure.** The black line follows the model based on the formula as predicted.

Application to Swimming Animals

- Interestingly, the researchers found that their equation also applies to swimming animals like whales and penguins.
- For positively buoyant diving animals that need to continuously move water to stay submerged, the same principle holds.
- The equation needs minor adjustments for swimming animals, replacing air density with water density and adjusting mass for buoyancy. However, this does not apply to fish with a swim bladder.
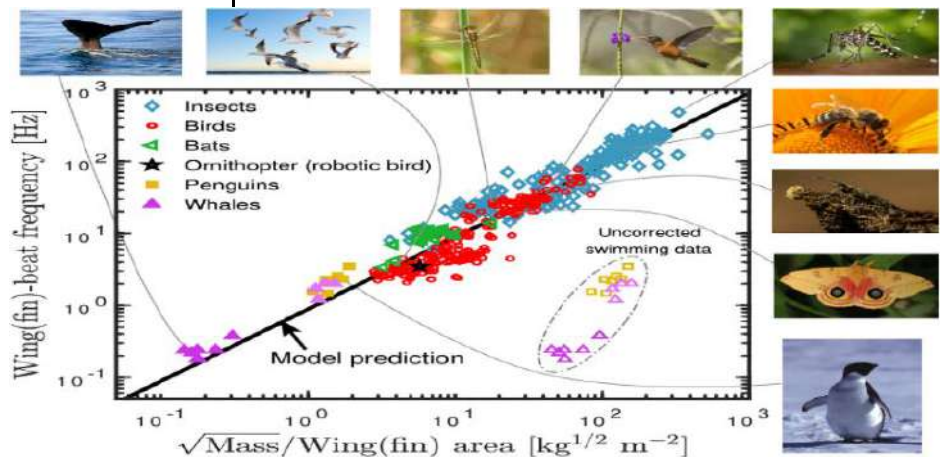
Validation and Limitations:

- The researchers validated their equation using data from older studies, encompassing 176 insect species (including bees, moths, dragonflies, beetles, and mosquitoes), 212 bird species (from hummingbirds to swans), and 25 bat species.
- They noted that the equation assumes certain physical conditions, such as the Reynolds number (Re), which affects fluid flow characteristics.
  - At high Re, density matters more than viscosity, which fits the conditions for flying animals. The

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equation needs modification for low Re, where viscosity becomes more significant.

Significance of the findings:

- This universal equation **offers a powerful tool for understanding the mechanics of flight and swimming across a wide range of species.**
- It not only explains current wingbeat frequencies but also **provides insights into the evolution of future flying or swimming animals and the design of winged robots.**
- The discovery **marks a significant advancement in our understanding of biomechanics and the principles governing animal locomo**

> **PEPPER IT WITH**
> flapping frequency, swimming creatures, flying animals

INTERNAL SECURITY

Trans-border financial crimes

News Excerpt:

Cambodia, Myanmar, and Laos emerge as hubs of organized financial crimes targeting Indians.

Cases of financial crime in India:

- As per the Chief Executive Officer of **I4C (Indian Cyber Crime Coordination Centre (I4C))**, in the first four months of the year, Indians had lost **over ₹1,776 crore in 89,054 cases** of financial crimes.
  - Out of the total complaints on the portal, **85%** pertain to financial crimes, of which **48%** originate from **South-East Asia**.
  - Out of the total financial scams originating from Southeast Asia, the maximum number of complaints—62,687—were related to **investment scams.**
- The **recent** spate of **bomb threat emails** sent to schools, hospitals and airports in various parts of the country have been **sent using VPNs** (virtual private networks) and investigating agencies were taking help from various countries to trace the culprits.

Types of cybercrime:

The I4C has identified **four broad categories of fraud (as shown in the figure below) originating** from these three countries, following certain modus operandi.

Steps taken by the government to curb it:

- **With the effort of I4C and the State police, 3.25 lakh** mule bank accounts**, 595 apps**, and more than **3,000 URL**s **were blocked i**n the past four months.
- Additionally, **5.3 lakh SIM cards** and **80,848 IMEI** numbers have been **suspended** since July 2023, and **3,401 WhatsApp groups** have been **taken down** in the past two months.

Trading Scam
- **Fraudsters create social media ads** featuring fake endorsements from stock market experts and fabricated news articles.
- **Victims join WhatsApp or Telegram groups** for free trading tips and are encouraged to install specific trading apps.
- They follow investment recommendations, depositing funds into designated accounts, and **see fake profits in their digital wallets.**

Digital Arrest Scam
- **Potential victims receive calls** claiming involvement in illegal activities.
- Fraudsters **impersonate law enforcement** officials over video calls, demanding money to resolve fabricated cases.
- Victims may be **digitally "arrested" and pressured to remain visible until demands are met.**

Investment Scam (Task-Based)
- Victims receive **WhatsApp messages from overseas numbers** posing as company representatives offering earnings from home by boosting social media ratings.
- They **rate entities, share codes with "admins"** on Telegram, and receive small sums initially.
- Then, they are **prompted to participate in tasks** requiring deposits for higher returns.
- **Refusal results in blocking,** while participation involves continuous tasks to improve "performance scores" for payouts.

Romance/Dating Scam
- Scammers, often posing as foreign women, initiate online relationships with male victims through dating and social media platforms.
- Gaining trust, they fabricate scenarios like airport detention, soliciting money for release.
- They expertly feign sincerity to deceive victims emotionally and financially, exploiting vulnerabilities for personal gain.

Way forward:

- **International Cooperation:** Strengthen cooperation and information-sharing mechanisms with law enforcement agencies in Cambodia, Myanmar, and Laos to track down and prosecute individuals involved in organized financial crimes targeting Indians.
- **Awareness Campaigns:** Launch extensive awareness campaigns to educate the public, especially vulnerable groups, about the tactics used in financial scams originating from South-east Asia.
- **Regulatory Measures:** Enhance regulatory measures to monitor and regulate online platforms and apps frequently used to perpetrate financial fraud. This may involve stricter licensing requirements for fintech companies and increased scrutiny of online investment platforms.

Indian Cyber Crime Coordination Center (I4C):

- The I4C is an initiative of the **Ministry of Home Affairs,** Government of India, established **to address cybercrime** in a coordinated and comprehensive manner.

- It aims to tackle various issues related to cybercrime by improving coordination among law enforcement agencies and stakeholders.

- The scheme for the I4C was **approved on October 5, 2018**, and has since been acting as a nodal point to curb cybercrime in the country.

- **Capacity Building:** Provide training and resources to law enforcement agencies to effectively investigate and prosecute cases of financial fraud.

PEPPER IT WITH:
Money Laundering, PMLA, Foreign Exchange Management Act, 1999

- **Technological Solutions:** Invest in advanced technological solutions like artificial intelligence and machine learning algorithms to detect and prevent financial crimes in real time.

Related:

At the 33rd Commission on Crime Prevention and Criminal Justice in Vienna, the heads of the **Financial Action Task Force (FATF)**, **Interpol, and the United Nations Office on Drugs and Crime (UNODC)** called for urgently stepping up efforts to target the huge illicit profits generated by transnational organized crime.

- This would also positively impact all goals of the **2030 Sustainable Development Agenda**.

- **Global financial integrity** is critical for financial stability, inclusion, peace, and security.

- Choking off **illegal revenue streams** is essential in promoting the rule of law and protecting vulnerable communities.

- **Money laundering, terrorism financing**, and predicate offences fueled by transnational organized crime are causing instability, violence, and exploitation worldwide.

- The UNODC works with governments, the private sector, the FATF, and the Interpol to **dismantle illegal financial networks** that sustain terrorism and transnational organized crime.

GEOGRAPHY

New vestiges of the first life on Earth were discovered in Saudi Arabia

News Excerpt:

Stromatolites are the earliest geological record of life on Earth. These curious biotic structures are made of algae carpets growing toward the light and precipitating carbonates.

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More about the News:

- **Stromatolites:** Stromatolites are layered structures **primarily composed of limestones**, formed by the **growth of cyanobacteria**, a type of photosynthetic microorganism also known as blue-green algae.

- These structures are one of the **oldest known forms of life on Earth**, dating back over 3.5 billion years.

- Stromatolites are primarily found in **shallow aquatic environments** such as lakes, lagoons, and coastal areas.

- The formation of stromatolites begins when cyanobacteria grow on surfaces such as rocks or sediment. As these **microorganisms multiply, they trap and bind sediment particles together,** forming layers of organic material and minerals. Over time, these **layers build up, creating distinctive dome-shaped or columnar structures**.

- Stromatolites are also partially responsible for the **Great Oxygenation Event**, which drastically changed the composition of our atmosphere by introducing oxygen.

- However, as more life forms adapted **their metabolism to an oxygenated atmosphere,** stromatolites started to decline, popping up in the geologic record only after mass extinctions or in difficult environments.

Modern Stromatolites and Their Habitats:

- In modern times, stromatolites are relegated to **niche extreme environments**, such as hypersaline marine settings and alkaline lakes.

- The only known **modern analogue to the biologically diverse**, open shallow marine settings where most Proterozoic stromatolites developed was the **Exuma Islands in the Bahamas.**

Discovery of Stromatolites in Saudi Arabia:

- A new study in the journal Geology reports **the discovery of living stromatolites** on Sheybarah Island, on the **northeastern shelf of the Red Sea in Saudi Arabia,**

- There are several **hundred stromatolites in the Sheybarah Island** field, ranging from well-developed textbook examples to sheet-like structures with low relief, possibly representing juvenile forms.

> **PEPPER IT WITH:**
> Stromatolites, Great Oxygenation Event, Exuma Islands
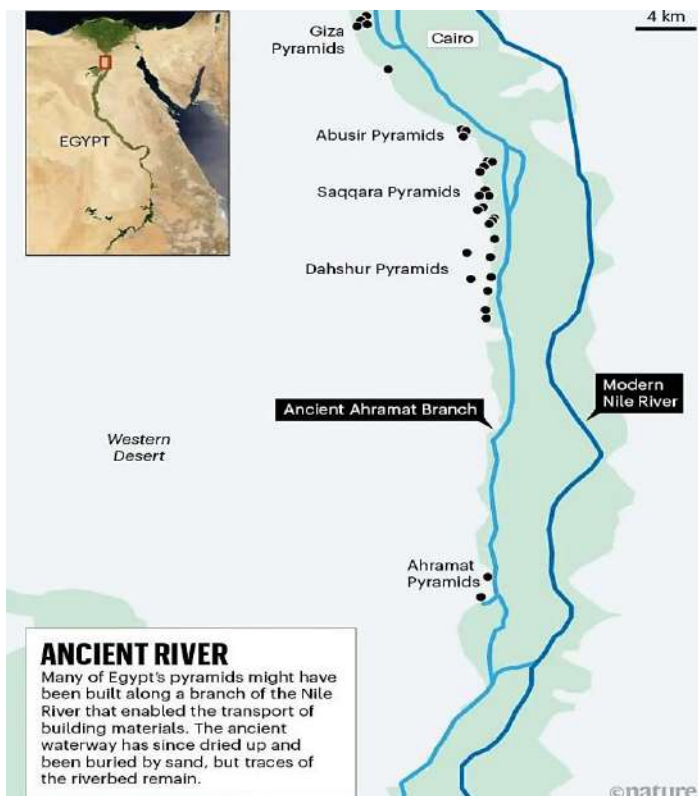
Ahramat Branch of the Nile

News Excerpt:

The task of moving such heavy objects without mechanized equipment seems implausible, but a new study reveals that the River Nile made Egypt's pyramids possible.

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Key findings from Study:

- Most of **Egypt's pyramids** are situated in a 50 km stretch of desert between **Giza and Lisht,** located kilometers away from the **present-day Nile River.**

ANCIENT RIVER
Many of Egypt's pyramids might have been built along a branch of the Nile River that enabled the transport of building materials. The ancient waterway has since dried up and been buried by sand, but traces of the riverbed remain.

- A recent study identified segments of a major extinct branch of the Nile called the **Ahramat**, which **ran adjacent to the pyramids.**

- **The Ahramat** was approximately 64 km long, 200-700 m wide, and 2-8 m deep, with several pyramid causeways leading to inlets connected to this waterway that likely **served as harbors.**

- The discovery of the Ahramat explains the **high density of pyramids** in this area of the Sahara Desert, as the river could have been used to **transport heavy construction materials and people with much less effort than overland.**

- While archaeologists long suspected a waterway near **the pyramids facilitated** construction, the Ahramat's exact location, size, and proximity were previously unknown.

- The presence of the Ahramat explains why pyramids were built at **different spots, as the water's course and volume changed over time,** forcing different dynasties to make different choices for pyramid locations.

- Transporting materials via the river was significantly easier than carrying them by **human labor alone.**

- The reason for the **Ahramat's disappearance is still unclear,** but a period of drought most likely caused the river to dry up.

> **PEPPER IT WITH:**
> Blue Nile and White Nile, Mediterranean Sea

- The discovery of the Ahramat helps researchers gain a **clearer picture of what the Nile floodplain looked like during the time of the pyramid builders.**

Nile River:

- The Nile is the **longest river in the world,** with a length of about 4,132 miles (6,650 km).

- It rises south of the Equator and flows northward through northeastern Africa, draining into the **Mediterranean Sea.**

- The Nile is often associated with Egypt, but in fact, it flows through **11 countries:** Tanzania, Uganda, the Democratic Republic of the Congo, Rwanda, Burundi, Ethiopia, Kenya, Eritrea, South Sudan, Sudan and Egypt.

- This mighty river has two main tributaries (branches, or smaller rivers or streams) which meet to form 'the Nile'.
  - One tributary is called the **White Nile**, which starts in South Sudan.
  - The other is called the **Blue Nile**, which starts in Ethiopia.

- The **Blue Nile and White Nile** merge together in the city of **Khartoum in Sudan.** From there, the river continues to flow north through Egypt and, finally, into the **Mediterranean Sea.**

- The name "Nile" is derived from the Greek word "Neilos," which probably originated from a Semitic root meaning "**a valley or a river valley.**"

- The Nile River basin is bordered by the **Mediterranean Sea** to the north, the Red Sea Hills and the Ethiopian Plateau to the east, the East African Highlands (including Lake Victoria, a Nile source) to the south, and the watersheds separating it from the Chad and Congo basins to the west.

DISASTER MANAGEMENT

India sends humanitarian aid to Papua New Guinea

News Excerpt:

Relief material worth $1 million was sent as an immediate assistance to Papua New Guinea after a **recent landslide in the country's Enga province.**

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What are landslides?

- Landslides occur when the force of gravity overwhelms the strength of the geomaterial forming a slope, which can range from rocks to sand, silt, and clays.
- **Secondary slides are subsequent landslides that occur after an initial landslide.**
  - They result from destabilized conditions caused by the primary slide, such as unstable debris, ongoing heavy rainfall, erosion, or disturbed ground.
  - These follow-up slides can happen without warning, posing **additional risks to rescue operations and further damaging affected areas.**

Causes of Landslides:

- Natural landslides are often triggered by earthquakes or heavy rainfall, or a combination of both.
  - **Earthquakes shake and weaken the ground over time, while rainwater seeps into porous soil, adding weight and reducing stability.**
- **Coastal slopes can also fail due to erosion from wave action.**
- Human activities like **deforestation and mining** can further destabilize slopes.
- Tree roots that reinforce soil are removed, and ground vibrations from mining operations mimic earthquake effects.
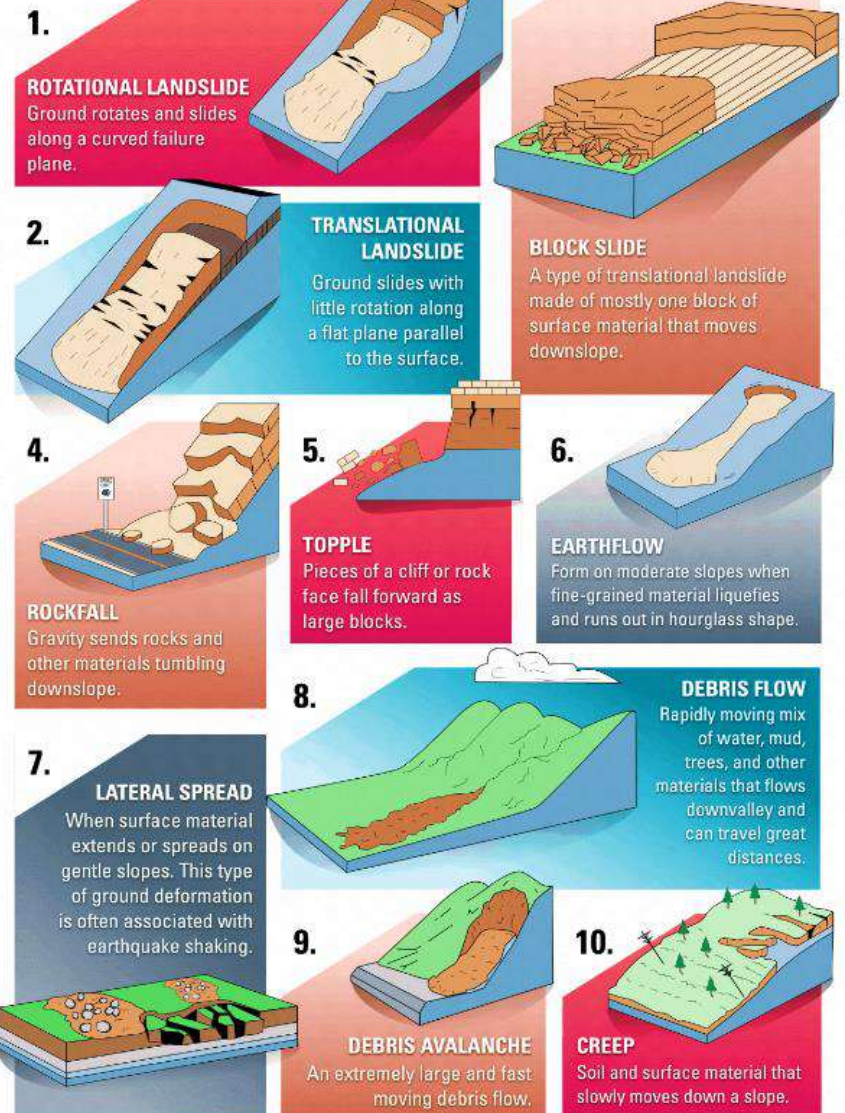
Prediction Challenges:

- Predicting landslides **is inherently difficult** due to the complex interactions of geological factors and environmental conditions.
- Effective prediction would require **accurate forecasts of earthquakes and rainfall patterns**, alongside detailed knowledge of the strength and distribution of geomaterials within slopes.
- Current **methods rely on limited data gathered from specific locations**, making extrapolation to larger areas prone to error.
- Factors like existing fractures in rock masses, which weaken slopes, often go undetected, introducing uncertainties into predictive models.

Landslides in India

- **The National Disaster Management Authority (NDMA)** addresses the pervasive threat of landslides across India, particularly in vulnerable regions like the **Himalayas, Northeastern hill ranges, Western Ghats, Nilgiris, and Vindhyans.**
- About 0.42 million square km of **India's landmass**, or about 13% of its area, spread over **15 states and four Union Territories**, is prone to landslides, according to **the Geological Survey of India**.

TYPES OF LANDSLIDES

1. **ROTATIONAL LANDSLIDE** Ground rotates and slides along a curved failure plane.

2. **TRANSLATIONAL LANDSLIDE** Ground slides with little rotation along a flat plane parallel to the surface.

3. **BLOCK SLIDE** A type of translational landslide made of mostly one block of surface material that moves downslope.

4. **ROCKFALL** Gravity sends rocks and other materials tumbling downslope.

5. **TOPPLE** Pieces of a cliff or rock face fall forward as large blocks.

6. **EARTHFLOW** Form on moderate slopes when fine-grained material liquefies and runs out in hourglass shape.

7. **LATERAL SPREAD** When surface material extends or spreads on gentle slopes. This type of ground deformation is often associated with earthquake shaking.

8. **DEBRIS FLOW** Rapidly moving mix of water, mud, trees, and other materials that flows downvalley and can travel great distances.

9. **DEBRIS AVALANCHE** An extremely large and fast moving debris flow.

10. **CREEP** Soil and surface material that slowly moves down a slope.

- NDMA implements **Landslide Hazard Zonation (LHZ) mapping** at various scales supported by organizations like the **National Remote Sensing Center (NRSC)** and academic institutions.
  - These maps **identify high-risk zones and guide targeted interventions for stabilization and monitoring.**

PEPPER IT WITH:
NDMA, LHZ, NRSC

- NDMA emphasizes the **importance of early warning systems and community preparedness, advocating for emergency kits and evacuation plans.**
- **Public awareness campaigns stress vigilance during periods of intense rainfall and recognition of warning signs like rockfalls and ground cracks.**
- NDMA's approach underscores **the proactive management of landslide risks through scientific mapping, community resilience, and coordinated disaster response measures nationwide.**

Heat waves as a notified disaster

News Excerpt:

The spell of **extreme heat** in many parts of the country has reopened discussions on the **inclusion of heatwaves** as one of the **notified disasters** under the **Disaster Management (DM) Act, 2005**.

Definition of a Disaster

- DM Act defines a disaster as a "catastrophe, mishap, calamity or grave occurrence" arising from "natural or man-made causes" that results in substantial loss of life, destruction of property, or damage to the environment.
- It must also be of such nature which is "beyond the coping capacity" of the community.
- Earlier, the DM Act was enacted in the wake of the 1999 Odisha super-cyclone and the 2004 tsunami.

Disasters included in DM Act

- Currently, there are **12 categories of disasters** which are notified under this Act. These are **cyclones, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack,** and **frost and cold waves**.

Implications of including disaster in DM Act

- If the **inclusion occurs**, states will be able to **use disaster response funds** to give **compensation and relief**, as well as a variety of other actions related to **heatwave management**.
- The **provisions of the DM Act can be invoked**. The provisions **allow states to draw money** from the two funds that have been set up under this law — the **National Disaster Response Fund** (NDRF) at the national level and the **State Disaster Response Fund** (SDRF) at the state level.
- The **states first utilize the funds available in the SDRF**, and only if the magnitude of the **disaster is unmanageable with the SDRF**, states **seek the money from the NDRF**.
- In the **FY 2023-24**, only **two states drew money** from the **NDRF**.

Increased Frequency of heat waves

- In the **last 15 years**, however, both the **severity and frequency of heatwaves have increased**.
- Due to **increased economic activity**, there is a far larger number of people who have to remain outdoors for their livelihoods or other reasons, exposing them to the **risk of a heat-stroke**.
- There are **23 states**, which are **vulnerable to heatwaves**.

Heat Action Plans

- States have prepared **heat action plans (HAPs)** to deal with the impacts of extreme heat.
- HAPs involve activities like creation of **shaded spaces**, ensuring availability of **cool water in public places**, distribution of simple **oral solutions**, and reorganizing the **schedules of schools, colleges** and **office working hours**.
- These measures require expenditure but **state governments have not been able to use the SDRF** for them.
- This is the reason for the **demand for inclusion of heatwaves** as a notified disaster in the DM Act.

Reasons for not including Heat waves in DM Act:

1. **Finance Commission Reluctance**
   - States have put the **demand of including heat waves** as a **notified disaster** before the **last three Finance Commissions**.
   - The **15th Finance Commission**, whose recommendations are currently being applied, said the **existing list of notified disasters "covers the needs of the states to a large extent"** and did not find merit in the request to include heatwaves.
   - But it endorsed an enabling provision created by the preceding Commission that allowed states to **utilise at least a part of the SDRF money** — **up to 10%** — for "**local disasters**" such as **lightning or heatwaves**, which **states could notify on their own**.
   - Using this new enabling provision, at least **four states** — **Haryana, Uttar Pradesh, Odisha, and Kerala** — have added **heat waves as local disasters**.

2. **Practical Difficulties**
   - It will lead to a potentially **huge financial implication** for the government as they have to provide **monetary compensation** of **Rs 4 lakh for every life lost** because of a disaster that is in the notified list. **Grievous injuries** also have to be compensated.
   - **Heatwaves claim a large number of lives every year.**
   - Once the government is mandated to provide compensation, a **larger number of deaths could be revealed**.

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3. **The problem with attributing heatwave deaths**
   - In most cases, **heat itself does not claim lives.** Most people die due to **other pre-existing conditions**, made worse by the impact of extreme heat. It is often difficult to ascertain whether it was heat that made the difference.
4. **Other Reason**
   - Heat related illnesses and deaths have been widespread in many parts of **northern, eastern,** and **central India** for a long time, but heat waves were not considered a disaster when the **Act was created in 2005**.
   - The reason for this was because heat waves weren't actually **an uncommon occurrence** throughout the summer, but rather a **regular occurrence**.
   - States currently have to pay for these initiatives out of **their own funds**.

National Disaster Response Fund (NDRF)
- The NDRF was constituted under **Section 46 of the Disaster Management Act, 2005**.
- It **supplements SDRF of a State**, in case of a **disaster of severe nature**, provided adequate funds are not available in SDRF.
- The **allocation of funds** under NDRF and SDRF is based on the recommendations of the successive **Financial Commissions**.
- **For NDRF**, the **entire contribution** in the fund comes from the **Central Government**.

State Disaster Response Fund (SDRF)
- The SDRF constituted under **Section 48 (1) (a) of the Disaster Management Act, 2005**, is the **primary fund available with State Governments** for responses to notified disasters.
- The **Central Government contributes 75%** of SDRF allocation for **general category States/UTs** and **90% for special category States/UTs** (NE States, Sikkim, Uttarakhand, Himachal Pradesh, Jammu and Kashmir).
- SDRF shall be used only for meeting the expenditure **for providing immediate relief** to the victims affected by **notified disaster**.
- Disasters covered under SDRF are - **Cyclone, drought, earthquake, fire, flood, tsunami, hailstorm, landslide, avalanche, cloudburst, pest attack, frost and cold waves.**
- **Local Disaster:** A State Government may use **up to 10 percent** of the funds available under the SDRF for providing immediate relief to the victims of natural disasters that they consider to be **'disasters' within the local context** in the State.
- These disasters are **not included in the notified list** of disasters of the **Ministry of Home Affairs** subject to the condition that the State Government has listed the **State specific natural disasters**.

Funds allocated by 15th Finance Commission
- For the **five-year period between 2021-26**, the 15th Finance Commission had recommended an allocation of

Rs 1,60,153 crore to the various SDRFs, a substantial sum of money.
- A state like **Uttar Pradesh** has been allocated about **Rs 11,400 crore** in its SDRF for the five-year period.
- **Maharashtra's share is the maximum, about Rs 19,000 crore**. This money is meant to deal with all kinds of disasters during this period.
- The fear is that even **this money could become insufficient** if heatwaves and lightning — another disaster that claims a large number of lives every year — is added to the notified list of disasters.

Argument for Inclusion of Heat waves
- On the other hand, **inclusion as a notified disaster** can improve the **management of heatwaves**.
- **Heat-related illnesses** and **deaths** would be better reported
- **Authorities** would be more alert to **minimize the impacts of heatwaves**.

PEPPER IT WITH:
DM Act, 2005, HAPs, SDRF

ART & CULTURE

Birsa Munda

News Excerpt:

Birsa Munda took his last breath on **June 9, 1900**. Various leaders marked the **124th death anniversary** of this prominent freedom fighter and tribal leader.

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About Birsa Munda:
- Birsa Munda was **born on November 15, 1875,** at a time when his community was witnessing major changes amid the advent of British colonial rule.
- The **Mundas,** a tribe of **nomadic-hunters-turned-farmers** who lived in the Chhotanagpur region in today's Jharkhand, had to bear the brunt of a series of adverse policies and events.

Laying the ground for revolt:
- Before colonial rule, the **prevalent system of land ownership was known as 'Khuntkatti'**. It was based on the principle of customary rights and did not involve landlords.
- However, the enactment of the **Permanent Settlement Act (1793)** led to a transformation and helped colonialism make its inroads in rural India. To maximize its revenue, the **East India Company** relied on the law to ratify the Zamindari system for land revenue collection. This created dual classes — of land-owning zamindars who were viewed as **outsiders or "dikus"** by the Indigenous residents and **the "ryots" or tenants.**
- The Act allowed the "**dikus" to claim ownership rights** using a deed that specified a precise area. This **displaced the indigenous dwellers** and denied them access to the land they had cultivated for generations.

- Compounding the problem for the community was a range of other debilitating policies, including the exploitation of tribal people through the **"begar" system of forced labour**, the forced dependence on money lenders for credit, and the replacement of traditional clan councils with courts.
- To cap it all, the **onset of famines in 1896-97 and 1899-1900** resulted in mass starvation.

'Dharti ka Abba', Bhagwaan Birsa:

- The impact of British rule, as well as the **heightened activities of the Christian missionaries** in the area, made many tribals cynical about the presence of the 'dikus'.
- Munda spent most of his time between 1886 and 1890 in Chaibasa, close to the Centre of the **Sardari agitation.**
- This inspired him to join the **anti-missionary and anti-colonial cause.** By the time he left Chaibasa in 1890, Birsa was strongly entrenched in the movement against the British oppression of the tribal communities.
- Munda soon emerged as a tribal leader who brought people together to fight for these issues. He also briefly propagated **his religion, Birsait,** which was said to be influenced by both Christianity and Vaishnavism.
- **Leading the faith of 'Birsait', he became a God-like figure** who came to be referred to as **'Bhagwan' (God) and 'Dharti ka Abba' (father of the earth)** by his followers.
- As followers flocked to the new religion, **Birsa advocated against superstition and urged his people to renounce begging and animal sacrifice,** asking them to worship only one God.
- In the process, members of the **Munda and Oraon communities** joined the Birsait sect, posing a **challenge to British conversion activities.**

The Ulgulan movement and the aftermath:

- Birsa Munda launched the **Ulgulan movement in 1899,** using weapons and guerrilla warfare to drive out foreigners. He encouraged the tribals to follow the **Birsa Raj** and not comply with colonial laws and rent payments.
- However, the British were soon able to halt the movement through the superior strength of their forces.
- It is believed he died in **Ranchi Jail due to an illness on June 9, 1900, at the young age of 25.** Though he lived a short life and the movement died out soon after him, Birsa Munda's mobilization of the tribal community to protect their land rights was remarkable, being one of the earliest such attempts.

- The movement also contributed to the **government's repeal of the 'begar system' and led to the Tenancy Act (1903)**, which recognized the **khuntkhatti system**.
- The **Chhotanagpur Tenancy Act (1908)** later banned the passage of tribal land to non-tribal folks.

> **PEPPER IT WITH:**
> Khuntkatti', Permanent Settlement Act, Chhotanagpur Tenancy Act

- Since last year, the Central government has been marking **Birsa Munda's birth anniversary on November 15 as 'Janjatiya Gaurav Diwas (Tribal Pride Day)'.**

Gandhi's first Satyagraha

News Excerpt:

On June 7, 1893, a young lawyer named Mohandas Karamchand Gandhi was unceremoniously thrown off a train's first-class compartment reserved for 'whites only' at the Pietermaritzburg railway station in South Africa triggering Gandhi's first Act of civil disobedience or Satyagraha.

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> **About the Satyagraha:**
> - The word 'Satyagraha' is **Sanskrit** in origin. It is a compound word formed of **'Satya'**, meaning **'truth'**, and **'Agraha'**, meaning **'clinging, holding fast, adherence, insistence'.** In other words, Satyagraha means **clinging to truth**, holding fast to truth, insistence on truth, or firm adherence to truth, come what may.
> - **Gandhiji** described Satyagraha as "firmness in a good cause" in Indian opinion.
> - Satyagraha, which was Gandhi's supreme invention, discovery, or creation, stands for a **ceaseless and relentless pursuit of truth without resorting to hatred, resentment, ill-will, or animosity.** His concept does not imply **passivity, weakness, helplessness, or expediency.**
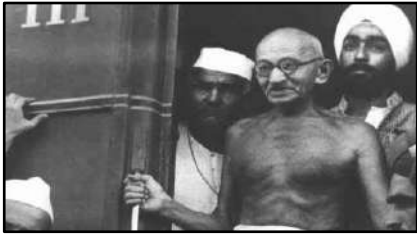
Incident at Pietermaritzburg:

- Gandhi was on his way from **Durban to Pretoria** when, on the night of June 7, 1893, a railway official demanded he relinquish his first-class seat and move to the third-class compartment.
- Gandhi refused, saying that he held a valid **first-class ticket.**
- This led to the summoning of a police constable and **Gandhi's ejection** from the train at the Pietermaritzburg station.

Path of Nonviolent Resistance:

- Gandhians view the Pietermaritzburg incident as one of the most crucial moments in Gandhi's life.
- As he wrote in his autobiography, what happened to him was **"only a symptom of the deep disease of colour prejudice,"** and he felt it was **his "duty" to fight it.**

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● From writing letters, articles, and petitions to mass mobilization and seeking imprisonment if demands were not met, Gandhi both **theorized and practiced satyagraha in South Africa before** he employed the same method of nonviolent protest **in India** against the British.

● **From the Non-Cooperation Movement (1919-22)** to the **Civil Disobedience Movement (1930-34)** to the **Quit India Movement (1942)**, his principles of nonviolent resistance were central to India's struggle for freedom.

Archaeologists and Sanskrit scholars tie up to decipher Rigveda text

News Excerpt:

Taking forward the research to potentially establish a **relationship between the Harappan civilization and the people of the Vedic age**, a group of archaeologists are now collaborating with Sanskrit scholars to decipher the text of the Rigveda.
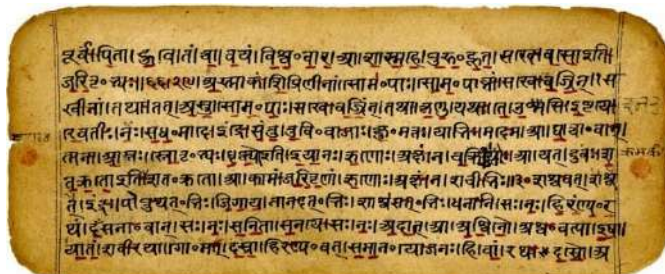
More about the research:

Seeking Substantive Evidence: The National Council of Educational Research and Training (NCERT) recently augmented the Class 12 History textbook with a significant addition titled **'Bricks, Beads, and Bones - The Harappan Civilization'.** This inclusion was based on DNA evidence derived from the 4,600-year-old remains of a woman, suggesting indigenous roots for the Harappan populace. Currently, researchers are directing their efforts toward assessing **the hypothesis that the Harappans and the Vedic people shared a common ancestry.** However, the NCERT has included a disclaimer underscoring the necessity for further research to solidify this proposed relationship.

● **Ritual platforms and fire altars at Rakhigarhi parallel Rigvedic fire worship**. The detailed meaning of the text will further help establish the relationship.

● The majority of Harappan settlements along the Saraswati River are frequently mentioned in Rigveda.

● **DNA evidence from the Rakhigarhi woman suggests that Harappans were indigenous people**, but further research is required to establish this hypothesis.

● **Debate on the origin of the Vedas**: The Vedas originated between 1,500 BC and 2,000 BC, but researchers claimed that they date back to 2,500 BC, aligning with the Harappan civilization.

Implications

Historical Understanding

- Establishing a link between the Harappan civilization and the Vedic age could reshape the historical narrative of ancient India, demonstrating a deeper cultural and genetic continuity.
- Understanding the precise period and context of the Rigveda remains critical to connecting textual descriptions with archaeological findings.

Language and Culture

- The potential Indo-European origins of Sanskrit and its relationship with Harappan culture could provide insights into the development and spread of ancient languages and cultural practices.

Further Research

- Continued interdisciplinary research is essential to solidify or refute the hypotheses regarding the Harappan-Vedic connection.
- This includes more detailed studies of Rigvedic texts, additional archaeological excavations, and further genetic analyses.

Other Findings Supporting the Hypothesis:
Saraswati River:

● The **Rigveda frequently mentions the river Saraswati**, and many **Harappan settlements have been found along its banks**. This correlation is crucial as it might indicate a cultural continuity between the Harappans and the Vedic people. Today, the **Saraswati is known as the Ghagghar-Hakra river,** which flows seasonally during the monsoon.

Animal Bones and Domestication:

● A contentious point is the **discovery of animal bones at Surkotada in Gujarat,** which some believe to be of **domesticated horses**, as mentioned in the Rigveda. This contrasts with findings suggesting the **bones belonged to wild asses**, supporting theories that domesticated horses arrived in India post-1,800 BC. around.

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PRE-SHOTS POLITY

Speaker's Post and Its Significance

News Excerpt:

BJP MP Om Birla was elected speaker of the 18th Lok Sabha after Prime Minister Narendra Modi moved a motion to elect the NDA nominee for his second term.

Election process of the Lok Sabha Speaker:

- After a pro-tem or temporary Speaker administers the oath to new members, the Speaker is chosen to be the Presiding Officer of the House.
- The Speaker is **elected by a simple majority** in the House.

Term of a Speaker: The term ends with the dissolution of the House unless the Speaker resigns or is removed from office before that.

Disqualification of Members:

- The Speaker's power under the **Tenth Schedule, or the anti-defection law,** is particularly significant for the opposition.
- The law, introduced through the 52nd Amendment Act of 1985, **empowers the Speaker to disqualify members who defect from their parties.**
- The **Supreme Court's 1992 ruling in Kihoto Hollohan vs Zachillhu** affirmed the Speaker's authority that **only the final order is subject to judicial review.**
- Timely decisions on disqualification are critical, as delays can **undermine the anti-defection law and impact government stability.**
  - In 2020, the Supreme Court ruled that Speakers of both Assemblies, and the Lok Sabha must **make decisions on disqualification pleas within three months, except in extraordinary circumstances.**

Significance of the Speaker's power:

Conducting the proceedings of House

- Maintain order and decorum in House: Deciding how the House is conducted, in consultation with Leader of the House.
- Oversee proceedings and ensure adherence to Rules of Procedure and Conduct of Business in Lok Sabha.

Questions and Records

- Members require prior permission from Speaker to ask questions or discuss matters, underscoring Speaker's control over legislature.
- Discretion extends to determining admissibility of questions raised by members.
- Oversees publication of House proceedings and possesses the authority to expunge unparliamentary remarks.

Voice Votes and Division

- Voting procedures in the Lok Sabha also fall under the Speaker's purview.
- Speaker's judgment is final during voice votes, where members orally express their support or opposition to a motion.
- In situations where treasury benches are thin, Speaker can disregard requests for division, pushing a bill through by voice vote. This practice bypasses a recorded vote, denying members the opportunity to formally document their positions.

No-Confidence Motion

- The Speaker's impartiality is critically tested during a motion of no-confidence that allows the opposition to challenge government's majority in the House.
- The Speaker's role in admitting and scheduling the motion is vital, as delays or refusals can stifle parliamentary scrutiny.
- In 2018, then-Speaker Sumitra Mahajan delayed admitting a no-confidence motion showing significant impact of the Speaker's decisions on parliamentary democracy.

Casting Vote

- According to Article 100 of the Constitution, Speaker does not vote in the first instance but exercises a casting vote in case of a tie.
- Traditionally, the Speaker votes in favor of the government, maintaining stability.
- This convention underscores the importance of Speaker's neutrality, as their vote can alter the outcome of crucial legislative decisions.

Union Council of Ministers

News Excerpt:

On June 9, 2024, Prime Minister Narendra Modi and the **Union Council of Ministers (COM)** were sworn in by the **President.**

Constitutional provisions for the Council of Ministers:

- India's parliamentary democracy designates the President as the nominal head, with **real executive powers vested in the COM, headed by the Prime Minister.**
- As per **Article 74** of the Constitution, **the COM advises the President.**

- **Ministers must be members of either the Lok Sabha or the Rajya Sabha or must secure a seat within six months of appointment.**

Composition of Council of minister:

- The COM includes Cabinet Ministers, MoS with independent charge, MoS, and Deputy Ministers, though the **Constitution doesn't classify them into ranks.**
- Informally following British practice, Cabinet Ministers manage large portfolios, while MoS assist and report to them.
- MoS with independent charge report directly to the Prime Minister.

Size of the COM:

- The current COM comprises the **Prime Minister, 30 Cabinet Ministers, 5 Ministers of State (MoS) with independent charge, and 36 MoS.**
- **The size of the COM has varied over the years.**
  - At independence, Jawaharlal Nehru's COM had only 15 Ministers, growing to around 30 after the 1952 elections. Over time, the size increased to 50-60.
  - The United Front governments under Prime Ministers Deve Gowda and I.K. Gujral had notably smaller COMs, with 21 and 34 Ministers, respectively.
  - When Atal Bihari Vajpayee became Prime Minister in 1999, his COM had 74 Ministers.
- **In contrast, state governments** have had enormous COM sizes such as Mayawati's 79 Ministers in Uttar Pradesh in 2002, which prompted the need for a law to be put in place.

Suggestions and amendments related to the Size of COM:

- **The National Commission, which reviewed the workings of the Constitution under Justice Venkatachaliah** in **2000, suggested** a 10% limit to the total strength of the Lok Sabha or Legislative Assembly for Ministers at the Centre or State level.
- This led to the **91st Constitutional Amendment in 2003,** capping the COM **size to 15% of the total strength of the Lok Sabha or State Legislative Assembly.**
- **Smaller states must have a minimum of 12 Ministers**, while Union Territories like Delhi and Jammu & Kashmir have a 10% limit.

Parliamentary Secretaries:

- The appointment of Parliamentary Secretaries (PS) in states remains contentious, as it can **bypass the constitutional limit** on COM size imposed after the 91st Amendment.
- The office of Parliamentary Secretary (PS) also **has its origin in the British system. In India, the post of PS was first created in 1951.**
- High Courts in several states have challenged these appointments, with the **Supreme Court declaring Assam's 2004 law for PS appointments unconstitutional in 2017.**
- In January 2024, the Himachal Pradesh High Court restrained six PS from functioning as Ministers.

Swearing-in ceremony and Oath-taking ceremony

News Excerpt:

Narendra Modi was appointed as **Prime Minister** at a **swearing-in ceremony** by the President.

Significance of oath-taking ceremony:

- **The oath-taking ceremony** is a **formal event** that signifies **a person assuming control of a post**, and it is associated with several **government offices** in India.
- In this ceremony, the person takes an oath to remain **loyal to the Constitution** and to **discharge his duties honestly**.

Different Types of Oaths:

- At **different levels of government**, the oath is administered by different people.
- This ceremony reaffirms the **supremacy of the Constitution** in our politics.

Procedures of oath-taking

- Those taking the oath can either "**swear in the name of God**" or simply "**solemnly affirm**".
- The words of the oath of allegiance for each post are given in the Constitution of India.

> The oath of office to the **President** is administered by the **Chief Justice** of India.

Constitutional Provisions of Oath

> For the **Prime Minister and the Union Cabinet**, the **President** administers the oath.

- The **President's oath of office**, in **Article 60** of the

> For **CMs and ministers at the state level**, the **Governor** administers the oath.

Constitution, says, **"I, do swear in the name of God/solemnly affirm that I will faithfully execute the office of President (or discharge the functions of the President) of India and will to the best of my ability preserve, protect and defend the Constitution and the law and that I will devote myself to the service and well-being of the people of India."**

- The '**Third Schedule of the Constitution'** details the oaths for other offices.
- Holders of these offices also take an oath of secrecy.
- **Form of oath of secrecy for a Minister for the Union:**— **"I do swear in the name of God/solemnly affirm that I will not directly or indirectly communicate or reveal to any person or persons any matter which shall be brought under my consideration or shall become known to me as a Minister for the Union except as may be required for the due discharge of my duties as such Minister,"**.
- There are a **few variations to these words** in the oaths for post-holders at the **state level**.

Are variations of oaths allowed?

- **Constitutional experts** say that **Article 164** makes it clear that the **text of the oath has to be read out exactly as it is**.
- **Other legal experts** say **the content of the oath is important**. That should be as per the **format laid down in the Constitution**. Adding something **before or after the oath is not unlawful** as long as the substance of the oath is unaltered.
- But **if a person wanders from the text**, it is the responsibility of the person **administering the oath** — **President/Governor** — to interrupt and ask the person being sworn in to read it out correctly.

Dispute on wordings of the oaths

- The **words of the oaths** were arrived at after considerable discussions in the Constituent Assembly. One of the sharpest debates was about **whether office bearers of a secular state should swear in the name of God.**
- Even after it was agreed upon that God could be part of the oath, there were disagreements on **whether "in the name of God" should come before or after "solemnly affirm".**
- Finally, the members of the Constituent Assembly decided to place **"swear in the name of God" above "solemnly affirm"** in the Indian constitution.

OBC quota for Muslims in West Bengal

News Excerpt:

The Calcutta High Court has struck down the Other Backward Class status granted to 77 communities (classes), 75 of which were Muslim, in West Bengal since 2010.

Background of the case:

- In its judgment, the High Court noted that in **2010,** the West Bengal government issued **several similarly-worded notifications.**
  - These notifications included **42 classes, of which 41 were** from the **Muslim community, as OBCs,** entitling them to reservation and representation in Government Employment under Article 16(4) of the Constitution.
- The first challenge in the HC was filed in 2011 because **"the declaration of 42 classes as OBCs was based purely on religion".**
  - **The categorization is not based on any acceptable data, and the survey conducted by the Commission was unscientific and prefabricated.**
- In **2012, the West Bengal government** classified **another 35 classes as OBC, 34 of which were from the Muslim community.** This, too, was challenged in the HC.
- The court noted that **"religion indeed appears to have been the sole criterion"** for declaring these communities as OBCs."

Observations made by HC in the case:

- The Court held that the **Backward Commission** plays a vital role in giving effect to **Article 16(4).** It is an integral and indispensable part of the reservation granting process for OBCs by the State.
- The **state government must consult the Commission** to make a **fair and impartial classification, including sub-classification.**
  - **Non-consultation** with the Commission by the State would ipso facto **negate, nullify, and/or render null and void** the inclusion of any class as OBCs and even their sub-classification or determination of the percentage of reservation by the State.
- The court also held that **Sub-classification is meant to address the different levels of deprivation faced by different communities,** which the court held could only be done by referring to material collected by the Commission.

Indian Constitution on religion-based reservations

- **Article 15** specifically **prohibits the state from discriminating against citizens** on grounds **only of both religion and caste (along** with **sex, race,** and **place of birth**).
- After the Supreme Court's judgment in the **State of Kerala vs N M Thomas (1975),** reservation is considered not an exception to the equality/ non-discrimination clauses of Articles 15(1) and 16(1) but as an **extension of equality.**
- The crucial word in **Articles 15 and 16 is 'only'** — which implies that if a **religious, racial, or caste group constitutes a "weaker section"** under Article 46 or constitutes a backward class, it would be entitled to special provisions for its advancement.
- **Some Muslim castes were given reservations not because they were Muslims** but **because these castes were included within the backward class,** and reservation was given without reducing the quota for

- SCs, STs, and OBCs by creating a sub-quota within the OBCs.
- The **Mandal Commission**, following the example set by several states, **included a number of Muslim castes in the list of OBCs.**
- The **Supreme Court in Indra Sawhney (1992)** laid down that any social group, whatever its mark of identity if found to be backwards under the same criteria as others, will be entitled to be treated as a backward class.

Sacchar and Mishra panel on religion-based reservation:

- The **Justice Rajinder Sachar Committee (2006)** found that the Muslim community as a whole was almost as backward as SCs and STs and more backward than non-Muslim OBCs.
- The **Justice Ranganath Misra Committee (2007)** suggested **a reservation of 15% for minorities, including 10% for Muslims.**
- Based on these two reports, the **central government in 2012 issued an executive order providing 4.5% reservation of minorities** — not just Muslims — within the existing OBC quota of 27%.
- Since the order was issued only a few days before the Assembly elections in UP, Uttarakhand, Punjab, Goa, and Manipur, the Election Commission asked the government not to implement it.
- **Article 341 of the Constitution and the 1950 Presidential Order state that only Hindus are entitled to inclusion within SCs.**
- However, **Sikhs were included within SCs in 1956,** and **Buddhists in 1990.** Muslims and Christians remain excluded.

National Litigation Policy

News Excerpt:

The **Minister for Law and Justice** has introduced a **National Litigation Policy** aimed at transforming the government into an **efficient and responsible entity**.

The objective of the New Policy

- This policy intends to **lower legal costs**, **reduce the number of government-involved cases**, and **ease the courts' workload**.

Issues with The New Policy

- **Compliance with criminal procedures** is crucial because criminal laws can lead to the deprivation of life and liberty.
- **Article 21** ensures **no person is deprived of life and liberty** except by established legal procedure, which the CrPC previously defined.
- Now, the **CrPC has been replaced by three new laws**. The **IPC**, which **defines criminal behaviour**, has also been **reworded and replaced**, **introducing new crimes**.
- This raises concerns for those accused in criminal cases.

Uncertainty in criminal laws

- In criminal cases, the **state prosecutes the accused**. The **new laws modify all three Act**, which have been **interpreted by the Supreme Court** for over a century.
- **Unpredictability and uncertainty** about criminal laws may threaten the life and liberty of citizens, as violations can result in arrest.
- **People base their behaviour on existing laws** and modify them to prevent criminal activity.
- The life and liberty of persons are seriously jeopardized when there is **ambiguity surrounding criminal laws** since breaking them carries the penalty of being arrested.

President's 'mercy' Power

News Excerpt:

The President of India has rejected a mercy petition filed by Pakistani national Mohammed Arif.

Background of the trial and appeal:

- **Trial Court Decision:** In 2005, Arif was sentenced to death by the trial court for his involvement in the Red Fort attack.
- **Delhi High Court Confirmation:** In 2007, the Delhi High Court upheld the trial court's decision to sentence Arif to death.
- **Supreme Court Appeal:** Arif appealed to the Supreme Court, which on August 10, 2011, rejected his appeal. **The Supreme Court rejected** the appeal, calling the attack an **"undeclared war by some foreign mercenaries"** and applied the **"rarest of rare"** standard.
- **Review Petitions:** Arif again filed a review petition at the Supreme Court against the death sentence. The petition was rejected in 2012, which was followed by a curative petition in January 2014, which was also rejected.
- **Constitution Bench Decision:** In September 2014, a Constitution Bench ruled that death sentence cases **should be heard by at least three judges**. Arif's case was subsequently reviewed by a **three-judge Bench.**
- **Latest Supreme Court Decision:** On November 3, 2022, nearly 22 years after the attack, **a three-judge Bench led by the former Chief Justice of India** rejected Arif's plea, citing a direct attack on **India's unity, integrity, and sovereignty.**
- **Mercy Petition:** Arif submitted a mercy petition to the President on May 15, 2024, seeking clemency.

The "rarest of rare" case rule:

- The Supreme Court upheld the constitutionality of the death penalty in the 1980 case **Bachan Singh v. State of Punjab,** establishing important guardrails.

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- The court has held that the **death penalty should only be awarded in the "rarest of rare" cases** when no alternative option is available.
- All possible mitigating circumstances must be considered before awarding the death penalty.

NOTA is a ballot option that a voter can choose to apply for instead of giving their vote to any of the contesting candidates.

NOTA empowers the electors to express their negative opinions and a lack of support for the contenders.

It gives them the right to reject while maintaining the secrecy of their decision.

Law Commission on the Death Penalty:

- The **262nd Law Commission Report published in 2015** recommended the "**absolute abolition**" of the **death penalty** for all crimes **except terrorism-related offences** and **waging war**.
- The Law Commission Report noted that the President's 'mercy powers' are crucial, and cases deemed unfit for mercy may merit capital punishment.

What are mercy petitions?

- **Article 72** of the Constitution grants the President the power to **pardon, suspend, remit, or commute sentences,** providing additional protection against possible miscarriage of justice.
- Similarly, **Article 161** confers **pardoning powers on the Governor,** but these **do not extend to death sentences.**
- In its 1981 ruling in **Maru Ram vs. Union of India**, the SC held that while deciding mercy petitions under **Article 72**, the President **must act on the advice of the council of ministers.**
- Under the existing law, the **President is bound by the Council of Ministers' advice** and can only return the plea for reconsideration once under **Article 74 (1).**
- After this, if the Council of Ministers decides against the changes suggested by the President, she has no option but to accept them.

NOTA Introduction and its consequences

News Excerpt:

Indore Lok Sabha constituency rewrote history by registering the highest-ever NOTA votes in the country at 2,18,674, overtaking a record posted by Bihar's Gopalganj in 2019.

When was it first used?

- The None of the Above (NOTA) option was introduced in India following a Supreme Court directive in September 2013.

- The Supreme Court mandated the Election Commission of India (ECI) to include a NOTA button in electronic voting machines (EVMs) to uphold the secrecy of the voters' choice and ensure a more democratic process.

About NOTA (None of the Above)

- NOTA was used for the first time in the 2013 Assembly elections in five states-Chhattisgarh, Mizoram, Rajasthan, Delhi, and Madhya Pradesh-and later in the 2014 General Elections.

Background and Reasoning:

- **PUCL's Petition (2004):** The People's Union for Civil Liberties (PUCL) filed a petition arguing that the existing election process violated voters' right to secrecy. Under the **Conduct of Elections Rules, 1961**, a record was maintained of those who chose not to vote, including their signatures or thumb impressions, which compromised the confidentiality of their decision.
- **Supreme Court Ruling:** The Court held that the **right to secrecy is fundamental, whether a voter chooses to cast a vote or not.** It emphasized that secrecy is a crucial element of free and fair elections. The introduction of EVMs had made it easy to identify non-voters, as the machines would not emit light or sound if no vote was cast.
- **ECI's Recommendation (2001):** The ECI had previously suggested the inclusion of a NOTA option to protect voter secrecy and to allow voters to express their disapproval of all candidates, potentially reducing bogus voting.

Does NOTA Vote Count?

- The Election Commission clarified that **votes cast as NOTA are counted** but are considered '**invalid votes**'.
- Even if **NOTA votes get the most votes in a constituency, the next candidate with the second-most votes is declared the winner.**
- Therefore, votes made to NOTA will not change the outcome of the election

Significance of NOTA:

- The introduction of NOTA was aimed at **enhancing voter privacy** and **reducing bogus voting**.
- NOTA provides a **way for voters to express dissatisfaction with all candidates.** However, it currently has **no legal consequence** if it receives the highest number of votes; the candidate with the next highest votes wins.

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NRI marriages and succession rights in India

News Excerpt:

Legal experts say that couples involving NRIs who marry abroad don't need to register their marriage in India, provided it is duly registered in the country where they wed.

Inheritance rights for NRIs and foreign spouses

- Inheritance rights in India **extend to both resident Indians and Non-Resident Indians (NRIs),** as well as to situations where one spouse is a foreign citizen married to an NRI.
- A Supreme Court ruling from 2018 established that even **foreign spouses have the right to inherit assets** from their late NRI spouses in India.
- Legal experts affirm that children born to Indian parents, regardless of whether they were born in India or abroad, have an automatic entitlement to inherit properties in India through succession.
- Furthermore, children **born from live-in relationships or those adopted by Indian parents abroad** are entitled to succession in India as well.

The legal framework governing inheritance laws in India:

Indian Succession Act, 1925

- It is applicable on all Indian citizens except Hindus, Jains, Buddhists, and Sikhs. It explicitly provides the rule for testamentary as well as intestate succession.

Hindu Succession Act, 1956

- This Act was specially formulated for Hindus, Sikhs, Jains, and Buddhists to govern their inheritance rights in absence of a will.

Legal steps for succession:

- Non-resident Indians (NRIs) who hold Indian citizenship are required to register their marriage under the **Special Marriage Act,** in which succession rights are governed by the **Indian Succession Act of 1925.**
- If both parties in the marriage are Hindus, regardless of their nationality, the **Hindu Succession Act of 1956** is applicable.
- NRIs who are citizens of another country must obtain an **Overseas Citizen of India (OCI) card** to expedite the processing of their rights under personal succession laws based on their religion.

Ways of transferring the title:

- **Will (Testamentary Succession):** NRIs inheriting property through a will should **make sure the will is legally valid.** In cities such as Mumbai, Kolkata, and Chennai, it is necessary to obtain probate, which is a legal document confirming the authenticity of the will.
- **Intestate Succession:** When there is no will, property is inherited according to the **laws of intestate succession.** NRIs might need to get a succession certificate or a letter of administration from Indian courts to prove their right to inherit in the absence of a will.

CIC can't comment on the utilization of MPLADS funds by legislators: HC

News Excerpt:

The **Delhi High Court** recently observed that the **Central Information Commission (CIC)** has no jurisdiction to comment on how members of Parliament utilize funds under the **Members of Parliament Local Area Development Scheme.**

Background of the case:

- In its 2018 order, the **CIC criticized the practice of some MPs deliberately accumulating MPLADS funds** before elections to gain an improper advantage. It is recommended that such abuse of funds be prevented and that equal distribution be ensured annually.
- The high court ruled that the **CIC had overstepped its jurisdiction by commenting on the MPs' utilization of MPLADS funds.** It ordered the removal of two paragraphs containing remarks on fund utilization and misuse from the CIC's order.
- However, the **court upheld a directive from the CIC requiring the publication of details** regarding MPLADS funds, including MP-wise, constituency-wise, and work-wise allocations. This directive, falling within the ambit of the RTI Act, was deemed appropriate for retention.
- It emphasized that the **scope of the Right to Information (RTI) Act is limited to ensuring access to information** under the control of public authorities.
- The court clarified that the **CIC can only address issues related to information sought under the RTI Act** or matters leading to the dissemination of such information.
- Any comments or observations on the functioning of public authorities fall outside the purview of the CIC's jurisdiction under the RTI Act.

Members of Parliament Local Area Development Scheme (MPLADS)

- It was introduced in 1993 and came under the **Ministry of Statistics and Programme Implementation (MOSPI).**
- The scheme enables **members of parliament (MP)** to recommend developmental work in their constituencies,

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with an emphasis on creating durable community assets based on locally felt needs.

- **Elected Members of the Rajya Sabha** representing the whole of the State may select works for implementation in one or more district(s) as they may choose.
- **Nominated Members of the Lok Sabha and Rajya Sabha** may also select works for implementation in one or more districts, anywhere in the country.
- MPs can also recommend work of up to Rs. 25 lakhs per year **outside their constituency** or state of election to promote national unity, harmony, and fraternity.
- MPs can recommend work of up to 25 lakhs for Natural Calamities in the state and up to Rs. 1 crore in the country in **case of Calamity of Severe Nature** (e.g. Tsunami, major cyclones, and earthquakes).
- **District authorities (DAs) sanction the work recommended by MPs.** MoSPI disburses funds to district authorities, not directly to MPs.
- Each MP is allocated Rs. **5 crores** per year since 2011-12.
- Funds are **non-lapsable in nature**, i.e., if they are not released in a particular year, they are carried forward to the next year.
- MPs need to recommend work worth **at least 15% and 7.5% of their funds** to create assets in areas inhabited **by Scheduled Castes (SCs) and Scheduled Tribes** (STs), respectively.
- Funds for MPLADS can be converged with the **Mahatma Gandhi National Rural Employment Guarantee Scheme** (MGNREGS) to create more durable assets and with the **National Program for Development of Sports (Khelo India).**

SOCIAL ISSUES

Tele MANAS cell for Armed Forces

News Excerpt:

The **Ministry of Health and Family Welfare (MoHFW)** and the **Ministry of Defence (MoD)** have signed a Memorandum of Understanding (MoU) to launch a pilot project of **Tele MANAS for the armed forces.**

Tele MANAS:

- It is an initiative to **deliver free 24/7 tele-mental health services across India,** especially to remote or underserved regions.
- Structured in a **two-tier system**, it combines **state-level** Tele-MANAS cells (Tier 1) with specialists available through the District Mental Health Programme (DMHP) and medical college resources (Tier 2).
- Currently**, 51 operational Tele-MANAS cells** are spread across all 36 States and Union Territories, providing services **in 20 different languages.**

- It was launched by the **Ministry of Health and Family Welfare** in October 2022.

Objectives:

- To exponentially **scale up the reach of mental health services** to anybody who reaches out across India.
- To **implement a full-fledged mental health service network** that provides integrated medical and psychosocial interventions, including video consultations with mental health specialists, e-prescriptions, follow-up services and linkages to in-person services.
- **To extend services to vulnerable groups** of the population and difficult-to-reach populations.

Tele-MANAS for Armed Forces:

- The MoU seeks to establish a two-year pilot project operating a special cell at the **Armed Forces Medical College in Pune**.
- The project will address the mental health and well-being of Armed Forces personnel and their families.

Nata Pratha

News Excerpt:

The **National Human Rights Commission (NHRC)** has sought a report on the '**sale of underage girls**' as part of '**Nata Pratha**'.

What is Nata Pratha?

- The centuries-old custom of "Nata Pratha" remains alive in several Indian states, including **Rajasthan, Gujarat, and Madhya Pradesh.**
- The Bhil tribe usually practises it.
- It is a practice where two persons can enter into a relationship similar to marriage **without any legal and religious/social obligation** by getting a divorce from an existing marriage or otherwise.
- The practice **involves monetary dealing**, in which the new groom usually pays a bride price to the woman, her parents, or her previous husband.

- Presently, under 'Nata Pratha', girls in some communities are allegedly "sold" either on a stamp paper or otherwise in the name of marriage **having no legal sanctity.**

Stand of NHRC

- Given the **"unethical and immoral consequences"** of the **'Nata Pratha'** on women and minor girls, the National Human Rights Commission has called for its **eradication and abolition**.
- The NHRC on-spot inquiry team also suggested that the **state government should enact a law to stop the social evil of 'Nata Pratha'.**
- **The NHRC also observed that the 'Nata Pratha' is comparable to "modern forms of prostitution".**
- The commission suggested that besides enacting a law, the individuals involved in forcing women to go for 'Nata Pratha' must be prosecuted under laws relating to human trafficking and for selling the minor girls under the relevant provision of **The Protection of Children from Sexual Offences Act (POCSO Act)** to check this menace.

Poor countries need $1.4 trillion annually for universal social protection

News Excerpt:

Universal social protection for **low and middle-income** countries would require an additional **$1.4 trillion per year**, according to a working paper by the **International Labour Organization (ILO).**

Key takeaways from ILO's Documents:

- The ILO document provided estimates of the financing gap to achieve universal social protection, including access to **five key social protection guarantees** and essential health care.
- The financing gap for low-income countries **is more than half (52.3%)** of their annual gross domestic product (GDP), highlighting the significant challenge of financing universal social protection.
- **Most of the funds needed (60.1%) are for essential health care**. At the same time, the remaining portion is divided among social protection cash benefits, such as child benefits, old-age pensions, disability benefits, unemployment benefits, and maternity benefits.
- For **child benefits**, the financing gap was calculated for individuals aged 0 to 14 who do not currently receive any child benefits.
- The financing gap **for old-age pensions** was calculated by counting the number of people aged 65 and up who do not receive any type of old-age pension.
- Furthermore, the financing gap is compared to **actual government and social protection expenditures.**
- In low- and middle-income countries, the financing gap

for universal social protection is 3.3% of GDP per year, with essential health care accounting for 2% and the five key social protection cash benefits accounting for 1.3%.

- **Africa faces the most significant challenge in achieving universal social protection coverage**, with a financing gap of 17.6% of the region's annual GDP.
- To achieve universal coverage, low- and middle-income countries must increase government spending by 10.6% of total annual spending, which can be accomplished through domestic resources and better sovereign debt management.

Climate Change and Social Protection Financing:

- The paper emphasizes the importance of universal social protection in dealing with the effects of the climate crisis by reducing vulnerabilities and mitigating climate shocks.
- Progressive taxation, including taxes on those who consume and produce the most carbon dioxide, is urgently needed to mitigate climate change and its unequal impact on populations within countries.
- One way to accomplish this is to eliminate regressive fossil fuel subsidies (explicit fossil fuel subsidies).
- Raise the price of carbon-intensive goods and services through a carbon tax that accounts for the environmental costs of carbon use.
- International climate financing could help strengthen and adapt social protection systems in low- and middle-income countries to mitigate the unequal impact of climate change.

FSSAI issues warning against sale of human milk and its products in India

News Excerpt:

The Food Safety and Standards Authority of India (FSSAI) has denied permission to process and sell human milk under **the FSS Act of 2006**.

More about the news:

- The **Food Safety and Standards Authority of India (FSSAI)** released an advisory titled **"Advisory on Unauthorized Commercialization of Human Milk and its Products."**
- The food regulator has also advised that all activities relating to **commercialising human milk and its products must be stopped.**
- Any violation of this advisory may result in the **initiation of action against the Food Business Operators (FBOs)** in accordance with the Food Safety and Standards Act, 2006, and the rules/regulations made thereunder.

Donation of Human Milk: Allowed or Not

- Donation of human milk is allowed, but it **cannot** be used for **commercial purposes.**

- **Donor human milk (DHM)** can only be provided to newborns and infants admitted to health facilities with **Comprehensive Lactation Management Centres (CLMCs).**
- Human breast milk donation should be **voluntary and free of monetary benefits for the donor.**
- According to government regulations, the donated milk is meant to be **used free of charge to feed newborns and infants of other mothers in the hospital.**
- The commercialising or selling human milk and its products is prohibited, according to the **FSSAI advisory.**

Reasons found for reduced supply of breast milk
- **Lack of Breast Growth During Pregnancy**
  - The study revealed a significant association between **the lack of breast growth or increase in breast size during pregnancy and low milk supply.**
  - Approximately 72% of women with low milk supply reported no noticeable change in their breast appearance throughout their pregnancy.
  - This finding suggests that a lack of breast growth during pregnancy could be an **indicator for healthcare professionals to anticipate potential milk supply issues after the baby is born.**
- **Breast Hypoplasia**
  - Breast hypoplasia, characterized by **underdeveloped breast tissue,** was identified as another potential reason for reduced milk supply.
  - The study found that more than **two-thirds (approximately 70%) of the participants reported having at least one irregularly shaped breast**, which could be indicative of breast hypoplasia.
- **High Body Mass Index (BMI) Around Puberty**
  - The research established a link between a **high BMI around puberty and a low milk supply.**
  - While this connection needs further validation through population-based studies, it highlights **the potential impact of weight and body composition during critical developmental stages on future milk production.**

Spotlighting pre-eclampsia, ensuring safe motherhood

News Excerpt:
There needs to be greater awareness of this serious hypertensive disorder of pregnancy, i.e. pre-eclampsia.
Pre-eclampsia:

- Pre-eclampsia (PE) is a **hypertensive disorder** that usually begins after the 20th week of pregnancy.
- It is marked by increased **blood pressure** and **protein (albumin)** in the **mother's urine.**
- The prevalence of PE during pregnancy varies from **5% to 15% in India,** making it a significant contributor to **maternal health complications.**
- **Early-onset pre-eclampsia,** occurring before **34 weeks of gestation**, poses a heightened risk of **severe illness and fetal mortality.**
- Apart from elevated **blood pressure** typically appearing after 20 weeks of gestation, affected mothers may experience symptoms like **swelling** in the **face, hands, and feet, intense headaches**, changes in vision, upper abdominal discomfort, and difficulty in breathing.

What is needed:
- The urgency lies in **combating pre-eclampsia by raising awareness about this serious pregnancy-related hypertensive disorder**, which is **both predictable and preventable**.
- The **Indian Radiological and Imaging Association (IRIA), through its flagship program, "Samrakshan,"** has taken on the mission of expanding the reach of safe motherhood initiatives across all districts of India.
- With a **commitment to reducing pre-eclampsia from 8%-10% to 3% and fetal growth restriction from 25%-30% to 10% by the end of the decade**, IRIA Samrakshan sets an example of the dedication required to address and mitigate the risks faced by pregnant women and newborns.

Review of the progress of schemes and key initiatives of DEPwD

News Excerpt:
The Ministry of Social Justice & Empowerment convened a meeting to review the progress of various schemes and strategize key departmental initiatives for the next 100 days under the **Department of Empowerment of Persons with Disabilities (DEPwD).**

Department of Empowerment of Persons with Disabilities (DEPwD)
- DEPwD develops policies, programs, and initiatives to foster **inclusivity, accessibility, and empowerment for persons with disabilities (PWDs).**
- Its mandate covers education, employment, social security, accessibility, and rehabilitation.
- Key initiatives of DEPwD include the **Accessible India Campaign**, which promotes barrier-free public infrastructure, and the implementation of the **Rights of Persons with Disabilities Act (RPwD Act), safeguarding PWDs' rights**.
- Through advocacy, capacity-building programs, and stakeholder collaboration, DEPwD plays a vital role in

fostering an equitable and inclusive society, enabling PWDs to realize their full potential and lead dignified lives.

Some of the significant schemes under DEPwD have been discussed in the table:

Scheme	Key Points
DISHA (Early Intervention and School Readiness Scheme)	• **Targets children aged 0-10 years with disabilities** under National Trust Act. • Provides early intervention, therapies, training, and family support. • Day-care facilities **with specific activities are available for at least 4 hours/day.** • Staff includes a Special Educator, Therapist, Counsellor, Caregiver, and Ayas.
VIKAAS (Day Care)	• Day-care for enhancing interpersonal and vocational skills for PwDs transitioning to higher age groups. • Provides caregiving support and respite for families. • **Daycare facilities are open for at least 6 hours/day and for at least 21 days/month.**
SAMARTH (Respite Care)	• **Respite home for orphans, abandoned, crisis-affected PwDs, and those from BPL & LIG families.** • Group home facility for all age groups with quality care and basic medical care.
GHARAUNDA (Group Home for Adults)	• Assured home and quality care services for life for adults with Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities. • **Provides vocational and pre-vocational activities and further training assistance.**
NIRAMAYA (Health Insurance Scheme)	• Affordable **health insurance for PwDs covering Autism, Cerebral Palsy, Mental Retardation, and Multiple Disabilities.** • **Up to Rs. 1 lakh cover**s OPD, regular checkups, surgeries, therapies, alternative medicine, and transportation costs.
SAHYOGI (Caregiver Training Scheme)	• Sets up caregiver cells to train caregivers for PwDs and their families. • Offers primary and advanced training courses for caregivers.
GYAN PRABHA (Educational Support)	• Encourages PwDs **to pursue educational/vocational courses leading to employment or self-employment.** • Provides financial support for fees, transportation, books, and out-of-pocket expenses.
PRERNA (Marketing Assistance)	• Provides funds for PwDs t**o participate in events to sell their products.** • Incentives for **Registered Organizations** based on sales turnover. • At least 51% of employees in participating work centres must be PwDs.
SAMBHAV (Aids and Assistive Devices)	• Sets up resource centres in cities with populations over 5 million. • Collates, displays, and demonstrates aids, software, and assistive devices. • Provides information on the National Trust website.
BADHTE KADAM (Awareness and Community Interaction)	• Supports activities to increase awareness of National Trust disabilities. • Aims for community awareness, social integration, and mainstreaming of PwDs. • Sponsors up to 4 events per RO per year.

ECONOMY

RBI's Surplus Transfer

News Excerpt:

Reserve Bank of India's Central Board has approved **₹2.11-lakh crore** surplus bonanza to the government.

About the news:

- The surplus transfer in FY24 is **much higher than both the budgeted** (₹1.02-lakh crore, including dividends from banks and financial institutions) and **street estimates** of ₹1 lakh crore surplus.
- The surplus transfer in FY24 is **2.41 times the previous year's** ₹87,416 crore.
- The figure is so large **despite RBI setting aside the highest prescribed 6.5%** of its balance sheet as its **Contingent Risk Buffer,** up from 6% in 2022-23 and 5.5% during the COVID years, when the buffer was reduced to lend the economy support.

- The development is an ode to the **RBI managing volatility skillfully while leveraging the turbulence in global markets to its advantage.**

What is the Surplus?

- **The RBI transfers its surplus annually to the government, the owner of the institution,** after making adequate provisions for contingencies or potential losses.
- These are called **transfers to the government,** rather than **dividends** because the **RBI is not a commercial organization**. RBI transfers the surplus — **excess of income over expenditure** —to the government under **Section 47 of the RBI Act, 1934.**

RBI's payout to Centre over the years (In Rs. Cr)

Source: RBI
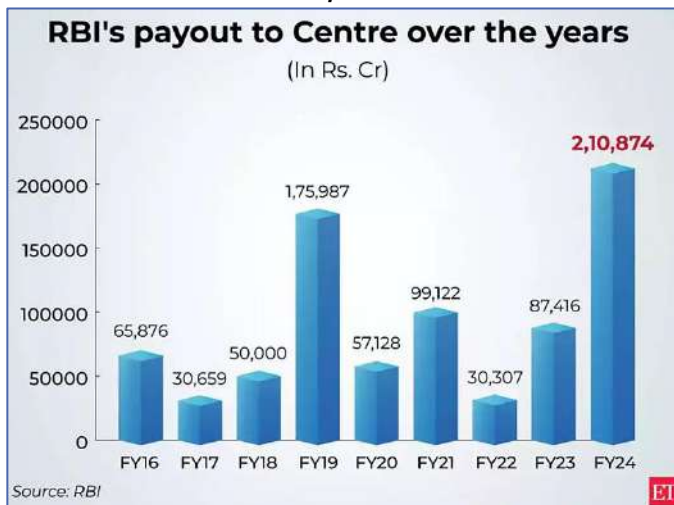
- The RBI normally pays the **dividend from the surplus income it earns on investments and valuation changes on its dollar** holdings and the fees it gets from printing currency, among others. The **rupee's depreciation against the dollar also weighs on the surplus transfer**.
- Economists have attributed the higher-than-anticipated surplus to higher interest income **led by an increase in both global and domestic yields.** There were also **revaluation gains on forex reserves**.

Impact of the surplus transfer:

- This surplus transfer will have a **positive impact on the government's finances and liquidity.** The **options before the government are**: reduce the borrowing (**borrow less in FY25)** and **give priority to fiscal consolidation** or allocate the bounty for capital spending **(step up capital expenditure).**
- The first option will be **positive for the bond market** as the **demand and supply will become more favourable**. If the government borrows less, **government security (G-Sec) yields could soften**, thereby **lowering its borrowing cost**.
  - Bond yields and prices are **inversely related** and move in opposite directions.

- The bumper dividend payout is also likely to ease reliance on the government's **disinvestment programme**, on which progress has been slow in the last few years.
  - This gives the government significant room to **manage welfare spending and sustain capex spending,** even if the disinvestment receipts fall short.
- The other aspect is **how the RBI manages this liquidity** and liquidity stance in the next policy. Suppose the stance continues to be **"withdrawal of accommodation"** in the next policy. In that case, the RBI may use other tools, including **OMO (open market operation) sales and forex interventions**, to suck out the liquidity.

RBI to allow opening of Rupee Account outside India

News Excerpt:

The RBI will permit the opening of rupee (INR) accounts outside India by Persons Resident Outside India (PROIs) as part of the 2024-25 agenda for the internationalization of the domestic currency.

More about the news:

- With emphasis on continuous synchronization of the **FEMA operating framework** with the evolving macroeconomic environment, rationalization of various guidelines will be of primary focus.
- RBI has finalized a **strategic action plan for 2024-25** and envisaged **liberalization of the External Commercial Borrowing (ECB) framework**.
- Rationalization of the **Liberalized Remittance Scheme (LRS)** and review of the **International Financial Services Centres (IFSC) regulations** under FEMA also are part of the agenda for the current financial year.

What is Currency Internationalization?

- It is the widespread **use of a currency outside the borders** of its original country of issue.
- There are a **number of benefits** to a country whose currency is internationalized.
- Economically, it **enlarges the sphere of the market in which they can participate** without the need to exchange currencies and incur the related transaction costs.
- It provides **more certainty to residents**, who can denominate foreign transactions in their home currency. They can also **borrow in foreign markets without incurring exchange rate risk,** potentially enabling them to find cheaper funding.

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- While a potential cost of internationalization **could be destabilizing effects** if a foreign loss of confidence were to lead to a sell-off in assets denominated in the currency, most major currencies have large domestic debt markets that could act as a **shock absorber** in such a scenario.

Foreign Exchange Management Act (FEMA):
- FEMA was introduced in 1999 to replace an earlier act named FERA (Foreign Exchange Regulation Act).

Objectives of FEMA
- The main objective of this act was **to facilitate external trade and payments.**
- It was formulated to assist in the orderly **development** and **maintenance of the Indian forex market**.
- It outlines the **formalities and procedures** for dealing with **all foreign exchange transactions in India**.

Liberalized Remittance Scheme (LRS):
- Before 2004, the act of fund transfer from India to other countries came with severe restrictions under the **Foreign Exchange Management Act of 1999**.
- Thus, **RBI introduced the LRS in 2004** to facilitate smooth foreign transactions.
- It is a **foreign exchange policy initiative** introduced by the RBI **to simplify and streamline** the process of remitting funds outside India.
- Under the LRS, a **resident individual** can remit up to **USD 250,000 per financial year** for permissible transactions.
- The LRS limit for **education, medical treatment, employment, emigration, travel, investment**, etc., is the same as mentioned.
- However, **one cannot use** the remittances for **margin trading, buying lottery tickets, real estate**, etc.

RBI moves 100 tonnes of gold from the UK

News Excerpt:

The **Reserve Bank of India** (RBI) has added around **100 tonnes** of **gold** from the **United Kingdom** to its **vaults in India**. This has been the most **significant since early 1991**, and the central Bank intends to move more in the coming months.

Fig: History of Gold Transfer
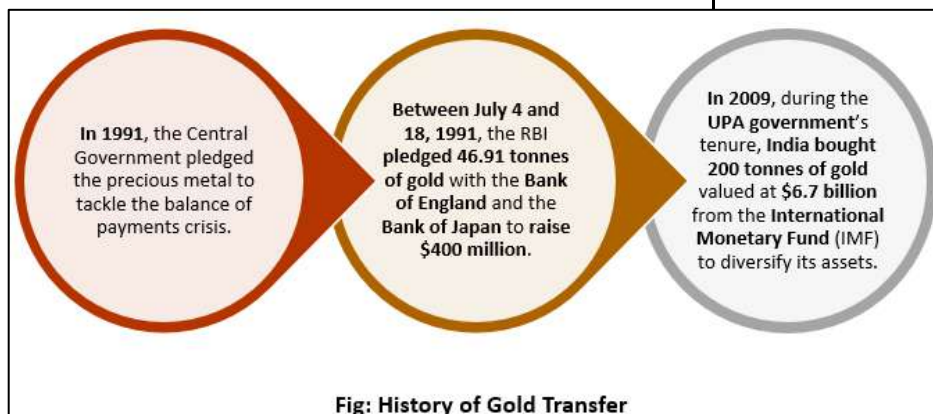
Purchasing of Gold by RBI:

- The RBI has started **to accumulate gold** regularly from the market **since December 2017**.
- The **share of gold in the country's total foreign exchange reserves** increased from 7.75 per cent at the end of December 2023 to about **8.7 per cent as of April 2024** end.
- The **RBI held 822.1 tonnes of gold**, with **413.8 tonnes stored overseas** as of March end.
- The RBI is among the central banks that have purchased gold in recent years, and has **added 27.5 tonnes in the last financial year**.

Tax Implication on Gold Transfer

- Initially, the **RBI obtained a customs duty exemption** to bring the metal into the country, with the central government "foregoing revenue" on this sovereign asset.
- However, **there was no exemption from Integrated GST**, which is applied to imports, since this **tax is shared with the states**.

The objective of Holding Gold in Forex Reserve

- The central Bank's **objective in holding gold in reserves** is mainly **to diversify its foreign currency assets base.**
- It is used to **hedge against inflation** and **foreign currency risks**.

RBI launches app for G-Sec transactions, PRAVAAH portal

News Excerpt:

The Reserve Bank of India (RBI) **launched three major initiatives** — the PRAVAAH portal, a Retail Direct mobile application, and a FinTech Repository.

More details about the news:

PRAVAAH portal:

- The PRAVAAH portal will make it convenient for any individual or entity to **apply online for various regulatory approvals** in a seamless manner.
- The portal will also **enhance the efficiency** of various processes related to granting of regulatory approvals and clearances by the RBI.
- On the portal, applicants can **submit the application online**, **track** and **monitor the status of the application**, respond to any clarification or query sought by the RBI in connection with the application and receive a decision from the RBI in a time-bound manner.

Retail Direct mobile app:

- The Retail Direct mobile app will provide retail investors a seamless and convenient **access to the Retail Direct platform** and provide ease of transacting in government securities.
- The scheme allows retail investors to **buy government securities** in the **primary auctions** as well as buy and sell G-Secs in the **secondary market**.

RBI Retail Direct Scheme
- It is a one-stop solution **to facilitate investment in Government Securities** by individual investors.
- **No fee** will be charged for opening and maintaining the **Retail Direct Gilt (RDG)** account with RBI.
- Opening an RDG account will allow individuals to buy **Government securities** directly in the **primary market** (auctions) as well as buy/sell in the **secondary market**.
- **G-sec** in the domestic market context is **risk-free** and **carries no credit risk**.
- Investment options on the Retail Direct platform.
  - Government of India Treasury Bills (T-Bills)
  - Government of India dated securities (dated G-Sec)
  - State Development Loans (SDLs)
  - Sovereign Gold Bonds (SGB)

Fintech Repository:

- Separately, the Fintech Repository will contain **information on the Indian FinTech Sector** for a better understanding of the sector from a regulatory perspective and facilitate designing appropriate policy approaches.

Sticky inflation

News Excerpt:

The Reserve Bank of India (RBI) unveiled its latest bi-monthly monetary policy review and, for the **eighth time** in a row, decided that it would **not change** the **repo rate.**

About Sticky inflation

- Inflation that is **no longer transitory** and continues to advance is considered "sticky."
- It's a phenomenon characterized by ongoing **increases in consumer prices and wages.**
- In economic terms, sticky inflation refers to **wages and consumer prices that don't respond quickly to changes in demand.** The phenomenon is closely related to **Keynesian economic theory**, which focuses on aggregate demand fueling an economy.
- Generally, prices for goods or services that don't appear to be coming down anytime soon are considered sticky.
- **Rising wages and prices for consumer goods and services** are typically the main factors behind inflation

stickiness. Prices for medical services, education, and housing are some of the most important factors that can contribute to sticky inflation.

Features of sticky inflation

- Some economists view sticky inflation as inflation that lasts for a while, **typically years rather than months.**
- When inflation is no **longer transitory and continues** to be on the increase, it is considered sticky and may eventually be considered **persistent.**
- Sticky inflation can have an **impact on monetary policy,** which directly affects the economy.

Why is the RBI not cutting interest rates?

- **Currently, the retail inflation rate has been coming down closer to the 4% mark.** In fact, it has stayed within the so-called "**comfort zone"** of the RBI — anywhere between **2% and 6%** — since September 2023 and yet, the RBI has not changed the repo rate since February 2023.
- The repo rate rose sharply between **May 2022 and February 2023**, but it has remained stagnant at 6.5% since then.

What is the goal of RBI's monetary policy?
The RBI has two goals.
- **The primary goal is to maintain price stability in the economy.** Simply put, the RBI aims to ensure that **prices do not fluctuate beyond a reasonable degree.**
- **The secondary goal for RBI is to promote economic growth.** When economic activity needs a boost, the RBI cuts the repo rate to make it easy for consumers and producers alike to borrow money and spend.

There are four broad reasons for this.

- **One**, despite keeping the repo rate consistently high, the retail inflation has not dropped to touch the 4% mark since January 2021.
- **Two**, the RBI does not cut the repo rate as soon as the overall inflation rate falls to (or below) **the 4% target in any one month**. The RBI has to be convinced that the inflation rate will stay around the 4% mark sustainably.
- **Three**, as explained earlier, **the RBI typically cuts the repo rate when it finds that economic activity needs a boost.** However, India's gross domestic product (GDP) growth rate has been strong over the past year.
- **Four**, although not articulated by the RBI per se, **the decision may have to do with India's forthcoming Union Budget.** Most economists are waiting to see how the political compulsions of a coalition government will impact the Centre's commitment to fiscal deficit.

WIPO Meeting 2024

News Excerpt:

The Treaty on **Intellectual Property (IP), Genetic Resources, and Associated Traditional Knowledge** was adopted at the Diplomatic Conference held under the aegis of the **World Intellectual Property Organization (WIPO)**.

More About the News:

- The diplomatic conference marked the **final stage of the negotiations** that began in 2021, originating from a proposal by Colombia in 1999.
- It is the **27th Treaty under WIPO** and the first in the last **10 years.**

Key highlights of the Treaty:

- **Treaty on Genetic Resources and Traditional Knowledge:** It is the **first WIPO treaty dealing with genetic resources and traditional knowledge** held by Indigenous Peoples and local communities.
  - The IP system can continue to **incentivize innovation** while evolving in a more inclusive way, responding to the needs of all countries and their communities.
- **Disclosure Requirements for Patent Applicants:** The Treaty ensures that **patent applicants must disclose the country of origin or source** of genetic resources used in claimed inventions.
  - Applicants must also disclose **the Indigenous Peoples or local community** who provided traditional knowledge if the patent is based on such knowledge.
- **Importance to India and Modifications Proposed:** The Treaty is important to India, as it holds **7-8% of global biodiversity** and a rich **repertoire of knowledge based** on these genetic resources.
  - India had submitted modifications to the text of the Treaty but these were not included in the **final text due to lack of consensus.**
- **Inclusion of Provisions for Indigenous Peoples and Local Communities:** It is the first WIPO treaty to include provisions specifically for **Indigenous Peoples and Local Communities.**
  - **Genetic resources** cannot be patented, but inventions using them, often based on **Indigenous and local traditional knowledge, can be protected.**
- **Protection Against Biopiracy and Non-Disclosure Issues:** The final text does not address the problem of biopiracy of genetic resources and associated traditional knowledge using patents. Non-disclosure of traditional knowledge sources in a patent application is still not **grounds for revocation.**
- **Role of the Nagoya Protocol:** The **Nagoya Protocol under the Convention on Biological Diversity** does ensure that benefits earned through the use of traditional knowledge are shared with the communities that have protected the resource and the associated knowledge for centuries
- **Ratification Process:** The Treaty will enter into force after 15 parties ratify it.

World Intellectual Property Organization (WIPO),

- It is an **international organization** designed to promote the worldwide protection of both industrial property (inventions, trademarks, and designs) and copyrighted materials (literary, musical, photographic, and other artistic works).
- The organization, established by a convention signed in **Stockholm in 1967**, began operations in 1970 and became a specialized agency of the United Nations in December 1974.
- It is **headquartered in Geneva.**
- WIPO's membership consists of more than **180 countries.** Its main policy-making body is the **General Assembly,** which convenes every two years.
- WIPO also holds a biennial conference, which determines the organization's budget and programs.
- More than **170 nongovernmental organizations maintain observer status.**

Project Financing Framework

News Excerpt:

RBI has proposed a **"harmonized prudential framework" for the financing of projects,** considering the long gestation period of projects relating to infrastructure, non-infrastructure, and commercial real estate sectors.

About the framework:

- It proposes revising the criteria for changing the **date of commencement of commercial operations (DCCO)** for such projects.
- The framework recommends that, **at the construction stage,** a general provision of **5% is to be maintained** on all existing and fresh exposures. This is a revision from the erstwhile 0.4%.
  - This 5% provisioning would be implemented in a phased manner, that is, 2% for FY25, 3.5% for the next financial year and eventually 5% in FY27.
- It can be **reduced to 2.5% and 1% at the operational phase** (that is, when commercial operations commence).

Purpose of the framework:

- Infrastructure projects usually have a long gestation period, **with a higher probability of not being financially viable,** which may face multiple obstacles leading to delays or cost overruns.
- The Ministry of Statistics and Programme Implementation's March review of **1,837 projects** observed that **779 were delayed,** and **449 faced cost overruns.**

o **Cost overruns** were primarily due to underestimating the original cost, the high cost of environmental safeguards and rehabilitation measures for the displaced, and spiraling land acquisition costs.

- The review attributed the delay to land acquisition, obtaining forest/environment clearances, changes in scope (and size), and delays in tendering, ordering and obtaining equipment, among other things.

Prerequisites in the framework for the financial projects:

- The framework requires that **all mandatory prerequisites** be in place before the financial year's closure.
- The indicative list must provide **environmental, regulatory and legal clearances** relevant to the project. The framework proposes to accept only half of the stipulated land availability for financial closure for PPP projects.
- The **Date of Commencement of Commercial Operations** (DCCO) must be clearly spelt out.
- For PPP projects, the disbursal should begin only after the de-facto handing over of a contract letter to the developer.
- RBI proposes to mandate that a **positive Net Present Value (NPV) be a prerequisite to obtain project finance.**

Net Present Value (NPV):

- It is the difference between the present value of cash inflows and the present value of cash outflows over a period of time.
- NPV is used in capital budgeting and investment planning to analyze the profitability of a projected investment or project.
- It is used to calculate the current value of a future stream of payments from a company, project, or investment.

Revised repayment norms under the framework:

- The framework proposes that the **original or revised repayment tenure not exceed 85%** of the project's economic life.
- The revision will have to take place before the commencement of commercial operations after lenders offer a **satisfactory re-assessment of the viability of the project** and if the risk in project cost, excluding any **cost overrun, is 25% or more** of the original outlay.
- The framework introduces **guidelines to trigger a standby credit facility and stipulates an incremental funding of 10%** of the original project cost.

SEBI committee to review ownership structure of clearing corporations

News Excerpt:

The Securities and Exchange Board of India (SEBI) is reviewing the **ownership structure** of **clearing corporations** to ensure independence and effective risk management.

About the news:

- A clearing corporation is an organization or entity **affiliated with a stock exchange** whose primary objective is to oversee the **confirmation, settlement**, and **delivery of transactions**.
- SEBI has formed a **committee chaired by Usha Thorat**, a former deputy governor of the Reserve Bank of India (RBI), to suggest alternatives to ensure the **capital needs of clearing corporations** and to **widen the list of eligible shareholders**.

Existing shareholding structure:

- **Indian Clearing Corporation** (ICCL) and **NSE Clearing** (NCL) are **wholly-owned subsidiaries** of the **Bombay Stock Exchange** (BSE) and the **National Stock Exchange**, respectively.
- The **dominance of the parent exchange** in the ownership structure invariably exposes a clearing corporation to the **expectations of its shareholders**, as the financial statements of **clearing corporations** are incorporated into the parent exchange's consolidated financial statements.
- According to norms, **stock exchanges** have to hold **at least 51 percent** paid-up equity share capital of the **clearing corporation**.
- Further, there are caps on the holdings by **non-residents** and **individual shareholders** at **5 percent**, while the same for **depositories** and **other institutions** is at **15 percent**.

Need for a review committee:

- The new committee may **review existing norms of shareholdings** and **look for alternatives** to meet financial obligations and investment needs.
- There is a need to ensure that there is no scope for any appearance of a perverse incentive coming in the way of **clearing corporations** discharging their role independently.
- The securities market has witnessed a **structural change** in recent times, with **exponential growth in derivatives** across the investor spectrum.
- Derivatives, being **leveraged products**, invariably increase the tail risk (**Tail risk is the chance of a loss occurring due to a rare event**) in markets. Therefore, the need for **resilience of a clearing corporation**, especially in times of market stress, cannot be overstated.

NSE Clearing Ltd

- NSE Clearing Ltd (formerly known as National Securities Clearing Corporation Limited), **a wholly-owned subsidiary of the National Stock Exchange** (NSE), was **incorporated in August 1995**.
- It was the **first clearing corporation** to be established in the country.

Indian Clearing Corporation Ltd

- Indian Clearing Corporation Ltd, **a wholly-owned subsidiary of the Bombay Stock Exchange (BSE)**, was incorporated in 2007.
- ICCL carries out the functions of **clearing, settlement, collateral management,** and **risk management for various segments of BSE**.

India Exim Bank

News Excerpt:

The **Export-Import Bank** of India (India Exim Bank) has opened an East Africa Representative Office in **Nairobi, Kenya**, to enhance India's business presence in the region.

More about the news:

- India Exim Bank is the **leading financial institution** engaged **in financing, facilitating, and promoting** India's international trade and investment.
  - It plays a critical role in policy formulation and project export finance under **India's economic diplomacy.**
- It aims to augment trade and investment between **India, Kenya, and the East Africa region.**
  - Merchandise trade between **India and East Africa has shown significant growth** in the last decade, increasing from $9.7 billion in 2013 to $12.9 billion in 2022.
  - **India's exports to East Africa grew** from $8.6 billion in 2013 to $9.4 billion in 2022.
- **The African continent** has been a key focus as part of India Exim Bank's strategy to promote and **support two-way trade and investment.**
- Under its Overseas Investment Finance Programme, the Bank has provided finance to 77 ventures set up by over 50 companies in 14 African countries.
- The Bank has extended over **200 Lines of Credit to 42 African countries** on behalf of the Government of India, totaling over $12 billion to support **socio-economic development, infrastructure, livelihoods, agricultural productivity, industrial output, and sustainable development.**
- This provides opportunities for **companies in Africa and India** across traditional and emerging sectors, benefits MSMEs in the value chain, and **creates and sustains jobs.**

AGRICULTURE

Farmers voluntarily gave up their PM-Kisan benefits

News Excerpt:

Bihar, Uttar Pradesh and Rajasthan lead the chart of **1.16 lakh farmers who have voluntarily given up** the benefits of the annual Rs 6,000 **Pradhan Mantri Kisan Samman Nidhi (PM-Kisan) scheme**.

The key takeaway from Data:

- **The state breakup:** 29,176 farmers' families in **Bihar surrendered** their PM-Kisan benefits, the maximum among all states.

Number of Beneficiaries	
BIHAR	29,176
UTTAR PRADESH	26,593
RAJASTHAN	10,343
MAHARASHTRA	7,825
JHARKHAND	6,215

- Last year, the Agriculture Ministry introduced a module in the PM-Kisan mobile app and website that enables farmers t**o exit the scheme voluntarily.**
- The **possible reasons for some farmers giving up the PM-Kisan benefits** include:
  - Absentee landlords who may have decided against availing of the subsidy;
  - Land going to tax-paying descendants who are not eligible;
  - Change in status of land-owners.
  - Ineligible farmers weeded out from the PM-Kisan database, reducing beneficiaries from 10.47 crore (April-July 2022 peak) to 8.12 crore in November 2023.

About PM-Kisan scheme:

- Under the **PM-Kisan scheme,** eligible farmer families **receive Rs 6,000 per annum** in three equated instalments through Direct Benefit Transfer (DBT) every four months.
- It is a **Central Sector scheme** with **100% funding from the Centre** that was launched in 2019.
- The fund is **directly transferred to the beneficiaries' bank accounts.**

Remove 100% fruit juice claims from ads

News Excerpt:

The **Food Safety and Standards Authority of India (FSSAI)** has mandated all **Food Business Operators (FBOs)** to immediately remove any '**100% fruit juice**' claims from the labels and advertisements of reconstituted fruit juices.

More about the News:

- **FSSAI** has instructed **food business operators (FBOs)** to exhaust all existing pre-printed packaging materials before September 1, 2024, that claim the product is "100% fruit juice.
- According to FSSAI, there is no provision under **the Food Safety and Standards (Advertising and Claims) Regulations, 2018**, for making a '100%' claim on fruit juice products.
- Such claims are considered **misleading**, especially when the **major ingredient is water**, and the primary ingredient (fruit) is present only in limited concentrations or when the **fruit juice is reconstituted using water and fruit concentrates or pulp.**
- FBOs have been directed to comply with the standards for fruit juices as specified under sub-regulation **2.3.6 of the Food Safety and Standards (Food Products Standards & Food Additives) Regulation, 2011.**
- This regulation states that products covered by this standard must be labelled in accordance with **the Food Safety and Standards (Labeling and Display) Regulations, 2020.**
- In the ingredient list, the word **"reconstituted"** must be mentioned against the name of the juice that is **reconstituted from the concentrate**.
- If added nutritive sweeteners exceed **15 gm/kg**, the product must be labelled as **'Sweetened juice'.**
- FSSAI is dedicated to **protecting and promoting public health** through the regulation and supervision of **food safety standards across the country.**

Ethylene Gas: A safe fruit ripener

News Excerpt:

The **Food Safety and Standards Authority of India (FSSAI)** has alerted traders/fruit handlers/Food Business Operators (FBOs) operating ripening chambers **to strictly ensure that no calcium carbide is used** for **artificial ripening** of fruits, particularly during the mango season.

More about the news:

- **The use of calcium carbide for ripening fruits has been banned** under Regulation 2.3.5 of the **Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011.**
- **FSSAI** has also advised **Food Safety Departments of States /UTs** to remain vigilant and **take serious action** and deal stringently against person(s) indulging in such **unlawful practices as per the provisions of the Food Safety and Standards Act, 2006**, and the associated rules/regulations.

What is Fruit Ripening?

- Fruit ripening is a **combination of physiological, biochemical, and molecular processes** that lead to changes in colour, sugar content, acidity, texture, and aroma.
- In general, it is a physiological process that makes the fruit **edible, palatable, and nutritious.**
- **Fruits are classified into two categories according to the ripening pattern:**
  - **Climacteric fruits:** These fruits are usually **harvested once they have reached their full maturity** and can be **further ripened during transit or storage.** These include banana, guava, avocado, mango, apple, pears, apricots, peach, tomatoes etc.
  - **Non-climacteric fruits:** These fruits **do not ripen after harvest**. Thus, to attain full ripeness and flavor, these fruits are often harvested once they have **fully matured and ripened** in the orchard. It includes fruits such as lemons, oranges, grapes, cherries, pineapples, strawberries etc.

What is Artificial Ripening?

- **Artificial ripening** is the **process by which ripening is controlled** to achieve desired characteristics intended **for better consumer acceptance** and **improved sales.**
- **This** method **allows for transporting unripe, perishable fruits, reducing spoilage, and ripening them at the destination market before sale.**
- Commonly used for **climacteric fruits**, it ensures fast, uniform ripening. When using approved agents, it is safe for consumption.

What are the issues involved with its use?

- Calcium carbide releases **acetylene gas**, which contains harmful traces of **arsenic and phosphorus.**
- These substances, also known as **'Masala'**, can cause **serious health issues** such as **dizziness**, frequent **thirst**, **irritation**, **weakness**, difficulty in swallowing, vomiting, **skin ulcers**, etc.
- Additionally, **acetylene gas is equally hazardous to those handling it**. There is a **chance** that **calcium carbide may** come in direct contact with fruits during application and **leave residues of arsenic and phosphorus on them.**

Ethylene as an Alternative:

- Considering the issue, **FSSAI has permitted** the **use of ethylene gas as a safer alternative** for fruit ripening in India.
- **Ethylene gas** can be used at **concentrations up to 100 ppm** (100 µl/L), depending upon the crop, variety, and maturity.
- **Ethylene, a naturally occurring hormone** in fruits, **regulates** ripening by initiating and controlling a series of chemical and biochemical activities.
- The treatment of unripe fruits with **ethylene gas triggers** the natural **ripening process until** the **fruit produces ethylene** in substantial quantities.

- The **Central Insecticides Board and Registration Committee (CIB & RC)** has **also approved Ethephon 39% SL** for the uniform ripening of mangoes and other fruits.

> **Food Safety and Standards Authority of India (FSSAI)**
> FSSAI was **established under the Food Safety and Standards Act of 2006**, **aiming to establish a single reference point** for all food safety and standards matters, moving from multi-level, multi-departmental control to a single line of command.
> **Administration:**
> - The **Ministry of Health & Family Welfare, Government of India,** oversees the implementation of FSSAI.
> - The **Chairperson and Chief Executive Officer** of **FSSAI** are appointed by the Government of India, with the Chairperson holding the rank of Secretary to the Government of India.
> **Mandate and objectives:**
> - **FSSAI** is **mandated to lay down science-based standards for food articles and regulate their manufacture, storage, distribution, sale, and import** to ensure the availability of safe and wholesome food for human consumption.
> - FSSAI, along with State Food Safety Authorities, enforces various provisions of the Act to ensure compliance with food safety standards across the country.

'Deda' Method of Preservation

News Excerpt:

The internally displaced tribal families in **Godavari Valley** continue to practice the **'deda' method** to preserve **seeds of pulses and food crops**, which were handed over to them by their **ancestors in Chhattisgarh.**

More about the news:

- **Muria tribes** who migrated from **Chhattisgarh and settled in the dense forests** of the **Godavari Valley** are still practising **'deda',** a traditional method of preserving seeds.
- In this method, the seeds are preserved in leaves and packed almost airtight to look like **boulders** from a distance.
- The packaged seeds are, in turn, **woven with Siali leaf (Bauhinia vahlii)**, which is locally known as **'addakulu'** to make the **deda.**
- A deda has **three layers.**

- In **the first layer,** wood ash is spread inside the **Siali leaves.**
- Later, the ash is covered with **lemon leaves** to form a casing,
- Lastly, the **seeds are preserved inside the casing and sealed.**
- The deda method guarantees the protection of seeds from **pests and worms.**
  - The stored seeds can be used for cultivation for up to **five years**. But tribes prefer to preserve them for up to **three years.**
  - They have been preserving **the seeds of pulses** such as green gram, red gram, black gram, and beans.
- The Muria tribes practice **small-scale farming of pulses** and other crops for their own food security, **rarely selling their produce commercially.**
  - The Murias would rarely sell their farm produce in the **weekly shandies** as they did not shift to **commercial cultivation** of any crop.

Mahua tree

News Excerpt:

The Koya tribe in Godavari Valley faces a cultural crisis as raids by the Special Enforcement Bureau threaten their cherished tradition of Mahua liquor consumption.

About Mahua:

- Mahua is a tropical tree known by its scientific name, **Madhuca longifolia**.
- It finds origin in different regions of **India, Sri Lanka, Myanmar, Nepal, The Philippines, Pakistan, and Australia.**
- It is a frost-resistant species that can grow in marginal areas of **dry tropical and subtropical forests** up to an altitude of **1200-1800 m in India.**
- It is known for its sweet flowers, which possess a lot of ethnic values among the tribal people, and it has been used for the development of various fermented and non-fermented food products.
- It holds great significance in the lives of **various tribal communities** in India.

Benefits of mahua:

- According to **WHO (2003)** approximately **65%** of the world's population integrate the medicinal plant for treatment. Mahua is one of the naturally occurring plants which possess numerous health benefits.
- Tribal people use mahua flowers to cure **skin diseases, headaches, pitta and bronchitis.**

- Flower juice is supplemented for **lactating women** to enhance breast milk

About Koya tribe:
- The Koyas are an ancient tribe that, in the long past, was identified as a warrior tribe.
- They call themselves **Koya or Koitor**, which means '**people**'.
- The Koyas are a branch of the **Gondi-speaking people**.
- Their mother tongue comes under the **Dravidian group of languages.**
- They inhabit the hills and forests north of **Godavari District of Andhra Pradesh** and **Malkangiri district of Odisha.**
- According to the **2011 census,** the total population of the Koya tribe in Odisha is **1.5 lakhs.**

INTERNATIONAL RELATIONS

Peru adopts India's UPI technology

News Excerpt:
NPCI International Payments Limited (NIPL) and the **Central Reserve Bank of Peru (BCRP)** have announced a partnership to introduce a **UPI-like real-time payments system** in **Peru.**

Government's push for a global acceptance of UPI:
- The decision will make Peru the **first South American country** to adopt the **system.**
- The government has been successfully pushing for a global acceptance of UPI**. France, UAE, Mauritius, Sri Lanka, Singapore, Bhutan, and Nepal** are among some of the countries that now accept UPI payments.

Benefits to the Peruvian economy:
- This strategic partnership will **empower BCRP** to build a **robust and efficient real-time payment platform** in **Peru** offering **fast, secure,** and **reliable digital payments**.
- The innovative system will facilitate **instant payments** between **individuals** and **businesses**, reducing reliance on cash transactions and **promoting digital payments** among Peru's large **unbanked population**.
- This partnership will increase **financial inclusion** and reduce **transaction costs**.
- This will drive **innovation, resilience, and transparency** in the Peruvian payment ecosystem.

Greater connectivity of UPI:
- **UPI's collaborative** and **open banking model** promotes **greater connectivity** and **interoperability**

with both domestic and international payment networks.
- This collaboration reflects **India's commitment** to **advancing digital public goods** globally.
- As Peru embraces this **cutting-edge technology**, it sets a precedent for other countries in the region to follow suit, paving the way for a **more connected and financially inclusive world**.

Maldives introduces RuPay Payment Service

Excerpt:
The Maldives is set to introduce India's RuPay payment system, a move expected to strengthen the Maldivian Rufiyaa.

RuPay:
- RuPay is the first-of-its-kind **domestic Card payment network of India**, with wide acceptance at ATMs, POS devices and e-commerce websites across India.
- It is a highly secure network that protects against **anti-phishing.**
- The name, RuPay, derived from the words '**Rupee** and '**Payment**', emphasizes that it is India's very own initiative for Card payments.
- RuPay is a product of **the National Payments Corporation of India (NPCI)**, the umbrella organization that powers retail payments in the country.

National Payments Corporation of India (NPCI)
- It is an initiative of **RBI and the Indian Banks' Association (IBA)** under the provisions of the **Payment and Settlement Systems Act, 2007.**
- The objective of NPCI was to provide **infrastructure to the entire Banking system** in India for **physical as well as electronic payment and settlement systems**.
- It has been incorporated as a **"Not for Profit" Company** under the **provisions of Section 25 of the Companies Act 1956** (now Section 8 of the Companies Act 2013).

US-Saudi petrodollar deal ends after 80 years

News Excerpt:
Saudi Arabia has reportedly decided **not to renew** its **80-year Petro-dollar deal** with the **U.S.**

What are Petrodollars?
- Petrodollars are **not a distinct currency**; rather, US dollars are obtained through the sale of crude oil.

- The term emerged in the early 1970s, denoting the **dollars earned by oil-exporting countries**.
- This concept has profoundly influenced the **global economics and geopolitics.**

Historical Background

- The **Bretton Woods Agreement of 1944** initially established the **US dollar** as the **primary global reserve currency**, **pegged to gold**.
- This arrangement **facilitated international trade** and **economic stability** after **World War II**.
- However, **in 1971**, **President Richard Nixon ended the dollar's convertibility to gold**, leading to **floating exchange rates** and increased currency volatility.
- **In 1973**, the **Organization of Petroleum Exporting Countries (OPEC)** imposed an **oil embargo** in retaliation for **US support of Israel** during the **Yom Kippur War**, causing oil prices to soar.
- To stabilize the situation, the **US negotiated a deal** with **Saudi Arabia** and **other OPEC nations** in **1974**.

The US-Saudi Petrodollar Agreement (1974)

- According to this deal, **oil would be traded exclusively in US dollars**.
- The **US committed to purchasing oil from Saudi Arabia** and **providing military aid and equipment**, while **Saudi Arabia** invested its petrodollar revenues back into the US economy.
- This arrangement ensured a **steady oil supply to the US** and **financial stability for Saudi Arabia**, benefiting both countries.

Future Implications

- With the expiration of the deal, **Saudi Arabia is now free to sell oil** in **various currencies**, including **yuan, euros, rubles,** and **yen,** and is exploring digital currencies like **Bitcoin**.
- This shift may hasten the **adoption of alternative currencies** in international trade, potentially **diminishing the US dollar's global dominance**.
- **Reduced global demand for the dollar** could lead to **higher inflation** and **interest rates**, as well as a **weaker bond market** in the **US**, signifying a major change in **global financial dynamics**.

Ireland, Spain, Norway and Slovenia to formally recognize Palestine

News Excerpt:

Ireland, Spain, Norway and Slovenia have announced plans to **formally recognize a Palestinian state,** in a move that is likely to further strain relations between Europe and Israel.

More about the news:

- These **European nations** claim that their **landmark decision** is the best path to lasting **Middle East peace**, but it prompted **swift condemnation from Israel,** which immediately recalled its ambassadors from those countries.
- While over **140 of the 193 UN** member states officially recognize **Palestinian statehood, only** some nations in the **27-member European Union** are among them.
- **Norway's** Prime Minister said that it can no longer wait for the conflict to be resolved before recognizing Palestine as the **"Two State Solution"** is the only alternative offering a **political solution for Israelis and Palestinians.**

Two-State Solution:

- The two-state solution proposed a framework for resolving the Israeli-Palestinian conflict by establishing **two states for two peoples**: Israel for the Jewish people and Palestine for the Palestinian people.
- In 1993, the Israeli government and the Palestine Liberation Organization (PLO) agreed on a plan to implement a two-state solution as part of the **Oslo Accords**, leading to the establishment of the Palestinian Authority (PA).

Origin of the Two-State Solution:

- The conflict occurred in **British-ruled Palestine between Arabs and Jews** who had migrated to the area, seeking a national home as they fled persecution in Europe and citing biblical ties to the land.
- In **1947**, the **United Nations agreed on a plan to partition Palestine** into Arab and Jewish states with international rule over Jerusalem. Jewish leaders accepted the plan, which gave them 56% of the land. The Arab League rejected it.
- The **state of Israel was declared on May 14, 1948.** A day later, five Arab states attacked Israel. The war ended with Israel **controlling 77% of the territory.**
- In a **1967 war, Israel captured the West Bank, including East Jerusalem, from Jordan and Gaza from Egypt**, securing control of all territory from the Mediterranean to the Jordan Valley.
- The **Palestinians remain stateless**, with most living under Israeli occupation or as refugees in neighbouring states. Some - mostly descendants of Palestinians who remained in Israel after its creation - have Israeli citizenship.

Manama Declaration

News Excerpt:

Arab leaders have accused Israel of obstructing Gaza ceasefire efforts and demanded an end to its war on Palestinian territory in a meeting convened in Manama, Bahrain.

About Manama Declaration:

- The **"Manama Declaration"** was issued by the 22-member Arab League.
- It calls for "international protection and peacekeeping forces of the United Nations in the **occupied Palestinian territories"** until a **two-state solution** to the **Israel-Palestine conflict is implemented.**
- It called for an immediate **end to fighting in the Gaza Strip.**
- It allows all Palestinian factions to join under the umbrella of the **Palestine Liberation Organisation (PLO)** by considering it the sole legitimate representative of the Palestinian people.
- The declaration added the Arab nations' commitment to "ensuring freedom of navigation in the Red Sea" and surrounding areas.

Arab League:

- It is a confederation of **22 Arab nations**
- It was founded in **March 1945, with its headquarters in Cairo.**
- Its **mission** is to **improve coordination among its members on matters of common interest.**
- According to its charter, the founding members of the Arab League—**Egypt, Iraq, Lebanon, Saudi Arabia, Syria, Transjordan, and Yemen**—agreed to seek **"close cooperation" on matters of economics, communication, culture, nationality, social welfare, and health.**
- They renounced violence as a means to settle conflicts between members and empowered league offices to mediate in such disputes, as well as in conflicts involving nonmembers.

BIMSTEC is now a 'legal personality.'

News Excerpt:

BIMSTEC has acquired 'legal personality' status after its charter came into force after Nepal's ratification.

About the news:

- **The Charter of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)** officially came into force on 20 May 2024, marking a significant milestone for the **seven-**

BIMSTEC
WHAT YOU SHOULD KNOW

Stands for **The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation**

Founded in 1997 through **Bangkok Declaration**

7 MEMBER COUNTRIES

Bhutan
Nepal
India
Myanmar
Bangladesh
Thailand
Sri Lanka

First summit held in Thailand

Importance of BIMSTEC

- Accounts for **22%** of the world's population
- Combined GDP of **$2.7 trillion**
- One-fourth of the world's traded goods cross the Bay every year
- Six focus areas- trade, technology, energy, transport, tourism and fisheries

member regional bloc with great strategic significance.

- With the endorsement of the **Charter by the Nepal Parliament in April 2024, all member-states completed the ratification of the foundational document.**
- The implementation of the BIMSTEC Charter **represents a long-awaited moment for its member states**, coming nearly three decades after the organization's establishment.
- This also signifies their commitment to making BIMSTEC a **more effective and result-oriented organization**.
- Despite the initial optimism surrounding BIMSTEC's formation, its journey has been marred by **slow progress and unmet expectations.**

BIMSTEC Charter:

- The Charter was **signed and adopted during the Fifth BIMSTEC Summit** held in virtual format in **Colombo in 2022.**
- **Article 3** of the **BIMSTEC Charter** confers **legal personality status** on the organization after **100% ratification.**

- With the coming into force of the charter, the grouping will now be able to **enter into structured diplomatic dialogue** with other groupings and countries.
- With this charter, the grouping is now **open to new members and observers.**

India's Position on the BIMSTEC Charter:

- The entry into force of the BIMSTEC Charter reaffirms India's commitment to a **prosperous, peaceful and sustainable neighbourhood.**
- BIMSTEC also reflects the synthesis of India's **Neighborhood First and Act East policies.**
- The Ministry of External Affairs, India has emphasized that, "The BIMSTEC Charter is a **testament to the shared commitment of the Member States** to promote regional cooperation in key sectors such as security, connectivity, trade, agriculture, environment, science and technology, agriculture and people to people contact."

India assumes the chair of the Colombo Process

News Excerpt:

India has become **chair of the regional grouping Colombo Process** for the **first time** since its **inception in 2003.**

About the Colombo Process:

- Colombo Process is a Regional Consultative Process of migrant worker origin countries from South and SE Asia.
- It serves as a forum for the exchange of best practices on overseas employment.
- The **inaugural meeting** of the Colombo Process (CP) took place **in 2003** in **Colombo, Sri Lanka.**
- It brings together **South and Southeast Asian labour-sending countries** in a member-state-driven, **non-binding** consultative process on **migration** to facilitate dialogue and cooperation on issues of common interest and concerns relating to **labour mobility.**
- **The International Organization for Migration** (IOM) has acted as the Secretariat of CP since its inception.
- There are currently **12 Member** States: **Afghanistan, Bangladesh, Cambodia, China, India, Indonesia, Nepal, Pakistan, Philippines, Sri Lanka, Thailand** and **Vietnam.**
- **India** has been a member of the Colombo Process since **its inception in 2003.**

Share experiences, lessons learned, and best practices in **labour migration management.**

Consult on issues faced by **migrants, countries of origin,** and **countries of destination,** and propose **practical solutions**

Optimize development benefits from organized overseas employment and **enhance dialogues** with countries of destination.

Review and monitor the implementation of the recommendations and **identify further steps of action.**

Objectives

Related: Abu Dhabi Dialogue (ADD):

- **Abu Dhabi Dialogue (ADD)** is a regional, voluntary, and non-binding consultative process.
- **India has been a member of the ADD since 2008.**
- It consists of the **12 member states** of the **Colombo Process** and **six Gulf countries** of destination: **Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, the United Arab Emirates,** and **Malaysia.**
- It was **established in 2008** as a **forum for dialogue and cooperation** between **Asian countries of labor origin and destination** to facilitate **regional cooperation on contractual labour mobility,** sharing of best experiences, and learning from one another's experiences.

Biopharmaceutical Alliance

News Excerpt:

South Korea, India, the United States, Japan, and the **European Union (EU)** have come together to launch an alliance to put joint efforts into building a resilient supply chain in the biopharmaceutical sector.

Need for the alliance:

- The Biopharmaceutical Alliance was launched in response to the **drug supply shortages** experienced during the Covid-19 pandemic.
- The alliance is launched to put joint efforts into **building a resilient and sustainable supply chain** in the biopharmaceutical sector.

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DELHI VN: 9717380832 & **DELHI ORN:** 9811293743 | **JAIPUR:** 8290800441 | **BHOPAL:** 7509975361| **INDORE:** 9893772941
| **BENGALURU:** 7619166663 | **KOLKATA:** 9007709895 | **www.ksgindia.com**

- They acknowledged that the **production of essential raw materials and ingredients is concentrated in a few countries** and agreed to work together to build a detailed pharmaceutical supply chain map.

Progress on the alliance:

- South Korea and the U.S. agreed to form the alliance during their dialogue on core emerging technologies in December 2023 and expanded it to include Japan, India and the EU
- The inaugural meeting of the Biopharmaceutical Alliance was held in **San Diego, California**, during the **Bio International Convention 2024.**
- The members agreed to **coordinate the respective countries' bio policies,** regulations, and research and development support measures.

What are Biopharmaceuticals?

- Biopharmaceuticals are **medical drugs produced using biotechnology**.
- They are **proteins** (including antibodies) and **nucleic acids** (DNA, RNA, or antisense oligonucleotides) **used for therapeutic or in vivo diagnostic purposes.**
- They are produced by means other than direct extraction from a native (non-engineered) biological source.
- The **first such substance approved** for therapeutic use was **recombinant human insulin, which was developed by Genentech and marketed by Eli Lilly in 1982.**

Mongla Port in Bangladesh

News Excerpt:

India has expressed interest in operating the Mongla Port in Bangladesh and constructing a new terminal there amid China's efforts to run the strategically located port.

Mongla Port:

- It is the **second-largest port in Bangladesh** after Chittagong, and it is located in the southwestern part of Bangladesh.
- It sits at the **confluence of the Mongla Nala and Pasur River.** It plays a crucial role in facilitating trade for Bangladesh and its neighboring countries.

The strategic importance of the development:

- **Enhancing Maritime Influence:** India's management of Mongla Port **would secure influence over key maritime locations on both the western and eastern fronts** of the Indian Ocean. It will reinforce India's position as a dominant player in the region's security.

- **Countering China:** The move aligns with India's broader strategy to counter China's expanding influence in the region. China continues to expand its influence in South Asia through **its Belt and Road Initiative (BRI).**
- India currently holds operational rights to the **Chabahar Port of Iran** and **Sittwe Port of Myanmar**, and **India's strategic investments in Mongla Port will complement these operations.**

Potential Benefits

- There is a **plan to construct two more jetties at Mongla Port** which will enable Mongla Port to handle increased cargo volume from transshipment.
  - **Improved port infrastructure** will facilitate the movement of goods, reduce transportation costs, and boost economic activities in the region.
- India's involvement in Mongla Port is expected to significantly **enhance regional connectivity.**

Other Important strategic ports connecting India with other countries:

- **Chabahar Port** serves as a critical link for trade between **India, Iran, and Afghanistan**, bypassing Pakistan. It provides India with **direct access to Central Asia** and strengthens its economic and strategic ties with Iran.
- **Sittwe Port** in Myanmar is part of the **Kaladan Multimodal Transit Transport Project,** which aims to connect the northeastern states of India with the rest of the country through Myanmar. This port enhances **India's connectivity with Southeast Asia**, facilitating trade and economic cooperation.

○ The port will serve as **a vital link for trade between India, Bangladesh,** and other neighbouring countries.

○ It will also complement India's existing connectivity projects, such as the **Bangladesh-Bhutan-India-Nepal (BBIN) Initiative and the Kaladan Multimodal Transit Transport Project.**

POK foreign territory, admits Pakistan government in high court

News Excerpt:

In a rare admission, the Pakistani government admitted in Islamabad High Court that it has no jurisdiction over POK (Pak Occupied Kashmir).

Pakistan Occupied Kashmir (POK):

● **Historically, Pakistan-Occupied Kashmir (PoK)** was part of the **princely state** of Jammu and Kashmir.

● It has been **illegally occupied** by Pakistan since 1947.

● In 1947, thousands of **Pashtun tribesmen from the North-West Frontier Province,** backed by the Pakistani Army, infiltrated Jammu and Kashmir.

● Despite attempts by the Princely States army to contain the situation, they failed, leading to **the insurgents gaining control over much of the Poonch district.** They succeeded in capturing Muzaffarabad and Baramulla.

● The **Maharaja of Kashmir signed an "Instrument of Accession"** in return for India's Military assistance.

● Indian troops were swiftly dispatched to Srinagar, and a war began between **the Indian and Pakistani armies.** This resulted in stabilized control over two regions.

● The area under the influence of **Pakistan-backed rebellions was renamed now known as the Pakistan-occupied Kashmir.**

Limited Commerce	• The economy of POK has been badly damaged by the suspension of commerce between India and Pakistan since 2019.
Dependency on Pakistan	• POK is highly dependent on financial support from Pakistan, which leaves it open to the country's own economic issues.
Underdeveloped Infrastructure	• Business development and investment are hampered by inadequate infrastructure, such as transportation networks and energy.
Emphasis on Security	• Funds are frequently redirected to address security issues, which reduces funding for social and economic development initiatives.
Restricted Work Opportunities	• High rates of unemployment, especially for young people.

Current Issues Associated with POK
Key Drivers in POK

● **The Taliban Threat:** Over the past few years, **the Taliban have seized power in some parts of Pakistan**. Few reports hinted at the possibility of Sharia law being imposed in POK.

● **Militant Training Camps:** POK has for long provided a safe haven to home-grown terrorists of Pakistan – both those operating in Kashmir Valley and those having close links with **al-Qaeda and Taliban**. The LeT operates freely in the area of Jamaat ud-Dawa (JuD).

● **Sectarian Divide:** The demography in **Gilgit Baltistan in POK has changed so much that the Shia,** the original inhabitants of the land, have become a minority. **Sunnis from Pakistan** were given lucrative job offers and other incentives to settle in POK. President Zia intended to shift the **demographic balance of POK in favor of Pakistan**, primarily a Sunni state, and the orders to this effect were carried out by Pervez Musharraf in the late 1980s.

● **China's Growing Influence:** The Chinese interest in POK dates back to the construction of the **Karakoram Highway,** the highest road in the world, built at a height of 4665 meters (15,397 feet). The highway has

yielded tremendous trading opportunities for both countries. It has also been used extensively to **transfer arms and ammunition from China to Pakistan,** and fissile nuclear and missile material from China. The highway was opened to the public only in 1986 even though it was completed in 1978 and was inaugurated in 1982.

- **Water Resources:** POK is rich in water resources. The **Indus and its tributaries** render bright opportunities for hydropower generation.

India's Position on POK:

- **India maintains a firm position that PoK is an inseparable part of its territory.**
- Unrest in PoK is seen by India as a potential consequence of the people comparing their situation with the rest of Jammu and Kashmir.
- India emphasizes its commitment, shared by all major political parties, to bring PoK back under its control.

UN Peacekeeping mission

News Excerpt:

Naik Dhananjay Kumar Singh, an Indian peacekeeper, was honoured posthumously with the prestigious **Dag Hammarskjold medal.**

UN Peacekeeping mission:

- The U.N. Peacekeeping mission is a **joint effort between the Department of Peace Operations and the Department of Operational Support.**
- It aims to **assist host countries** in transitioning from situations of conflict to peace.
- It **began its Peacekeeping efforts in 1948** when it deployed military observers to West Asia to monitor the Armistice Agreement between Israel and its Arab neighbours.
- The **three basic principles** that guide the U.N.'s Peacekeeping missions are:
  - **Consent of the parties**
  - **Impartiality**
  - **Non-use of force except in self-defence and defence of the mandate.**
- The **International Day of UN Peacekeepers, marked on May 29, was established by the UN General Assembly in 2002.**

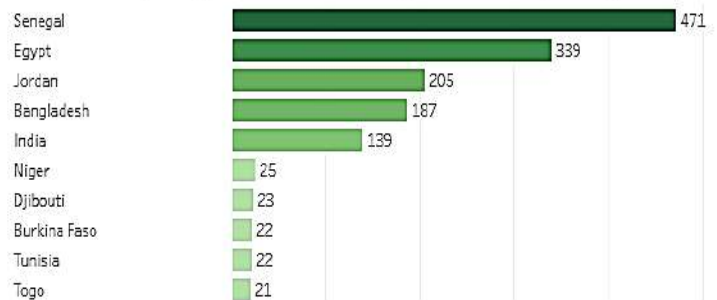**Contribution of India to the UN Peacekeeping Forces:**

- India is the **second largest contributor** of uniformed personnel to UN Peacekeeping.
- Over 200,000 Indians have served in **49 U.N. Peacekeeping missions** since 1948.

- Currently, **6,069 Indians are part of various U.N. Peacekeeping operations** in Abyei, the Central African Republic, Cyprus, the Democratic Republic of the Congo, Lebanon, the Middle East, Somalia, South Sudan, and Western Sahara.
- Nearly **180 Indian peacekeepers have made the supreme sacrifice** in the line of duty, the highest number by far from any troop-contributing country.
- In **2007, India became the first country to deploy an all-women contingent to a U.N. Peacekeeping mission.**

Top ten military contributors (as of February 2024)

Pakistan	1,908
India	1,817
Bangladesh	1,676
Nepal	1,153
South Africa	1,135
Indonesia	1,035
Morocco	928
United Republic of Tanzania	855
Uruguay	772
Malawi	758
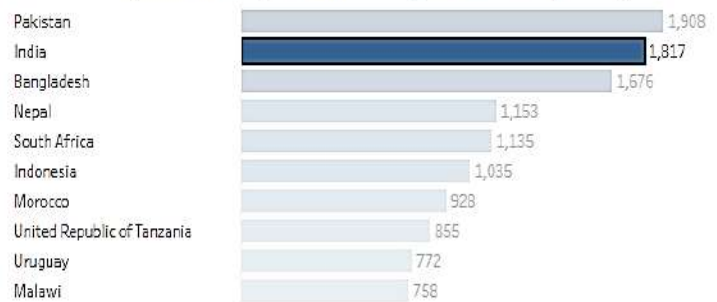
Top ten police contributors (as of February 2024)

Senegal	471
Egypt	339
Jordan	205
Bangladesh	187
India	139
Niger	25
Djibouti	23
Burkina Faso	22
Tunisia	22
Togo	21

ENVIRONMENT

Zero-emission Cement

News Excerpt:

In a world-first, engineers from Britain's University of Cambridge have shown that **cement can be recycled** without the same steep cost to the environment as making it from scratch.

More about the News:

- Researchers claim to have found **a solution to produce cement without associated CO2 emissions,** which could massively impact tackling climate change.
- The cement industry accounts for nearly **8% of human-caused CO2 emissions**, more than any country **except China and the United States**.

○ To produce cement, the basic ingredient in **concrete**, the limestone must be fired in kilns at very high temperatures, which is usually achieved by burning fossil fuels like coal.

○ Cement binds concrete together but the **whitish powder is highly carbon-intensive to produce,** with the sector generating more than triple the emissions of global air travel.

Bright hope for zero-emission cement

● Many efforts to produce "green cement" have been **too expensive, difficult to deploy at scale, or rely on unproven technologies** that don't achieve near-zero emissions.

● The Cambridge researchers looked at the existing **steel recycling industry,** which uses **electric-powered furnaces** to produce alloys.

● They developed a method that tweaks the steel recycling process by substituting a key ingredient with **old cement sourced from demolished buildings.**

● Instead of waste, the result is **recycled cement ready for use in concrete**, bypassing the **emissions-heavy process of superheating limestone in kilns.**

Cement production is a major source of global CO₂ emissions and also generates the most emissions per revenue dollar.

● The **United Kingdom has the highest number of Ramsar Sites globally, with 175 recognized wetlands,** followed by Mexico with 144 sites.

Nagi wetland:

● Nagi Bird Sanctuary is a 200-hectare wetland that formed as a **result of the construction of the Nagi dam.**

● It is a prime location for migrating birds in the **winter season from October to April.**

● It was **declared a bird sanctuary in 1984**. It has also been designated as an **Important Bird Area (IBA) by Birdlife International.**

● The wetland and its fringes provide habitat for over 75 bird species, 33 fish, and 12 aquatic plants.

● It also hosts **one of the largest congregations of bar-headed goose** (*Anser indicus*) on the Indo-Gangetic plain.
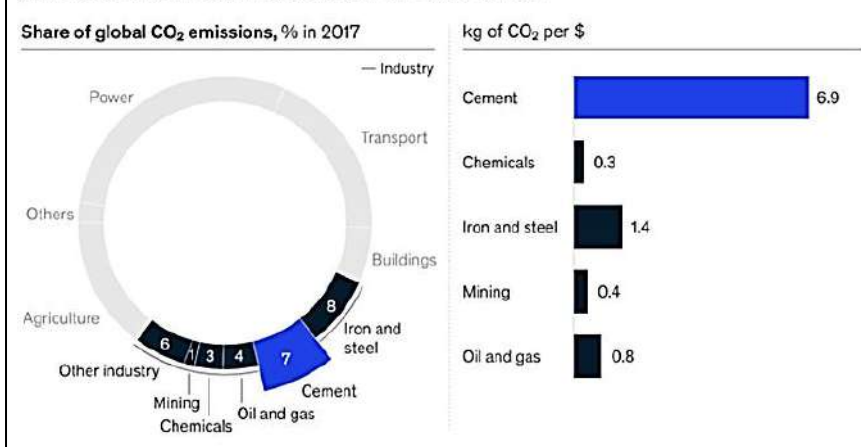
Nakti wetland:

● Created primarily for irrigation through the Nakti Dam construction.

● **It is a Habitat for over 150 species of birds, mammals, fish, aquatic plants, reptiles, and amphibians.**

● It is **home to the endangered Indian elephant (Elephas maximus indicus) and vulnerable native catfish (Wallago attu).**

● It is predominantly surrounded by **dry deciduous forests** and hills.

● It was recognized as **a Bird Sanctuary in 1984,** emphasizing its significance as a wintering habitat for migratory species.

● It hosts over 20,000 birds during winter, including a large congregation of **red-crested pochard** (*Netta rufina*) on the Indo-Gangetic plain.

Two More Indian Wetlands Added to Ramsar List

News Excerpt:

India has added two bird sanctuaries from Bihar, **Nagi, and Nakti,** to the Ramsar Sites list, taking the tally to 82.

More about the news:

● The newest 'Wetlands of International Importance' are **man-made reservoirs situated in the Jhajha forest range of Jamui District in Bihar.**

● **India now equals China** in terms of Ramsar Sites. Both countries have 82 recognized waterlogged ecosystems.

What is the Ramsar Convention?

● It is an intergovernmental treaty, adopted on **2nd February 1971**, in the **Iranian city of Ramsar,** on the southern shore of the **Caspian Sea.**

● Under the Convention, each Contracting Party undertakes to designate **at least one wetland site for inclusion** in the List of Wetlands of International Importance.

● **India** became a **party to the 'Convention** on Wetlands', on 1st February **1982** and has since then designated 82 wetlands.

Green Oscars

News Excerpt:

Purnima Devi Barman receives **Green Oscar** for **Greater Adjutant Stork and its wetland habitat Conservation in Assam.**

More about the news:

Barman will receive **£100,000** for her efforts, which have transformed both the outlook for the scavenger bird and the local women, known as **"Stork Sisters,"** who have become conservation leaders.

About Green Oscar:

- The **Whitley Fund for Nature (WFN)** annually celebrates grassroots conservation leaders for their innovative solutions and community-based approaches to save some of the world's most fragile ecosystems, which is called **the Whitley Awards** or **Green Oscars**.
- Winners of the Whitley Awards are provided with funding to scale up their conservation efforts and broaden their global impact.

How did Barman contribute to the conservation?

- Barman's dedication to saving the **greater adjutant stork** has resulted in a significant increase in nesting colonies.
- In one such colony in Kamrup district, the **number of nests rose from just 27 in 2007 to 250 in 2021** which is largely attributed to Barman's "**Hargila Army**" known as "**Stork Sisters**," who have become conservation leaders of over ten thousand local women who have worked to protect the bird and its habitat.
- The project has **rescued more than 500 greater adjutant chicks** that fell from nests, while also planting **45,000 saplings** near the stork nesting trees and wetland areas to increase nesting habitat.

About the Greater Adjutant Stork:

- **Locally known as 'Garuda'** once commonly found in southern Asia and mainland southeast Asia, is now restricted to a small area in Assam.
- It is known for its distinct appearance, with a **long neck, large bill, and a prominent gular pouch.**
- There are only **3 known breeding grounds**, one in Cambodia and two in India (**Assam and Bihar).**
- In Assam, their habitat is primarily in the Brahmaputra valley, specifically in the districts of **Guwahati, Morigaon, and Nagaon.**
- **IUCN Red List:** Endangered
- **Wildlife (Protection) Act 1972:** Schedule IV

INCOIS's New Product for Predicting El Niño and La Niña Conditions

News Excerpt:

The **Indian National Centre for Ocean Information Services (INCOIS)** has introduced a new tool called the **Bayesian Convolutional Neural Network (BCNN)** to forecast **El Niño and La Niña** conditions up to **15 months in advance**.

About ENSO:

- The **El Nino Southern Oscillation (ENSO)** is a **climatic phenomenon** characterized by variations in the temperature of the **central and eastern tropical Pacific Ocean**, along with atmospheric changes.
- ENSO significantly **impacts global weather patterns** and occurs in cycles **every 2-7 years**.

Three phases of ENSO:

- **El Niño:** Warm phase, where the **eastern Pacific waters are warmer** than usual due to weakened wind systems.
- **La Niña:** Cool phase, where the **eastern Pacific waters are cooler** than usual due to stronger wind systems.
- **Neutral:** The **eastern Pacific** (near the northwestern coast of South America) **is cooler compared to the western Pacific** (between the Philippines and Indonesia) due to prevailing east-to-west wind systems.

In India, **El Niño** typically results in **weak monsoons** and **severe heat waves**, while **La Niña** leads to **strong monsoons**.

The New BCNN Product:

- The BCNN uses **Artificial Intelligence, Deep Learning, and Machine Learning** to enhance ENSO phase predictions by calculating the Niño 3.4 index from SST anomalies in the central equatorial Pacific.
- This model predicts El Niño and La Niña conditions **with a lead time of 15 months**, compared to 6-9 months by other models.

Forecast by BCNN:

The **BCNN predicts La Niña conditions** will develop **between July and September** with a **probability of 70-90%** and continue **until February 2025**.

Wildfires threaten a unique Brazilian ecosystem.

News Excerpt:

Brazil's Pantanal, the **world's largest tropical wetland,** is under severe threat as wildfires rage through the region.

About the news:

- Close to **32,000 hectares** have already been destroyed by the fires in the **state of Mato Grosso do Sul**.

- The **number of fires so far in 2024 is the highest since 2020**, which was the **worst year on record** for **Pantanal fires**.

Challenges for the Firefighters:

- **Efforts to extinguish the flames** were being hampered by **high winds**.
- The region has also seen **less rain than in other years**, which has made it easier for the fires to spread.

Environmental State of Emergency:

- **Mato Grosso do Sul state** authorities declared an **environmental state of emergency** in April, saying low rainfall was creating ideal conditions for wildfires.
- The situation would probably deteriorate further at the **peak of the dry season** in August and September.

About the Pantanal Tropical Wetland:

- The name "Pantanal" comes from the **Portuguese word pântano,** meaning wetland, bog, swamp, or marsh.
- It is the **world's largest tropical wetland**, covering **42 million acres**.
- It spans across three countries: **Bolivia, Brazil, and Paraguay**.
- The Pantanal is one of the **most biologically rich environments** on the planet, home to over 4,700 plant and animal species, including **jaguars, giant ant-eaters,** and **giant river otters**.
- The region supports **cattle ranching**, **soy production**, and **tourism activity**.

Conservation:

- The **Pantanal** is **threatened** by **unsustainable infrastructure development, pollution, and deforestation**, with over 12% of its forest cover lost. If no action is taken, its native vegetation may disappear by 2050.
- Poor development planning by Bolivia, Brazil, and Paraguay could harm the region's economy, the well-being of its inhabitants, and the stability of the Rio de la Plata basin.

Fern shatters Guinness World Record with the largest genome on Earth

News Excerpt:

A fern growing on a remote Pacific Island has broken the Guinness World Record for having the **largest genome of any organism on Earth.**

More about News:

- This remarkable fern, **Tmesipteris oblanceolata,** has a genome size of **160 gigabase pairs (Gbp)**.
- The fern surpasses the previous record **holder,** the Japanese flowering plant **Paris japonica**, **by 7%.**

- The human genome, with a relatively modest size of approximately 3.1 gigabase pairs (Gbp), provides a striking contrast to **the colossal genomes** found in these ferns.
- Plants with large genomes face **challenges in growth and reproduction due to the extensive genetic material to be copied**.
- Research suggests a correlation between **genome size and plant adaptability to environmental stress.**
- Scientists are uncertain about the role of much of the DNA in such large genomes, often labelling it as **"junk DNA."**

SCIENCE & TECHNOLOGY
SPACE

LignoSat: World's First Wooden Satellite

News Excerpt:

Japanese researchers have developed **LignoSat**, a wooden satellite crafted from **magnolia wood** to combat **space debris**.

Fight against Space Debris

- This innovative project aims to **reduce space debris** by burning up completely upon **re-entry into Earth's atmosphere**.
- Traditionally, **satellites are constructed from metal**, which creates **harmful debris** when they burn up in the atmosphere.
- This debris can pose a significant **threat to operational satellites and spacecraft**, and researchers believe wooden satellites could offer a **more sustainable solution**.
- It could pave the way for a new generation of **environmentally friendly satellites**.

Launching Site

- LignoSat is scheduled to launch on a **SpaceX rocket** from the **Kennedy Space Center** in September.
- It will be delivered to the **International Space Station (ISS)**, where it will be deployed for a **series of tests to assess its strength and ability** to withstand extreme temperature fluctuations.

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More about LignoSat

- It is a collaborative effort between **Kyoto University** and the logging company **Sumitomo Forestry**.
- The satellite is a mere **10 centimeters on each side** and is crafted from magnolia wood.
- It was selected for its **strength and workability** after space exposure tests were conducted on cherry, birch, and magnolia wood chips.

EarthCARE satellite

News Excerpt:

The European Space Agency's (ESA) EarthCARE **(Earth Cloud Aerosol and Radiation Explorer)** satellite, poised to revolutionize our understanding of how clouds and aerosols affect our climate, has been launched.

Earth's Energy Budget

Earth strives to maintain a balance between the overall amount of incoming and outgoing energy at the top of the atmosphere. This is called Earth's energy budget or Earth's radiation budget.

Earth receives incoming energy from the Sun. Earth also emits energy back to space.

For Earth's temperature to be stable over long periods (for the energy budget to be in balance), the amount of incoming energy and outgoing energy must be equal.

If incoming energy is more than outgoing energy, Earth will warm. If outgoing energy is greater than incoming energy, Earth will cool.

More about the news:

- EarthCARE is a joint mission between the ESA and the Japan Aerospace Exploration Agency (JAXA).
- The mission will soon provide crucial information to better understand the complex interactions between **clouds, aerosols, and radiation within Earth's atmosphere.**
- JAXA provided the satellite's cloud profiling radar instrument, which is the world's first radar that can measure **the velocity of upward and downward flow within clouds.**

Influence of Clouds and Aerosols on Earth's Climate:

- Clouds regulate atmospheric heating and cooling but pose a major uncertainty in climate understanding. They reflect solar energy into space and trap infrared energy, affecting whether they cool or heat the planet.

- Aerosols are tiny particles (e.g., dust, pollutants) that directly reflect or absorb solar radiation and indirectly affect climate by influencing cloud formation.
- Human activities alter aerosol concentrations, impacting regional climates.

PREFIRE Mission

News Excerpt:

NASA launches Small Climate Satellite - PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment) mission to Study Earth's Poles.

About the PREFIRE Mission:

- The PREFIRE (Polar Radiant Energy in the Far-InfraRed Experiment) mission was jointly developed **by NASA** and the **University of Wisconsin-Madison**.
- The mission **consists of two shoebox-size cube satellites**, **or CubeSats**, that will **measure the amount of heat Earth radiates into space from two of the coldest, most remote regions on the planet.**
- Data from the PREFIRE mission will help researchers **better predict how Earth's ice, seas, and weather will change in a warming world.**
- At the heart of the PREFIRE mission is Earth's energy budget – the balance between incoming heat energy from the Sun and the outgoing heat given off by the planet.

Chang'e 6 China's lunar mission

News Excerpt:

China's **Chang'e 6 mission** has successfully landed on the **Moon's far side, specifically in the South Pole-Aitken Basin**, marking a significant achievement in lunar exploration.

More About the News:

- The mission, launched on **May 3, 2024**, aims to **collect rock and soil samples** from this region for the first time, potentially uncovering some of the Moon's oldest geological materials.

Mission Details

- **Objective:** The mission aims to collect **approximately 2kg (4.4 pounds) of lunar material using a scoop and drill**. These samples will provide new insights into the Moon's geological history and the formation of the solar system.

- **Return Plan:** The collected samples will be **transferred to a rocket booster on the lander, which will then launch back into space**.
- **Risks:** Landing on the far side of the Moon is particularly challenging due to communication difficulties. The mission **utilized the Queqiao-2 relay satellite to maintain communication**.
- **Autonomous Landing:** The spacecraft used an **autonomous visual obstacle avoidance system and a visible light camera to select a safe landing area**. It hovered about 100 meters above the surface before making a slow, **controlled descent using a laser 3D scanner**.

Global Context and Implications

- **China's second successful far side Moon landing** showcases advanced space capabilities.
- Samples from the South Pole-Aitken Basin promise **unprecedented insights into lunar geology and solar system history.**

Zero Debris Charter

News Excerpt:

The **European Space Agency (ESA)** and **twelve other nations** have signed the **Zero Debris Charter** at the **ESA/EU Space Council,** solidifying their commitment to the long-term sustainability of human activities in Earth orbit.

What is the Zero Debris Charter?

- The Zero Debris Charter is an effort to become **debris-neutral in space by 2030**.
- ESA's Zero Debris approach is the ESA's large-scale revision of its **internal space debris mitigation requirements** to become **debris-neutral by 2030.**
- **Austria, Belgium, Cyprus, Estonia, Germany, Lithuania, Poland, Portugal, Romania, Slovakia, Sweden,** and the **United Kingdom** have all pledged to adhere to the charter.

Significance of the charter:

- The Charter's signing represents the **first-time countries** have subscribed at the **national level**, boosting Europe as a leader in **clean space** while demonstrating widespread acceptance of the charter.
- It signals Europe's unwavering commitment to be a global leader in **space debris mitigation and remediation**, fostering collective action of a large community of space actors from all around the world.

SPECULOOS-3b

News Excerpt:

In a paper published in Nature Astronomy, the discovery of a new Earth-like exoplanet named SPECULOOS-3b was announced as part of **NASA's SPECULOOS (Search for Planets EClipsing ULtra-cOOl Stars) program.**

About SPECULOOS- 3b:

- The Earth-like exoplanet SPECULOOS-3b's distance from Earth is **55 light-years.**
- The planet orbits an **ultra-cool red dwarf.**
- This red star has a lifespan **that is 100 times that of our sun.** It is also 1000 times cooler and dimmer than our sun, and similar in size to Jupiter.
- The exoplanet is like Earth **in its rocky composition, size, and topography.**
- It takes **17 hours to orbit the red star**, which means one year on SPECULOOS-3b is just 17 Earth hours.
- It orbits much **closer to its ultra-cool red star** than Earth does to the Sun, exposing it to high radiation. This likely prevents an atmosphere from forming, **eliminating the possibility of liquid water and, consequently, life.**
- It appears to be **tidally locked,** i.e. the exoplanet has **endless days and nights.**

Significance of discovery:

- The SPECULOOS project searches for **potentially habitable exoplanets** around the smallest and coldest stars of the solar neighborhood.
- The discovery of this Earth-like planet could help in the **study of exoplanetary geology** as well as understanding the planet's surface mineralogy and research on its potential atmosphere.
- Using the James Webb Space Telescope, scientists plan on executing multiple research projects to try and **understand this planet** and its surroundings.

TECHNOLOGY

PraVaHa

News Excerpt:

Indian Space Research Organisation (ISRO) develops new CFD software "PraVaHa" or **"Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis"**, to aid re-entry of vehicles key for human missions.

About PraVaHa:

- ISRO's Vikram Sarabhai Space Centre (VSSC) has developed an **indigenous computational fluid dynamics (CFD) software** called **PraVaHa.**

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- This software **simulates the airflow around aerospace vehicles during launch and re-entry**, which is crucial for designing their shape, structure, and thermal protection systems for human spaceflight missions.
- PraVaHa is being **extensively used in the Gaganyaan program** for analyzing the aerodynamics of human-rated launch vehicles.
- It is designed to utilize both CPU and GPU architectures of supercomputing facilities and is flexible enough to enable collaborative development with academic institutes and government labs.

India's first Quantum Diamond Microchip Imager

News Excerpt:
The Indian Institute of Technology Bombay (IIT-Bombay) has entered a strategic partnership with Tata Consultancy Services (TCS) to develop India's first Quantum Diamond Microchip Imager.

About Diamond Microchip Imager:
- Quantum Diamond Microchip Imager is a leap forward in semiconductor imaging with its **advanced capabilities to identify chip defects**.
- It **uses the defects in a diamond's structure, known as Nitrogen-Vacancy (NV) centers,** together with the other hardware and software **for detecting and characterizing anomalies in semiconductor chips**.
- It can identify chip defects such as current leakages and **enable visualization of three-dimensional charge flow in multi-layer chips.**
- This advanced sensing tool will hold the potential to unlock new levels of **precision in the examination of semiconductor chips, reduce chip failures, and improve the energy efficiency of electronic devices.**

Significance of the Diamond Microchip Imager:
- **Quality Control**: Improve reliability, safety, and energy efficiency of semiconductor chips.
- **Non-Destructive Examination**: Utilize advanced imaging to detect anomalies without damaging chips.
- **Non-Invasive Techniques:** The Quantum Diamond Microchip Imager can image magnetic fields, enabling a non-invasive and non-destructive mapping of semiconductor chips, much like an MRI at a hospital.
- **Applications in various fields:** It will have wide applications in microelectronics, biological, and geological imaging, and fine-scale imaging of magnetic fields, among others.

BIOTECH

Djibouti releases GM mosquitoes to fight malaria

News Excerpt:
Genetically modified (GMO) mosquitoes were released in Djibouti, East Africa to fight malaria.

More about the News:
- **Anopheles stephensi** is a highly **invasive mosquito species** that migrated to Africa from South Asia and the Arabian Peninsula, leading to a significant increase in malaria cases in Djibouti (from 27 cases in 2012 to 73,000 cases in 2020).
- Anopheles stephensi is well-adapted to urban environments, posing a particular threat to Djibouti.
- **The Stephensi species, originally from Asia**, is very difficult to control. It is also referred to as an **urban mosquito** that has outsmarted traditional methods of control.
- It **bites both during the day and at night** and is resistant to chemical insecticides.
- This is the first time **genetically engineered mosquitoes** have been released in **East Africa** and the second time on the **African continent, after Burkina Faso in West Africa.**

Mass production of recombinant proteins

News Excerpt:
Researchers at the Department of Biochemistry, Indian Institute of Science, have developed a novel method for producing recombinant proteins.

Currently used methods:
- **Recombinant proteins**, such as **vaccine antigens, insulin, and monoclonal antibodies, are mass-produced by growing modified bacterial, viral, or mammalian cells in large bioreactors.**
- The **most widely used organism is the yeast Pichia pastoris** (now called Komagataella phaffii).

Process of recombinant protein synthesis:
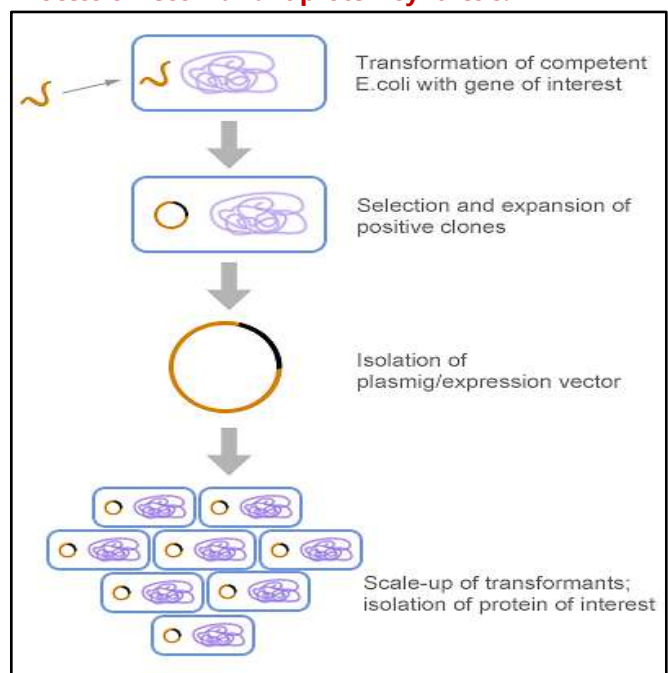
Significance of the research:

- After an extensive search, the team found that **monosodium glutamate (MSG)**, a USFDA-approved food additive, **can activate a different promoter in the yeast genome that codes for an enzyme called phosphoenolpyruvate carboxykinase (PEPCK).**

- **Activating PEPCK with MSG led to protein production** similar to methanol activation of the AOX (Alcohol oxidase) promoter.

- This system **can be used in biotech industries to mass-produce valuable proteins, including milk and egg proteins, baby food supplements, and nutraceuticals, as well as therapeutic molecules.**

Recombinant protein:

- Recombinant proteins are proteins encoded by recombinant DNA that have been cloned in an expression system.

- **Production Process:** The gene coding for the desired protein is inserted into a host organism's genome. The host cells then produce the protein in large quantities, which can be harvested and purified.

- **Applications:** These proteins are essential in medical treatments (e.g., insulin, vaccine antigens, monoclonal antibodies), industrial processes, and research.

GENERAL SCIENCE

International Year of Quantum Science and Tech: 2025

News Excerpt:

The United Nations has announced that 2025 will be designated as the 'International Year of Quantum Science and Technology'.

What is Quantum Science?

- Quantum science explores the **behavior of matter and energy at the smallest scales, typically at the level of atoms and subatomic particles.**

- It encompasses quantum mechanics and quantum field theory, which describe phenomena like superposition, entanglement, and wave-particle duality.

- These principles enable advancements in quantum computing, quantum communication, and quantum cryptography, promising **significant impacts on technology, medicine, and security.**

- **Unlike classical physics, quantum science reveals that particles can exist in multiple states simultaneously and influence each other instantaneously over distances,** challenging traditional notions of reality and paving the way for revolutionary technological breakthroughs.

Significance of the year 2025:

- 2025 is the **centenary** of German physicist Werner Heisenberg's pivotal paper that laid the groundwork for quantum mechanics.

- **The paper reinterpreted classical mechanics to explain newly discovered quantum phenomena in 1925.**

- Heisenberg was awarded the Nobel Prize for Physics in 1932 for **creating the field of Quantum Mechanics, roughly around the time he devised his famous uncertainty principle.**

National Quantum Mission (NQM)

- On April 19, 2023, the Union Cabinet approved the National Quantum Mission (NQM) with a budget of Rs. 6003.65 crore for 2023-24 to 2030-31.

- The mission aims to advance scientific and industrial R&D in Quantum Technology (QT), **positioning India as a global leader in Quantum Technologies & Applications (QTA).**

- The mission will enable secure satellite-based quantum communications within India over 2000 kilometers, long-distance communications with other countries, and inter-city quantum key distribution networks.

- NQM will also focus on **high-sensitivity magnetometers, and atomic clocks for precision timing and communication.**

The Earth's poles are flipping

News Excerpt:

The **Earth's magnetic poles** are showing signs of shifting, a natural process that occurs over thousands of years.

The Earth's Magnetic Field
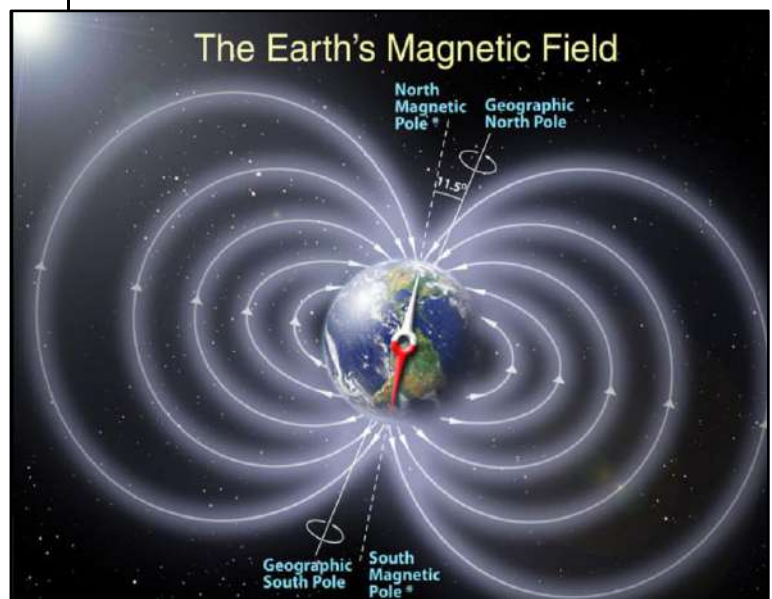
More about News:

- The **Earth's magnetic field** is generated by the movement of **molten iron** in the Earth's outer core, and it protects the planet from **harmful solar radiation.**
- The magnetic field experiences changes over time, including reversals of its magnetic poles, which have occurred approximately **every 200,000 to 300,000 years** throughout **Earth's history.**
- It has been more than twice as long since the last reversal, leading to speculation that we are overdue for **another flip.**
- Pole flipping is a gradual natural process occurring over thousands of years, with the current rate of movement indicating **no immediate reversal.**
- Satellite observations have revealed **'blobs'** of unusually **intense magnetic fields** deep inside the planet, contributing to the current changes in the **magnetic field.**
- The **North Pole** has been moving at an **accelerated rate** (from about 15 kilometers per year in the 1990s to approximately 55 kilometers per year) towards **Siberia.**
- The **movement could be a precursor to a magnetic reversal** although the exact timing and consequences are still uncertain.

Implications of Pole Reversal on Earth's Magnetic Field:

- During a pole reversal, the Earth's magnetic field weakens, potentially exposing the planet to increased **solar radiation** and affecting **living organisms.**
- The Earth's magnetic field has flipped many times before without any **catastrophic consequences for life on Earth.**
- The weakening of the magnetic field could lead to increased **radiation on the planet,** potentially increasing **rates of cancer in animals** and disrupting the migratory patterns of animals that rely on the **magnetic field for navigation.**
- While the flipping of the **Earth's poles merits attention** and study, it is a gradual process and part of the **Earth's natural cycle,** not an immediate cause for alarm.

HEALTH

Does the H5N1 Virus spread through Raw Milk?

News Excerpt:

The **CDC in Atlanta**, USA has **advised against** consuming **uncooked dairy products**, such as raw, unpasteurized milk or raw cheeses, **from animals suspected** or confirmed to be infected **with the H5N1 bird flu virus**.

What is H5N1?

- **H5N1** is **one of several influenza viruses** that causes a **highly infectious respiratory disease in birds called** avian influenza (or "bird flu"). **Infections in** mammals, including **humans**, have **also been documented**.
- **So far**, close to **900 human infections** have been **reported since 2003**, of which more than half were fatal. The **H5N1 virus** is **constantly evolving** and could **potentially** become easily **transmissible** from **person to person**.

How does the virus spread?

- Most H5N1 infections in humans have been linked to **close contact with infected birds** or **contaminated environments**, such as live bird markets. There have **also** been **instances of transmission** from **infected mammals to humans.** Currently, human infections of H5N1 are limited and vaccines are not recommended.

What are the symptoms?

- The **symptoms** of H5N1 infection **may include fever (often high fever, > 38°C)** and **malaise**, **cough, sore throat and muscle aches.** Other early symptoms may include **conjunctivitis** and other **non-respiratory symptoms**.
- The infection may progress quickly to severe respiratory illness and **neurologic changes (altered mental status** or **seizures)**.

How is H5N1 virus infection in humans treated?

- Influenza **patients should be managed properly to prevent severe illness and death**. **Patients with laboratory-confirmed influenza virus infection** with progressive, complicated, or severe illness – or those with asymptomatic or mild disease but who are at increased risk of severe disease – **should be treated with antiviral medicines**, for **example, oseltamivir**, as soon as possible.

WHO's recommendations on the consumption of Raw Milk

- WHO mentions that H5N1 viruses have been detected in raw milk from infected dairy cows in some places. Based on available studies, pasteurization appears to inactivate the virus and make it safe for consumption.
- WHO recommends that consumers avoid consuming raw milk to reduce exposure to several pathogens, including but not limited to H5N1 viruses.
- WHO strongly advises that people consume pasteurized milk. If pasteurized milk isn't available, heating raw milk until it boils can also make it safer for consumption.
- Dairy products, like cheese, made from safe milk, following strict hygiene standards, should be safe to consume.

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Critical priority pathogens continue to pose a threat: WHO

News Excerpt:

Critical priority pathogens present major global threats due to their high burden, and ability to **resist treatment and spread resistance to other bacteria,** noted the latest **Bacterial Pathogens Priority List (BPPL)** updated by the **World Health Organization (WHO).**

Why an update was required?

- The 2017 prioritization exercise **partially addressed aspects** such as specific resistance patterns, coresistance, and the level of innovation within the antibacterial medicines in the R&D pipeline.
- This update aims to **address some of those limitations and to incorporate lessons from experience** with the first BPPL exercise.
- The update takes **advantage of recent advances in surveillance platforms**, which have resulted in better surveillance data.
- The BPPL is a compass for R&D priorities and investment and public health action. While this updated BPPL is a global tool, its **application requires adaptation and contextualization to account for regional differences** in the distribution and ecology of bacterial pathogens, as well as variations in the vulnerable groups and the burden of AMR.

Key highlights of the report:

- The **2024 WHO Bacterial Priority Pathogens List** (WHO BPPL) is an important tool in the global fight against antimicrobial resistance.
- The list covers 24 pathogens, spanning **15 families of antibiotic-resistant bacteria** grouped into **critical, high, and medium categories** for prioritization.
- In this update, Gram-negative bacteria that are resistant to last-resort antibiotics, such as Acinetobacter baumannii and various pathogens in the Enterobacterales order, as well as rifampicin-resistant (RR) Mycobacterium tuberculosis, are listed as of **critical priority** because of their ability to transfer resistance genes, the severity of the infections and disease they cause and/or their significant global burden, particularly in LMIC.
- The inclusion of Salmonella and Shigella as of **high priority** reflects their increasing resistance to existing treatments and the high burden of infection associated with these pathogens, particularly in LMIC.
- Other **high-priority pathogens** in the 2024 BPPL are antibiotic-resistant Pseudomonas aeruginosa and Staphylococcus aureus, due to their global threat, especially in health-care settings.
- Another pathogen of **public health importance** is antibiotic-resistant Enterococcus faecium, a bacterium

that is particularly important due to its ability to transmit resistance elements across the One Health spectrum.

- The 2024 BPPL includes Group A and B Streptococci, Streptococcus pneumoniae, and Haemophilus influenzae in the **medium-priority category,** indicating an urgent need to address their public health impacts, particularly in vulnerable populations in resource-limited settings.

CSIR's 'Phenome India' Project

News Excerpt:

The CSIR's **'Phenome India'** Project hit a target with **10,000 samples** collected, aiming for a new era in Precision Medicine.

More details about the news:

- The **Council of Scientific and Industrial Research (CSIR)** announced the successful conclusion of the first phase of its groundbreaking longitudinal health monitoring project, the '**Phenome India-CSIR Health Cohort Knowledgebase**' (PI-CheCK).

Phenome India-CSIR Health Cohort Knowledgebase' (PI-CheCK):

- Launched on **7th December 2023,** the PI-CHeCK project aims to **assess risk factors in non-communicable (cardio-metabolic) diseases** within the Indian populace.
- The key objectives of this initiative of CSIR are to ensure "**Swasthya Bharat Viksir Bharat**" through health and wellness checks.
- The collected data encompasses a wide range of **parameters,** including **clinical questionnaires, lifestyle and dietary habits, anthropometric measurements, imaging/scanning data,** and extensive biochemical and molecular data.

Project mechanisms

- The project aims to understand **the mechanisms behind increasing cardiometabolic disorders in India** and develop tailored strategies for risk assessment, prevention, and management.
- Current risk prediction methods **based on Caucasian data may not accurately reflect Indian population** diversity and lifestyles.
- It aims to create a comprehensive phenome database for India **to improve the accuracy of risk prediction algorithms** and foster similar initiatives nationwide.

The Bacteria That Write New Genes to Fight Infections

News Excerpt:

Klebsiella pneumoniae **bacteria may use a newfound protein called** Neo **to stop a bacteriophage infection in its tracks.**

The Discovery of Reverse Transcriptase:

- Discovered by Howard Temin and David Baltimore in 1970.
- Found to convert RNA into DNA, changing the understanding of genetic information flow.
- Key in developing quick and accurate COVID-19 tests.
- Aided in tracking virus spread and advancing public health and vaccine development.

Impact on Research and Medicine:

- The ability to **create DNA from RNA** changed molecular biology research. Scientists could now study genes by **making DNA copies of RNA** and **inserting them into bacteria**.
- **Reverse transcriptase** was crucial in developing **treatments for HIV/AIDS** in the 1980s.
- Drugs targeting this enzyme turned a deadly disease into a manageable condition, greatly improving the lives of those affected.

Role in Human Evolution:

- Reverse transcriptase has also **influenced human evolution**. Human DNA contains many sequences that came from **ancient viruses**, called **retroelements**.
- The recent research suggests these **retroelements play important roles in human biology** and might be linked to diseases like **neuropsychiatric disorders**.

Bacterial Reverse Transcriptases:

- Believed to be precursors of eukaryotic reverse transcriptases; first discovered in bacteria in 1989.
- Columbia University researchers found that bacteriophages infecting Klebsiella pneumoniae use non-coding RNA to instruct cells to create DNA, producing a protein named 'Neo'.
- 'Neo' stops bacterial and bacteriophage replication, halting infections.
- These findings suggest new uses in biotechnology and medicine, especially against antimicrobial resistance.
- Further study could lead to innovative treatments and applications by uncovering new genetic evolution and viral resistance mechanisms.

DISEASES IN NEWS

NAME OF THE DISEASE	ABOUT

H5N2 STRAIN
 	
News Excerpt:
 	
World Health Organization (WHO) confirms first death from bird flu strain H5N2 in Mexico.
	About the news:
	● The World Health Organization reported the first confirmed human death due to the **H5N2 type of bird flu.**
	● It adds to growing anxiety about the risk of bird flu **spreading among people**, especially because the **man had no history of exposure to poultry** or other animals.
	About H5N2:
	● H5N2 is a type of **avian influenza virus.**
	● Belongs to the H5 family, primarily infecting poultry and wild birds.
	   ○ Unlike H1 and H3 viruses, H5 viruses rarely infect humans.
	   ○ There are nine known H5 subtypes (CDC).
	● The H5N2 virus infecting the man is **low pathogenic** (low path).
	   ○ **Low-path viruses** cause mild or no symptoms in various animal species.
	   ○ **High-path viruses** have genetic changes making them more likely to cause serious illness.

NAEGLERIA FOWLERI
 	
New Excerpt:
 	
A five-year-old girl undergoing treatment for primary amoebic meningoencephalitis (PAM), a rare infection caused by Naegleria fowleri or "brain-eating amoeba", died at Kozhikode.
	About Primary Amoebic Meningoencephalitis
	● **Primary amebic meningoencephalitis (PAM)** is a **rare brain infection** that is caused by **Naegleria fowleri.** It is a **free-living amoeba or a single-celled living organism.**
	● **Naegleria fowleri** is a **microscopic ameba** that lives in **warm fresh water and soil** around the world.
	   ○ It can infect people when it enters the **body through the nose,** usually while swimming.
	   ○ Once inside, **it travels to the brain, where it destroys brain tissue and causes swelling.**
	● Higher temperatures of up to **115°F (46°C)** are conducive to its growth and it can survive for **short periods in warm environments.**
	● The amoeba can be found in warm freshwater, such as **lakes and rivers,** swimming pools, splash pads, surf parks, or other recreational venues that are poorly maintained or minimally chlorinated.

	● People cannot get infected with **Naegleria fowleri** from drinking water contaminated with the **amoeba**. PAM is also **non-communicable.**
	Symptoms of Primary Amoebic Meningoencephalitis
	● The symptoms include headache, fever, nausea and vomiting.
	● Later on, the patient may have a stiff neck and experience confusion, seizures, hallucinations, and slip into a state of coma.
	● According to the **US Centers for Disease Control and Prevention (CDC),**
	    ○ Most people with PAM die within 1 to 18 days after symptoms begin.
	    ○ It usually leads to coma and death after 5 days.

BIRD FLU **News Excerpt:** Australia has announced the confirmed case of bird flu in a human, in a child who is believed to have acquired it while in India some weeks ago.	**More about the news:** ● A human case of **avian influenza A(H5N1)** infection, also known as **"bird flu"**, has been reported in **Victoria, Australia.** ● There is **no evidence of local transmission in Victoria** and the chance of additional human cases is very low as avian influenza does not easily spread between people. **Bird Flu (Avian Influenza):** ● Avian influenza, commonly called "bird flu," is a **viral infection** that usually **spreads in birds** but can sometimes spread to humans. ● Influenza **A(H5N1)** is the **most common** cause in humans. ● It can cause **severe respiratory symptoms.** ● People who work with **poultry, waterfowl (like geese and ducks),** and **livestock** are most at risk. **SYMPTOMS** Chest pain · Breathless · Fever · Headache · Cough · Vomit **Types of bird flu:** ● There are many **subtypes** of **avian flu.** The most common subtypes that spread to humans are influenza **A(H5N1)** and influenza **A(H7N9).** ● These are named **based on the types of proteins** on the surface of the virus. **How common is bird flu in humans?** ● So far, **bird flu infections in humans are rare.** ● There have been less than 1,000 known cases worldwide since it was first identified in humans in 1997. **Transmission of bird flu:** ● Humans can get bird flu if they come in **contact with an infected animal's body fluid, like spit (saliva), respiratory droplets, or poop (feces).** ● A person can breathe it in from small dust particles in animal habitats or get it into your eyes, nose, or mouth after touching body fluids.
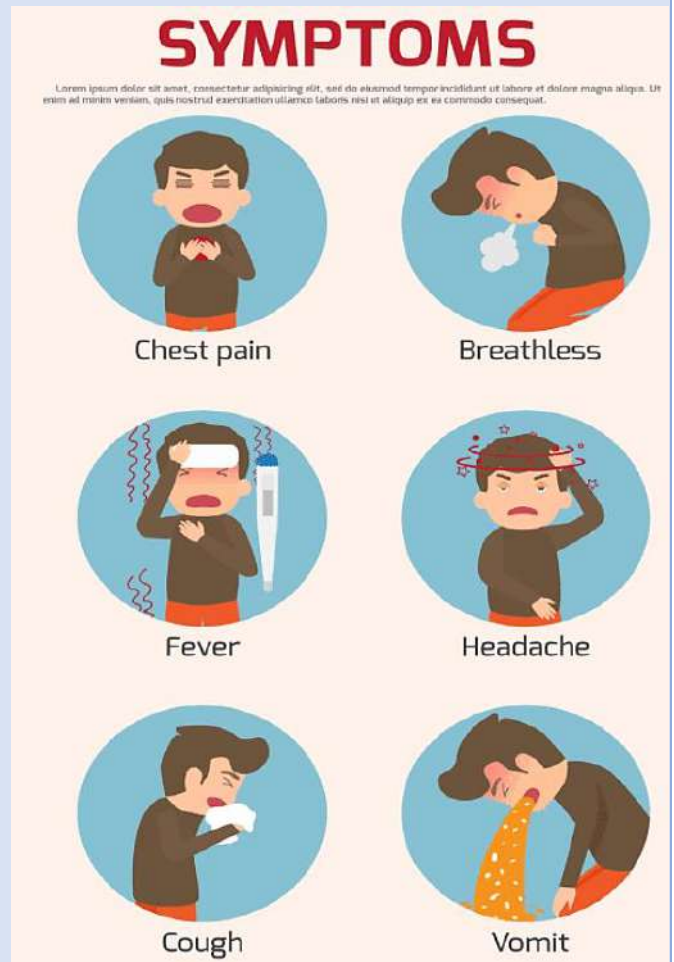
NIPAH VIRUS

News Excerpt:

Scientists at the Institute of Advanced Virology (IAV), Thonnakkal, Thiruvananthapuram, have developed a novel way of generating non-infectious Nipah virus-like particles (VLPs) in the laboratory, which mimic the wild-type Nipah virus (NiV).

About Nipah Virus:

- Nipah virus (NiV) is a **zoonotic virus** (it is transmitted from animals to humans) and can also be transmitted through **contaminated food** or directly between people.
- In infected people, it causes a **range of illnesses from asymptomatic (subclinical) infection to acute respiratory illness** and fatal encephalitis.
- The virus can also cause severe disease in animals such as pigs, resulting in significant economic losses for farmers.

Symptoms of Nipah Virus Infection

The initial symptoms of Nipah virus seen in symptomatic cases are:
- Fever
- Headaches
- Myalgia (muscle pain)
- Vomiting
- Sore throat
- Dizziness
- Altered consciousness (confusion)
- Atypical pneumonia etc.

History:

- The Nipah virus was **first recognized in 1999** during an outbreak among pig farmers in, Malaysia. No new outbreaks have been reported in Malaysia since 1999.
- It was also recognized in Bangladesh in 2001, and periodically in eastern India.

Treatment:

There are currently **no drugs or vaccines specific for Nipah virus** infection although **WHO has identified Nipah as a priority disease for the WHO Research and Development Blueprint.** Intensive supportive care is recommended to treat severe respiratory and neurologic complication.

INTERNAL SECURITY

Nagastra-1 Kamikaze drones

News Excerpt:

Indian Army has inducted indigenous **Loiter Munition, Nagastra-1**, developed by **Nagpur-based Solar Industries.**

About Nagastra-1:

- The Indian Army has placed an order for the supply of **480 Nagastra-1 Loiter Munitions** under an emergency purchase agreement.

- **Economics Explosives Ltd (EEL)**, in collaboration with **Z-Motion Autonomous Systems Pvt Ltd**, Bangalore, has spearheaded the development of Nagastra-1, with over **75% indigenous content.**
- The successful development and deployment of **Nagastra-1** marks the first step in enhancing India's indigenous capabilities in utilizing drones and UAVs as crucial components of warfare machinery.

Features:

- Nagastra-1 operates in a **"kamikaze mode"(suicide drones)** and is designed to neutralize hostile threats with **GPS-enabled precision strikes**, exhibiting an accuracy of **2 meters**.
- It is a 9 kilogram man-portable fixed-wing electric **UAV** with an endurance of **30 minutes**, a **man-in-loop range of 15 kilometers**, and **a range of 30 kilometers in autonomous mode.**
- Nagastra-1's electric propulsion system ensures a **low acoustic signature**, making it undetectable by adversaries at heights exceeding 200 meters.
- **Nagastra-1** has **day and night surveillance cameras** and a **1-kilogram High Explosive Fragmentation Warhead,** making it effective against **soft-skin targets.**

- Nagastra-1 is a **man-portable system** weighing 30 kilograms in two rucksacks and comprises essential components such as the Ground Control Station, Communication Control, Payload, and Pneumatic Launcher.

About Loitering munitions

- Loitering munitions are a **new generation of unmanned aerial vehicles** designed to provide unprecedented flexibility and precision in modern warfare.
- They are equipped with a range of advanced sensors, guidance systems, and explosive warheads that enable them to locate, track, and engage high-value targets with pinpoint accuracy.
- Unlike traditional UAVs used for **reconnaissance or surveillance**, loitering munitions are **designed to attack targets directly, making them a game-changer in modern warfare**. With their ability to **loiter in the air for extended periods** and **conduct autonomous missions**, loitering munitions are rapidly becoming a critical tool in the arsenal of modern militaries worldwide.

RudraM-II

News Excerpt:

DRDO successfully tested the RudraM-II air-to-surface missile from the Indian Air Force's (IAF) Su-30 MKI jet.

About RudraM-II:

- The RudraM-II is an **indigenously developed air-to-surface anti-radiation missile,** which means '**remover of sorrows.**
- It is meant to neutralize various types of enemy assets.
- It has a range of **300 kilometres**, a **speed** of up to **Mach 5.5** and a **200-kilogram payload.**
- The missile is expected to be vital in strengthening India's air security and defence preparedness and act as a **'force multiplier'.**

- India currently uses **Russia's Kh-31 missile** in its Sukhoi fighter jets. The RudraM-II missile will replace the Kh-31s.

RudraM-I:

- It was a **new-generation anti-radiation missile** (ARM) developed **by** the Defence Research and Development Organization **(DRDO).**
- ARMs are designed **to seek and destroy enemy defence systems**, including radar, communication assets, and other radio frequency sources.
- The RudraM-I was test-fired **four years ago** by the Indian Air Force at the integrated test range in Odisha's Balasore.
- The RudraM-I has a **100-to-150-kilometre range**, can reach **speeds** of up to **Mach 2**—twice the speed of sound—and has a l**aunch altitude range of 1 to 15 kilometers.**

CISF takes over the Parliamentary Security from PSS

News Excerpt:

Recently, **the Central Industrial Security Force (CISF)** took over the security of most of parliament's parts from the erstwhile **Parliamentary Security Service.**

Why it happened:

- On 13th December 2023 two people managed to clear multiple layers of security, **smuggled smoke canisters into the Lok Sabha,** and jumped into the House from the visitor's gallery.
- Following this incident, **a committee under the chairmanship of the CRPF DG was set up** to investigate the overall security issues of the Parliament complex and make suitable recommendations.

About the Parliamentary Security Service:

Formation:

- **8 April 1929**: A **bomb-throwing incident** in the Central Legislative Assembly Chamber (now the Lok Sabha Chamber) highlighted the need for dedicated security arrangements.

Prior to takeover by CISF the **Delhi police** was responsible for access control, including frisking and baggage scanning.

The **Parliament Duty Group (PDG)** of the **Central Reserve Police Force (CRPF)** was deployed for armed interventions.

Overall security had been managed by the **Parliament Security Service under the Lok Sabha Speaker.**

Fig: Existing security system in Parliament

Central Industrial Security Force
CISF is an armed force of the Union established under an Act of Parliament, "**Central Industrial Security Force Act, 1968 (50 of 1968)**".
- According to the mandate, CISF **provides security to the premises staff** along with the **security of property and establishments.**
- CISF provides security to strategic establishments, including the **Department of Space, the Department of Atomic Energy, the Airports, the Delhi Metro,** the ports, the historical monuments, and the basic areas of the Indian economy, such as **petroleum and natural gas, electricity, coal, steel, and mining.**
- CISF protects some private sector units and important government buildings in Delhi **and provides security** to the protected **persons classified as Z Plus, Z, X, Y.**

- **3 September 1929**: **Hon'ble Shri V.J. Patel** constituted a committee to develop a scheme for a security service exclusively for the Central Legislative Assembly.
- After thoroughly examining the proposed scheme, the committee **recommended the immediate creation of a security service to protect the inner precincts of Parliament** House.
- The organization was aptly named **"WATCH AND WARD,** also known as **Parliamentary Security Service (PSS).**
- This objective is achieved through **close coordination with various security agencies,** such as **Delhi Police, CRPF, ITBP, IB, SPG, NSG, the Home Ministry, and State Governments**, with Watch and Ward **acting as the overall coordinating agency.**

Key functions performed by PSS:
- The main responsibility of **the Parliament Security Service** is to **provide and maintain proactive, preventive, and protective security measures within the Parliament House Complex** to **safeguard Members of Parliament, visitors, and employees**.
- The whole approach revolves around the **principles of Access Control, which are based on proper authorization, verification, identification, and authentication** of human and material resources entering the Parliament House Complex using modern security gadgets.

Pig Butchering Scam

News Excerpt:
Authorities in the US have charged two Chinese nationals in a $73 million cryptocurrency scam known as **pig butchering.**

More about the News:
- The US accused them of being involved in a **type of cryptocurrency investment scam** known as **pig butchering.**

- The defendants are alleged to have instructed co-conspirators to open **US bank accounts** in the name of **shell companies.**
- Victims were induced online into depositing money into these accounts, funds that were then laundered through **US financial institutions to bank accounts** in the Bahamas.

What is pig butchering?
- "Pig butchering," the **practice of fattening a hog before slaughter,** originated in China and went global during the pandemic.
- Through fabricated trades, the scammers **deceive victims into believing they are making profits**. Over time, they build trust and convince victims to invest more money ("fattening the pig").
- However, when victims attempt to withdraw funds, the fake platform **either stalls or imposes hefty fees, exposing the scam.**

Jiribam District Violence

News Excerpt:
The murder of a Meitei farmer triggered **retaliatory attacks,** including the burning of homes belonging to both **Kuki-Zo-Hmar and Meitei communities** located along the **Assam-Manipur border.**

More about the news:
- Jiribam has now become the latest hotspot of ethnic violence in Manipur when a mob rampage followed a murder, leading to the implementation of **CrPC Section 144**.
- The state has been embroiled in ethnic clashes between the **tribal Kuki-Zo-Hmar people and the Meitei community** since May 3, 2023.
- These conflicts have led to the **displacement** of over 50,000 people and the death of at least 221 individuals.

About Jiribam:
- Jiribam district, with a population of around 50,000, is home to 13 communities, including many **Hindu and Muslim Bengalis** and **Nagas.**
- Jiribam is on the **westernmost side of Manipur**, about 220 kilometers from the state capital, Imphal. It **borders Assam's Cachar district.**
- The **Jiri River flows from north to south**, acting as a significant drainage artery for the region. It collects water from various small streams that join it along its course. **The river forms part of the boundary between Assam and Manipur** and eventually merges with the Barak River at Jirimukh.
- Jiribam's topography is an **extension of the Cachar Valley**. It features a plain area formed by the alluvial deposits of the Jiri River. **A ridge runs north to south**

through the town, merging with the Aglapur highland. Settlements are predominantly located on this highland due to its elevation and fertile alluvial soils. The surrounding plains are also fertile and extensively used for cultivation.
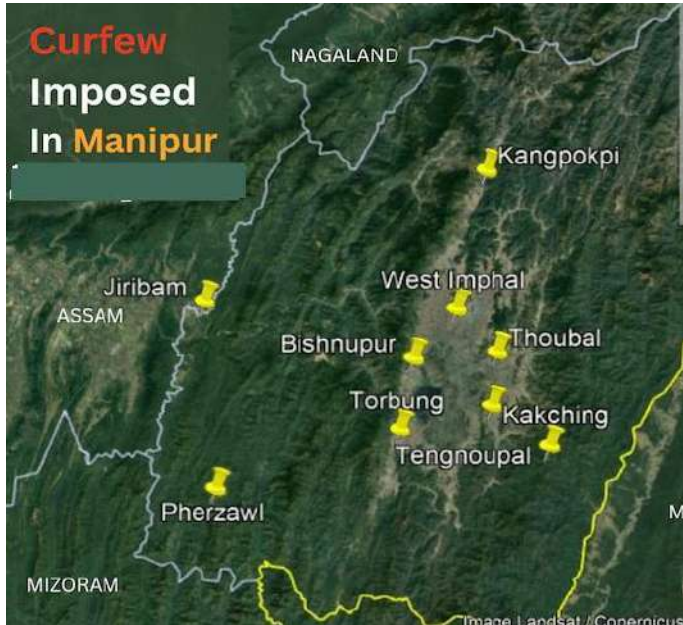
- The district has a history of **managing violence through community efforts.**
- Currently, about **36,000 personnel from the Army and the Central Armed Police Force (CAPF) are deployed in Manipur**, with a significant presence in buffer zones to separate the warring communities.
- Security decisions are being **managed by the Unified Command** appointed by the Centre to ensure neutrality amid community divisions within the state police.

Exercise Cyber Suraksha

News Excerpt:

Exercise Cyber Suraksha 2024 which was held from 20-24 May 2024, aims to empower participants by improving their skills, techniques, and capabilities in cyber defence.

About Exercise Cyber Suraksha, 2024:

- It was conducted by the **Defence Cyber Agency.**
- It was held to underscore the importance of strengthening India's cyber defence capabilities.
- **Aim:**
  - To empower participants by **enhancing their cyber defence skills,** techniques and capabilities;
  - **Share best practices** and work towards a unified and robust cyber defence posture.
- It will **promote joint manship and synergy** in the planning and preparation of a **Cyber Defence Framework.**
- The event reaffirms the commitment of the Indian Armed Forces to safeguarding national security in the increasingly important cyber domain.

Cyber Defence Framework:

- It helps teams address cyber security challenges, providing a strategic, well-thought-out plan to protect its data, infrastructure, and information systems.
- The frameworks offer guidance, helping IT security leaders manage their organization's cyber risks more intelligently.

Frameworks give cyber security managers a reliable, standardized, systematic way to mitigate cyber risk, regardless of the environment's complexity.

EXERCISES IN NEWS

NAME OF THE EXERCISE	PARTICIPATING COUNTRIES	ABOUT
RIMPAC 	**MULTILATERAL**	**News Excerpt:** The Indian Navy participated in the RIMPAC multinational Naval Exercise hosted by the U.S. Navy. **About RIMPAC:** • It is a **biennial multinational maritime exercise** in and around the Hawaiian Islands to make the world's sea lanes safer. • RIMPAC-2024 is the **24th such Exercise** in the series that began in 1971. • The Indian Navy is deploying the **indigenous stealth frigate** INS Shivalik for Ex RIMPAC. • The Exercise will include **multi-domain warfare** in a range of scenarios, from **anti-submarine warfare, multi-ship surface warfare, multinational amphibious landings**, and multi-axis defence of the carrier strike group against live forces.

RED FLAG	MULTILATERAL	**News Excerpt:**
		The IAF contingent has reached the US Air Force's Eielson Base in Alaska (USA) to take part in the Red Flag exercise.
		Red Flag Exercise:
		• Red Flag is one of the **most prestigious and advanced multilateral air combat training exercises** organized by the US Air Force.
		• The Exercise involves multiple nations to enhance interoperability and combat readiness.
		• The US has been conducting this Exercise with its friendly countries since 1975.
		• **The Indian Air Force participated in this Exercise for the first time in 2008.**
		• The IAF has deployed **Rafale fighter jets, C-17 Globemaster transport aircraft, and IL-78 air-refueller** for the Exercise.
		• The Exercise will be conducted from **two air bases in Alaska, Eielson and Joint Base Ilmendorf-Richardson.**
JIMEX-24	INDIA-JAPAN	**News Excerpt:**
		The 8th edition of the bilateral Japan-India Maritime Exercise 2024 (JIMEX 24) took place in Yokosuka, Japan.
		About JIMEX:
		• It is an **annual bilateral exercise** between India and Japan.
		• This is the **eighth edition** of JIMEX; since its **inception in 2012**, the Exercise included both harbour and sea phases.
		• The Indian Navy was represented by **INS Shivalik**, and the Japan Maritime Self-Defense Force was represented by the **Guided Missile Destroyer JS Yugiri.**

GEOGRAPHY

Rivers in Alaska are turning orange

News Excerpt:

Rivers and **streams in Alaska are changing color** from a clean, clear blue to a rusty orange because of the toxic metals released by thawing permafrost, according to a new study.

Key Takeaways from Study:

● Researchers from the **National Park Service,** the University of California at Davis, and the US Geological Survey conducted tests at 75 locations in the waterways of Alaska's Brooks Range.

● The rivers and streams in the **Brooks Range** appeared to rust and became **cloudy and orange** over the past **5 to 10 years.**

● The discoloration and cloudiness are being caused by **metals such as iron, zinc, copper, nickel, and lead,** as permafrost thaws and exposes the waterways to minerals locked away underground for thousands of years.

● **Arctic soil,** rich in carbon, nutrients, and metals, melts as temperatures rise, releasing these elements into surrounding water sources. With the **Arctic warming four times faster than the global average,** accelerated soil thawing is an unexpected consequence of climate change.

● **Satellite imagery** revealed that the most drastic increases in **discoloration occurred between 2017 and 2018,** which coincided with the warmest years on record at that point.

- This discoloration has been linked to **"dramatic declines"** in aquatic life, raising concerns about how the continued **melting of permafrost will affect communities** that rely on those waterways for drinking and fishing.

Halloween Crack

News Excerpt:

A large iceberg named A-83 measuring 375 square kilometers, broke off from Antarctica's Brunt Ice Shelf.

More about the news:

- As per the **European Space Agency,** this was the region's third significant **iceberg calving** in the past four years.
- Iceberg A-83 was first spotted off the Brunt Ice Shelf in the eastern Weddell Sea. It broke from a rift known as the **"Halloween Crack".**

More about Halloween Crack:

- **Location and Formation**
  - **McDonald Ice Rumples:** The crack originates in this area, where the floating ice sheet's underside is grounded on the shallow seabed. This grounding point, known as a pinning point, slows the ice flow and creates fractures on the surface.

The Halloween Crack was first observed in October 2016
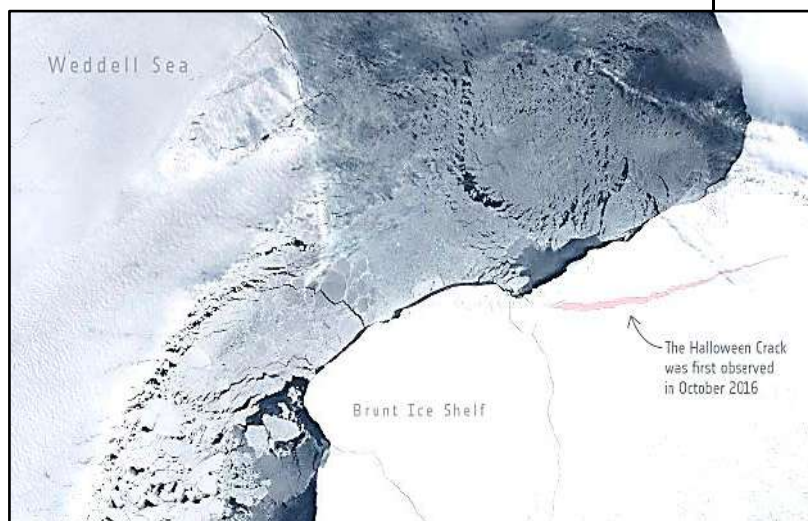
  - **Geological Impact:** The McDonald Ice Rumples are caused by an underwater obstruction where the bedrock rises into the underside of the ice shelf. This results in pressure waves, crevasses, and rifts forming on the ice surface.
- **Characteristics of the Halloween Crack**
  - **Current Status:** The Halloween Crack is presently stable.
  - **Location:** It runs adjacent to the more vulnerable tip of the Brunt Ice Shelf.
  - **Potential Break-off:** The precarious tip of the ice shelf is tenuously held by a narrow ice strip about

600 meters long. If this narrow strip fails, it could lead to the formation of a massive iceberg.
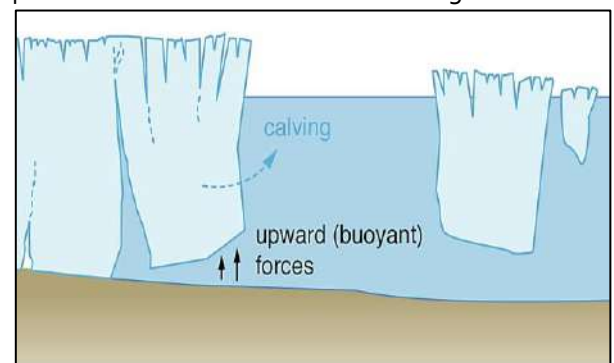
Monitoring:

The European Space Agency's (ESA) Copernicus Sentinel-1 mission plays a crucial role in monitoring the Brunt Ice Shelf and its evolving cracks, including the Halloween Crack and Chasm 1.

Contributions of Sentinel-1

- **Continuous Observation:** Sentinel-1's radar instruments offer unprecedented, uninterrupted views of ice shelf changes, which are crucial for tracking and understanding the calving process.
- **Enhanced Understanding:** The mission's ability to monitor the ice shelf regardless of weather conditions or light availability greatly enhances the understanding of ice shelf dynamics and the broader implications for global sea levels and climate change.

Natural Calving Process

- **Calving Explained:** Calving, the process where chunks of ice break off from the edge of a glacier, is a natural part of an ice shelf's lifecycle. The anticipated iceberg from the Brunt Ice Shelf will be significant but not unprecedented in size for Antarctic icebergs.

Importance of Monitoring: Regular satellite monitoring provides critical insights into ice shelf behavior, including responses to changes in ice dynamics and variations in air and ocean temperatures. This information is vital for understanding and predicting future changes in these remote and sensitive regions.

DISASTER MANAGEMENT

Cold Lava

News Excerpt:

The eruption at **Mount Canlaon in the Philippines** led to a cold lava flood in the street and river downstream.

What is Cold Lava?

- Cold lava is a **mixture of volcanic material and pebbles** that has cooled. This phenomenon occurs when rain mixes with volcanic materials like ash, sand,

and pebbles. It flows like wet concrete and can move swiftly.

- It can have **either smooth, glassy textures or rough, jagged textures.**
- Its temperature ranges from 0°C to 100°C, but typically **stays below 50°C.** In contrast, hot lava has a temperature range of 700 to 1,200°C.
- The phrase cold lava is also known as **"lahar"** in Indonesian and Tagalog.

Risks associated with Cold Lava:

- **Flash Flood:** Cold lava can travel significant distances from a volcano's summit, accumulating debris and sediment as it moves, which rapidly increases its volume and destructive potential.
- **Physical Injury:** Cold lava formations can have sharp edges, making them hazardous to walk on or climb.
- **Toxic Gases:** Some volcanic rocks can release toxic gases if disturbed, which can be harmful to health if inhaled in large quantities.
- **Falling Debris:** Cold lava formations can be unstable and may collapse, causing falling rocks and debris.
- **Chemical Burns:** Certain types of volcanic rock, like obsidian, can have sharp edges that can cause cuts or abrasions. Additionally, contact with certain chemicals in volcanic rock can cause skin irritation.
- **Environmental Hazards:** Cold lava can disrupt ecosystems and cause changes in soil composition, affecting vegetation and wildlife.
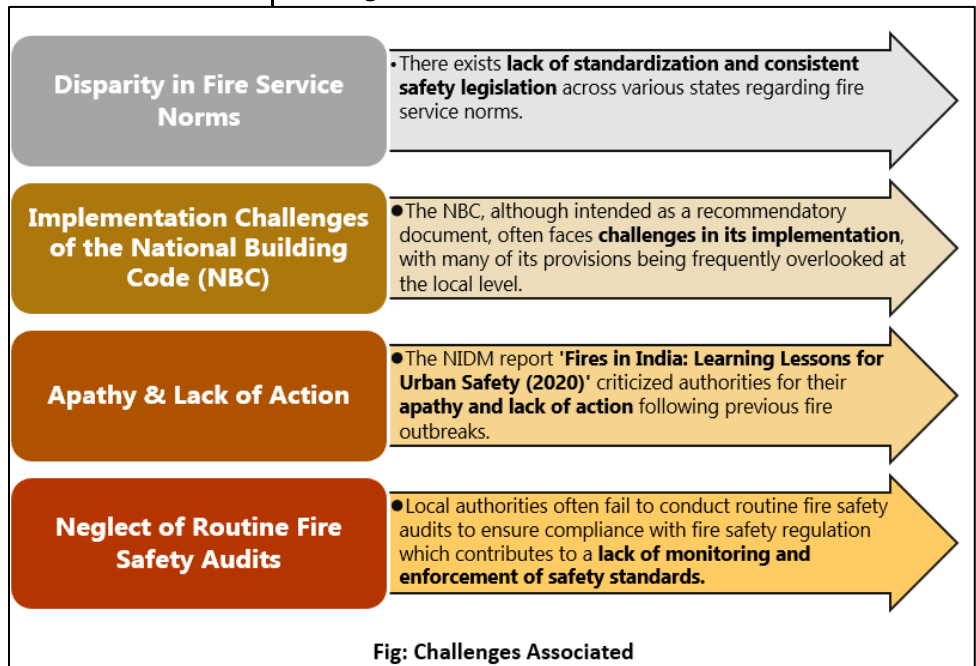

Fire Safety

News Excerpt:

The **fire incidents** in Rajkot and Delhi reflect the concern regarding upsurge in fire incidents in India.

About Fire safety

- Fire safety is the **set of practices** intended **to reduce** the **destruction caused by fire**.

- It includes the **measures** that are intended **to prevent ignition of an uncontrolled fire,** and those that are

Disparity in Fire Service Norms	• There exists **lack of standardization and consistent safety legislation** across various states regarding fire service norms.
Implementation Challenges of the National Building Code (NBC)	• The NBC, although intended as a recommendatory document, often faces **challenges in its implementation,** with many of its provisions being frequently overlooked at the local level.
Apathy & Lack of Action	• The NIDM report **'Fires in India: Learning Lessons for Urban Safety (2020)'** criticized authorities for their **apathy and lack of action** following previous fire outbreaks.
Neglect of Routine Fire Safety Audits	• Local authorities often fail to conduct routine fire safety audits to ensure compliance with fire safety regulation which contributes to a **lack of monitoring and enforcement of safety standards.**

Fig: Challenges Associated

used to limit the development and effects of a fire after it starts.

- It also includes the **planning** to be done **during the construction** of a building.
- Threats to fire safety are commonly referred to as **fire hazards.**
  - A fire hazard may include a situation that increases the likelihood of a fire or may impede escape in the event a fire occurs. **Fire safety is often a component of building safety.**

Alarming data of fire incidents:

- Recent data from the **National Crime Records Bureau (NCRB)** revealed that over 3,375 fire incidents were reported in India in the last two years, with electrical short circuits being a predominant cause.
- Data from the **Accidental Deaths and Suicides in India (ADSI)** highlights that an average of **35 fire-related deaths** occurring **daily** between **2016 and 2020**. The number of people dying in the incidents was 16,900 in 2016 and 9,110 in 2020.
- **Maharashtra and Gujarat** collectively accounted for **30 percent** of fire-related fatalities, with electrical faults, human negligence, and ill-formed habits cited as primary causes, according to the report.

Legislative frameworks:

Fire services in India fall **under state jurisdiction and are delineated as a municipal function**, with state governments tasked with enforcing fire prevention measures through legislation such as the State Fire Services Act and building bylaws.

- **National Building Code:** Fire safety regulations in India, as outlined in the National Building Code (NBC), **published by the Bureau of Indian Standards** (BIS) in **1970 and updated in 2016,** provide comprehensive guidelines for construction, maintenance, and fire safety protocols in buildings.
- **Model Building Bye Laws 2016** issued by the **Ministry of Housing and Urban Affairs, offers guidance to states and Union Territories (UTs)** in formulating building bylaws to address fire protection and safety requirements.
- **National Disaster Management Authority (NDMA):** It mandates specific fire safety criteria for public structures like **hospitals, encompassing provisions for open safety spaces, evacuation procedures,** and dedicated staircases and evacuation drills.
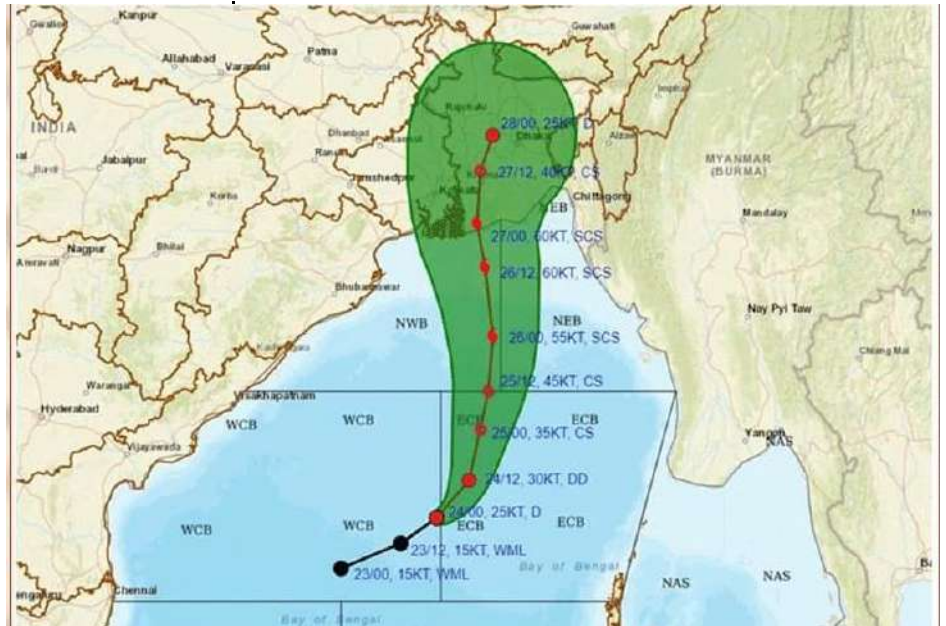
Cyclone Remal

News Excerpt:

Cyclone Remal made landfall on the coasts of West Bengal and Bangladesh as a Severe Cyclonic Storm.

About Cyclone Remal:

- The name Remal, meaning **'sand'** in Arabic, was chosen from **Oman**. It is the **first cyclone** in the Bay of Bengal this **pre-monsoon season.**
- The cyclone impacted the **Sundarbans mangrove forest** also, one of the largest in the world, renowned for its diverse fauna.

Scientific Insights:

- Scientists say cyclonic storms are intensifying rapidly and **retaining their potency for longer periods** due to warmer sea surface temperatures, a result of oceans absorbing most of the excess heat from greenhouse gas emissions.
- Warmer sea surface temperatures mean more moisture, which is **favourable for the intensification of cyclones.**

How are the cyclones named?

- The **World Meteorological Organization (WMO)** is a 185-member United Nations agency.
- Realizing the importance of an effective cyclone warning and disaster mitigation in the **North Indian Ocean region** (comprising both the Arabian Sea and the Bay of Bengal), WMO came together in 1972 to establish **the Panel on Tropical Cyclones (PTC).**

- The PTC **originally comprised eight member countries** — Bangladesh, India, Maldives, Myanmar, Pakistan, Sri Lanka, Sultanate of Oman and Thailand.
- The PTC then began naming tropical cyclones in **the Bay of Bengal and Arabian Sea in 2004,** after receiving recommendations from panel countries.
  - In 2018, the PTC expanded to include **Iran, Qatar, Saudi Arabia, the UAE, and Yemen.**
- In April 2020, a list **of 169 cyclone names** was released — 13 suggestions each from the **13 countries**. It is this list that is currently being used to name cyclones.

How the naming convention works:

- There are **some basic guidelines** that countries need to follow while sending in their proposals. These include ensuring that the proposed name is neutral to
  (a) politics and political figures
  (b) religious beliefs,
  (c) cultures and
  (d) gender;
  - does not hurt the sentiments of any group of population over the globe;
  - is not very rude and cruel in nature;
  - is short, easy to pronounce, and not offensive to any PTC member;
  - is at most eight letters long;
  - is not repeated (not before, not after).
- The list of proposed names arranges the countries in **alphabetical order** and lists all the names suggested by them.
- Then these names are allotted to any cyclone, which takes place in the region, on a rotational basis regardless of which country proposed it.
  - **For instance,** the first cyclone after the list was named Nisarga (Bangladesh's name choice), which

hit Maharashtra, followed by **Gati** (India's choice, hit Somalia), **Nivar** (Iran's choice, hit Tamil Nadu), and so on.

Why name cyclones at all?

- Adopting names for cyclones **makes it easier for people to remember,** as opposed to numbers and technical terms.
- Apart from the general public, it also helps the **scientific community**, the media, disaster managers etc.
- With a name, it is easy to **identify individual cyclones, create awareness of its development**, rapidly disseminate warnings to increase community preparedness and remove confusion where there are multiple cyclonic systems over a region.

ART & CULTURE

Sanké mon

News Excerpt:

Climate change threatens not just economic survival but also centuries-old rites. Heat waves threaten **Sanke mon**, **a collective fishing rite in the southern Mali town of San.**

About Sanke Mon:

- The Sanké mon **commemorates the town's founding in San**, in the Ségou region of Mali, every second Thursday of the seventh lunar month.
- It begins with **rooster and goat sacrifices and offering**s made by villagers to the **water spirits of the Sanké pond**.
- The collective **fishing lasts fifteen hours,** using large and small mesh fishing nets.
- It is followed by **a masked dance on the public square featuring Buwa dancers** from San and neighbouring villages.
- They wear **traditional costumes and hats** decorated with cowrie shells and feathers and perform specific choreography to drum rhythms.

- The rite reinforces **collective values of social cohesion, solidarity, and peace** between local communities.

Climate Impact
- Temperatures in Burkina Faso and Mali have increased by 1.5°C.
- Climate change and heat waves are disrupting the tradition.

Conservation Efforts
- Listed in 2009 on the List of Intangible Cultural Heritage in Need of Urgent Safeguarding.
- Plans to deepen the pond to prevent silting remain unimplemented.

Threats to Survival
- The disappearance of the Sanké pond endangers the rite and local economy.
- Lack of historical awareness and declining event attendance.
- Environmental degradation due to inadequate rainfall & urban development impacts.

Fig: Threats to this Tradition

Mela Kheer Bhawani

News Excerpt:

Many pilgrims visit temples across J&K to celebrate **Mela Kheer Bhawani** amid heightened security following terrorist attacks in the UT.

About Mela Kheer Bhawani:

- The fair, **an annual event at the Kheer Bhawani temple**, dedicated to **Rangya Devi** in **Ganderbal district's Tulmulla**, is celebrated in **other shrines and temples in Jammu and Kashmir to mark 'Zyeth Atham', or 'Jyeshtha Ashtami'.**
- This is the biggest **Hindu festival in Kashmir after the Amarnath yatra** and holds immense significance in J&K.
- Kashmiri Pandits thronged to the temple in Jammu city to mark the start of the **three-day annual mela** and seek blessings.
- **The Kheer Bhawani Peeth in Jammu City** was constructed as a replica of the original shrine after the mass migration of the **Kashmiri Pandit community** from the valley in the **early 1990s.**

- Devotees offer **milk and 'kheer' (pudding)** at the sacred spring within the temple complex, believing that the color of the spring water reflects the conditions in the valley.
- The water in the spring was **clean and milky white this year,** which is considered an auspicious sign for Kashmir.
- While most of the colours do not have any particular significance, the black or darkish colour of the water is believed to be an indication of inauspicious times for Kashmir.

Joshimath renamed as Jyotirmath, Kosiyakutoli becomes Kainchi Dham

News Excerpt:

In a significant move reflecting Uttarakhand's historical and spiritual heritage, the Centre has approved the renaming of Joshimath tehsil in Chamoli district to Jyotirmath and Kosiyakutoli tehsil in Nainital district to Pargana Shri Kainchi Dham.

About Jyotirmath:

- The town of Joshimath is also popular as a hill station as it is seated at an elevation of **1,890 meters above sea level**.
- The **Alaknanda and Dhauliganga meet at the confluence of Vishnuprayag overlooking the town of Joshimath**. The view of Hathi Parvat and other Himalayan Peaks make it a popular destination.
- It is also the **gateway to many Himalayan expeditions, trekking trails, camping, and pilgrimage centres.**

Historical Significance of Jyotirmath:

- Joshimath, now Jyotirmath, holds profound historical and spiritual significance.
- It is believed that the area **was originally known as Jyotirmath after Adi Guru Shankaracharya visited the region in the 8th century.**
  - According to local lore, Shankaracharya performed penance under the sacred Amar Kalpa tree and

attained enlightenment, a divine revelation called **Divya Gyan Jyoti.**
- Over centuries, the name evolved to Joshimath, but the recent renaming restores its original, spiritually significant nomenclature.

The Revival of Kainchi Dham:

- The renaming of **Kosiyakutoli tehsil to Pargana Shri Kainchi Dham pays homage to Baba Neem Karoli Maharaj and his ashram, a revered spiritual site.**
- The proposal reflects the deep reverence residents and devotees hold for Baba Neem Karoli Maharaj, whose teachings and spiritual presence continue to inspire many.

About Kaichi Dham:

- Situated on the Nainital—Almora Road, 9 km from Bhowali and 17 km from Nainital**, it has emerged as a modern pilgrim center.**
- **Kaichi is a term used for two sharp hairpin bends of the motor road in the local dialect; hence, the name.** It has **no relation to scissors.**

Rock carvings in Goa's Mauxi Village

News Excerpt:

Mauxi (Mhaus) village in **Goa** has emerged as a hotbed of **neolithic discoveries.** Some two decades ago, ancient rock carvings etched into the metabasalt rock along the dry riverbed of the **Zarme River** belonged to the **Neolithic.**

Key points about the rock carvings:

- The rock carvings were initially discovered by **residents around** 20 years ago.
- The carvings depict animals such as **zebus (a type of cattle), bulls, and antelopes, as well as footprints and cupules (circular cavities on the rock surface).**

○ The circular cavities or cupules on the rock surface signify community involvement in discovering **historical artefacts.**

● Around **20 rock etchings** showcasing the use of the **bruising technique** have been identified in the region; tools from the same period as **the rock carvings** have been found on the riverbed, validating the **site's historical significance.**

○ Officials from the Archaeological Survey of India (ASI) have confirmed the site's **Neolithic origins,** a period when humans started **domesticating cattle.**

● A carving depicting **a trident, a symbol associated with the Iron Age,** suggests the site's enduring significance through various historical epochs.

● The presence of the **Dhawad community, early settlers, and ironsmiths** adds another layer to the historical narrative, although they were **eventually displaced by new settlers.**

● One notable feature is **a rock with cupules found outside the Puravati Temple**. Initially interpreted as representing a star constellation with **27 cupules**, it was later found to have **31 cupules, r**aising curiosity about its significance. The **exact purpose of the cupules remains unknown.**

Neolithic Period:

● Scholars coined the term in the late **19th century CE** and it covers three periods: **the Palaeolithic, the Mesolithic, and the Neolithic.**

● The term **Neolithic Period** refers to the last stage of the Stone Age.

● The **Neolithic period** is significant for its megalithic architecture, the spread of agricultural practices, and the use of **polished stone tools**.

● **Copper metallurgy** was introduced toward the end of the Neolithic era, marking a transition period to the Bronze Age.

Nyishi Tribe

News Excerpt:

Mountaineer and cricketer **Kabak Yano** from **Arunachal Pradesh** has created history by becoming the **first Nyishi woman to scale Mount Everest.** She also became the **5th woman from Arunachal Pradesh** to climb the world's highest peak.

About the Nyishi Tribe:

● The Nyishi are the **largest ethnic group in Arunachal Pradesh** in north-eastern India.

● They trace their **descent patrilineally** and are divided into several clans.

● **Etymology:** In Nishi, their traditional language, **Nyi** refers to "**a man**", and the word **shi** denotes **"a being"**, which combined refers to **a civilized human being**.

● **Geographical extent:** They are spread across seven districts of Arunachal Pradesh: **Kra Daadi, Kurung Kumey, East Kameng, West Kameng, Papum Pare,** and parts of **Lower Subansiri** and **Upper Subansiri.** They also live in the Sonitpur and North Lakhimpur districts of Assam.

● **Population:** Their population of around **300,000** makes them the most populous tribe of Arunachal Pradesh, closely followed by the combined tribes of the **Adis** and the **Galos**, which were the most populous in the 2001 census.

● The Nyishi **language belongs to the Sino-Tibetan family**. However, the origin is disputed.

● **Social life: Polygyny** is prevalent among the Nyishi.

○ **Polygyny is where one man is married to several women.**

○ It signifies one's social status and economic stability and also proves handy during hard times, such as clan wars, social hunts, and various other social activities.

○ This practice, however, is diminishing, especially with modernization and also with the spread of Christianity.

Bela Block Printing

News Excerpt:

Lesser-known craft from the Kutch region, **Bela Block printing, remains in obscurity.**

Bela Printing:

● Bela printing is a **traditional art form** from Bela village in the Rapar block **of Kutch, Gujarat.**

● It is a form of **block printing** where intricate designs are carved onto **wooden blocks** and then **stamped onto fabric to create decorative patterns**.

● Bela Print, akin to Bagru Print, is a form of **Mordant printing** that employs a Hand Block Printing Technique.

● This traditional method involves the direct application of dyes onto cloth using hand-carved wooden blocks. Bela Print is renowned for its **bold and graphic prints**, often featuring **vibrant red and black colours**, which are emblematic of the style. These hues are preferred for their exceptional colour fastness.

● Moreover, the colours utilized in Bela printing are derived entirely from **natural and vegetable sources**.

● Kachchh has long been associated with the production of **Bela-style cloth, reflecting the region's enduring cultural heritage**. The materials essential for Bela printing include **cloth, natural dyes sourced from natural resources**, and hand-carved wooden blocks.

Challenges faced by Bela Printing:

● **Modernization and Industrialization:** The advent of **modern machinery and industrialization has led** to the rise of mass-produced textiles, which often offer cheaper alternatives to handmade Bela-printed fabrics. This competition from mechanized production can threaten the livelihoods of artisans practicing Bela printing.

● **Changing Consumer Preferences:** With changing consumer tastes and preferences, there may be a **declining demand for traditional handcrafted products like Bela-printed fabrics**. Younger generations may be more inclined towards modern, trendy designs rather than traditional motifs.

● **Lack of Awareness and Promotion:** Bela printing is often overshadowed by more widely recognized **crafts**, and there may be a lack of awareness about its **cultural significance and unique artistic value**. Insufficient promotion and marketing efforts can result in limited exposure and market access for artisans practicing Bela printing.

● **Limited Market Access:** Bela printing artisans, particularly those located in remote or rural areas, may face challenges in accessing markets for their products. **Limited infrastructure, poor connectivity, and lack of distribution networks** can hinder their ability to reach a broader customer base.

● **Financial Constraints:** Many artisans practicing **Bela printing come from economically disadvantaged backgrounds and may lack access to financial resources or capital to invest in their craft.** This can constrain their ability to purchase quality materials, upgrade equipment, or participate in training programs to enhance their skills.

Vijayanagara-era inscriptions were found near Huligi Dam.

News Excerpt:

A historical inscription from the **Vijayanagara dynasty** found near **Mudlapura in Koppala** taluk reveals insights into **ancient water management** and religious practices.

More details about the news:

● While conducting operations near the **Huligi Dam**, communication and documentation experts of the **Karnataka Irrigation Corporation** informed the **state archaeological museums and heritage department** about the inscription's presence.

● Their led to the discovery of a **six-line Kannada inscription**, believed to date back to the reign of the **Vijayanagara kings.**

About Inscription

● The inscription was found at the source of the Huligi dam across the **Tungabhadra River.**

● **The inscriptions, measuring 14 feet in length and 3 feet in width**, surfaced due to **reduced water levels** in the Tungabhadra River, a result of lower-than-average rainfall this year.

● The inscription mentions **Nagannadannanayaka**, a prominent **chief** under the Vijayanagara kings, who constructed a **ford (check dam)** across the Tungabhadra River at a place called **Kalaur**, located northwest of **Malinathdeva village**.

● This ford, referred to as **Huligiyakatti**, was part of an ancient canal system.

● The inscription reveals that **water from this canal was directed to Huligi,** a renowned religious site.

- The inscription not only highlights the **advanced engineering skills of the Vijayanagara period but also underscores the cultural and religious importance of water management in sustaining agriculture and spiritual sites.**

Virupaksha Temple

News Excerpt:
Restoration of collapsed pavilion at Hampi's Virupaksha temple to begin soon.

About Virupaksa Temple:
- It is the **7th-century Shiva temple** in Hampi, Central Karnataka.

- Hampi is a **UNESCO World Heritage Site.**
- **Lord Virupaksha, also referred to as Pampapathi**, is the main deity in Virupaksha Temple.
- This temple was constructed with the assistance of Lakkana Dandesha's assistance, who was a commander under **King Deva Raya II of the Vijayanagara Empire.**
- The most interesting feature is the use of **triangular mathematical concepts** in its construction and decoration.
- Virupaksha Temple complex is surrounded by **three gopuras (towers).**
  - The main tower on the **east** is an imposing structure, 9 stories and 50 meters tall, built in the fifteenth century.
  - It forms the **main entrance** to Virupaksha Temple.
  - It has extensive craftsmanship on each of its floors, featuring hundreds of Hindu gods and goddesses.
- Apart from the sanctum, it boasts **three antechambers, a pillared hall, and an open pillared hall.**
- The nine-tiered eastern gateway, which accommodates some earlier structures, is 50 meters and is proportionately constructed.
- It has a **stone base with a brick structure.**
- The Kanakagiri gopuram towards the north paves the way to a small enclosure with smaller shrines and leads one forward to the Tungabhadra River

Vivekananda Rock Memorial

News Excerpt:
PM Modi has chosen Vivekananda Rock Memorial as his meditation retreat.

About Vivekananda Rock Memorial:

- It was built by the Vivekananda Rock Memorial Committee to **commemorate the visit of Swami Vivekananda to "Shripada Parai '' on 24th, 25th, and 26th December 1892** for deep meditation and enlightenment.
- The memorial consists **of two main structures**, viz (i) Vivekananda Mandapam and (ii) Shripada Mandapam.
  - **Vivekananda Mandapam**: It consists of
    - **Dhyana Mandapam**, i.e., Meditation Hall with six adjacent rooms.
    - **Sabha Mandapam** or the Assembly Hall

    including Pralima Mandapam (statue section), two rooms, a corridor, and an open Parakram around the Sabha Mandapam (30 Mukha Mandapam (Portion).
    - The **front entrance steps** with two rooms and a corridor below the steps.
    - **Shripada Mandapam**: This square hall consists of Garbha Graham (**Sanctum Sanctorum**), Inner Parakram, Outer Parakram, and Outer Platform.

GOVT SCHEMES & INITIATIVES

PRAGATI-2024

News Excerpt:
Central Council for Research in Ayurvedic Sciences has launched "PRAGATI-2024", an initiative to shape the future of Ayurveda.

About the PRAGATI-2024:

- It was launched **by the Central Council for Research in Ayurvedic Sciences (CCRAS)** which is an autonomous body under the **Union Ministry of AYUSH** (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy).
- PRAGATI stands for **Pharma Research in AyurGyan and Techno Innovation.** It offers a very useful opportunity for collaborative research between CCRAS and the Ayurveda drug industry.
- CCRAS aims **to reach each stakeholder to improve its implementation.**

Central Council for Research in Ayurvedic Sciences (CCRAS):

- It is an apex body in India **that formulates, coordinates, develops, and promotes research on scientific** lines in the Ayurveda and Sowa-Rigpa systems of medicine.
- Its **headquarters** is in **Delhi.**
- **Vision:**
  - To develop scientific evidence in Ayurvedic Principles and drug therapies by integrating ancient wisdom with modern technology.
  - To bring Ayurveda to the people through scientific innovations related to diagnostics, preventive, promotive as well as treatment methods
- **Mission:** The aim is to enhance health through evidence-based Ayurvedic principles, develop CCRAS into a leading Ayurvedic research organization, integrate modern science with Ayurveda, and achieve global leadership in addressing lifestyle-related diseases.

Digi Yatra

News Excerpt:
Digi Yatra service was started at **Chennai Airport Domestic terminals**.

More About the News:
- **Digi Yatra** may soon be extended to **hotels**, **rail travel**, and other **public places** like **historical monuments**.

What is Digi Yatra?
- It is a **facial recognition technology** used for **seamless check-ins** at **various public places**.
- It uses **biometric data**, like **facial scans**, instead of boarding passes, enabling **paperless movement** through various airport checkpoints.

UNLOCK WITH YOUR FACE A HASSLE FREE TRAVEL EXPERIENCE

With DigiYatra app enjoy a seamless and paperless access from airport entry to boarding.

The objective of Digi Yatra
- The primary objective outlined in its **2017 policy document** is to improve passenger throughput at airports, **enhancing infrastructure efficiency** to accommodate increasing **passenger volumes**.
- The potential extension of Digi Yatra's use to **hotels** and **other public places** indicates a **broader scope beyond air travel**.

Expansion of Digi Yatra:
- Launched in **December 2022**, the initiative **currently covers 14 airports**, with plans to include **15 more by the end of 2024**.

- Pax need not show a boarding pass or ID at multiple checkpoints.
- Minimum human intervention. Less queuing time.
- The security is enhanced as the system will map the passenger with the PNR. Only bona fide passengers will be allowed entry at every checkpoint.
- Airport operators will have real-time information on Passenger load and resource planning becomes better.
- Airlines will be benefitted by knowing the passenger position in the airport.
- Airport throughput will be enhanced.

Fig: Benefits of Digi Yatra

- The expansion would significantly **improve the travel experience** for **tourists** who need to present their passports for **hotel check-ins** and **police verifications**. For example, **visitors to the Taj Mahal** could benefit from this technology.

National Health Claim Exchange

News Excerpt:
The **Ministry of Health** and the **Insurance Regulatory and Development Authority of India (IRDAI)** are launching the National Health Claim Exchange (NHCX) as part of the Ayushman Bharat Digital Mission.

More about the initiative:
- It is a digital platform developed by the **National Health Authority (NHA)** that will allow patients to access **quality healthcare swiftly and with reduced out-of-pocket expenditure.**
- It aims to provide a **unified platform** for exchanging claims-related information among various stakeholders.

- It enhances the **efficiency and transparency** of health claims processing, benefiting policyholders and patients.
- This system will help to **accommodate the dynamic and diverse healthcare** system of India. Also, the healthcare landscape has already been evolving to align with IRDAI's objective of achieving **'Insurance for All by 2047'**.

Key Features and Benefits of NHCX:

- **Seamless Interoperability**:
  - The platform will extensively **utilize Ayushman Bharat Health Account (ABHA) IDs** to access patient information, ensuring that the claims process is seamless and quick.
  - It will integrate insurance companies, hospitals, and TPAs (third-party administrators) to ensure **smooth data exchange** and fast-track the claim process.
  - The system is designed to **alleviate the administrative burden** on hospitals, which currently navigate multiple portals for different insurers.
- **Time-Bound Claims Processing**:
  - The insurance authority mandates that all cashless claims must be processed **within three hours** of receiving discharge authorization from the hospital.
  - The **systems and processes are to be in place by July 31,** which is expected to expedite the claim settlements.
- **Digital Health Incentive Scheme (DHIS)**:
  - To promote digital health transactions, for every transaction processed through NHCX hospitals are incentivized with ₹**500 per claim or 10% of the claim amount, whichever is lower.**
  - This initiative encourages the adoption of digital health records and transactions.
- **Standardization and Transparency**:
  - The NHCX aims to standardize health claims data presentation and validation, fostering a more predictable and transparent healthcare pricing model.
  - This standardization is anticipated to reduce operational costs and improve efficiency.
- **Enhanced Relationships and Trust**:
  - The platform seeks to improve the relationship between hospitals and insurance companies by reducing discharge delays and miscommunication and building **greater trust among policyholders through efficient service delivery.**
- **Fraud Detection and Reduction**:
  - By centralizing and digitizing claims data, it will enhance fraud detection capabilities and ensure **better resource allocation.**

IRDAI

- The Insurance Regulatory and Development Authority of India (IRDAI) is a **statutory body** formed under an **Act of Parliament**, i.e., the Insurance Regulatory and Development Authority Act, 1999 (**IRDA Act, 1999)**
- It was formed to **supervise and develop the insurance sector** in India.
- The powers and functions of the Authority are laid down in **the IRDA Act of 1999 and the Insurance Act of 1938.** The Insurance Act of 1938 is the principal Act that provides the powers to IRDAI to frame regulations that lay down the regulatory framework for supervision of the entities operating in the Insurance sector.

An overview of the AMRUT scheme

News Excerpt:

This article provides an **overview of the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) Scheme**, launched in **2015** to improve **urban infrastructure** in the country.
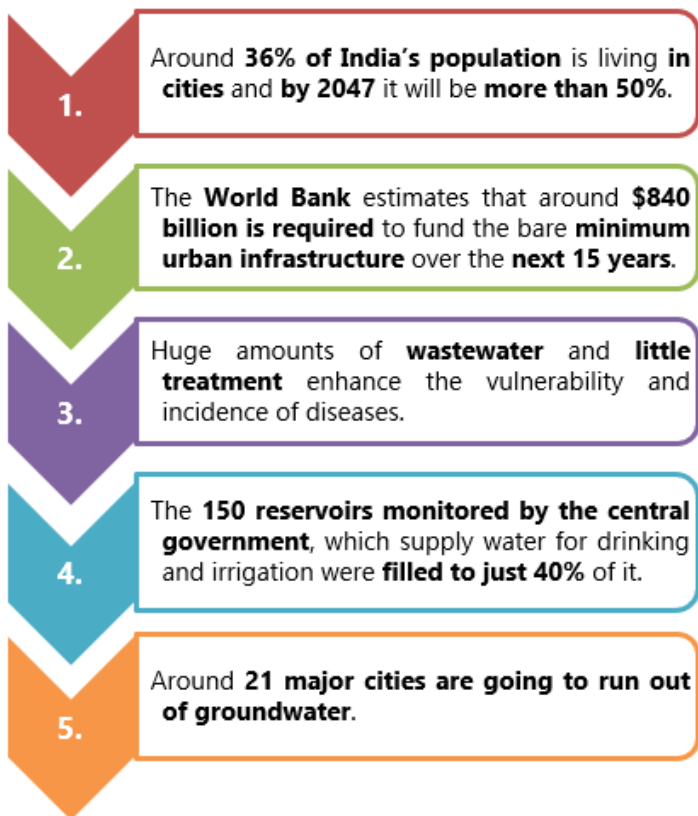
What is the AMRUT Scheme?

- It was launched **in 2015 under the Ministry of Housing and Urban Affairs** in **500 cities and towns** with **a population of over one lakh** with notified municipalities nationwide.
- The Mission focuses on the development of **basic infrastructure** in the sectors of **water supply, sewage,** and **urban transport**.
- **The objective of AMRUT Mission:**
  - Every household has access to tap **water** and a **sewerage connection.**
  - Increase the value of cities by **developing greenery** and well-maintained **open spaces such as parks.**
  - Reduce pollution by switching to **public transport** or **constructing facilities for non-motorized transport**.
- The **total outlay for AMRUT** was ₹**50,000 crore for five years** from **FY 2015-16** to **FY 2019-20**.
- AMRUT Mission has now been **subsumed under AMRUT 2.0**.

About AMRUT 2.0:

- **The AMRUT 2.0 scheme** was launched in **2021** for a period of **5 years**, i.e. from the **FY 2021-22** to **2025-26**.
- **The objective of AMRUT 2.0:**
  - It is designed to provide **universal coverage of water supply through functional taps to all households in all the statutory towns in the country** and **coverage of sewerage** in **500 cities** covered in the first phase of the AMRUT scheme.

○ AMRUT 2.0 will promote a **circular economy of water** through the development of the **City Water Balance Plan** (CWBP) for each city focusing on **recycling/reuse of treated sewage**, **rejuvenation of water bodies,** and **water conservation**.

○ The Mission envisages **making cities 'water secure'** through a circular economy of water.

● The **total indicative outlay for AMRUT 2.0** is **₹2,99,000 crore**, including a **Central share of ₹76,760 crore for five years**.

Related Statistics:

1. Around **36% of India's population** is living **in cities** and **by 2047** it will be **more than 50%**.

2. The **World Bank** estimates that around **$840 billion is required** to fund the bare **minimum urban infrastructure** over the **next 15 years**.

3. Huge amounts of **wastewater** and **little treatment** enhance the vulnerability and incidence of diseases.

4. The **150 reservoirs monitored by the central government**, which supply water for drinking and irrigation were **filled to just 40%** of it.

5. Around **21 major cities are going to run out of groundwater**.

A related NITI Aayog report states that:

● Nearly **31%** of **urban Indian households do not have piped water.**

● **67.3%** are **not connected to a piped sewerage discharge system.**

● **The average water supply per person** in urban India is **69.25 litres/day**, whereas the required amount is 135 litres.

● **40% of India's population** will have **no access to drinking water by 2030**.

Criticisms and Way Forward:

Critics have pointed out some lacunas in the implementation of the scheme, which, when rectified, would make it more beneficial, such as:

● The **involvement of elected local governments** is required for the efficient implementation of this scheme.

● **Water management** in cities must factor in the **climate and rainfall patterns of the area** and the **existing infrastructure of combined sewers**.

● The **scheme needs nature-based solutions** and a comprehensive methodology with a **people-centric approach** that **empowers local bodies**.

MISCELLANEOUS

Astronomical Transients

News Excerpt:

The Indian-American astronomer **Shrinivas Kulkarni** was awarded the **Shaw Prize for Astronomy in 2024** for his work on the physics of astronomical transients.

About Astronomical transients:

● In astronomy, a 'transient' is **any celestial object whose brightness changes in short periods.**

● They are **studied to understand where their violence comes from** and what that can tell us about non-transient events.

● There are many kinds of astronomical transients, all of them united by phenomena that are violent in some measure. **For example-**

Supernovae:

● These are **the most well-known transients.** These are formed when the outer layers of large stars blow up while their cores implode because the stars have run out of elements to fuse.

● Many supernovas have been known to become so bright that they emit more intense light than the stars combined in the rest of their host galaxy.

Active Galactic Nucleus (AGN):

● An active galactic nucleus, or AGN, is an **extremely bright central region** of a galaxy that is dominated by the light **emitted by dust and gas** as it falls into a black hole.

● The extremely luminous central region is emitting so much radiation that it **can outshine the rest of the galaxy altogether.**

- AGNs emit radiation across the entire electromagnetic spectrum, from radio waves to gamma rays. This radiation is produced by the action of a central supermassive black hole that is devouring material that gets too close to it. A galaxy hosting an AGN is called an **'active galaxy'.**

About the Shaw Prize:
- It was established in **2002**.
- The Shaw Prize **consists of three annual awards**, namely the Prize in **Astronomy**, the Prize in **Life Science and Medicine**, and the Prize in **Mathematical Sciences**.
- The Shaw Prize honors individuals who are **currently active** in their **respective fields** and who have recently **achieved distinguished** and **significant advances**, who have made outstanding **contributions** in academic and scientific research or applications, or who have achieved excellence in other domains.
- Each prize carries a **monetary award**, which has been set at **one million two hundred thousand US dollars since 2016**.

World Summit on the Information Society (WSIS)+ 20

News Excerpt:

C-DOT wins United Nations' WSIS 2024 PRIZE "Champion" Award.

More about the news:
- It won the award **for "Mobile-Enabled Disaster Resilience through Cell Broadcast Emergency Alerting"**.
- The award recognizes C-DOT's commitment to leveraging **technology for societal impact**.
- At the **AI for Good Global Summit**, C-DOT showcased its AI-based solution to detect and prevent cyber fraud.
- **Two Indian AI startups**, DeepVision Tech and Nayancom, selected by C-DOT, also presented their innovations.
  - **Nayancom:** An AI-based vision processing platform for road safety and smart city monitoring.
  - **DeepVision Tech:** "Let'sTalkSign" - an automatic sign language interpreter for the Deaf, Speech & Hearing-Impaired community.

About C-DOT's Mobile-Enabled Cell Broadcast Emergency Alerting Platform:
- It is an end-to-end solution for near **real-time delivery of life-saving emergency** information to mobile phones through cellular networks.
- It is an **indigenous, cost-effective, and automated system.**

- It has enabled **geo-targeted multi-hazard** alerting with multi-language support, improving the overall efficiency of disaster risk management activities.
- The initiative aligns with global **Early Warnings for All (EW4All)**, International Telecommunication Unions (ITU's) – Common Alerting Protocol (CAP), 'Call to Action' and promotes SDGs (Sustainable Development Goal) targets.
- It enhances the country's capacity-building efforts towards **disaster resilience.**

About AI for Good Global Summit
- It was organized **along with WSIS** in Geneva.
- It is the **leading action-oriented platform** of the United Nations, promoting AI to advance health, climate, gender, inclusive prosperity, sustainable infrastructure, and other global development priorities.
- The goal is to identify **practical applications of AI** to advance the United Nations Sustainable Development Goals and scale those solutions for global impact.

About the World Summit on the Information Society (WSIS)
- It is a high-level event **conducted by the International Telecom Union (ITU) in Geneva, Switzerland.**
- It is a **unique two-phase** United Nations (UN) summit.
- It was initiated to create an evolving multi-stakeholder platform aimed at addressing the **issues raised by information and communication technologies** (ICTs) through a structured and inclusive approach at the national, regional, and international levels.
- The goal of WSIS is to **achieve a common vision, desire, and commitment** to build a people-centric, inclusive, and development-oriented **Information Society** where everyone can create, access, utilize, and share information.
- WSIS Forums are **organized each year and hosted by the ITU.**

UN Military Gender Advocate Award, 2023

News Excerpt:

Major Radhika Sen of the **UN mission in Congo was** honoured With the **UN's Military Gender Advocate Award in 2023.**

Who is Major Radhika Sen?
- She served as the **Commander of MONUSCO's Engagement Platoon** for the **Indian Rapid Deployment Battalion (INDRDB),**

- Major Sen **facilitated English classes for children, as well as health, gender,** and **vocational training for displaced and marginalized adults.**
- Her efforts directly **inspired women's solidarity**, providing safe spaces for meetings and open dialogue.
- As a **gender advocate,** she encouraged women in the village of Kashlira, near Rwindi town, to organize themselves to **address issues collectively**, advocate for their rights, and amplify their voices within the community, in particular in local security and peace discussions.

About Military Gender Advocate Award, 2023:

- It was created in **2016** by the **Office of Military Affairs** within the **Department for Peace Operations (DPO).**
- It recognizes a **military peacekeeper** who has best **integrated a gender perspective into peacekeeping activities.**
- Each year, the awardee is selected among candidates **nominated by Force Commanders** and **Heads of Mission** from all peace operations.
- Major Sen is the **second Indian peacekeepe**r to receive this award after **Major Suman Gawani,** who had served with the **UN Mission in South Sudan (UNMISS)** and was **honoured with the 2019 United Nations Military Gender Advocate** of the **Year Award.**

World Oceans Day 2024

News Excerpt:

Every year, **World Oceans Day is marked on June 8** to raise awareness about the critical importance of preserving the seas and protecting ocean resources from depletion.

Historical Background

- World Oceans Day was **first proposed in 1992 by Canada's International Centre for Ocean Development (ICOD)** and the **Ocean Institute of**

Canada (OIC) at the Earth Summit UN Conference on Environment and Development in Rio de Janeiro, Brazil.

- The **United Nations General Assembly officially established World Oceans Day on June 8** through Resolution 63/111, adopted on December 5, 2008.
- The day is **coordinated by the UN Division for Ocean Affairs and the Law of the Sea, with support from UNESCO's Intergovernmental Oceanographic Commission (IOC).**

Theme for 2024: Awaken New Depths:

- The UN is joining forces with all stakeholders to **showcase how our relationship with the ocean needs to change urgently** since our efforts to date have only skimmed the surface.

Why World Oceans Day Matters:

- World Oceans Day is **an opportunity to educate the public about the ocean and the threats it faces.**
- **Covering more than 70% of the Earth's surface, the ocean is home to a vast array of marine life and is a crucial source of recreation, energy, and food.**
- Human activities such as **pollution, overfishing, and climate change** are putting immense pressure on these marine environments.
- **Protecting the ocean is essential to ensure its health and vibrancy for future generations.**

SPECIES IN NEWS

Species in News	About:
LION-TAILED MACAQUE **News Excerpt:** 730 Lion-tailed Macaque (LTM) in Sharavathi Valley LTM Sanctuary: Report 	**About the report:** ● The survey was conducted by **Salim Ali Centre for Ornithology and Natural History**, Coimbatore and the **Karnataka Forest Department**. ● It states that anthropogenic activities have been a major concern in the area. 　○ In addition to hunting, loss of habitat due to the expansion of agricultural fields, developmental activities and the extraction of firewood have drastically affected habitat availability. ● It has also called for initiatives and interventions which are required to manage the LTM and its habitat in the sanctuary. **Lion-tailed Macaque:** ● **About:** 　○ Lion-tailed macaques have black fur and are characterized by the **grey mane around their face**; hence they are sometimes called **bearded monkeys.** 　○ Their tail resembles a lion's tail hence named as 'lion-tailed macaque'.

IUCN Conservation status: Endangered	**● Habitat:** 　○ In the wild, lion-tailed macaques are **only native to India.** 　○ They live in the **Western Ghats hills and mountains** of southwestern India, where they live in **tropical rainforests** and on **elevated mountainsides.** **● Lifestyle:** 　○ They are social animals, living in groups of four to thirty animals. **● Behavior:** They use some seventeen different vocal calls to communicate with each other as well as through facial expressions and posture.
SARUS CRANE **News Excerpt:** Agricultural biodiversity not only sustains the food-based bio-resources, but also helps in maintaining a viable population of various dependent flora and fauna, like the Sarus Crane. **Conservation status:** "Vulnerable" in the IUCN Red List.	**About Sarus Crane:** ● It is the tallest flying bird in the world, standing **152-156 cm** tall with a **wingspan of 240cm.** ● It weighs 6.8-7.8 Kgs. ● It is a social creature, found mostly in pairs or small groups of three or four. ● It is known to **mate for life with a single partner**, and its breeding season coincides with heavy rainfall in monsoon. **In India:** ● There are 15 crane species in the world out of which the **Sarus crane is the only resident species found in India.** ● The major population of Sarus cranes are found in **Uttar Pradesh, Gujarat and Rajasthan.** **Conservation Challenges:** ● **Local Threats** like egg mortality and habitat loss due to land use change: Farmers often perceive the cranes as pests due to their nesting habits in paddy fields, leading to the destruction of nests and eggs. ● **Broader Threats** like industrialization, further land use change, and the impacts of climate change: These threats not only directly impact the habitat of the cranes but also disrupt the delicate balance of ecosystems they rely on. ● **Lack of Awareness:** Many farmers may not be aware of its importance for the agrarian ecosystem which requires proper sensitization and education. **Limited Resources:** Implementing conservation initiatives requires resources such as funding, manpower, and technical expertise. In rural areas where resources are often limited, mobilizing support for conservation efforts can be challenging.
DIADROMOUS FISH **News Excerpt:** A new study has found that **62% of Marine Protected Areas (MPAs)** dedicated to protecting rare migratory fish species fall outside their core habitats. 	**Diadromous fish:** ● **Diadromous fish** are those which **migrate between saltwater** and **freshwater** environments. 　○ They are **sensitive to anthropogenic pressures.** 　○ **Barriers to migration like dams, weirs** and **locks** have a collective impact as these fish move between freshwater and marine habitats throughout their life cycle. ● They are **subjected to terrestrial, freshwater, and marine pressures** such as **agricultural and pollutant runoffs, habitat destruction, barriers to migration, fishing, bycatch,** and **climate change.** **Methodology of the study:** ● It was found that **only 55%** of modeled core habitats identified for diadromous fish **overlapped with the MPAs.** ● Of these protected areas, **only half had measures in place for the protection of the fish**, according to the study. ● The researchers analyzed specific individual species and found that **less than 30 percent** of endangered species such as Mediterranean twaite shad (Alosa agone) dwelt **in core habitat within MPAs.** Moreover, it was also found that though species such as the **European eel and European smelt** had **nearly 70% of their core habitats within MPAs,** only **9%** of these MPAs had

	specific steps to protect the European eel and **no measures existed to protect the European smelt.**
GERMAN COCKROACH **News Excerpt:** It is the most widespread roach of all roach-kind. A recent study reconstructed its origins and charted its unstoppable rise. 	**German Cockroach's impressive skill** ● Cockroaches can move incredibly fast, they can make themselves totally flat in order to squeeze through tiny cracks, and their feet are equipped with special adhesive organs, as well as claws, that enable them to **climb even smooth vertical surfaces.** ● Cockroaches are incredibly resilient. A roach's carapace can resist **900 times its body weight**, which makes it virtually **unsquashable**. ● Even most **insecticides have little effect** on them, and this is a big problem, because cockroaches act as **vectors** for a great many **bacteria, viruses and fungi.** **German cockroach's triumph:** ● It is the most widely found cockroach species around the world, present on every single continent. ● It is an unwelcome companion in human habitation, preferring **dark and damp places**. ● The German cockroach is **nocturnally active** and does not live in the wild. ● The species was **first classified by the Swedish naturalist** in 1776, shortly after the **Seven Years War**, when he collected specimens from Germany, hence the name "**German cockroach."** **South Asia origins** ● The German cockroach evolved from the **Asian cockroach (Blattella asahinai) about 2,100 years ago.** ● The two species (German cockroach and Asian cockroach) are still very similar today. According to the researchers, the insects originally adapted to human settlements in **India and Myanmar.** **German cockroach flourishes** ● The roaches found ideal conditions in houses that had **heating and internal plumbing**. The **mortality rate of these cold-sensitive insects** therefore dropped significantly, even in **chillier regions.** German cockroaches thrive in damp and warm buildings, as the only thing they don't tolerate well is **dryness**. In modern houses without damp corners, they **quickly die of thirst.**

MEITEI SAGOL
 	
News Excerpt:
The Government of Manipur collaborated with various organisations and associations to prevent the disappearance of the Manipuri Pony, also known as Meitei Sagol.
 	
	About the Metei Sagol:
	● **It is one of the 7 recognised horse and pony breeds of India.**
	● The Manipuri Pony is **known for its unique stamina, agility**, intelligence, speed, **maneuverability** and great **adaptability to harsh geoclimatic conditions.**
	● The breed is **regarded as the original polo** pony as **modern polo** is derived from the traditional *Sagol Kangjei* sport of Manipur.
	● They were also used in **sports like polo** and **horseraces**, they were also **utilised as mounts by cavalry** of the **Manipur Kingdom.**
	● The population of the Manipuri Pony, despite its high value, has been dwindling rapidly. According to the **17th Quinquennial Livestock Census in 2003, there were 1,898 ponies**, which decreased to **1,101 in the 19th Quinquennial Livestock Census in 2012**. Subsequently, the number further declined to **1,089 in the latest livestock census conducted in 2019**.
	Issues faced by the species:
	● According to the **Manipuri Pony Conservation and Development Policy (MPCDP)**, following factors are contributing to the decline of the pony in the state:
	  ○ **Shrinkage of wetlands,** the natural habitat of the Manipuri Pony, due to rapid urbanisation and encroachment.
	  ○ **Lack of polo grounds** and playing areas in rural Manipur.
	  ○ **Restriction** of pony usage **to only the game of polo**.
	  ○ **Uncontrolled diseases** affecting the ponies.
	  ○ Exodus of ponies to neighboring states and countries.
	  ○ The **Manipur government declared** the **Manipuri Pony as** an **Endangered Breed in 2013.**

FLAMINGOS **News Excerpt:** An Emirates aircraft flew into a flock of flamingos, killing 39 birds in Mumbai's worst ever human-wildlife conflict.	**About Flamingo:** ● The greater flamingo is the **state bird** of **Gujarat**. ● **Kutch desert sanctuary** of Gujarat state located in Bhuj is quite popular for its flamingo city. ● The greater flamingo has selective habitats as they require **salty lagoons, deep water, and the sea to survive.** ● It is the largest of the species and is most widespread among all Flamingos generally found in different regions of **Africa, Asia and Europe.** ● In Asia, their distribution range includes the coastal areas of **India and Pakistan** as these birds prefer salt water lagoons in coastal areas. ● They also inhabit **large alkaline** and **saline lakes**. ● Flamingos live, and feed in large flocks, which can consist of **thousands in a group.** ● They get their unique **pink colour** from the food they eat, which includes shrimp, plankton, algae and crustaceans. ● They are monogamous birds and lay only **one egg per breeding season**. ● **Key threats -** Habitat loss and disturbance, direct persecution by humans. ● **Greater Flamingo** (Phoenicopterus roseus) - **IUCN Status** - **Least Concern** ● **Lesser Flamingo** (Phoeniconaias minor) **- IUCN Status: Not Threatened**
GOLDEN-BACKED FROG **News Excerpt:** The rediscovery provides evidence of a historic land bridge between India and Sri Lanka during the late Pleistocene period or the Ice Age, says experts from the Zoological Survey of India.	**More About the News:** The rare Sri Lankan wetland frog, Hylarana gracilis, was spotted in the Palamaner forest range of the **Koundinya Wildlife Sanctuary** in the Chittoor district, Andhra Pradesh. ● This discovery brings the **total number of freshwater frog species in India to 20**. ● This rediscovery carries significance beyond merely finding a new species, as it provides **evidence for the historical land bridge** that once connected India and Sri Lanka as they are currently separated by approximately 800 kilometers. ● Amphibians serve as **important ecological indicators of ecosystem health**, and the **Eastern Ghats are home to 27 species of amphibians**, a notably lower number compared to the Western Ghats. Moreover, there **exists a minor genetic divergence of 0.2% to 1% between these populations, today.**
WILD HORSE SPECIES RETURNS TO KAZAKH STEPPES **News Excerpt:** After a long trip from Prague, three Przewalski horses rode off for the first time into the Kazakh steppe, the endangered species' natural habitat.	● Przewalski horses are commonly referred to as one of the world's last breeds of wild horse. ● The horses are the first of 40 which are to be released into the wild in Kazakhstan over the next five years. **More about the news:** ● These horses will initially be **under observation** in the **Golden Steppe nature reserve** before being left in the wild. ● There are now **2,000 Przewalski horses** around the world, mainly in **China** and **Mongolia.** ● **They are a stocky-built horse with huge heads**, which has a **common ancestor** with modern domestic horses but is **genetically distinct**. ● The horses are **capable of resisting harsh winters** like the ones in **Kazakhstan** where temperatures can drop below **minus 30 degrees C** and food runs scarce. **Altyn Dala Conservation Initiative:** ● The **Altyn Dala Conservation Initiative**, meaning "**golden steppe**" in **Kazakhstan**, is a major conservation effort launched in **2005**. ● It was to restore the **Central Asian steppe** and save the critically endangered **saiga antelope**.

	• These are protected areas covering about **5 million hectares** in **Kazakhstan**, with the **saiga** population rebounding to **1.3 million from just 50,000**. • The project also aids other species like wild **asses** and **Przewalski's horses**.

NEW ALGAL SPECIES DISCOVERED IN WESTERN GHATS
News Excerpt:
 	
A group of phycologists from the Department of Botany at Catholicate College in Pathanamthitta has discovered a new algal species in the **Western Ghats**.
	• Researchers discovered a **new algal species named "Oedocladium sahyadricum"** in the natural forests of **Kumbhavurutty region in Kollam district, Kerala.**
	• The researchers identified the species by **its unique features,** such as
	    ○ Being dioecious and terrestrial
	    ○ Having a superior operculum
	    ○ Possessing ellipsoid oogonium and oospore.
	• The alga was found as a **thin mat of elongated strands on damp soil**, with a velvety **green color** that turns **yellowish-green** as it matures, and likely **requires rainy weather for abundant growth.**
	• **Oedocladium** has potential practical applications in medicine, agriculture, and in the production of a natural pigment called **astaxanthin**, which has unique **biological activities and health benefits. The benefits are:**
	    ○ It protects Red Blood Cells (RBCs) from oxidative damage, which can impair their ability to deliver oxygen to body tissues as we age.
	    ○ Astaxanthin significantly improves blood flow. Better oxygenation of tissues leads to better overall cellular and tissue function.

ATLANTIC BLUEFIN TUNA **News Excerpt:** The **Atlantic bluefin tuna** now faces a new challenge of **warming seas**. **Marine heatwaves** are driving these fish to **migrate northward**, according to a recent study by **Trinity College Dublin**. 	**About Atlantic Bluefin Tuna** • Bluefin are the **largest tunas**, capable of **living up to 40 years**. • They **migrate across all oceans** and can dive to depths **exceeding 3,000 feet**. • **Their body**, retractable fins and eyes are **suitable for speed** like a torpedo. • Most Atlantic bluefin tuna are caught in the **Mediterranean Sea**. • It is **highly valued as a food fish** and is extensively fished throughout its range. • They typically visit the **Irish coast during summer and autumn** as part of their **annual migration**. • The study revealed that some bluefins are **migrating further north** than expected, a shift attributed to **rising sea temperatures**. • However, **lucrative commercial fishing** led to significant population declines, causing their **near disappearance** from **Ireland in the 2000s**. • Recently, **bluefins have reappeared** in their **historic Irish feeding grounds**, thanks to **improved management** over the past decade. **Conservation Status**: There are **three species** of bluefin: **Atlantic, Pacific, and Southern**. In which **Atlantic bluefin is largest** and **most endangered**. **As per IUCN latest data:** The **Atlantic bluefin tuna** (Thunnus thynnus) moved from **Endangered to Least Concern** while the **Southern bluefin tuna** (Thunnus maccoyii) **moved from Critically Endangered to Endangered**. The albacore (Thunnus alalunga) and **yellowfin tuna**s (Thunnus albacares) both moved from **Near Threatened to Least Concern**.

CATLA

News Excerpt:

Catla is one of the top ten species items mentioned in the **"The State of World Fisheries and Aquaculture 2024"** report by the **UN Food and Agriculture Organization (FAO).**

More about the News:

- Catla is the **eighth most produced aquatic species** globally, with over **4 million tonnes harvested in 2022.**
- Catla is **endemic to the riverine systems of northern India**, the Indus plain, and adjoining areas of Pakistan, Bangladesh, Nepal, and Myanmar. It has been introduced into almost **all riverine systems, reservoirs, and tanks across India.**

Key Findings from the Report:

- Catla was **traditionally farmed in the ponds of eastern Indian states** and later spread across the country during the **second half of the 20th century.**
- **Catla, along with Rohu (Labeo rohita) and Mrigal (Cirrhinus mrigala)**, are three of the most farmed fish in **India's inland fisheries.**
- The report highlighted **significant variations in harvested species** over the years, with notable regional differences..
- The report notes that **aquaculture production surpassed capture fisheries production** for the first time in 2022, contributing to the rise in production of species like catla.

Assam Gibbon

News Excerpt:

The Northeast Frontier Railway (NFR) has earmarked funds to construct **canopy bridges for India's only ape** "Assam gibbon" **to move across a railway track** bifurcating its prime habitat in eastern Assam.

About:

- Hoolock Gibbons, known as the **smallest and fastest of all apes**, inhabits tropical and subtropical forests in **Southeast Asia.**
- They have **high intelligence, distinct personalities, and strong family bonds** like other apes.
- Hoolock Gibbons **are India's only ape species.**
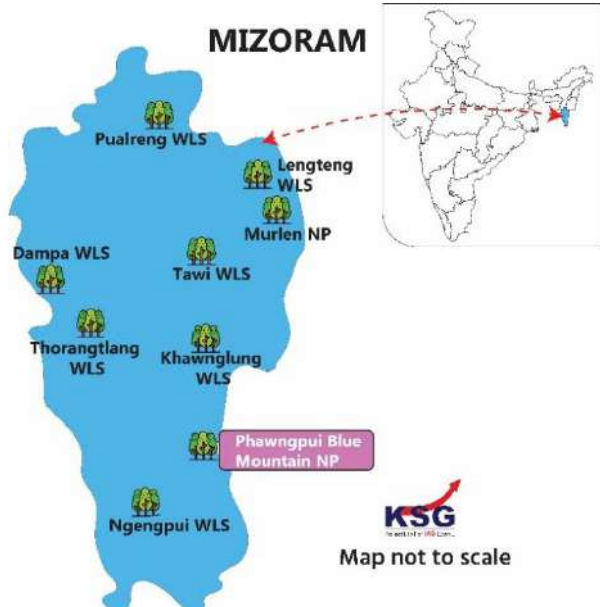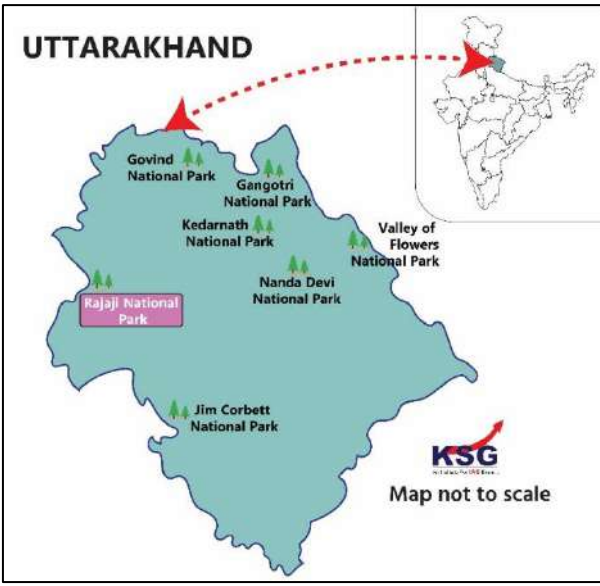
Characteristics:

- They are known for their **distinct white eyebrows, long arms, and a throat sac used for vocalizations.** Gibbons are **exclusively arboreal**, spending their lives in the treetops of tropical forests.
- Hoolock gibbons **are particularly sensitive to habitat disruptions, such as canopy gaps.**
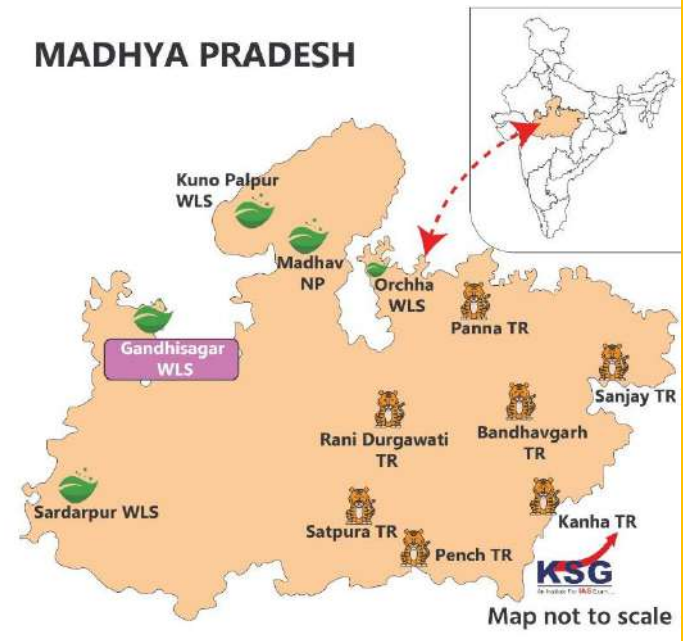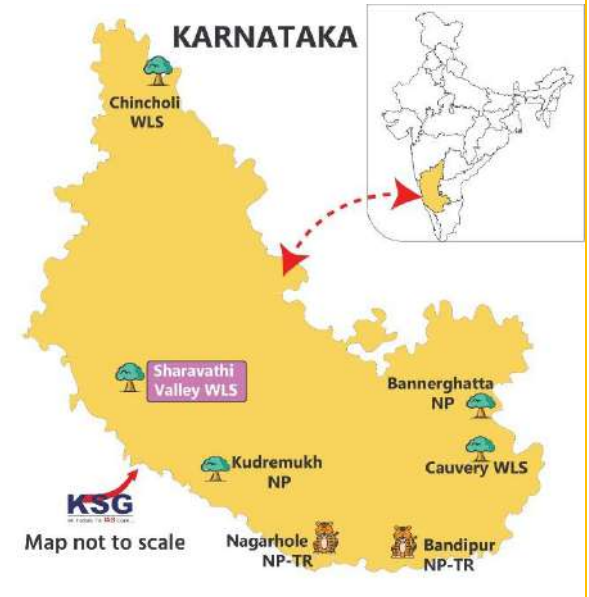- Fragmentation of their habitat can lead to **genetic isolation and threaten their populations.**

Hoollongapar Gibbon Sanctuary

- The Hoollongapar Gibbon Sanctuary is an isolated protected area of evergreen forest located in the **Jorhat district** of Assam, India.
- The sanctuary was officially established and renamed in **1997**. The **Hoollongapar Gibbon Sanctuary** contains India's **only gibbons** – the hoolock gibbons, and Northeastern India's only **nocturnal primate** the Bengal slow loris.
- The upper canopy of the forest is dominated by the **Hollong tree**, while the Nahar dominates the middle canopy.
- It is the **only sanctuary in India named after a gibbon** due to its distinction for containing the densest gibbon populations in Assam.

PROTECTED AREAS IN NEWS

PROTECTED AREAS	About
RAJAJI RAGHATI BIOSPHERE **News Excerpt:** Environmentalists have created India's first private biosphere **Rajaji Raghati Biosphere**.	**About Rajaji Raghati Biosphere:** ● It is a 35-acre private forest initiative led by ecologists Vijay Dhasmana known for restoring the Aravalli landscapes and Jay Gupta, a clean air activist. ● Situated **within the Rajaji National Park in Uttarakhand,** the biosphere overlooks the rocky white Raghati riverbed, nestled in the Shivalik foothills. ● It offers a promising approach **to combating deforestation** and **growing forests.** ● In 2023, the first phase of plantation was initiated by introducing approximately 80 species which is planned to incorporate an additional 35 to 40 new species in the biosphere in the upcoming monsoon. ● The land earmarked for RRB was previously barren and in a state of degradation. ● Thousands of non-native eucalyptus trees were removed within days of acquiring the land. Subsequently, the land was contoured to retain water, prevent erosion, and promote groundwater recharge. ● They are also working on a **second biosphere atop the Western Ghats:** above the Koyna River in the buffer zone of the Sahyadri Tiger Reserve near Pune, Maharashtra.
Phawngpui National Park **News Excerpt:** A rare hemi-parasitic terrestrial plant has been found in Phawngpui National Park.	**About Phtheirospermum lushaiorum** ● A very rare terrestrial hemi-parasitic plant ***Phtheirospermum lushaiorum*** is found from the dense forests near the **Phawngpui national park peak in Lawngtlai district of Mizoram,** marking a new species to science. ● The specific epithet "**lushaiorum" is named after the "Lushai" tribe of Mizoram**. ● They flower only during **July to September** and fruits are produced during August to October. **Phawngpui national park (Mizoram): (Blue Mountain Park)** ● It is located in Mizoram and got its name from the highest peak of Mizoram, Phawngpui Peak at the height of 2,157 m. ● It has been declared a National Park covering an area of about 50 sq.km. ● It is replete with diverse fauna typical of **Montane Subtropical forests** including **oak, rhododendrons** and rare species of **bamboos**.

	Birds: Blyth's tragopan (Vanga), Mrs. Hume's pheasant (Vavu), Firetailed sunbird (Dawithiama Ar), Grey sibia (Vasir), Wreathed Hornbill (Kawlhawk), Kaleej pheasant (Vahrit), White cheeked partriged (Varung) etc. **Animals:** Tiger (Sakei), Leopard (Keite), Clouded leopard (Kelral), Himalayan black bear (Savawm), Binturong (Zamphu), Serow (Saza), Ghoral (Sathar), Sambar (Sazuk), etc.
GANDHI SAGAR WILDLIFE SANCTUARY **News Excerpt:** The Gandhi Sagar Wildlife Sanctuary will be the **second home for cheetahs in India,** after the Kuno National Park.	**About Gandhi Sagar Wildlife Sanctuary:** ● The sanctuary is spread across an area of 368.62 sq km, in the districts of **Mandsaur** (187.12 sq km) and **Neemuch** (181.5 sq km) in **western Madhya Pradesh,** right on the border with Rajasthan. ● It sits atop a flat rocky plateau, with the **Chambal River** cutting the sanctuary into two almost equal halves. ● It is known for some rare wildlife species like **Wild Dogs (Dholes), Chinkara, Leopard, Otter, Mugger crocodiles.** ● In addition to this, common animals like **Spotted Deer, Sambar, Gray Langur, etc** are also seen in this sanctuary. ● Due to the **rocky terrain and exposed sheetrock**, the topsoil is shallow. This is behind **Gandhi Sagar's savanna ecosystem** comprising open grasslands interspersed with dry deciduous trees and shrubs. ● The forest of this sanctuary is part of **Khathiar-Gir dry deciduous forest** thus trees like Salai, Kardhai, Dhawda, Tendu, Palash, etc are found here. **It was notified in 1974 and added to the list of sanctuaries in 1984.**
SHARAVATHI VALLEY LTM SANCTUARY	**Sharavathi Valley:** ● It is located in the **Sharavathi River Valley** of **Sagar taluk** in **Shivamogga** District (Karnataka). ● The area of the Sanctuary is around **431.23 Sq. Km**. ● The Sanctuary lies in the **Western Ghats**, mainly covered with **evergreen and semi-evergreen forests** in the valleys and grassy patches on hilltops, and is immensely rich in flora and fauna both in variety and diversity. ● It is rich in species like **Dhoopa, Gulmavu, Surahonne, Mavu, Nandi, etc.** It also harbors wildlife like **Bison, Spotted deer, Tiger, Panther, etc.**

MAP CONNECT

MYITSONE DAM

The proposed project on the Ayeyarwady River in Myanmar's northern Kachin state has been revived.

HALMAHERA ISLAND

Mount Ibu in Indonesia, located on this remote island, has erupted three times in a single day, emitting red lava and clouds of grey ash.

ENGA PROVINCE

It is believed that 2,000 people were buried alive in a landslide that struck Papua New Guinea's Enga province.

SINIYAH ISLAND

Archaeologists have discovered the remains of the ancient city of Tu'am. This city in UAE was once renowned for its thriving pearl trade.

BEDOUT ISLAND

Tropical Cyclone Ilsa, a Category 5 storm, is estimated to have wiped out 80-90% of this Australian Island's seabird population.

NARVA RIVER

Russia's dispute with Estonia over navigation buoys on the Narva River, which forms part of the boundary between the two nations.

SOMALIA

After more than 50 years, Somalia has rejoined the UN Security Council as a non-permanent member for two years starting 2025.

OHIO STATE

Last year's derailment of freight train carrying hazardous materials led to high levels of pollutants across atleast 16 US states & southern Canada.

PANAMA

It is poised to become the first nation to relocate an entire indigenous Gunas community due to climate change.

ATACAMA TRENCH

In this 8,000m deep formation along the length of Peru and Chile, scientists discovered Chile's deepest and northern most cold seeps at 2,836m.

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MAP NOT TO SCALE

PHILOSOPHY OF THE MONTH

THE PHILOSOPHY OF MIDDLE PATH: CURRENT RELEVANCE

While the **world has changed significantly since the Buddha's time**, the core principles of the Middle Path remain remarkably relevant to navigating the challenges and opportunities of the 21st century. The world is facing a **"Poly-Crisis"** right now, and this has entailed the need for a middle path in all our lives.

The Middle Path, emphasizes moderation and balance, steering away from extremes of indulgence and self-denial. In a world marked by **rapid changes, heightened stress, and information overload,** the Middle Path offers a timeless and practical guide to promoting mental well-being and fostering harmonious relationships.

As the Vice-President of India recently remarked the **teachings of Buddha are not relics of the past, but a compass for our future.** These challenges to humanity are existential and can be addressed by common resolve and collaborative and collective approaches. The principles of Bhagwan Buddha are no less than a beacon of hope and light to catalyze the convergence of all stakeholders on a common platform. **As the world is faced with disruptive technologies, Buddha's Middle Path shows us the way in addressing contemporary challenges such as climate change, conflict, terrorism, and poverty.**

In the midst of a **global pandemic, economic instability, and social unrest**, the Middle Path philosophy encourages individuals to find a **middle ground between excessive worry and complacency**. The Middle Path teaches us to acknowledge the reality of suffering and impermanence while also **recognizing moments of joy and contentment.** This can be immensely valuable in managing stress, anxiety, and the overwhelming pace of modern life.

Furthermore, in a polarized world where extreme views and opinions often dominate public discourse, the Middle Path can serve as a beacon of reason, promoting dialogue, understanding, and empathy.

Undeniably, Buddha's Middle Path introduced a fresh perspective to India's religious landscape, charting a middle course between the strict practices of the Jains and the more open-minded approach of the sacrificial Brahmanas.

Furthermore, the Middle Path's emphasis on compassion and moderation resonates with the growing need for social harmony and environmental awareness. By promoting empathy and understanding, it can contribute to bridging divides and fostering a more peaceful world.

Its basic ideals of peace, harmony, brotherhood, and the principle of live and let live have not been lost in India and have been finally legalized and accomplished by the government of the Republic of India in 1949-50. In conclusion, the relevance of the Buddhist Middle Path in the current scenario lies in its ability to **offer a timeless philosophy of balance, mindfulness, and compassion**.

CONTEMPORARY ETHICS CASE STUDY

Q. In a small village there lived an elderly woman named Nazia. Frail and impoverished, she relied on her monthly pension to make ends meet. Despite the government's regulation of doorstep pension delivery, Nazia was forced to embark on a long and arduous journey to collect her meagre sustenance on a hot summer day.

The local authorities, responsible for ensuring the welfare of the elderly, had failed in their duty to provide the promised doorstep delivery of pensions. Their negligence left Nazia and many others like her vulnerable and deprived of their rights. As Nazia finally reached the government office, she saw that the officials seemed indifferent to her struggles. She wondered if these officials were aware of the hardships faced by individuals like her.

Driven by her determination to seek justice, Nazia voiced her concerns. She joined forces with other affected pensioners, forming a collective to demand accountability and change. Through peaceful protests and media attention, their voices echoed across the nation, shedding light on the injustices faced by the elderly.

(a) What is the root cause of such insensitive behaviour from the officials? Explain in detail.

(b) Do you think Nazia should have quietly collected her pension and left without causing any trouble?

(c) What are the ways through which public service delivery could be enhanced? Mention a few.

(d) What ethical values are the officials lacking and how can these be inculcated into them?

(Answer in 250 words) 20

THEMATIC ESSAYS

1. Peace is bred by Education.
2. A weapon against poverty is technology.
3. The major problems in the world are the result of the differences between how nature works, and the way people think.
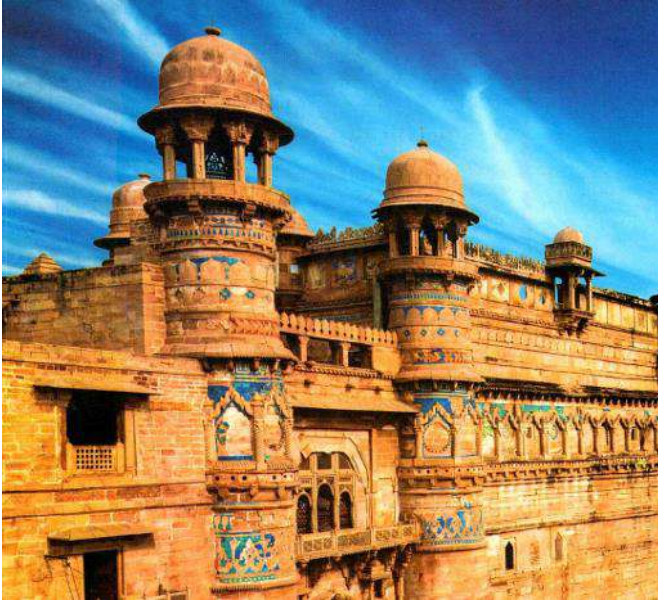
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SNAPSHOTS: THEMES OF THE MONTH

FORTS OF INDIA (YOJANA)

Forts are commonly understood as robust structures designed for protection, typically surrounded by walls, palisades, or fences, often complemented by defensive features like moats or multiple fortified layers. These structures, strategically positioned within a kingdom's towns, cities, or capitals, were integral to the cultural and military landscapes of ancient India. They form a significant part of India's architectural legacy, constructed by various dynasties over centuries.

Type of fort as classified by Kautilya's "Arthashastra":

Jal-Durga (Water Fort)

- **Antardvipa-Durga (Island Fortress):** This type of fort is surrounded by natural water bodies such as seas or rivers, isolating it from direct land access. Murud-Janjira is a prominent example of an island fortress in India.
- **Sthala-Durga (Plain Fortress):** Surrounded by artificial moats or irrigated by a river, providing a protective barrier against ground attacks. Gagron, Deeg, Lohagarh, and Shergarh forts in Rajasthan are notable examples of plain fortresses.
- **Dhanvana or Maru-Durga (Desert Fort):** These forts are situated in arid desert regions, at least 5 yojanas (approximately 73 km) wide, utilizing the natural desert landscape for defence. Jaisalmer, Lodrava, and Bhatner (Hanumangarh) forts exemplify desert forts in India.

Giri-Durga (Hill Fort)

- **Prantara-Durga:** Located on the flat summit of a hill, these forts maximize visibility and defensive advantage from high ground. Chittorgarh and Gwalior forts are classic examples of hill forts with flat summit fortifications.
- **Giri-parshva-Durga:** The fortifications extend not just on the summit but also down the hill slopes, incorporating the natural terrain into the defence strategy. Bundi's Taragarh and Ajmer's Taragarh forts are good illustrations of hill forts extending down the slopes.
- **Guha-Durga:** Positioned in a valley surrounded by hills, these forts utilize the natural geography for defensive purposes, often with outposts and signal towers. Specific examples from historical records might include forts strategically placed in valleys between hills.

Vana-Durga (Forest Fort):

- Surrounded by dense forests, these forts are protected by natural barriers and are often difficult to approach due to the dense foliage. Ranthambore Fort is a well-known forest fort in India.
- **Khanjana-Durga:** Built on marshy land and surrounded by thorny forests, these forts are challenging to access due to both natural and man-made defences. Historical references might provide specific examples matching this description.
- **Sthambha-Durga:** Constructed in the midst of dense forests among tall trees, these forts typically lack sufficient water sources and rely on their dense surroundings for defence. Historical texts and archaeological findings may provide insights into specific forts of this type.

Mahi-Durga (Earthen Fort)

- **Mrid-Durga:** Surrounded primarily by earthen walls, these forts use soil and natural materials for their defensive structure. Specific forts from ancient texts or historical accounts might match this description.
- **Parigha-Durga:** Surrounded by both earthen walls and stone or brick walls, with specific dimensions (height and width), enhancing their defensive capabilities. Examples with detailed architectural features and dimensions could be sourced from historical records.
- **Panka-Durga:** Situated amidst marshy land or quicksand, these forts utilize the difficult terrain as a natural barrier against attacks. Historical references might provide specific instances of forts built in such challenging environments.

Nri-Durga (Human Fort):

- These forts are defended by experienced warriors and often form a significant part of a city's defensive system, with a large permanent garrison. Nagaur Fort exemplifies a human fort strategically defended by skilled warriors and integrated into the urban defence network.

Early fortifications and protected citadels in the Indian context utilized three major methods:

- **Earthen Ramparts:** These were created using the soil dug out from adjoining protective dry moats or ditches. These ramparts flanked areas needing protection.
- **Rubble and Earth Ramparts:** Large and tall protective ramparts were made using rubble and earth, with additional earth on the outer side.
- **Stone and Masonry Forts:** This method became the basis for most of India's forts during the historical period.

Early Fortifications

- The earliest archaeological evidence comes from over 1,050 known sites and settlements of the Proto-Historic Harappan Culture, dating between c. 3000 and c. 1500 BCE, with over 416 sites in Pakistan and over 625 sites in India.
- By the 4th century BCE, fortified settlements or urban centres and cities began to emerge across India. These include the capitals of the 'Solasa Maha-Janapadas' (Sixteen Great Kingdoms and Republics), such as Pataliputra, Kosambi, Ujjain (Ujjayani), Kashi, Mathura, and Takshashila (Taxila).

Evolution of Fortifications

- Well into the 7th century CE, the Indian subcontinent primarily had fortified citadels, cities, garrison encampments, or semi-fortified landscapes, rather than the hill-top or hill-slope fortresses commonly associated with Indian forts today. During the Mauryan, Gupta, Pratihara, Vakataka, Cholas, and Pandya dynasties, the cultural landscapes featured more fortified cities than massive defensive forts.
- From the 10th to the 11th centuries, the capital of kingdoms began to take the form of defensive forts rather than fortified city settlements.
- The introduction of artillery in the 16th century brought significant changes to fort construction and design. The advent of gunpowder and cannons led to thicker walls, further pushing out of bastions and other modifications similar to European forts.

British Influence: The British established trading posts along the coast and constructed protective forts at each post, such as Fort Mumbai, Kolkata's Fort William, and Chennai's Fort St George. The vulnerabilities of these earlier forts, hostilities with the French, and the growing power of the British East India Company led to stronger and more complex designs for subsequent constructions. The design of Fort St George, for example, reflected the influences of the French engineer Vauban.

Current Status: Today, there are nearly 7,000 formally documented and listed forts across the Indian Subcontinent, with many smaller structures considered ancillary and defensive fortifications. However, only 1,064 of these forts and fortifications are protected.

Historical References: Literary and historical references, along with archaeological, architectural, and art examples, provide extensive knowledge about various city walls and fortifications across India. Texts on architecture, such as the Mansar, Mayamatam, Shilpa-Ratna, and Samrangana Sutradhara, composed in different periods and regions, offer references to forts and fortifications. Kautilya's 3rd-century text 'Arthashastra' mentions six major types of forts differentiated by their modes of defence.

DEFENCE ARCHITECTURE OF FORTS OF ANDHRA AND TELANGANA

The earliest references to forts in the Andhra Desa region (modern Andhra Pradesh, Telangana, and parts of Maharashtra) are found in the accounts of **Megasthenes and Pliny.** They documented the presence of 30 walled towns and numerous villages. Archaeological remains suggest around 160 forts and fortified villages in Andhra and Telangana. These forts, traditionally classified as **Sthala, Girl Jala, and Vana Durgas**, offer insights into past societies.

- **Kondapalli Fort (NTR District, Andhra Pradesh):** Located atop the Eastern Ghats, this fort has two main gates and an Indo-Saracenic-style palace complex. Initially part of the Western Chalukyan territories, conflicts were seen between the Reddy-Velama rulers, who later fell under the Gajapatis, Vijayanagara, and Qutb Shahi rulers.
- **Kondaveedu and Addanki Forts (Bapatla and Palnadu Districts, Andhra Pradesh):** These forts were significant for the Reddy kingdom in the early 15th century. They served as capitals before becoming contested among the Gajapatis, Vijayanagara, Bahamani powers, and Qutb Shahis. Kondaveedu Fort had a formidable double-layered defence system.
- **Udayagiri Fort (PSR Nellore District, Andhra Pradesh):** Perched on a hill, this fort was initially under Vijayanagara rule and later under the Gajapatis. It features thirteen fortresses with bastions, gateways, water reservoirs, and granaries. It was later controlled by the Qutb Shahis and the East India Company.
- **Gooty Fort (Anantapuramu District, Andhra Pradesh):** Known for its large fortification with seven concentric walls and fourteen gateways, this fort was initially a Vijayanagara province. It later faced challenges from the Adil Shahis, Qutb Shahis, and Mughals. Morari Rao, a Maratha chief, repaired the fort extensively before it was annexed by the East India Company.
- **Chandragiri Fort (Tirupati District, Andhra Pradesh):** This fort encompasses an upper and lower section, with stone ramparts, temples, and structures like Rani Mahal

and Raja Mahal. It became Vijayanagara's capital in the late 16th century.

- **Warangal Fort (Warangal District, Telangana):** A testament to the Kakatiya legacy, this fort features massive granite stone blocks, concentric circular defenses, and a high-security tower. It houses significant archaeological relics and structures from the Kakatiya period.
- **Bhongir Fort (Yadadri Bhuvanagiri District, Telangana):** Flourishing under Kakatiya rule, it was later controlled by the Bahamanis and Qutb Shahis. Situated atop a steep hill, it has architectural traits from both periods.
- **Koilkonda Fort (Mahbubnagar District, Telangana):** A border fort between the Vijayanagara and Qutb Shahi kingdoms, it features defensive walls with bastions, gateways, and structural remnants of the commander's house, granary, and an Idgah.

FORTS OF GUJARAT: GUARDIANS OF LEGACY AND LORE

Gujarat, a region rich in history and culture, boasts numerous magnificent forts that stand as timeless monuments to its vibrant heritage. From the rugged hills of Junagadh to the serene shores of Diu, each fort narrates a saga of valour, conquest, resilience, and architectural brilliance. They bear witness to **the syncretic blend of Hindu, Islamic, and European influences that characterize Gujarat's cultural landscape,** exemplified in the architectural styles, religious traditions, and culinary delights of the region.

Adi-Kadi-Vav-Uparkot Fort

Notable Forts of Gujarat

- **Uparkot Fort (Junagadh):** Uparkot Fort, located in the heart of Junagadh, is a treasure trove of ancient history, believed to have been built in 319 BC by the **Mauryan emperor Chandragupta**. Carved out of the rocky terrain, this fort served as a stronghold for various dynasties, including the Mauryas, Guptas, and Chudasamas. Its strategic location atop a steep hill provided natural defences against invasions, making it an impregnable fortress. Legend has it that the fort once withstood a 12-year siege, having been besieged 16 times throughout its history.
- **Pavagadh Champaner Fort:** Situated atop a volcanic hill near the town of Champaner, Pavagadh. Champaner

Fort is a **UNESCO World Heritage Site.** It was built over centuries, bears witness to the confluence of diverse influences and the ingenuity of its builders, making it a cherished landmark in Gujarat.

- **Diu Fort:** Located on **the serene island of Diu** off the coast of Gujarat, Diu Fort is a testament to the region's rich historical, cultural, and architectural heritage. Today, it is a landmark of Diu and one of the Seven Wonders of Portuguese Origin in the World.
- **Bhujiya Fort:** The historic Bhujiya Fort is located on the top of Bhujiya Hill on the outskirts of the town of Bhuj in the district of Kutch. Named after Bhujang, a snake believed to provide protection, the fort has strong cultural significance, with the Snake God being worshipped by the people.
- **Bhadra Fort:** Situated in the walled city area of Ahmedabad, **Bhadra Fort was built by Ahmad Shah I in 1411.** The fort adopted the name Bhadra after a temple of Bhadra Kali, a form of Laxmi, established during Maratha rule. Previously known as **Aark Fort.**

FORTS IN DELHI

The forts of Delhi stand as witnesses to the city's past. Delhi is often described as comprising 7 to 11 cities, depending on the historian. Its ancient history traces back to the **Mahabharat, where the Pandavas built the famed Indraprastha** on the western bank of the Yamuna River. Some believe that this ancient city existed at the site of the Purana Qila (Old Fort), with ongoing excavations providing further insights.

Notable Forts of Delhi

- **Qila Rai Pithora:** The earliest fort in Delhi, built in the 11th century by Tomar ruler Anangpal, was Lal Kot. This fort was later expanded by Prithviraj Chauhan, becoming Qila Rai Pithora, the first of the Seven Cities of Delhi. The fort's thick ramparts and high walls, with remnants visible in Saket, Mehrauli, Kishangarh, and Vasant Kunj, reflect its historical importance. The fort was later captured by Muhammad of Ghor in 1192 CE and developed further by his commander Aibek, who built **the Quwwat-ul-Islam Mosque and the Qutub Minar within its premises.**
- **Tughlaqabad Fort:** Built by Ghiyas-ud-din Tughlaq in the 14th century, Tughlaqabad Fort was constructed to resist Mongol attacks and serve as the capital. This fort, part of the third city of Delhi, is characterized by its massive stone fortifications and circular bastions. It once had 52 gates, of which 13 remain today. The fort also contained rainwater tanks and a large reservoir connected to Ghiyas-ud-din Tughlaq's Tomb by an elevated causeway.
- **Adilabad Fort:** Adjacent to Tughlaqabad Fort, Adilabad Fort was built by **Ghiyas-ud-din's son, Muhammad-**

bin-Tughlaq, in 1327-28 AD. It serves as an extension of Tughlaqabad and shares a similar architectural style.

Purana Qila
(Old Fort)
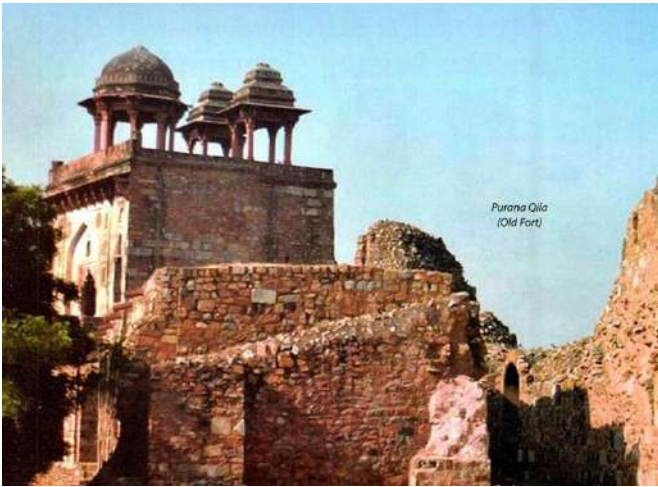
- **Purana Qila:** Built by Mughal emperor Humayun and completed by Sher Shah Suri, Purana Qila (Old Fort) stands on a site believed to be the ancient Indraprastha. The fort's significant structures include the **Qila-i-Kuhna Mosque, Sher Mandal, Lal Darwaza, and Khairul Manazil.** The mosque, built in 1541 AD by Sher Shah, showcases a blend of Islamic and Hindu architectural motifs.

- **Red Fort:** Commissioned by Emperor **Shah Jahan in 1638,** the Red Fort served as the main residence of the Mughal emperors for nearly 200 years. Designed by **Ustad Ahmad Lahauri**, the fort features intricate carvings, elegant domes, and sprawling gardens. Key structures within the fort include the **Diwan-i-Aam, Diwan-i-Khas, Rang Mahal, and Moti Masjid**. The Red Fort remains a symbol of India's sovereignty, with the Prime Minister hoisting the national flag here on Independence Day. **It was added to the UNESCO World Heritage List in 2007.**

These forts of Delhi are not just historical sites but speaking monuments that recount the city's rich and diverse heritage. They reflect the various dynasties and cultures that have shaped Delhi's history, offering a glimpse into the past through their architecture and enduring legacy. Their preservation and storytelling continue to captivate visitors, offering glimpses into the rich tapestry of Delhi's history and heritage.

BEKAL FORT: A FUSION OF CULTURE AND HISTORY ECHOING THROUGH TIME

In the northernmost reaches of Kerala, where the Arabian Sea whispers secrets to the shore, lies Kasaragod, a vibrant district brimming with cultural and linguistic diversity. Often called the **"Land of Seven Languages,"** Kasaragod boasts a unique heritage, reflected in its people's use of over ten languages, including Malayalam, Tulu, Kannada, Konkani, Urdu, Marathi, and the fascinating scriptless language Byari.

Bekal Fort: A Sentinel of History

Standing sentinel amidst this dynamic medley is Bekal Fort, a majestic structure resonating with stories of a dramatic past.

Once part of the powerful Mahodayapuram kingdom, the fort transformed into a crucial port town under the rule of Kolathunadu in the 12th century. Recognizing its strategic and economic potential, the Keladi Nayakas (Ikkeri Nayakas) conquered the region in the 16th century. The Nayakas' reign marked a pivotal moment. They constructed the formidable Bekal Fort not only to defend against outside attacks but also to aid their own campaigns in Malabar. This era also saw the rise of Chandragiri Fort, another testament to the Nayak dynasty, standing proudly nearby.

The Fight for Control

The fight for control continued as the Kolathiris challenged the Nayak dominance. This conflict finally ended with the rise of Haider Ali, who brought Bekal under the Mysore Sultanate. The fort then became a vital military outpost for Tipu Sultan's Malabar campaign.

With Tipu Sultan's fall in 1799, the fort transitioned into the hands of the British East India Company. During this period, Bekal served as the headquarters of the newly formed Bekal Taluk. Following India's independence, Bekal became part of Kerala in 1956.

VELLORE FORT: THE GREAT GARRISON OF SOUTH INDIA

The Vellore Fort is one of the classical examples of medieval architecture in Tamil Nadu. This 16th-century fortress, built by the Vijayanagar Empire, served as its headquarters for many decades. The fort was constructed by Chinna Bommi Nayak and Timma Nayak, subordinate chieftains under Emperor Sadasiva Raya of the Vijayanagar Empire, in 1556 AD.

The fort gained strategic prominence following the re-establishment of Vijayanagar rule with Chandragiri as their fourth capital after the Battle of Talikota. The Aravidu Dynasty, which held the title of Rayas in the 17th century, resided in this fort, using it as a military base in the War of Toppur in the 1620s.

- **Strategic and Historical Significance:** The Rayas had long-running battles with their longtime rivals, the Turko-Persian Bijapur Sultans, and with their subordinates in the Nayaks of Madurai and Gingee over the non-remittance of annual tributes. In 1650, Sriranga Raya allied with the Mysore and Tanjore Nayaks and marched south to attack Gingee and Madurai. The Bijapur Sultan dispatched a large army and captured Vellore Fort, marking the end of the last direct line of the Vijayanagar Empire.

- **The Maratha and Mughal Eras:** In 1676 AD, the Mavalas, under the Great Maratha King Shivaji, captured Tanjore first and appointed his brother Ekaji as its ruler.

Later, he captured Gingee Fort in 1677 AD but left the task of attacking Vellore to his subordinates. In 1678 AD, after a prolonged siege, Vellore passed into the hands of the Marathas. In 1707 AD, the year that the Mughal Emperor Aurangzeb died, the Delhi army under Daud Khan captured Vellore Fort after defeating the Marathas.

- **British Rule and the Vellore Mutiny:** Following the decline of the Madurai Nayaks and coinciding with the emergence of the British on the Madras coast, conflict developed between the Nawab and his sons-in-law. The Nawab was supported by the British and rival claimants by the French, resulting in the Carnatic wars. The British East India Company took possession of Vellore Fort with relative ease and used the fort as a major garrison until Indian independence in 1947.

- In 1780, the **Vellore Fort was designed by Haider Ali** during the Second Anglo-Mysore War, but the British garrison held out for over two years before the siege was lifted. The Vellore Mutiny (1806-1807 AD) was the first large-scale mutiny by Indian soldiers against the British, setting the stage for the 1857 freedom struggle.

MEDIEVAL FORTS AND PORTS

In Maharashtra, many coastal forts are built on headlands or capes, particularly at the mouths of river creeks. Twenty-eight rivers from the Sahyadri mountains flow about 50-60 km to the Arabian Sea, forming creeks. These creeks often have forts at both their mouths and upstream, such as Revdanda and Korlai on Kundalika Creek. Inland forts are those more than two kilometres from the coast, serving as hinterlands for ports.

Trade and Ports on the West Coast of Maharashtra

- **Ancient Ports of the North Konkan Coast**: The chief ancient ports on the North Konkan coast were **Sopara, Sanjan, Chaul, Thana, and Kalyan.** These ports were hubs of trade and commerce with the West from very early times. For instance, the **Kanheri inscriptions from the fifth century mention Chemula (modern Chaul), noting that a merchant from Chaul funded the excavation of the cave.** This merchant was renowned as "famous among the millionaires of the great city of Chemula as one whose widespread fame had bathed in the three seas."

- A copper plate grant from Silahara king Anantdev (1094) equated Chaul's status with that of Shurparaka (Sopara) and Shristhanaka (Thana). Chaul appears in various travel accounts as Saimur or Jaimur, documented by Arab travellers like Masudi (915), Muhalhil (941), Al Istakhri (950), Ibn Haukal (976), Al Biruni (1030), and Al Idrisi (1130).

- In later centuries, European travellers such as Nikitin (1470), Barbosa (1514), Fitch (1584), and others also visited Chaul. **Ibn Batuta** noted colonies of Muslim traders and sailors on the west coast and a growing number of mosques. **Marco Polo (1290)** mentioned that although a Hindu king ruled the Malabar region, trading activities were controlled by mercantile Arabs.

- **Medieval Trading Activities:** During the medieval period, two types of trading activities existed: internal trade among the powerful dynasties (Nizam Shahi, Adil Shahi, and Bahamani) and external trade with other states or countries through trade centres and harbours.

- Ports like Vasai, Kalyan, Chaul, and Danda Rajpuri belonged to the Nizam Shahi rulers. Meanwhile, Bagmandala or Bankot, Dabhol, Rajapur, Kharepatan, Satavali, and Banda were under the Adil Shah dynasty.

- Malabar exported medicines, wax, palm sugar, emery stone, and copper while importing cotton, rice, wheat, and millet. Muslin woven cotton and silk were exported from Chaul and Dabhol to Diu in Gujarat. Port Mandala imported spices and copper.

- **Portuguese Influence and Fort Construction:** In the 15th century, the Portuguese challenged the Arab monopoly in trading. With superior ships, technology, military power, and strong willpower, the Portuguese dominated the Arabs, leading to the decline of Indian Muslim and Arab supremacy on the coast. This shift resulted in the rise of the Portuguese, British, and Dutch influence. Consequently, this transition led to the construction of numerous forts along the west coast of Maharashtra.

Ports and Forts in Raigad District

Table 1: Forts and ports situated on the creeks at Raigad district

Sr.	Name of the River/Creek	Name of the Primary Port	Fort at Primary Port	Name of the Secondary Port (Hinterland)	Fort at Primary (Hinterland) Forts
1	Panvel Creek	Nhava	Gharapuri	Belapur	Belapur
2	Karanja Creek	Karanja/Uran	Karanja/Dronagiri	Nagothane	Sagargad
3	Thal	Thal	Underi/Khanderi	Mahagaon	Ramdarane
4	Kundalika	Chaul	Rajkot/Revdanda/Korlai	Roha/Ashtami	Birwadi/Avachitgad
5	Natural Creek -Mandad	Danda Rajpuri	Danda Rajpuri/Janjira	Natural Creek- Mandad	Tala/ Mandad/ Ghosala
6	Savitri	Bankot/ Bagmandala	Bankot	Mahad/Dasgaon	Mahad kot/ Dasgaon

Various types of forts were constructed according to the landscape in the medieval period by different rulers in the Raigad district. Only the coastal and hinterland forts located on the Kundalika and Mandad creeks have been selected for the present study. The location of forts on the port side (both primary and secondary) has geopolitical significance. Detailed information relating to coastal and hinterland forts and ports based on exploration has been given.

- **Chaul) and Revdanda** are two separate forts located in close vicinity, with Chaul also known as Agarkot or, historically, Rajkot. The main entrance is at the Katkar Ali boundary in Chaul. Chaul and Revdanda (Upper and Lower Chaul) are 3 km apart, both near the coast on the north bank of the Kundalika River. **Excavations reveal continuous habitation from the Early Historic to medieval periods, with an ancient embankment and jetty discovered**. Chaul was a major port from the 3rd

century BC to the 18th century, with Rajkot fort built to protect its trading operations.

- **Revdanda Fort** is also on the north bank of the Kundalika River. The **Portuguese constructed the fort between 1520 and 1721**. It is surrounded by seawater on three sides and a deep moat on the land side. According to Marco Polo, Chaul was predominantly Muslim, while Revdanda was a Portuguese town.
- **Korlai Fort is at the mouth of Kundalika Creek,** 50 meters from the seashore, completely fortified with walls and bastions. It is 861 meters long and 27 meters wide, with eleven gateways. Initially built by Burhan Nizam Shah in 1521, it was captured by the Portuguese in 1594 and reconstructed in 1646 by D. Felippe Mascarenhas. The British captured it in 1818.

Hinterland Forts

- **Birwadi Fort** is 18 km southwest of Roha, on a hill perpendicular to the Sahyadri main range. Built by Chhatrapati Shivaji Maharaj in 1657, it monitored Siddi movements and trading around the Kundalika River after the Siddis retreated to Janjira.
- **Avchitgad** is a hill fort 298 meters high, 5 km from Roha, north of the Kundalika River near Medha village. Built by Chhatrapati Shivaji Maharaj, it was captured by British Colonel Prother in February 1818.

Kundalika River: Today, Kundalika Creek is known for adventure and water sports. A traditional festival, worshipping the Sea God "Koli Bhavani," is celebrated in the first week of October by the local fisherman community in Chaul. This tradition has influenced recent developments, with villagers upgrading their homes and living standards.

TRIBAL ART AND CULTURE (Kurukshetra)
INNOVATIVE SCIENCE PROJECTS TO PRESERVE TRIBAL CULTURE

In the realms where tradition meets innovation, a profound renaissance is underway. In the heartlands of tribal communities, where ancient wisdom intertwines with modern aspirations, a new narrative is being written—one that celebrates the convergence of science and cultural preservation. This emerging narrative highlights the transformative power of innovative science projects in preserving and revitalizing indigenous heritage. These efforts are crucial as globalization and modernization threaten the survival of age-old customs and traditions. India is remarkable for its unity amid diversity, boasting the world's second-largest tribal population. According to the 2011 Census, 8.9% of India's population is classified as tribal. These communities possess rich traditions, cultures, and heritage with unique lifestyles and customs.

Innovative Science Projects in Tribal Communities

Across the diverse landscape of tribal communities, innovative science projects are harnessed as powerful tools to preserve indigenous heritage. In an era marked by rapid globalization and modernization, these initiatives stand as beacons of resilience, offering hope for the survival and revitalization of age-old customs and traditions. The innovative science projects represent a convergence of traditional wisdom and cutting-edge research, embodying a holistic approach to preserving indigenous knowledge systems.

As communities grapple with the challenges of environmental degradation, socio-economic marginalization, and cultural erosion, these initiatives offer not only solutions but also a reaffirmation of the intrinsic value of tribal heritage.

Government Efforts in Preserving Tribal Culture
The Department of Science & Technology (DST) under the Ministry of Science & Technology, and the Ministry of Environment, Forest and Climate Change have recognized the importance of preserving the rich cultural heritage of tribal communities and have taken significant steps to support science projects aimed at this goal. Through various initiatives and schemes, the government actively promotes research, documentation, and conservation efforts that integrate scientific knowledge with traditional wisdom.

Efforts from the Department of Science & Technology

- **Documentation and Preservation:** DST supports projects aimed at documenting and preserving the indigenous knowledge systems of tribal communities. These projects often involve collaborations between researchers, anthropologists, and tribal elders to record traditional practices, medicinal knowledge, oral histories, and cultural rituals. By digitizing and archiving this information, DST helps ensure the continuity and accessibility of tribal culture for future generations.
- **Cultural Heritage Conservation:** DST is involved in science projects aimed at conserving and restoring cultural heritage sites associated with tribal communities. This may involve using advanced scientific techniques such as remote sensing, geographic

information systems (GIS), and 3D modelling to assess and monitor the condition of heritage sites, plan conservation interventions, and raise awareness about their significance.

- **Interdisciplinary Research:** DST promotes interdisciplinary research that integrates traditional ecological knowledge (TEK) with modern conservation science to protect biodiversity and cultural landscapes in tribal areas. These projects aim to understand the ecological wisdom embedded in tribal cultures and develop conservation strategies that respect indigenous practices and values.

- **Funding and Support Programs:** Through programs like the Science and Technology for Harnessing Innovations **(SATHI)** scheme and the Science for Equity, Empowerment, and Development **(SEED)**, DST provides funding and support for science projects that promote grassroots innovation, entrepreneurship, and social inclusion among tribal populations to empower tribal communities and address local challenges using scientific knowledge and technology.

Efforts by the North East Centre for Technology Application & Reach (NECTAR) under DST

NECTAR is providing technology applications through various science projects and garnering support for the sustainable harnessing of tribal cultural heritage. Projects include:

- **Honey Production and Eco-friendly Yoga Mats**: NECTAR has expanded honey production in Nagaland and produced eco-friendly yoga mats from water hyacinths.

- **Bamboo-Based Technologies:** NECTAR promotes the use of bamboo and bamboo-based composite materials in construction. Projects include the development and manufacture of bamboo-based sanitary and electrical products to replace plastic and metal with bamboo, providing sustainable livelihood and employment opportunities.

- **State Specific Technology Demo Centres**: Bamboo-based Technology Demo Centres (TDC) have been established to develop awareness among local people about various technologies and their applications.

- **Low-Cost Water Treatment Plant:** NECTAR supported a project to design and construct a low-cost water treatment plant based on roughing and bio-sand filters for villages.

**Preserving Tribal Culture Through Traditional Ecological Knowledge**

- The Ministry of Environment, Forest, and Climate Change supports projects aimed at empowering tribal communities while promoting environmental conservation and sustainable development. Initiatives include:

- **Community-Based Forest Management:** Programmes like the Joint Forest Management (JFM) encourage participatory forest management practices involving local tribal communities. These projects empower tribal groups to play an active role in forest protection, afforestation, and regeneration activities.

- **Climate Change Adaptation and Mitigation:** Science projects focus on strategies tailored to the needs of tribal communities. These projects may include the promotion of climate-resilient agriculture practices, renewable energy technologies, and community-based disaster risk reduction measures.

Conclusion

Preserving tribal culture in India through science projects involves a multifaceted approach that combines traditional knowledge with modern tools like digital documentation, language preservation apps, cultural mapping, virtual reality (VR), and augmented reality (AR). By combining the strengths of science, technology, and indigenous knowledge systems, it is possible to sustain and revitalize tribal cultures in India while respecting their autonomy and heritage.

VITAL ROLE OF TRIBAL ART IN SAFEGUARDING CULTURAL IDENTITY
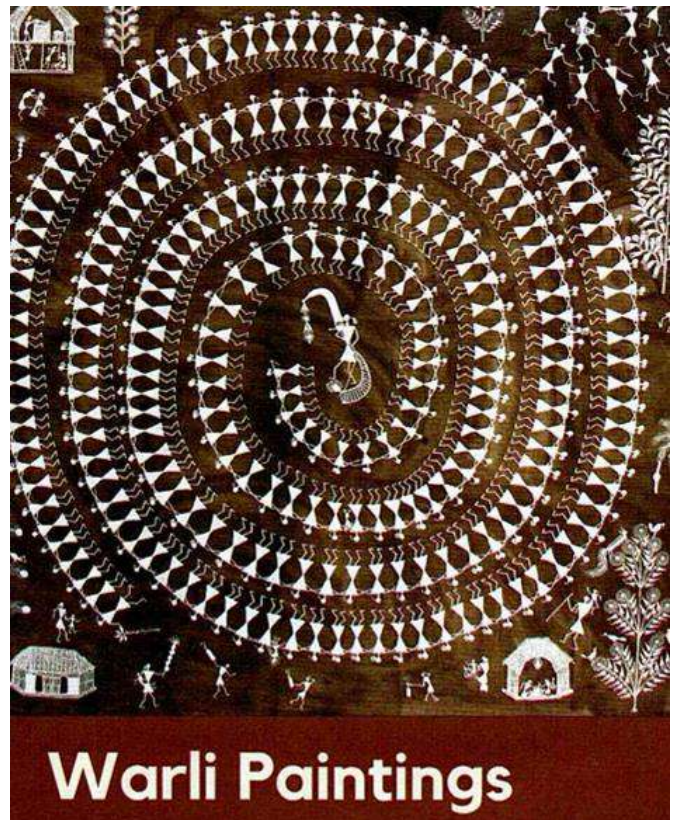
Warli Paintings

The tribal artwork, woven intricately into the fabric of artistic expression, stands as a testament to the diverse cultural tapestry of the nation. Over time, it has undergone a gradual evolution, journeying alongside classical forms. These artistic traditions are deeply rooted within distinct

social communities, each imbued with its own unique cultural essence. These expressions primarily manifest as visual art forms, such as paintings, depicting the intricacies of daily life, traditions, and cultural heritage specific to their respective communities. The art of tribal communities often incorporates elements like local festivals, divine beings, and flights of fancy into their portrayal.

- The colourful paintings of the Gond people of Madhya Pradesh and the Santal people of Jharkhand embody the essence of local sentiments.

- The **Muria dance in Bastar**, Chhattisgarh, reflects the spirituality of life, resonating with thoughts and feelings.

- **Pithora paintings among the tribes of Rathwa, Bhilals, and Nayka of Gujarat and Madhya Pradesh** are other fine examples of Indian tribal art.

- The **Dhokra brass sculptures of Odisha** delve into ancient tales, while the terracotta Bankura pottery of West Bengal serves as a simple medium for expressing emotions.

- The **Bhimbetka cave paintings** eloquently capture the essence of the primitive human connection to nature, expressing a profound reverence for the bounties of the natural world with unparalleled depth and breadth of emotion.

- **Indigo Dabu fabric prints of Rajasthan** offer a variety of expressions, and indigenous Bonda jewellery of Odisha carries the soulful essence of an ancestral legacy.

Nature spirits, associated with forests, rivers, or mountains, are also honoured as sources of supreme power and wisdom in tribal artwork. Moreover, tribal art frequently depicts rituals and ceremonies conducted to honour these spiritual entities or to seek their blessings and protection. These rituals often involve music, dance, and elaborate costumes, showcasing the vibrancy and diversity of tribal cultures. Overall, tribal paintings offer a glimpse into the rich understanding of spiritual beliefs and cultural traditions that shape indigenous communities, highlighting their deep reverence for nature, ancestors, and the divine.

Art has turned into a key tool for tribes to keep their traditions alive. The new generation of the tribal community, sensing the heartbeat of the market, is also aware of how to sell their artwork in the state and national markets. Despite having a mindset for selling, they continue to create art according to their own terms, aligned with their traditions, ensuring that their art continues to sell without compromising the soul of its creativity due to market influence.

AGRICULTURAL FESTIVALS: INTEGRAL PART OF TRIBAL CULTURE

India is home to over 730 scheduled tribes, often referred to as 'Adivasis', each with its distinct culture, customs, language, and lifestyle. These tribes primarily inhabit forests and hilly regions across the country, practising various means of subsistence like hunting, farming, fishing, and gathering from the forest. They have a deep connection with their land, practising sustainable farming methods and holding natural elements like the sun, rivers, soil, and mountains in high esteem. Their cultural heritage includes numerous festivals to honour deities and mother nature, especially in relation to agriculture.

Agricultural Festivals in India

- **Bhagoria Tribal Festival:** The Bhagoria Tribal Festival is celebrated by the Bhils and Bhilalas tribes in Madhya Pradesh, particularly in the Jhabua, Dhar, Alirajpur, and Khargone areas. Celebrated in March, it marks the completion of the harvest season. This festival is renowned for its vibrant music, dance, and a unique marketplace where exquisite tribal silver jewellery is sold. A notable custom during the festival is the 'Swayamvar', where young men and women choose their life partners.

- **Karam Festival:** The Karam Festival, dedicated to the worship of Karam, the god of harvest and fertility, is celebrated by various tribes across Madhya Pradesh, Jharkhand, Odisha, Chhattisgarh, West Bengal, Bihar, and Assam. Major tribes like Munda, Ho, Oraon, and others celebrate this festival on the 'Ekadashi' of 'Purnima' in the Hindu month of 'Bhadon' (August-September). It involves sowing seeds of nine types of crops, collecting branches of the Karam tree, and worshipping them for a good harvest and health.

- **Hareli Festival:** Celebrated mainly by the Gond tribe in Chhattisgarh, the Hareli Festival takes place on the new moon day in the month of 'Shravan' (July-August). It is dedicated to crop harvests, trees, and greenery. Farmers pray for a good monsoon and bumper crops by placing branches of the Bhelwa tree in their fields and hanging Neem tree branches at the entrances of their homes. The festival also includes the ritual 'Pat Jatra', where SaI wood is worshipped before being used to make agricultural tools.

Regional Festivals

- **North-East India:** The North-Eastern region of India is rich in cultural diversity, with tribes like the Mising in Assam celebrating festivals like Ali-Aye-Ligang and Porag. Ali-Aye-Ligang marks the beginning of cultivation, while Porag is a post-harvest festival. In Nagaland, the Konyak tribe celebrates the Aelong festival after sowing seeds, and the Ao tribe celebrates Moatsii Mong after field cleaning. The Dimansa tribe's Bushu Dima festival marks the completion of the January harvest.

- **Arunachal Pradesh**: The Apatani tribe celebrates the Myoko festival from 20th March to 19th April, while the Idu Mishmi tribe celebrates Reh from 1st to 3rd

February. The Galo tribe celebrates Mopin on the 5th of April, and the Nyish tribe celebrates Nyokum on the 26th of February, all with rituals connected to agriculture and prosperity.

- **Sikkim:** Sikkim's Losar festival, celebrated by local communities, begins after harvesting and is a prayer for a good harvest in the new year. The Sakewa festival, celebrated by the Kirat Khamba Rai community, is a homage to Mother Earth. The Losoong or Noomsong festival marks the end of the reaping season and the beginning of the Sikkimese new year.

These festivals not only reflect the rich cultural heritage of India's tribal communities but also emphasize their deep-rooted connection with nature and agriculture. They serve as a reminder of the importance of sustainable practices and the conservation of natural resources. Increasing tourism interest in these festivals is a positive sign for the preservation and promotion of tribal cultures.

EMBRACING DIVERSITY: CULTURAL HERITAGE OF TRIBES IN INDIA

Hornbill Festival, Nagaland

Cultural diversity is indispensable for nurturing a dynamic and inclusive society. It enhances our comprehension of the world, promotes tolerance, and fosters respect for varying viewpoints and lifestyles. Embracing cultural diversity spurs creativity and innovation, as diverse perspectives often lead to innovative solutions for complex challenges. Moreover, it safeguards the distinct identities and traditions of different communities, thereby enriching human heritage. In today's interconnected world, cultural diversity acts as a bridge, forging meaningful connections and promoting mutual understanding among people from diverse backgrounds. By acknowledging and valuing cultural diversity, we can create a more harmonious global community where all individuals can express themselves and contribute to collective progress.

Language Diversity: Indian tribal communities speak a multitude of languages and dialects, reflecting the country's linguistic richness. Major languages and dialects spoken include:

- Santali, used primarily by the Santhal tribe in Jharkhand, West Bengal, Odisha, and Bihar.
- Gondi, spoken by the Gond tribe in central India, notably in states like Madhya Pradesh, Chhattisgarh, Maharashtra, Telangana, and Andhra Pradesh.
- Khasi, the language of the Khasi tribe in Meghalaya.
- Mizo, spoken by the Mizo tribe in Mizoram.
- Bhili, primarily spoken by the Bhil tribe across Rajasthan, Gujarat, and Madhya Pradesh.
- Oraon, used by the Oraon tribe in Jharkhand, Chhattisgarh, Bihar, and West Bengal.

Tribal Folklore: Indian tribal folklore is a treasure trove of myths, legends, and oral traditions passed down through generations within indigenous communities across India. Enchanting folk songs, ballads, and storytelling traditions celebrate the triumphs and challenges of tribal life, offering moral lessons and entertainment.

- The Bhil tribe venerates "The Story of Pithoro," a deity symbolizing protection and fertility.
- Gond folklore features the epic of "Sing Bonga," embodying the spiritual essence of nature.
- Mizo folklore entertains with "The Legend of Pu Lallula," known for its clever trickster tales.
- Santal tradition reveres "The Story of Marang Buru," their divine creator and protector.
- The Ho tribe celebrates "The Legend of Thakkar Bapa," which is known for its strength and wisdom.
- These tales, intertwined with tribal identities, illuminate the cultural richness and spiritual depth of India's indigenous heritage.

Drama: Traditional dramas originating from these indigenous communities play a pivotal role in preserving and showcasing their vibrant cultural heritage.

- The Santal tribe presents "Pirama," a tale of bravery and leadership, while the Gonds depict struggles against injustice with "Karmabai."
- Pandavani, a Gond storytelling form, narrates episodes from the Mahabharata, while Yakshagana from Tulu-speaking regions combines dance, music, and dialogue depicting Hindu mythology.
- The Bhil tribe's "Bhawariya" emphasizes bravery and social justice, and the Oraon tribe's "Hachchiya" celebrates love and community life.
- These dramas entertain while preserving the cultural heritage of India's tribal communities.

Tribal Cuisine: India's tribal cuisines offer a tantalizing glimpse into the rich culinary heritage of indigenous communities.

- Bamboo shoot curry from Northeast India, flavoured with Indigenous spices, tantalizes with its unique aroma.
- Sao Aloo from the Santhal tribe offers a comforting blend of potatoes, mustard oil, and local spices.
- Bamboo steamed fish in Mizoram showcases creative use of natural resources, while red ant chutney from the Gond tribe provides a tangy accompaniment.
- Bhil cuisine features Mahua flower curry, celebrating nature's bounty with floral essence.
- Litti Chokha, a staple of Adivasi communities, combines roasted wheat dough balls with spiced gram flour and flavorful accompaniments.
- Sisunak saag from Garhwali tribes highlights foraged greens cooked with mustard oil and spices, while rice beer brewed by various tribal communities adds festivity to celebrations.
- These dishes not only tantalize the taste buds but also embody culinary ingenuity, cultural richness, and a deep connection to nature inherent in India's tribal cuisines.

ENVIRONMENTAL AGENDA FOR THE NEW GOVERNMENT (DOWN TO EARTH)

CLIMATE CHANGE

In the 2024 general election, major political parties reiterated their commitment to expanding green energy. Consequently, policymakers are acknowledging that India's development must align with addressing climate change. The reality is that extreme weather patterns, rising sea levels, and increasing temperatures could undermine decades of development progress and economic growth. They pose serious threats to food security, increase the risk of disease outbreaks, drive migration, and potentially spark conflicts. Therefore, the new government faces the challenging task of balancing economic growth with climate change mitigation. One approach to achieving this is through transitioning to clean energy.

Move on to Energy Transition

- India has made significant progress in renewable energy, with non-fossil fuels (excluding nuclear power) accounting for 43.12% of total installed capacity, as reported by NITI Aayog. This positions India on track to achieve its goal of securing **50% of its power capacity from non-fossil sources by 2030**, as per the commitments made in the 2015 Paris Agreement on climate change. However, despite constituting 43.12% of the country's energy capacity, non-fossil fuel sources currently only generate 23.4% of total electricity.
- As coal's share in the energy mix is expected to decrease, the integration of larger shares of renewable energy into the grid will be pivotal. This necessitates substantial investments in grid flexibility, transmission and distribution infrastructure, and energy storage technologies such as pumped hydro and batteries. Bridging the gap between states that are rapidly adopting renewables and those lagging behind is imperative, alongside addressing systemic issues such as the financial health of distribution companies.

Plan for decarbonisation

- By 2019, India had reduced the emissions intensity of its **GDP by 33% compared to 2005** levels, putting the country on track to achieve its **goal of a 45% reduction by 2030.**
- Concurrently, India plans to expand its economy to more than eight times its current size by 2047, necessitating a robust sector-specific decarbonization strategy aligned with national development priorities.
- In 2022, India submitted its **Long-Term Low Emission Development Strategy (LT-LEDS) to the UNFCCC**, outlining sectoral guidelines. However, detailed sector-specific plans with short-, medium-, and long-term emission reduction targets are essential. Additionally, adequate funding for the National Adaptation Fund for Climate Change (NAFCC) is crucial.

Build climate resilience

- According to India's Third National Communication to UNFCCC submitted in December 2023, the country requires **Rs 56.68 lakh crore (US $679 billion) by 2030 for climate adaptation.**
- Initiatives like the National Adaptation Fund for Climate Change (NAFCC) aim to help states and Union Territories cover adaptation costs. However, budgetary allocations for the fund have not kept pace with increasing needs; no allocations were made in the past two fiscal years.
- While funding for mitigation measures has increased recently, addressing India's adaptation requirements must be a priority.
- Comprehensive research into socio-economic impacts is crucial for identifying gaps in adaptation. Enhancing such research demands a standardized framework and methodology to assess climate risks, vulnerabilities, and the effectiveness of development programs.

Anyone cares?
Budget allocation for National Adaptation Fund on Climate Change on a decline since 2018
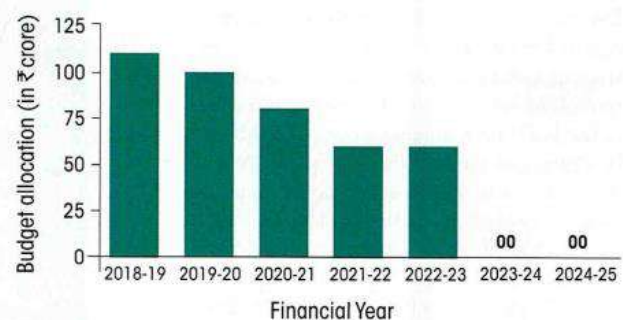
Note: There was no budget allocation for the fund in 2023-24 and 2024-25
Source: Budget documents

Geopolitical Challenges

- India's climate goals face external pressures from global energy and industrial geopolitics, along with competition for control over supply chains for critical minerals and green technologies. Resource security has become a central concern in international relations.

- China dominates nearly 85% of global rare earth oxide production, critical for rare earth elements, posing significant supply risks due to concentrated production and processing.

- Mechanisms like the **EU's Carbon Border Adjustment Mechanism (CBAM)** could adversely affect India's trade competitiveness by proposing tariffs on products based on their carbon footprint.

- Given these challenges, India's foreign policy should prioritize securing resources for domestic green initiatives. Ensuring policy coherence and developing clear strategies for local manufacturing of key technology components, diversifying raw material supply chains, and appropriately addressing trade actions purportedly for climate protection will be essential.

RENEWABLE ENERGY: ITS NOW OR NEVER

India's push towards renewable energy has not only reduced greenhouse gas emissions from thermal power generation but has also bolstered economic development while enhancing electricity access and security. To sustain this progress, a comprehensive assessment of barriers hindering the transition to clean energy is necessary, focusing on sector-specific implementation challenges.

Compressed Biogas: Unlocking Potential

- **Compressed biogas (CBG),** derived from sources like agricultural residue and solid waste, serves as a cleaner alternative to imported compressed natural gas (CNG), boasting similar properties and calorific values. India aims to establish 5,000 CBG projects nationwide under the **Sustainable Alternative Towards Affordable Transportation (SATAT) initiative**. However, the sector encounters several significant challenges.

Challenges and Strategies

- Many CBG plants are currently operating below their intended capacity.

- Inadequate procurement of feedstock poses operational hurdles.

- Limited CNG infrastructure restricts the extension of gas pipelines to CBG plants, thereby impeding gas sales.

- Enhancing gas pipeline networks surrounding plants can ensure full gas utilization. In rural areas, incentivizing the conversion of tractors and two-wheelers to use CBG can stimulate demand for this fuel.

- CBG faces irregular biomass supply due to a scarcity of machinery for harvesting agro residue. Subsidies can incentivize targeted initiatives to promote domestic manufacturing of such equipment.

- Encouraging farmer-producer organizations to aggregate feedstock can replace third-party entities while ensuring equitable profit-sharing among farmers.

- Despite CBG being classified as a priority lending sector by the RBI, banks exhibit limited interest in financing projects, citing narrow profit margins and lack of standardization. Introducing a government-backed guarantee program can encourage financial institutions to provide loans more readily.

- There is also a shortage of technical personnel skilled in the maintenance and operation of CBG plants, leading to inefficiencies and leakages. Introducing skill development programs on biogas technology through national training institutions is essential.

Wind energy: Attracting Investment

Wind energy currently **contributes 32% or 45 GW to India's total renewable energy capacity, second only to solar power.** However, this represents a small fraction of its potential. India has the capability to generate 700 GW from wind power alone, with the government aiming to increase wind capacity to **172 GW by 2030—140 GW from onshore projects and 32 GW from offshore projects.** Achieving this target in just six years presents a formidable challenge, especially considering India added only 2.2 GW in 2023. At the current rate, it would take 57 years to reach 172 GW.

Challenges and Strategies

- Wind power generation fluctuates seasonally, posing challenges for developers. While a monthly banking system exists, new developers find it unappealing. Extending the energy banking scope to cover additional months during low-generation periods could enhance attractiveness.

- Streamlining capacity expansion is critical. Land acquisition remains a major obstacle for onshore wind projects. Simplifying acquisition processes, clarifying land-use policies, and ensuring fair compensation for landowners can mitigate these challenges.

- India's extensive coastline holds potential for generating 70 GW of offshore wind power. Despite this, no offshore wind projects have been developed so far. The tepid investor response to the 4,000 MW offshore wind power tender in Tamil Nadu and Gujarat in early 2024 underscores this hesitation. To instil confidence among investors, the government could launch a pilot project demonstrating the profitability of offshore wind.

- Guidelines and incentives are essential to promote the repowering of older wind farms with more efficient turbines. Facilitating collaboration between domestic and international experts can drive innovation and cost reduction in the sector.

Solar energy: Make it reliable, affordable

India has achieved remarkable progress in solar energy development over the past decade. The installed solar capacity has risen from 1.2 GW in FY 2013-14 to 82 GW in 2023-24. This increase has elevated solar energy's contribution to 6.5% of the total energy mix, up from less than 0.4% a decade ago. To sustain this growth trajectory, the government must address challenges that hinder deployment timelines, grid integration, and power procurement practices.

Challenges and Strategies

- Solar generation is unevenly concentrated in the western and southern regions of the country.
- Efficient transmission of solar power from these areas requires strengthening the power system interface to ensure grid stability.
- Given that establishing transmission corridors takes longer than constructing solar plants, expediting prior assessments can accelerate deployment.
- Prioritizing projects in high-potential zones that combine solar and wind energy can enable round-the-clock power generation. Integrating renewable power into the grid seamlessly can be achieved through battery storage devices.
- Enhancing the operational management of DISCOMs is crucial to increasing rooftop solar adoption.
- Providing DISCOMs flexibility to transition from costly thermal power purchase agreements to solar power can help reduce carbon emissions and stimulate the domestic battery manufacturing sector, making tariffs more competitive.
- Due to the significant land footprint of solar plants, promoting alternative sites like floating solar power plants or integrating solar energy with agricultural activities can optimize land use.
- Currently, rooftop solar contributes nearly 13 GW, with residential sectors accounting for only 30%. Enhancing rooftop solar adoption will require improved operational management by DISCOMs, including efficient billing, power procurement, and technical aspects like residential metering arrangements (net, gross, or virtual).

AIR POLLUTION: LOOK BEYOND DUST
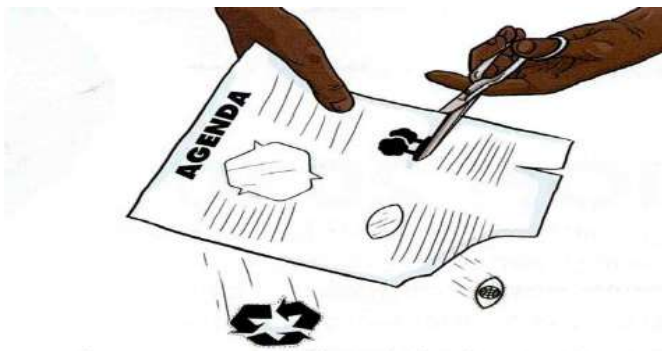
India's efforts to combat air pollution are facing critical challenges as the deadline nears for 131 polluted cities to improve their air quality under the **National Clean Air Programme (NCAP)**, launched by the Union Environment Ministry in January 2019. The programme aimed to reduce particulate matter concentrations by up to 40% from 2019 levels by 2025-26, backed by a significant Rs 19,711 crore funding allocation—a pioneering strategy in pollution control efforts. According to the Ministry's Annual Report 2023-24, all 131 cities showed improvements in PM10 levels by 2023, indicating progress.

However, the effectiveness of the programme is marred by significant underutilization of funds, revealing sluggish implementation:

- Major cities with populations over 49 million received Rs 8,357.51 crore but utilized only 70% of it by December 2023.
- Smaller cities received Rs 1,292.5 crore but spent just 37.5% of the allocated funds, highlighting a slower pace of action compared to targets.

Moreover, the metrics used to gauge progress in air quality improvement are contentious:

- Originally designed to address both PM10 and more harmful PM2.5 particles, NCAP primarily focuses on PM10 in practice.
- This skewed focus has directed investments towards dust control measures like road paving and water sprinkling, neglecting emissions from combustion sources responsible for PM2.5.

To address these issues and better reflect health impacts, there is a call to shift the benchmark to PM2.5 as the primary indicator for air quality improvement. PM2.5 is more closely associated with combustion sources, such as vehicular and industrial emissions, which currently receive insufficient attention under NCAP. Furthermore, establishing a clearer link between policy actions and pollution reduction outcomes is crucial. Cities showing improvement in PM10 levels under NCAP may not necessarily perform well under other air quality assessments **like Swachh Vayu Sarvekshan (SVS),** indicating a need for alignment and consistency in evaluating air quality progress.

Additionally, adopting a regional approach is essential, particularly for cities in **the Indo-Gangetic Plain**, where transboundary pollution significantly affects air quality. While NCAP acknowledges this with an airshed approach, effective inter-state coordination is lacking. Leveraging state action plans can help mitigate upwind pollution sources impacting downwind air quality, benefiting smaller towns and rural areas lacking individual capacity for complex pollution control measures.

National Policy for Local Action: A national policy is essential to support local efforts to achieve clean air, focusing on industries, power plants, public transport

infrastructure, waste management, and adoption of clean fuels. While state governments are progressing with notifications on approved fuels, their implementation often faces obstacles due to insufficient national policies on pricing and infrastructure for clean fuels.

Polluters Must Pay: Adopting the polluter pays principle is crucial in designing taxes, cesses, and pricing strategies for products to generate additional revenue. This revenue can then be allocated to dedicated funds for targeted pollution control measures. For instance, Delhi has implemented an environmental compensation charge on daily truck entry, diesel fuel sales, and large vehicles, demonstrating the effective application of this principle. Municipalities, as primary drivers of local action, can explore opportunities such as green municipal bonds to fund environmental initiatives effectively.

Need sectoral targets: Sector-specific targets are crucial for the National Clean Air Programme (NCAP), allowing tailored actions and funding allocation. For example, the Swachh Bharat Mission 2.0 aims for garbage-free cities by 2025, promoting measures to curb waste burning, which aligns with NCAP objectives. Strengthening legislative and regulatory frameworks and ensuring committed funding for sectoral schemes and programs are essential to accelerate progress, necessitating broader implementation at scale.

INDUSTRY: OVERHAUL OVERDUE

Environmental degradation is closely tied to inadequate enforcement of environmental regulations and standards, a critical concern for the new government as India's industrial sector expands significantly. Addressing key areas of concern will be pivotal in improving the country's environmental performance.

Enhancing State Pollution Control Boards (SPCBs)

The effective functioning of State Pollution Control Boards (SPCBs) is essential for environmental management and regulatory compliance, as mandated by various laws. **However, their performance is hindered by several challenges:**

- A significant portion of positions within SPCBs—over 50%, according to the Central Pollution Control Board (CPCB)—remain vacant. This shortage severely impacts their ability to monitor and regulate industries effectively. For instance, the Maharashtra Pollution Control Board operates with 505 staff against 839 sanctioned positions, overseeing 111,928 industries.

- The adoption of advanced technologies, such as Continuous Emission Monitoring Systems (CEMS), is crucial for real-time monitoring of industrial emissions. However, current regulations do not recognize CEMS data as admissible evidence under the Air Act of 1981, limiting its utility for regulatory purposes.

- Financial sustainability remains a concern despite performance audits indicating that most SPCBs and

Pollution Control Committees (PCCs), except those in northeastern states, are not currently facing financial constraints. Addressing uncertainties about future funding availability requires exploring new financial avenues and streamlining existing funding mechanisms.

Reevaluate EIA Notification

The Environment Impact Assessment (EIA) Notification of 2006 serves as the primary legal framework for granting environmental clearance to industries based on their potential environmental impact:

- The notification is adaptable to evolving requirements but has been subject to misuse. Governments have frequently amended their provisions to facilitate the establishment and expansion of industries, often at the expense of environmental safeguards.

- Over the past five years, 110 changes have been introduced through office memoranda, bypassing public consultation and leading to legal challenges in the National Green Tribunal. To ensure robust implementation, it is crucial to replace the notification with an EIA Act.

- Transparency regarding Environmental Clearance (EC) conditions post-project commissioning is essential. While project developers submit biannual compliance reports, these are inadequately publicized and often incomplete. Centralizing all environmental information on a unified portal, regardless of jurisdiction, would address this issue.

Combat Pollution

Industries are frequently scrutinized for air pollution, emitting two primary types of emissions:

- Stack emissions resulting from fuel combustion necessitate transitioning to cleaner fuels, adopting efficient technologies, and maintaining effective pollution control devices.

- Fugitive emissions, prevalent in sectors like stone crushers and brick kilns, require detailed sector-specific pollution abatement guidelines for rigorous implementation.

- Current guidelines suffer from weaknesses and poor enforcement, exacerbating on-ground pollution issues.

Decarbonizing All Sectors

The Third National Communication by the Ministry of Environment, Forest and Climate Change (MoEFCC) to the UN Framework Convention on Climate Change (UNFCCC) in 2023 highlighted that **the industrial sector contributed approximately 22 percent of the country's total emissions**, primarily through energy and process-related activities. Key contributors like steel, cement, and aluminium industries need focused strategies for decarbonization:

- Transitioning to cleaner energy sources and adopting advanced technologies is crucial.
- Promoting the use of cleaner raw materials and establishing circular value chains where one industry's waste becomes a resource for another can significantly reduce emissions and manage waste effectively.

The Perform, Achieve, and Trade (PAT) scheme, operational since 2012, has faced challenges such as low pricing, oversupply of energy certificates, unambitious targets, and lax penalties for non-compliance. To prevent similar issues in upcoming carbon markets, it's essential to ensure robust governance and substantial coverage of the country's emissions.

Cleaning Up Power

- In 2015, MoEFCC introduced new emission standards for coal-fired thermal power plants. However, as of now, only a small fraction of these plants, accounting for 5 percent of the country's total installed capacity, comply with these norms. Delays in compliance have been exacerbated by multiple extensions granted by MoEFCC, with the latest deferring the deadline until 2026. To protect public health from the impacts of coal emissions, further extensions should be avoided.
- The government must prioritize improving the energy efficiency of thermal power plants. Inefficient older plants should be phased out and replaced with more efficient supercritical and ultra-supercritical plants where necessary. This approach will not only reduce emissions but also enhance overall energy efficiency across the sector.

Building Sustainable Infrastructure

India's industrial development agencies must shift their focus from merely economic considerations to embracing a sustainable approach as the country gears up for a significant expansion in manufacturing. This shift is crucial to ensure that new industries operate in an environmentally responsible manner:

- Current industrial areas in India face several challenges, including poor road conditions, inadequate management of non-hazardous industrial waste, insufficient parking facilities, and lack of green spaces and other amenities.
- A key concept in sustainable infrastructure is the establishment of common facilities. These would encompass shared amenities such as boilers, effluent treatment plants, waste management facilities, and parking areas for heavy vehicles.
- Future industrial zones should be strategically located away from residential areas, with designated buffer zones. They should have access to cleaner fuel sources, facilities for monitoring air quality, well-designed roads, sidewalks adorned with greenery, and other essential amenities.

- The focus should not be limited to new developments alone; revitalizing existing industrial areas is equally critical. Without robust, sustainable infrastructure, the environmental degradation caused by industrial activities could spiral out of control.

ECONOMIC & POLITICAL WEEKLY
THE CLAMOUR FOR SPECIAL CATEGORY STATUS

Unfair allocations by the Finance Commission and policies of the Union government are seen as denying poorer states their rightful shares. With the Bharatiya Janata Party-led National Democratic Alliance (NDA) returning to power, demands for Special Category Status (SCS) from states like Andhra Pradesh, Bihar, Chhattisgarh, Odisha, Telangana, Jharkhand, and Rajasthan have resurfaced, driven in part by pressure from key NDA allies. Despite repeated rejections by the Union government, these demands are becoming more pressing as the NDA seeks to maintain coalition harmony.

The central question remains: why are numerous economically disadvantaged states advocating for SCS designation?

Initially granted by the National Development Council starting in 1969, SCS provided significant advantages. It ensured greater financial transfers from the Union to states with remote locations and challenging demographics, such as high tribal populations and low population densities. These states often struggled financially and required additional resources and infrastructure support to become economically viable. The SCS also offered substantial tax incentives like excise duty exemptions, income tax holidays, and extended subsidies to attract private investments.

The Gadgil Formula, implemented initially, ensured a fair distribution of loans and grants between SCS and General Category States (GCS), with more favourable terms for centrally sponsored schemes (CSS) benefiting SCS states (90:10 ratio) compared to GCS states (30:70 ratio).

- However, the benefits of SCS have diminished over time. Following the 12th Finance Commission, loans to states were halted, and funds were distributed as block grants in a 56:44 ratio between SCS and GCS.
- The dismantling of the Planning Commission and the merger of plan and non-plan funds in 2017–18 further eroded SCS distinctions, leading the Union government to declare an end to the SCS era. Additionally, the introduction of GST eliminated many tax concessions previously enjoyed by SCS states.
- Despite these challenges, the Gadgil Formula succeeded in significantly boosting the share of Union funds in the budgets of SCS states. For instance, estimates from 2013–14 indicate that eight SCS states financed nearly two-thirds of their budget expenditures from Union government transfers.

Current Demand of SCS Status

Increased Devolution of Funds: Despite the Fourteenth Finance Commission omitting any mention of Special Category Status (SCS), statistics indicate a significantly higher share of tax transfers to SCS states compared to previous years. Recent figures from 2022–23 reveal that SCS states receive 67% of gross transfers from the Union government in overall state budget disbursements, whereas general category states (GCS) receive a substantially lower 34%. This demonstrates that although the SCS label has been discarded, the eight northeastern and three Himalayan states still benefit from disproportionately larger fund devolutions. This disparity underscores why SCS status remains a crucial demand for economically disadvantaged states.

Unfair Finance Commission Allocations: Another critical factor driving the demand for SCS status is the perceived unfairness in recent Finance Commission awards. For example, while the Eleventh Finance Commission allocated a significant 63% weight to equity, emphasizing income distance criteria in fund distribution, subsequent commissions have reduced this to a lower 45%. Instead, these commissions have doubled the allocation based on need-based criteria such as population, area, and demographic changes, which typically favour larger states. This shift has disproportionately disadvantaged smaller, poorer states, compelling them to seek SCS status as the only viable means to secure adequate funds.

Shrinking Divisible Tax Pool: Furthermore, the Union government's policies, which withhold a portion of devolved funds through increased cesses and surcharges, have exacerbated financial challenges for the poorest states. Despite recent Finance Commission reports increasing tax devolutions to over 40%, the growing imposition of cesses and surcharges has diminished the divisible tax pool from 88.6% in 2010–11 to 78.9% in 2021–22. As a result, funding for the neediest states has been further curtailed.

STATE DEBT AND THE CONSTITUTION

The recent legal dispute between the Kerala government and the union over finances represents not just a political confrontation between governments of different parties but also signals a looming constitutional crisis concerning the union's control over subnational debt. Addressing this constitutional void requires appropriate amendments to the Constitution. On March 31, 2024, a two-judge bench of the Supreme Court of India referred several critical questions regarding the interpretation of Article 293 to a constitution bench of the Supreme Court (State of Kerala v Union of India).

What's at stake?

- This case revolves around a lawsuit filed by the state of Kerala under Article 131 of the Constitution, seeking the Court's direction to lift the cap on the amount of money the state can borrow.

- As it marks the first instance of interpreting Article 293, the matter was referred to a constitutional bench comprising five judges under Article 145.

- The litigation ran alongside negotiations between the union and Kerala, which failed to produce concrete results.

- Kerala sought interim relief, specifically the right to immediately borrow Rs 26,266 crore, but the court denied this and referred the issue to the larger bench.

- Article 293 empowers states to borrow against their consolidated fund, subject to the union government's approval as a creditor. Kerala's lawsuit questions the extent of the union's authority under this article and its exercise thereof.

Fiscal Federalism Under Strain: The recent dispute between Kerala and the union over subnational debt regulation is not merely a bilateral issue but highlights broader challenges to India's constitutional framework for fiscal federalism. Several factors exacerbate this strain, including the use of cesses to bypass finance commission recommendations, delays in GST revenue disbursal, and inadequate funding for centrally sponsored schemes. These issues have constrained state budgets, prompting states to seek alternative funding avenues through public sector enterprises and other means. Against this backdrop, the Supreme Court's forthcoming ruling on Kerala's lawsuit bears significant implications for federalism in India.

Interpreting Article 293: The genesis of Kerala's dispute with the union can be traced to an amendment to the Fiscal Responsibility and Budget Management Act (FRBM) in 2018. This amendment, enacted through the Finance Act, mandated the union government to ensure that overall public debt remains below 60% of GDP and fiscal deficit below 3% of GDP. Kerala's decision to file suit stemmed from the union's refusal to permit further borrowing based on the amended FRBM, citing Kerala's breach of the 3% debt ceiling relative to its gross state domestic product (GSDP). The inclusion of debt incurred by Kerala's public sector undertakings (PSUs) in calculating this ceiling was contested by the state, arguing that PSU debt should not be included. The lawsuit challenges the constitutional validity of the FRBM amendment and specific directives restricting Kerala's borrowing capacity, including PSU debt, in the calculation.

The Supreme Court, in referring the matter to a constitutional bench, framed four key questions for deliberation. Of these, two are particularly relevant:

- The first question addresses whether states have an inherent "right" under Article 293 to borrow from the union and other sources and if the union can regulate this right. Kerala contends that the union lacks the

authority to impose restrictions unless they pertain specifically to loans obtained from the union.

- The second question examines whether debts incurred by state government PSUs fall within Article 293's scope for state government borrowing purposes. Kerala argues that PSU debts should be excluded from Article 293's purview.

On the first question, Kerala's argument appears tenuous given the provisions of Article 293, which impose separate restrictions on state borrowing:

- Clause (1) restricts borrowing within the debt ceiling set by the state legislature,
- Clause (3) mandates union consent for outstanding loans from the union.

Interpreting Clause (3), as Kerala proposes, would undermine its purpose, as Clause (2) already empowers the union to impose conditions on loans, rendering Clause (3) redundant. The constitutional intent was to grant the union oversight over subnational debt from all sources, not solely loans from the union itself.

Regarding the second question, Kerala's position rests on solid legal ground. Article 293(3) explicitly applies solely to loans secured on the consolidated fund of the state. Public Sector Undertakings (PSUs), established under company law, do not fit within the definition of "state." The exception applies only if these companies perform essential governmental functions akin to entities like NHAI that are considered part of the "state." Another perspective is that a government company is not automatically exempt from the Insolvency and Bankruptcy Code, 2016, meaning any default on its loans must comply with that law. However, if the state government guarantees PSU debts, those debts fall squarely under Article 293 and require union consent. Beyond interpreting Article 293, there looms a larger issue concerning its future relevance within the fiscal federalism framework.

Impending Constitutional Crisis

- As previously mentioned, Article 293 empowers the union to regulate state debt based on loans owed by the state to the union. Notably, Article 293 lacks provisions for the union to regulate state debt when no money is owed by the state to the union. In a Westminster parliamentary democracy like India's, where the executive and legislature are often under the control of the same party, there are limited checks on state governments' borrowing powers.
- The Fourteenth Finance Commission initially flagged the likelihood that certain states would soon owe no money to the union. RBI data underscores this trend, showing the union's share of state loans dropped from 57% in 1991 to 6% by 2014 due to changes in fund disbursement rather than a deliberate reduction in state

indebtedness. Anticipating this shift, the commission refrained from proposing changes to address the issue.

- However, the COVID-19 pandemic temporarily altered this trajectory. By FY 2020, loans from the union comprised just 3% of total state loans. Yet, post-FY 2021, this figure rose steadily, reaching 8.6% by FY 2024 budget estimates. This uptick may prove transitory, potentially reinstating the long-term trend identified by the Fourteenth Finance Commission.

Conclusion: While Kerala presents a compelling case in its civil suit, the Supreme Court's interpretation of Article 293 will profoundly impact India's fiscal federalism. A lenient interpretation that reduces the union's control over subnational debt could carry significant macroeconomic implications, possibly prompting cautious judicial intervention. Nonetheless, irrespective of the Court's stance on Article 293, the article itself faces constitutional obsolescence in the approaching decade. Addressing this challenge may necessitate a constitutional amendment establishing a more enduring foundation for the union's authority to regulate state debt.

REIMAGINING URBAN EMPLOYMENT PROGRAMMES

Despite notable strides in reducing poverty, urban residents in India continue to grapple with considerable vulnerability. Between 33% and 47% of the urban population resides in informal housing located in marginalized areas lacking essential infrastructure such as water, drainage, sanitation, toilets, and lighting. These settlements predominantly house vulnerable local communities and migrants, with nearly 90% engaged in informal employment.

- The compounded vulnerabilities faced by these households heighten their risk of falling back into poverty due to everyday shocks, inflation, epidemics, disasters, or severe illness. Such conditions restrict their mobility and hinder their ability to enhance their skills and prospects, both for themselves and their children. It is crucial for India's urban development strategy to prioritize mitigating these vulnerabilities, expanding access to preventive and protective social safety nets, and shifting towards transformative social protection that fosters upward social and economic mobility across generations.
- An emerging response to address urban vulnerabilities, particularly highlighted during and after the COVID-19 pandemic, is the adoption of urban employment programmes (UEPs). Currently operational in more than 10 states, with several others in the planning stages, these programmes are modelled after India's longstanding rural employment guarantee scheme, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA). Generally aimed at providing a specified number of days of work and wages, UEPs in India seek to combat urban inequalities encompassing

economic, social, spatial, and housing vulnerabilities among urban residents.

- They also aim to integrate transformative social protection elements that enable access to skill development opportunities and promote mobility. However, implementing UEPs in urban settings requires a nuanced approach. Urban environments differ spatially, socially, and economically from rural areas. Therefore, designing effective UEPs demands an operational framework that comprehends and addresses the intricacies of urban contexts while striving for broad-based outcomes.

1. Rethinking Permitted Works

Employment programmes typically allocate workdays to applicants based on a predefined list of permitted tasks. Redesigning this list of potential works has the potential to address not only economic challenges but also social and spatial vulnerabilities. Currently, urban employment programmes (UEPs) in India predominantly focus on manual and daily labour tasks, such as sanitation, painting, and maintenance of parks, schools, and open spaces. However, these tasks often offer limited opportunities for skill development, learning, or creating lasting assets and infrastructure.

The majority of urban workers in India operate in informal sectors, including street vendors, construction labourers, domestic workers, and waste collectors. How can the permitted work under UEPs not only guarantee them minimum earnings but also improve their working conditions and overall quality of life? By prioritizing the enhancement of socio-economic infrastructure for informal workers as a core principle, UEPs could include a broader range of potential works.

Sector-Specific Infrastructure:

We propose sector-specific economic infrastructure aimed at providing conditions for decent work tailored to specific groups of informal workers:

- Waste workers: Establishing decentralized waste collection and material recovery centres can streamline waste management and recycling processes within urban areas, benefiting waste workers.
- Street vendors: Providing dry and cold storage facilities would help vendors preserve their goods, preventing spoilage.
- Gig economy workers: Setting up infrastructure like computer centers with Wi-Fi hotspots and charging stations supports the mobility and work requirements of gig economy workers.

Workplace Support Infrastructure:

It is essential to develop targeted infrastructures for workers engaged in the informal economy:

- Childcare infrastructure: Establishing crèche facilities and breastfeeding stations within urban areas supports women engaged in informal work.
- Public toilets and drinking water: Ensuring accessible public toilets and drinking water facilities throughout the city cater to the extended working hours of informal workers.
- Multipurpose community centres: Dedicated centres providing resting spaces, storage facilities, and facilitation services benefit all workers.

Infrastructure at Home

Developing social infrastructure in residential areas such as crèches, anganwadis, clinics, community centres, and canteens addresses social vulnerabilities and supports economic activities:

- Enables time savings for workers, particularly women.
- Reduces costs and enhances real wages.
- Improves productivity by mitigating health risks and ensuring food security.
- Creates opportunities for women's employment in servicing and maintaining social infrastructure.
- In Argentina, for example, the Plan Jefes program supports micro-enterprises, day-care centres, and facilities that cater to various needs of the homeless population.

Rethinking the Inclusion Criteria

Given that many recent employment programs operate at the state level, defining who qualifies as an urban resident becomes crucial for implementing these Urban Employment Programs (UEPs):

- Urban areas, including metropolitan cities and smaller towns, experience significant inter- and intra-state migration, posing economic and social challenges. Inclusion criteria similar to those in the MGNREGA that emphasize local domicile or permanent residence in a specific urban area often exclude vulnerable groups like circular or short-term migrants.
- However, even long-term residents in urban areas may face challenges meeting residency criteria, such as in Rajasthan's IRGY scheme, where enrolment requires state-issued Jan Aadhaar cards that many long-term urban residents lack.
- To effectively address these challenges, UEPs must redefine residency both conceptually and operationally, considering anyone with the intent to reside and work in urban areas as eligible. Inclusive inclusion criteria should be complemented by flexible registration processes and requirements.

Setting Wages for UEPs

Current perspectives on UEPs, influenced by the MGNREGA, often view these programs as safety nets providing fallback options for workers. Consequently, wage rates are typically

set at minimum wage levels, which can be as low as Rs 177 per day in some states, falling short of market rates.

- UEPs should adopt a broader perspective on wage setting, moving beyond statutory minimum wages towards establishing living wages. Living wages should be contextually determined, considering housing and food costs, job location, and required skills.

- Establishing realistic living wages can significantly impact urban areas by setting minimum wage standards, similar to the MGNREGA's impact in rural areas.

- Additionally, UEPs should offer social security benefits such as health insurance, sickness benefits, and maternity and employment injury benefits. These benefits enhance work conditions and overall well-being beyond monetary compensation. The Ayyankali program in Kerala exemplifies this approach, integrating a comprehensive range of worker benefits, including pensions and medical insurance, through convergence with existing state schemes.

Delivery of UEPs

The challenges associated with state capacity in delivering UEPs are well-documented:

- Urban settings face constraints such as limited municipal capacity, low awareness among potential beneficiaries, and frequent population mobility, hindering effective program outreach.

- Non-state actors (NSAs) with local knowledge can play a crucial role in identifying vulnerable populations, such as households with disabilities, female heads of households, and transgender communities, who could benefit from UEPs.

- Establishing worker facilitation centres at labour nakas can simplify registration processes and improve accessibility to UEPs for beneficiaries.

- NSAs could expand their role in UEPs to include monitoring and grievance redressal, ensuring equitable program delivery through collaborative decision-making processes involving both state entities and NSAs.

Conclusion

There is a pressing need for a more inclusive and expansive approach to Urban Employment Programs (UEPs) so that they can effectively address urban vulnerabilities through a transformative social protection framework. Our vision for UEPs transcends mere provision of work and workdays; it encompasses a diverse array of permitted works, inclusive criteria for participation, and dynamic wage and promotive benefits. Given the enthusiastic adoption of UEPs by various states, now is an opportune moment to reimagine their potential in diverse forms. We encourage academics and practitioners to contribute new perspectives on UEPs, focusing not only on visionary goals but also on practical operational strategies to make them actionable.

Global Cities Index

As India emerges as a prominent player on the global economic stage. While the nation's economic prowess is on the rise, its cities grapple with profound challenges that hinder their appeal and quality of life. This disparity is vividly illustrated in the Global Cities Index by Oxford Analytics, which meticulously ranks 1,000 major cities worldwide based on a comprehensive array of economic, social, and environmental indicators.

- **What is GCI:** The Global Cities Index underscores the concentrated distribution of these urban centers, with a significant majority clustered in just a few nations. Among these, India stands out with 91 cities represented, reflecting its burgeoning population and economic activity. However, the report reveals a sobering truth: despite its demographic size and economic potential, Indian cities lag behind their global counterparts in crucial metrics that define urban livability.

- **Economic Landscape and Global Positioning:** The economic indicators in the Global Cities Index highlight the potential for growth and development within Indian cities. However, while India ranks favorably in economic metrics compared to other emerging economies, such as China, its cities often face challenges in translating economic growth into improved quality of life for residents.

- **Human Capital Deficit:** The report points to a stark contrast: while India produces highly skilled professionals who compete at the global level, a substantial segment of the population lacks even basic literacy skills. This imbalance not only hampers productivity and innovation but also contributes to widening socio-economic disparities within urban centers.

- **Quality of Life:** Issues such as inadequate healthcare infrastructure, traffic congestion, pollution, and lack of affordable housing contribute to a less-than-desirable living environment for many residents. Efforts to improve quality of life face challenges due to rapid urbanization, resource constraints, and governance issues.

- **Environmental Sustainability:** Despite initiatives to promote sustainable practices and renewable energy adoption, the scale of environmental degradation in many Indian cities remains daunting. The Global Cities Index underscores the urgent need for comprehensive strategies to mitigate environmental risks and enhance resilience.

- **Governance and Stability:** India's performance in governance indicators varies significantly across cities. While some cities demonstrate robust governance frameworks and effective service delivery, others

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struggle with corruption, bureaucratic inefficiencies, and inadequate infrastructure planning. Strengthening governance capacities at the local level is crucial for addressing urban challenges and promoting sustainable development.

- **Regional Disparities and Urban Concentration:** The northern belt, encompassing cities like Delhi and Kolkata, dominates in terms of urban concentration, followed by the southern and western regions. This geographical concentration underscores disparities in development and infrastructure across different parts of the country. Addressing regional imbalances through targeted investment and policy interventions is essential for fostering equitable urban development and leveraging regional strengths.

- **Indian Cities in Focus:** Examining specific Indian cities provides insights into the diverse challenges and opportunities within the urban landscape. They also grapple with issues such as traffic congestion, air pollution, and socio-economic inequality. Initiatives such as the Smart Cities Mission aim to transform urban governance and infrastructure, yet their impact varies across different cities.

- **Learning from Global Leaders:** Cities like New York, London, and Tokyo consistently rank high across multiple indicators due to their robust economic foundations, strong governance frameworks, and high quality of life standards. Learning from their strategies in areas such as urban planning, sustainable development, and innovation can inform policy and investment decisions in Indian cities.

- **Towards Sustainable Urban Futures:** Policy interventions should prioritize enhancing human capital through investments in education and skill development, promoting inclusive growth to reduce socio-economic disparities, and strengthening governance frameworks to improve service delivery and accountability. Embracing sustainable practices in urban planning, infrastructure development, and environmental management is crucial for mitigating urban challenges and enhancing resilience.

Conclusion: While India's ascent in the global economy is commendable, the challenges facing its cities demand urgent attention and innovative solutions. By addressing issues related to human capital, quality of life, environmental sustainability, and governance, Indian cities can realize their full potential as vibrant, inclusive, and resilient urban centers in the 21st century global landscape.

India's Economic Growth Has Been Manufacturing-led, Not Services-led

In recent decades, India's economic trajectory has sparked debates over the nature of its growth—whether it has been predominantly driven by services or manufacturing sectors. Contrary to widespread belief, a new perspective highlighted in the article suggests that India has experienced manufacturing-led economic growth rather than being propelled primarily by services. This assertion challenges established narratives and relies on comprehensive economic analysis, including the use of the double deflation method for national accounts, to redefine our understanding of India's economic evolution.

Figure 2: Contribution of Manufacturing and Services Sectors to Aggregate GVA Growth, 2003–18, by Sub-periods
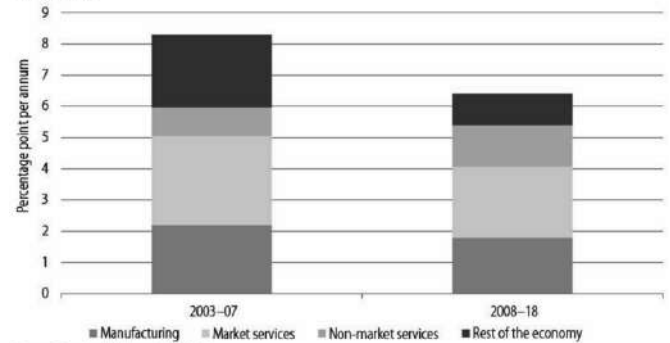
Source: Based on Krishna et al (2022).

- **Rethinking Growth Dynamics of Manufacturing vs. Services:** Historically, the development path of many economies has followed a pattern where agriculture's dominance in GDP is supplanted by manufacturing, which subsequently yields ground to a burgeoning services sector. India, however, presents a distinct case. Over the period from 2003 to 2018, the share of manufacturing in India's Gross Value Added (GVA) at constant prices doubled from 16% to 32%. This growth outpaced that of market services, which exhibited stagnant growth in terms of its share of GDP during the same period. This statistical observation challenges the conventional wisdom that India's economic growth has been led by its services sector.

- **The Role of Double Deflation:** A critical element in reassessing India's economic structure lies in the methodology used to compute national accounts. Unlike many G20 nations, which employ the double deflation method for accurate measurement, India predominantly uses the single deflation method, except in the agriculture sector. The article argues that this methodological difference has masked the true contribution of manufacturing to India's economic growth. Had India applied the double deflation method consistently across all sectors, the share of manufacturing in GDP at constant prices would likely have shown a marked increase over recent decades.

- **Empirical Evidence and Econometric Analysis:** To substantiate the claim of manufacturing-led growth, the article draws on econometric investigations and input-output analyses. These methodologies reveal intricate growth linkages and highlight the disproportionate impact of manufacturing sector growth on the overall

economy compared to services. Empirical findings indicate that while services may have contributed significantly to aggregate real GVA growth, the manufacturing sector's influence on economic dynamics, particularly through inter-sectoral linkages, is more profound.

- **Policy Implications and Strategic Outlook:** Understanding India's economic dynamics as manufacturing-driven rather than services-led has profound implications for policy formulation and future growth strategies. A manufacturing-focused approach could leverage India's demographic dividend, technological capabilities, and industrial potential to foster sustained economic expansion. Moreover, policies aimed at enhancing manufacturing competitiveness, promoting export-oriented industries, and improving infrastructure could yield greater economic dividends compared to a services-led strategy.

- **Comparative Analysis and Global Perspective:** Comparing India's growth trajectory with that of other economies underscores the strategic importance of a manufacturing-centric approach. While services sectors in countries like the US and UK have driven economic growth, India's unique demographic profile and industrial landscape necessitate a different developmental strategy. Learning from global best practices in manufacturing excellence and export-led growth could position India favorably in the global economy.
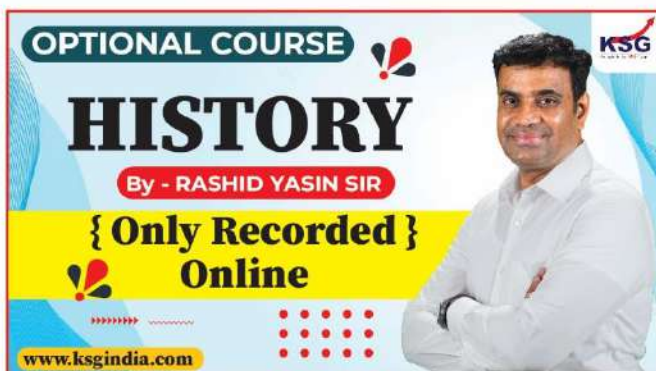
Conclusion: Reevaluating India's growth narrative to acknowledge its manufacturing-led trajectory provides a nuanced understanding of its economic evolution. This perspective challenges preconceived notions and emphasizes the need for tailored policies that capitalize on India's industrial strengths while addressing sector-specific challenges. Moving forward, fostering a balanced growth paradigm that integrates manufacturing resilience with services sector dynamism will be crucial in achieving sustainable economic development and fulfilling India's aspirations of becoming a developed nation by 2047.
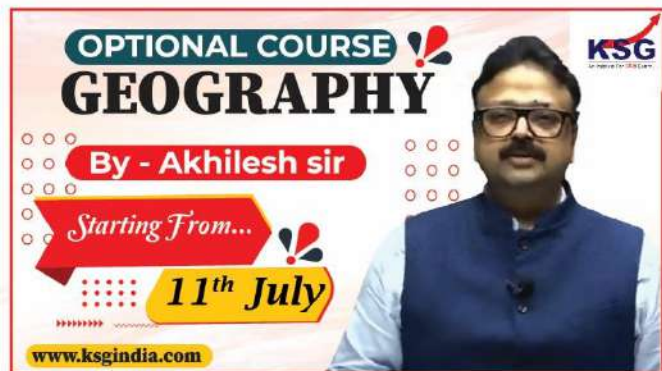
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