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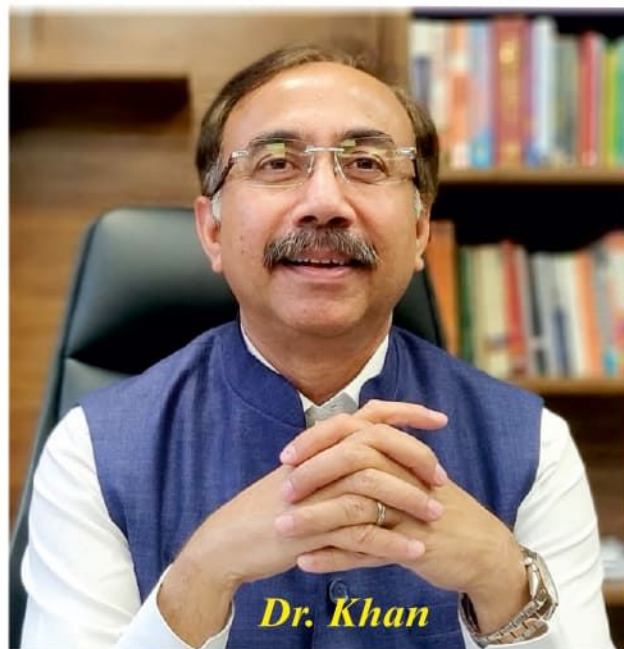
- PHILOSOPHY OF THE MONTH • PRE-SHOTS • MAP CONNECT
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MESSAGE FROM DR. KHAN

Dear Students,

Today, we will talk about an issue that students face most of the time when they are under the pressure of expectations.

*The widely acclaimed film "3 Idiots" sheds light on how the **pressure of expectations** affects young adults. **Expectations come from all directions**- from their parents, teachers, friends, relatives, neighbours, partners, etc.- everybody has expectations from students. Most of the time, parents expect their children to achieve something bigger and better without trying to know about their aspirations.*

*At this juncture of your life, managing various things such as **expectations, syllabus, time, and resources** may become overwhelming. As you continue to manage them, **remember you are not alone**. The world around us often creates artificial expectations of what a "**perfect timeline**" of our lives should look like. Sometimes, these **expectations** can be silent. **The weight of silence is heavy**. It's a kind of cumulative causation. Expectation breeds expectation. You expect from someone, they expect back from you. Then, you expect more from them, creating a vicious cycle. It would help if you took charge of your life and did not crack under the pressure of expectation. **I would like you to negotiate with the expectations.***

***Firstly, keep it realistic:** Align your expectations with your abilities and skill sets in a timely manner. Managing and setting realistic expectations on your own and those around you is a **sign of emotional maturity**.*

Secondly, communicate effectively:** If someone's expectations bother you, communicate with them. Let them know that it is affecting you adversely. The best way to tackle expectations is **UNDER PROMISE**. Don't promise them what you basically can't deliver. If you give somebody something more, that's the best way of managing your expectations. **Wrong expectations usually are a result of little communication.

*It's okay if things don't go our way constantly. Accept that you were wrong somewhere and **re-calibrate your approach to the goal without letting go of it.***

In this beautiful life, be kind to yourself, and do not get carried away by somebody else's expectations of you. Take control of yourself and manage your expectations so they don't manage you.

My best wishes are always with you!

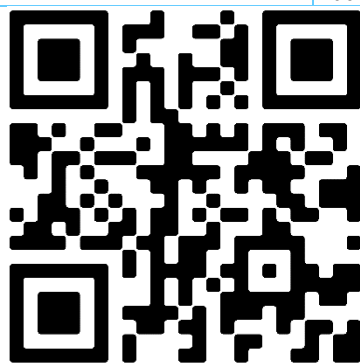
Stay Blessed!

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. We have also given **questions for practice both, subjective and objective**, so that candidates are oriented to the examination mode. 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 Destinaire, Navigator, NEEV, AWSDP plus, KOL, DL& MP, Advance Foundation Course, Weekend Courses as well as Optional Courses (PSIR and Sociology)**. 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

S. No.	GS -I	GS- II	GS- III	GS-IV
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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POLITY & GOVERNANCE

The Article 370

News Excerpt:

A five-judge Constitution Bench of the Supreme Court (SC) upheld the Centre's decision to abrogate Article 370 of the Constitution through a presidential order issued on August 5, 2019.

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About the Supreme Court Ruling:

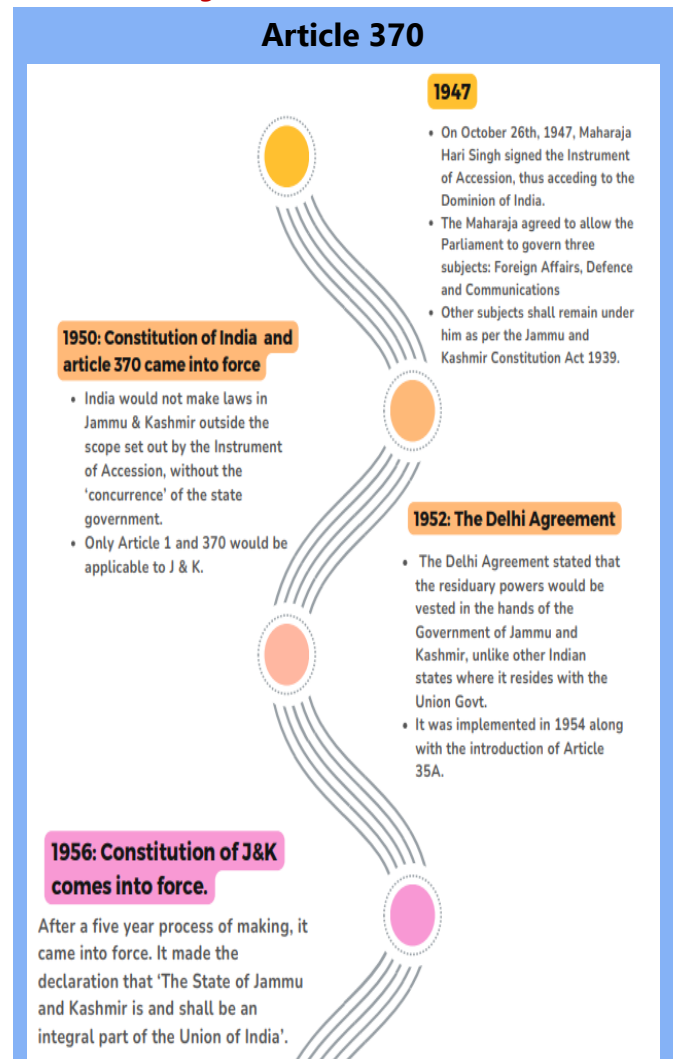
- A Constitution Bench headed by Chief Justice of India D.Y. Chandrachud held that **Article 370** was intended to **"enhance constitutional integration"** between the Union of India and the State of Jammu and Kashmir and not cause any "disintegration".
- The Abrogation (Repealing) of **Article 370** in 2019 put Jammu and Kashmir on **par with the other states**.
- The entirety of the Indian Constitution would now apply to Jammu and Kashmir.

Before and After abrogation of 370	
BEFORE	AFTER
Dual Citizenship	Single Citizenship
Special Powers Conferred	No Special Powers
Art 365 and 360 not applicable	Now applicable
Separate Flag	Tricolor will be the only flag
No reservation for Minorities	Reservation for Minorities
Separate Constitution	Constitution of India

What is Article 370?

- Article 370 of the Constitution of India was a **temporary provision** that provided special status to the State of Jammu and Kashmir.
- It was temporary because the Constituent Assembly of Jammu and Kashmir had the **right to modify, delete, or retain it**, and it was considered temporary only until a plebiscite was held to ascertain the public opinion.
- The temporary provision of this Article is derived from **Part XXI of the Constitution under the title "Temporary, Transitional and Special provisions", which grants special status to the State of Jammu and Kashmir**.

Historical Background:



- In 1947, the Indian Independence Act was passed in the British Parliament; the former British colony was partitioned to create the Dominion of India and the Dominion of Pakistan.
- Article 370 was therefore introduced in the Constitution to preserve the specific terms under which Kashmir had agreed to accede to India, unlike the other 565 princely states.
- Vallabhbhai Patel was given the credit for the country's successful integration.**

ARGUMENTS FOR	ARGUMENTS AGAINST
Strengthening the spirit of Integration - <ul style="list-style-type: none"> "Ek Bharat, Shreshtha Bharat" by Integrating Indians by abrogating Article 370 and bringing J & K to par with other states. One nation, One flag, and One Constitution. 	A tilt in Federal Balance towards Centre <p>The Supreme Court, in upholding the abrogation of Article 370 of the Constitution, seemed to tilt the federal balance in favour of the Union.</p>

Providing equal rights to sanitation workers, women, and non-resident Indians by abrogating Article 35A.	The challenge of a standstill Government: According to the present CJI, every decision taken by the Union on behalf of the State during Presidential rule is not open to challenge. This may lead to the administration of the State to a standstill.
Provides them with the Right to Education and the Right to Information .	Setback for 'One Nation and One Election': The Court directed the Election Commission of India to hold elections "by September 30, 2024", which was interesting as it effectively meant directing an autonomous body (the Election Commission) which is meant to decide on when to hold polls independently.
The decline in violence in Jammu and Kashmir since the abrogation of Article 370. <ul style="list-style-type: none"> According to official data, the number of terrorist incidents has decreased by over 50%, and security forces have killed over 300 militants in the last four years. This has been possible due to increased security measures, better intelligence gathering, and a decline in public support for militancy. 	Challenges to fundamentals of the Constitution: <ul style="list-style-type: none"> The Court is not going into the question of whether Parliament can convert a state into a union territory and left this open. The Union can now impose the President's Rule first and then substitute parliamentary approval in place of the Assembly, even for highly divisive issues like the splitting of a state.
Promotes Economic Development: <ul style="list-style-type: none"> Tourism: Jammu and Kashmir has seen 1.62 crore tourists in 2022, the highest in India's 75 years of independence Infrastructure: New Roads, Tunnels and Bridges have seen the light of the day 	Loss of Regional Identity- <ul style="list-style-type: none"> Article 370 was created to respect and preserve the unique identity, history, and culture of the State of Jammu and Kashmir. This abrogation can raise insecurity among the regional communities, depriving them of special treatment or protection. The separatist elements can use this verdict to fuel separatism and radicalism.

Way Forward:

- Restoration of Statehood:** As directed by the Supreme Court, working towards the restoration of statehood for Jammu and Kashmir, could

PEPPER IT WITH:

Special Status, SR Bommai v Union of India, PM Development Package (PMDP), Industrial Development Scheme (IDS)

reinstate local governance and allow the region to have more autonomy in decision-making.

- Truth and Reconciliation Commission:** Establishing a Truth and Reconciliation Commission can significantly address past human rights violations and foster reconciliation.
- Security Measures and Counter-terrorism Actions:** Continued focus on maintaining security measures to combat terrorism and extremist activities, ensuring the safety and security of the populace, and preventing external forces from destabilizing the region. Also, there is need to stop the misuse of AFSPA
- Political Dialogue and Engagement:** Initiating meaningful and inclusive dialogue involving all stakeholders, including political representatives from Jammu and Kashmir, to address grievances, aspirations, and concerns. The dialogue should restore trust and confidence among different communities in the region.
- International Diplomacy and Bilateral Engagement:** Engaging in diplomatic efforts and bilateral dialogues with neighbouring countries, particularly Pakistan, to address cross-border terrorism issues and seek cooperation in maintaining peace and stability in the region.

Constitutional Bench

News Excerpt:

Recently, CJI D.Y. Chandrachud announced his intent to **create Constitution Benches** of varied strengths as a permanent feature of the Supreme Court.

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Historical Background of Supreme Court (SC):

- India had three SCs during colonial times: Bombay, Calcutta, and Madras.
- The Indian High Courts Act of 1861 replaced the Supreme Courts with separate regions, while the Government of India Act 1935 created the Federal Court of India.
- The Supreme Court was founded on January 28, 1950, under **Article 124** of the Constitution. It came into being in Delhi as a result of **Article 130**.
- The first SC had eight judges, including the Chief Justice of India (CJI). As the workload increased, the number of judges was increased, with the **current number being 34**.

About Constitution Benches of the Supreme Court:

- Article 145(3)** of the Constitution provides for the setting up of a Constitution Bench.
 - It says a **minimum of five judges** (odd numbers- 5, 7, 9, etc.) need to sit to decide a case involving a "substantial question of law as to the interpretation

of the Constitution" or for hearing any reference under **Article 143**, which deals with the power of the President to consult the SC.

- The Court sits in benches of **varying sizes**, as determined by the Registry on the directions of the **CJI, the Master of the Roster**.
- It deliberates on a specific issue related to constitutional law.
- Typically, cases before the Supreme Court are heard by Division Benches (of two or three judges) or Constitutional Benches (of five or more judges).

Issues identified:

- **SC** has faced numerous frivolous public interest litigations (PILs), including demands to **remove secularism** from the Preamble to the Constitution, etc.
- **Limited Judicial Access:** Despite their best efforts to provide wide access to the Supreme Court, judges have inadvertently **limited access to justice**, particularly for under-resourced groups.
- **Delayed Justice:** Delays can be **incentives and disincentives** for parties involved in litigation, with the well-resourced but legally weaker parties benefiting from the delays.
- **Political Influence:** The **Chief Justices** are known to **influence** the **outcomes** of important cases by using their administrative powers of **case assignment**.
- **Institutional Instability:** **Short tenures** and **early retirements** contribute to institutional instability and **encourage judges** to **comply** with the Government of the day.
 - The appointment and transfer of judges in India is carried out through the **collegium system**, which has been criticized for its **opaque functioning**.
 - Since the inception of the Supreme Court, **only 11 women** have been appointed as judges, and none as Chief Justices.

Way Forward:

- In **1984**, the **Tenth Law Commission** of India proposed splitting the Supreme Court into the **Constitutional and Legal divisions**. This would make justice more accessible and reduce litigants' fees.
- **Eleventh Law Commission** 1988 stated that dividing the Supreme Court into parts would make justice more widely available and significantly **decrease litigants' fees**.
 - The top Court mostly handles matters from **nearby high courts**, while courts far away have fewer appeals due to **accessibility and costs**. That is, appeals from the **Punjab and Haryana High**

PEPPER IT WITH:

CJI, SC, Article 145(3), Article 143, Constitution Bench

Court, Allahabad High Court, and Delhi High Court formed the **major chunk** of matters.

- In **Bihar Legal Support Society v. Chief Justice of India (1986)**, the Supreme Court proposed establishing a **National Court of Appeal** to entertain **special leave petitions**, allowing it only to address constitutional and public law-related questions.
- The **229th Law Commission Report (2009)** recommended **four regional benches** in **Delhi, Chennai or Hyderabad, Kolkata, and Mumbai** to hear non-constitutional issues, with six judges from each region taking appellate responsibility.
- A Constitution Bench (**V. Vasanthkumar v. H.C. Bhatia**) **analyses** the issues and contemplates measures to **protect citizens' basic right to access** the Supreme Court.

All India Judicial Services

News Excerpt:

During an event celebrating **Constitution Day** at the Supreme Court, the **President of India** **suggested** the

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establishment of an All-India Judicial Service (**AJS**).

Need for AJS:

- **Suggestions:**
 - **1st Law Commission in 1958** recommended the creation of an AJS for efficiency in the subordinate judiciary, addressing structural issues and ensuring standard training nationwide.
 - **8th Law Commission 1978** also recommended it for delays and arrears in trial courts.
 - **Chief Justice Conferences** in 1961, 1963, and 1965 supported AJS.
 - **National Judicial Pay Commission** supported AJS in 1999.
 - In **1992**, the **Supreme Court's** observation in the **All India Judges case** suggested examining the feasibility of implementing Law Commission recommendations expeditiously for the health of the judiciary.
- **Fill vacancy of Judges:** India faces a **shortage of judges** in its subordinate courts, with around 35% of vacant posts. This has led to a poor judge-to-population ratio, with only 17 judges per million people.
- Since the inception of the Supreme Court, only 11 women have been appointed as judges, and none as Chief Justices.

- India Justice Report (IJR) 2022 shows that only 35% of subordinate court judges are women.
- No State has been able to meet the quotas for Scheduled Castes (SC), Scheduled Tribes (ST), and Other Backward Classes (OBC) categories in the subordinate judiciary.
- **Ensure independence and accountability:** The appointment and transfer of judges in India is carried out through the **collegium system**, which has been criticized for its **opaque functioning**. **AJIS would reduce the scope for judicial or executive interference and the subjectivity in the recruitment process.**

Current status:

- A comprehensive proposal was formulated for the Constitution of an All India Judicial Service (AIJS), and the Committee of Secretaries approved the same in 2012.
- The creation of AIJS was discussed among State Governments and High Courts, but there was a significant divide in their Opinions.
- As a result, there is currently no consensus on the proposal among major stakeholders, and the issue needs further deliberation and consideration.
- **Pending cases** are moving towards the 5-crore mark.
 - According to the **Law Minister, as of December 31, 2022, the total number of** pending cases in district and subordinate courts was pegged at over 4.32 crore.
 - Over **69,000 cases** are **pending** in the Supreme Court, while there is a **backlog** of more than **59 lakh cases** in the country's 25 high courts.

Constitutional Provision:

- **Article 312** of the Constitution provides for establishing All India Judicial Service (AIJS) upon a **resolution by the Rajya Sabha** supported by at least two-thirds of its members.
- AIJS shall **not include any post inferior to that of a District Judge**, i.e., it enables the creation of the AIJS at the District Judge level.
- **Article 233**- appointment of District Judges by the Governor in consultation with High Court judges.
- **Article 234**- recruitment of persons other than district judges.

Significance of AIJS:

- **Increase Judge-to-population ratio:** AIJS is crucial for **strengthening** India's **justice delivery** system and making justice **accessible to all**.
- **Merit-based**, competitive, and **transparent system:** It will allow for the induction of qualified legal talent, addressing **social inclusion** and attracting **competent individuals**.
- **Inclusive representation of India's unique diversity:** AIJS will facilitate the inclusion of competent persons from **marginalized, deprived** sections and **women** in the judiciary.

Way Forward:

- The **National Judicial Pay Commission** has **recommended** that the AIJS should be constituted only in the cadre of District Judges, following **Article 312 (3)** of the Constitution.
 - The **selection process** for direct recruitment should be conducted by the **National Judicial Commission / UPSC** and the promotees by the respective High Courts.
 - The **qualification** for direct recruitment should conform to **Article 233(2)** of the Constitution.
 - **Service Judges** should also be **allowed** to compete for **AJIS recruitment**.
 - **Not exceeding 25% of posts** in every state cadre of District Judges should be **earmarked** for direct recruitment.
- **Niti Aayog's 'Strategy for New India @75' report** recommends AIJS exam to maintain high standards and the AIJS cadre should report to the Chief Justice in each High Court to preserve judicial independence.
- AIJS should first be **implemented on a Pilot basis**.

PEPPER IT WITH:

Union Public Service Commission, Initiatives Related to Judiciary in India, Challenges Related to the Indian Judicial System.

Against Federalism	The creation of AIJS could further diminish the powers of States , which currently have limited powers.
Inadequate knowledge of the regional language	It would corrode judicial efficiency by disregarding the local laws, languages, and customs of the different states.
42nd Amendment Act to the Constitution	It has adversely affected states' powers, would diminish them further by transferring the power of selection from the High Courts to a central body.
Career	<ul style="list-style-type: none"> • Article 312 of the Constitution states that no post inferior to that of a "district judge" should be included in the service. • District judges handle serious criminal cases, and also civil matters. • It is questioned whether these young recruits aged 24-30, posted as district judges soon after selection and training, should be given such vast powers or not.
Current Recruitment System	It recruits district judges through the respective High Courts and other subordinate judicial officers through public service commissions, is more conducive to ensuring diversity, as there is scope for both reservation and a clear understanding of local practices and conditions.
Central recruitment	It would give the executive more influence over the appointment of district judges, and reduce the role of High Courts which is against Article 50. The government is the biggest litigant before the courts. It is problematic if the litigant were to decide who is to be appointed as a judge and for what considerations.

Challenges of AIJS

Suspension of Member of Parliament

News Excerpt:

Opposition MPs from both the Houses of Parliament are **suspended**. They were suspended for disrupting Parliamentary proceedings while **protesting about the Parliament security breach**.

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Causes of the disruption of Parliament:

- **Lack of time** available to MPs to raise important matters.
 - The Government sets the **agenda** in Parliament and decides how much time will be dedicated to any issue.
- **The Government's unresponsive attitude** and retaliatory posture by **Treasury benches**.
 - Parliamentary procedure prioritizes government business over other matters.
- Deliberate disruption by parties for **political** or **publicity purposes**.
- **Absence of prompt action** against MPs disrupting Parliamentary proceedings.
 - Parliament has **not updated** its **rules** in this regard over the last 70 years.

Types of punishment for MPs:

- Mild offences are punished by -
 - **Admonition** (a firm warning)
 - **Reprimand** (to tell somebody officially that he/she has done something wrong).
- After this comes the punishment of **"Withdrawal."**
 - As per **Rule Number 373** in Lok Sabha's Rules of Procedure and Conduct of Business, The **Speaker**, if he is of the opinion that the conduct of any Member is grossly disorderly, may direct such Member to **withdraw immediately** from the House, and any Member so ordered to withdraw shall do so forthwith and shall remain absent during the **remainder** of the **day's sitting**.
- Refusing the Presiding Officer's directions can invite the punishment of **"Suspension"**.
 - A member can be suspended, at the **maximum**, for the **remainder** of the **session** only.
 - Moreover, the House can **reinstate** a suspended member at any point in time by **passing a motion**.
- In cases of extreme misconduct, the House may **"expel"** a member "to rid the House of persons who are unfit for membership."

Procedure for suspension of MPs:

- The **Presiding Officer** - the Speaker of **Lok Sabha (LS)** and Chairman of **Rajya Sabha (RS)** - plays a major role in meeting suspensions.
 - In **LS**, the Speaker acts by **Rules 373, 374, and 374A** of the **Rules of Procedure and Conduct of Business**.
 - In **RS**, the Chairman acts as per **Rules 255 and 256** of the Rules.
- The **procedure** in both Houses is largely similar.
 - First, the **presiding officers** can **direct** an MP to **withdraw** from the House for any disorderly conduct (**Rule 373 in LS, 255 in RS**).
 - If that does not work and the said **MP continues to disrupt** the House proceedings, the **presiding officer** can "**name**" the legislator (**Rule 374 in LS, 256 in RS**).
 - After that, the House can move a **motion** to **suspend the MP** until the end of the session.
- While these rules have mostly remained **unchanged since 1952**, in 2001, the Lok Sabha further empowered the Speaker to deal with "**grave and disorderly conduct**."
 - As per the new rule (**Rule 374A**), an MP "**named**" by the Speaker shall **automatically stand suspended** for a period of **five days** or the remaining part of the session.
 - This rule **removes** the need for the House to pass a **motion** for suspension.
 - Notably, the **Rajya Sabha** has **not incorporated** this provision in its procedures.

Implications of suspension of MPs:

- It affects the **democratic setup** of the country.
- It leads to **the erosion** of the **representation** of people.
 - By suspending the MPs, **no voice is left** in the House of the people s/he was representing.
- In an opposition-less Parliament, the Government can get important **pending bills** passed by the muscle of the majority without any **discussion, debate** or **disagreement**.

Way Forward:

- The number of **suspensions** has **gone up** over the last few years.
- The **Presiding Officer** must maintain a **crucial balance** in the House.
 - While enforcement of the **supreme authority** of the Speaker is essential for **the smooth conduct of proceedings**, it must be remembered that her job is to run the House, not lord over it.
 - Therefore, the solution must be **long-term, consistent** with **democratic values**, and a changing India.
- Before the suspension of the members, there should be a **detailed discussion** on the matter, and the members to be suspended should be **heard unbiasedly**.

Advocates Amendment Act, 2023

News Excerpt:

The Advocates Amendment Bill, 2023, received the assent of the President.

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About the Act:

- The Advocates (Amendment) Bill, 2023, was **introduced** in the **Rajya Sabha** in August 2023.
- The Bill **repeals** certain sections related to touts under the **Legal Practitioners Act of 1879**.
- It **amended** the **Advocates Act of 1961**.
 - The 1961 Act **consolidates** the law related to legal practitioners and constitutes Bar Councils and the All-India Bar.
- It is **aimed** at **weeding out 'touts'** from the legal system.

Key features of the Advocates Amendment Act, 2023:

- Touts:**
 - The Bill provides that any judge of **High Court, district judge, sessions judge, district magistrate, and revenue officer** (not below the rank of a district collector) may frame and publish **lists of touts**.
 - Tout refers to a person who:
 - Either proposes to **procure or procures** the employment of a legal practitioner in a legal business in return for any payment or
 - Frequent places** such as the precincts of civil or criminal courts, revenue offices, or railway stations to procure such employment. The Court or judge may exclude from the premises of the Court any person whose name is included in the list of touts.
- Preparation of lists:**
 - The authorities empowered to **frame and publish the list of touts** may order subordinate courts to hold an **inquiry** into the conduct of persons alleged or suspected to be touted.
 - Once such a person is proven to be a tout, the authority may include his name in the list of touts.
 - No person will be included in such lists without getting an opportunity to show cause against his inclusion.
- Penalty:**
 - Any person who acts as a tout while his name is included in the list of touts will be punished with **imprisonment for up to three months, a fine of up to Rs 500, or both**.

PEPPER IT WITH:

Lok Sabha, Rajya Sabha, Member of Parliament, Presiding Officer, Speaker.

Related Acts:**Legal Practitioners Act, 1879:**

- Section 2 of the 1879 Act **defined** the term “**legal practitioner**” to include **advocates, vakils, or attorneys** of any High Court.
- It also introduced a **new definition** of the term “**tout**”.
 - A “Tout” was defined as someone who procures, in consideration of any remuneration from any legal practitioner, the employment of a legal practitioner in any legal business or one who proposes to any legal practitioner or anyone interested in any legal business to procure, for remuneration, the employment of the legal practitioner in such business.
- Simply, a tout is someone who procures clients for a legal practitioner in exchange for payment.
 - For such procurement purposes, the definition also included people who frequented civil or criminal courts, revenue offices, railway stations, etc.

Advocates Act of 1961:

- It was enacted to **amend** and **consolidate** the law relating to legal practitioners and to provide for the Constitution of **Bar Councils** and an **All-India Bar**.
- It **aimed** to create a **single Act** to regulate the legal profession.
 - This Act **repealed** a **majority of the 1879 Act** but left behind provisions relating to its extent, definitions, and powers to frame and publish lists of tous.

Significance of the Advocates Amendment Bill, 2023:

It will **reduce** the number of **superfluous enactments** in the statute book and **repeal** all **obsolete laws**.

It **aligns** with the Government's **policy of repealing obsolete laws or pre-independence Acts** that have lost their utility.

The Bill **aims** to ensure the **regulation** of the **legal profession** and protect the interests of advocates and the public.

It provides **consultation** with the **Bar Council of India** on the regulation of the legal profession.

Way Forward:

The Bill will help to address the long-standing issues in the legal system and balance the need to respect legal traditions with the demands of contemporary legal practice. These changes are expected to contribute to a more transparent and accessible legal system.

PEPPER IT WITH:

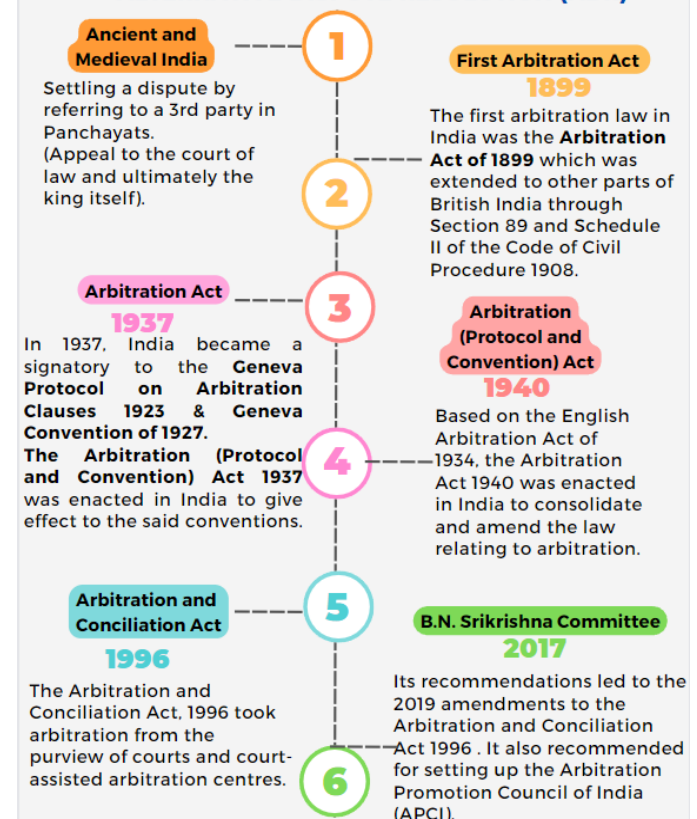
Bar Councils, All India Bar Association, Advocate Act, 1961

Whither Arbitration?**News Excerpt:**

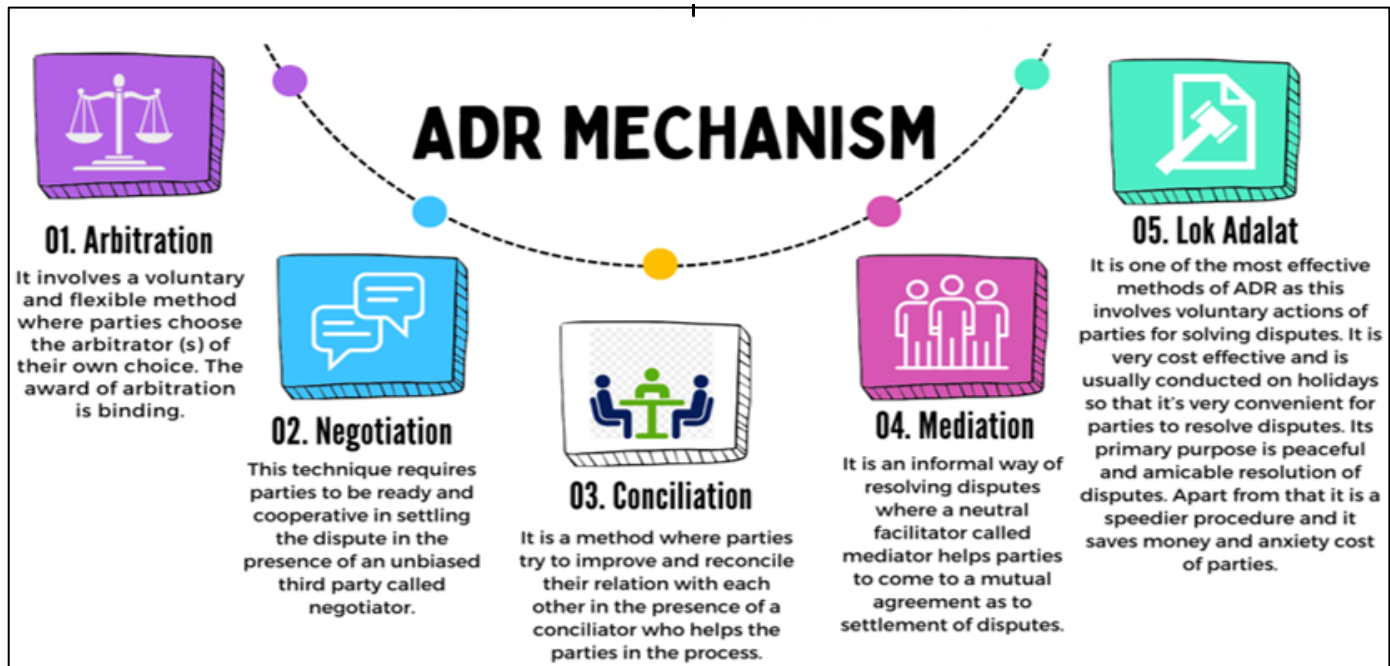
There is a dearth of information relating to **caseload and functioning**, particularly in the case of arbitration centres associated with trade and merchant associations and city-specific chambers of commerce.

According to WIPO (World Intellectual Property Organisation), **Arbitration** is a procedure in which a dispute is submitted, by agreement of the parties, to one or more arbitrators who make a binding decision on the dispute

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ALTERNATIVE DISPUTE RESOLUTION (ADR)**Need for Efficient Arbitration in India:**

- Speedy Justice Delivery System:**
 - The increasing burden of over **4.9 crore pending cases** in Indian courts prompted policymakers to consider strengthening ADR mechanisms.



- The **number of judges in India is comparatively low**, considering the population ratio in India.
- **MSMEs sector:** Micro, Small, and Medium Enterprises (MSMEs) are eagerly awaiting the establishment of arbitration institutions in the country.
 - Under **Section 18(3) of the MSME Act 2006**, when a dispute of MSMEs fails to settle through conciliation, the MSME Council shall either take up the dispute itself for arbitration or refer it to an arbitration institution for settlement.
 - The institution then conducts arbitral proceedings and passes an award that is binding on the disputing parties and equivalent to a court's decree.
- **Institutionally stable:** Arbitrations, if conducted in a tight environment, under the institution's rules, and if supervised, are responsible for various aspects relating to arbitration tribunal and ensuring the quality of an award passed by their panel arbitrator.
- **A rights-based approach to justice delivery:** The complex nature of the laws and rigidity of courts further amplify the need for an alternate mechanism to settle disputes.
 - In the **Food Corporation of India (FCI) Vs Joginderpal case**, the Supreme Court observed that "the law of arbitration must be 'simple, less technical and more responsive to the actual reality of the situations', 'responsive to the canons of justice and fair play'.
 - The absence of procedure and unnecessary formalities makes the **judicial process of arbitration hassle-free**. Further, at present, there is no fixed time given in the law for the speedy disposal of cases.

- The parties dissatisfied with an arbitrator's award may petition a court under **section 34** of the Arbitration Act within **90 days** to set aside the award.

Major Institutional Challenges in India:

- **Unawareness in Public:** The lack of legal education in the larger strata of our society is one of the greatest hindrances to the growth of ADR in India.
- **Execution Issues:**
 - **Ignorance:** Certain government officials and bankers are ignorant that an arbitration award by a party-appointed Arbitrator is equivalent to a court decree.

The Arbitration and Conciliation (Amendment) Act, 2021:

- It amended the **Arbitration and Conciliation Act of 1996**.
- **Provisions:**
 - The amendment allows an **automatic stay on enforcement of any arbitral awards if the courts find any clear evidence that the award is influenced by fraud or corruption**. This change has been incorporated under Section 36 of this Act using Section 2 of the Principal Act.
 - Secondly, it **omitted the Eighth Schedule** from the principal Act and states that the **qualifications, experience, and norms for accreditation of arbitrations** will be specified under the regulations.
 - The Act contains provisions **to deal with domestic and international arbitration** and defines the law for conducting conciliation proceedings.

- The **Arbitration Council of India** to authorize and regulate Arbitration Institutions (passed in 2021) has yet to be established.
- **Non-clarity of proceedings and dearth of Data:** In the present ADR mechanism, there is no established method for execution. The parties are now again in the same litigation process, which was meant to be bypassed by ADR. Several arbitral institutions do not have websites.
- **Lack of professionals and skilled lawyers:** Due to the generalized theoretical system of Judicial education present in India, we lack skilled arbitrators and legal professionals.

Way Forward:

- **Need to Democratize Judiciary:** There is an urgent need for the Centre and all the High Courts in the country to take note of the institutions operating in each State and designate them as arbitration institutions to alleviate the much-discussed burden on courts.
 - There is a huge need to build ADR tribunals in every district of the states to make it more accessible to every citizen of India.
- **Bringing Behavioural changes:** Legally educating the lower strata of society needs to be a part of school and college curriculums.
 - Further, legal professionals must be upskilled and provided with further career opportunities in ADR solutions to enhance the execution mechanism.

PEPPER IT WITH:

Arbitration Council of India, Article 51, Types of Arbitration, ICC-International Court of Arbitration.

Lok Adalat

News Excerpt:

The Legal Aid System in India is in an alarming situation.

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Current Situation of Legal Aid in India:

- According to Indian Justice Report (2022), the quantity of legal services clinics experienced a decline, decreasing from 14,159 in 2020 to 4,742 in 2022.
- Between 2021 and 2022, the National Lok Adalats resolved matters for a meagre Rs. 7,322 crore in total value. Over 60% of the inmates in prisons in 32 states are undertrials.
- Vocational education was made available to less than 5% of inmates in 24 states and Union Territories. 5 states have not furnished their inmates with vocational instruction.

What is Lok Adalat?

- Lok Adalat is one of the forums for **alternative dispute redressal mechanisms** where disputes/cases pending in the Court of law or at the pre-litigation stage are settled.
- Lok Adalats has been given **statutory status** under the **Legal Services Authorities Act of 1987**.
 - Under the Act, the decisions made by the Lok Adalats are deemed to be a decree of a civil court and are final and binding on all parties, and **no appeal against such an award** lies before any court of law.
- If the parties are not satisfied with the award of the Lok Adalat, they are **free to initiate litigation** by approaching the Court of **appropriate jurisdiction** and filing a case by following the **required procedure** in the exercise of their right to litigate.

Legal Aid System and National Legal Aid Service Authority (NALSA):

- Established under the **Legal Services Authority Act of 1987**, NALSA endeavours to ensure that the letter and spirit of the Constitution are upheld and that the poor, disadvantaged, and weaker members of society have access to equal justice.
- NALSA operates at both the **national and sub-national levels** using institutional arrangements that are explicitly designated, intending to ensure access to justice is affordable for those in need as follows:
- NALSA obtains its jurisdiction not solely from the **Legal Services Authority Act of 1987** but also from **Articles 14 and 22(1)**, which mandate the State to guarantee equal treatment under the law and a legal system that advances justice by providing equal opportunities to all.

Constitutional Provisions:

A citizen of a nation is obligated to face justice when his or her personal conduct or commercial activities are deemed to be in opposition to domestic legislation or the rights of another individual. A citizen in such a circumstance is free to pursue justice through administrative and judicial institutions:

- **Article 14- Access to Justice to the impoverished:** "Within the territory of India, the State shall not deny equality before the law and equal protection of the laws to any person."
- **Article 39A- Obligation on the State to offer free legal aid to all citizens:** It is the State's responsibility to ensure that the functioning of the legal system advances justice on an equal opportunity basis.

Issues with the Legal Aid system in India:

- **Accessibility of Justice:** Despite exerting considerable effort, legal aid systems could only reach a fraction of their prospective clientele.
- **Rising Prison and Pre-trial Offenders:** According to the India Justice Report, 2022, prison overcrowding

experienced a notable increase, surging from 120% to 130%. An unprecedented 77% of the inmate population consists of pre-trial offenders, who spend an average of more time incarcerated than at any other time in history.

- **Issue of Pending Cases:** The alarming number of pending cases, nearly 5 crores (50 million) below the staggering figure, is the distressing record of the escalating duration required to achieve a resolution.
 - **National Judicial Data Grid** indicates that of the 4,450,075 pending cases in various courts across the nation that have been unresolved for one to thirty years, more than seventy-five percent are criminal in nature.
- **Low Clearance of Cases:** According to the report, the only courts that operate with an entire complement of justices are the High Court of Sikkim and the district courts in Chandigarh.
 - Kerala was the only State among the eighteen large and medium-sized states to attain case clearance rates of one hundred per cent at both the High Court and subordinate court levels.
- **Lack of Policy Implementation:** No state or territory could meet all its Scheduled Castes, Scheduled Tribes, and Other Backward Classes quotas at the District court level.
 - Information regarding SC/ST/OBC justices is not accessible to High Courts.
- **Institutional Lags:**
 - **Police Force:** The police are an integral component of the criminal justice system in India. State statutes mandate employment quotas for SC, ST, and OBC individuals.
 - Every State and territory failed to achieve its designated quota for female police officers, while only the State of Karnataka has met these requirements.
 - **Human Rights Commission:** As of March 2021, the combined count of pending cases among the 25 State Human Rights Commissions stands at 33,312. State Human Rights suffers a shortage of 44% of their sanctioned staff strength.
 - **Loopholes in Law:** An additional malady of the nation's legal aid system is the situation obtained at the police station level in granting bail in petty cases, even though compounding of offences without court permission is permitted under **Section 320(1) of the Code of Criminal Procedure**.
 - Our police personnel are trained to register cases that do not fall under this provision, thereby preventing the station-level compounding of offences.

The Legal-aid Initiatives by the Government:

- **Public Awareness:** NALSA educates the public about their rights and promotes legal aid through institutional

arrangements, organizing legal literacy camps, and appointing paralegal volunteers. Since its establishment, it has organized over five lakh awareness-raising programs nationwide.

- **Prompt Resolution:** It is also conducting a permanent Lok Adalat to ensure prompt resolution and training and to facilitate pre-litigation dispute resolution via **Alternative Dispute Resolution (ADR) methods**.
- **Volunteering for weaker sections:** The provision of legal services by national, State, and district authorities is complimentary for the impoverished, including women, the disabled, scheduled castes, and tribes.
- The **India Justice Report 2022** - State expenditure on police and judiciary has kept pace with overall state expenditure.
 - Prisons, which had earlier seen a dip in allocations, saw an improvement in funds between 2020 and 2021.
 - Legal aid, too, recently saw increased infusions from the Centre and state exchequers.

Structural and Institutional Changes:

- **Commercial Courts Act of 2015:** To facilitate the Ease of Doing Business (EoDB) and further improve India's ranking in the **World Bank Report on EoDB**, the Government amended the Commercial Courts Act, 2015 in 2018.
 - **The salient features of the Commercial Courts Act (2015) are:**
 - Reduction in Specified Commercial Dispute Value.
 - Establishment of Commercial Courts at the district Judge Level and below.
 - Establishment of appellate Court at district judge level.
 - Introduction of the Pre-Institution Mediation and Settlement Process.
- **Recommendations:** A High-Level Committee was set up to review the Institutionalization of Arbitration Mechanisms in India, led by **Justice Sri B N Krishna**. It suggested that arbitration be institutionalized in India as an **Alternative Dispute Resolution (ADR) mechanism**.
 - The Union Government, **committed to speedy resolution of commercial disputes**, decided to look into the recommendations and amended laws accordingly in 2017.
- **Mediation Act of 2023:** An act to promote and facilitate mediation, especially institutional mediation, to resolve disputes, enforce mediated settlement agreements, and provide for a body to register mediators.

Way Forward:

- **Democratizing Justice:** Developing additional legal aid clinics, implementing legal aid at the village level, fortifying the Gram Nyaya Laya framework, and

promoting awareness among all stakeholders, including law enforcement, advocates, and the general public.

- **Implementation:** Developing a core team of advocates to work on a monthly salary basis in legal aid centres and bolstering institutional arbitration and mediation with pro bono service quotas.
- **Behavioural change:** Educating magistrates and judges about the importance of exercising their discretion in administering justice and preventing unwarranted delays in case dispensation will help the under-trials and the other needy.

PEPPER IT WITH:

Alternative Dispute Resolution (ADR), Gram Nyayalayas, District courts.

Special Marriage Act

News Excerpt:

An estranged **Parsi wife** of a prominent **Hindu** industrialist is seeking legal advice on her **alimony rights**; their marriage was solemnized under the **Special Marriage Act (SMA)** and not the Hindu Marriage Act (HMA).

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Enacted in 1872 and later re-enacted in 1954 to solemnise and recognise marriages between individuals from different faiths, communities, or religions (Hindus, Muslims, Christians, Sikhs, Jains, and Buddhists) and to regulate inter-faith marriage, separation, and other related issues.

2

Marriages solemnised under the SMA 1954 are entirely legal and binding.

3

The minimum age to get married under the SMA is 21 years for males and 18 years for females.

4

Marriages under this act are solemnised in the presence of a Marriage Officer, without any religious ceremonies or rituals. The Marriage Officer is responsible for maintaining marriage records.

5

Registration of marriages is mandatory if conducted under the SMA.

KEY FEATURES OF SMA

Key issues related to SMA:

- **Alimony and maintenance: Right to Equality**
 - **Section 36** deals with interim support, while **Section 37** addresses permanent alimony and maintenance.
 - Under **Section 37** of SMA, **only the wife** can claim permanent **alimony** and **maintenance** from the husband. In contrast, according to **Section 25** of **HMA**, **either party**, i.e., the

husband or the wife, can claim permanent alimony and maintenance.

- The condition that **only women** are **eligible** for alimony under SMA violates the **Right to Equality**.

- **Notice period: Right to Privacy**

- Under **Section 7 (Objection to marriage)**, any person can object to the marriage before thirty days from the date of the notice's publication.
- This provision is often used to **harass** consenting **inter-religious couples** and has been challenged several times for endangering the lives of such couples.
 - In **2009**, the **Delhi High Court**, underlining the right to privacy, **struck down** the **practice of posting the notice** of intended marriage under the SMA to the residential addresses of both parties through the police station of the concerned jurisdiction to verify their addresses.
 - In **2021**, the **Allahabad High Court** ruled that couples seeking to solemnize their marriage under the SMA, 1954, can choose **not to publish** the **30-day notice** of their intention to marry.

- **Property and Inheritance:**

- **Section 26**, which deals with **succession** under the SMA, recognizes the validity of children born to people married under the SMA.
 - The offspring of such marriages are **not entitled to ancestral property**.
 - They can only obtain a share of their parents' self-owned or inherited property.

Positive aspects of SMA:

- **No need for conversion:**

- Laws, such as the **Muslim Marriage Act 1954** and the **Hindu Marriage Act (HMA) 1955**, require either spouse to **convert** to the religion of the other before marriage.
- SMA allows individuals from different religions to marry without the need to convert.

- **Succession rights under SMA:**

- Rights about the succession of property of a person married under this Act, or that of their children, are governed by the **Indian Succession Act 1925**.
- **Children** born under the SMA have **equal rights** over both parents' properties, as opposed to unequal rights of sons and daughters under religious laws.

Way Forward:

- **Awareness campaigns and initiatives** should be started to **inform** people about the **legal provisions** and **procedures** followed in the Special Marriage Act.
 - Thus helping individuals make **informed decisions** when opting for such marriages.
 - It would bring more **inclusivity** and **diversity** to the institution of marriage.
- Authorities should look towards **providing security** to the couples opting for marriages under the Act.
 - This would **negate** the chances of **honour killings**, which are quite **prevalent**.
- The Government could strive to **speed up** and **improve** the **procedure** to make marriages easier under the SMA.
 - The **30-day notice rule** has been a **contentious** subject. This requirement could be **done away** with or made **optional** by the Government.

PEPPER IT WITH:

Inheritance rights, Special Marriage Act 1954, Right to Privacy, Personal Liberties, Article 21.

Universal Declaration of Human Rights @ 75**News Excerpt:**

The year 2023 marks the **75th** anniversary of the **Universal Declaration of Human Rights**, which coincides with the **30th** anniversary of the **Office of the High Commissioner for Human Rights**.

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What is the Universal Declaration of Human Rights?

- 75 years ago (December 10), the UN General Assembly approved the **Universal Declaration of Human Rights** at a meeting of the **Paris Peace Treaty** by laying one of the foundation stones of the international order that emerged following the horrors of **World War II**.
- The Declaration was proclaimed as "**a common standard of achievement for all peoples and all nations**."
- As the document turns 75, U.N. Human Rights Chief Volker Turk said that the world is at a "**sombre moment in history**," wracked by conflicts and crises. But he insisted that "**human rights have not failed**."

What was the Universal Declaration of Human Rights?

- A relatively compact document, the Declaration consists of a **preamble** and '**30 articles**' setting out **fundamental rights and freedoms** as follows:

- **Article 1:** It states that all human beings are born free and equal in dignity and rights.
- **Article 2:** It states that everyone is entitled to all the rights and freedoms. It prohibits distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or another status.
- **Other Articles:** They state that "everyone has the right to life, liberty and the security of person" and that no one "shall be held in slavery or servitude" or "subjected to torture or cruel, inhuman or degrading treatment or punishment."
- **Equality before Law:** The Declaration says that "all are equal before the law" and that everyone is entitled to "a fair and public hearing by an independent and impartial tribunal."
 - **Right to Remedy (article 8):** It also says that "everyone has the right to seek and to enjoy asylum from persecution in other countries."
 - **Right to Peaceful Justice:** The Declaration enshrines the rights to freedom of religion, freedom of opinion and expression, and freedom of peaceful Assembly. And it says that everyone has the right to education.

Why and how was the Universal Human Rights Commission drawn up?

- The "never again" sentiment among political leaders after two world wars led to the U.N. Charter being founded in 1945 with a **road map to guarantee the rights of every individual**.
- **Eleanor Roosevelt** (widow of U.S. President Franklin D. Roosevelt) chaired a formal Drafting Committee.
- This committee comprised members of the new Commission on Human Rights from eight countries, selected to reflect geographical distribution.
- Over 50 U.N. countries participated in the final drafting in 1948, and the U.N. General Assembly approved the result on December 10, 1948, with eight countries abstaining but none voting against it.

Criticism faced by the Drafting Committee:

- According to Amnesty International (Human Rights Group), the Declaration was drawn up at a time when much of the world's population lived under colonial rule, but says that "its drafting ultimately could not be controlled by the powerful alone."
 - It says that smaller nations "out manoeuvred the large," ensuring that the final text promised human rights for all without distinction, and those female delegates ensured equal rights for men and women were affirmed.

What are the achievements made by the Universal Declaration of Human Rights?

- It worked as a pillar for regional and State laws:

- The principles set out have been **incorporated into many countries'** laws and are viewed as the basis for international human rights law.
- It is recognized as having inspired and paved the way for more than **70 human rights treaties** at global and regional levels, according to the U.N.
- It enshrines the rights of all human beings and is a global blueprint for international, national, and local laws and policies and the bedrock of the **2030 Agenda for Sustainable Development**.
- **For example**, it inspired the decolonization movement, the anti-apartheid movement, and freedom fighters worldwide, be it on gender issues, LGBTIQ+ issues, or racism.
- **Less edged and issue of legally binding:** The Declaration has no force of law as it is a mere declaration with no effect over the horrors suffered by many people since its adoption by the UN.

What is the current situation now?

- **Challenged due to changing geo-political scenario:** The Universal Human Rights Commission is challenged due to recent issues like the Israel-Hamas war, Russia-Ukraine conflicts, and Myanmar and Sudan internal conflicts and in a host of other places and situations.

Why has Article 99 of the UN Charter been invoked?

- Recently, Article 99 of the UN Charter was invoked (discretionary power) in decades as Israel attacked Gaza.
- Article 99 states, "The Secretary-General may bring to the attention of the Security Council any matter which in his opinion may threaten the maintenance of international peace and security."

When has Article 99 been invoked in the past?

- Past examples include the upheaval in the Republic of the Congo in 1960 following the end of Belgium's colonial rule and a complaint by Tunisia in 1961 against France's naval and air forces launching an attack.
- **Powers are misused:** The Human Rights Council is criticized for 'using it as a wrecking ball' for political gains, and principles are often misused.

Way Forward:

The Universal Declaration of Human Rights, adopted in 1948, is a testament to our collective efforts to build a world where justice, fairness, freedom, and human dignity prevail. It signifies a ground-breaking moment in the history of humankind. Today, the world may appear quite different, yet the Declaration's relevance and significance remain undiminished.

PEPPER IT WITH:
Article 12 to 35, DPSP,
Achievements of UDHR.

PRE-SHOTS

Constitution Day - November 26

News Excerpt:

The **Ministry of Law and Justice**, in collaboration with the **Indian Law Institute**, celebrated Constitution Day at Vigyan Bhavan, New Delhi.

About:

- November 26 was marked as the Constitution Day of India (or "**Samvidhan Diwas**") in the year 2015 as a part of a year-long celebration of the 125th birth anniversary of Dr B R Ambedkar.
- Earlier, this day was celebrated as Law Day, but in 2015, the Indian Government modified Law Day as Constitution Day.
- On **November 26 1949**, 73 years ago, the Constitution of India was **adopted**, coming into **effect on January 26, 1950**.
 - The Constituent Assembly for Independent India drafted the Constitution for two years, 11 months, and 17 days, with 11 sessions and 7,600 amendments.
- As part of this year's celebrations, a **national-level transformative Colloquium** will feature **five technical sessions**.
 - The Colloquium **aims** to explore the crucial **link** between **constitutional values** and **global aspirations** with the planet's well-being and its inhabitants.
 - This will provide an opportunity for **legal luminaries, policymakers, and academia**, among others, to deliberate upon the **reformative needs** of our laws, focusing on the **vision @2047**.
- BR Ambedkar's statue will be installed on the Supreme Court premises.

Significance of the Constitution Day:

- The Constitution Day aims to bring awareness about the importance of the Indian Constitution and its architect, Dr B R Ambedkar, who is also called the Father of the Indian Constitution.
- This will help to **advance constitutional values among Indian Citizens**.
- As National Law Day, this day is celebrated to honour the 207 eminent members of the Constituent Assembly who have contributed to the Constitution of India since its foundation.

Truth and Reconciliation Commission

News Excerpt:

In his opinion, Supreme Court Judge Justice Sanjay Kaul recommended setting up a Truth and Reconciliation Commission to look into alleged **human rights** violations by both **State** and **non-state** actors in J&K.

About the Truth and Reconciliation Commission (TRC):

- It is also known as the **"Truth and Justice Commission"**.
- It is an official mechanism **to acknowledge** and **reveal** wrongdoings by a government (or non-state actors or combatants).
 - Resultantly, conflicts of the past can be addressed and resolved.
- Characteristics:**
 - Focused** on the **past** rather than ongoing events.
 - Investigates** a pattern of events that took place over a period of time.
 - Engages** directly and broadly with the affected population.
 - Gather information** on their experiences.
 - A temporary body** will conclude with a **final report**.
 - Officially **authorized** or empowered by the State under review.

Countries with such commissions in the past:

- In India's neighbourhood, TRCs have been set up in **Sri Lanka** and **Nepal**.
- Canada** set up one in **2008** to investigate the **violations** in the **First Nation Indian residential school system** (similar to the American-Indian boarding school systems, which involved the **children** of First Nation tribes being **forcibly sent** to residential schools, characterized by **extreme discipline** and often led to widespread **abuse** and deaths of the children).
- In **South Africa**, the first post-apartheid Government established a TRC in **1995** to uncover the truth of **human rights violations** during the decades of **apartheid**.

Why does India need a Truth Commission?

- Women's groups** in the **Northeast** were clear that a Commission was necessary to "begin processes of truth-telling, healing and reconciliation", and therefore, they called for establishing a **Northeast India Truth and Reconciliation Commission**.
- Human rights abuses during the **Emergency**, **Sikh riots** of 1984, **Partition**, and 2002 **Gujarat riots**.
- Kashmir** and its long and terrible history.

- The atrocities on **Dalits**, such as the **Khairlanji killings** or the **Tsundur massacre**.
- Imposition of the **Armed Forces (Special Powers) Act, 1958**.
- The systematic oppression and marginalization of the **Minorities**.

Amplifi 2.0 Portal

News Excerpt:

The Ministry of Housing and Urban Affairs (**MoHUA**) launched the **Amplifi 2.0** (Assessment and Monitoring Platform for Liveable, Inclusive and Future-ready Urban India) **portal**.

About:

- Amplifi 2.0 portal is a platform that provides **raw data** from **Indian cities** for data-driven **policymaking**.
- Under Amplifi 2.0, data across **14 sectors** is **streamlined** to increase focus on data collection, and domain experts can **analyze disaggregated data**.
 - Sectors included** - demography, economy, education, energy, environment, finance, governance, health, housing, mobility, planning, safety and security, solid waste management, and water and sanitation.
- The portal has already **onboarded 225** urban local bodies (**ULBs**) and has **data for 150 cities**.
 - MoHUA **aims** to make data from **over 4,000 ULBs** available on the portal.
- Need of Amplifi 2.0:**
 - By 2030**, India is projected to have 60 crore (**40%**) of the **population** living in **urban areas** compared with 37.7 crore (31%) in 2011.
 - According to the 2011 Census, **urban India contributed 63%** to the country's **GDP**, projected to increase to **75% by 2030**.
- The Ministry has previously used data from ULBs to **rank cities** based on **four indices** -
 - Ease of Living Index
 - Municipal Performance Index
 - Climate Smart Cities Assessment Framework
 - Data Maturity Assessment Framework.

FASTER 2.0 portal and e-SCR portal

News Excerpt:

Chief Justice of India launched the **FASTER 2.0 portal** and unveiled a **Hindi version** of the **e-SCR portal**.

About Fast and Secured Transmission of Electronic Records (FASTER) 2.0 portal:

- The portal is designed to promptly **inform jail authorities, trial courts, and high courts** about court orders to release prisoners.

- The new digital facility looks to **plug the delay** in the present system, which is currently much more **time-consuming** as this is based on **physical order copies** to be officially received via "formal" government channels before the jail authorities.

About e - Supreme Court Report (e-SCR) portal:

- This is an initiative to provide the **digital version** of the **judgments** of the Supreme Court as they are reported in "**Supreme Court Reports**".
 - The **Hindi version** of the e-SCR portal will **allow** access to Supreme Court **judgments in Hindi**, making legal information more **accessible** and **inclusive**.
- This project endeavours to take a step forward towards fulfilling the objective of the **digitization of the Indian Judiciary** for the benefit of **litigants, judges**, members of the **Bar, law colleges** and **universities, governmental institutions, law clerks** and **researchers, judicial academies, civic society** and the public at large.

Centre's power to extend the tenure of Chief Secretary

News Excerpt:

The Supreme Court (SC) held that the **Central Government** had **the power** to **extend** the **tenure** of the incumbent Chief Secretary of Delhi.

About the news:

- The SC said that the **central Government** has the **power to appoint** the Chief Secretary of Delhi, which includes **extending** the term of the superannuating officer.
- The SC stated the **Chief Secretary of Delhi** is entrusted to look after the "**public order, police and land**" - three subjects excluded from the powers of Delhi government- it is **impossible** to **divide** the functions of the Chief Secretary.

Chief Secretaries of the States vis-a-vis Chief Secretary of the Government of National Capital Territory of Delhi (GNCTD):

- In relation to chief secretaries appointed to states, under **rule 16** of the **All India Services (Death Cum Retirement Benefit) Rules, 1958**, an extension can be granted only on **prior approval** of the **state government**.
 - Rule 16 would apply to the extension of service of other officers whose power doesn't extend to the excluded subjects" - public order, police and land.
- This provision is made in relation to the role of the state government, where the chief secretary performs functions related to the State.
- However, the position for GNCTD is different as the chief secretary performs executive functions where he is entrusted with significant functional responsibilities, including overall administrative control and supervision over subjects that also stand excluded from the legislative domain and executive powers of GNCTD.

Constitution Bench II judgement, 2023:

- The SC judgement settling **the tussle** between **the Delhi Government** and the **Centre** In the spirit of **cooperative federalism** stated that the Union must exercise its powers within the boundaries created by the Constitution.
- NCTD, having a **sui generis federal model**, must be allowed to function in the domain charted for it by the Constitution.
- The LG is bound by the **aid and advice** of the Council of Ministers of NCTD in relation to matters within the legislative scope of NCTD.
 - Further, any reference to "**Lieutenant Governor**" over services (excluding services related to 'public order', 'police' and 'land') in relevant Rules shall mean LG acting on behalf of GNCTD.

SOCIAL ISSUES

Annual report of the National Crime Records Bureau (NCRB)

News Excerpt:

National Crime Records Bureau (NCRB), under Ministry of Home Affairs released the 70th edition of the annual 'Crime in India' report, which contains an exhaustive set of crime statistics for the year 2022.

About the Report:

- The **National Crime Records Bureau publishes the report under the Ministry of Home Affairs**. This is the oldest and the most prestigious publication brought out by NCRB.
- The data for the report is **collected by the State Crime Records Bureau (SCRB)** from the District Crime Records Bureau (DCRB) and sent to NCRB at the **end of every calendar year** under the reference.

Key Highlights:

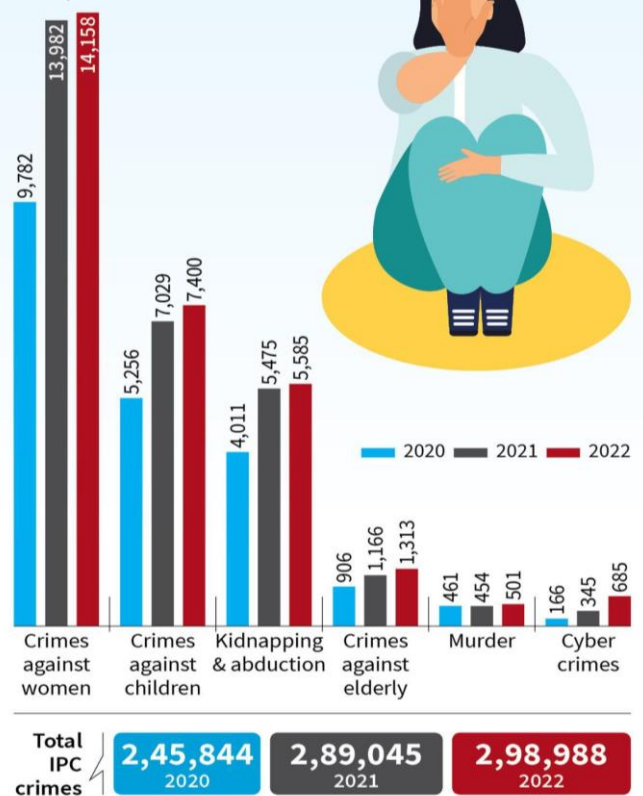
- Overall Crime:** A total of 58,24,946 cognizable crimes comprising 35,61,379 Indian Penal Code (IPC) crimes and 22,63,567 Special & Local Laws (SLL) crimes were registered in 2022. It shows a **decline** of 4.5% in case registration over 2021. During 2022, registration of cases under IPC and SLL Crimes have declined **by 2.8% and 7.0%, respectively, over 2021**.
- The crime rate registered per lakh population has declined from 445.9 in 2021 to 422.2 in 2022.
- Crime Against Women:** The majority of cases under crime against women under IPC were registered under '**Cruelty by Husband or His Relatives**' (31.4%), followed by '**Kidnapping & Abduction of Women**' (19.2%), '**Assault on Women with Intent to Outrage her Modesty**' (18.7%), and '**Rape**' (7.1%). The population's crime rate registered per lakh women was 66.4 in 2022 compared to 64.5 in 2021.
- Cyber Crime:** There has been a sharp **increase** in Cyber Crime Cases registered in States and 19 Metro cities. A total of 65,893 cases were registered under Cyber Crimes, showing an **increase** of 24.4% in registration over 2021 (52,974 cases). The crime rate under this category **increased** from 3.9 in 2021 to 4.8 in 2022.
- Extortion and human trafficking:** A total of 501 incidents of murder were reported in the city. It also

recorded 106 cases of human trafficking. At least 492 minor boys were trafficked in Delhi as compared to 113 girls in 2022 — **all of whom were recovered**.

- The State/UT reporting the highest Charge-sheeting Rate under IPC Crimes are Kerala (96.0%), Puducherry (91.3%), and West Bengal (90.6%).
- Acid Attack:** West Bengal reported 31 incidents of acid attacks, with 35 victims throughout the state. There were seven victims in seven incidents of "attempt to acid attack." Uttar Pradesh, with 25 victims in 23 incidents and one incident of an attempt to acid attack, is second on the list, and Madhya Pradesh, with 11 victims in seven incidents, is third.

Observations made by the Report:

Capital crimes



Source: NCRB

- Delhi unsafe for Women:** Delhi is the most unsafe metropolitan city for women in the country, recording an average of three rape cases daily, according to the annual report of the NCRB.
 - Delhi recorded 14,158 incidents of crime against women in 2022, the highest number among 19 metropolitan cities for the third consecutive year, with about 186.9 crimes reported for every 1,00,000 women.

- According to a recent observation, in most incidents of rape and assault, the victim and the accused are generally known to each other, which makes it difficult for the police to directly prevent such incidents from taking place as the victim refrains from registering a complaint due to various factors.
- **Awareness is rising:**
 - Awareness drives are carried out to **explain safe and unsafe touch** and what to do when women and girls find themselves in such situations. Several such sessions at schools and colleges to make policing accessible have been conducted.
 - The police have been conducting **self-defence training camps** for women and efficiently working on converting complaints into FIRs.
 - The **increase in cases registered** for incidents of crime against women also reflects police efforts to check crime.
 - The number of unreported cases has decreased as more women register cases. According to the latest NCRB data, 7,400 incidents of crime against children were recorded in the city, which included 22 incidents of murder.

Way Forward:

- The Supreme Court judgment of 2014 on furnishing identity proof for acid purchases and registration for selling is nowhere near implementation. Thus, awareness still needs to be increased about the existing laws and judgments
- "'Rise in crime' and 'increase in registration of crime by police' are clearly two different things that require better understanding. Thus, an oft-repeated expectation from certain quarters that an effective police administration can keep the crime figures low is misplaced.

PEPPER IT WITH:

E-Prison, E- Forensic, E-Court, State of crime in India.

WHO's World Malaria Report 2023

News Excerpt:

According to a **new WHO World Malaria Report 2023**, Malaria cases continue to dip in India.

About World Malaria Report:

The World Malaria Report 2023 presents progress against several important health and development goals in global efforts to reduce the burden of malaria and eliminate the disease where possible.

- **These goals are outlined in the Sustainable Development Goals (SDGs) framework:**

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- The World Health Organization (WHO) **Global technical strategy for malaria 2016–2030 (GTS)**
- The RBM Partnership to **End Malaria** (formerly known as Roll Back Malaria) **Action and Investment to Defeat Malaria 2016–2030**
- For most indicators, the report covers the **period 2000–2022**.

Key highlights of the Report:

- **Indian Scenario:** Contrasting the global trend, **India continued to witness a decline in malaria cases** and deaths in 2022 (a decrease of 30% and 34%).
 - According to the **National Institute of Malaria Research**, the decline in malaria cases and deaths in 2022 was due to **good preventive and case management strategies, effective vector control tools, point-of-care diagnostics, and prompt treatment** at the community level.
- **Global Scenario:** According to the World Malaria Report 2023, the number of malaria cases globally dropped from 243 million in 2000 to 233 million in 2019 and **increased during the pandemic**.
- In 2020, the first year of the pandemic, there were 11 million more cases. The figures remained the same in 2021, only to increase in 2022. The number of global malaria deaths was also higher: 608,000 deaths in 2022 compared with 576,000 in 2019.

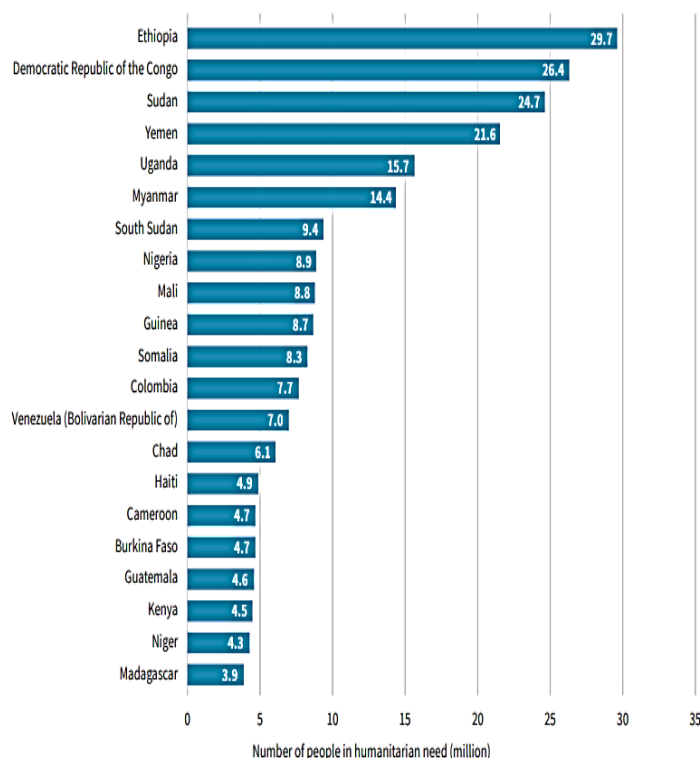
WHO on Malaria trends in South-East Asia Region:

- The WHO South-East Asia Region had **nine malaria-endemic countries** in 2022, accounting for 5.2 million cases and contributing to 2% of the burden of malaria cases globally.
- In 2022, India accounted for about 65.7% of all malaria cases in the region.
- Between 2000 and 2022, malaria cases **decreased by 77%, from 22.8 million in 2000 to 5.2 million in 2022**, and incidence decreased by 83%, from 17.6 to 3.0 per 1000 population at risk.
- **India and Indonesia** accounted for about **94% of all malaria deaths** in this region in 2022. **Between 2020 and 2022**, all countries in the region in which malaria deaths occurred reported an **increase in the malaria mortality rate, except for India**.

Challenges presented by the Report:

- **Direct vulnerabilities:** Climate variabilities, such as changes in temperature and rainfall, can impact the behaviour and survival of the **malaria-carrying Anopheles mosquito**. Extreme weather events such as heat waves and flooding may increase the transmission and burden of the disease.

Malaria endemic countries that account for 89% of people in humanitarian aid in 2022 Source: *Global humanitarian overview 2022 (13)*.



- **Indirect vulnerabilities:** A changing climate has indirect effects on malaria, too. As an example, population displacement may lead to more malaria as people without immunity migrate to endemic areas.
 - Climate variability has also led to malnutrition in many places, a risk factor for severe malaria among young children and pregnant women.
- **Lack of Services:** Millions of people continue to miss out on the services they need to prevent, detect and treat the disease. Conflict and humanitarian crises, resource constraints and biological challenges such as drug and insecticide resistance also continue to hamper progress.

Recommendations by World Malaria Report 2023:

- The currently followed operational strategy focuses on WHO/GMP's role but also acknowledges the importance of a concerted effort across the ecosystem to accelerate progress towards the **GTS 2030 targets**. It is, therefore, fully aligned with both the **GTS** and **WHO's 14th General Programme of Work**.
- The **WHO Global Malaria Programme (WHO/GMP)** has developed a departmental operational strategy for the **2024–2030 period**.
- **Recommendations on Vector Control:** WHO published recommendations to cover two new classes of dual-ingredient insecticide-treated mosquito nets (ITNs) with different modes of action.
- **Recommendation to Rollout of the RTS, S/AS01 malaria vaccine:**

- This kind of vaccine allocation was determined by applying the principles outlined in the vaccine allocation framework, which prioritizes doses to areas of highest need, where the risk of malaria illness and death among children is highest.
- This allocation round uses the supply of vaccine doses available to Gavi via the United Nations Children's Fund (UNICEF).

• Recommendation for a second malaria vaccine, R21/Matrix-M:

- The addition of the R21 malaria vaccine to complement the ongoing rollout of the first malaria vaccine, RTS, is expected to result in sufficient vaccine supply to benefit children living in areas where malaria is a major public health problem.
- Tens of thousands of young lives could be saved every year with the broad rollout of these malaria vaccines.

Way Forward:

- WHO's World Malaria Report provides a comprehensive and up-to-date assessment of trends in malaria control and elimination across the globe.
- **This year's report includes, for the first time, a dedicated chapter focused on the intersection between climate change and malaria.**
- A substantial pivot in the fight against malaria is needed, with increased resourcing, strengthened political commitment, data-driven strategies and innovative tools.

PEPPER IT WITH:

Vector-borne Disease, Malaria and its eradication, World Health Assembly.

Lancet Report on Child Marriages in India

News Excerpt:

A study published in the Lancet Global Health talks about the declining prevalence of child marriage in India.

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About:

- The **United Nations Children's Fund (UNICEF)** sees child marriage as a **"violation of human rights"** as it "compromises the development of girls and boys".
- Child marriage is often the result of entrenched gender inequality, making girls disproportionately affected by the practice.
- Ending child marriage is therefore seen to be critical to achieving the **UN's Sustainable Development Goal (SDG) 5**, which is to **"achieve gender equality and empower all women and girls" by 2030**.

- **SDG target 5.3** seeks to "eliminate all harmful practices, such as child, early and forced marriage and female genital mutilation".

Significance of the studies and observations by the Lancet Global Health:

- The study has provided the first comprehensive assessment and changes if any, in the prevalence of child marriage across all states and Union Territories of India between 1993 and 2021.
- Most studies in the past have ignored child marriages among boys, which has a direct bearing on reducing child marriages among girls in the Indian context.
 - A deep-rooted societal norm prevailing in most parts of the country is that a bride needs to be younger by age than the potential groom.
 - This practice can be corroborated by the median age at first marriage for men and women in the age group 25–49 years being 24.9 years for men and 19.2 years for women, as reported by the **National Family Health Survey NFHS (2019–21)**.
 - The study has also made a sincere effort to provide **child marriage headcounts** for girls and boys.
- It not only **helps policymakers, advocates, and implementers to set the future requirement** for multi-sectoral investment in the programs associated with the elimination of child marriages but also a potential source of absolute and relative assessments of child marriage burden across states and Union Territories and the selected socio-demographic backgrounds.

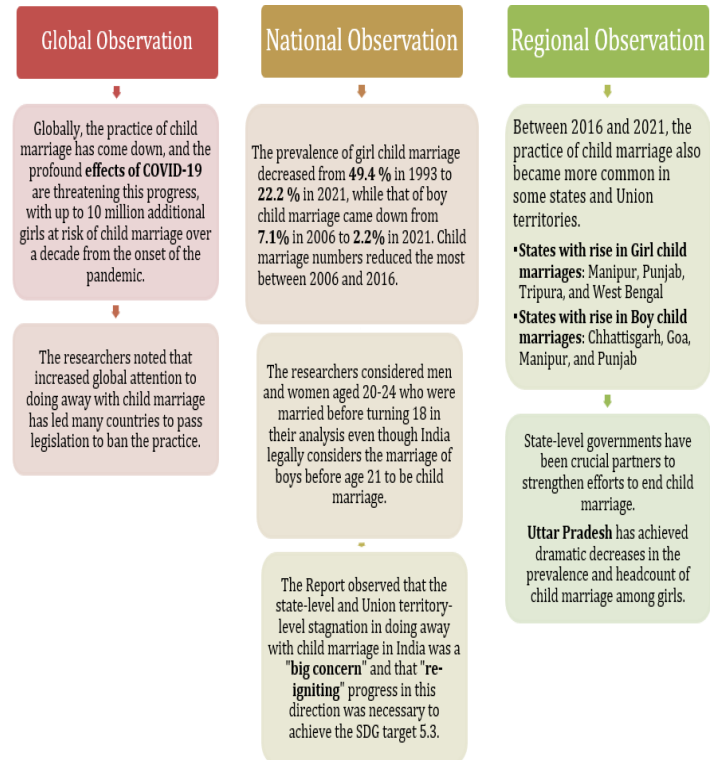
Highlights of the Reports:

- According to the study published, **1/5th of girls** and about **1/6th of boys** in India are married, with the progress made towards eliminating the practice of child marriage stagnating in recent years.

Government Interventions for preventing Child marriages:

- India had started legal intervention much before the cognizance of the current international commitments to tackle child marriage.
- **In 1929**, the Imperial Legislative Council of earlier British India passed the **Child Marriage Restraint Act** to curb child marriages, which was amended later on several occasions in independent India.
- **In 1978**, the amendment to the act fixed the minimum legal age at marriage for **girls to 18 years** and **boys to 21 years**.
- **In 2006**, the act was renamed as the **Prohibition of Child Marriage Act** and has punishable provisions in case of its violation. It also empowers the state to curb child marriages through community sensitization and awareness policies and programs.

- Regarding the variation in the effective implementation of the **Prohibition of Child Marriage Act** in the context of a highly diversified socio-cultural milieu, norms, and practices associated with marriage, studies in the past have documented tremendous intra-state and inter-state variation in the child marriage rates.



Way Forward:

According to the Lancet Report, future research measuring the child marriage problem requires refinement on two necessary fronts.

- **Need to think about Indicators of the measuring criteria:**
 - The indicator of the proportion of women aged 20–24 years married before 18 years and men aged 23–27 years married before 21 years is **neither an accurate period measure nor a robust cohort measure to capture the most recent progress.**
- **The decline in child marriage might not be a true reflection of a change:**
 - The reports showed that the prevalence of child marriage had declined in India between 1993 and 2021.
 - But, on the other front, participation in mate selection **and forced or unconsented marriage** at any age is a serious issue.

PEPPER IT WITH:

Dhanalakshmi Scheme, Child Marriage Prohibition Officers, Sustainable Development Goal (SDG) 5, UNICEF

Indian Higher Education must be globally competitive

News Excerpt:

Recently, the D/o Higher Education Ministry of Education set up an Overarching Committee to strengthen the assessment and accreditation of Higher Education Institutions (HEIs).

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About HEIs:

Higher education is tertiary education, leading to the award of an academic degree. It is an optional final stage of formal learning after completing secondary education.

What is Accreditation in HIEs?

Higher education accreditation is a type of quality assurance process under which services and operations of post-secondary educational institutions or programs are evaluated to determine if applicable standards are met. If standards are met, accredited status is granted by the agency.

Why does the Present system of Accreditation need changes?

- Changing Student Expectations.
- A renewed emphasis on research quality and innovation.
- Burgeoning global collaborations, a genuine desire for international recognition and intense competition in the academic sector among both public and private players.
- This need for change is also fueled by accrediting bodies and ranking entities like NAAC, NBA, NIRF, UGC and AICTE, which wield substantial influence.

About the Overarching Committee:

- This overarching committee was set up on 3rd November 2022 by the Ministry of Education.
- K Radhakrishnan, chairman of IIT's Kanpur Board of Governors chaired the committee.
- The report's title is 'Transformative Reforms for Strengthening Periodic Assessment and Accreditation for All Higher Education in India'.
- The Aim/Objectives of the Committee:
 - To strengthen the accreditation processes by NAAC and the ranking system by NIRF,
 - To recommend how more institutions can come into the fold of accreditation,
 - To prepare a roadmap for aligning NAAC, NBA, and NIRF to the proposed National Accreditation Council (NAC) in HECI.

Transformative reforms proposed now for India's HEI-accreditation system conforming to NEP 2020:

- **One Nation One Data Model:** The **One Nation One Data (ONOD)** Portal aims to establish a unified data architecture for augmenting the efficiency and transparency of the country's Approval, Accreditation, and Ranking processes of Higher Education Institutions. It will also help reduce the time spent on HEIs collecting data and information.
- **The transition from the present 8-point grading system of NAAC to an 'Adapted Binary Accreditation System' is proposed;** HEIs are awarded eight types of letter grades viz. A++, A+, A, B++, B+, B, C and D as per NAAC.
- **Enable Choice-based Ranking System for Diverse Users:** Mentor the Institutions falling 'far below the standards for accreditation'. HEIs from the accredited

BENEFITS OF ACCREDITATION

FOR THE PUBLIC	FOR STUDENTS & GRADUATES	FOR EMPLOYERS	FOR THE PUBLIC HEALTH WORKFORCE	FOR THE FEDERAL GOVERNMENT	FOR THE UNIVERSITY
					
Accreditation promotes the health, safety & welfare of society by assuring competent public health professionals.	Accreditation ensures that the school has been evaluated & has met standards established by the profession. Promotes professional mobility & enhances employment opportunities.	Accreditation provides assurance that the curriculum covers essential skills and knowledge needed for today's jobs.	Accreditation establishes standards of practice & assures that educational requirements reflect the current training needs of the profession.	Accreditation serves as a basis for determining eligibility for federally funded programs and student financial aid.	Accreditation serves as a reliable basis for inter- and intra-institutional cooperative practices, including admissions & transfer of credit. Enhances its national reputation & represents peer recognition.

group may be encouraged to become mentors, with suitable credit given during their re-accreditation.

- **Encourage accredited Institutions to raise their bar gradually to:**
 - 'Level 1' to 'Level 4' of Institutes of National Excellence (moving up as they evolve 'in-depth in their disciplines' and/or in-breadth in disciplines)
 - 'Level-5' for Multi-Disciplinary Research and Educational Institutions of global standing (as envisioned in NEP 2020)
- **This classification could be a necessary condition for graded autonomy.**
 - **Include all HEIs and every programme in the newly proposed assessment and accreditation system, with due regard for their statutory dispensations (e.g. IITs):** The process of encouraging IITs to migrate from their internal peer review system to an appropriate national accreditation system is on the anvil.
 - **Initiate a robust outreach mechanism in tandem with effective methods of handholding the potential entrants** (which is the large majority now), where the aim should be to facilitate all HEIs in the country towards joining the accreditation process and ranking as soon as possible.

Way Forward:

To address the present issues the following focus areas need to be considered:

- Carrying out **stakeholders' consultation** to further streamline the existing accreditation process of NAAC/NBA.
- Examination of the existing documentation/verification processes and **rationalization** of the present system of recognition/accreditation and ranking by multiple agencies.
- Adopting an **incentive-based, facilitation-oriented approach to encourage HEIs to undertake accreditation.**
- The government must give **due regard to the Institutes of Excellence** to achieve global competitiveness in HEIs.

PEPPER IT WITH:

Education Quality Upgradation and Inclusion Programme (EQUIP), Revitalizing Infrastructure and Systems in Education (RISE) by 2022.

74.1% of Indians can't afford a healthy diet: FAO

News Excerpt:

The Food and Agriculture Organization (FAO) launched a report titled- '**Regional Overview of Food Security and Nutrition 2023: Statistics and Trends**'.

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Food and Agriculture Organisation (FAO):

- It is a specialized agency of the United Nations that leads international efforts to defeat hunger.
- It was founded in 1945 and headquartered in Rome. India is a member of FAO.
- Its goal is to achieve food security for all and make sure that people have regular access to enough high-quality food to lead active, healthy lives.
- With 195 members - 194 countries and the European Union, FAO works in over 130 countries worldwide.
- World Food Day is celebrated on 16th October every year to mark the anniversary of the FAO.



India related findings:

- **74.1% of Indians** could not afford a **healthy diet** in 2021, compared to 76.2% in 2020.
- The report states that **16.6%** of the country's population is **undernourished**, impacting health, nutritional well-being, and economic and social costs.
- India recorded the **highest rate** of **stunted** growth among **children under five** years of age, with **18.7%** facing this major health problem.
- The report also noted that **53%** of the country's **women** aged **between 15 and 49** had **anaemia**.
- The report warns that **1.6%** of the country's **adults** are **obese** as of 2000, which has increased to **3.9% by 2016**.
- India has improved its prevalence of **exclusive breastfeeding** among **infants 0-5 months** of age, with a percentage of **63.7%**, higher than the world prevalence of 47.7%.
- India has the **region's highest prevalence** of **low birth weight (27.4%)**, followed by Bangladesh and Nepal.

Asia and Pacific-related findings:

- In **Pakistan**, **82.2%** and in **Bangladesh**, **66.1%** of the population faced difficulty finding healthy food.

- **Sri Lanka, Iran, Indonesia, Myanmar, Fiji, and Mongolia** are the **only** countries showing an **increase** in the percentage of people unable to afford a healthy diet in 2021 compared to 2020.
- Rising **food costs**, if not matched by **rising income**, will lead to more people **being unable** to afford a healthy diet.
- Asia and the Pacific region, which account for half of the world's severe food insecurity, continue to suffer from protracted effects during the **COVID-19** pandemic and the **"5Fs" crisis – Food, Feed, Fuel, Fertilisers, and Finance**.
- **Southern Asia** showed a higher **severe food insecurity** prevalence than other sub-regions, while **Eastern Asia** had the **lowest prevalence**.
- The report highlights the progress in meeting **Sustainable Development Goals** and World Health Assembly (**WHA**) global nutrition targets.

Causes of rising hunger:

- **Food insecurity and malnutrition jeopardize the life chances of youth:** The youth are emerging into adulthood in a context of inherently unequal and unsustainable food systems that fail to deliver food and nutrition security and that are highly vulnerable to climate change and environmental degradation.
 - These shortcomings are particularly problematic given the youth's unique food and nutrition needs, and the data showing these needs are not being met in low- and middle-income countries.
- **Gender discrimination:** Women and girls make up about 60 per cent of severely hungry people.
 - In many low- and middle-income countries, women, particularly in lower-income groups, are responsible for producing and preparing food and obtaining water and firewood.
 - During periods of food scarcity, women and girls often eat last and least, making them more vulnerable to food and nutrition insecurity.
- **The loss of food sovereignty weakens food systems:** The loss of food sovereignty, particularly in the world's low- and middle-income countries, has been hastened by several major factors, including colonialism, poor governance, and the intensive capitalization of food systems, the widespread growth of monocultures in agriculture, and some of the negative outcomes of the Green Revolution.
 - In many areas, local farmers are excluded from seed systems and have limited control over what they plant, relegating indigenous crops to the status of neglected crops.

Way Forward:

- **Food sovereignty needs attention to four critical factors:** people and their rights, the quality of food produced, cultural aspects of food systems, and environmental well-being.
 - A global forum held in Nyeleni Village, Mali 2007 declared food sovereignty as "the right of peoples to healthy and culturally appropriate food" produced through ecologically sound and sustainable methods and their right to define their own food and agriculture systems.
 - In this way, gender discrimination can also be tackled.
- **Need for nutrition and food security assistance:** Food produced in an indigenous manner has long-term nutritious values and positive effects on human health.
 - Water, sanitation, and hygiene need to be taken care of to help families live and eat better.
- **Policy making and Youth participation:** Although policymakers have begun to seek out young people's voices and perspectives, the share of youth in formal decision-making forums is negligible, and the increased focus on youth participation in some policy dialogues is necessary for a meaningful impact.
- **Economic recovery and market systems through up-skilling the entrepreneurial energy:** In the coming years, the skilling-up programmes can open new possibilities for business; training provided by the private sector can help to improve skills and product quality.

PEPPER IT WITH:

Wasting, Anaemia, Stunting in Childs, Diverse and Balanced Diets, Millets, Low-birth Weight

Rising Female work participation

News Excerpt:

With changes in the work status of females, predominated by the rise in Agri sectors, the rising contribution of females in the labour market epitomizes a stressed livelihood.

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Recent Report on Participation in India's Workforce:

- According to the **Periodic Labour Force Survey, or PLFS (2022-23)**, there is a rise in female participation in India's workforce.
 - There is a rise in the percentage of the **population of all ages** – to 27.8%, up 3 percentage points **Year-on-Year (YoY)**, especially from the rural areas (up 3.3% to 30.5%).

- The surge in employment (WPR) has been driven by **self-employed persons**, predominantly in rural areas.
- **Female participation:** The rise in the female LFPR is a major contributor to the overall rise in the worker-to-population ratio (WPR) employment and availability of rural and female labour in 2022-23.
 - This signifies a significant funneling of economic progress to household livelihoods.
- **Male participation:** However, for males, the LFPR declined (-1.1% at 56.2%) more than WPR (-0.4%, to 54.4%).
 - This implies that notwithstanding a greater contribution by women, the unemployment rate (UR) decline for males has been larger than for females.
- **Occupation status** data shows a rise in female workers in agriculture sectors in FY23, both rural (+0.3pp YoY to 76.2%) and urban areas (+0.6pp to 11.7%).
 - **Rural India:** In rural areas, the proportion of women in industry and services has risen even as the Agri sector remains dominant.
 - Additionally, there has been a rise in the proportion of rural females of self-employed status (+3.2pp at 71%), indicating increasing dependence of rising LFPR and WPR on the Agri sector.
- **Urban India:** In contrast, their proportion in urban industry, construction and services has declined.

Current Challenges:

- **Decrease in work profile quality:** Due to the increasing dependence of rising LFPR and WPR on the agri sector, the work profile's quality reflects a decline in the proportion of regular wage work and casual wage work.
- **Changing trends in incomes:** A gainful situation would imply abundant employment opportunities in productive sectors, translating into rising incomes.

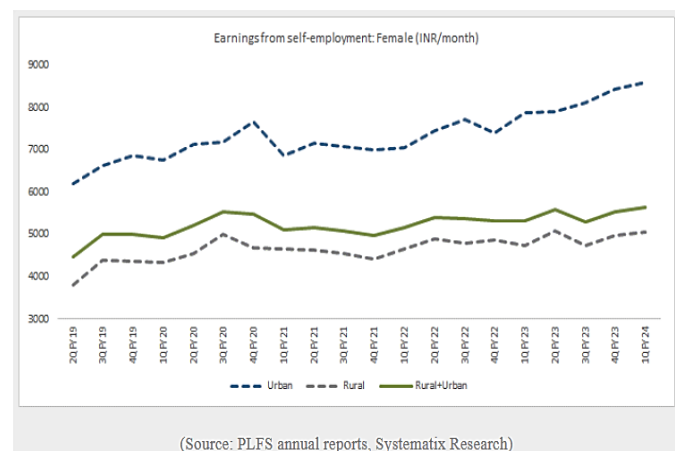
- **National Sample Survey Office (NSSO)** launched the **Periodic Labour Force Survey (PLFS)** in **April 2017**.
- The **Periodic Labour Force Survey (PLFS)** was **designed with two major objectives** for measuring employment and unemployment.
 - **The first was to** measure the dynamics in labour force participation and employment status in three months for only the urban areas in the Current Weekly Status (CWS).
 - **The second one** was for both rural and urban areas to measure the labour force estimates on key parameters in both usual status and CWS.

- Conversely, a distressing situation would emanate from a decline in average real incomes, forcing women to seek work, even in less productive sectors and at lower wages.

Key takeaways from the PLFS data:

- **Disguised unemployment:** The wages for the self-employed segment, male and female, are majorly driven by the rural areas (80% weight).
 - Rural self-employment accounts for the disguised unemployment clustered under
 - Helper in the household enterprise,
 - Own account worker and
 - A significant portion of wages is based on their activities; they do not represent actual cash wages.
- **Decline in urban wages:** With respect to self-employed women, the weight of wages from rural (lower paying vs urban) has seen a remarkable rise from 72% in September 2018 to 84% in June 2023; the contribution of higher paying urban wages has declined.
 - As a result, the 4-year CAGR for self-employed females was a meagre 3.5% (INR 5636/month).
 - After COVID-19, real female wages (net of inflation) fell by 5.4%.
- **The narrow gap in the Male-female regular wages:** The regular salary/wage growth for rural females (7.8% 4-year CAGR, 1.8% in real terms) was higher than for males (5.7% CAGR), reflecting the narrowing female-male gap in regular wages.
 - However, the proportion of regular wage earners among females has declined in rural areas (8%, -0.1pp) and risen in urban areas (50.8%, +0.5pp).

Exhibit 1: Female earnings from self-employment have stagnated (0.6% CAGR over pre-covid)



- **Increased workload and responsibilities for women:** Declines in real income per worker amid the rise in dependency have led to a forced increase in women's participation in the workforce despite lower earnings.

What can be the Implications for Society?

- **Structural implications:** Stretched per capita incomes can affect investment in education and health, thereby impairing labour productivity and future earnings capability.
- **Issue of Triple Burden:** A woman is expected to carry on work, household, and childcare responsibilities. Predominated by the rise in Agri sectors and incomes mainly from self-employment, the rising contribution of females in the labour market epitomizes a stressed livelihood rather than a bountiful situation.
- **Decrease in Urban Employment:** At a broader level, the recent trends observed through PLFS mirror an important dimension of the rising Realization phenomenon and declining proportion of employment in the urban industrial and services sectors, translating into rising dependence on rural sectors.

Way Forward:

- **Need for the change in ideology:** The domestic ideology has reinforced the identification of the domestic sphere and the house as the woman's place. As such, reproductive work is naturally considered women's work. Domestic work has no clear demarcations between work and leisure; it is without beginning and end, and in many societies, women tend to work longer hours than men.
- **Need to organize, Mobilize, and challenge injustice:** There is an urgent need to improve women's condition at the household level and **assist them in their traditional roles** to create more time for them to embark on income-generating enterprises.
 - However, improving their condition needs to be done in a transformative way that challenges the gender division of labour and women's subordination to men in society.
- **Need to make her economically empowered:** A critical issue concerning reproductive work is the lack of recognition of the economic cost, which has resulted in it being **undervalued, unpaid, and invisible**. It is crucial to recognize this as work and the obstacles it presents for women's economic empowerment.

PEPPER IT WITH:

Gender Inequality, Wage Disparities, Female Labour Force Participation Rate, Human Capital Development,

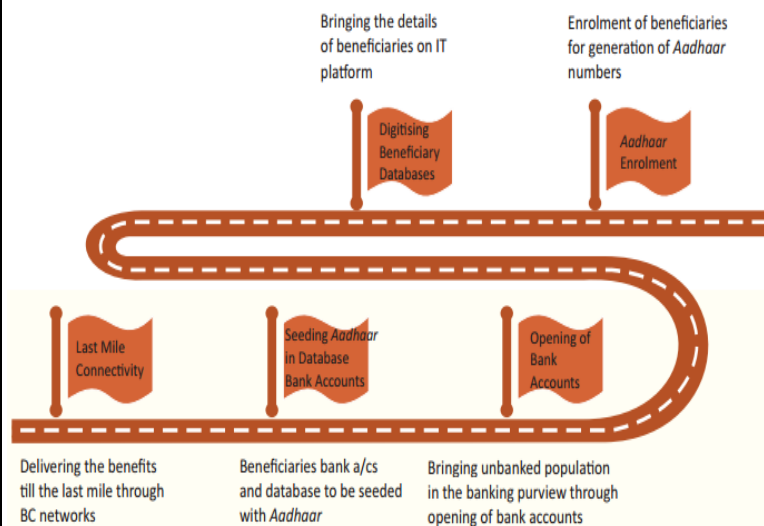
PRE-SHOTS

Direct Benefit Transfer

News Excerpt:

A recent article written by a member of the Economic Advisory Council to the Prime Minister of India focused attention on the **significance of DBT in providing dignity to the poor.**

What is Direct Benefit Transfer (DBT)?



- The Government of India launched the DBT Program on **1st Jan 2013 to transfer benefits to the underprivileged population transparently and honestly.**
- This system has been globally recognized as a "logistical marvel" as it leverages the digital public infrastructure to its full potential.
- Schemes such as **the National Child Labour Project, LPG Subsidy, Janani Suraksha Yojana, etc.,** are successful examples of DBT.
- It is estimated that DBT has saved **1.14 per cent of India's Gross Domestic Product (GDP).**

DBT: As a Preserver of the poor's dignity

- Preserving the dignity of the poor is **another crucial benefit that has received little attention.**
- In that way, **DBT is fulfilling the mandate of Article 21, which guarantees the Right to Live with dignity.**
- Even though dignity might be challenging to quantify, it should be recognized that even with efficient administration, the poor would have to undertake a long road to avail of government benefits.
- This change in approach, **where instead of the poor availing of government benefits, it's the government benefits that reach them without an intermediary,** has important implications for their psyche.
- In a civil and humane society, **it is essential to recognize that all individuals, irrespective of their**

economic and social circumstances, have equal rights to dignity.

Need for replication of DBT in other areas, such as Justice:

- We need to think hard about how we **can replicate the success of DBT**, which leveraged technology to efficiently deliver goods and services to the poor in other areas.
- The President of India has highlighted **the plight of prisoners who have been languishing for years in jails for petty crimes because they do not have the financial or legal resources to fight their cases.**
- She appealed to the judges and government **to design a mechanism where Justice can reach the poor, not where they have to struggle and fight for Justice and still be deprived of it.**

Femicides at a twenty-year peak across the globe

News Excerpt:

About 88,900 women and girls were intentionally killed worldwide on the grounds of gender-related factors in 2022, a recent study from the **United Nations Office on Drugs and Crime (UNODC)** and **UN Women** shows.

Key Highlights of the Study:

- "Gender-related killings of women and girls (femicide / feminicide)", saw an **increase in femicide in 2022** despite a **global decline in homicides overall.**
- **Women are more likely to be murdered by their partners** or someone known to them. This stems from the reality that women are primarily the victims of physical abuse at the hands of their close relatives.
 - **Out of the 88,900 female victims of homicides** in 2022, **55% were killed by family members** or intimate partners.
 - **In over half the female homicides in Europe, the perpetrators are partners** or related to the victims.
 - In 2022, there were **about 20,000 female victims of intimate partner/family-related homicide in Africa**, the highest among continents.
 - The **African continent exceeded Asia in femicides** for the first time in 13 years.
 - **In Asia, 18,400 women were killed by their families** during the same period.
 - Data also suggests that there was a general trend of reduction in gender-related killings of women before 2021, though it increased drastically in 2021 and 2022, especially in Africa.

Project Collaboration Agreement

News Excerpt:

The Ministry of AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy) and the World Health Organization (WHO) have signed a Traditional and Complementary Medicine 'Project Collaboration Agreement' in Geneva.

About the Collaboration Agreement:

- The main objective of this agreement is to **standardize Traditional and Complementary Medical Systems**, integrate their **quality and safety aspects** into the mainstream of the **National Health System**, and disseminate them at the **international level.**
- To fulfil this objective, **Traditional Medicine Global Strategy 2025-34** will be prepared by WHO with the support of the Ministry of AYUSH.
- Other major objectives of the agreement include efforts to **strengthen the system of training and practice** in the Complementary Medicine System '**Siddha**', formulation of guidelines for listing Traditional and Complementary Medicines, safety and related efforts, etc.
- The AYUSH Ministry will develop an **International Herbal Pharmacopoeia of Herbs** found in South-East Asia in collaboration with WHO.
- Efforts will be made under this agreement to integrate evidence-based Traditional and Complementary Medicines with the National Health System, **conservation and management of biodiversity and medicinal plants, etc.**

World Health Organization (WHO):

- Founded in **1948**, the WHO directs and coordinates international health within the United Nations system.
- It is headquartered in **Geneva**, Switzerland.
- The objective of WHO is to **attain the highest possible level of health by all people.**
- **Health**, as defined in the WHO Constitution, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.

Operation Storm Makers II

News Excerpt:

According to Interpol, the Telangana Police, under **Operation Storm Makers II**, registered one of the first cases in India of **human trafficking victims forced to commit cybercrimes.**

About Operation Storm Makers II:

- It is the **first operation** carried out by **Interpol** from October 16 to October 20, specifically targeting a

Human trafficking group that forces victims to commit cybercrimes or scams on an industrial scale.

- It involves Law enforcement agencies in 27 countries across Asia and other regions.
- **The operation resulted in the arrest of 281 individuals for offences** such as human trafficking, passport forgery, corruption, telecommunications fraud, and sexual exploitation.
- **Several citizens were taken to Dubai** on the pretext of a job, only to be shipped to Thailand and then Myanmar. Once there, they were handed over to an online fraud syndicate and kept under armed guard while being trained to defraud banks.
- **In India**, an accountant was lured to Southeast Asia, where he was forced to participate in online fraud schemes and could only leave after a ransom was paid.
- The Interpol operation also led to the rescue of other human trafficking victims.
 - A 13-year-old boy from Bangladesh, who had been trafficked to India, was rescued in coordination with the Interpol National Central Bureaus in both countries, including the Central Bureau of Investigation.

SPARK Project

News Excerpt:

In collaboration with the Women's Development Corporation in Maharashtra, the ILO (International Labour Organization) and the International Fund for Agricultural Development (IFAD) are implementing the SPARK project.

About SPARK (Sparking Disability Inclusive Rural Transformation) Project:

- ILO is implementing the multi-country SPARK **project on disability inclusion in rural livelihood**.
- The SPARK project is **integrated into the IFAD-funded Nav Tejaswini Yojana**, Government of Maharashtra.

- The project has brought an attitudinal shift towards persons with disabilities from the societal to administrative levels.
- **Working:**
 - Persons with disabilities were put in the lead, being identified from the villages, and trained as **Disability Inclusion Facilitators (DIFs)**.
 - The DIFs engage with the community, persons with disabilities, caregivers of persons with disabilities, women from self-help groups and other stakeholders to raise awareness about disability inclusion and barriers to inclusion.
 - The DIFs identify women with disabilities and **mainstream them in existing self-help groups** for social and economic development, where these women can access funds to start an enterprise.



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ECONOMY

Special Economic Zones (Fifth Amendment) Rules, 2023

News Excerpt:

The Ministry of Commerce and Industry has amended the **Special Economic Zones (SEZ) Rules, 2006**.

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About the Amendments:

- The amendment permits the **demarcation** of a portion of the built-up area within an SEZ unit on a **floor-by-floor basis** as a non-processing area.
- This area may be used for setting up and operation of businesses with a focus on Information Technology (IT) and IT-enabled services, and at such terms and conditions as may be specified by the Board of Approval.
- A non-processing area shall consist of a **complete floor**.
- A part of a floor cannot be demarcated as a non-processing area.
- Demarcation** of a non-processing area shall not be allowed if it decreases the processing area to less than 50% of the total area or less than the specified area.
- However, repayment of tax concessions associated with the non-processing area will be required.
- The repayment of tax benefits will be determined by calculating the benefits provided for the processing area of the SEZ.

About Processing and Non-Processing Area:

Processing Area	Non- Processing Area
The processing area in a SEZ is the designated space where units are established for the primary purpose of manufacturing goods or rendering services that contribute directly to the economic activity and objectives of the SEZ.	The non-processing area in an SEZ refers to the space where supporting infrastructure is developed . Activities in the non-processing area are not directly involved in the core business operations of manufacturing or service provision.

Significance of the Amendment:

- Reduction of SEZ Vacancy:** The move is expected to reduce vacancies in SEZs, making them more appealing to businesses as after the phasing out of tax benefits, occupiers had become less inclined to stay in SEZs.
- Addressing Compliance Concerns:** The amendment addresses these concerns and is expected to make SEZs more attractive for businesses with no excessive compliance concerns.
- Positive Impact on REITs:** It is likely to have a positive impact on Real Estate Investment Trusts (REITs) with

significant SEZ space in their portfolios, as the demand for such spaces may increase.

- Harmonious co-existence:** It will pave the way for a harmonious co-existence of SEZ and non-SEZ entities within a unified campus, enhancing the ease of doing business for corporations, developers, and investors.
- Boost economy and employment:** This progressive reform will aim to increase occupancy within IT SEZ Parks, in turn boosting economic activity and creating more jobs.
 - For Example, India's SEZ occupancy levels are currently around 80%, and this amendment will further elevate the attractiveness of our 20 million square feet of premium grade-A office spaces.

Special Economic Zones (SEZs):

- The Indian Special Economic Zone was structured with the establishment of the first Export Processing Zone (EPZ) at **Kandla in 1965**.
- The Special Economic Zones (SEZs) policy was launched in April 2000. The Special Economic Zones Act 2005 was passed in May 2005, and the **SEZs Rules came into effect in 2006**.
- The SEZ Act 2005 provides for the establishment, development, and management of the SEZs for the promotion of exports and matters connected therewith or incidental thereto.
- SEZs in India are areas that offer **incentives to resident businesses**.
- SEZs typically offer **competitive infrastructure, duty-free exports, tax incentives**, and other measures designed to make it easier to conduct business.



- SEZs in India are a popular investment destination for many **multinationals**, particularly **exporters**.
- As of 2023, India has around **272 operational SEZs** with a combined employment of 2.8 million people. These SEZs generated approximately **US\$133 billion in exports**, with service exports making up about 60% of this total.

Way Forward:

- The amendment to SEZ Rules represents a **progressive reform** aimed at enhancing the **operational flexibility** of IT and IT-enabled services SEZs.
- As it fulfils the **long pending industry demand**, it will foster economic growth and **attract diverse businesses** to these specialized zones.
- The impact is not only on the spatial dynamics within SEZs but also on **the overall economic landscape**, with potential benefits for developers, businesses, and job seekers.

PEPPER IT WITH:

SEZ rules, REITs, Processing and Non-Processing Areas, Foreign Trade Policy.

Periodic Labour Force Survey (PLFS)

News Excerpt:

The latest Periodic Labour Force Survey (PLFS) released by the **National Statistical Office (NSO)** shows shifts in India's **labour market dynamics** and the **record-low unemployment rate**.

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National Statistical Office (NSO)

The Statistics Wing, re-designated as NSO, consists of the **Central Statistics Office (CSO)** and **National Sample Survey Office (NSSO)**.

- It operates under the **Ministry of Statistics and Programme Implementation**.
- It is responsible for collecting, analyzing, and disseminating official statistics, providing crucial data on various aspects of the Indian economy, society, and demographics.

Labour Force Participation Rate (LFPR)

- The labour force participation rate is a measure of the proportion of a country's **working-age population** that engages actively in the labour market, either by **working or looking for work**.
- It indicates **the size** of the supply of labour available to engage in the production of goods and services relative to the population at working age.

Unemployment rate and rise in labour force participation:

- The latest Periodic Labour Force Survey (PLFS), released last month by the National Statistical Office (NSO),

shows the unemployment rate at **3.2 %** during the 12 months from July 2022 to June 2023— the lowest recorded since the NSO started the survey in April 2017.

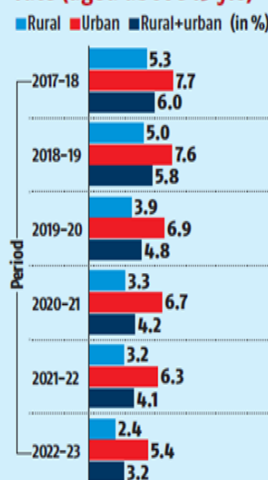
- Unemployment declined both in **rural as well as in urban** areas.
- The quality of employment has declined continuously over the past few years, as wage employment, which is the better form of employment, is at its lowest level since the survey started in April 2017.
- The data also shows a steady rise in the **Labour Force Participation Rate (LFPR)** to 57.9 % in 12 months to June 2023 from 49.8% between July 2017 and June 2018.
- That means currently, **three out of five** working-age Indians — between **15 and 59 years** old are **looking for work**.

Increase in self-employment:

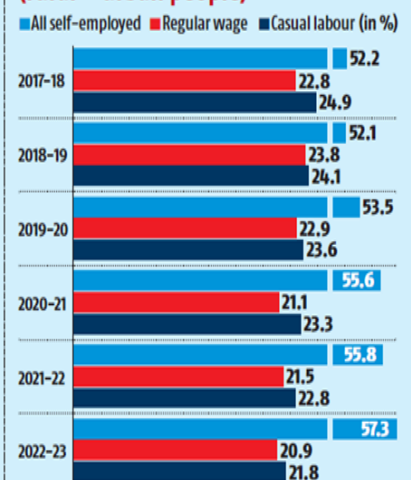
- The share of self-employed people increased to **57.3 %** during July 2022 to June 2023, from 55.8 % in the previous 12-month cycle and 52.2 % in the period

WORK STATUS

Annual unemployment rate (aged above 15 yrs)



Worker by employment status (rural + urban people)



Note: 2022-23 refers to July 2022–June 2023 and likewise for 2021-22, 2020-21, 2019-20, 2018-19 and 2017-18

Source: NSO

between **July 2017** and June 2018.

- The increase in LFPR and the fall in unemployment led to a rise in self-employment, including **unpaid household** work and small business enterprises.
- Quality of employment** has declined with a decrease in wage employment, while self-employment has increased to **57.3%**.
- There is a substantial increase in the **share of women in agriculture**, reaching 64.3% in 2022-23, possibly driven by pandemic-induced distress and economic slowdown.
- Government initiatives like **Mudra Yojana** and **PM SVA Nidhi** are facilitating the growth of family

enterprises, contributing to the rise in self-employment.

Concerns about the informal sector sustainability:

- Despite positive indicators, concerns remain about the informal sector's sustainability and **slow formal job creation**.
- The World Bank lowers India's growth forecast, emphasizing challenges in the informal sector and **low female labour force** participation.

Way Forward:

India's latest PLFS reports a record-low 3.2% unemployment, attributing it to a rise in self-employment. Quality of employment has declined, with wage employment at its lowest level. Despite positive trends, concerns persist about the informal sector's stability and a slowdown in formal job creation.

PEPPER IT WITH:

Worker Population Ratio (WPR), Unemployment Ratio, Rozgar Mela, Startup India Scheme

Dollarization: The concept

News Excerpt:

Argentina's president-elect had pledged to dollarise his country during the campaign. This has drawn attention to the pros and cons of dollarisation.

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What is Dollarisation?

Dollarisation refers to using the U.S. dollar **in addition to or in place of the country's indigenous currency**. It represents a case of **currency substitution**.

- When a country's currency loses its utility as a medium of exchange owing to **hyperinflation or instability** and is replaced by the dollar, the country is said to have been dollarized.
- Dollarisation is common in developing nations with **weak central monetary authority**. It can be done either by an official decree or through acceptance by the market participants.

Why do countries shift to Dollarization?

- The primary reason for dollarisation is **better currency value stability over a country's indigenous currency**.
 - For example, the inhabitants of a country in an economy experiencing rampant inflation may prefer to conduct day-to-day transactions in the United States dollar because inflation will lower the purchasing value of their currency.
- By **modifying its money supply**, the government gives up some of its potential to affect its economy through monetary policy. The dollarising country outsources its monetary policy to the United States Federal Reserve.

Pros and Cons of Dollarisation:

BENEFITS	CHALLENGES
Lower Administrative Cost	Loss of Monetary Autonomy
Lower Interests Costs, Less currency volatility, No currency conversion costs	Loss of vital national symbol
Base for a sounder financial sector	Greater vulnerability to foreign influence

For **Argentina**, this brings all the standard economic benefits of financial and monetary integration: reduced transaction costs and enhanced usefulness of money for all its basic functions (medium of exchange, unit of account, store of value).

For the **United States**,

Advantages include gains of seigniorage, prestige, and political authority.

Disadvantages include possible constraints on US monetary policy and pressures to accommodate the special needs of dollarization countries.

Efficiency gains could be considerable and will be shared commensurately by both sides, the United States as well as the country that dollarizes.

Is dollarisation a solution to an economy?

- Dollarisation** can help **control hyperinflation** by breaking the vicious cycle between **rising prices and rising money supply**.
- If the **domestic currency is replaced by dollars**, the money supply can no longer be controlled by vested political interests that can **raise spending for political purposes**.
- Prices would be forced to moderate** because customers would no longer be able to access currency, decreasing consumption demand conveniently.
- Dollarisation can also be **beneficial to growth**. Because a small economy can only access dollars through international trade and capital inflows, it would incentivize the economy to focus on export achievements while easing conditions for foreign capital, which would be more eager to participate in a stable currency economy.
- The **dollar's stable value** would ensure that foreign and domestic economic agents could make long-term plans for economic activity, which would otherwise be impossible with a currency that rapidly lost value.

Way Forward:

Dollarization may have broken the back of inflation, but active fiscal policy played an important role in ensuring sustainable growth. Dollarization is not a silver bullet; if used well with nimble domestic policy, it can offer a route to success.

PEPPER IT WITH:

Inflation, Exchange rates, De-dollarisation, India's Trade agreements, Special Vostro Rupee Accounts.

LEADS 2023 report

News Excerpt:

LEADS (Logistics Ease Across Different States) 2023 report, released by the Union Ministry of Commerce and Industry, recognizes the achievements of 11 states and two union territories in enhancing logistics ease.

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Logistics Performance Index (LPI):

- LEADS was conceived in 2018 on the lines of the **Logistics Performance Index (LPI)** of the World Bank but has evolved over time to suit the Indian context better.
- This adaptation ensures that the assessment aligns with the unique challenges and dynamics of the Indian logistics landscape.
- Improvement of India's Logistics Performance Index (LPI) rank by **6 places to 38th position in 2023** is a reflection of India's efforts.



- The 5th edition of the LEADS annual exercise - the LEADS 2023 report, provides insights into the improvement of logistics performance at the State/UT level.

- It highlights an **enhanced overall stakeholder perception and impact of various reforms** across States and UTs.

Categorization of LEADS initiative:

- LEADS initiative categorizes States based on their geographic demographics into **4 categories: Landlocked, coastal, northeastern regions, and Union Territories.**
- For grading each of these categories into three categories:
- The **"Achievers"** are States that have shown exemplary logistics ecosystems with exceptional infrastructure and transparent regulatory processes.
- The **"Fast Movers"** are States that are moving towards becoming Achievers by notifying progressive policy and legislative initiatives along with new infrastructure projects.
- The **"Aspirers"** – States that have initiated their journey towards logistics ease and excellence by adopting national best practices to improve further their contribution towards India's emerging position as a global manufacturing and logistics hub.

Performance Highlights from LEADS 2023:

	Achievers	Fast Movers	Aspirers
Coastal Group	Andhra Pradesh, Gujarat, Karnataka, Tamil Nadu	Kerala, Maharashtra	Goa, Odisha, West Bengal
Landlocked Group	Haryana, Punjab, Telangana, Uttar Pradesh	Madhya Pradesh, Rajasthan, Uttarakhand	Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand
North-East Group	Assam, Sikkim, Tripura	Arunachal Pradesh, Nagaland	Manipur, Meghalaya, Mizoram
Union Territories	Chandigarh, Delhi	Andaman & Nicobar, Lakshadweep, Puducherry	Daman & Diu/ Dadra & Nagar Haveli, Jammu & Kashmir, Ladakh

Significance of LEADS initiatives:**Benchmarking Logistics Performance:**

- LEADS serves as a tool to benchmark and assess the logistics performance of different states and Union Territories (UTs) in India.
- It provides a comprehensive overview of the logistics ecosystem, focusing on key pillars such as **Logistics Infrastructure, Logistics Services, and Operating and Regulatory Environment**.

Related: India's logistics costs, according to a **joint report by the National Council of Applied Economic Research (NCAER) and the Department for Promotion of Industry and Internal Trade (DPIIT)**, decreased to 7.8-8.9% of GDP in the fiscal year 2021-22.

Summary of the report:

- A similar dip occurred during 2014-15 to 2016-17, with costs dropping **from 8.3-9.4% to 7.8-8.8%**.
- Faster growth in nominal GDP** compared to logistic costs **and a fall in fuel prices** contributed to the reduction from 2014-15 to 2016-17.
- The report emphasizes the significant investments in **physical and digital infrastructure** in India, creating an enabling environment for data-based planning and policy-making.
- NCAER, on behalf of the government, calculates these figures, contributing to the development of a framework for credible logistics cost estimates. The report aligns with India's **National Logistics Policy**, aiming to reduce logistics costs in the country.
- The recommended hybrid approach for estimating logistics costs involves primary and secondary survey data coupled with real-time Big Data analysis.

Way Forward:

LEADS is a multifaceted initiative that assesses and ranks logistics performance, fostering improvements and healthy competition. The latest report highlights positive shifts, offering actionable insights for policymakers and stakeholders and empowering states with region-specific information.

PEPPER IT WITH:

Logistics Performance Index, World Bank, Ease of Doing Business.

OPEC+ ambitions for the Indian oil market**News Excerpt:**

India struggles to balance oil dependence, clean energy goals, and economic growth amid global pressures.

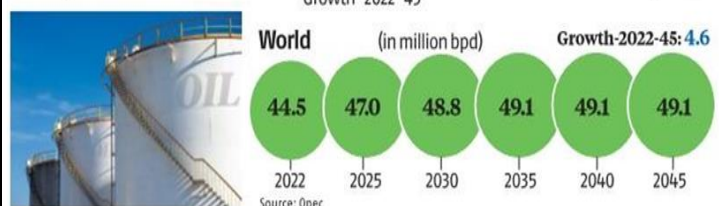
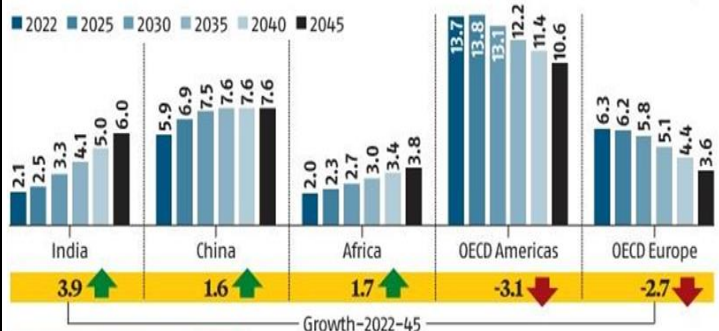
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About the news:

- India **faces a challenge** in balancing its growing need for oil, which has increased to over **85%** dependence on imports, with its goals of **promoting clean energy**

OIL DEMAND IN ROAD TRANSPORT SECTOR

(in million bpd)



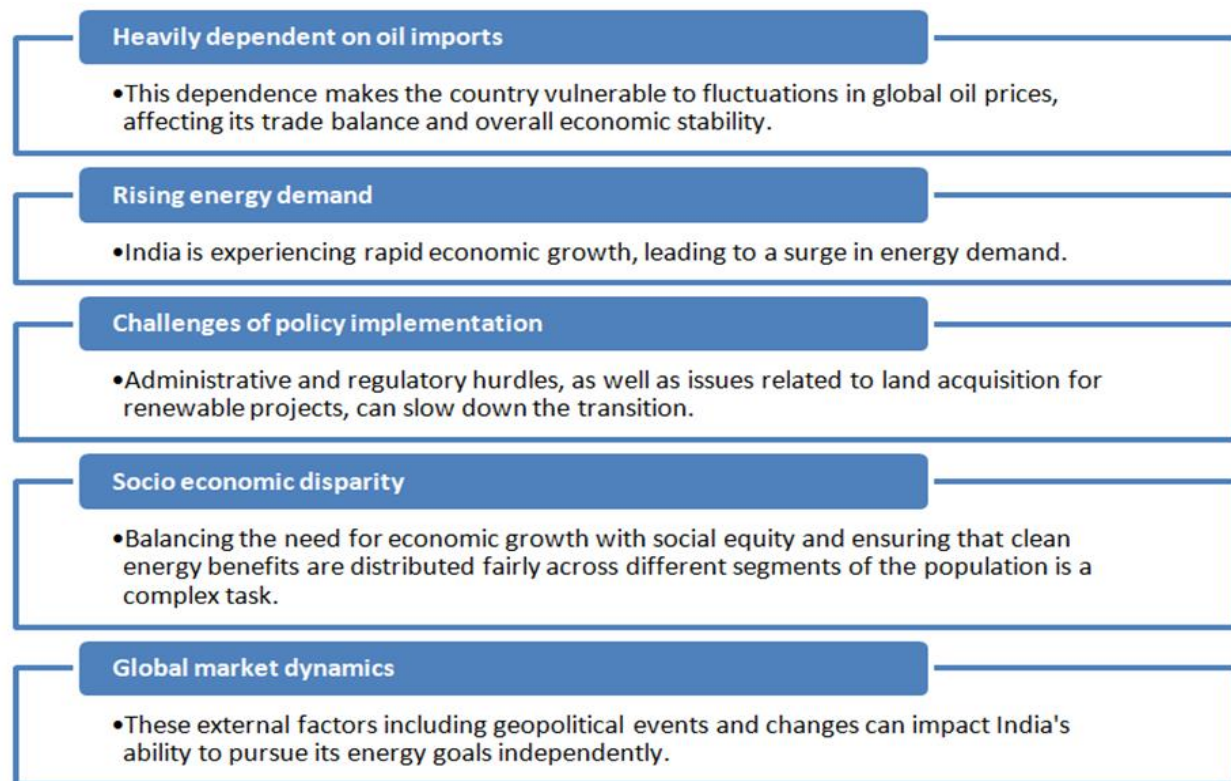
and addressing pollution concerns.

- The Organization for Petroleum Exporting Countries (OPEC), Russia, and the US aim to make India a major destination for oil and gas, capitalizing on its increasing demand.
- India's oil demand is expected to continue growing rapidly, and it may **surpass China** as the main source of growth in the global oil market by **2027**.
- Despite India's push for clean energy and an **"Aatmanirbharta" (self-reliance)** approach to growth, it cannot maintain its 7% annual growth rate **without foreign petroleum**.
- The International Energy Agency (IEA)** predicts that India's oil use will reach **8.4 million barrels per day by 2040**, with demand expected to continue growing for at least the next two decades.
- India's dependence on diesel, comprising nearly **40% of its oil mix**, is challenging to eliminate due to limited alternatives for heavy trucks.

Steps taken to promote clean energy:

- India launched the **National Hydrogen Mission** in 2013 to make India the world's largest hydrogen hub and holds the 4th largest **wind power** capacity globally.

Why India struggles to balance its energy goals and economic growth?



- Through decades of scientific research, India has indigenously developed and deployed **nuclear reactors**.
- India's successful implementation of solar applications has led to spearheading the **International Solar Alliance (ISA)**. Also, India has had over 800 **biomass power** and cogeneration projects since the mid-nineties.
- India's massive **UJALA LED bulb** campaign is reducing emissions by 40 million tonnes annually.
- At **COP-21 in Paris in 2015**, India committed to a 40% share of power generation from non-fossil fuel sources. We have achieved this target a decade ahead of the 2030 timeline.
- The country's vision is to achieve **Net Zero Emissions by 2070**, in addition to attaining the short-term targets, which include:
 - Increasing renewables capacity to **500 GW by 2030**,
 - Meeting **50% of energy** requirements from renewables
 - Reducing cumulative emissions by one billion tonnes by 2030
 - Reducing emissions intensity of India's **gross domestic product (GDP) by 45%** by 2030.

Way Forward:

- **Invest in training:** Invest in training programs to develop a skilled workforce for the clean energy and technology sectors.
- **Collaborate with international organizations:** To share knowledge, technology, and best practices in achieving a balanced energy strategy.
- **Electric Vehicles (EVs):** Incentivize the production and purchase of electric vehicles (EVs) through subsidies, tax breaks, and other financial incentives.
- **Investment in Research and Development:** Allocate resources to research and development in clean energy technologies.
- **Gradual Transition:** Develop a phased approach with clear milestones for reducing oil dependence and increasing the share of clean energy over time.
- **Favourable environment:** Create a favourable environment for private investments in the clean energy sector through incentives and subsidies.

PEPPER IT WITH:

About OPEC, renewable energy, India Initiatives for clean energy.

PRE-SHOTS:

Catastrophe bonds

News Excerpt:

Insurance companies in India have faced losses from various natural disasters, such as the Chennai floods in December. The industry has, over the years, developed instruments to deal with such disasters: **Catastrophe bonds** or 'cat bonds'.

What is a 'cat bond'?

- It's a **financial safety net** for the insurance industry.
 - Cat bonds provide insurers with quick access to funds during large disasters.
 - Recent destruction events, such as Cyclone Michaung, brought the insurance companies under stress.
 - Investors benefit by earning interest on the bonds they hold.
 - Investors buy bonds, and if a major disaster occurs, like the recent floods, insurers use the money from these bonds to cover their losses.**

The benefit of these bonds:

- Insurance and reinsurance companies use them to **shift big risks to investors** in the capital market. This reduces their overall costs and frees up money for new insurance businesses.
- Investors in cat bonds get **regular interest payments**, like regular corporate bonds.
- If no qualifying disaster occurred, the insurance company would pay a coupon to the investors.
- But if it did occur, then the principal would be forgiven, and the insurance company would use this money to pay their claim-holders.

Goldilocks Effect

News Excerpt:

The RBI's Growth and Inflation forecasts indicate a Goldilocks Effect on the economy by the second quarter of the next fiscal year.

What is the Goldilocks Effect?

It is the premise that people are inclined to seek '**just the right amount**' of something. **Leveraging the Goldilocks Effect is fairly straightforward**, but it can only work for certain businesses, the ones that can offer tiered options for a single product or service.

Application:

- In the context of pricing, businesses capitalize on the effect by offering three versions of a product at different price points: **one high-end, one middle, and one low-end.**

THE GOLDILOCKS PRINCIPLE



- Goldilocks Pricing is one of the effect's more prominent applications. It's a psychological pricing strategy that rests on **the concepts of**
 - Product differentiation
 - Comparative pricing
 - Bracketing
- Product differentiation:** It is the practice of distinguishing certain products from others. Businesses can only leverage the Goldilocks Effect if they can differentiate their products from one another.
 - This then needs to be combined with comparative pricing, where businesses offer multiple versions of a product simultaneously of varying quality, attached to corresponding price points.

Fiscal Prudence

News Excerpt:

Government limits additional spending to Rs 58,378 crore for fiscal prudence before 2024 elections.

FISCAL PRUDENCE	SUPPLEMENTARY GRANTS
<ul style="list-style-type: none"> Fiscal prudence is the recognition of the limits to public spending. It is the responsible management of government finances, emphasizing balanced budgets, efficient resource allocation, and careful debt management. There are limits to how much spending can be financed through higher taxation, as increasing income-tax rates is both politically unpopular and economically damaging. It involves transparent, accountable, and long-term planning to ensure economic stability, prevent crises, and maintain public trust by judiciously handling expenditures, revenues, and debt levels. 	<ul style="list-style-type: none"> The additional grant required to meet the required expenditure of the government is called Supplementary Grants. When grants authorized by the Parliament fall short of the required expenditure, an estimate is presented as Supplementary or Additional grants. These grants are presented and passed by the Parliament before the end of the financial year.

About the news:

- The Government of India has set the Fiscal deficit target at **5.9%** of GDP for FY24.
- The first tranche of **Supplementary Demands for Grants** seeks approval for Rs 1.29 trillion. It is a sign of **fiscal prudence** ahead of the 2024 general elections.
- The second tranche of Supplementary Demands for Grants is expected in February 2024 during the Budget session. This money will go to **fertilizers, food subsidies, and defence**.
- The government remains confident in meeting the **fiscal deficit target** due to robust tax collections.

Boost to UPI Limits for Health & Education**News Excerpt:**

The Reserve Bank of India (RBI) enhances UPI payment limits and proposes rules for the web-aggregation of loans and the creation of a Fintech Repository.

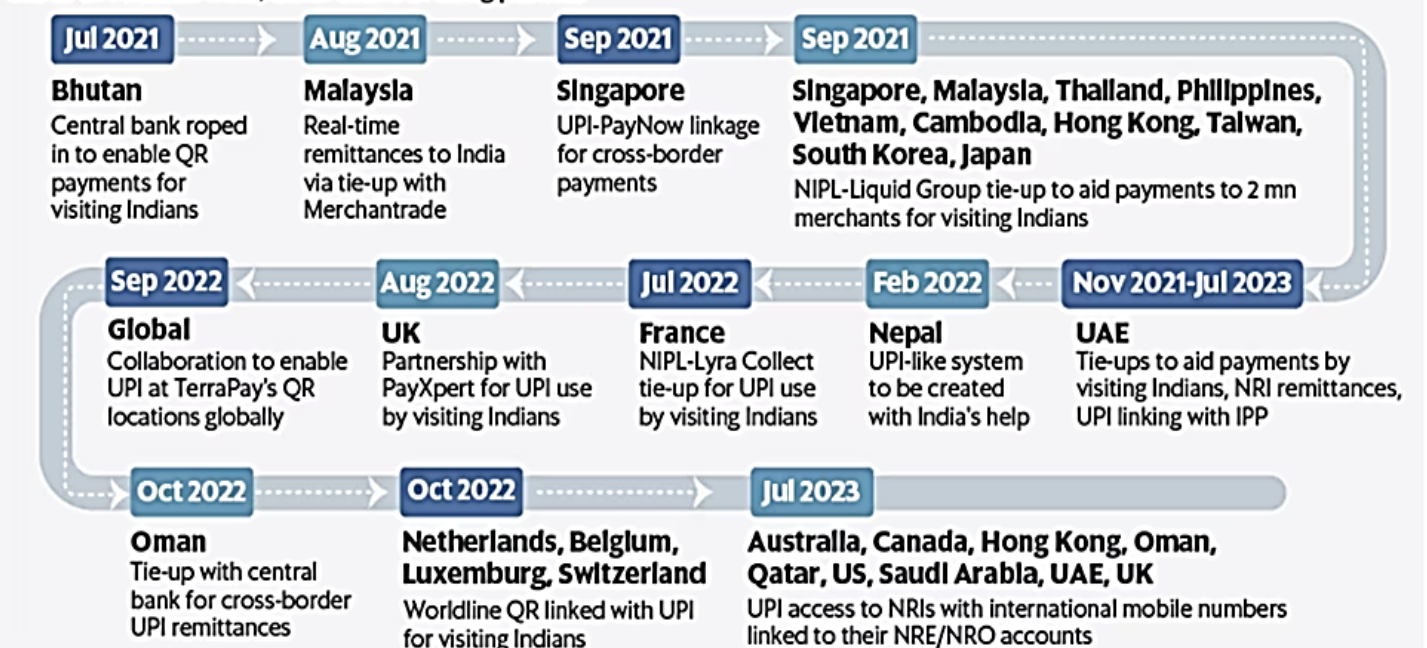
About the news:

- The RBI has made important changes to digital payments and lending. It increased the UPI payment limits to pay up to **Rs. 5 lakhs from Rs 1 lakh** for healthcare and education.
- The enhanced limit will **help consumers make UPI payments of higher amounts**, especially for both education and healthcare purposes.
- To ensure fairness in online loans, the RBI has also proposed **rules for companies** that gather loan offers from different lenders (called **web-aggregation** of loan products).

- It also proposed creating a **FinTech Repository** to better understand and control the partnerships between banks, finance companies, and FinTech firms.
 - It will be run by the **RBI's Innovation Hub**. The rationale behind this framework is to understand developments in the fintech ecosystem better as financial entities such as banks and NBFCs are increasingly partnering with them.
- This move is expected to bring more **clarity and trust** to the digital lending sector, making it safer for people to use online financial services.

Unified Payments Interface (UPI):

- It is an **instant payment system** developed by the **National Payments Corporation of India (NPCI)**, an **RBI-regulated** entity.
- It is a system that powers multiple bank accounts into a **single mobile application** (of any participating bank), merging several banking features, seamless fund routing & merchant payments into one hood.
- **Growth:** Since its launch in 2016, UPI has rapidly gained popularity and currently boasts of around **260 million** users with its growth forecast looking promising.
- **Global Expansion:** The domestic success of UPI is paving the way for its international expansion. India is the world's leading remittance market in terms of inflows. It has signed agreements with more than **two dozen countries** to expand UPI beyond its borders.

Use of UPI outside India, either active or being planned

Non-Convertible Debentures

News Excerpt:

Adani Ports and Special Economic Zone Ltd. announced that it will raise ₹5,250 crore by issuing **non-convertible debentures** and 2.5 billion rupees through **non-cumulative redeemable preference shares**.

About: Non-Convertible Debentures (NCDs):

- A type of long-term debt instrument issued by a company to raise funds from the public or institutional investors is called a debenture.
- Some debentures have a feature of convertibility into shares (Convertible Debentures) after a certain point of time at the discretion of the owner, while others don't (Non-Convertible).
- NCDs are used as tools to raise **long-term funds** by companies through a **public issue**.
- To compensate for this drawback of non-convertibility, lenders are usually given a **higher rate of return** compared to convertible debentures.

Preference shares: Company stock with dividends that are paid to shareholders before common stock (equity share) dividends are paid out.

Cumulative preference shares	Non-cumulative preference shares
<ul style="list-style-type: none"> Requires the company to pay shareholders all dividends, including those that were omitted in the past, before the common shareholders can receive their dividend payments. While these dividend payments are assured, they may only sometimes be disbursed promptly. 	<ul style="list-style-type: none"> Do not issue any omitted or unpaid dividends. If the company chooses not to pay dividends in any given year, the shareholders of the non-cumulative preferred stock have no right or power to claim such forgone dividends at any time in the future.

RBI and Bank of England Sign MoU on CCIL Cooperation

News Excerpt:

The Reserve Bank of India (RBI) and the Bank of England (BoE) recently signed an agreement (MoU) about working together and sharing information regarding the Clearing Corporation of India Ltd (CCIL).

About the news:

- In 2022, a European regulator called the **European Securities and Markets Authority (ESMA)** withdrew recognition of some Indian clearing entities, including CCIL.
- This move led to a **disagreement** because the RBI wanted to avoid foreign supervision of these entities, stating that they follow strong risk management practices.

- In response, RBI and BoE have now signed this MoU, allowing BoE to **trust and rely** on RBI's regulatory activities.
- The agreement also supports the application of CCIL to be recognized as a **third-country clearing entity** by the Bank of England.
- This recognition is necessary for UK-based banks like Barclays and Standard Chartered to continue providing **clearing and settlement services** in India.

Clearing Corporation of India Ltd (CCIL)

- CCIL is regulated by **RBI** and was founded in April **2001** to guarantee clearing and settlement for transactions in **Money, G-Secs, Foreign Exchange, and Derivative markets**.
- CCIL's efforts led to improved market **efficiency, transparency, liquidity, and risk management**.
- CCIL's adherence to the stringent principles governing its operations as a Financial Market Infrastructure has resulted in its recognition as a **Qualified Central Counterparty (QCCP) by the Reserve Bank of India in 2014**.

SIDBI and TDB collaboration

News excerpt:

Small Industries Development Bank of India (**SIDBI**) and the Technology Development Board (**TDB**) formalized a **Memorandum of Understanding (MoU)** for easier credit access to MSMEs involved in technology development.

About the news:

- The agreement includes mutual referral of **additional funding** needs for previously funded companies.
- Dedicated key contacts streamline coordination for seamless referral exchange between **TDB and SIDBI**.
- The collaboration aims to promote innovation, job creation, and overall economic development in the MSME sector.
- SIDBI's recent initiatives include launching the **MSME Economic Activity Index – Sumpoorn** to address knowledge gaps and support credit flow.

Small Industries Development Bank of India (SIDBI)	Technology Development Board (TDB)
<ul style="list-style-type: none"> It is a pioneer development bank of the country established with the purpose of solely focusing on the MSME sector. It is a wholly-owned subsidiary of IDBI (Industrial Development Bank of India) and has come into existence via a special Act in 1988; it has been operational since 	<ul style="list-style-type: none"> The Government of India constituted the Technology Development Board (TDB) in 1996, under the Technology Development Board Act, 1995, as a statutory body. It promotes the development and commercialization of indigenous technology

1990.

- SIDBI was formed with the aim of providing a central unit for financing, promotion, and development of the MSME units.
- It provides a huge **source of finance** for the development, promotion, marketing, and commercialization of the MSME sector.

and the adaptation of imported technology for wider application.

- The TDB is the first organization of its kind within the government framework with the sole objective of **commercializing the fruit of indigenous research**.
- The Board plays a proactive role by **encouraging enterprises** to take up **technology-oriented products**.

Investor Risk Reduction Access platform

News Excerpt:

India's stock exchanges, including the Bombay Stock Exchange (BSE) and the National Stock Exchange (NSE), have jointly developed the **Investor Risk Reduction Access (IRRA) platform**.

IRRA platform

- IRRA platform has been developed to **reduce risks faced by investors** in the eventuality of **technical glitches** at the trading member's end at both the primary site and disaster recovery site.
- Its purpose is to provide investors with an opportunity to **square off/close** their **open positions** and **cancel pending orders** using the IRRA platform in case of technical glitches or unforeseen outages that render the trading member's site inaccessible.
- The IRRA platform has been designed to **reduce risks for investors** participating in the market.
- It is not meant for taking fresh positions or orders but only to **cancel the pending orders**.

Need for IRRA

- **Growing reliance on technology** in the securities market has led to an increase in glitches, causing disruptions in trading services and raising investor complaints.
- Investors with **open positions face the risk** of being unable to **close their positions** during such disruptions, especially in volatile markets.
- Existing business continuity plans of trading members may not always prevent disruptions, such as delays in moving to Disaster Recovery sites or **cyber-attacks**.

Interest Equalization Scheme

News Excerpt:

The Union Cabinet has approved an additional allocation of Rs 2500 Cr for the continuation of this Scheme till 30th June 2024.

About the scheme:

The Government of India (GoI) announced the Interest Equalisation Scheme on Pre- and Post-Shipment Rupee Export Credit to eligible exporters in 2015, which was initially valid for 5 years.

- The rate of **interest equalization @ 3%** per annum was available on Pre Shipment Rupee Export Credit and Post Shipment Rupee Export Credit.
- The scheme would **not be available to merchant exporters**. Government, however, **reserves the right to modify/amend the Scheme at any time**.
- Banks are required to completely pass on the benefit of interest equalization, as applicable, to the eligible exporters upfront and submit the claims to RBI for reimbursement, duly certified by the external auditor.
- The Scheme was **not fund-limited** and extended the benefit **without any limit to all exporters**.

Recent Extensions in the Scheme:

- The government of India has approved the extension of the Interest Equalization Scheme for Pre and Post-Shipment Rupee Export Credit ('Scheme') **up to March 31, 2024**, or till further review, whichever is earlier.
- Currently, the Scheme provides an interest equalization **benefit at the rate of 2% on pre and post-shipment Rupee export credit** to merchant and manufacturer exporters of 410 identified tariff lines at 4 digit level and **3% to all MSME manufacturer exporters**.
- The Scheme has **now been made fund-limited**, and benefits to individual exporters have been capped at **Rs 10 Cr per annum per IEC** (Import Export Code).
- The scheme shall be **implemented by RBI** through various **Public and non-public Sector banks** that provide pre and post-shipment credit to the exporters.
- The Scheme is jointly **monitored by DGFT (Directorate General of Foreign Trade)** and RBI through a consultative mechanism.

Benefits of the Scheme

- The availability of pre- and post-shipment packing credit at competitive rates is essential for the **export sector's international competitiveness**.
- According to a study undertaken by IIM Kashipur, the effect of the Interest Equalisation Scheme has been helpful to **the country's export growth**.
- The MSME sector is essential for job creation. The scheme is primarily intended for **labour-intensive industries**.
- The current proposal is intended **for exports by recognized tariff line merchants and manufacturer exporters, as well as MSME Sector manufacturer exporters**. Increased exports from these labour-intensive sectors and MSMEs will result in job creation in the country.

AGRICULTURE

Basic Animal Husbandry Statistics 2023

News Excerpt:

Basic Animal Husbandry Statistics Report 2023 comprising Milk, Egg, Meat, and Wool production was released by the **Ministry of Fisheries, Animal Husbandry & Dairying**.

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Animal Husbandry:

It is the branch of agriculture that deals with animals raised for meat, fibre, milk, or other products. It includes day-to-day care, selective breeding, and the raising of livestock.

About the report:

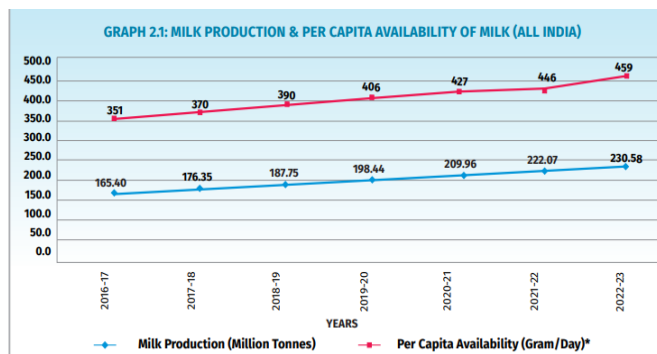
- Livestock production is estimated **annually** based on the Integrated Sample Survey (ISS) outcomes, whose survey methodology is designed by ICAR- Indian Agricultural Statistics Research Institute (ICAR-IASRI).
- Integrated Sample Survey is the **only scheme** through which considerable data, particularly on the production estimate of **Major Livestock Products (MLPs) viz. Milk, Eggs, Meat, and Wool** are being generated for policy formulation in the livestock sector.
- This survey is conducted from March to February. The entire period of one year is divided into three Seasons of 4 months. These Seasons are:**

Name of the Season	Period of survey
Summer Season	1st March to 30th June (122 days)
Rainy Season	1st July to 31st October (123 days)
Winter Season	1st November to 28th or 29th February (120 days or 121 days in a leap year)

- The 2023 report is based on the data from 1st March 2022 to 28th February 2023.

The **estimates of 4 products, i.e. Milk, Egg, Meat, and Wool, for the year 2022-23** are summarized below:

1. Milk Production:



*Based on Projected Human Population according to Population Census-2011

- The total milk production in the country is estimated at 230.58 million tonnes (2022-23), an increase of 3.83% over the previous year.

- According to production data from the Food and Agriculture Organization Corporate Statistical Database (FAOSTAT), **India ranks 1st in the world in terms of total milk production.** Milk production in India has registered a fifty-one per cent increase during the last eight years.

Top Milk Producing States:

In terms of Production, Uttar Pradesh (15.72 %) > Rajasthan (14.44 %) > Madhya Pradesh (8.73 %) > Gujarat (7.49 %) > Andhra Pradesh (6.70 %). **Together, they contribute 53.08% of the total milk production in the country.**

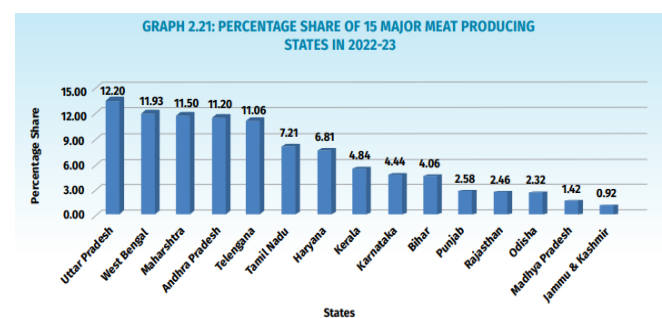
2. Egg Production:

- The total Egg production in the country has been estimated to be 138.38 billion during 2022-23, an annual increase of 6.77% from the previous year.
- India ranks 3rd in the world in terms of total Egg production (Source: FAO).**

Top Egg Producing State: In terms of **Production:** Andhra Pradesh (20.13 %) > Tamil Nadu (15.58 %) > Telangana (12.77 %) > West Bengal (9.94%) > Karnataka (6.51 %). **Together, they contribute 64.93% of the total egg production in the country.**

3. Meat Production:

- The total Meat production in the country is estimated at **9.77 million tonnes, an annual increase of 5.13% over the previous year.**
- India ranks 8th in the world in terms of total Meat production (Source: FAO).**



Top Meat Producing States:

In terms of production: Uttar Pradesh (12.20 %) > West Bengal (11.93 %) > Maharashtra (11.50 %) > Andhra Pradesh (11.20 %) > Telangana (11.06 %).

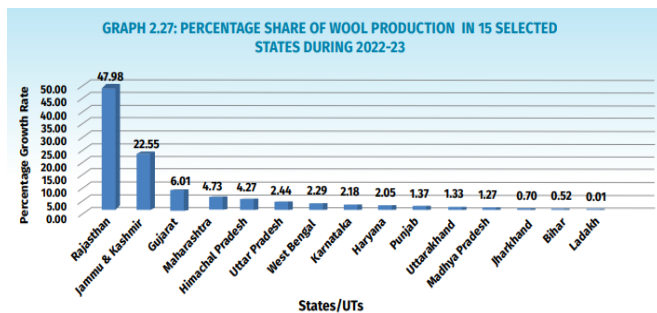
4. Wool Production:

The total Wool production in the country is estimated at 33.61 million kg, with an annual increase of 2.12% over the previous year.

Top Wool-Producing States:

In terms of Production: Rajasthan (47.98%) > Jammu & Kashmir (22.55%) > Gujarat (6.01%), > Maharashtra (4.73%)

>Himachal Pradesh (4.27%). **They contribute 85.54% of total wool production in the country.**



Way Forward:

- This survey fulfils the need for the **timely availability of reliable and updated data** relating to various livestock indicators, which will further help in evolving, monitoring, and evaluating various **developmental schemes** in this sector.
- It also contributes to the **stock of time series data** on the production of milk, meat, egg, and wool, which may be used in **research and policy-making**.

PEPPER IT WITH:

Animal Husbandry Infrastructure Development Fund, Status of India's Livestock Sector.

Farming's impact on the environment

News Excerpt:

The increasing **demand** for **agricultural products** is causing significant **social** and **environmental** impacts worldwide.

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Current scenario - Impact of agriculture:

- The expansion of international trade has created **global supply chains**, leading to impacts like **carbon emissions, biodiversity loss, freshwater depletion, soil degradation, and labour rights issues**.
- India**, a global anchor of agricultural trade, has experienced significant social and economic **development**, leading to an increasing demand and supply of these products.
- India's **vast land areas** are used to service domestic and international demand for **grains, fruits, and vegetables**, putting pressure on national soil and water resources.

Food-based impact accounting:

- Addressing **demand-supply dynamics** is crucial for international environmental governance and achieving the **U.N. Sustainable Development Goals** and other **climate action** and **biodiversity conservation** goals.

- The **current approach, production-based accounting**, has limitations in managing **leaks, accountability**, and ensuring **equity and justice** among producers and consumers.

- Consumption-based accounting** has emerged as an **alternative**.

Consumption-based accounting:

- It is a method that accounts for the social and environmental impacts of **production** and **trade**, directing responsibility to the final products and consumers.
- It encourages **sustainable consumption practices** as a form of environmental action and impact coverage.

Demand perspective of Consumption-based accounting:

- This approach focuses on the **responsibility** of consumers for the consequences of production processes in developed economies.
- This approach **decouples population and emissions** by shifting substantial impacts from emerging markets like India to less-populous, economically developed countries.
- It highlights the responsibility of industrialized states to mitigate the impact and the rights of developing economies not to carry an excessive burden.
- It also accounts for the growing element of international trade, **trilateral supply chains**, where products are produced, processed, and consumed in multiple countries.

Supply perspective of Consumption-based accounting:

- This approach can encourage **cleaner production** by encouraging producer countries to reduce their exports' **environmental footprint**.
- This also boosts **living standards** in agricultural supply chains, ensuring access to foreign markets.
- The approach can also address production system leaks, where production is often transferred to **less stringent jurisdictions** like **India**, thereby improving the overall environmental impact.

Consumption-based accounting vis-a-vis Sustainable development:

- Consumption-based accounting is used to **estimate carbon emissions** and **virtual water use**, but it has only recently gained traction in policy-making.
 - For ex., the **European Commission** has taken steps to ensure products consumed in the EU do not contribute to deforestation in their country of origin, which is expected to reduce carbon emissions and biodiversity loss.
- India**, a major consumer of agricultural and forestry products, has a unique situation.

- Major developed economies have an environmental footprint in India due to their consumption of Indian agricultural produce.
- Conversely, India's own **deforestation footprint** outside its borders has increased over the last two decades and is rapidly growing. However, it remains below that of several **G-20 countries** on a per-capita basis.

Way Forward:

- Consumption-based emissions accounting can identify the impact of domestic and foreign agricultural demand, **facilitating an agreement** on global environmental action by involving producers and consumers.
- This approach allows **developed economies to take responsibility** for some of the impact, promoting **coordinated action** and allowing **developing economies** like India to **improve their agricultural systems**.
- It also helps **diagnose impact-intensive consumption patterns**.

PEPPER IT WITH:

Monocultural Practices, International Maize and Wheat Improvement Centre (CIMMYT), Zero Tillage.

India's Demand and Supply for Agricultural Commodities Towards 2030

News Excerpt:

According to agricultural economists, **India** is **expected** to face continued output **shortfalls** in **key protein sources**, edible oils, and fruits in the **next seven years**.

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About the Report:

- Demand and Supply projections are crucial for **formulating** farsighted agricultural and **food policies** to sustain **food production**, ensure **food security** and for the efficient functioning of food systems while controlling for external factors such as changing **consumption basket**, **taste**, and **preferences**, changing **population growth** and **income growth**.
- The report was **published by** the National Bank for Agriculture and Rural Development (**NABARD**) and the Indian Council for Research on International Economic Relations (**ICRIER**).

Key findings of The Report:

- Commodities like **oilseed**, **pulses** and **fruits** will experience a **supply and demand gap** in the coming years.

- Therefore, there is a **need** to increase the level of **production and productivity of oilseeds, pulses, and fruits** since their demand in the future shows an increasing trend."
- As **per capita incomes rise**, people's consumption baskets tend to diversify towards nutritious and high-valued commodities, including fruits, vegetables, and dairy products, and away from staples such as rice and cereals.
 - Demand growth for **non-cereals and high-valued commodities** is expected to exceed the population growth rate and cereal commodities' growth in coming years.

Food Items	Gap=supply – Demand		
	2020-21	2025-26	2030-31
Rice	15.8	22.5	37.7
Wheat	7.6	15.4	25.5
Coarse Cereals	0.5	3.2	6.4
Cereals	23.9	44.2	69.6
Pulses	-3.9	-2.1	0.4
Foodgrains	20.0	42.0	70.0
Oilseeds	-0.1	-3.0	-6.0
Milk	2.5	31.7	76.2
Fruits	-0.3	4.0	10.6
Vegetables	1.6	8.3	18.4

Report on the commodities:

Demand Projections of Agricultural Commodities up to 2030–31:

In this section, There is an exercise to project ex-ante demand for rice, wheat, coarse cereals, cereals, pulses, foodgrains, sugar, oilseeds, fruits, vegetables, milk, and meat till 2019-20 to ascertain the accuracy of the methodology used in generating the forecast in the future.

- The base year for ex-ante prediction of fruits and vegetables **was revised** as there has been a substantial increase in production of horticulture commodities after 2005-06, particularly after the implementation of the **National Horticulture Mission (NHM) 2005-06**.
- Similarly, the base year for meat and milk** was revised due to a significant increase in the value of livestock output during the **11th FYP**, which was primarily driven by the demand for protein food.

In addition, the Government of India launched the **National Livestock Mission during the 12th FYP to encourage the growth of the livestock sector** (Department of Animal

Husbandry, Dairying and Fisheries, Annual Report 2019-20).

- **Cereal demand** will increase by the end of 2030-31 from **253.97 MT in the base year** to **260.6 MT under 4.1% PCY growth** and **254.7 MT under 6.1% PCY growth**.
- The projections for **pulses** during 2030-31 range **between 33.7-35.3 MT** under the alternative PCY growth scenarios.
- The **livestock product** is estimated at **283-327.6 MT for milk** and **11-12.9 MT for meat** in 2030-31.
- **Demand for fruits and vegetables** will increase from **289.32 MT in the base year (2019-20)** to **431.1 MT** under the assumption of **4.1% Per Capita Income (PCY) growth** and **501.8 MT under 6.1% PCY growth** by the end of **2030-31**.

Supply projections of Agricultural Commodities up to 2030-31:

Like demand forecasts, various studies have forecasted the supply of agricultural commodities to compute if the country's food balance sheet will be in deficit/surplus in the near future, medium-term and long term.

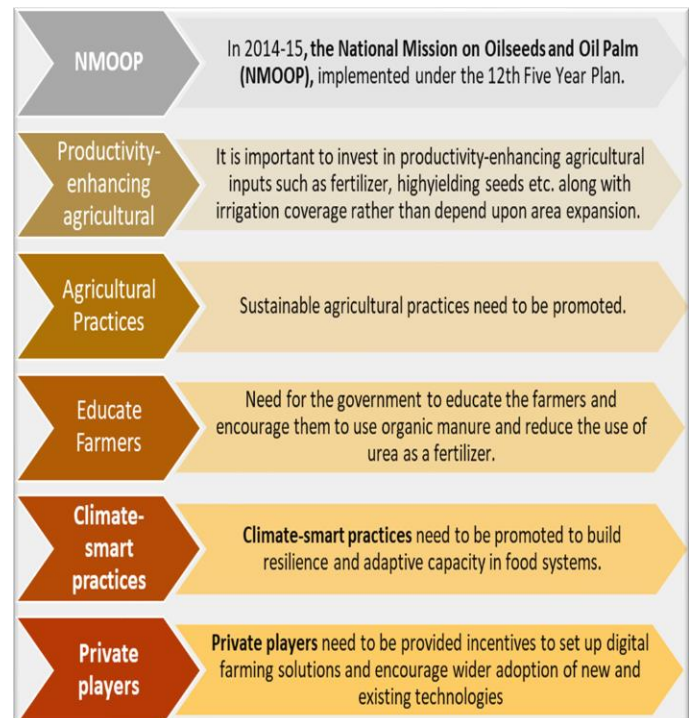
- For estimating the supply projection of agricultural commodities such as **rice, wheat, coarse cereals, cereals, pulses, foodgrains, oilseeds, fruits, and vegetables for the period between 2020-21 and 2030-31**, we use the base-level production and the past trend of average annual growth rates of actual output.
- The **cereals and foodgrain** supply is estimated to increase to 356.8 MT and 396.0 MT by 2030-31.
- If supply growth follows the last 15 years' trend, the pulse production will grow **to 39.2 million tonnes by 2030-31**.
- The **milk production** between 2020-21 and 2030-31 is expected to increase from **197.9 MT in 2020-21 to 340.5 MT in 2030-31** and **from 197.3 to 328.8 MT** during the same period.
- If we consider that the **horticulture commodities** will follow the last 15 years, fruit production will increase to 150.9 MT, and vegetables will increase **to 282.5 MT by 2030-31**.

Demand and Supply Gap: A Concern

The gap between projected demand and supply of agricultural commodities, or in other words, a deficit in the food balance sheet, would result in higher imports to meet the domestic demand, which, in turn, leads to a huge import bill in the long run.

- Therefore, there is a **need to increase the level of production and productivity of oilseeds, pulses, and fruits** since their demand in the future shows an increasing trend.

Further steps for Reducing the Demand and Supply Gap:



Way Forward:

The report has called for policy attention to ensure a balance between domestic production and the absorption of these commodities, diversification towards high-value commodities that require major investments in market infrastructure, processing, and cold storage and warehousing facilities to build an efficient and reliable value chain. Such measures can significantly reduce food wastage, they underlined.

PEPPER IT WITH:

Food Price Index, Minimum Export Price, Impact on Edible Oil of Exports.

Drones to Women Self-Help Groups

News Excerpt:

The Union Cabinet has approved a **central sector scheme** to provide **drones to women self-help groups (SHGs)**.

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About the Scheme:

- The scheme aims to provide drones to **15,000 selected women SHGs** during the **period 2023-24 to 2025-2026** to provide rental services to farmers for agricultural purposes.
- According to the Economic Survey - 2022, **India has around 1.2 crore SHGs, 88% of them are all women.**
- The scheme seeks to **emphasize the integration of technology, women's empowerment, and agricultural innovation.**

- Drones are being demonstrated across the country, emphasizing their role in efficient fertilization, pest control, and precision agriculture.

Cabinet Decisions



29th Nov 2023

Drones to Empower Women SHGs

Supply of drones to
15,000 Women Self-Help Groups

5-day drone pilot +
10-day agriculture training
to 1 member of SHGs

Financial Assistance
@ 80% of cost of
drone/charges upto a
maximum of ₹8 lakh



Financial Outlay: ₹1261 Crore from 2024-25 to 2025-26

Key highlights:

- Empowerment and Training:** Identified clusters conducive to drone usage will be targeted, and 15,000 women SHGs across states will be selected to receive drones. **Comprehensive training programs will equip members with drone piloting skills** and agricultural expertise, enabling them to provide rental services and support.
- Financial Support:** Central Financial Assistance covers 80% of the drone cost, up to a maximum of Rs. Eight Lakh will be extended to the SHGs. The remaining amount can be raised through the National Agriculture Infra Financing Facility (AIF), with an **interest subvention of 3% on the AIF loan.**
- Innovative Roles:** Members of SHGs will be trained as **drone pilots and technicians**, facilitating not just drone operation but also repairs and maintenance, bridging the gap between suppliers and SHGs.
- Nano Fertilizer Adoption:** The scheme promotes the use of Nano Fertilizers like Nano Urea and Nano DAP through drone services, **facilitating efficient pesticide application and fertilizer distribution.**
- Economic Empowerment:** Envisioned as a means of sustainable business and livelihood support, the scheme aims to enable 15,000 SHGs to earn an **additional income of at least Rs.1 lakh per annum.**

Way Forward:

With the infusion of advanced drone technology, the scheme is poised to enhance agricultural efficiency, increase crop yields, and reduce operational costs, thereby benefiting farmers at large.

PEPPER IT WITH:

Vishwakarma Yojana, Drones, Swadhar Greh, Sukanya Samridhi Yojna, Pradhan Mantri Mahila Shakti Kendra Scheme.

PRE-SHOTS

Saffron Production: Red Gold

News Excerpt:

Saffron production has dwindled in India.

About Saffron:

- It is derived from the **crocus plant**.
- The **deep-red threads, called stigma**, are removed from between the crocus petals and dried to form Saffron.
- Around **90% of India's saffron production comes from Kashmir**, where it has been grown for centuries.
- It can take between 2,00,000 and 3,00,000 flowers to produce just 1 kg of Saffron.
- It is a **highly labour-intensive industry** where each process, from planting the corms, plucking the flowers, and gently removing the red stigmas from the flowers to the final grading, is meticulously carried out by skilled workers with decades of experience in the trade.



Factors leading to lower production of Saffron:

- Rains, higher temperatures, and snowfall** have become **erratic and uncertain**, and thus, **climate change** is creating havoc for saffron fields.
- The **amount of land devoted to saffron production** has reduced in the country.
- The **expansion of towns and villages** onto saffron fields and the **lack of investment** in irrigation and training for farmers are also responsible.

International Cotton Advisory Committee (ICAC)

News Excerpt:

The Ministry of Textiles, Government of India is hosting the 81st Plenary Meeting of the International Cotton Advisory Committee (ICAC) in Mumbai, in association with the Cotton Corporation of India Limited (CCI), the Confederation of Indian Textile Industry (CITI) and the Cotton Association of India (CAI).

- The theme is "**Cotton Value Chain: Local Innovations for Global Prosperity**," reflecting a shift from economic considerations to ecological sustainability.
- It aims to serve as a platform for sharing innovations, benchmarks, good practices, and experiences across the globe on productivity, climate resilience, and circularity for a **vibrant cotton economy**.

About the International Cotton Advisory Committee (ICAC):

- It is an intergovernmental UN-recognized body of cotton-producing and consuming nations.
- It was formed in 1939.
- **India**, along with Brazil, Egypt, France, Sudan, and the USA, is one of the **founder members** of this forum.
- The Plenary Meeting of ICAC is held **annually** in the member countries of ICAC at their invitation.
 - This provides a forum for discussions on international issues of importance to the **World Cotton industry**.
 - It provides an opportunity for the industry and the government leaders from cotton-producing, consuming, and trading countries to deliberate on matters of mutual concern.

Cotton Textile Industry in India:

- **Cotton Production Overview:** India has the largest area under cotton cultivation and is currently the second-largest global producer, representing about 25% of the world's area under cultivation.
- **Regional Distribution:** Maharashtra has the highest area under cultivation (41.2 lakh ha), followed by Gujarat (27.1 lakh ha) and Telangana (17.9 lakh ha), accounting for 72% of the total cotton acreage in the country.
- **Launch of Kasturi Cotton Bharat:** Launching the 'Kasturi Cotton Bharat' brand marks India's foray into providing complete end-to-end traceability and transparency solutions using Blockchain technology.
 - It is a joint initiative by the **Ministry of Textiles**, the Cotton Corporation of India, Trade Bodies, and industry to work on the principle of self-regulation by owning complete responsibility for Branding,

Traceability and Certification of Indian Cotton.

- **Government Schemes for the Cotton Textile Sector:** Scheme for Integrated Textile Parks (SITP), Integrated Skill Development Scheme (ISDS), Integrated Processing Development Scheme (IPDS), Market Development Assistance (MDA), and Market Access Initiative (MAI).
- **Industry-led Growth Initiatives:** Initiatives such as PM MITRA (PM Mega Integrated Textile Regions and Apparel) Parks, National Technical Textiles Mission, and drone-based pesticide spraying support the growth and innovation of the cotton textile sector.

India's Standards on Millets

News Excerpt:

The Codex Alimentarius Commission (CAC) has **praised India's Standards on Millets** and accepted its proposal to develop **Global Standards for Millets** during its **46th session** held in Rome, Italy.

About India's proposal for International Group Standards for Millets:

- India has developed a comprehensive group standard for **15 types of millet, establishing 8 quality indicators such as maximum limits for moisture content, uric acid content, extraneous matter and other defects, etc.**
- India put forward Global Standards, particularly for **Finger millet, Barnyard millet, Kodo millet, Proso millet, and Little millet**, similar to group standards for pulses.
- Important standards proposed by India include Standards for Okra, BWG Pepper, Aubergines, Dried and Dehydrated Garlic, Dried or Dehydrated Chilli Pepper and Paprika, Fresh Dates, Mango Chutney, Chili Sauce, Ware Potatoes, and labeling requirements for non-retail containers.

About Codex Alimentarius Commission (CAC):

- It is an **international food safety and quality standard-setting body** created by **WHO and FAO** of the United Nations with 188 member countries and one member organization (European Union).
- The Commission's program of work is **funded through the regular budgets of WHO and FAO**, with all work subject to the approval of the two governing bodies of the parent organizations.
- **India** has been a **member** of the CAC **since 1964**.

About Millets:

- Indian millets are a group of **nutritiously rich, drought tolerant, and mostly grown in India's arid and semi-arid regions**.
- They are **small-seeded grasses** belonging to the botanical family **Poaceae**.

- They have minimal requirements for water, fertilizers, and pesticides.
- Millets have a low Glycaemic Index (GI) and are also associated with the prevention of diabetes.
- They are good sources of minerals like iron, zinc, and calcium.
- Millet cultivation helps to reduce the carbon footprint.
- Millets have gained popularity in the West because they are gluten-free and boast high protein, fibre, and antioxidant content.

Government initiatives to promote millet:

- **Millet International Initiative for Research and Awareness (MIIRA):**
 - It aims to connect millet research organizations across the world while also supporting research on these crops.
- The Union Finance Minister termed millets as '**Sri Anna**' in her budget speech.
- The year **2023** has been declared by the **United Nations** as the **International Year of the Millet**, following a proposal by India.
- **Millets And Other Ancient Grains International Research Initiative (MAHARISHI):**
 - This initiative is aimed to bolster research and awareness concerning agro-biodiversity, food security, and nutrition, aligning with the **International Year of Millets 2023 program** initiated by the United Nations General Assembly (UNGA).
- **Initiative for Nutritional Security through Intensive Millets Promotion (INSIMP):**
 - It was launched in **2011-12** to demonstrate improved production and post-harvest technologies in an integrated manner.

India becomes the chair of the International Sugar Organization (ISO) for 2024

News Excerpt:

In its **63rd council meeting**, the **International Sugar Organization (ISO)**, an apex body for sugar and related

products headquartered in London, has announced India as the organization's chair for 2024.

International Sugar Organization (ISO)

- ISO is the **unique intergovernmental body** devoted to improving conditions in the world's sugar market through Debate, Analysis, Special Studies, Transparent Statistics, Conferences, and Workshops.
- **It has a proactive attitude to include ethanol from sugar crops.** During the mid-90s, it helped to promote the increasing role of biofuels.

India's Sugar Industry:

- India is the **largest consumer** and **largest producer** of sugar in the world.
- India's sugar trends undeniably affect the world market, with about **15% share in global sugar consumption** and about **20% sugar production**.
- With Brazil in the Western Hemisphere, **India is the market leader in the sugar industry in the Eastern Hemisphere.**



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BHOPAL {M.P.Nagar}	12 Feb.	☎ 7509975361
DELHI {Rajender Nagar}	05 Feb.	☎ 9811293743
DELHI {Vijay Nagar}	26 Feb.	☎ 9717380832
BENGALURU {Koramangala}	06 Jan.	☎ 7619166663
PATNA {Exhibition}	Admission open	☎ 7463950774
JAIPUR {Tonk Road}	26 Feb.	☎ 8290800441
KOLKATA {SALT LAKE}	Admission open	☎ 9007709895
INDORE {Bhawar Kuan}	12 Jan.	☎ 9893772941
HYDERABAD {Himayatnagar}	Admission open	☎ 7996066663
IMPHAL WEST {Keishamthong Hodam Leirak}	05 Feb.	☎ 9650245599

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INTERNATIONAL RELATIONS

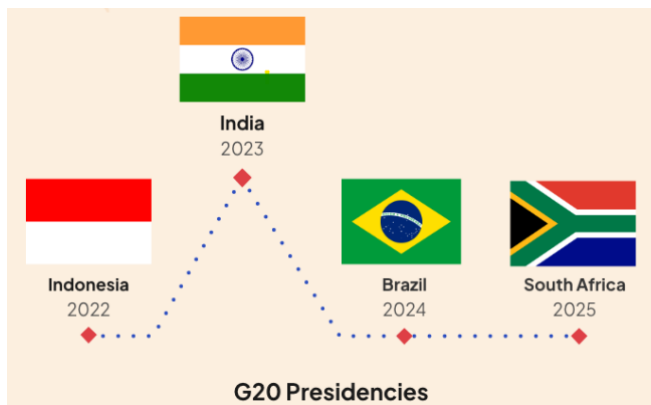
365 days of India's G20 Presidency

News Excerpt:

India has completed its tenure as the G-20 president.

Background:

- India received the G20 presidency from Indonesia in 2022 and handed it over to Brazil.
- Indonesia, India, and Brazil formed the "Troika"** for our presidency.



- In September 2023, India hosted the **18th G20 Summit in New Delhi**, focusing on the theme '**One Earth, One Family, One Future**' drawing upon our age-old belief of "**Vasudhaiva Kutumbakam**".
- There were **9 invitee countries** – Bangladesh, Egypt, Mauritius, Netherlands, Nigeria, Oman, Spain, Singapore and UAE.

India during its G-20 presidency:

- India offered the world an alternative to the status quo, i.e. a **shift from a GDP-centric to human-centric progress**.
- India aimed to remind the world of **what unites us rather than what divides us**.
- Further, food security, climate change, energy, development, healthcare, and digitalization were deliberated upon at the global forum, which was formed primarily to discuss economic and financial matters. **This required a fundamental reform of multilateralism.**
- India also hosted a **Virtual G20 summit** whose goal was to **address gaps in global governance, reaffirm commitments to Sustainable Development Goals (SDGs), as well as to the New Delhi G20 Leaders' Declaration, and progress towards a revitalized multilateral system.** For the first time under any presidency, both a physical and a virtual meeting were held.



JAN BHAGIDAARI: CITIES/UTS COVERED BY THE G-20 PROGRAMS.

Four-Fold Approach:

In its presidency, India assumed a four-fold approach of - **Inclusive, Ambitious, Action-Oriented, and Decisive (IAAD)**, which was adopted unanimously by all G20 members.

INCLUSIVE

- Jan Bhagidaari** (people's participation) involved all states and Union Territories as partners.
- The **inclusion of the African Union (AU)** as a permanent member of the G-20 integrated 55 African nations into the forum.

AMBITIOUS

- The first-of-its-kind '**Voice of the Global South Summit**,' was convened by India, heralding a new dawn of multilateralism.

ACTION-ORIENTED

- India delivered the G-20 2023 **Action Plan to Accelerate Progress on the Sustainable Development Goals (SDGs).**

DECISIVE

- India has witnessed the revolutionary impact of digital innovations like Aadhaar, UPI, and Digilocker, thus was decisive in its recommendations.
- India has successfully completed the **Digital Public Infrastructure (DPI)** Repository (featuring over 50 DPIs from 16 countries), a significant stride in global technological collaboration.

Initiatives by India during G20:

- **Green Development Pact:** It addresses the challenges of choosing between combating hunger and protecting the planet and outlines a comprehensive road map where employment and ecosystems are complimentary, consumption is climate-conscious, and production is planet-friendly.
- **Global Biofuel Alliance:** It aims to boost supply and demand for biofuels and offer a lower-emissions fuel option for many forms of transport.
- **India-Middle East-Europe Economic Corridor (IMEC):** This proposed project will include rail, road, and ship routes to connect India to Europe via the Arabian Gulf.
- **Lifestyles for Sustainable Development (LiFE):** The G-20 declaration underscores India's commitment to climate justice and equity, urging substantial financial and technological support from the Global North.
- **Towards equitable global order:** India is taking a lead role in UN reforms, especially in restructuring principal organs like the UN Security Council, which will ensure a more equitable global order.
- **Against terrorism:** India raised issues such as threats from new and emerging technologies for terrorist purposes, such as cryptocurrency and digital terrorism, such as using the darknet.

Group of 20 (G20)

About:

- It is the pre-eminent forum for **international economic cooperation** and is crucial in establishing and enhancing global governance and the world's architecture.
- There is **no permanent secretariat or staff for the G20**.
- Every year, a different Presidency is in charge of holding the G20 Summit.
- The G20 was **initially created in 1999 for the Finance Ministers and the Central Bank Governors** to address global financial stability after the Asian Financial Crisis (1997).
- It **later evolved to include Heads of State or Government** due to the 2007 and 2009 global economic crises.
- **Membership:** A total of **19 nations**—Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Türkiye, United Kingdom, and the United States **and the European Union are members**.
- **The African Union**, a group of 55 member states, is the **latest & the 21st member to be** admitted to G20.

Way Forward:

- India's Presidency imparted a **new dynamism and momentum to the G20** and built consensus on a wide range of issues among developing countries and advanced economies. India also brought multilateralism back to the centre stage and amplified the voice of the Global South.
- It is a matter of pride that during the Indian Presidency, the **G-20 (New Delhi Leaders Declaration)** achieved 87 outcomes and 118 adopted documents, a marked rise from the past.

PEPPER IT WITH:

G20, LiFE, IMEC, Global Biofuel Alliance, New Delhi Leaders Declaration

India - Latin America and Caribbean (LAC) ties

News Excerpt:

The **External Affairs Minister, in the recent past**, visited **Guyana, Colombia, the Dominican Republic, and Panama**, signalling an intensification of ties.

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What is Latin America and the Caribbean (LAC)?

LAC refers to the region south of the United States, i.e., **Mexico, the Caribbean Islands, and South America**.



- The name is given since the dominant languages spoken in the region (Spanish and Portuguese) are derived from Latin.

- The Caribbean region refers to countries belonging to or relating to the Caribbean Sea. It consists of many sovereign island nations and territories that belong to other nations as well.

India & Latin America ties:

ECONOMIC:

- According to the **IBEF** (India Brand Equity Foundation), the **trade** between the two regions was nearly **US\$ 50 billion in 2022-23, with much more unexplored potential.**
- India's trade interests in the **LAC region** include raw materials like **edible oil, crude oil, gold** and critical minerals like **lithium** and **copper**.
- The region's capabilities in producing and supplying the resources that India needs give us a special trade edge.

Weight of Crude Oil:

Heavy: It evaporates slowly and contains material used to make heavy products like asphalt.

Light: It requires less processing and produces a greater percentage of gasoline and diesel than heavy oil.

- The standard unit of measurement for oil weight is API Gravity.
- The American Petroleum Institute created this scale to measure the density of oil.
- The higher the API, the lighter the oil and the lower the API, the heavier the oil.
- **EDIBLE OIL:** India imports **edible oil** for cooking, with Latin America being its main source of **soybean oil**. **Argentina** and **Brazil** are the largest producers of soybean oil in the world.
- **CRUDE OIL:** Venezuela, Mexico, and Brazil have seen a **rise in crude oil** production from **2006-2020**. Venezuela — home to the world's largest crude oil reserves — **presents an opportunity for Indian refiners**, who can refine heavy crude from the Latin American country. It can also help India **further diversify its crude import basket**, given that it has stopped importing crude from another sanctioned country, Iran, since 2019.
- **GOLD & COPPER:** Chile was the leading supplier of **copper**, and India has also looked towards South America for **gold**, with imports exceeding **\$6.5 billion** in the region's **last fiscal year**.
- **CRITICAL MINERALS:** Chile, part of the "**Lithium Triangle**," has the **world's largest lithium reserves**, making it a key source of electric **batteries** and **green energy**. Peru is a major lead, zinc, gold, copper, and silver producer.
- A trade agreement with the Andean countries of Bolivia, Colombia, Ecuador, and Venezuela would be beneficial as they **hold major reserves of the world's critical minerals**.

STRATEGIC:

- **Mexico** was the **first nation** in this region with which independent India established relations.



- **Brazil** is a key partner for India, enjoying multilateral cooperation with India in **BRICS, IBSA, and as a partner in Global South**.
- India has also expanded its diplomatic presence to Central American and South American countries like **Panama** and **Mexico**, which are key to **shipping routes** in the region.
- The Indian **diaspora** and India's **soft power** have leveraged the relationship.
 - About **one million Indian diaspora** in the LAC region (mainly in Suriname, Guyana, Trinidad, and Tobago) adds a special dimension to the relationship. It has helped create a **living bridge** between India and the LAC.

Impediments to Greater Cooperation:

- **Chinese Growing Sphere of Influence:** China's growing role in expanding regional industries may also impede Indian prospects. Countries such as Peru count China as one of its closest allies and are also a part of the Belt and Road Initiative (BRI). China's state firms are major investors in the region's energy, infrastructure, and space industries.
- **Economic challenges:** The relationship suffers due to few bilateral trade agreements, trade barriers, limited market access, and inefficient logistics routes.
- **Geographical Distance:** The region is relegated to the far end of India's foreign policy with no guiding policy, with Latin America being located far away from India.

- **Linguistic Unfamiliarity:** The lack of Spanish and Portuguese speakers in Indian companies is a disadvantage.
- **Mixed Past Experiences:** Indian companies that ventured to Latin America have had mixed experiences, with challenges such as:
 - **Uruguay's** revoked mining licenses for Zamin Resources,
 - Unsuccessful Iron ore projects in **Bolivia** and Sugar ventures in **Brazil**.

Way Forward:

- The two blocs have **complementary economies** and hold a series of strategic resources that could leverage the trade and investment ties for **mutual benefit**.
- Areas of great potential could be **energy transition, climate agenda, health, and industrialization**.
- India should encourage greater **cooperation** by **actively engaging** with the **three** Latin American members of the **G20 (Argentina, Brazil & Mexico)** to deepen its engagement.
- For this, the Indian **External Affairs Minister** proposed **four pillars for intensified engagement**:
 - Addressing Global Challenges
 - Resource Partnerships
 - Sharing of Development-Related Experiences
 - Supply Chain Diversification

PEPPER IT WITH:

Lithium Triangle, Crude Oil and Supplies, BRICS, IBSA, South-South Cooperation

Oman's significance for India:

- **Geostrategic:**
 - Oman is India's **closest neighbour in the Arabian Gulf** region.
 - With key Omani ports bordering the coastline



along the Arabian Sea as well as the **Gulf of Oman** leading into the **Persian Gulf** and towards the **Gulf of Aden**, Oman's location is of **utmost strategic importance to India**.

- **Diplomatic relations:**
 - The ruling family of Oman has always had a **strong connection** with India. They have had a long history of getting educated here.

India-Oman vision document:

- The document is broadly rooted in **Oman's 'Vision 2040'**, its national development blueprint, and **India's development vision of 'Amritkaal'**.
- It focuses on building a partnership in 8 to 10 areas, including - **Maritime cooperation and connectivity, Digital payments, Space, Green energy, Tourism, Agriculture, Food security, and Cricket**.
- The cooperation in clean energy will also focus on **green hydrogen**.

- At the **people-to-people level**, too, India and Oman enjoy close ties. There is a large Indian community of almost seven lakh people, which has contributed to the constantly evolving vibrant relations.

- **Geopolitical support:**
 - During the Cold War era, and even thereafter, when the Arab world was largely ambivalent towards India and was often soft and supportive of Pakistan, it was Oman that kept its doors open to India.

- **Strategic partnership:**
 - The **India-Oman strategic partnership** was signed during Prime Minister Manmohan Singh's

India - Oman Trade Talks

News Excerpt:

The Sultan of Oman, Sultan Haitham bin Tarik, was on a 3-day state visit to India.

Key Highlights of the visit:

- The Indian Prime Minister and Oman's Sultan **adopted a vision document to strengthen bilateral ties**. Also, they pushed for **sealing a comprehensive economic partnership agreement**.
- The two sides announced the third tranche of the **Oman-India investment fund** worth **USD 300 million** (around Rs 2,500 crore) that would be used for **channelling investment into the fastest-growing sectors of the Indian economy**.
- Both countries **signed agreements on cooperation in the field of information technology, combating financial crimes, culture**, and the establishment of a **Hindi chair** of the Indian Council of Cultural Relations in Oman.

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visit to Oman in **2008** and is **based on twin pillars of mutual trust and shared interests**.

- Oman was one of the countries to have been **invited by India to its G-20 presidency as a guest nation** this year.
- **Defence and Security engagement:**
 - Oman is the first Gulf country with which **all three wings of India's defence forces hold joint exercises**.
 - Since 2012-13, an **Indian naval ship** has remained on duty in the **Gulf of Oman for anti-piracy operations**.
 - Oman has **allowed overflights/transit by Indian military aircraft, too**.
 - The **MoU on Duqm Port** is a historic landmark in our security cooperation, providing **basement facilities, Operational Turn Round, and other logistics facilities to Indian naval ships** operating in the region.
- **Economic engagement:**
 - **Bilateral trade** during FY 2022-23 reached **\$12.388 billion**.
 - There are over **6,000 India-Oman joint ventures in Oman**, with an estimated **investment of over \$7.5 billion**.
 - **India** was the **second largest market for Oman's crude oil exports** for the year 2022 after China.
 - In 2022, India and Oman launched the **Rupay debit card in Oman**, a key footprint of India's initiative to promote Digital Public Infrastructure (DPI) in the world.
- **Oman's involvement in crucial multilateral forums:**
 - Oman is an **integral part** of all important groupings in the region: the **GCC**, the **Organisation of Islamic Cooperation**, and the **Arab League**.
 - Its ability to manage rival ideologies and regional power games makes it **vitaly important to India**.

Challenges:

- **Security challenges** in the region have a ripple effect on the bilateral ties.
- Any **instability in the region** directly affects the **safety and security of millions of Indians** working there, **India's energy security**, and its steadily growing trade relations.

Way Forward:

- Sectors for **future cooperation** involve Space, Rare Earth Metals as well as infrastructural projects such as the proposed India-Middle-East-Europe

PEPPER IT WITH:

India- West Asia relations, Gulf Countries, GCC, OIC, Gulf of Aden

Connectivity Corridor (IMEEC) as well as the deep-sea pipeline proposed for the transfer of gas from Oman to India.

- The list of convergences is long and limitless. Both countries are the **ambassadors of peace and enjoy goodwill** across ideologies in the world. **Oman is, therefore, India's gateway to West Asia.**

India-Maldives Relations

News Excerpt:

Newly elected Maldivian President **Mohamed Muizzu** has decided to send Indian "troops" out of the country while pledging to safeguard the Maldives' independence and sovereignty.

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Background:

- India and the Maldives enjoy close, friendly, and multifaceted relations and share ancient ethnic, linguistic, cultural, religious, and commercial ties.
- India was among the **first nations to acknowledge the Maldives** following its independence in 1965 and forge diplomatic ties with it.
- **Maldives' proximity to the west coast of India** (barely 70 nautical miles away from Minicoy and 300 nautical miles away from India's West coast) and its situation at the **hub of commercial sea lanes running through the Indian Ocean** lead to significant strategic importance for India.
- **India's prompt assistance during the 1988 coup attempt** led to the development of trust and long-term and friendly bilateral relations with the Maldives.
- India was the **first to assist Maldives during the 2004 tsunami** as well as during the **water crisis in Malé in 2014**.
- **India's swift dispatch of 30,000 doses of measles vaccine in Jan 2020** to prevent an outbreak in the Maldives and India's rapid and comprehensive assistance to the Maldives since the **COVID-19 pandemic** began has further reinforced India's credentials of being the "**first responder**".

Evolution of India-Maldives relations:

- **Political relations:**
 - Since the establishment of diplomatic relations, almost all the Prime Ministers of India visited the Maldives.
 - On international issues, **Maldives has consistently supported India in multilateral fora**, such as the **UN**, the **Commonwealth**, the **NAM**, and the **SAARC**.
 - Maldives also **co-sponsored the G-4 draft resolutions on UN reforms**.

- **India extended support to Maldives** candidature for a **non-permanent seat in the UN Security Council for the term 2019-20.**
- **Security & Defence Cooperation:**
 - Since 1988, defence and security have been a major area of cooperation between India and the Maldives.
 - A **comprehensive Action Plan for Defence** was also signed in 2016 to consolidate defence partnerships.
 - **Capacity Building/Training:**
 - India provides the largest number of **training opportunities** for the **Maldivian National Defence Force (MNDF)**, meeting around 70% of their defence training requirements.
 - The Indian Navy has also provided MNDF with air assets for air surveillance, MEDEVAC, SAR, and Helo-borne vertical insertion capability.
 - Indian defence cooperation also extends to the areas of **Joint Exercises, Maritime Domain Awareness, gifting of hardware, infrastructure development**, etc.
- **Development Cooperation:**
 - The major completed and ongoing **development assistance projects** executed by India are:
 - **Indira Gandhi Memorial Hospital:** The hospital was built with Indian Grant Assistance in 1995.
 - **Maldives Institute of Technical Education (now called the Maldives Polytechnic):** It was completed for INR 12 Cr and handed over to GoM in Sept 1996.
 - **India-Maldives Faculty of Hospitality & Tourism Studies:** The foundation stone for the Faculty was jointly laid by Late PM Vajpayee and President Gayoom in 2002.
 - **Technology Adoption Programme in the Education Sector in Maldives:** The US\$ 5.3 million project fully funded by GoI was launched in 2011 to provide ICT training to Maldivian teachers and youth and for vocational training.
 - **National College for Police and Law Enforcement (NCPL):** With GoI grant funding of INR 222.98 Crore, NCPL is the single-largest grant project executed by India in the Maldives.
- **Infrastructure and connectivity Projects:**
 - **Water and Sanitation in 34 Islands:** The project seeks to improve water supply and sewerage facilities in 34 identified islands by installing a proper water supply distribution network.
 - **Addu Development Project (Roads and Land Reclamation):** It includes roads, street lighting, stormwater drainage, shore protection, and land reclamation for the development of tourism infrastructure.
 - **Greater Male Connectivity Project:** The project aims to connect Male to Villingili, Gulhifalhu, and Thilafushi islands through a series of bridges, causeways, and roads.
- **Economy and Trade:**
 - India and Maldives signed a **trade agreement in 1981** that provides for the export of essential commodities.
 - India-Maldives **bilateral trade** stood at the **USD 300 million mark for the first time in 2021**, reaching an impressive USD 323.9 million. Trade registered a growth of over 31% over the previous year.
 - This is a direct result of the launch of the cargo vessel service between the two countries in September 2020 and the commencement of work on three of our Line of Credit (LoC) projects since February 2021.
 - The implementation of visa-free entry in Feb 2022 for Indians arriving in the Maldives for business purposes is a further recognition of the growing commercial partnership.
 - India emerged as **Maldives' 3rd largest trade partner** in 2021.
 - **Indian imports from the Maldives** primarily comprise **scrap metals**.
 - **Indian exports to the Maldives** include various **engineering and industrial products** like drugs and pharmaceuticals, radar apparatus, rock boulders, aggregates, cement, and agricultural produce like rice, spices, fruits, vegetables, and poultry.
 - In 2022, the RBI signed a **Currency Swap Agreement** with the Maldives Monetary Authority (MMA) under the SAARC Currency Swap Framework.
 - This is to provide swap support as a backstop line of funding for short-term foreign exchange liquidity requirements.
- **Tourism:**
 - Tourism directly accounts for about a quarter of Maldives' Gross Domestic Product (GDP).
 - In a **pandemic-hit 2020, India was the largest source market** for the Maldives, with nearly 63,000 Indians visiting the Maldives.
 - In 2021 & 2022, India continued as the top market with over 2.91 lakh and 2.41 lakh Indian tourist arrivals, respectively.

- In March 2022, India & Maldives agreed to an **open skies arrangement**, which will further improve connectivity between the two countries.
- **Education & Capacity Building:**
 - For decades, India has been a traditional partner for the Maldives in human resource development across sectors.
 - Several Maldivian youths acquire their higher education in India Universities every year.
 - India has traditionally offered a substantial number of ICCR scholarships to Maldivian youth.
 - India also offers 10 seats every year to the Maldives under the Department of Science and Technology (DST), Govt. of India "India Science and Research Fellowship (ISRF) Programme".
 - Maldives has been a partner of the **ITEC (Indian Technical and Economic Cooperation Programme)** for several years. In 2019-20, the in-person ITEC slots were increased to 200.

Concerns regarding Maldives for India:

- **Geopolitical Strategic Location:** The Maldives, an archipelago of 1,200 coral islands, is strategically positioned in the Indian Ocean, close to important shipping lanes that guarantee steady energy supplies to nations like China, Japan, and India.
- **China's Growing Influence:** The Maldives' importance has risen significantly since China began sending military ships to the Indian Ocean some ten years ago, even up to the Gulf of Aden, in the name of counterpiracy operations. **Today, the Maldives is estimated to owe 70% of its foreign aid to China.**
- **Countering China in the Indian Ocean:** China's entry is solely to advance its interests. It has done so through debt financing, leading to debt traps that further lead to interference in internal politics, support to fundamental groups, and the consequent hegemony of China, which is a hindrance to democracy.
- **Radicalization:** The Maldives saw a sharp increase in radicalization, and India cannot afford a neighbour who does not prevent the radicalization on its soil.
- **Indian Security Interests:** For India, Maldives is a first line of defence against terrorism, piracy on the high seas, drug trafficking, narcotics, and other maritime crimes.

Related: The Maldives government has decided not to renew **an agreement with India** that allowed India to **conduct hydrographic surveys in Maldivian waters.**

- This is carried out by ships, which **use methods such as sonar** to understand the various features of a water body.
- These surveys help **"map out water depth, the shape of the seafloor and coastline, the location of possible obstructions, and physical features of**

water bodies" to ensure the efficiency and safety of maritime transportation.

- Only 25 percent of the coastal countries, including India, have adequate hydrographic capabilities.
- India has also performed **hydrographic surveys** along its coasts as well as for neighbouring countries, including **Sri Lanka, Myanmar, and Bangladesh.**

Way Forward:

- Both countries should focus on **capacity building and working together** to address their shared challenges and priorities.
- As neighbours, both countries need to collaborate closely to address challenges like **transnational crimes and Humanitarian Assistance Disaster Relief.**
- India must work with the Maldives in the security and defence domains as the leading South Asian power and a "net security provider" in the Indian Ocean region.

PEPPER IT WITH:

Addu and Male Projects,
Net Security Provider,
Strategic Location

India - Australia Relations

News Excerpt:

The Defence Minister and the External Affairs Minister of India met their Australian counterparts as part of the second India-Australia 2+2 Ministerial Dialogue in New Delhi, and the **6th edition** of the Australia-India leadership dialogue was held in **Melbourne, Australia.**

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Key Points:

- India and Australia held a 2+2 Ministerial Dialogue to **step up defence cooperation and deepen the strategic relationship** in critical minerals and trade and investment sectors.
- India and Australia are finalizing agreements for **cooperation in hydrography and air-to-air refuelling.**
- They agreed that a **robust defensive alliance** between Australia and India would benefit both nations and the Indo-Pacific's general security.

Key engagements:

- The year saw significant progress in various areas, such as the **First Annual Leaders Summit**, the Economic Cooperation and Trade Agreement (**ECTA**), and record-high **bilateral trade.**
- Additionally, establishing a **Little India** in Sydney and the **new Consulates General** in Bengaluru and

Brisbane have further strengthened the bond between the two countries.

- **Australian university campuses** in India, recognition of educational qualifications, and mobility agreements are also positive developments.

- **The Australia-India Leadership Dialogue (AILD)** is the premier forum for **informal diplomacy** between Australia and India.
- The AILD has established itself as a key track **1.5 engagement** between both countries.
- **Theme for 2023:** "Skill for Success"

The theme chosen this year is contemporary, relevant, and outcome-oriented in the following manner:

- **The Clean Energy Transition:** Decarbonising Towards Net Zero.
- **Skills for Success:** Revolutionizing the Job Market in the Digital Age.
- **"Bridges of "Bharosa":** Security Cooperation in a Contested World.
- **The tryst between Identities:** The Convergence of Technology and Culture.

Opportunities identified for India-Australia:

Renewable Energy and Decarbonization:

- Australia and India can lead a **clean tech revolution** and become renewable energy superpowers by collaborating on **solar, green hydrogen**, and other renewable energy forms.
- They need **critical minerals** and **rare earths** for advanced electronics, energy storage systems, electric vehicles, and aerospace technologies.
- Leaders can maximize the potential of the **Critical Minerals Investment Partnership**, eliminate **supply chain bottlenecks**, finance renewable energy projects, and foster a **circular economy** for innovation, job creation, and economic growth.

Employment and skills:

- **India** aims to create **new jobs** for its growing population, while **Australia** faces **workforce shortages**. Initiatives like **Jobs and Skills Australia** and **Skill India** can activate untapped potential and bridge workforce needs.

Geopolitical and geostrategic:

- Australia and India, located in the **Indo-Pacific region**, are focusing on leveraging their technological capabilities to **build trust** and enhance **cooperation**
- Assess global security standards, explore public-private partnerships, and understand how both countries can enhance their security and economic prosperity in a future shaped by technology-driven geopolitics.

People-to-people:

- People-to-people connections are a crucial asset in **India's economic strategy for 2035**.
- Technology can be an **enabler** to foster cross-cultural understanding between the two countries.
- **Cultural centres** should be developed as **hubs** where technology combines **entertainment** and **culture**, offering interactive experiences.

Challenges in the relations:

- The two countries need more strategic trust despite significant strategic and defence engagement.
- India-Australia relations are facing challenges such as **visa restrictions** for **Indian students** and **professionals** and concerns over **Khalistan supporters' attacks** on the Indian diaspora and temples.
- There are differing concerns about **China's growing presence** in the Pacific and Indian Oceans.
- Australia is India's **eighth-largest** trading partner, and India is Australia's **fifth-largest**. Trade between India and Australia is limited, with **around 70%** of exports of **coal** and **gold** to India.
- Australia's **Temporary foreign worker program** reforms have caused concern in India, impacting **labour mobility** and the future movement of **skilled workers** between the two countries.
- Despite a civil nuclear cooperation agreement, some reservations about exporting uranium to India remain.

Way Forward:

As strong democracies and **dynamic economies** of the **Indo-Pacific**, both countries can make a difference through **cooperation** on a

practical, progressive and **sustainable** agenda. Together, both countries should make a force for **global good**.

PEPPER IT WITH:

Circular Economy, Supply Chain Diversification, QUAD, Indo-Pacific

PRE-SHOTS

Anti-Terror Exercise of SCO

News Excerpt:

India hosted a joint anti-terror exercise of the Shanghai Cooperation Organization (SCO) nations.

About the exercise:

- The exercise was carried out in New Delhi with the support of the executive committee of the **Regional Anti-Terrorist Structure (RATS) of the SCO**.
 - RATS is a **permanent** acting agency of the SCO based in Tashkent, Republic of Uzbekistan.

- It was officially launched on January 1 2004 and is designed to assist, coordinate, and interact with the competent agencies of SCO member states in fighting **terrorism, separatism, and extremism**.
- **Objectives:**
 - **Improving the mechanisms** with an **exchange of positive experience** between the competent authorities of the SCO member states to identify and suppress the use of the Internet and digital assets for terrorist, separatist, and extremist purposes.
 - Increase **the level of interaction** between the competent authorities of the SCO member states in countering cyber-attacks on the critical information infrastructure of the member states.

Shanghai Cooperation Organization (SCO):

- It is an intergovernmental organization founded in Shanghai on June 15, 2001.
- The SCO currently comprises 9 Member States, which are **China, India, Kazakhstan, Kyrgyzstan, Russia, Pakistan, Tajikistan, Uzbekistan, and Iran**.
- It has **three Observer States** interested in acceding to full membership (Afghanistan, Belarus, and Mongolia) and six **"Dialogue Partners"** (Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka and Turkey).
- Since its inception in **2001**, the SCO has mainly focused on regional security issues and its fight against regional terrorism, ethnic separatism and religious extremism.
- To date, the SCO's priorities also include regional development.

India-Korea Electronic Origin Data Exchange System (EODES)

News Excerpt:

India and South Korea have launched the **India-Korea Electronic Origin Data Exchange System (EODES)**.

About EODES:

- EODES **shortens the transmission lead time** and assures Preferential Certificate of Origin (PCO) authenticity, thus **reducing the goods' time-to-market through faster customs clearance**.
- It is aimed at **facilitating the smooth implementation** of the **India-Korea Comprehensive Economic Partnership Agreement (CEPA)** by way of **electronic exchange of origin information** between the two customs administrations in respect of the goods traded under the CEPA.
- The data fields in a **Certificate of Origin (CoO)** shall be electronically shared by the exporting customs administration with the importing customs as soon as



the certificate is issued. This would facilitate faster clearance of imported goods.

India-Korea Comprehensive Economic Partnership Agreement (CEPA):

The India-Korea CEPA played a major role in enhancing trade between the two countries. The annual bilateral trade reached \$21.5 billion in 2018. India-Korea CEPA became operational in January 2010.

● Features of India-Korea CEPA:

- Both nations **reduced or eliminated the customs duty** on originating goods of the other nation.
- One nation can request the other nation about the possibility of **accelerating the reduction or elimination of customs duty**.
- Goods covered under the CEPA shall be eligible for **preferential treatment** provided they satisfy certain **rules of origin**.
- **Neither of the nations** shall maintain or adopt any **non-tariff measures on the import or export of goods** destined for the other country in the agreement except for the rights and obligations under the WTO agreement.
- In case a country decides to impose an **anti-dumping duty**, then it shall impose a duty less than the margin of dumping if such lesser duty is sufficient to remove the injury to the domestic industry.

● Benefits of India-Korea CEPA:

- By establishing a cooperative framework, it liberalized and **facilitated trade in goods and services** between both countries.
- It **established transparent rules that govern investment** and trade between both parties.
- It **improved the competitiveness and efficiency of the manufacturing and service sectors of both nations** and opened new doors for a higher level of trade and investment.

The soft launching of the EODES will **mark a major milestone** in the flourishing bilateral relations between India and South Korea.

Global Cooperation and Training Framework

News Excerpt:

Officials from the **United States**, **India**, and **Taiwan** gathered for a **cybersecurity workshop** under the Global Cooperation and Training Framework (GCTF).

Global Cooperation and Training Framework:

- In **2015**, **Taiwan** and the **United States** established the Global Cooperation and Training Framework (**GCTF**), a platform to address **global issues**. It allows Taiwan to participate in global platforms and raise its voice.
- The GCTF **assists Indo-Pacific countries** in **capacity building** through training programs for officials and experts, enhancing Taiwan's multilateral cooperation.
- Since its inception, the GCTF has conducted **70 international workshops** with **over 120 countries**, focusing on **critical issues** such as public health, law enforcement cooperation, women's empowerment, energy efficiency, e-commerce, cybersecurity, humanitarian assistance, disaster relief, and media literacy.
- **Japan** became a full partner in **2019**, cohosting all GCTF workshops.
- **Australia** announced its full partnership in **2021**.
- The **full partners** (currently **Taiwan**, the **United States**, **Japan**, and **Australia**) hold GCTF Joint Committee meetings to review events and decide on cooperation areas for the coming year.

About the news:

- The **first in-person GCTF program** in **India**, cohosted by the US ambassador to India, was attended by representatives from the **US**, **India**, and **Taiwan** in New Delhi.
- This event signifies a significant step in cybersecurity cooperation, as the GCTF serves as a platform for **sharing expertise** in areas often restricted in international institutions.
 - India, with over **800 million internet users** and **1.2 billion smartphones**, considers cybersecurity integral to its **national security**.

Regional stability and China's viewpoint:

- This trilateral collaboration on cybersecurity is likely to have implications for regional stability.
 - It is **aimed to counter digital threats** and enhance collective security in the Indo-Pacific region.
- This strategic alignment could **balance** China's growing **influence** and **assertiveness** in the region.

- China, which views Taiwan as part of its territory and opposes official interaction, may view this development as a challenge to its **regional aspirations**.
- The collaboration is a concerted effort to counter Chinese influence in cyberspace and as a **tacit support** for **Taiwan's** international presence despite its exclusion from global platforms.

India re-elected to the International Maritime Organization (IMO)

News Excerpt:

India has been **re-elected** to the **International Maritime Organization (IMO) Council** with the highest tally at elections held at its Assembly in London **for the 2024-25 biennium**.

- India's re-election falls under the **Category of 10 states** with "**the largest interest in international seaborne trade**", alongside Australia, Brazil, Canada, France, Germany, the Netherlands, Spain, Sweden, and the United Arab Emirates (UAE).

About IMO:

- It was established by a Convention approved under the auspices of the United Nations on **March 17 1948 in Geneva**, and it met for the first session in January 1959. It now has **175 member states and three associate members**.
- It is a specialized agency of the United Nations responsible for measures to **improve the safety and security of international shipping** and **prevent pollution** from ships.
- It is critical to achieving the targets outlined in the **United Nations Sustainable Development Goal (SDG) 14**: Conserve and exploit oceans, seas, and marine resources sustainably for long-term development.
- The **Assembly** generally **meets in regular session once every two years**.
 - It is responsible for **approving the work schedule, voting on the budget, and setting the organization's financial arrangements**.
 - At these meetings, the organization's **40-member council is also elected for the next two years**.

The **Amrit Kaal Vision 2047** also sets goals to **strengthen India's global maritime presence**. There are 43 initiatives identified as part of Amrit Kaal Vision 2047 Action Plan, of which the key initiatives focus on strengthening our global maritime presence, which includes a **dedicated IMO cell in India**, the **appointment of a permanent representative at IMO headquarters, London**, etc

ENVIRONMENT

COP 28

News Excerpt:

COP 28 or the United Nations Climate Change Conference was hosted by **United Arab Emirates**, from **30 November until 12 December 2023**.

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- UN Climate Change conferences (or COPs) take place annually and are the **world's only multilateral decision-making forum on climate change**.
- The COP is where the world comes together to agree on ways to address the climate crisis, such as **limiting global temperature rise to 1.5 degrees Celsius**, helping vulnerable communities adapt to the effects of climate change, and **achieving net-zero emissions by 2050**.
- Officially, **COP 28 stands for the 28th meeting of the Conference of the Parties (COP) to the UNFCCC**.

Key Outcome of the COP28:

India's Initiatives at COP 28:

Green Credits Initiative

About Green Credits Programme:

- It was launched by the **Ministry of Environment, Forest and Climate Change (MoEFCC)** in the **2023-24 budget** under **Mission LIFE**. (LIFE was launched in October 2023).
 - MoEFCC issued the draft '**Green Credit Programme Implementation Rules 2023**' under the **Environment Protection Act 1986**.
 - Democratizes credit**: Carbon markets focus more on industry and corporations, while green credit programmes can also benefit individuals and communities.
- Flashback on India's COP 26 commitments**:
 - Previously, India made its commitments at **Glasgow, in COP-26**, of **cutting the emissions intensity of India's GDP by 45%**, increasing the share of **non-fossil fuels to 50% by 2030**, and achieving **net zero by 2070**.
 - In **COP 28**, India **offered the concept to the international community to create a market for green credits** at a global level, just like the one on carbon credits exists.
 - New Target on Climate Finance**: The New Collective Quantified Goal (NCQG) refers to **ongoing negotiations on a new climate finance commitment** developed countries must make to developing countries to accelerate the world's transition away from fossil fuels.

Lead IT 2.0

On the **sidelines of COP28 in Dubai**, the Prime Minister of India **launched Lead IT 2.0**, focusing on inclusive and just industry transition.

Lead IT 2.0 will focus on **co-development and transfer of low-carbon technology and financial assistance to emerging economies**.

The main agenda is **to complete a stocktaking exercise** to review the progress in the global fight against climate change

and decide on measures to strengthen climate actions being taken by countries.

Fossil Fuels

Indian Initiative for Fossil Fuels:

It was India at the COP27 meeting in Sharm el-Sheikh, Egypt, last year, **calling for a phase-out of fossil fuels** to be included in the final outcome of the meeting.

In COP 28, India fought hard to change the word 'phase-out' to 'phase-down', with the tacit support of many powerful countries, **including the United States and China, both big coal consumers like India**.

- At COP27 last year, **India argued against the singling out of coal and called for the phase-down of all fossil fuels**.

GST on Fossil fuels:

- All three successive GST drafts find that the **1.5°C target** would require a **"deep, rapid and sustained"** reduction in global **emissions of 43% by 2030 and 60% by 2035** relative to 2019 levels, reaching **net-zero CO2 by 2050**, with global emissions expected to peak **around 2020 or latest by 2025**.
- This draft sought to square the circle on fossil fuels by calling for **"transitioning away" from fossil fuels**.

Fossil Fuels: Is It Replaceable?

It was only in the **26th edition of the COP, in Glasgow in 2021**, that countries agreed to tackle coal — the fossil fuel with the biggest global warming footprint — by agreeing to **"phase down" its use**.

- India's National Electricity Plan, 2022-27**, plans to **add nearly 87,000 MW** in this period in the form of fresh coal-fired capacity: **27,000 MW** via under-construction power plants and **60,000 MW from new plants**.
- Oil production in the U.S. hit record levels this year**.
 - Since 2010, the number of oil barrels per day has tripled, and gas production has risen two and a half times in the country.
- Efforts to cut emissions have so far been focused mainly on reducing the relative consumption of energy or on improving energy efficiencies. And global production of fossil fuels continues to rise.
- There is no way that emissions can be reduced without substantially cutting down the use of these fuels.

Global Initiatives:

COP28 Health & Green Pledge

Health Pledge: On the **first Health Day at COP28**, global leaders united in endorsing the health and climate change declaration, sounding the alarm on the severe health implications of climate change. **India is not a signatory of the Health Pledge**.

Green Pledge: CoP 28 also has cleared a **Global Renewables and Energy Efficiency Pledge**, which aims to **triple renewable-energy generation capacity by 2030** and calls for an end to new investments in coal-significantly. **India didn't sign on to this**.

Global Stocktake

- The Global Stocktake (GST) is a comprehensive assessment of the world's progress on climate action.
- The **first Global Stocktake (GST)** of implementing the Paris Agreement was concluded at COP 28.
- Each stocktake is a **two-year process** every five years to assess the world's collective progress towards achieving its climate goals.
- **Significance of GST:**
 - The GST is crucial to the '**ratcheting up**' **mechanism** that is key to meeting the **Paris Agreement goals**.
 - After presenting at COP, countries must confer on how to respond by agreeing and delivering the '**political outcome**' of the GST.
 - Countries are expected to update and increase the ambition of their **NDCs until 2025** and submit their **first 'biennial transparency report' (BTR1)**, which will help track progress.

BASIC countries:

The BASIC countries (also Basic countries or BASIC) are a bloc of four large newly industrialized countries — **Brazil, South Africa, India and China** — formed by an agreement in 2009.

Climate Club

- **Climate Club** is an initiative aimed at cooperation between countries to make effort & strategies in **decarbonising the industrial sector**. It was formally launched at COP28.
- **Led by Germany and Chile**, the Club has garnered support from 36 member countries, including Kenya, the European Union, Switzerland and others.
- **Key priorities** for the Club include: **Standardizing emission calculations for carbon dioxide (CO₂) intensities of certain products**,

What is the Climate Club Work Programme 2024?

- **Aim-** Make decarbonisation of industries successful for climate and businesses through ambitious policies, alignment of methodologies and standards and improving finance and assistance for emerging and developed economies.
- The Club's **core idea** is based on the fact that the **hard-to-abate sectors, including steel, cement, and chemicals, are responsible for about 70 per cent of global CO₂ emissions from industry**, and developed countries account for a significant share of these emissions.

Climate Club:

- It was launched at COP28 of UNFCCC.
- It is an open, inclusive, high-level forum for cooperation on climate action, particularly the decarbonization of industry.
- Germany first proposed it during a G7 summit meeting (2022).
 - **G7** is an informal grouping of advanced economies.
 - It includes the **United States, Canada, France, Germany, Italy, Japan, and the United Kingdom**.
 - **Membership:** 36 countries. (India is not a member)
 - **Interim Secretariat:** Economic Cooperation and Development (OECD) and International Energy Agency (IEA).

Loss and Damage Fund

It was first announced after **COP-27 in Sharm El-Sheikh, Egypt**.

What is the Loss and damage fund?

It is a global financial package to ensure the rescue and rehabilitation of countries facing the cascading effects of climate change.

- The **term refers to the compensation that rich nations, whose industrial growth has resulted in global warming** and driven the planet into a climate crisis, must pay to poor nations, whose carbon footprint is low but are facing the brunt of rising sea levels, floods, crippling droughts, and intense cyclones, among others.
- The **World Bank will be the "interim host"** of the fund for four years. It is expected to operate by the principles of the UNFCCC and the Paris Agreement.

All developing countries are eligible to apply, and every country has been "invited" to contribute to the fund.

New Collective Goal on Climate Finance

- This CoP hopes to sort out the definition and mechanics of delivering **\$100bn in Climate finance by OECD countries**, a pledge made in **2009 and due to start in 2020 but has not been kept so far**.

Tripling Nuclear Capacity by 2050

- **Tripling renewables: One hundred and thirty-two countries** committed to tripling **renewable energy capacity worldwide by 2030** and doubling the annual rate of energy efficiency improvements. The pledge was included in the outcome of the talks in a substantial win for its supporters.
- **Tripling nuclear:** More than 20 countries led by the US called for tripling the **world's nuclear energy capacity by 2050**.

Food and Farming

- **Food and farming:** Nearly 160 countries agreed to prioritize food and agriculture systems in their national climate plans.

Global Methane Pledge

The expansion of the Global Methane Pledge, with 150 signatories committed to reducing methane emissions by **30% by 2030**, continues the momentum from **COP 26**. This progress is promising but demands a detailed analysis of its practical implications and challenges.

Indian Stance in COP 28:

- India is one of the few economies globally that is on track to meet the NDC targets.
- India's target is to reduce emissions intensity by **45 per cent by 2030**
- India **will increase its share of non-fossil fuel to 50 per cent.**
- India is sticking **to a net zero target of 2070**, not bringing that earlier.
- **India and UAE launched a Green Credit Initiative.**
- The big announcement is that India would like to host the **CoP33 to be held in 2028, which India last hosted in 2002.**
- **India is** not a signatory to the Green Pledge and Health Pledge.
- India also resisted the phase-down of Coal.
- **India did not sign** the Global Methane Pledge proposed by the European Union and the United States of America to target a 30% reduction in global methane emissions from 2020 levels by 2030

How does the draft presented at COP 28 have loose definitions?

- **Loopholes:** The final draft favoured the industry and rich developed countries with advanced technologies-.
 - While calling for a **phase-down of "unabated" coal power**, the door was left open for "**low-carbon fuels**", "**low-emission**" technologies, "**low-carbon hydrogen**", and "**transitional fuels**"— all terms with very loose definitions.
- **Unclear on Emissions:** It also mentioned Carbon Capture, Utilization, and Storage (CCUS), which has not achieved commercial viability and whose eventual emissions savings are unknown.
- **Unrecognized Financial Support:** The final draft also **did not take the issue of financial support by developed countries further**, causing much anguish to vulnerable climate-sensitive countries.

Way Forward:

The 28th Conference of Parties (COP-28) in Dubai, was important owing to the Global Stock Taking (GST) over the Paris climate

deals of keeping global temperatures below 1.5 degrees Celsius and reducing greenhouse gas (GHG) emissions. The focus was, on both mitigation and adaptation strategies. However, it has brought to the fore the crucial question of acknowledging the interconnections, interdependencies and interconnectedness of climate action, social justice and the role of the urban world.

PEPPER IT WITH:

Low emission technologies, UNCCC, outcomes of COPs, United Nations Conference on Trade and Development (UNCTAD).

International Methane Emissions Observatory 2023 Report

News Excerpt:

The **International Methane Emissions Observatory's (IMEO)** third annual report - '**An Eye on Methane**' has been

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published. The UN's Food and Agriculture Organization (FAO) is set to present a plan for emission reduction.

- It provides decision-makers with a framework of action to track and monitor methane emissions to plan targeted and ambitious actions for their mitigation.

About the IMEO Report:

- UNEP, through IMEO and the **Climate and Clean Air Coalition (CCAC)**, is the designated implementation partner for the GMP.

Initiatives for curbing methane emissions around the Globe:

- There is extensive coverage at the United Nations Climate Conference in **Egypt (COP27)** and the **Global Methane Pledge (GMP)** growth since 2022.
- At **COP28 in Dubai**, United Arab Emirates, IMEO launched the new Methane Alert and Response System (MARS).
 - This system collects data from multiple satellites and issues alerts to countries and companies when emissions are detected.
- **Under the GMP, more than 150 countries have committed** to collectively reducing their methane emissions by **30% across all sectors by 2030.**
- IMEO collaborates with governments, scientists, satellite operators, and companies to integrate and improve the quality of methane emissions data, specifically identifying mitigation opportunities.

- **Aim:** UNEP's International Methane Emissions Observatory is catalyzing a methane data revolution and building the infrastructure to ensure that data accelerates methane action.
- **Objective:** A methane data revolution making it possible to move beyond generic emission factors that attempt to estimate the release of methane pollution and to replace them with more accurate empirical measurements of what is happening on the ground.
- **Key highlights of IMEO Report as of 2023:**
 - **The methane data platform** is under design.
 - **The Methane Alert and Response System (MARS)** (from COP27) has issued alerts on 127 plumes to the responsible authorities.
 - **20 IMEO-funded and coordinated peer-reviewed studies** have been published, and 7 studies have been submitted or are under review.
 - **114 oil and gas companies** – covering 37% of production – joined UNEP's measurement, reporting and verification program OGMP (Oil & Gas Methane Partnership) 2.0 September 2023 cut-off.
 - **Funding is secured** for baseline studies that will provide an empirical and actionable assessment of emissions across methane-emitting sectors for selected countries.

Why is methane a concern?

- Methane is a relatively short-lived gas with an atmospheric lifetime of around a decade, whereas carbon dioxide affects the climate for hundreds of years. **Methane absorbs much more energy while it exists in the atmosphere and causes swift damage.**
- **Global warming potential:** It is a metric used by the Intergovernmental Panel on Climate Change (IPCC). One **tonne of methane exhaust is likely equivalent to over 25 tonnes of carbon dioxide over a century.**
- There is also an estimate of the heat caused by the gas. **The 2021 Sixth IPCC Assessment Report says that anthropogenic methane accounts for almost a third of the planet's warming observed so far.**
- Among livestock, these emissions are the gaseous waste product of digestion.
- **A 2018 study found sheep, goats, beef cattle and buffaloes to be big emitters.**

The GHG inventory covers the seven direct greenhouse gases under the Kyoto Protocol:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)

- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

FAO Roadmap: A part of the discussion at CoP-28 in Dubai:

- **A restraint advisory for heavy consumers** is likely part of an FAO roadmap for the global agrifood industry **to align with the Paris Pact's goal of keeping our planet no warmer than 1.5° Celsius above its pre-industrial level.**
- **As per FAO, 14% of all greenhouse gas emissions from human activity come from meat and dairy production.**

Not all of the food sector's emissions are from animal food chains:

- **According to one study, these Emissions account for about 57% (including livestock feed), while 29% can be traced to plant-based foods and 14% to other related activities.**
- Methane gas gets far less attention than carbon dioxide, but **it also adds to the crisis of an atmospheric heat trap.**
- Fluorinated gases and nitrous oxide are even less known as culprits.

Global warming:

It is the long-term warming of the planet's overall temperature. Though this warming trend has been going on for a long time, its pace has significantly increased in the last hundred years due to the burning of fossil fuels. As the **human population has increased**, so has the volume of fossil fuels burned.

Greenhouse Gas Emission: Greenhouse gas (GHG) emissions from human activities intensify the greenhouse effect. **This contributes to climate change.**

Way Forward:

- Existing methodologies are now mature enough to be rapidly deployed and will provide accurate estimates of emissions if applied consistently with the assumed conditions.
- Top-down approaches have relied on ground-based mobile measurements, airborne-based measurements, tower networks, and satellite remote sensing.
- Future IMEO scientific work will also focus on improving the characterization of key emission sources and advancing and homogenizing robust testing and validation of methane monitoring technologies.

PEPPER IT WITH:

G20, UNEP, International Energy agency, Initiatives for methane In India.

Compressed Bio-Gas (CBG)

News Excerpt:

Recently, the Government announced the mandatory blending of Compressed Bio-Gas in the CNG (Transport) & PNG (Domestic) segments of the CGD Sector.

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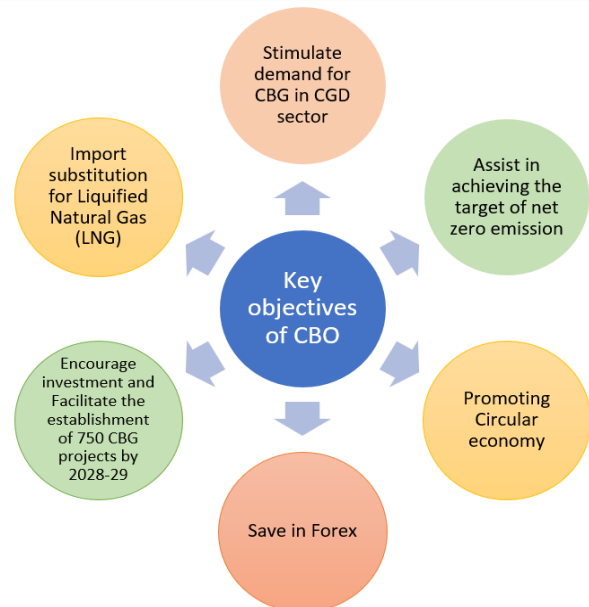
Important Terminologies

- **Piped Natural Gas (PNG):** It is natural gas - mainly methane- and is supplied through mild steel (MS) and polyethylene (PE) pipes to cater to customers' natural gas demand.
- **Domestic PNG:** Natural Gas supplied through piped connections to households is called Domestic PNG.
- **Compressed natural gas (CNG):** It is a fuel gas mainly composed of methane (CH₄), compressed to less than 1% of the volume it occupies at standard atmospheric pressure.
- **City Gas Distribution (CGD)** networks are an interconnected system of underground Natural Gas pipelines for supplying Piped Natural Gas (PNG) and Compressed Natural Gas (CNG) to domestic-commercial and industrial customers.
- **Promotion of the biofuels:**
 - Sustainable Aviation Fuel (SAF/Bio-ATF) initial indicative blending percentage targets were set by the **SAF (Sustainable Aviation Fuel) Committee**.
 - **1% SAF indicative blending target in 2027 (Initially for International flights)**
 - **2% SAF blending target in 2028 (Initially for International flights)**
- **Production of Ethanol:** Promoting ethanol production from maize with all stakeholders to make it a prominent feedstock in the coming years with the help of HY seeds, DDGS (Dried Distillers Grain Solids), etc.

Compressed Bio-Gas: Fuel of the Future

- Compressed Bio-Gas (CBG) is a mixture of hydrocarbon gases and vapours produced by decomposing plant and animal waste.
- It is purified and compressed for use as an automotive fuel and industrial application.
- CBG has high calorific value and other properties similar to CNG and can replace CNG in automotive, industrial, and commercial areas, given the abundance of biomass available within the country.
- It will reduce the higher costs due to natural gas and crude oil imports.
- It will reduce GHG emissions and pollution levels.

- It will provide a buffer for energy security and thus reduce crude/gas price fluctuations.
- Promote the Swachh Bharat Mission and help double the farmer's income through responsible waste management.



Initiatives for Promoting CBG Production:

National Initiatives:

- **CBO initiative taken by the Petroleum Ministry:** CBG Blending Obligation (CBO) will promote the production and consumption of Compressed Bio-Gas (CBG) in the country.
- **Sustainable Alternative Toward Affordable Transportation (SATAT):**
 - **Launched by: Ministry of Petroleum and Natural Gas.**
 - Aim to establish an ecosystem for producing Compressed Bio Gas (CBG) from various waste/ biomass sources and promote its use with Natural Gas.
- **National Policy on Bio-Fuels 2018:** The government of India has released the National Policy on Bio-Fuels 2018, emphasizing the promotion of advanced Bio-Fuels, including CBG.
- **The Galvanizing Organic Bio-Agro Resources Dhan (GOBAR-DHAN) scheme:** It was launched by the Government of India to convert cattle dung and solid waste in farms to Bio-CNG (CBG) and compost.
- **The New National Biogas and Organic Manure Programme (NNBOMP):** It promotes using biogas produced from cattle manure and other organic wastes available in rural areas.

Global Initiatives:

- **The World Biogas Association:** It is the global trade association for the biogas, landfill gas, and anaerobic digestion (AD) sectors, dedicated to facilitating the global adoption of biogas.

Way Forward:

- India should also establish a coordinated institutional framework to facilitate research and development (R&D) in the CBG sector.
- This framework should leverage all domestic R&D institutions to swiftly transfer successful technologies from the laboratory to practical implementation.
- The creation of model CBG plants, with support from technical universities throughout the country, can serve as innovative success stories and provide valuable guidance.

PEPPER IT WITH:

CBG Blending Obligation, Bio-fertilizers, bio-CNG, National Biofuels Coordination Committee (NBCC)

UNEP Report: The Global Cooling Watch 2023

News Excerpt:

The **United Nations Environment Programme (UNEP)** led **Cool Coalition** has released a **Global Cooling Watch report** named **"Keeping it Chill: How to Meet Cooling Demands while cutting emissions"**.

About the report:

- The report is released to support the **Global Cooling Pledge**, a joint initiative between the **United Arab Emirates as host of COP28 and the Cool Coalition**.
- It emphasizes that **"Cooling is a double burden on climate change"**.
 - **Rising demand for power-hungry equipment**, such as air conditioners and refrigeration, will drive greater indirect emissions from the associated electricity consumption.
 - These emissions are compounded by **direct emissions from the release of refrigerant gases in cooling equipment**, the majority of which have a much higher global warming potential than CO₂.
- To minimize the multiple and severe negative impacts of cooling growth, **a rapid transition to sustainable cooling is needed**.
 - **82% of global cooling-related GHG emissions came from G20 countries in 2022.**

UNEP:

- It was founded in **June 1972** following the landmark UN Conference on the Human Environment.
- **Head Quarters: Nairobi, Kenya.**
- It is the leading global authority on the environment.
- UNEP supports its **193 Member States to achieve Sustainable Development Goals** and live in harmony with nature
- **Other publications:** Emissions Gap Report and Adaptations Gap Report

Cool Coalition:

- It was launched at the **First Global Conference on Synergies between the 2030 Agenda and the Paris Agreement**.
- UNEP assembled it with the belief that a unified effort of all stakeholders will be more effective in bringing about change than any of us acting alone.
- It is working towards a rapid global transition to efficient and climate-friendly cooling.

Highlights of the report:

It lays out that **sustainable cooling integrated action is needed in three key areas:**

- **Passive strategies** to address extreme heat and reduce cooling demand in buildings and the cold chain, while maintaining indoor thermal comfort and temperatures in cold storage.
 - Such passive cooling measures can **curb the demand for cooling capacity growth in 2050 by 24%**, result in capital cost savings in avoided new cooling equipment of around US\$1.5 trillion to US\$3 trillion (2020 US\$), and **reduce 2050 emissions by 1.3 billion tons of CO₂**.
- **Higher energy efficiency** standards for cooling equipment.
 - To deliver a good amount of reduction, the **global average efficiency of all cooling equipment operating in 2050 would need to be almost triple** the average efficiency of equipment operating today.
- **A phase-down of climate-warming hydrofluorocarbon (HFC) refrigerants** at a faster rate than is required under the Kigali Amendment to the Montreal Protocol while improving the energy efficiency of cooling equipment.
 - If fully implemented, reduce the 2050 emissions from cooling **by more than 60%**.

Recommended Policy Actions:

PASSIVE COOLING	HIGHER ENERGY EFFICIENCY STANDARDS & EQUIPMENT	PHASE DOWN OF CLIMATE-WARMING REFRIGERANTS
<ul style="list-style-type: none"> Enhance and enforce building energy codes that account for passive cooling. Planning incentives (such as more floor space, faster approvals, and fiscal incentives) must be given for code compliance and certification. 	<ul style="list-style-type: none"> Gradually phase out sales and use of low energy efficiency equipment. Build market demand for higher-efficiency and low Global Warming Potential (GWP) equipment through know-how, economic benefits, and accessibility of the supply chain. 	<p>Deliver a faster Hydro Fluoro Carbon (HFC) phase-down ahead of the Kigali timetable through the integration of refrigerant and energy efficiency regulations and programs and enhanced life-cycle management.</p>
Develop standards for key passive cooling technologies and materials (e.g. cool paints, insulation, clothing insulation, etc.) and support heat-wave preparedness and coordination for early warning systems.	Develop policies and regional/global agreements to prevent product dumping and the prolonged use of obsolete appliances in secondary markets.	Regulate servicing and end-of-life of equipment to minimise refrigerant leakage , encourage refrigerant reclamation and recycling, and support destruction.
Enhance the capacity of sub-national and local governments to scale enforcement and track progress.	Develop financing instruments and targeted finance incentives (including microfinance and leasing) for low-income populations.	Safeguard the market from illegal refrigerant trade (domestic and international).
CURRENT STATUS:		
Building energy codes at the national level are present in only 80 countries (41%) and are mandatory in 56; only 49 countries include cool and reflective surfaces.	115 countries have national-level Minimum Energy Performance Standards (MEPS) for cooling and refrigeration.	More than 150 countries have ratified the Kigali Amendment's action on the HFC phase-down.

Way Forward:

- Achieving **near-zero emissions from cooling by 2050 is possible** but requires a huge amount of policy interventions.
- The report identified that most countries have **at least one national-level policy that is critical to driving the cooling sector to near-zero emissions**. However, **synergistic integration is lacking** among these policies and other enabling activities related to space cooling, cold chains, the refrigerant transition, and finance for sustainable cooling.
- India has worked on a comprehensive GHG inventory for seafood cold chains.
- All nations need to consider an **integrated cooling policy framework** for implementation that accounts for cooling emissions and their role in countries' Nationally Determined Contributions (NDCs) under the Paris Agreement.

PEPPER IT WITH:

Kigali amendment, India Cooling Action Plan (ICAP)

Dynamic Groundwater Resource Assessment Report 2023

News Excerpt:

The Union Minister of Jal Shakti released the Dynamic Groundwater Resource Assessment Report for the entire country for the year 2023. The government reports widespread arsenic and fluoride in groundwater.

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Key Findings of the Report:

- Groundwater Recharge:** The total annual groundwater recharge in 2023 stood at 449.08 billion cubic meters (BCM), reflecting an increase of 11.48 BCM compared to 2022. Rainfall accounts for nearly 60.3% of this recharge, with contributions from other sources like return flow from irrigation, canal seepage, etc. This signifies a positive trend towards replenishing groundwater resources.
- Extractable Groundwater Resource:** The country's total annual extractable groundwater resource was **assessed at 407.21 BCM**.

- **Groundwater Extraction:** The annual groundwater extraction in 2023 was reported at 241.34 BCM. The irrigation sector is the largest consumer, utilizing 87% of the total annual groundwater extraction.
- **Improvements in Assessment Units:** The identification of improvements in 226 assessment units suggests that certain areas have witnessed positive changes in groundwater conditions, reflecting potential successful interventions or natural improvements.
- **Decrease in Over-exploited Units:** The reduction in the number of over-exploited units signifies progress in managing and potentially alleviating stress on groundwater resources in certain regions.
- **Geographical Variation:** Over-exploited units are prevalent in the northwestern states (like Punjab and Haryana) due to over-extraction beyond recharge capacities. Arid regions like Rajasthan and Gujarat also face similar over-exploitation due to low recharge rates.

Central Ground Water Board (CGWB):

- It is a **multi-disciplinary scientific organization** of the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti, Government of India.
- It is the **National Apex Agency** entrusted with the responsibility of providing scientific inputs for the management, exploration, monitoring, assessment, augmentation and regulation of the country's groundwater resources.

Arsenic is a naturally occurring substance that can be found in air, water, and soil. It can also be released into the environment by certain agricultural and industrial processes, such as mining and metal smelting.

- Arsenic comes in **two forms (organic and inorganic)**; the inorganic form is more toxic than the organic form.
- The most common source of arsenic in people is **contaminated drinking water**. Because arsenic occurs naturally, waters that come in contact with particular rocks and soils may contain it.
- Arsenic affects a broad range of organs and systems including:
 - Cardiovascular system
 - Endocrine system
 - Immune system
 - Liver, kidney, bladder organs
 - Nervous system
 - Prostate glands
 - Skin

Pollution Related to Ground Water:

- **Arsenic** was found in **25 states** and **fluoride** in **27 states**, impacting **230 and 469 districts**, respectively.
- The **Central Ground Water Board (CGWB)** under the Ministry of Jal Shakti regularly monitors and assesses groundwater quality, including groundwater contamination of Arsenic and Fluoride.
- These studies indicate the occurrence of arsenic and fluoride in groundwater beyond permissible limits -- set by the **Bureau of Indian Standards** - for human consumption in isolated pockets in various states and Union Territories.

Arsenic Pollution:

- Prolonged ingestion of arsenic-containing drinking water is associated with an increased risk of **bladder cancer and skin cancer**, and medical exposure to arsenic has been clearly associated with skin cancer in epidemiological studies.
- In addition, cancers of the **lung, digestive tract, liver, kidney, and lymphatic and hematopoietic systems** have been linked to arsenic exposure.
- In India, the states of West Bengal, Jharkhand, Bihar, Uttar Pradesh, Assam, Manipur and Chhattisgarh are reported to be most affected by arsenic contamination of groundwater above the permissible level.

Fluoride Pollution:

- Fluoride is found naturally in soil, water, and foods.
- Excessive fluoride intake usually occurs through the consumption of groundwater naturally rich in fluoride, particularly in warm climates where water consumption is greater or where high-fluoride water is used in food preparation or irrigation of crops.
- Such exposure may lead to **dental fluorosis** or crippling skeletal fluorosis, which is associated with osteosclerosis, calcification of tendons and ligaments, and bone deformities.

Initiatives Taken for Groundwater Pollution:

AMRIT Technology:

- This technology is made to remove Arsenic and Metal ions from water.
- The technology uses **nano-scale iron oxy-hydroxide**, which selectively removes arsenic when water is passed through it.

Other initiatives:

- The health effects associated with arsenic exposure are a priority for the **National Institute of Environmental Health Sciences (NIEHS)**.
- In some areas of the country, good continuous rainfall and management practices like **groundwater augmentation and conservation measures** through government and private initiatives have improved groundwater.

- **Atal Bhujal Yojana**, being implemented in April 2020, envisages improving groundwater management in identified water-stressed areas in parts of seven States in the country with emphasis on demand management and community participation.
- As reported by the States/ UTs in the Integrated Management Information System (IMIS), Arsenic affected habitations that are yet to be provided with tap water supply to households have been **provided with safe drinking water through Community Water Purification Plants (CWPPs)** for drinking and cooking purposes.
 - A CEPP provides **treatment and filtration to the public water system**

Way Forward:

- **Water Balance Studies:** Suggested detailed studies to understand water balance components and their interactions for accurate resource assessment.
- **Case Studies:** Advocated conducting case studies to analyze the impact of management interventions on groundwater regimes.

PEPPER IT WITH:

Groundwater aquifers, Pradhan Mantri Krishi Sinchayee Yojana, Jal Shakti Abhiyan- Catch the Rain Campaign, Atal Bhujal Yojana, Aquifer Mapping and Management Programme.
- **Temporal Availability Assessment:** Recommended assessing temporal variations in groundwater availability, especially in hard rock terrains, using **Digital Water Level Recorders (DWLRs)**.
- **Database Management:** Emphasized the need for a dedicated database and regular updates for realistic groundwater resource assessment.
- **Deeper Aquifer Systems:** Urged studies on deeper aquifer systems in specific regions (Indo-Gangetic, Brahmaputra, and Coastal Alluvial areas) to utilize them during exigencies and for drinking water purposes.

Climate-Proof Sanitation

News Excerpt:

At the recent G20 summit in New Delhi, world leaders reiterated their previous commitment to addressing climate change challenges by building sustainable and appropriate solutions.

What is Climate-proof or Climate-resilient Sanitation?

- Climate-resilient sanitation **refers to sanitation systems (both non-sewered and sewerage), services**

and behaviours that can function or quickly recover in the face of climate-related shocks.

Issues faced due to Non-resilient Sanitation:

- **Sanitation and Greenhouse gas emission: According to the UNICEF 2022 report**, the global methane emissions from non-sewered sanitation systems are equivalent to **approximately 377 metric tons of carbon dioxide per year, or 4.7% of global anthropogenic methane emissions**.
- **Increase in Migration:** The impact of climate change is leading to a growing number of displaced people. These people often resettle in areas of higher climate risk and poor access to **WASH (water, sanitation, and hygiene)** facilities or increase the burden on already overstretched facilities.
- **Contamination of Natural Resources:** Non-resilient sanitation directly releases effluent containing nitrogen and phosphorus from human urine and faeces into the environment during heavy rain and flooding periods. In addition to contaminating drinking water, this can also lead to **eutrophication**, where significant nutrient imbalances across ecological systems promote algae growth and deplete oxygen in water systems.
 - **Wetlands, coastal areas, and coral reefs** are particularly vulnerable to the impacts of poorly managed sanitation, affecting the communities and ecosystems.
- **Increase in Epidemics:** The spread of diseases adds another layer of challenges, with 80% of slum residents in Bhubaneswar and 63% in Jaipur reporting fever, skin infections, malaria, dengue and typhoid, loss of livelihood, with economic instability and increased healthcare costs.
 - **Women and girls** suffered the most, grappling with menstrual hygiene challenges and facing harassment while relieving themselves due to the lack of home toilets.

What is the Significance of Climate-resilient Sanitation?

- **Behavioural change:** Strengthening climate resiliency and behaviours along the whole sanitation service chain is likely to improve community resilience and lessen the impact of climate change.
- **Protection and rapid recovery:** Climate-resilient sanitation protects the entire service chain. It is resistant to damage from climate events, enables rapid recovery, and reduces GHG emissions.
 - Climate-resilient sanitation encompasses both **mitigation and adaptation**. Mitigation involves reducing the emission of GHGs, while adaptation refers to minimizing the impacts of climate events on sanitation service delivery.

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Government Initiatives:

- **WASH programming:** India has made rapid progress in ending open defecation across the country, which significantly impacts improving water, sanitation, and hygiene (WASH).
 - **UNICEF** extended the objective of eradicating open defecation to effective solid and liquid waste management in all cities and villages.
 - **By 2019**, the number of people without access to toilets has reduced significantly by an **estimated 450 million**.
- **Swachh Bharat Sanitation Programme:** The concept of Swachh Bharat Abhiyan is to provide basic sanitation facilities like toilets, solid and liquid waste disposal systems, village cleanliness, and safe and adequate drinking water supply to every Indian citizen.
 - **Core 6 components:** Individual household toilets, Community toilets, Public toilets, Municipal Solid Waste Management, Information and Education Communication (IEC), Public Awareness, and Capacity Building.
- **Jal Jeevan missions:** This program aims to supply 55 litres of water to each citizen residing in rural households by providing extensive and functional Household Tap Connections (FHTC) by 2024.

**Adaptation:**

The sanitation sector should prioritize adaptation approaches. This will strengthen the sustainability of this essential service and also human rights.

**Mitigation:**

The rationale for climate-resilient sanitation mitigation action is to improve containment technologies and practices to limit GHG emissions. Potential activities include improving pit design and/or more frequent desludging as well as opportunities for carbon credits.

**Identify and appraise options:**

With a better understanding of the problems through the sanitation climate risk assessment, the framework's next step is to conduct an appraisal of potential programming responses.

**Deliver solutions:**

Delivering the identified climate-resilient sanitation solutions at scale requires strong political commitment, an enabling policy environment, and institutional and system strengthening.

FIGURE RATIONALE FOR CLIMATE-RESILIENT SOLUTION

- Rainwater harvesting and water conservation are also the most essential aspects of the mission, focusing on planting trees.

Way Forward:

Despite India having the policy framework for WASH-related policies in flagship missions such as the **Swachh Bharat** and **Jal Jeevan missions**, the country still needs to develop a climate-resilient

PEPPER IT WITH:

GLASS Report, Twin Pits and Septic Tanks, Urban Sewer Systems, Faecal Sludge Treatment Plants (FSTPs).

WASH infrastructure and sustainable practices.

- **Need for Universal Integration and Collaboration:** Integrating climate-resilient sanitation into national policies and legislation is a crucial first step in ensuring these climate-resilient programs and mitigation solutions can be taken to scale.
- **Enhancing sustainable capacity:** Governments can further strengthen people's initiatives by strengthening their ability to sustain safe sanitation and incentivizing them to revive alternative water sources. **For example, adapt or design new sanitation systems** and high-quality construction standards, methods, and materials (including roofing) in flood-prone areas.
- **Need for Climate-resilient sanitation criteria:**
 - **Risk analysis** (hazard, exposure, vulnerability, and capacity) identifies potential impacts of climate and extreme weather events, and preventive measures have been incorporated.
 - **Mitigation measures** are identified and implemented to reduce the risk of sanitation system failure.
 - **Sanitation services and systems** are designed for reliability, flexibility, robustness, and responsiveness to seasonal variability and extreme weather events (**e.g., during droughts/ floods**) or quick recovery after a shock.
 - **Contingency plans** and capacity are in place to anticipate, cope with, and respond to climate shocks while ensuring minimal service disruption.

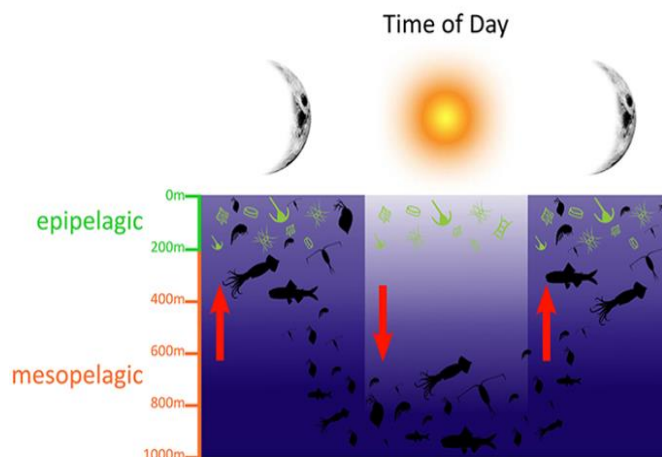
Diel Vertical Migration and Its Role**News Excerpt:**

Diel Vertical Migration (DVM) has been recently in the news due to its role in carbon sequestration.

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What is DVM?

Every day, billions and billions of animals, mostly zooplankton (e.g., smallish animals, including fish, various shrimp, and jellies), migrate up and down in the ocean all over the planet. This movement is referred to as Diel Vertical Migration.



- Diel means that it occurs on a daily, **24-hour cycle**.
- **Vertical refers to the direction of the movement up and down in the water column**, generally between the surface layer (called the epipelagic layer) and the deeper middle layer (called the mesopelagic layer).
- **History:** The great French naturalist Georges Cuvier first noted the daily migration of aquatic animals in the early 1800s. DVM is like a circadian rhythm (in humans) associated with genetics.

Migration of Different Animals:

- Zooplankton cannot stay in dangerous waters during the day because of the presence of their predators on the surface. DVM allows them to safely come to the surface at night for their food (phytoplankton). Example: Copepods are a type of zooplankton and are a big part of the diel vertical migration
- Animals like dragonfish, Sharks, and glass squid may also migrate to reduce ultraviolet damage to their DNA, to use the currents to move to areas with more food or to take advantage of the benefits of colder (deeper) waters to get more nourished or produce more eggs.

DVM plays an essential role in Carbon Sequestration:

Carbon sequestration is the process of capturing and storing atmospheric carbon dioxide. It is one of the methods of reducing the amount of carbon dioxide in the atmosphere with the goal of reducing global climate change.

DVM is also more than just a survival strategy as it plays a pivotal role in sequestering carbon, a process vital for regulating the Earth's climate.

- Animals dwelling in the mesopelagic layer actively remove substantial amounts of carbon from the upper ocean as they feed on surface-dwelling plankton. When these organisms return to deeper waters, they carry carbon with them.
- Certain migratory species contribute to the food chain in the twilight zone by passing on the carbon they eat to their predators. The predators' carbon-rich waste sinks to the ocean floor, which remains locked for centuries. This natural mechanism is a major carbon sink that aids in regulating carbon dioxide levels in the atmosphere.

Way Forward:

- During this current global climate change scenario, any shift in the intensity of DVM behaviours could impact the Earth's carbon cycle.
- There is little knowledge about how this phenomenon occurs in different parts of the world and how it responds to climate change, so this remains to be explored in future research.

PEPPER IT WITH:

Climate Change, Zooplanktons, Carbon Sequestration

PRE-SHOTS**Clean Energy Share Mix of India****News Excerpt:**

According to the data published at the time of COP 28 Summit, India's **share of clean energy in power production rose from 17% in 2000 to 23% in 2022.**

What is clean energy?

The energy comes from **renewable, zero-emission sources that do not pollute the atmosphere** when used, as well as **energy saved** by energy-efficient measures.

For example: Solar energy, Wind energy, and Hydroelectric energy etc.

Status of India:

India's progress has been relatively slow, with its share of clean energy in power production rising from **17% to 23% in this period.**

- **Only the top 15 States** in terms of power generation are selected.
- **Gujarat** has recorded a drastic decrease in its usage of fossil fuels for power generation from **80% in 2019 to 60% in 2022.**
- **Rajasthan, along with Gujarat**, has recorded a decline in clean energy production.
- **Karnataka and Himachal Pradesh** are the only States among the top 15 producers where the share of clean energy is already higher.
- **Tamil Nadu** was inching closer to the 50:50 mark, but progress has stagnated in recent years.

- On the other hand, the share of fossil fuel in power generation was more than 90% consistently in **Uttar Pradesh, Madhya Pradesh, Chhattisgarh, West Bengal, and Bihar**.
 - In the four years considered, the share has not budged in these States.
- Odisha's fossil fuel usage has shown an increase in recent years along with Punjab.

Status of BRICS countries:

- The reduction in the share of fossil fuels in China's power generation — from 82% in 2000 to 65% in 2022 — was unmatched among the BRICS nations.
- However, China leads the world in both clean and dirty energy, with more renewable energy capacity and more coal consumption than any other country globally.
- Responsible for about 30% of annual global emissions, China is the world's biggest greenhouse gas emitter.

ENACT Partnership

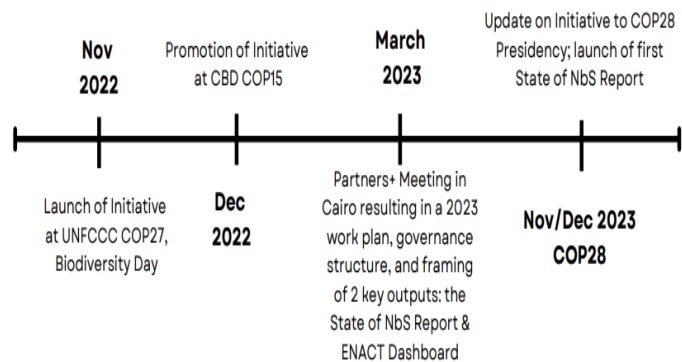
News Excerpt:

Recently, six new countries and a United Nations agency joined the **ENACT Partnership**.

About ENACT (Enhancing Nature-based Solutions for an Accelerated Climate Transformation) Partnership:

It is an **ambitious global initiative** that seeks to coordinate global efforts to address climate change, land and ecosystem degradation, and biodiversity loss through Nature-based Solutions.

- New members include France, the **United States of America, Belgium, the Netherlands, Switzerland, Pakistan, and the UN Environment Programme**, including its World Conservation Monitoring Centre.
- They joined Germany and Egypt, along with the International Union for Conservation of Nature, and **launched ENACT at COP27**.
- Canada, the European Union, Spain, Malawi, Norway, South Korea, Japan, and Slovenia are also founding members of the partnership.
- It aims to enhance the protection from and resilience to climate impacts of **at least 1 billion vulnerable people** and secure up to **2.4 billion hectares** of healthy natural and sustainable ecosystems. And significantly increase global mitigation efforts by protecting and restoring carbon-rich ecosystems.



KEY MILESTONE OF ENACT PARTNERSHIP

Nature-based Solutions at COP 28:

About Nature-based Solutions:

It involves **working with nature**, as part of nature, to address societal challenges, supporting human well-being and biodiversity locally.

- They include the protection, restoration or management of natural and semi-natural ecosystems; the sustainable management of aquatic systems and working lands; and the integration of nature in and around our cities.
- Actions to limit warming to 1.5°C** - by phasing out all fossil fuels, including oil and gas, and embracing just transition – to minimize climate-related losses and damage to people and nature.
- Increased funding and investment**, particularly prioritizing local communities and accommodating an integrated approach to address climate change, biodiversity loss, and human well-being.
- Stronger international collaboration and commitments** to the rapid reduction of fossil fuel emissions and a commitment to the implementation of Nature-based Solutions.
- Robust data and monitoring systems** are essential for tracking progress and outcomes based on transparent reporting and accountability mechanisms.

Way Forward:

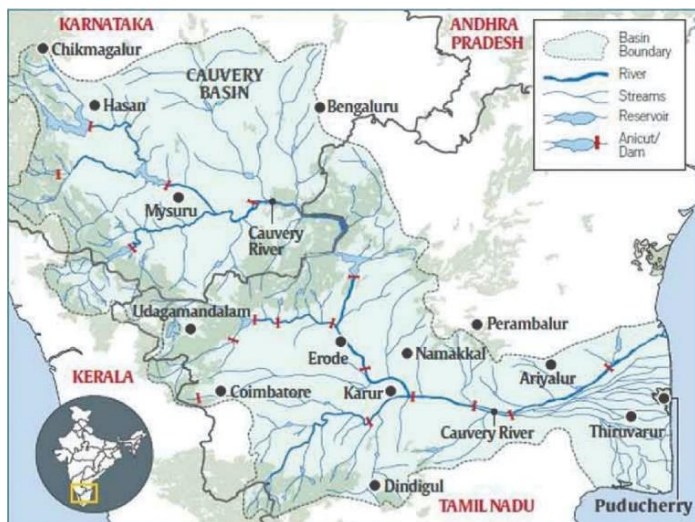
The ENACT partnership (previously under the working title "Sharm el Sheikh Partnership for NbS") was developed in a collaborative process. The draft concept note underwent open peer review. To further operationalize the partnership, 2023 efforts will focus on

- Resourcing the initiative.
- Building the partnership.
- Launching the State of NbS Report & ENACT Dashboard.
- Leading global communications about high integrity NbS for the climate that integrates biodiversity concerns.

Report on loss of vegetation in Cauvery basins

News excerpt:

As per a recent paper published by researchers at the **Indian Institute of Science (IISc), Bengaluru**, there has been a significant loss of natural vegetation in the Cauvery basin for 50 years (1965 to 2016).



Summary of the report:

The extent of Vegetation Loss:

- The report quantifies the loss of natural vegetation, revealing that approximately **12,850 sq. km** of land in the Cauvery basin experienced a decline in natural vegetation cover.
- The reduction in dense vegetation was 35% (6,123 sq. km.), while degraded vegetation witnessed a more significant decrease of 63% (6,727 sq. km.).

Geographical Distribution of Loss:

- Karnataka** bears the brunt of the lost green cover, accounting for **3/4th of the total**, while Tamil Nadu's share is around 1/5th.
 - The **water demand of the two States increased**, and land use analysis showed that in **73.5% of the catchment, agriculture and horticulture constituted** the dominant activity.
- The report identifies specific areas, such as the **Brahmagiri Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park**, and the **Cauvery Wildlife Sanctuary**, which have suffered adverse changes in forest cover.
 - In respect of the **Bannerghatta National Park**, the moist deciduous forest area, which was about **50% in 1973, stood at 28.5% in 2015** due to "anthropogenic pressure" on the National Park.

Land Use Dynamics and Water Demand:

- The report traces the historical growth of the cropping area in the basin, emphasizing the rise in **irrigated land** in both **Tamil Nadu and Karnataka**.

- This increase in **agricultural activity** contributes to a heightened demand for water in the region.

Identified Issues and Challenges:

- The paper highlights various problems affecting the Cauvery basin, including inappropriate **cropping patterns, inefficient water use, adoption of water-intensive crops, unsustainable mining of river sand**, and a **decline in community participation** in watershed management.

Proposed Solutions and Recommendations in Report:

- To address the challenges, the report suggests **integrated management** of the catchment, restrictions on large-scale **water-intensive** cash crops, **monoculture**, and over-exploitation of **groundwater**.
- It advocates for the enrichment of the catchment with native species, **promotion of organic farming, establishment of effluent treatment plants**, and ensuring **zero discharge from industries**.

ADB launches initiative for the Hindu Kush Himalayan region

News Excerpt:

The Asian Development Bank (ADB) announced the launch of an initiative to address the adversities of climate change in the Hindu Kush Himalayan (HKH) region, a vital source of water for billions of lives.

Hindu Kush Himalaya (HKH):

- The HKH stretches **3,500km** from Afghanistan to Myanmar and has the highest mountain ranges in the world.

Adversities of climate change in the Hindu Kush Himalayan region

- According to ADB, the Hindu Kush Himalayan region can lose up to **75%** of the glaciers by the end of the century.
- Loss of glaciers** can cause frequent hazards, dry zeros, loss of biodiversity and climatic catastrophe. **Nepal and Bhutan** face increased threats like **landslides, earthquakes, and floods**.

Key issues identified in the HKH assessment report:

- Geological Fragility:** The HKH region is geologically fragile, characterized by young and rising mountains.
- Climate Change:** These changes include shifts in temperature, precipitation patterns, and the frequency of extreme weather events.
- Disasters:** The region is susceptible to various disasters, such as floods, landslides, and earthquakes.
- Infrastructure Development:** The construction of roads, dams, and other infrastructure projects can disrupt ecosystems, alter water courses, and contribute

to habitat loss, impacting biodiversity and ecosystem services.

ADB's assistance will help the **governments, private sector, and local communities** understand the risks they face so they can decide on disaster risk reduction and adaptation measures, as well as risk transfer solutions, including insurance.

- **As Asia and the Pacific's climate bank**, ADB aims to provide \$100 billion in climate financing from its own resources from 2019 to 2030, including \$34 billion for adaptation.
 - In 2022, ADB committed \$7.1 billion to climate finance, including \$4.3 billion for mitigation and \$2.8 billion for adaptation.

The Emissions Gap Report - 2023

News Excerpt:

The Emissions Gap Report - 2023 was recently published by the UN Environment Programme (UNEP).

About Emissions Gap Report:

- The Emissions Gap Report (EGR) is UNEP's spotlight report launched annually before the annual Climate negotiations.
- The EGR tracks the gap between where global emissions are heading with current country commitments and where they ought to be to **limit warming to 1.5°C**.

Key highlight of the Emissions Gap Report - 2023:

- **As many as 86 days this year** have already breached the **1.5 degree Celsius temperature** threshold, as global greenhouse gas emissions scaled a record high in 2022.
- The world, together, **emitted 57.4 billion tonnes of carbon dioxide in 2022**, a **1.2 per cent increase** over the previous year and higher than the previous record achieved in 2019.
- The **emissions of China and the United States**, the world's two biggest emitters, also rose in 2022, as did that of India, the third largest emitter.
 - **The European Union, Russia and Brazil saw emissions go down a bit.**
- Even if all the climate actions as per the current promises made by the countries were carried out with the **highest ambition, global emissions in 2030** would still be **at least 19 billion tonnes of CO2** equivalent higher than the level required to keep **global warming within 1.5 degree Celsius** from pre-industrial times (the average of annual temperatures in the 1850-1900 period).
- To meet this gap, **global emissions** would need to drop **by at least 8.7 per cent yearly from 2024 (instead of the 1.2 per cent rise in 2022)**.

- The failure of the world to take early action on climate has brought it into a situation where meeting the 1.5 degree Celsius target looks extremely difficult.

Carbon Capture and Storage (CCS) & Carbon-Dioxide Removal (CDR)

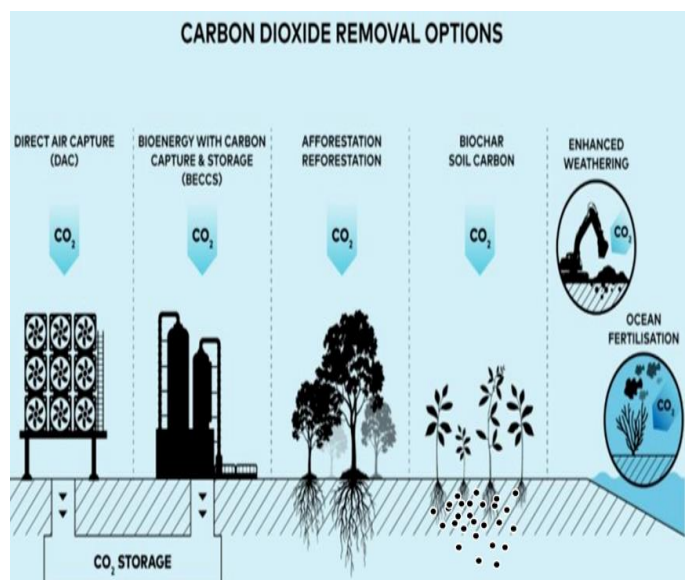
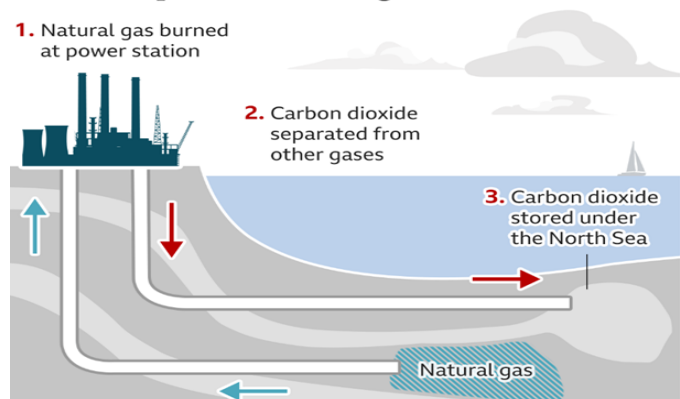
News Excerpt:

Scientists have questions about the scale at which **Carbon Capture and Storage (CCS)** and **Carbon-Dioxide Removal (CDR)** are expected to succeed.

About Carbon capture and storage (CCS):

- CCS refers to technologies that can capture carbon dioxide (CO₂) at a source of emissions before it is released into the atmosphere.

Carbon capture and storage



- These sources include the fossil fuel industry (where coal, oil, and gas are combusted to generate power) and industrial processes like steel and cement production.
- Effective CCS applications should achieve a capture rate of **90-95%** or more, store emissions permanently, and keep methane emissions leakage under 0.5%.

About Carbon dioxide removal (CDR):

- CDR takes the forms of both natural means like **afforestation or reforestation** and **technologies like direct air capture**, where machines mimic trees by absorbing CO₂ from their surroundings and storing it underground.
- There are also more complex CDR technologies like enhanced rock weathering, where rocks are broken down chemically; the resulting rock particles can remove CO₂ from the atmosphere.
- **IPCC 6th Assessment Report (AR6) indicates** that achieving the **1.5 degrees Celsius** target is nearly impossible without **significant CDR efforts**.

Concerns of CCS and CDR:

- These technologies might create room for increased greenhouse gas emissions, potentially offsetting their benefits.
- Some worry that the use of CDR methods, particularly in the **Global South**, could impact land rights and biodiversity and compete with essential land-use practices like agriculture as the technology requires land for setup.
- The higher use of CCS and CDR might lead to emissions pathways with a higher contribution from gas, potentially **hindering the necessary decline** in coal, oil, and gas use by 2050 to meet climate goals.
- The development of workable, scalable CDR techniques that **respect biodiversity and land rights** should be the main goal of future endeavours.

Global Drought Snapshot 2023

News Excerpt:

The report '**Global Drought Snapshot**' was released by the UN Convention to Combat Desertification (UNCCD) in collaboration with the International Drought Resilience Alliance (IDRA) at **COP28 in Dubai**.

Fact Findings:

- The UN report '**Global Drought Snapshot**' sheds light on the pressing need for global resilience against droughts, highlighting severe drought conditions in China, food insecurity in the Horn of Africa, and reduced crop production in regions like Brazil-Argentina.
- The report underscores the detrimental impact of drought on agriculture, forests, and water conditions worldwide, leading to crop damage, loss of grazing land, and low water levels in rivers.

- **Extensive coastline:** Around 7,517 km, India is exposed to rising sea levels, floods and droughts.
- **High Vulnerabilities:** The marginalized communities living in the coastal belt are particularly vulnerable to these extreme weather events.

Future Endeavours:

- Working on Nature-based solutions like land restoration have the potential to offset up to 25% of CO₂ emissions.
- Emphasizing the importance of respecting planetary boundaries, restoring degraded landscapes, urban intensification, family planning, and curbing rapid population growth.
- Replacing half of animal products consumed with sustainable alternatives could potentially prevent almost 100% conversion of global forests and natural land for agriculture.
- Switching to micro-irrigation (drip irrigation) systems could potentially reduce water **waste by 20 to 50%**.
- Global disaster-related losses covered by insurance increased to 45% in 2020 but remain low in many developing countries.

About UNCCD:

The United Nations Convention to Combat Desertification (established in 1994) focuses on fostering good land stewardship, enabling sustainable land management, and assisting communities and countries in securing food, water, and energy.

- The convention aims to integrate and accelerate the achievement of Sustainable Development Goals, build resilience to climate change, and prevent biodiversity loss through partnerships and sound policy.
- The UNCCD is the only legally binding framework set up to address desertification and the effects of drought.

Drought Impact:

- **Global Scale Emergency:** Droughts have a far-reaching impact, causing loss of life, economic damage, and affecting various sectors of societies across the world.
- **Silent Devastation:** Droughts fail to garner immediate public and political response compared to other disasters, leading to neglect and isolation of affected populations.

Statistics:

- The **United States** faced severe to extreme drought conditions affecting 5% of its area in **May 2023**.
- The **Horn of Africa** had **23 million severely food-insecure individuals in December 2022**.
- **Europe** experienced its largest drought-impacted area in 2022, significantly exceeding the average impacted area between 2000 and 2022.

Agriculture, Forests, and Water Conditions:

- **Mediterranean Cereal Crops** have suffered a severe 70% damage due to drought from 2016 to 2018.
- Under a 3°C warming scenario, forest losses in the **Mediterranean** might double or triple compared to current risks.
- **South Africa's Grazing Land** might experience a significant 33% loss due to drought.
- **Argentina's Soybean Production** is expected to drop by 44% in 2023, contributing to a 3% GDP reduction for Argentina in the same year.

Social Impact:

- Drought-related economic losses in Africa over the past 50 years have amounted to \$70 billion.
- 85% of people affected by drought live in low- or middle-income countries. 1.2 million people in the Central American Dry Corridor region need food aid after enduring five years of drought, heatwaves, and unpredictable rainfall.
- Majority of people affected by drought live in low- or middle-income countries.
- Higher vulnerability in regions prone to drought, storms, and floods.

GLOBAL DROUGHT SNAPSHOT

Accredited Compensatory Afforestation (ACA) program

News Excerpt:

Ministry of Coal showcased environmental stewardship through successful reclamation and afforestation at the Jamuna Open Cast Project. The Ministry proposes 579 hectares of reclaimed land under the **Accredited Compensatory Afforestation (ACA) program** for broader environmental conservation goals.

Accredited Compensatory Afforestation (ACA) program

- Accredited compensatory afforestation (ACA) allows project developers to purchase afforested land from private or public entities.

- This is done as a way of “**compensating**” for forest land lost to non-forest activity and was introduced by the **Forest (Conservation) Rules of 2022**.
 - Compensatory Afforestation is mandatory under the Forest (Conservation) Act of 1980.
- The initiative transforms former coal mining land into a **green haven, restoring biodiversity** and promoting responsible **resource management**.
- This system is a **radical shift away from previous norms**, which made it mandatory for project developers to **find non-forest land and bear the cost of raising compensatory afforestation** on it.
- The Ministry sets a precedent for the industry, proving **economic activities** like coal mining can **coexist with environmental preservation**.

- Aligned with national goals, ACA addresses funding delays and land availability issues and aligns with India's target of **33% forest cover** and creating a carbon sink by **2030**.

India Joins BESS Consortium for Renewable Energy Integration

News Excerpt:

India became a member of the **Battery Energy Storage Systems (BESS) Consortium**, an initiative led by the **Global Leadership Council (GLC)** of the **Global Energy Alliance for People and Planet (GEAPP)** at C.

Battery Energy Storage Systems (BESS):

- Battery Energy Storage Systems is a critical element in increasing the **reliability of grids** and accommodating the variable renewable energy sources.
- The Battery Energy Storage Systems (BESS) Consortium is a global initiative aiming to secure commitments for **5 gigawatts (GW)** of BESS by the end of **2024**.
- The BESS Consortium includes other countries like Barbados, Belize, Egypt, Ghana, Kenya, Malawi, Mauritania, Mozambique, Nigeria, and Togo.

The stance of India:

- India has already approved a scheme to develop **4,000 megawatt-hours (MWh)** of BESS projects by **2030-31**, with financial support for developers.

- The goal is to integrate **400 gigawatts** of renewable energy by 2030 and alleviate energy poverty.
 - IndiGrid**, an infrastructure trust, has been awarded a major BESS project in Delhi as part of this effort. The goal is to enhance grid stability, support renewable energy growth, and contribute to a net-zero future.

Global Leadership Council:

- The Global Leadership Council (GLC) is a **high-level coalition** within the Global Energy Alliance for People and Planet (GEAPP), established in **2022**.
- The GLC is committed to reducing the cost of renewable energy technologies, focusing on battery storage and off-grid tech aggregation, with a mission to address climate issues and improve global access to sustainable energy.

Global Energy Alliance for People and Planet (GEAPP):

- The Alliance was formed in **2021** to catalyze **clean energy technologies** and **new pools of finance** to bring reliable, livelihood-enhancing energy to people who lack it.
- Working with **developing countries**, the Alliance seeks to foster collaboration and speed in harnessing the considerable human and financial resources needed to reduce energy poverty while combating climate change.



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SCIENCE AND TECHNOLOGY

Gene therapies for Sickle Cell Disease

News Excerpt:

The U.S. Food and Drug Administration (FDA) has approved two gene therapies for Sickle Cell disease.

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About the Gene Therapies:

- **CASGEVY™ (exagamglogene autotemcel) and LYFGENIA™ (lovotibeglogene autotemcel) are the first two gene therapies** for the treatment of sickle cell disease in patients 12 years and older with **recurrent vaso-occlusive crises (VOCs)**.
 - A VOC occurs when sickled red blood cells block blood flow to the point that tissues become deprived of oxygen. This, in turn, sets in motion an inflammatory response as the body tries to rectify the problem.
- Both therapies, pitched as **one-time treatments**, will be available in early 2024.

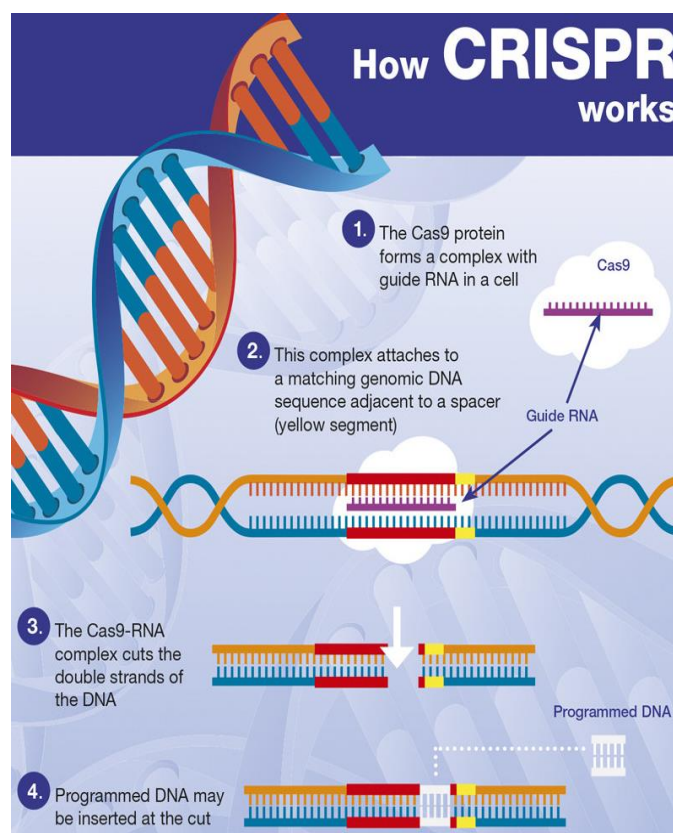
CASGEVY	LYFGENIA
<ul style="list-style-type: none"> • It is based on CRISPR, which uses molecular "scissors" to trim faulty parts of genes that can be disabled or replaced with new strands of normal DNA. ◦ Patients must have stem cells harvested from their bone marrow for this therapy. ◦ The cells are then sent to manufacturing facilities and edited using CRISPR/Cas9 technology. ◦ Once the cells are incubated, they are infused back into the patient. 	<ul style="list-style-type: none"> • It uses a more conventional form of gene therapy that uses a virus to ferry a gene into cells. ◦ It uses a lentiviral vector (gene delivery vehicle) for genetic modification. ◦ The patient's blood stem cells are genetically modified to produce haemoglobin that functions similarly to the normal adult haemoglobin produced in persons unaffected by sickle cell disease. These modified stem cells are then delivered to the patient.

What is Sickle Cell Disease?

- Sickle cell disease is an **inherited red blood cell disorder that affects haemoglobin**, the protein that carries oxygen through the body.
- Red blood cells are generally **disc-shaped** and flexible enough to move easily through the blood vessels.
 - In sickle cell disease, **red blood cells become crescent- or "sickle"-shaped due to a genetic mutation**. These sickled red blood

cells do not bend or move easily and can **block blood flow to the rest of the body**.

- The blocked blood flow can lead to serious problems, including stroke, eye problems, infections, and episodes of pain called pain crises.
- Sickle cell disease is a lifelong illness. A **bone marrow transplant is currently the only cure** for sickle cell disease.
- **Every year**, between **30,000 and 40,000 babies in India** are thought to be born with **this disorder**.
- Those who receive a **pair of faulty genes from both parents** have the symptoms.
 - One can lead a normal life even if they only have one copy of the gene from one parent.



What is CRISPR Technology?

- **CRISPR (Clustered Regularly Interspaced Short Palindromic Repeats)** are short DNA sequences found

in the genome of prokaryotic organisms such as bacteria, which are reminders of the previous bacteriophage (viruses) attacks that the bacteria successfully defended against.

- **Cas9 (CRISPR-associated protein 9)** enzyme (part of bacteria's defence mechanism) uses these flags to **target and cut any foreign DNA precisely**, thus protecting the bacteria from future attacks by similar bacteriophages.
- The unprecedented precision of targeting the DNA sequences and then efficiently cutting them is the basis for CRISPR-Cas9 technology, as demonstrated in editing genes in cells and organisms.

Challenges involved:

- The **procedure cost** is very **high**. Since many sufferers of these illnesses reside in poorer nations, it is unlikely that they will be able to pay for the therapy.
- **The lack of local manufacturing facilities** necessitates sending the extracted blood stem cells across the countries, causing delays.

Way Forward:

None of these technologies are without caveats. An important caveat is off-target events, where a CRISPR-Cas9 system becomes inaccurate and edits some other part of the genome, with unintended consequences. So, while these technologies have enormous potential, the risk must be balanced with both short and long-term benefits.

PEPPER IT WITH:

CASGEVY and LYFGENIA, VOCs, Thalassaemia, National Health Mission, DNA, RNA,

Urgency in Combating Antibiotic Resistance

News Excerpt:

Innovation in antibiotics research and development is urgently needed.

About Antimicrobial Resistance (AMR):

- AMR occurs when bacteria, viruses, fungi, and parasites evolve over time and no longer **respond to medicines**, making infections more challenging to treat and increasing the risk of disease spread, severe illness, and death.
- As a result, the medicines become **ineffective, and infections persist** in the body, increasing the risk of spreading to others.
- AMR threatens the effective prevention and treatment of an ever-increasing range of infections.

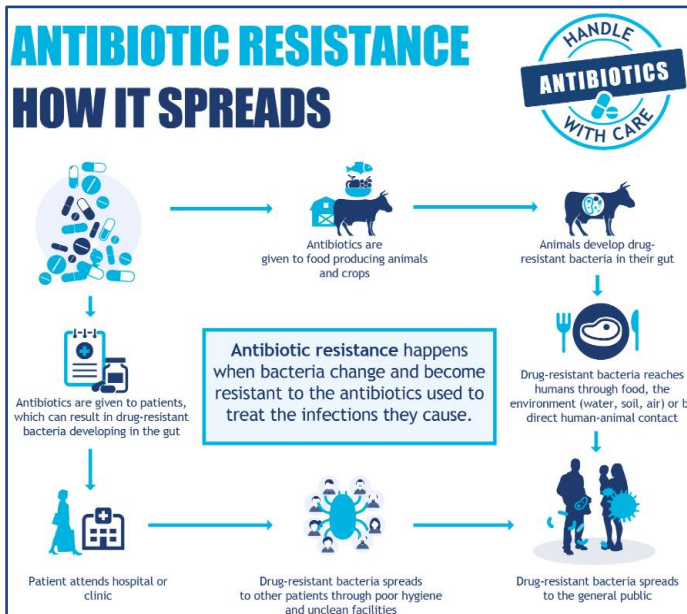
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- Antimicrobials - including **antibiotics, antivirals, antifungals, and antiparasitics** - are medicines used to prevent and treat human, animal, and plant infections. Microorganisms that develop AMR are sometimes referred to as "**superbugs**".

Status of AMR in India:

- India has one of the highest age-standardized infectious disease mortalities in South Asia, and the rates of antibiotic resistance **are alarming**.

Causes of AMR



- India has one of the highest uses of human antibiotics, a prime driver of antimicrobial resistance, at **10.7 units per person**.
- Over the past four years, the number of isolates reported has gradually increased from 25,833 to 1,19,686.
 - Similar to the previous five years, Escherichia coli (33%) remained the most commonly isolated pathogen in the **AMR Surveillance data 2022**.

Hurdles Faced in Antibiotic Innovation:

- **Lack of Innovation:** Limited exploration of alternative pathways and mechanisms hampers the emergence of groundbreaking antibiotic solutions.
- **Challenges in Identifying New Druggable Targets:** Unraveling suitable bacterial targets for antibiotics is a complex puzzle, often compounded by evolving resistance mechanisms.
- **The exit of Major Pharmaceutical Companies:** The withdrawal of prominent pharmaceutical players from antibiotic development diminishes collective expertise and resources dedicated to combating bacterial infections.
 - **For example-** Between 2016 and 2018, four big companies – AstraZeneca, Sanofi, Novartis, and Allergan exited from antibiotic R&D.
- **Less Attractive Profit Margin:** The comparatively lower profitability of antibiotics discourages investment, diverting attention and resources toward more lucrative therapeutic areas like cancer or chronic diseases.

Way Forward:

- **Recognition:** Combined effort is required from major regulatory bodies to treat AMR as a global challenge akin to climate change, E.g., A call for integrated action on AMR by the World Federation of Public Health Associations.
- **Encourage innovation:** Treat AMR as a national issue, make policies and arrange funding to encourage innovation.
 - **The Global Antibiotic Research and Development Partnership (GARDP)** proposes to focus on public health-driven, non-profit antibiotic development.
- **Government support:** There is a need for the Government's push for R&D, infrastructure, clinical development, organized market forces, and incentives for novel antimicrobial discovery. E.g., **India's National Action Plan (NAP) for AMR 2017** by the Union Ministry of Health and Family Welfare.
- **One Health approach:** As AMR affects human, animal, plant, and environmental health, a One Health approach is required to tackle its complexities.

PEPPER IT WITH:

India's National Action Plan (NAP), One Health Approach, Superbugs, Government Initiatives for AMR.

Voice over New Radio (VoNR)

News Excerpt:

Voice calling over VoLTE (Voice over Long term Evolution) was a game-changer. Now it's time for this feature to showcase itself in 5G-enabled VoNR (Voice over New Radio).

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How Vo5G Works:

- **Packet-Switched Architecture:** Vo5G operates on a packet-switched network, where voice data is broken into packets and transmitted over the 5G network. This approach allows for more efficient use of network resources, optimizing voice data delivery.
- **Low Latency and Quality of Service (QoS):** The ultra-low latency of 5G networks contributes to faster call setup times, reduced delays, and improved service quality. Vo5G is designed to prioritize voice traffic, ensuring a seamless and reliable communication experience.
- **Vo5G-Compatible Devices:** To take advantage of Vo5G, users will need devices that support 5G connectivity and Vo5G technology. Modern smartphones are increasingly equipped with these capabilities, enabling users to experience the benefits of Vo5G.

About the technology:

The introduction of VoLTE in India and its significant improvements to voice calling quality is remarkable. With the advent of 5G, there's anticipation surrounding the evolution to Vo5G or Voice over New Radio (VoNR), seen as the future standard for voice calls on 5G networks.

- **VoLTE in India (2016):** VoLTE revolutionized voice calling with its **clear quality**, contrasting the previous muffled 3G/2G call experiences. It marked a significant upgrade, ensuring WhatsApp-like voice clarity without constant repetitions.
- **Introduction of Vo5G (Voice over 5G):** Vo5G, also known as VoNR (Voice over New Radio), represents the future standard for voice calls on 5G networks. It utilizes 5G network advancements—**speed, capacity, responsiveness**—to enhance voice calling experiences.
- **Advantages of VoNR over VoLTE:** VoNR offers superior call quality due to advanced audio codecs leveraging 5G's increased data capacity. Faster call connection times are attributed to **reduced network latency of 5G, enhanced reliability and continuity in calls** with lower packet loss, and reduced voice cutouts.
- **Improvements over Drop Issues in India:** VoNR aims to resolve drop issues experienced during network switches from 5G to 4G for VoLTE calls. With VoNR, 4G

should remain dormant on 5G-supported phones, eliminating delays or drops during calls.

- **VoNR's Status in India:** VoNR is yet to arrive in India, despite ongoing 5G rollout by major carriers. Reports suggest Reliance Jio has been testing VoNR to ensure seamless integration with existing 4G VoLTE and new 5G networks.
- **Anticipated VoNR Availability:** The specific timeline for VoNR in India remains uncertain, but Reliance Jio might be among the first to roll out VoNR services. Competitors like Airtel and Vi are expected to follow suit quickly after its introduction by Reliance Jio.

Way Forward:

The introduction of VoNR signifies a **natural progression** as networks continue to evolve with the adoption of 5G technology.

- The goal is to ensure **smooth interoperability, enhanced user experience** and capture the attention of consumers and industries.
- The service providers can embed 5G voice services to **remote diagnostics in telemedicine or real-time language translation services.**
- VoNR can also be used to **stream live event broadcasting with immersive audio, and interactive gaming experiences with integrated voice** functionalities.

PEPPER IT WITH:

VOLTE, 4G, 5G technology, Spectrum Bands, Latency, Applications of VoNR in future

Global Partnership on A.I.

News Excerpt:

The Global Partnership on AI has unanimously adopted the **New Delhi Declaration**, pledging their commitment to a collaborative approach for A.I. applications.

About Global Partnership on Artificial Intelligence (GPAI):

- The GPAI is an attempt **to adopt a global risk-based approach to A.I.** largely led by the democratic world, including India.
- It is an alliance of 29 members (28 countries and the European Union) established in June 2020.
- Today, **GPAI's 29 members are** Australia, Argentina, Belgium, Brazil, Canada, Czech Republic, Denmark, France, Germany, India, Ireland, Israel, Italy, Japan, Mexico, the Netherlands, New Zealand, Poland, the Republic of Korea, Singapore, Slovenia, Spain, Sweden, Senegal, Serbia, Turkey, the United Kingdom, the United States and the European Union.

- **Notably, China**, a major tech superpower, is **not part of the multilateral grouping.**

- **GPAI endeavours to bridge the gap between theoretical understanding and practical implementation** of A.I. by endorsing cutting-edge research and applied endeavours in AI-related priorities.
- GPAI structures its working groups around **four core themes:**
 - Responsible A.I.
 - Data Governance
 - Future of Work
 - Innovation and Commercialization

New Delhi Declaration by GPAI:

- This summit aims to finalize a comprehensive framework encompassing shared principles for **Safe and Trusted AI.**
- **Flagged Concerns:** The declaration flagged concerns emanating from such systems, including **misinformation, unemployment, lack of transparency and fairness, protection of intellectual property and personal data, and threats to human rights and democratic values.**
- **Win for India:** This is a significant win for India, which will push its **Digital Public Infrastructure (DPI)** model worldwide. Besides, access to computing capabilities from member nations will also boost New Delhi's plans of building a sovereign A.I. system,
- **Available to all countries:** The declaration seeks to ensure that A.I. and its benefits are inclusive and open to all the countries of the world, including the Global South.
- **Agriculture Sector:** GPAI members also agreed to support A.I. innovation in the agriculture sector as a new "thematic priority". India was pushing for the inclusion of agriculture as a priority sector in A.I. innovation.
- There is a need to mitigate risks arising from the development and deployment of A.I. systems and promote equitable access to critical resources for A.I. innovation including computing and high-quality diverse datasets.

Related: World's First A.I. Law

The E.U. has become the **first continent to set clear rules for the use of A.I.** and have passed the World's first comprehensive regulation for artificial intelligence called the A.I. Act.

Highlights:

- **Governments can only use real-time biometric surveillance** in public areas when serious threats are involved, such as terrorist attacks.
- **E.U. legal framework broadly divides A.I. applications** into various risk classes:

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- Some applications will be largely banned, including the deployment of facial recognition on a mass scale, with some exemptions for law enforcement.
- A.I. applications focused on behavioural control will also be banned.
- High-risk applications** such as the use of A.I. tools for self-driving cars will be allowed but subject to certification and an explicit provision for the backend techniques to be made open to public scrutiny.
- Those applications in the **"medium risk" category** can be deployed without restrictions, such as generative A.I. chatbots but must be explicitly made aware that they are dealing with an A.I. and not interacting with a human.

Way Forward:

Multiple conversations on A.I., including the **G7 Hiroshima Process, Bletchley Declaration, and GPAI**, will contribute to the global discussions on how the framework of A.I. evolves in the near future.

G7 Hiroshima A.I. Process:

- In 2023, as the G7 President, Japan hosted the G7 Hiroshima Summit.
- It had significant implications as the leaders of the G7 gathered for discussions in Hiroshima. This city has recovered from the catastrophic damage caused by an atomic bomb and continues to seek lasting world peace.

Bletchley Declaration:

- The Bletchley Declaration was signed by the countries who attended the A.I. Safety Summit in the U.K.
- In an agreement, 29 countries, including the U.S., the U.K., China, Australia, Brazil, India and the European Union, have mutually agreed that A.I. has the potential to transform and enhance human well-being, peace and prosperity.

PEPPER IT WITH:

Artificial Intelligence, Types of A.I., ML and DL, Artificial Intelligence Mission.

- AKASH Weapon System **can simultaneously engage Multiple Targets** in Group Mode or Autonomous Mode.
- AKASH Weapon Systems has been inducted and is operational with the Indian Air Force (IAF) and the Indian Army (I.A.).



Features:

- Fully automatic with quick response time from target detection to kill.
- Open system architecture ensures adaptability to existing and futuristic Air Defence environments.
- High immunity against active and passive jamming. Since it has built-in Electronic Counter-Counter Measures (ECCM) features.
- Secured mode of communication between combat elements.
- Self-sufficient in electrical power with in-built power sources.
- It is road and rail transportable with quick mobilization and deployment capabilities.

Demonstration of Akash Missile system:

- The demonstration was conducted by the IAF during **Astrashakti 2023** at Suryalanka Air Force Station on **December 12, 2023**. **Astrashakti** means the power of weapons.

Akash Missile System

News Excerpt:

India became the **first country** to demonstrate the capability of engaging four aerial targets simultaneously at 25 km ranges by command guidance using a single firing unit.

About Akash Weapon System (AWS):

It is a **Short-Range Surface Air Missile (SRSAM) Defence System**. The Akash Weapon System is indigenously designed and developed by the **Defence Research and Development Organization (DRDO)** and produced by defence public sector units and other industries.

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Universal Dynamic Crosslinker (UDC)

News Excerpt:

Researchers at IIT Madras, Columbia University and Colorado State University in the U.S. have developed a **technique to merge diverse plastics into strong and recyclable materials**.

Key findings:

- The technique **combines** different types of plastics to create **new composite plastics** that are **strong, processable, and recyclable**.

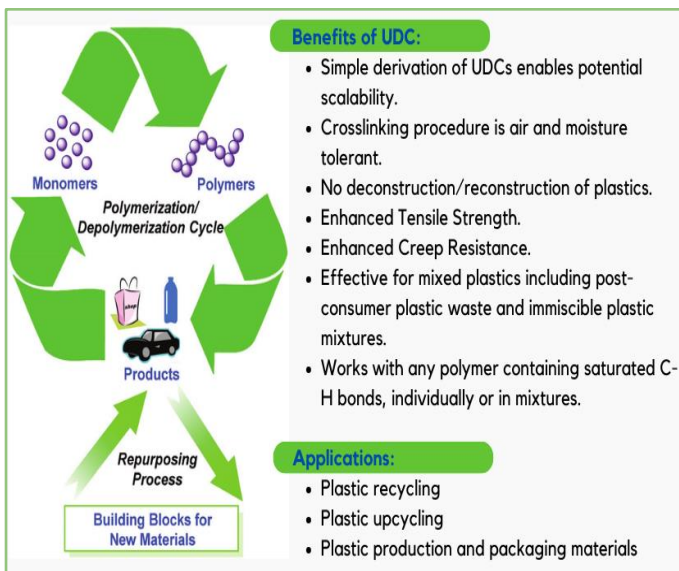
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- The research, published in the peer-reviewed **journal Nature**, addresses the **plastic waste crisis** and promises to transform society's **perception** and **management** of plastic recycling.
- The team employed a **specially designed** universal dynamic crosslinker (**UDC**) to successfully blend usually incompatible plastics.
 - The team has developed a **process** that can **stitch the interface** between **immiscible phases** and make the **mechanical strength good**, allowing for the recycling of mixed plastic waste.
 - Through a process called "**compatibilization**", one can make them blend without compromising their individual characteristics.

Issues with recycling of plastic:

- Plastic waste is made up of many **different kinds of polymers**, which do not mix easily.
- Recycling currently involves a lot of separation, which is **time-consuming** and **inefficient**.
- To recycle plastic mixtures effectively, different plastics **must blend** together without losing their unique properties.
- Reprocessing mixed plastic waste tends to be **immiscible**, meaning that the material formed tends to be **mechanically weak**.

Universal Dynamic Crosslinker (UDC):



- The design and development of several UDCs enable an optimal **closed-loop upcycling path** for immiscible multicomponent plastics.
- UDCs **reactivate dead chains** in the mixed plastics to dynamically **crosslink** them into compatibilized, grafted multiblock copolymers with superior properties and **without** the need for **deconstruction** or **reconstruction**.

- The resulting upcycled materials can be used and reprocessed through **multiple cycles** and have enhanced performance over **virgin plastics**.
- The **key barrier** in the technique is **cost**.

Way Forward:

India has a **plastic recycling rate** of **13%**, higher than the **global average** of **9%**. Adopting techniques such as Circular

PEPPER IT WITH:

Ban on plastics, Plastic Pollution, Single Use Plastic, SDG-11: Sustainable Cities

Economy as well as providing alternatives to the industry are crucial. However, certain **technical obstacles** are preventing further progress in plastic recycling. It is important to conduct adequate **research** on the technique of **UDC**, which can make the process more **economical** and **viable** for plastic recycling.

Addressing Orbital Debris

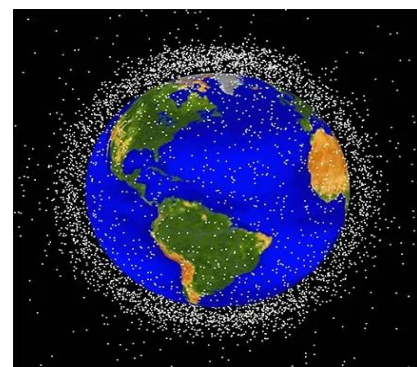
News Excerpt:

In the past decades, a new and unexpected hazard has emerged with increasing space activities: orbital or space debris.

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Space Debris:

- It includes natural meteoroids and artificial orbital debris, which are **non-functional objects in orbit around Earth** that no longer serve a useful function.
- The time for deorbiting can be substantial, and for higher orbits, it can take centuries.



- Orbital debris in numbers:** As tracked by the Department of Defence's global **Space Surveillance Network (SSN)** sensors, 2,000 active and 3000 dead satellites are in Earth's orbit.

Instances that led to Orbital debris:

- Various incidents, including the following, have exacerbated the debris problem in space:
 - 1996 **French satellite damage**,
 - The 2009 **Russian spacecraft collision** with the **U.S. Iridium spacecraft**,
 - China's 2007 anti-satellite test** and **India's 2019 anti-satellite test**

- **Russia, the United States, and China** are the biggest contributors to space debris.

Risks posed by Orbital debris:

- Space junk poses a significant risk to other **spacecraft** operating in Low Earth Orbit (**LEO**) due to its fast-moving nature. The satellites in LEO face more risk than those in Geostationary Equatorial Orbit (GEO).
 - Even **tiny paint flecks** can damage spacecraft, leading to the **replacement** of some **space shuttle windows**.
- Several companies are planning vast new **groups of satellites** called mega-constellations. These companies include **SpaceX, Amazon's Project Kuiper, OneWeb Corporation, and Canada's Telesat**. If successful, there could be **thousands of additional satellites** in orbit.
- NASA has guidelines to assess the threat of such maneuvers, ensuring the International Space Station's and its crew's safety.

Active De-orbiting measures:

Active deorbiting is crucial for **collecting** and **moving** debris to a **lower orbit**, enabling faster de-orbitation. Following are the ways that can be used for De-Orbiting:

Harpoon Systems	• It involves deploying a device that can physically capture a piece of debris. This method is beneficial for capturing larger pieces of debris.
Nets and Snares	• A spacecraft equipped with a net or snare can approach the debris, deploy the capturing mechanism, and secure the object for subsequent removal. Suitable for small debris.
Robotic Arms	• It can grasp, manipulate, and secure debris. These arms can be attached to a dedicated debris removal spacecraft.
Electrodynamic Tethers	• These use an electrically conductive tether to interact with the Earth's magnetic field, generating thrust. It changes the orbit of the debris, causing it to re-enter the Earth's atmosphere and burn up.
Propellantless Deorbit Devices	• These include solar sails or aerodynamic drag devices. • These technologies harness natural forces, like solar radiation pressure or atmospheric drag , to gradually lower the orbit of the debris until it re-enters the Earth's atmosphere.
Ground-Based Lasers	• These nudge the debris by imparting momentum through laser ablation .

India's Initiatives on Space Debris:

- **Project NETRA**- It is an **early warning system** in space to detect debris and other hazards to Indian satellites.
- **Centre for Space Debris Research**- It has been set up by **ISRO** to monitor and mitigate the threat of space debris.
- **ISRO System for Safe and Sustainable Operations Management (IS4OM)** was set up by **ISRO in 2022** to continually **monitor** objects posing collision threats, **predict** the evolution of space debris, and **mitigate** the risk posed by space debris.

- **ISRO** also carried out **21 collision avoidance manoeuvres** of Indian operational space assets in 2022 to avoid collisions with other space objects.

Kessler Syndrome

It was proposed by **NASA scientist Donald Kessler in 1978**, suggesting that excessive space junk in orbit could lead to a **chain reaction where more objects collide, creating new space junk**, potentially making Earth's orbit unusable.

Way Forward:

- Addressing space debris requires international **cooperation**, advanced **technology**, and **sustainable operations**.
 - Collaboration between space-faring **nations**, space **agencies**, and international bodies like the United Nations Committee on the Peaceful Uses of Outer Space (**COPUOS**) is crucial for responsible debris removal.
- The **United Nations** mandates activities in outer space to minimize their effects on the environment and Earth, **aligning** with the **2030 Agenda for Sustainable Development**.
- The Indian philosophy of "**Vasudhaiva Kutumbakam**" should be transformed into "**One Universe, One Family**", emphasizing the universe's universality.

PEPPER IT WITH:

Project NETRA, Inter-Agency Space Debris Coordination Committee (IADC), Kessler syndrome

PRE-SHOTS:

INFORMATION TECHNOLOGY

Open Digital Ecosystems (ODEs)

News Excerpt:

Alphabet's Google, Meta Platforms, Qualcomm, and seven other tech companies have teamed up to push for open digital ecosystems.

About the importance of the Coalition for Open Digital Ecosystem (CODE):

- CODE has emerged with a mission to champion more transparent and open platforms and systems, envisioning these changes as catalysts for growth and innovation within Europe's tech landscape.
- The coalition expressed its intent to collaborate with academics, policymakers, and corporations to promote digital openness, specifically addressing the implementation of the **Digital Markets Act (DMA)** and potential future **E.U. regulatory frameworks**.

- Under the DMA, gatekeepers in the tech domain are mandated to facilitate third-party interoperability with their services.
- It aims to open up digital ecosystems through **cross-industry collaboration and promote seamless connectivity and interoperable systems**, among other strategic endeavours.

About Open Digital Ecosystem:

- ODEs are open and secure Digital Platforms that enable a community of actors to unlock transformative solutions for society based on a robust governance framework.
- Several public and private institutions have started to build ODEs in various sectors, **such as health, urban governance, e-commerce, mobility and education**.
- A few examples of digital public infrastructure that exhibit a large number of ODE characteristics and are gradually evolving into full-fledged ODEs **include**:
 - **India Stack**: Enables governments and businesses to deliver presenceless (Aadhaar Authentication), paperless (eKYC, eSign, DigiLocker) and cashless (UPI) services.
 - **National Digital Education Architecture (NDEAR)**: A set of principles, standards, specifications, building blocks and guidelines that enable multiple entities to create parts of the digital education ecosystem - independently but interoperably.
 - **National Urban Digital Mission (NUDM)**: Foundational digital building blocks, ready-to-use platforms, standards, specifications, and frameworks to build a shared digital infrastructure for the urban ecosystem to solve complex problems at scale and speed.
 - **Ayushman Bharat Digital Mission**: A modular and interoperable stack aimed at the seamless and safe exchange of health information among various stakeholders and across the ecosystem to provide personalized and citizen-centric health services and improve outcomes.
 - **National data and analytics platform (NDAP)**: A platform to **standardize data across multiple government sources**, provide flexible analytics, and make it easily accessible in formats conducive to research, innovation, policy-making and public consumption.

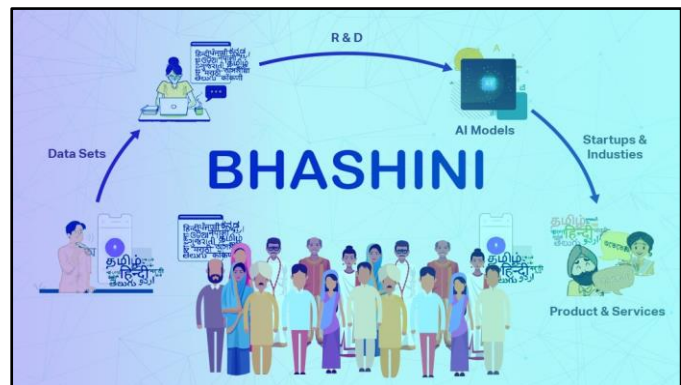
Bhashini - an A.I. tool

News Excerpt:

At the **Kashi-Tamil Sangamam event** in Varanasi, the A.I. tool '**Bhashini**' was used for the first time to **live-translate the Indian Prime Minister's Hindi speech into Tamil**.

About Bhashini:

- It is an **AI-driven language translation system or tool**.
- It is also known as the BHASa Interface for India.
- It allows **translation and conversation in multiple Indian languages**.
- It allows people to communicate in their native language to **break language barriers**.
- It shall act as an orchestrator to **unify and align a large, diverse network across Government, industry, academia, research groups, and startups** to bring all their contributions into an open repository.
- The Union government has outlined **four tracks defining Bhashini's roadmap: Foundation, Contribution, Innovation, and Grand Challenge**.
- The **platform also has a separate 'Bhasha Daan' section**, which enables individuals to contribute to various **crowdsourcing initiatives**.



What's Bhasha Daan?

- Under Bhasha Daan, the Government plans to **gather language inputs across myriad local languages**.
- There are several **categories within Bhasha Daan: Suno India, Likho India, Bolo India and Dekho India**.
- **Suno India** allows people to **type audio content or validate text** transcribed by others.
- Under **Bolo India**, individuals can **record sentences in their voices** and validate the audio recorded by other people.
- Under **Likho India**, people can **translate the provided text into their local language** and validate translations submitted by others.
- In **Dekho India**, individuals can **contribute by typing the visible text** or labelling images. They can also validate the images labelled by others.

Significance of Bhashini:

- It will enrich and **develop Indian languages and make digital content in native languages easily accessible**.
- Such an initiative assumes significance in India, where over **19,500 languages or dialects are spoken as mother tongues**, according to the 2011 census.

- It will **bridge the language barrier and encourage developers to provide digital services in local languages.**
- The Union Finance Minister Sitharaman announced the **National Language Translation Mission (NLTM) in the 2021-22 budget.**
 - The initiative was introduced following a survey that found that 53% of Indians who do not use the Internet will access the web if the content is available in their native language.

Gemini - A powerful A.I. model by Google

News Excerpt:

Recently, Google launched **Gemini**, touted as its most **powerful artificial intelligence (A.I.) model, trained to behave in human-like ways.**

About:

- It is a large language model (LM) developed by Google DeepMind division.
- It is designed to compete with other AI systems like open AI's ChatGPT.
- Gemini is designed from the ground up to be multimed, Integrating text, images and other data types.

Gemini comes in three versions:

Gemini Nano ("for device tasks"), the lighter version, is meant to run natively and offline on Android devices.

Gemini Pro ("for scaling across wide range of tasks") the heavier version, will soon power several Google AI services and is the backbone of Google's chat-based AI tool, Bard.

Gemini Ultra ("for highly complex tasks") is the most powerful large language model (LLM).

Other A.I. models in the news:

- **Krutrim:** Meaning Artificial in Sanskrit, is an Indian Large Language Model developed by Ola.
- **Phi-2:** Microsoft's Small Language Model
- It is currently available only in English, but support for other languages is expected to come soon.
- It will eventually be integrated into Google's search engine, its ad products, the Chrome browser, and others globally.
- As Gemini, integrates into more Google products and services, its power and potential to solve real-world applications and problems will gradually become clearer.

GENERAL SCIENCE

Piezoelectricity

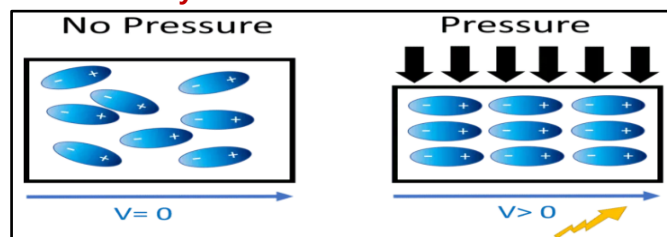
News Excerpt:

In the future, piezoelectricity might be used for energy harvesting.

About Piezoelectricity:

- **Jacques and Pierre Curie**, two French physicists brothers, discovered piezoelectricity in 1880.
- The process of utilizing crystals to transform mechanical energy into electrical energy or vice versa is known as piezoelectricity.
- When mechanical stress is applied to some materials, those materials tend to accumulate electric charges.
 - The fact that a piezoelectric material will produce a voltage when pressure is applied to it is known as the piezoelectric effect.
- The inverse piezoelectric effect is used in many transducers to produce ultrasonic sound waves.

How does piezoelectricity appear under pressure in ceramic or crystal materials?



- When the material is in a free state (without any pressure), those molecules will be arranged in a certain way, which corresponds to an equilibrium of the material and in which the charges of the molecules cancel themselves if we look at the whole.
- When pressure is applied, however, those molecules change position and align into a dipolar state where the global charge isn't null anymore, and 2 sides of the materials become polarized.

Applications of piezoelectricity:

- Piezoelectricity is being used in electronic applications these days:
 - Speakers & buzzers
 - Actuators
 - Drivers
 - Sensors
 - Motors
 - Quartz watches

NUCLEAR

China starts up the world's first fourth-generation nuclear reactor

News Excerpt:

China has started commercial operations at a new-generation nuclear reactor that is the first of its kind in the world.

About:

- This **fourth-generation Shidaowan plant** is **designed to use fuel more efficiently** and improve economics and safety.
- It will also reduce China's environmental footprint as it turns to nuclear power to meet carbon emission goals.
- It uses a **modular design**. (Modular plants refer to those nuclear plants of less than 300MW and can be constructed off-site.)
- **China aims to produce 10% of its electricity** from nuclear by 2035 and 18% by 2060.

History of Reactor Generations:

Three generations of nuclear power systems -

- **Generation I:**
 - It refers to the prototype and power reactors that launched **civil nuclear power**.
 - This generation consists of **early prototype reactors** from the 1950s and 1960s.
- **Generation II:**
 - It refers to a class of **commercial reactors** designed to be economical and reliable.
 - They are designed for a typical **operational lifetime of 40 years**.
 - These reactors are typically referred to as **light water reactors (LWRs)**.
- **Generation III:**
 - Gen III nuclear reactors are essentially Gen II reactors with evolutionary, **state-of-the-art design improvements**.
 - These **improvements** include **fuel technology, thermal efficiency, modularized construction, safety systems, and standardized design**.

Electricity generation in the nuclear reactor:

- A nuclear reactor is driven by the **splitting of atoms**, a process called **fission**, where a **particle (a 'neutron') is fired at an atom**, which then **fissions into two smaller atoms** and some additional neutrons.
- Some of the released neutrons then hit other atoms, causing them to fission and release more neutrons. This is called a **chain reaction**.
- The fissioning of atoms in the chain reaction also **releases much energy as heat**.

- A circulating fluid, typically water, removes the generated heat from the reactor.
- This heat can then be used to generate steam, which drives **turbines for electricity production**.

Nuclear reactors in India:

- NPCIL presently **operates 23 reactors** with a total capacity of 7480 MW and **has nine units** (including KAPP-4) with a capacity of 7500 MW **under construction**.
- In addition, 10 more reactors with a total capacity of 7000 MW are in **pre-project activities**. These are expected to be completed progressively **by 2031-32**.

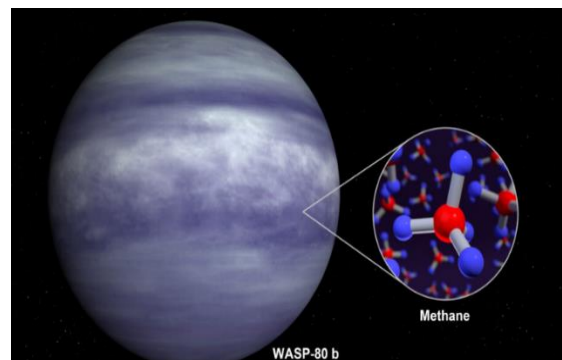
SPACE

Methane' Discovered on 'Warm- Jupiter' Exoplanet

News Excerpt:

Methane's short duration in a planetary atmosphere has captured the scientific attention of many researchers.

Discovery of Methane



Astronomers have **spotted water vapour in the atmospheres** of around a dozen planets thus far. Still, the **detection of methane** though commonly found in the atmospheres of solar system worlds like **Jupiter, Saturn, Uranus, and Neptune** — using space-based spectroscopy **has been far rarer**.

- So, the scientists are now done with the **James Webb Space Telescope**.
- This was the first time scientists had seen such an **obvious methane spectral feature** with our eyes in a transiting exoplanet spectrum.

Why is it an Important Discovery?

- Methane is an essential gas in **tracing atmospheric composition**.
- It is essential to know the **chemistry of Giant planets**.
- It is also hypothesized to be, in combination with oxygen, **a possible signature of biology**.
- We can **observe other carbon-rich molecules, such as carbon monoxide and carbon dioxide**, enabling us to paint a more comprehensive picture of the conditions in this planet's atmosphere.

- This discovery is the opportunity to finally compare planets outside our solar system to those in it.

About Warm -Jupiter Exoplanet

- The exoplanet exists with a temperature of about **825 kelvins**.
- **WASP-80 b** is the exoplanet that scientists call a 'warm Jupiter'.
- WASP-80 b goes around **its red dwarf star once every three days** and is situated **163 light-years away from us** in the constellation **Aquila**.
- This planet cannot be seen directly with even the most advanced telescope like Webb. Instead, researchers study the combined light from the star and planet using the **transit method** (which has been used to discover most known exoplanets) and **the eclipse method**.
- Like all planets, **WASP-80 b** emits some of its light through **thermal radiation**. This light's wavelength category and intensity **depend on the planet's temperature**.

NASA's "Atmospheric Waves Experiment"

News Excerpt:

NASA's first-ever experimental endeavour, the **Atmospheric Waves Experiment**, aims to investigate the interaction between **space weather** and **terrestrial weather**.

About Space Weather:

- The Sun and its activities, such as solar flares and emissions and the types of matter that predominate in the space surroundings, continue to impact the environment around Earth and the other planets.
- When the weather over Earth turns extreme, **Space weather**, too, can suffer extreme events.
 - These directly influence crucial Earthly installations such as satellite-based communication systems, radio communication networks, and space-based aircraft orbits or stations.
 - They also impact the seamless functioning of power grids, navigation systems, and Global Positioning Systems (GPS).

About Atmospheric Gravity Waves (AGW):

- **Atmospheric Gravity Waves (AGW)** are one such vertical wave.
- The waves are often produced by abrupt disturbances or extreme weather events that cause stable air to be displaced vertically.
- Natural phenomena like **thunderstorms, hurricanes, tornadoes, regional orography**, and others have the potential to send out a variety of periodic waves, including Atmospheric Gravity Waves (**AGWs**), in the lower levels of the atmosphere.

The objective of NASA's AWE experiment:

- It will map the Earth's atmosphere's vivid airglows with precision.
- It is an **Advanced Mesospheric Temperature Mapper (ATMT)**, an instrument that will **scan or map the mesopause** (a region between the mesosphere and thermosphere).
 - By utilizing the four identical telescopes that make up an imaging radiometer, researchers intend to measure the wavelength-specific brightness of the light.

Advanced Mesospheric Temperature Mapper (AMTM)

- It is a remote sensing instrument developed at Utah State University to map temperature structures in the hydroxyl airglow emission at ~87 km.
- These maps can then be used to quantify wave field characteristics and to observe general climatology trends.
- This information can be converted into a **temperature map, revealing the airglow movement** and, ultimately, giving **clues on their role in the upper atmosphere and Space weather**.

Airglow

- Airglow is the **light of excited atoms** high in Earth's atmosphere.
- It's usually **too faint for the eye alone to see**. But under very dark skies, photographers can capture it.
- The phenomenon typically **occurs when molecules (mostly nitrogen and oxygen) are energized by ultraviolet (U.V.) radiation from sunlight**.
- To release that energy, atoms in the lower atmosphere bump into each other and lose energy in the collision.
- However, the upper atmosphere is thinner, so atoms are less likely to collide. Instead, they release their energy by emitting photons. **The result is colorful airglow**.

NASA spacecraft 'Psyche'

News Excerpt:

Recently, NASA picked up a laser signal fired from its Psyche spacecraft, which is currently over 16 million km away.

How spacecraft transmit vast amounts of data:

Like wireless communications on Earth, **spacecraft encode data on various bands of electromagnetic frequencies**.

- Most space communication was initially carried out using radio waves with **the highest wavelengths but the lowest frequencies** in the electromagnetic spectrum.

- Higher bandwidths (range of frequencies) carry more data per second. Thus, scientists would ideally like to transmit data at the highest bandwidths possible to increase data transfer rates.
- Radio waves** carry higher bandwidths and can pass through the atmosphere regardless of weather, pass through foliage and most building materials, and bend around obstructions. **About Psyche Spacecraft Mission**

NASA's Launch Services Program is responsible for the launch vehicle's insight and approval and manages the Psyche mission's launch service.

- The Psyche mission is a journey to a unique **metal-rich asteroid orbiting the Sun between Mars and Jupiter**. About **2.5 years after launch**, the spacecraft will **fly by Mars for a gravity boost**.
- Trajectory:** The Psyche spacecraft was targeted to launch in **summer 2022** and travel to the asteroid using **solar-electric (low-thrust) propulsion**, arriving in **2026, following a Mars flyby and gravity-assist in 2023**.
- Scientists believe this asteroid is the **nickel-iron core of an early planet**, studying which could provide **unique insights into the impenetrable iron core of our own planet**.

NASA's Deep Space Optical Communication (DSOC) experiment

The Psyche mission will test a sophisticated **new laser communication technology** that **encodes data in photons at near-infrared wavelengths (rather than radio waves)** to communicate between a probe in deep space and Earth.



- Using light instead of radio allows the spacecraft to communicate more data in a given amount of time.

- DSOC will allow **data rates at least 10 times higher than state-of-the-art radio telecommunications** systems of comparable size and power, enabling higher resolution images, larger volumes of science data, and even streaming video.
- The **Psyche spacecraft** is the **first to carry a DSOC transceiver** and will be testing high-bandwidth optical communications to Earth **during the first two years** of the spacecraft's journey to the main asteroid belt.

Future Space Travel

- DSOC is taking optical communications into deep space, paving the way for high-bandwidth communications far beyond the Moon and over 1,000 times farther than any optical communications test.
- In the future, it will help pave the way toward higher data-rate communications capable of sending scientific information, high-definition imagery, and streaming video to support humanity's next giant leap - sending humans to Mars.

HEALTH

Anthrobots

News Excerpt:

In a groundbreaking study, researchers created small robots from human cells that can **move and heal neurons in a laboratory setting**.

Bronchial/Tracheal cells:

- These cells are from the lining of the bronchi/trachea, the network of tubes used to convey air to the lungs.
- These cells are responsible for producing lubricating mucus to keep the airways functional, and they are a type of epithelial cell, a term used generally to refer to cells lining the inside or outside of the body.

About Anthrobots:

- These are **bio-engineered entities consisting of human tracheal cells** and possess the ability to configure themselves into various forms and dimensions autonomously.
- The scientists anticipate employing these **bio-bots** (robots built of biological material) as innovative instruments for **regeneration, recovery, and the management of diseases**.
- It can mend damaged tissues.
- These **self-assembling creations**, which **measure between the width of a human hair and the tip of a sharpened pencil**, have the potential to be used in **regenerative medicine, wound healing, and disease therapy**.
- It may also be possible to make bio-bots with potential **uses in sustainable construction and outer-space**

exploration by mixing multiple cell types and exploring other stimuli.

- They **can be created from adult human cells without genetic modifications**, making them a potential patient-specific therapeutic tool.

Ketamine

News Excerpt:

Recently, as per the autopsy report, Mathew Perry ("Friends" series & American-Canadian actor) **died from the "acute effects" of ketamine**.

What is Ketamine?

- Ketamine is an anaesthetic that has been listed as a **hallucinogen**.
- It's referred to as a "**dissociative anaesthetic hallucinogen**" because it creates a feeling of detachment from pain and the environment.
- Its effects include **pain control, forgetfulness, intoxication, dissociation, and euphoria**.

Uses of Ketamine:

It has **both medical and recreational uses**.

MEDICAL USES	RECREATIONAL USES
<ul style="list-style-type: none"> • It has been used more widely due to its approval for treatment-resistant depression (TRD) — that is, severe depression that has not improved via other therapies, including for people who are experiencing suicidal thoughts. • Relief from TRD with ketamine happens rapidly. Instead of waiting for an SSRI (Selective serotonin reuptake inhibitor) to provide relief over weeks, people who are suffering from depression can start to feel the benefits of ketamine within about 40 minutes. 	<ul style="list-style-type: none"> • Ketamine is also used as a recreational drug, popularly known as K or Special K among clubgoers. • It garnered popularity as it affects brain receptors that traditional antidepressants do not target. • It can make a user feel like they are having an "out of body" experience and hallucinations for a short time.

Future Endeavors:

- **Ketamine can provide help and hope to patients who have not found relief with any other treatments**. Given its efficacy in people considering suicide, it is plausible that ketamine may be lifesaving.
- But it should be noted that ketamine **isn't a first-option treatment for depression**, and it is generally used only when other, more longstanding treatments haven't been effective.

deCODE Initiative

News Excerpt:

Recently, the **United Kingdom** has announced the completion of half a million whole-genome sequences, almost **0.7% of its population**.

About the news:

In the last decade, genomics has undergone a revolutionary shift with the advent of technologies that have significantly improved throughout and reduced the cost of whole-genome sequencing, giving rise to population-scale genome-sequencing programmes — where scientists decipher the complete genetic makeup of large populations, offering unprecedented insights into the intricate view and tapestry of human diversity.

The deCODE initiative:

- An early effort to use large-scale population genetic studies was **initiated in Iceland by deCODE genomics in 1996**, with most of the Icelandic population enrolling for genetic studies in around a decade.
- The initiative and the **democratization of sequencing technologies** provided the initial impetus for programmes that wished to use population-scale genomic data for precision medicine and public health.
- The deCODE effort considerably **improved our understanding of the genetics of diseases** and the utility of such data in risk assessment.
 - It also contributed **significantly to the methods, infrastructure, and standards** with which researchers handle large-scale genomic data and set up discussions on their bioethics.
- The project laid the groundwork to **integrate medical records** and people's **genealogies**, resulting in **new drugs and therapeutics**.
- deCODE's success, plus the **wider availability of sequencing technologies**, gave rise to several population-scale genome initiatives around the world, including many pilot programmes initiated in the last decade.
 - At first, several projects worked with **hundreds to thousands of genomes**, but in the last half a decade, such endeavours have leapfrogged to lakhs of genomes.

Genome (IndiGen) from India:

- A pilot programme for **population genomes in India named IndiGen** provided an early view of more than a thousand genomes of individuals from cosmopolitan areas in India.
- It yielded some clues to the **landscape of many treatable genetic diseases** and variants of clinical significance, including the efficacy and toxicity of drugs and the prevalence of rare disorders.
- A larger programme to **sequence 10,000 whole genomes** from diverse population groups is being worked on under the Genome India initiative.

DRESS Syndrome

News Excerpt:

The **Indian Pharmacopoeia Commission (IPC)** issued an advisory about the side effects of Meftal - a commonly consumed painkiller - as it could be a reaction known as **Drug Rash with Eosinophilia and Systemic Symptoms (DRESS) syndrome**.

DRESS Syndrome

- DRESS syndrome (**Drug Rash with Eosinophilia and Systemic Symptoms**) is an adverse reaction term that is currently used to describe a hypersensitivity reaction.
- DRESS syndrome is a **type 4 hypersensitivity reaction**.

About Indian Pharmacopoeia Commission (IPC)

- Indian Pharmacopoeia Commission (IPC) is an **Autonomous Institution** of the **Ministry of Health and Family Welfare**.
- Indian Pharmacopoeia Commission (IPC) to deal with matters relating to the official book of standards for drugs included therein, in terms of the **Second Schedule to the Drugs and Cosmetics Act, 1940**.
- The Commission became fully **operational on January 1, 2009**, as an Autonomous Body fully **financed by the Central Government**.

- It is a serious drug reaction affecting the skin and other organs, with a **mortality rate of up to 10%**.
 - Sometimes referred to as **DIHS (Drug-Induced Hypersensitivity Syndrome)**.

Symptoms of DRESS syndrome:

The symptoms can vary, but they typically develop over several days, with the typical onset being 2–6 weeks after starting the responsible medicine.

Typical signs of DRESS syndrome include fever, skin rashes or eruption, eosinophilia, atypical lymphocytosis, swollen lymph nodes and inflammation of internal organs.

About Meftal- Spas

Meftal-Spas is a commonly prescribed drug for various conditions such as **rheumatoid arthritis, osteoarthritis, dysmenorrhoea, mild to moderate pain, inflammation, fever, and dental pain**.

C.T. scans associated with increased risk of blood cancers

News Excerpt:

Recently, researchers formed the International Agency for Research on Cancer (IARC) and stated that **the C.T. (Computerized Tomography) Scan** can potentially

increase cancer risks. The high cumulative doses from multiple scans have raised concerns among the medical and scientific community.

Key highlights of the findings:

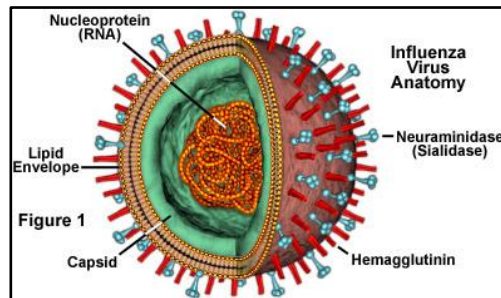
- Researchers monitored a group of people for at least two years after their initial C.T. scan.
 - They discovered **790 cases of haematological malignancies**, including 578 cases of **lymphoid malignancies** and 203 cases of **myeloid malignancies** and acute **leukaemia (A.L.)**.
- They found a clear association between cumulative dose and risk of all haematological malignancies, with an excess relative risk of 1.96 per 100 mGy.
- Researchers estimated that **"for every 10,000 children examined today (mean dose 8 mGy), one to two persons are expected to develop a haematological malignancy attributable to radiation exposure in the subsequent 12 years."**
- The results showed a **clear dose response between cumulative ABM (active bone marrow) dose and lymphoid and myeloid haematological malignancies risk**, with **increased risk at doses as low as 10-15 mGy**.

Working of C.T. Scan:

- A CT scanner **emits a series of narrow beams** through the human body as it moves through an arc.
- This **differs from an X-ray machine**, which sends just one radiation beam.
- The **CT scan produces a more detailed final picture than an X-ray image**.
- The CT scanner's X-ray detector can see hundreds of different density levels. It can see tissues within a solid organ.
- This data is transmitted to a computer, which builds up a 3-D cross-sectional picture of the part of the body and displays it on the screen.
- Sometimes, a contrast dye is used because it can help show certain structures more clearly.
 - For instance, **if a 3-D image of the abdomen is required, the patient may have to drink a barium meal**. The barium appears white on the scan as it travels through the digestive system

Diseases in News

H1N2



Details

News Excerpt: The **UK Health Security Agency** reported the country's **first human case of the H1N2 virus**, also known as the **pig virus**.

About H1N2:

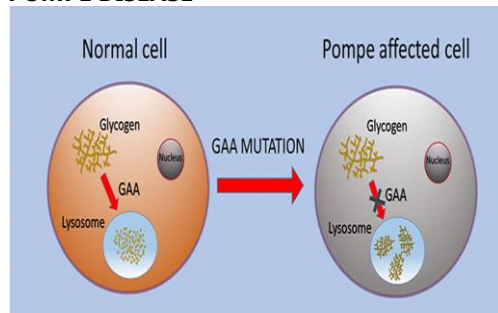
- The virus is called influenza **A(H1N2)v**.
- It is similar to a strain of flu circulating in pigs
- A(H1N2)v is a subtype of the influenza A virus.
 - Influenza A viruses circulate in seven species, including humans, birds, and pigs, but normally stay within their species.

Influenza A Virus:

- The **primary subtypes of influenza A virus** are **H1N1, H1N2, and H3N2**.
- The influenza A virus causes influenza (the flu), a highly **contagious respiratory infection**.
 - Influenza B and, in rare cases, influenza C can also cause the flu.
- It is **spread by droplets from an infected person's nose** or throat, generally by coughing and sneezing.
- Influenza A infections are most **common in winter**.
- The **proteins on the surface of the influenza A virus** are called **hemagglutinin (H) and neuraminidase (N)**.
- Some **influenza A subtypes** can infect animals, including:
 - **Birds** (causing avian flu)

Pigs (causing swine flu)

POMPE DISEASE

**News Excerpt:**

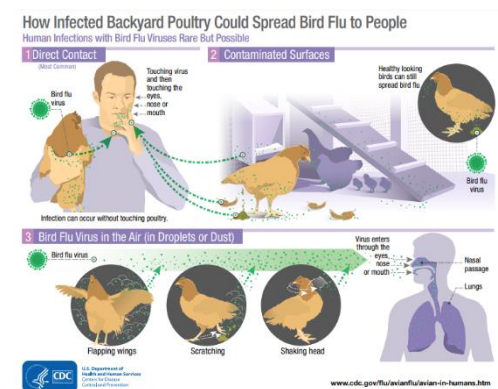
India's first patient diagnosed with the rare Pompe disease died recently after spending nearly six years in a semi-comatose state.

- According to the Central government, an estimated 70 million people in India suffer from 450 rare diseases.

About Pompe disease:

- A rare inherited disorder that affects one child per million, **caused by a deficiency of the enzyme acid alpha-glucosidase (GAA)**.
- It results in the **accumulation of glycogen** in cells, particularly in muscles.
- Some common side effects and symptoms include progressive muscle weakness, difficulty in mobility, respiratory issues, heart problems, and difficulty swallowing.
- **There are two forms of Pompe disease:**
 - **Early onset (infantile form)** is caused by the complete or near complete deficiency of GAA.
- **Late onset (juvenile/adult) results** from partial deficiency of GAA and can begin as early as the first decade of childhood or well into adulthood.

H9N2 FLU

**News Excerpt:**

The Union Health Ministry is closely monitoring the reported outbreak of H9N2 cases and clusters of respiratory illness in children in northern China.

About the H9N2 Virus (Avian influenza virus):

- H9N2 is a subtype of the influenza A virus that causes **both human and bird flu**.
- In 1966, the H9N2 subtype was isolated for the first time in Wisconsin, United States.
- H9N2 viruses are present in wild birds all over the world and are endemic in many areas of poultry.
- There is a risk of occasional infection and small clusters of human infections due to exposure to diseased birds or contaminated settings, according to the **World Health Organisation (WHO)**.

Infections in Humans:

- Human H9N2 virus infections are uncommon, but likely underreported due to the disease's relatively mild symptoms.
- **In 1998, Hong Kong reported the first incidence worldwide.**
- **Symptoms: Mild, flu-like symptoms or eye inflammation to severe, acute respiratory disease or death.**

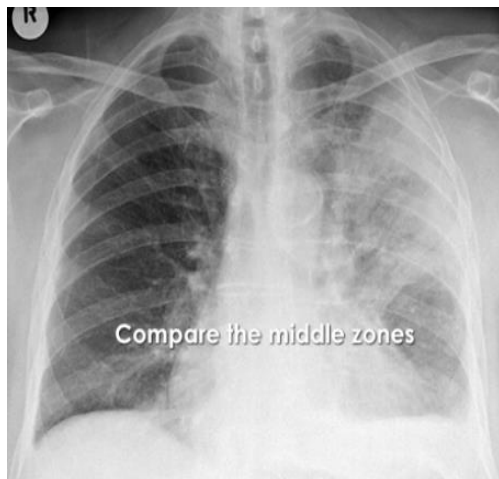
In India:

- The virus was picked up in **February 2019** during a community-based surveillance study in **93 villages of Korku tribes in the Melghat district of Maharashtra.**
- **Vaccine by India:** Bhopal-based ICAR-National Institute of High-Security Animal Diseases (NIHSAD) has developed the **"Inactivated low pathogenic avian influenza (H9N2) vaccine for chickens".**

It is the first indigenous vaccine for the H9N2 virus for animals.

The Indonesian government has built an **effective vaccination strategy against H5N1 and H9N2 strains.**

WHITE LUNG SYNDROME



News Excerpt:

There is an outbreak of respiratory illness -'White Lung Syndrome' in children from China to the US and some parts of Europe.

About White Lung Syndrome:

- When we see the X-ray or CT scans of the lungs, they appear black. This indicates that air is present in the lungs.
- Whenever there is an inflammation or collection of fluid in the lungs, which restricts the air sacs, the lungs show up white. The white patches are because of a bacterial or viral infection.
- It includes some respiratory illnesses like acute respiratory distress syndrome, silica-related conditions, and pulmonary alveolar microlithiasis.
- **Causes:** Combination of bacterial, viral, and environmental factors.
- **Symptoms:** cough, fever, runny nose, phlegm pileup in sinuses, difficulty breathing, and fatigue.

Other Chronic Respiratory related diseases:

- **Silicosis-** caused by inhaling silica dust.
- **Acute respiratory distress syndrome (ARDS)-** occurs when fluid builds up in the air sacs in the lungs.
- **Pulmonary Alveolar Microlithiasis (PAM)-** caused by deposits of calcium in the air sacs of the lungs.

ELEPHANT Endotheliotropic HERPESVIRUS


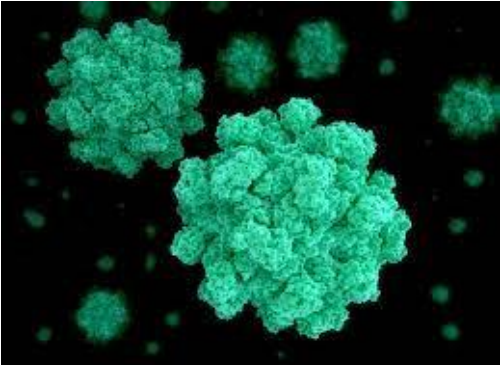


News Excerpt:

A new study has assessed the circulation of the **Elephant Endotheliotropic HerpesVirus subtypes (EEHV)** responsible for the recent rise of the disease in Asian Elephants.

About Asian Elephant:

- Asian elephant (*Elephas maximus*) is **classified as endangered (IUCN Red List).**
- It is placed in **Schedule I and Part I of the Indian Wildlife Protection Act (1972)** conferring it the highest level of protection.
- Asian elephants are the **National heritage animals** of our country and account for **55% of the total world elephant population.**
- They live in the **tropical forests and grasslands of Southeast Asia.**
- They're a little **smaller than African elephants** but can grow nine feet tall and weigh nearly six tons.

	<p>About Elephant Endotheliotropic Herpesvirus (EEHV):</p> <ul style="list-style-type: none"> • EEHV is a double-stranded DNA virus that is classified in the family Herpesviridae. • It causes acute, fatal hemorrhagic disease in wild and captive juvenile Asian and African elephants. • If severe, EEHV can result in death within 24 hours of infection. • EEHV consists of eight genotypes that include EEHV1 through EEHV6, each varying in their lethality.
<p>LATHYRISM</p> 	<p>News Excerpt: Scientists are working to aid research on improved varieties of grass pea.</p> <p>About Lathyrism:</p> <ul style="list-style-type: none"> • Lathyrism is one of the oldest known neurotoxic disorders, with symmetrical spastic leg weakness with no sensory deficit, resulting from excessive consumption of grass pea (<i>Lathyrus sativus</i>) an environmentally tolerant legume that has seed with high protein content. <ul style="list-style-type: none"> ◦ It is an irreversible Neurological Disease that leads to paralysis of the lower limbs. <p>Common causes are:</p> <ul style="list-style-type: none"> ◦ Ingestion of beta-aminopropionitrile. • Consumption of peas of species <i>Lathyrus sativus</i> which has a neurotoxin called beta oxalyl amino alanine (BOAA).
<p>NOROVIRUS</p> 	<p>News Excerpt: Norovirus cases rise in the UK, with more than 1,500 infected.</p> <p>About:</p> <ul style="list-style-type: none"> • Norovirus is a highly contagious virus that causes acute gastroenteritis (inflammation of the stomach and intestines) leading to symptoms like nausea, vomiting, diarrhea, fever, headaches, and body aches. • The primary route is oral-faecal. It is transmitted through contaminated food, water, and surfaces and can be contracted multiple times as the virus has different strains. • The virus is resistant to many disinfectants and can survive in heat up to 60°C. Therefore, merely steaming food or chlorinating water does not kill the virus. <p>The basic precaution is washing hands frequently with soap and maintaining hydration.</p>
<p>Noma</p>	<p>News Excerpt: The World Health Organization (WHO) added one of the world's most under-recognized health challenges, NOMA, to its official list of neglected tropical diseases (NTD).</p> <p>About:</p> <ul style="list-style-type: none"> • It is also known as cancrum oris or gangrenous stomatitis, which is a severe gangrenous disease of the mouth and face. <ul style="list-style-type: none"> ◦ The name of the disease comes from the Greek word "nomē", meaning "to devour", as noma eats away facial tissue and bones if not treated early. • It mainly affects children aged 2-6 years old and is found most commonly among those living in poor communities. • Noma is associated with extreme poverty, malnutrition, poor access to sanitation, weakened immune systems, infections, and oral hygiene with a mortality rate of approximately 90%. • The disease is also called the 'face of poverty', as effective drugs and adequate surgical treatment remains inaccessible for many due to extreme poverty.

JN.1 variant of COVID



News Excerpt:

A new coronavirus variant named **JN.1** has been detected.

About the JN.1 variant of COVID:

- This **variant** is considered to be the Omicron subvariant BA.2.86 or Pirola.
 - **Pirola and JN.1** are considered to be **Variants of Interest**.
- **Variants of Interest:** These variants are **less** effectively neutralized in labs by antibodies from infection or vaccination and have the potential to spread.
- **JN.1** contains only **one additional mutation** on the spike protein as compared with Pirola, **Pirola** contains **more than 30 mutations** on the spike protein.
 - **Mutations** in the spike protein **increase** its **infectivity** and **ability** to evade immune responses.
 - **Symptoms** associated with JN.1 include - **fever, runny nose, sore throat, headache, and mild gastrointestinal** symptoms such as abdominal pain and diarrhoea.

Mpox



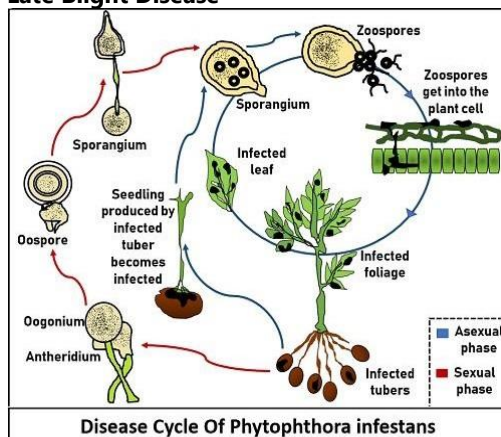
News Excerpt:

Recently, the World Health Organization confirmed the sexual transmission of Mpox in Congo. This is the **first definitive proof** of sexual transmission of monkeypox in Africa.

About Mpox:

- Mpox (formerly known as monkeypox) is a rare disease caused by infection with the mpox virus.
- The monkeypox virus is part of the same family of viruses as **the variola virus, which** causes smallpox.
- **Symptoms:** painful rash, enlarged lymph nodes, and fever.
- The natural reservoir of the virus is unknown - various small mammals such as **squirrels and monkeys** are susceptible.
- Person-to-person transmission of mpox can occur through direct contact with infectious skin or other lesions.

Late Blight Disease



News Excerpt:

Several farmers of Sanaur in Patiala district have claimed that their tomato and potato crops have been damaged by blight disease, triggered by bad weather and fog.

About Late Blight Disease:

- It is a fungal disease of potato and tomato plants, caused by the **water mold Phytophthora infestans**.
- **Symptoms:**
 - The first symptoms appear as small, light to dark green, circular to irregular-shaped water-soaked spots.
 - During cool, moist weather, these lesions expand rapidly into large, dark brown or black lesions, often appearing greasy.
 - A pale green-to-yellow border often surrounds the lesions.
 - When plants have become infected, **lesions** (round or irregularly shaped areas) **appear on the leaves, petioles, and stems**.
 - A whitish growth of spore-producing structures may appear at the margin of the lesions on the underleaf surfaces.
- The disease occurs in humid regions with temperatures ranging **between 4 and 29 °C (40 and 80 °F)**.
- Potato or tomato plants that are infected may rot within two weeks.
 - The **Great Famine in Ireland** in the mid-19th century was caused by the late blight of the potato plant.

GEOGRAPHY & DISASTER MANAGEMENT

Southern Annular Mode (SAM)

News Excerpt:

Indian National Centre for Ocean Information Services (INCOIS) has discovered that the Southern Annular Mode (SAM), a vital climate pattern, is pivotal in shaping the sea conditions across the Indian Ocean.

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ESSO-INCOIS:

- It was established as an **autonomous body** in **1999** under the **Ministry of Earth Sciences (MoES)** and is a unit of the **Earth System Science Organization (ESSO)**.
- It is to provide **ocean data, information and advisory services to society**, industry, the government and the scientific community through sustained ocean observations and constant improvements through systematic and **focused research in information management and ocean modelling**.

About Southern Annular Mode (SAM):

The SAM refers to the **(non-seasonal) north-south movement of the strong westerly winds** that blow **almost continuously** in the **mid-to-high latitudes** of the southern hemisphere.

- This belt of westerly winds is also associated **with storms and cold fronts moving west to east**, bringing rainfall to southern Australia.
- These are also called **Antarctic Oscillation**.

- The SAM has three **phases: neutral, positive and negative**.
- Each positive or negative SAM event lasts **one to two weeks**, though longer periods may also occur.
- The time frame between positive and negative events is random but typically ranges from **a week to a few months**.
- The SAM's effect on rainfall **varies greatly depending on season and region**.

Phases of SAM

Positive Phase:

- Band of westerly winds contracts toward Antarctica
- Higher pressures over southern Australia
- Can relate to stable, dry conditions.

Negative Phase:

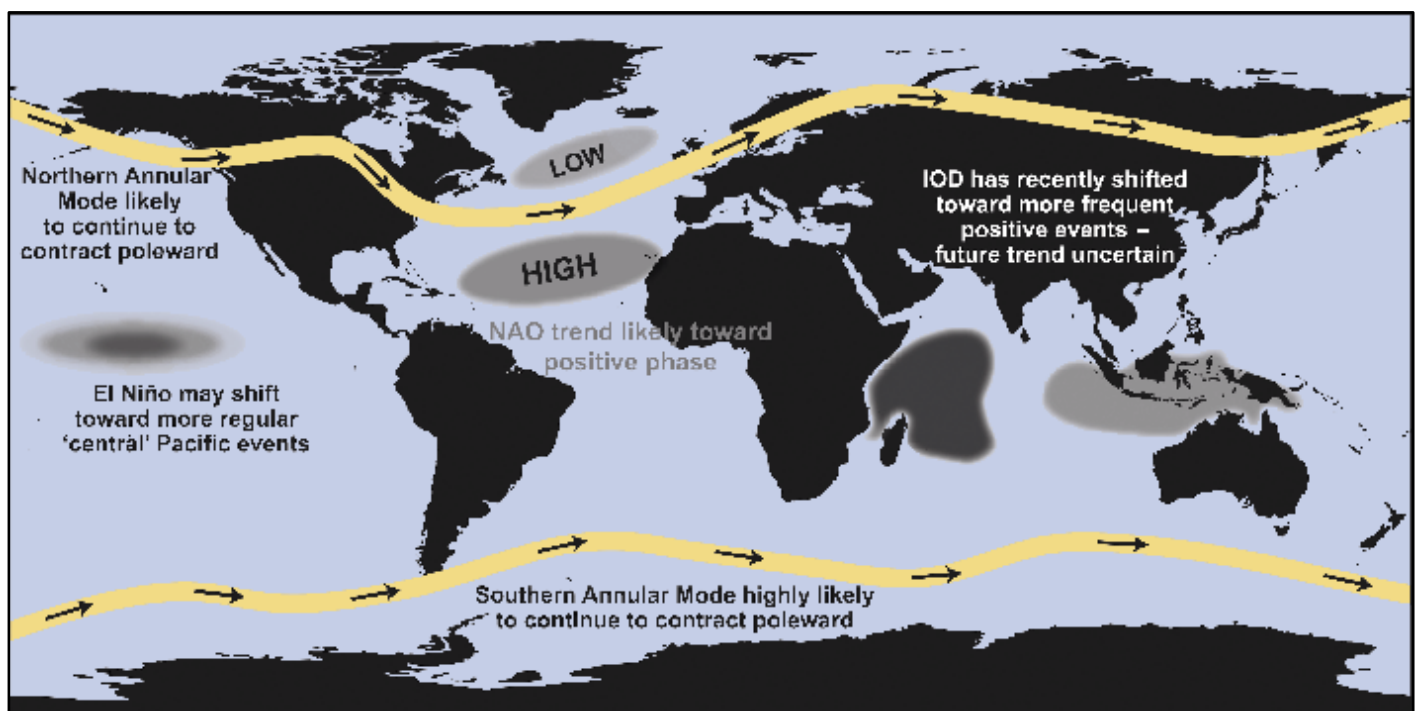
- Band of westerly winds expands towards the Equator.
- More (or stronger) low-pressure systems over southern Australia.
- Can mean increased storms and rain.

Impact of SAM across the Indian Ocean:

- SAM impact expands beyond swells, influencing the Northern Indian Ocean wave climate by altering wind seas through **Hadley cell (HC) circulation shifts**.

During a Positive SAM phase:

- A cyclic pattern of warm sea surface temperature anomalies can be seen, and strong winds cause increased wave activity in the Indian Ocean.



- Since the early 1990s, changes in the atmospheric fields have evoked anomalous **vertical motion over the continent and the Indian Ocean**, enhancing the southerly cross-equatorial flow by **increased land-sea thermal contrast**, thereby increasing **decadal rainfall** in the region.
- A new swell generation region along the East African coast caused an **increase in wave height in the Arabian Sea**.

During a Negative SAM phase:

- The eastern tropical southern Indian Ocean becomes the central region for generating swells, resulting in reduced wave heights in the Arabian Sea.

Significance of the Study for the Indian Ocean:

- It could help the country with better coastal planning, resource management, and **disaster preparedness**.
- It can also contribute to advancing the **accuracy of wave predictions**.
- It can help identify **fair weather windows**, thus benefitting the **fisherfolk community and blue economy stakeholders** such as shipping, maritime boards, and the oil industry for their multi-million dollars' worth of operations at sea.
 - Oil and shipping industries can utilize these fair windows for their operations, **thus significantly impacting the blue economy activities on the Indian coast**.
- It is important to study ocean surface waves as they are crucial in shaping coastal processes and influencing numerous aspects of society, including **shoreline erosion, sediment transport, coastal engineering, and recreational activities**.

Way Forward:

Extreme wave events in the Indian Ocean can significantly impact coastal livelihoods, infrastructure, and

PEPPER IT WITH:

El-Nino, La-Nina, ENSO, Earth System Science Organization (ESSO), Hadley Cell

ocean activities. Understanding **Southern Annular Mode** can **help forecast** fair weather windows, benefiting maritime trade and fishermen. Accurate forecasting of future wave amplitude is crucial for timely warning and coastal planning.

Ennore Oil Spill

News Excerpt:

The National Green Tribunal (NGT) questioned the Tamil Nadu government and Chennai Petroleum Corporation Limited (CPCL) on the oil spill in Pulicat backwaters.

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About the Ennore oil spill:

- Dark lumps of oil have washed ashore at **Koraikuppam and Koonankuppam**, near Pulicat Lake, a known **biodiversity hotspot**.
- Due to the incessant rains caused by **cyclone Michaung** there was unprecedented flooding inside the CPCL refinery in Manali. Presently water levels have receded. There was no pipeline leak from the refinery.

Damage caused after the oil spill:

- **Residential Disruption:** People have been spending days together cleaning the oil stains from their homes besides losing electronic appliances.
- **Health concerns:** The fishing villages complain that they have been encountering several health issues since the oil spill last week, besides feeling suffocated due to the odour of the oil.
- **Effect on Fisheries:** Thousands of fishermen have not been able to venture into fishing even after rains have stopped as fish catch smells of oil, the report stated.
- **Ecological Consequences:** Hundreds of fish, prawns, and crabs have been found dead in the Kosasthalaiyar River due to the impact of oil mixing with flood water when extremely heavy rains drenched Chennai.

Provisions to deal with the oil spill:

- Authorities take stern measures, like **hefty penalties, jail terms, etc.**
 - In 2020, the **National Green Tribunal** imposed an interim penalty on PSU major Oil India over its failure to stop the fire in Assam's Baghjan oil well resulting in damage to the environment.

Offshore Oil Spill CleanUp Measures

Booms: Physical barriers to contain oil

Skimmer: Device to extract oil from water surface

In-situ burning: Set fire to spilled oil

Dispersant: Chemical to break oil small droplets

Sorbent: Materials to absorb and adsorb oil

Solidifier: Agent to change oil from liquid to solid

Bio-remediation: Biological process to degrade oil

- International laws and conventions such as the **International Convention for the Prevention of**

Pollution from Ships (MARPOL) for merchant ships that may spill oil due to negligence.

- **Merchant Shipping Act, 1958:**
 - **Section 356J**- Power to give notice to the owner, etc., of the polluting ship when the Central Government is satisfied the ship is not as per the prescribed rules.
 - **Section 356K**- If a person, after being served the notice under section 356J, fails to comply, then the person can be convicted of an offence.
- **National Oil Spill Disaster Contingency Plan (NOS-DCP):**
 - The Indian Coast Guard (ICG) is the Central Coordinating Authority in India for matters related to Oil Spills.
 - NOS-DCP promulgated by ICG is the apex plan for responding to oil spill disasters in Indian waters and applies to shipping, ports, and oil industries.

About Pulicat Lake:



- It is a saltwater lagoon on the Coromandel Coast of the state of Andhra Pradesh. It extends from Andhra Pradesh's extreme southeast into an adjacent portion of Tamil Nadu.
- Scattered settlements surround the lake, which is in the sandy, marshy Andhra lowlands. The lake produces prawns and salt.
- The Indian satellite launch station, Satish Dhawan Space Centre, is located on the long, narrow island of Sriharikota, which divides Pulicat Lake from the Bay of Bengal.

Way Forward:

- Strengthening stormwater drainage systems, implementing stricter safety measures in industrial facilities, and enhancing monitoring protocols can help prevent future incidents.

- Comprehensive studies and transparent reporting on ecological impacts are vital for informed decision-making and sustainable environmental management.

PEPPER IT WITH:
MARPOL, Kosasthalaiyar River, NGT, Satish Dhawan Space Centre

Global Status of Multi-Hazard Early Warning Systems 2023 Report

News Excerpt:

According to a **Global Status of Multi-Hazard Early Warning Systems (MHEWS) 2023 report** from the United Nations

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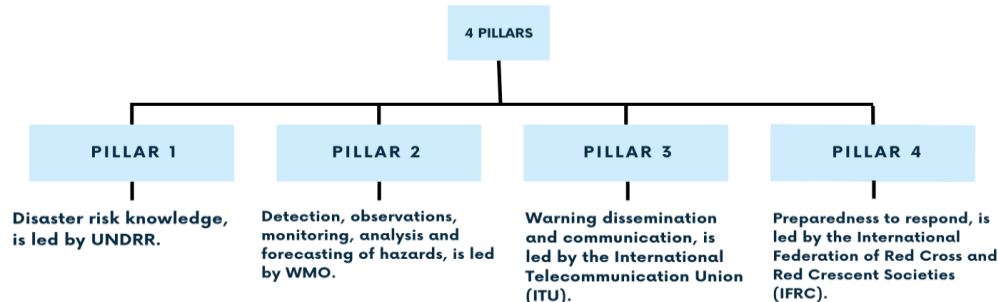
Office for Disaster Risk Reduction and the World Meteorological Organization, **half of the countries lack appropriate multi-hazard early warning systems.**

Key findings of the report:

- **Good Progress:**
 - The trend of increasing numbers of countries reporting the existence of **MHEWS** has continued – the number has doubled since 2015 and increased to 101 countries as of March 2023.
 - **Dramatic improvement** has been witnessed in **Africa and the Asia and Pacific region.**
 - **2/3rd of WMO members report having fully operational warning and alerting services** and more than half incorporate hazard, exposure, and vulnerability information in their warning products.
 - **Advances in science and technology**, together with the increase in available observations have led to **improvements in forecasts**, especially lead times.
 - With **95 percent of the world's population** able to access a **mobile broadband network**, there are **significant opportunities to leverage** mobile networks and internet connectivity.
- **Significant gaps:**
 - **Issues:**
 - **Low coverage in the Americas and the Caribbean** and despite progress, persistent **gaps in Africa**. Coverage remains especially low (**less than 50%**) in Least Developed Countries (LDCs).
 - **Lack of affordability** continues to be a barrier to **internet access**, particularly in **low-income economies.**
 - **Lack of effective Plans and Policies to act on early warnings:**
 - Less than one-third of countries reporting on **Indicator G4** (Percentage of local governments

EARLY WARNINGS FOR ALL INITIATIVE

- It ensures that everyone on Earth is protected from hazardous weather, water, or climate events through life-saving early warning systems by the end of 2027.
- Under this, there are four pillars that make up the early warning chain:



Objective:

- **At the global level:** Mobilizing international support to fund the Executive Action Plan's estimated budget of USD 3.1 Billion over five years.
- **At the regional level:** Strengthening regional coordination and collaboration around early warning coverage.
- **At the National and Local Levels:** Building political momentum and support to bring together all relevant government agencies and representatives from all of society.

having a plan to act on early warnings) indicated 'substantial progress' towards achieving MHEWS.

- The report also revealed that compared to last year, six more countries have reported having an early warning system.

Indian Scenario:

- In India, **disaster risk knowledge and management**, warning, dissemination, and communication are **not adequate**. However, **preparedness, response capabilities**, and detection, monitoring, and forecasting capabilities are **available**.
- The report praised the improved forecasting and activation of the **Early Action Protocol** taken by India during **Cyclone Amphan in West Bengal**.

Way Forward:

- **Design EWS for scale:** Best practice is to start small – on the priority hazards identified locally – and to develop, test, iterate, and expand the EWS over time.
- **Ensure local ownership and an 'all of society' approach:** local actors must be placed at the heart of EWS design, development, implementation, evaluation, improvement, and operation.
- **Leverage flagship programs and existing initiatives:** Every opportunity should be sought to align and leverage these activities and to ensure that time and resources are not wasted through duplication.

PEPPER IT WITH:

United Nations Office for Disaster Risk Reduction, World Meteorological Organization, Cyclones

- **Maximize innovations in science and technology:** This includes social science– EWS can only be effective if warnings result in appropriate action.
- **Harness sustainable, complementary funding:** Current and potential funders (governments, donors, philanthropists, etc.) must be brought into the EW community and its conversations to ensure shared understanding, urgency, and action.

PRE-SHOTS

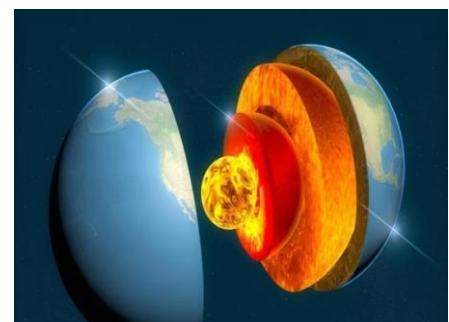
New Enigmatic Layer – E Prime Layer

News Excerpt:

Earth core's mysterious new layer formed due to surface water diving deep

About E Prime Layer:

The E prime layer is located at the **outermost portion of the Earth's core**. It is the **consequence of "surface water penetrating deep into the planet,"** altering the composition of the metallic liquid core's outermost section.



How does this layer develop?

- According to the latest findings, **tectonic plates carrying surface water have moved it deep within the Earth** over billions of years.

- When this water reaches the core-mantle border, some **1,800 miles** below the surface, it causes **substantial chemical changes** that influence the core's structure.
- Scientists have discovered that **subducted water reacts chemically** with core components under extreme pressure.
- This reaction results in the **development of a film-like structure with a hydrogen-rich, silicon-depleted layer** at the outer core.
- This process **generates silica crystals**, which climb and merge into the mantle, influencing the overall composition.
- These changes in the **liquid metallic layer could result in lower density and altered seismic properties**, which would correspond to abnormalities recorded by seismologists.

Significance of the findings

- Researchers believe that the **E prime Layer** may be **older than the inner core** as it took 1 billion years to reach the current thickness.
- The new finding is another sign that our current understanding of how the **outer core and mantle interact with one another** may be incomplete.
- In **September 2022**, the research team discovered that **leaking water could be reacting with large reservoirs of carbon in the outer core** to create gigantic diamond factories near the core-mantle boundary.
- The discovery expands experts' understanding of Earth's underlying systems, showing a larger and more complex global water cycle than previously thought.

Tantalum

News Excerpt:

Researchers from IIT (Ropar) have found the presence of tantalum, a rare metal, in the **Sutlej River** sand in Punjab.

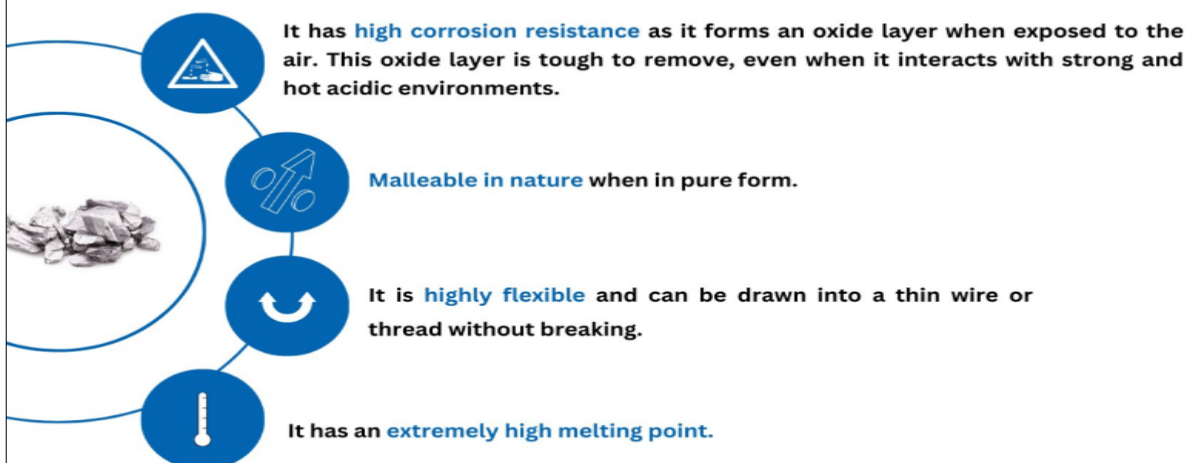
What is Tantalum?

- It is a rare metal.
- It is grey, heavy, very hard, and is known for being one of the **most corrosion-resistant metals**.
 - **Background:** This rare metal has been named after a Greek mythological figure, Tantalus as he was known to be very wealthy.
 - Swedish chemist **Anders Gusgutf Ekenberg** discovered tantalum in 1802.
 - **Location in Periodic Table:** Tantalum is with the **atomic number 73** — the number of protons found in one atom of the element.
 - A **periodic table** is a tabular display where all the elements are organized according to their chemical properties.

Application of Tantalum:

- **In electronics and semiconductors:**
 - Tantalum is widely used in the electronics and semiconductor industry because of its unique characteristics.
 - The capacitors made of Tantalum are capable of storing more amount of electricity without much leakage than any other capacitors. This usage makes the metal ideal for use in portable devices, including smartphones, laptops, and cameras.
- **In the jewellery sector:**
 - It is also used as a cheap alternative to platinum which is widely used for jewelry and in converters for cars, trucks, and buses.
- **In heavy Industries:**
 - A composite consisting of Tantalum Carbide (TaC) and Graphite in Tantalum is one of the hardest materials known and is used on the cutting edges of high-speed machine tools.

PHYSICAL CHARACTERISTICS OF TANTALUM:



• In the defence sector:

- Tantalum is also prominently used in the defence sector in chemical plants, nuclear power plants, missiles, and fighter jets.

Rat Hole Mining

News Excerpt:

Recently, 41 workers were rescued from the collapsed **Silkyara tunnel** using the technique of **rat hole mining**.

About Rat Hole Mining:

- It is a type of **manual drilling done by professional personnel** that is particularly frequent in Meghalaya.
- The term "**rat hole**" refers to **narrow pits** excavated into the ground that are usually only large enough for one person to descend and get coal from.
- After excavating the pits, the miner descends into them using a rope and bamboo ladders.
- This technology is typically **used to remove coal** and is exceedingly dangerous.
- Many countries have made it illegal due to an increase in the number of miners dying from asphyxiation, a lack of oxygen, and hunger.
- There is **another type of rat mining**:
 - A rectangular hole of 10 to 100 sqm is formed, and a vertical pit of 100 to 400 feet depth is dug through it.
 - Once the coal seam is discovered, horizontal rat-hole-sized tunnels are built through which miners can extract the coal.

Why is rat-mining banned?

- This rat-mining practice has **received harsh condemnation** due to the **hazardous working conditions, environmental degradation, and frequent accidents** resulting in injuries and fatalities.
- According to experts, the mines are often unregulated, without safety precautions such as sufficient ventilation, structural support, or worker safety gear, resulting in a highly hazardous situation for the rat miners.
- Furthermore, mining can lead to soil degradation, deforestation, and water contamination.
- The **National Green Tribunal in 2014 imposed a ban** on coal mining using the **rat-hole mining** technique in Meghalaya.

Esequibo River

News Excerpt:

Tensions rise as **Venezuela and Guyana** dispute ownership of the Esequibo region and offshore oil discoveries.

About Esequibo River:

- Esequibo River, in **east central Guyana**, is the largest river between the **Amazon and the Orinoco**.
- It rises in the **Acarai Mountains** on the Brazilian border and flows northward for approximately 630 miles (1,010 km) through Savannas and forests to the Atlantic Ocean.

- Its estuary, 20 miles (32 km) wide, is obstructed by islands and silt.
- With its chief tributaries, the **Rupununi, Mazaruni, and Cuyuni**, its system drains more than half of Guyana.
- The River is **administered by Guyana**. However, Venezuela has, for decades, laid **claim** to Essequibo.
- Venezuela has claimed that the Esequibo River to the **region's east forms a natural border** and has historically been recognised as such.



Why Esequibo is a very important place?

- Venezuelan President **Nicolas Maduro's** move to create a new state and explore the disputed area increases regional tensions.
- Massive **oil and gas** findings near the **Esequibo region**.
- Both countries (**Venezuela and Guyana**) claim the **160,000-square-km** territory surrounding the Esequibo River.
- Guyana seeks support from the United Nations and the International Court of Justice.
- Oil production is currently at **some 400,000 barrels per day (bpd) of oil and gas** and is **expected to rise to more than 1 million bpd by 2027**.
- It will sharply boost Guyana's economy and promise huge income for the country over the coming years.

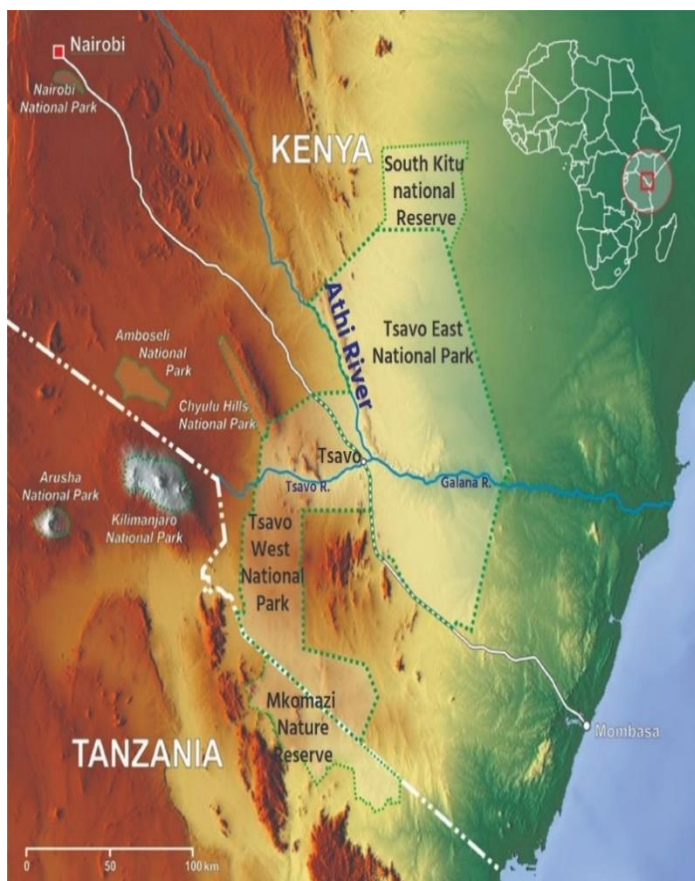
Athi River

News Excerpt:

Athi River has no piped water or sewage system, and drought is making clean water supplies more scarce and expensive for locals.

About Athi River:

- The **Athi-Galana-Sabaki River** is Kenya's **second longest river** (after the Tana River).
- This river rises in the **Gatamaiyo Forest** as the **Athi River** and then **enters the Indian Ocean as the Galana River** or the Sabaki River.
- The Athi River flows across the **Kapote and Athi plains**, through Athi River town, then takes a northeast turn where the Nairobi River meets it.
- The **Thwake Dam** or Thwake Multi-purpose Water Development Programme is a dam complex built on the **confluence of the Thwake and Athi Rivers in Kenya**.
- Both Athi River and Thwake Dam are Kenya's most polluted water bodies with the highest levels of toxic elements.



Dr APJ Abdul Kalam Island (Wheeler Island)

News Excerpt:

Defence Research Development Organisation (DRDO) will pause missile testing at Dr APJ Abdul Kalam Island (Wheeler

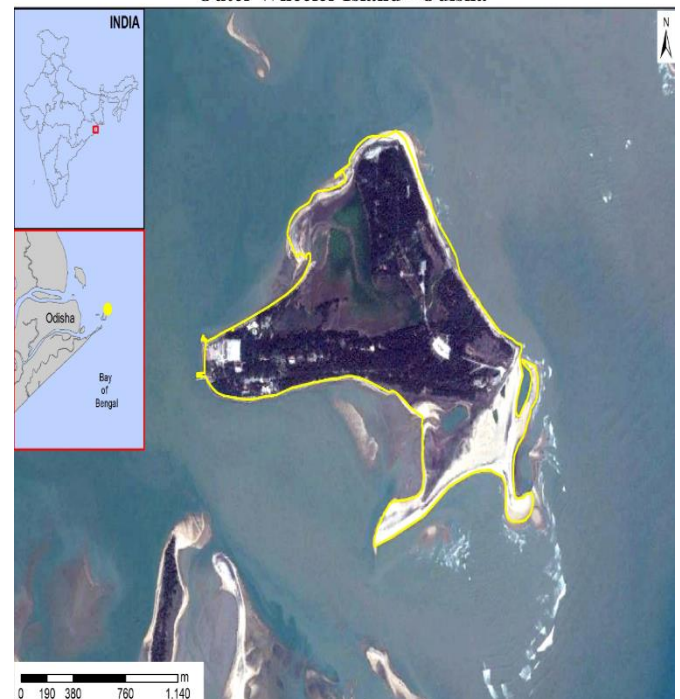
Island) off the Odisha coast during the mass nesting season of Olive Ridley Sea turtles from January to March next year to ensure the endangered species wins the race for survival.

- Missile testing, mechanised boats, and the movement of people adversely impact the mass nesting and breeding of sea turtles off the island. Around five lakh Olive Ridleys nested there this year.

About Dr. APJ Abdul Kalam Island (Wheeler Island):

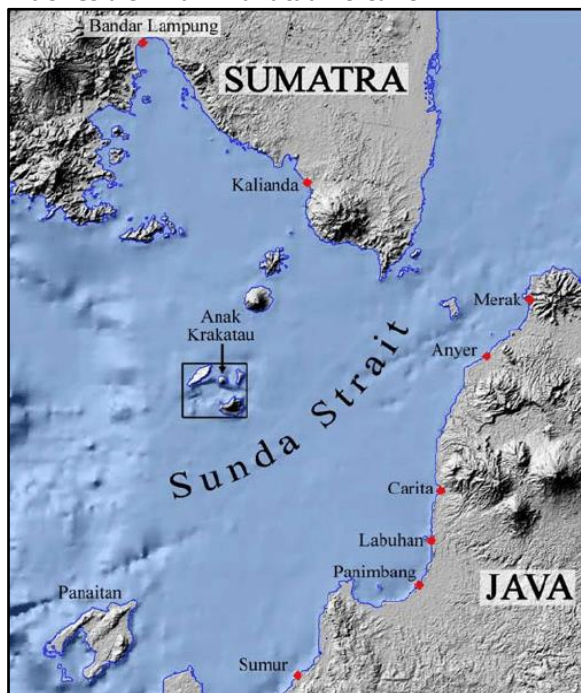
- Dr APJ Abdul Kalam Island is a continental Island off the coast of Odisha state, located in the Bay of Bengal.
- The island is located offshore of Bhitarkanika National Park.
- It is an **Integrated Test Range Missile Testing Facility in India**.
- The island was formerly known as Wheeler Island, after the English commandant Lieutenant Wheeler.
- On 4 September 2015, the island was renamed to honour the late Indian President, Dr. APJ Abdul Kalam.
- **Biodiversity and Conservation:**
 - **Flora** - Mangrove with associates, seagrass and other species
 - **Fauna** - Marine crustaceans, molluscs, fishes and sea bird
 - **Type of forest** - Mangrove (on the West and Northwest of the island)

Outer Wheeler Island - Odisha



DISASTERS IN NEWS

Indonesia's Anak Krakatau volcano



News Excerpt:

The **Anak Krakatau volcano in Indonesia's Sunda Strait** erupted, releasing a 1 km-high cloud of volcanic ash into the sky.

About Anak Krakatau volcano island:

- The volcano island is located in Indonesia's **Sunda Strait** between the main **Java and Sumatra** islands.
- Anak Krakatau, which translates as "**Child of Krakatau**," is the spawn of the renowned Krakatau volcano, whose **massive eruption in 1883 precipitated a period of worldwide cooling**.
- It lies in the **Pacific Ring of Fire**.

Sunda Strait:

- The Sunda Strait connects the Indonesian islands of **Java and Sumatra**.
- It is the **link** between the **Java Sea and the Indian Ocean**.
- **The Sunda Kingdom**, which ruled the western half of Java, inspired the name.

It also derives from the name of the Sundanese, the aboriginal people of West Java, whereas the Javanese are predominantly located in Central and East Java.

Indonesia Marapi Volcano



News Excerpt:

Indonesia's Mount Marapi in West Sumatra province erupted.

About:

- Mount Marapi, **which means 'Mountain of Fire'**, is the **most active volcano on Sumatra island** and is nearly 2900 meters high.
- Indonesia is home to about 130 active volcanoes, and Marapi is among these active volcanoes, prone to seismic upheaval due to its location on the **Pacific "Ring of Fire,"**
 - Ring of Fire is an **arc of volcanoes and fault lines** encircling the Pacific Basin or a belt of tectonic plate boundaries circling the Pacific Ocean where frequent seismic activity occurs.
 - Here, the meeting of continental plates causes **high volcanic and seismic activity**.

About Sumatra:

- It is an Indonesian island, the **second largest** (after Borneo) of the Greater Sunda Islands in the Malay Archipelago.
- It is separated in the northeast from the Malay Peninsula by the **Strait of Malacca** and in the south **from Java by the Sunda Strait**.

Volcano in Grindavik, Iceland

News Excerpt: A volcano erupted in Reykjanes peninsula (southwest Iceland), spewing lava and smoke across a wide area after weeks of intense earthquake activity.

- Due to the volcano eruption, nearly 4,000 inhabitants of the fishing town of Grindavik have been evacuated.

Reykjanes Peninsula:

- It is a **volcanic and seismic hot spot** southwest of the capital Reykjavik, Iceland.



- It runs along the **Mid-Atlantic Rift**, where the **Eurasian and the North American tectonic plates** are drifting apart.
- Due to this geological setting, the whole peninsula is extremely volcanically active, covered with moss-coated lava fields and cone-shaped mountains.
- Despite its location between two tectonic plates, there were no recorded volcanic eruptions there for **800 years**.
- However, that all changed in **March of 2021** when **Fagradalsfjall volcano** erupted.

Cyclone Michaung



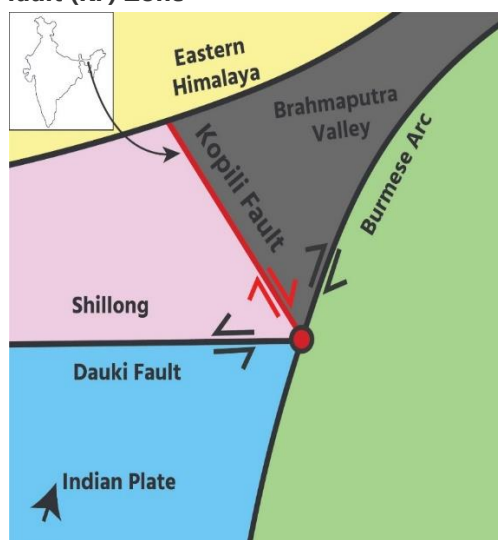
News Excerpt:

Heavy rains and strong winds are battering India's southern Andhra Pradesh state as a severe cyclonic storm Michaung makes landfall.

Cyclone Michaung:

- It is the **fourth** tropical cyclone of the year over the Bay of Bengal. The other previous three were - **Mocha, Hamoon, and Midhili**.
- It developed from a **low-pressure area** in the southwest Bay of Bengal. Gradually intensified into a **deep depression**, a **cyclonic storm**, and finally, a **super-cyclonic storm**.
- It moved northward towards the **Andhra Pradesh coast** while bringing heavy rain and strong winds to **northern Tamil Nadu**.
- It made **landfall** near Bapatla, **Andhra Pradesh**, and **weakened** into a depression over land.
- The name Michaung was suggested by **Myanmar** symbolises **strength** and **resilience**.

Kopili fault (KF) Zone



News Excerpt:

Recently researchers from the Indian Institute of Geomagnetism (IIG), **identified Seismogenic Liquefaction features** at three trench sites in the floodplain deposits of **Kolong River**, in an active fault in the North Eastern Region (NER), called the Kopili fault (KF) zone.

- It is a **fracture or zone of fractures between two blocks** of rock.

About Kopili Fault(KF):

- It is **one of the active faults** in the northeastern region (NER) and experienced large earthquakes in **1869 and 1943**.
- The KF, **extends from the western part of Manipur to the tri-junction of Bhutan, Arunachal Pradesh, and Assam**.
- It separates the **Shillong plateau and the Mikir hills**.
- Its paleoseismological investigations in the unexplored abandoned flood plain of Brahmaputra River located in the **Kopili Fault zone (KFZ)**.

In the region **with thick alluvial cover**, the **active faults do not produce** significant geomorphic expression when they lie at a deeper source.

INTERNAL SECURITY

India's Coastal Security Apparatus: 26/11

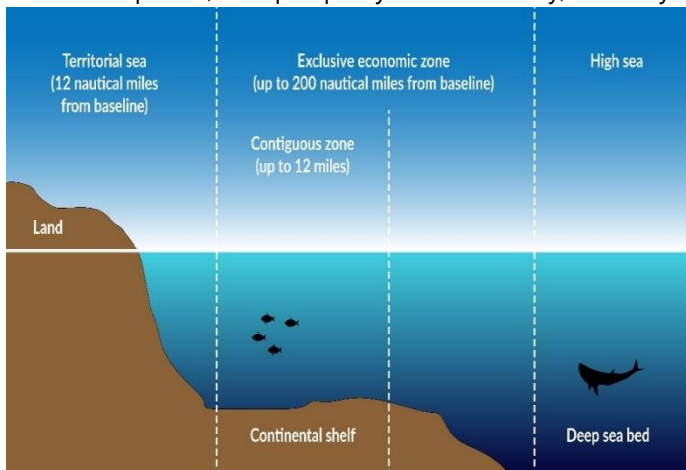
News Excerpt:

15 years have passed since the 26/11 sea-borne terror attack on Mumbai (2008-2023), which was caused by a failure in India's coastal security.

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India's coastal security:

- India's coasts have always been vulnerable to anti-national activities. The **physical proximity** of India's coasts to Sri Lanka, Bangladesh, Pakistan, and the Gulf countries adds to its vulnerability.
- The strategic installations such as the Gas and Oil plants, Nuclear plants as well as the vast population residing in coastal cities are vital for the security, development, and prosperity of the country, but they



are also **high-value targets** for terrorists.

- There is a **multi-tier arrangement for the protection and maritime security of the country involving the Indian Navy (IN), Indian Coast Guard (ICG), and Marine Police of the coastal States and Union Territories.**
- The **Indian Navy** patrols the International Maritime Boundary Line (IMBL), while the **Indian Coast Guard** is mandated to patrol and surveillance up to 200 nautical miles (i.e., Exclusive Economic Zone (EEZ)).
- Simultaneously, **the State Coastal Police (SCP)** performs boat patrolling in shallow coastal areas.
- The SCP has jurisdiction up to 12 nautical miles from the coast, and the ICG and the IN have jurisdiction over the entire maritime zone (up to 200 nautical miles), including the territorial waters (with the State marine police (SMP)).
- The **Border Security Force (BSF)** is deployed in the creek areas of Gujarat and Sundarbans in West Bengal.

Loopholes that persist in India's Coastal Security:

- Fragmented Approach to Security Management:** A diffused approach gives rise to overlapping jurisdiction and the need for unity of command. Management of international land and coastal borders falls within the exclusive purview of the **Ministry of Home Affairs**, but the agencies responsible for safeguarding these borders lie under the control of the **Ministry of Defence.**
- Lack of Infrastructure:** To secure maritime borders and coastlines, technical capability must detect every infringement. This needs an advanced technology infrastructure, especially for tracking the Sub-20 Metre Vessels.
- Identification of genuine Indian fishermen:** Equipping the boats with satellite-based tracking transponders was considered an option; however, the cost was prohibitive for the smaller fishermen. The identification of genuine Indian fishermen at sea by security agencies remains a challenge, and the threat of an Indian fishing boat seized by Pakistani operatives to undertake a 26/11-type Mumbai attack remains a danger.

Government Initiatives:

- Integrating management:** Following 26/11, the Central government set up a three-tier security arrangement comprising the Indian Navy (IN), the Indian Coast Guard (ICG), and the State Marine Police, jointly safeguarding India's maritime zone.
- There are joint exercises in the Arabian Sea and the Bay of Bengal. **"Sagar Kavach"** exercises, involving the Navy, ICG, and the State coastal police, are now held.

Related:

2023 marks the 15th anniversary of the tragic terror attacks on Mumbai, and **Israel has officially designated Lashkar-e-Taiba (LeT) as a terror organization.** The action was taken without any request from India's government.

- Updating the security system:** Coastal police stations and surveillance infrastructure under a Coastal Security Scheme (CSS) were set up. Radar stations came up along the coastline. Automatic Identification Systems and Joint Operation Centres (JOCs) were also set up.
- Coastal radar chains were set up. **The National Command and Control Communications Intelligence Network (N3CIN), the Maritime Domain Awareness Plan, and the Information**

Management and Analysis Centre (IMAC) also came into play.

- The Indian Navy has established **four Joint Operations Centers (JOC) at Mumbai, Visakhapatnam, Kochi, and Port Blair, ensuring an increased deployment of security forces and surveillance equipment.**
- The appointment of the country's first **National Maritime Security Coordinator (NMSC)** reflects the serious intent of the Government of India (GoI) to address maritime security challenges. It is a step in the right direction.

Way Forward:

- After an extensive vulnerability/gap analysis, one of the most significant achievements has been the **integration of all maritime stakeholders**, including several State and Central agencies, into the new coastal security mechanism. As a result, **good coordination, synergy, and understanding** between all agencies now exist.
- Requirement of Training:** The Coast Guard acknowledges improvements in the security architecture, particularly inter-agency cooperation, but points out that those high-technology initiatives alone will not ensure foolproof security. The States Marine or Coastal police have to play a major role; for this, they must be trained, equipped, and motivated.

PEPPER IT WITH:

International Maritime Boundary Line, EEZs of India, National Command and Control Communications Intelligence Network (N3CIN)

Peace Agreement with the United National Liberation Front (UNLF)

News Excerpt:

The Union Government of India and the State Government of Manipur signed a Peace Agreement with the United National Liberation Front (UNLF), Manipur's oldest valley-based **armed group**.

About the news:

- The Union Home Ministry has recently signed agreements with several armed groups in the northeast to end militancy and promote regional development.
- It is the first time a valley-based Manipuri armed group has agreed to return to the mainstream. It is a **banned organization under the Unlawful Activities**

(Prevention) Act (UAPA), and this ban has been extended for **five** years recently.

- There has been a significant reduction in insurgency incidents in the last ten years. Also, in this period, Security Forces casualties and civilian deaths have decreased significantly.
- A **Peace Monitoring Committee (PMC)** will oversee the enforcement of the agreed ground rules.

Significance of the agreement:

- End of hostilities:** The agreement will not only bring an end to hostilities between UNLF and security forces, which have claimed precious lives on both sides over the last more than **half a century** but also provide an opportunity to address the longstanding concerns of the community.
- Set a precedent for others:** The return of UNLF to the **mainstream** will encourage other valley-based armed groups to participate in the peace process in due course.
- Ensure development:** The development is likely to be a significant step in **restoring peace and normalcy** in the State.

Limitations of Agreement:

- The biggest hurdle in the road to peace remains the **floating looted arms** numbering around 4,500 in various hands — militants, self-styled activist groups, and private militias.
- The **terms of the agreement are not known**. The involvement of militants in the latest ethnic conflict may complicate the issue further.
- If criminal cases are withdrawn, then **similar concessions** have to be given on the other side to the Kuki militants. More problematic would be the withdrawal of cases on serious crimes.

Challenges in implementing the Agreement:

- The primary issue is the **multiplicity of stakeholders and the divergent interests** of different groups. Diverse demands from various ethnic and/or tribal communities in regions like Manipur and Nagaland are difficult to reconcile.
 - Each group has distinct historical grievances, aspirations, and demands, making it hard to arrive at a resolution that satisfies all parties.
- The fragility of peace agreements also lies in their **vulnerability to disruptions** caused by extremist factions or splinter groups within these communities.
- Moreover, the implementation of peace agreements also faces challenges due to **historical distrust** between the communities and the government.
- External influences and geopolitical factors** may also play a role.

- The reluctance of neighboring countries to support peace processes or interference by external actors can destabilize the region and make implementing peace agreements a daunting task.

About the United National Liberation Front (UNLF):



Formation: The UNLF was formed in November **1964**. It set up its armed wing, the "Manipur Peoples' Army (MPA)" in February **1990**.

Objective: The UNLF favoured a long-term programme to secede from India, form an alliance mainly with China, and gradually capture political power with the help of an indoctrinated young population and the intelligentsia. It aimed to reclaim the **Kabaw Valley in Myanmar**.

Personnel and Weapons: The UNLF split into factions due to internal differences. Jointly, the two factions are estimated to have 400-500 personnel with over 500 weapons of mixed types.

Organizational Structure: The organizational structure of the UNLF comprises a chairman, a central committee (five members), a military affairs committee (three members), and a standing committee (four members). All of the **UNLF camps** were in Myanmar.

Linkages and Front Organizations: The UNLF, the **oldest valley-based armed group**, had significantly influenced public issues. Most of the impact was through the front organizations that it used to mobilize public protests on key matters.

Return to Mainstream: The senior **leaders** of the UNLF responded favorably to the Centre's offer to join the mainstream for the first time in 2020. More than 400 personnel with an equal number of weapons joined the peace process.

Way Forward:

- Following the recent signing of the Peace Agreement, around 25 leaders/cadres of **National Revolutionary Front Manipur (NRFM- a Meitei UG outfit)**, along with 25 weapons, joined UNLF in the peace process.
- The development is likely to encourage other Meitei outfits to join the peace process and democratically pursue their demands, besides giving a boost to fulfill the Government's vision of an **"Insurgency free and prosperous North East."**
- The return of UNLF to the mainstream will also encourage other valley-based armed groups to participate in the peace process.
- The government and other involved stakeholders should work to **build trust for their policies** before implementing them in the conflicting regions.
- **External influences** in such matters should be forbidden so that separatist forces cannot interfere in peace-building activities.

PEPPER IT WITH:

Extremism in India, Assam and Bodo Accord, India-Myanmar Border infiltration, UAPA, NRFM

PRE-SHOTS

NATPOLREX-IX

News Excerpt:

The **Indian Coast Guard** conducted the 9th National Level Pollution Response Exercise (**NATPOLREX-IX**) off **Vadinar, Gujarat**.

About the exercise:

- It **aims** to assess the **preparedness** and **coordination** between various resource agencies to respond to a **marine oil spill** while invoking the **provisions of the National Oil Spill Disaster Contingency Plan (NOSDCP)**.
- The exercise involved the deployment of surface and air platforms by the Indian Coast Guard (**ICG**), such as Pollution Response Vessels (**PRVs**), Offshore Patrol Vessels (**OPVs**), indigenous Advanced Light Helicopter **Mk-III**, and **Dornier Aircraft** configured for marine pollution response.

Initiatives by ICG regarding oil spills:

- The **Indian Coast Guard** is the **central authority** responsible for responding to oil spills in Indian waters.
- They began protecting the marine environment in India's maritime zones on **March 7, 1986**, when this **responsibility** was **transferred** to them from the Ministry of Shipping.

- The ICG then developed the **National Oil Spill Disaster Contingency Plan (NOSDCP)** in a process ranging from 1993-1996.
- In addition to creating the NOSDCP, the Coast Guard has established **four Pollution Response Centers** in Mumbai, Chennai, Port Blair, and Vadinar.

NOSDCP:

- The National Oil Spill Disaster Contingency Plan prescribes **procedures** and provides **information** required in case of **oil spills**.
- India is a party to the United Nations Convention on the Law of the Sea (**UNCLOS**) and, thus, has an **obligation** to **protect** and preserve the **marine environment**.
- The **42nd Amendment** to the Constitution of India **obliges** the Indian state to **protect** and **improve** the environment.
- Thus, this plan is a measure of **the fulfilment** of the obligation of the State under **both the UN Law of the Sea Convention and the Constitution of India**.

LCA Tejas

News Excerpt:

The Indian Prime Minister completed a sortie in the **supersonic multirole fighter jet Tejas**, becoming the first head of government to achieve the feat.

About Tejas:



- It is a **4.5th Generation Light Combat Aircraft (LCA)** category Fighter jet.
- It is an **all-weather aircraft** that can work as both single and twin-seater jets.
- The aircraft is designed to be multi-role, **capable of easily taking up offensive air support, close combat, and ground attack roles**.
- It is also designed to undertake **Ground Maritime Operations**.
- This is the first time **an indigenous twin-seat fighter** has been designed, developed, and manufactured in India.
- It is equipped with **AESA Radar**, EW suite consisting of **radar warning and self-protection jamming, Digital**

Map Generator (DMG), Smart Multi-function Displays (SMFD), Combined Interrogator and Transponder (CIT), Advanced Radio Altimeter, and other advanced features.

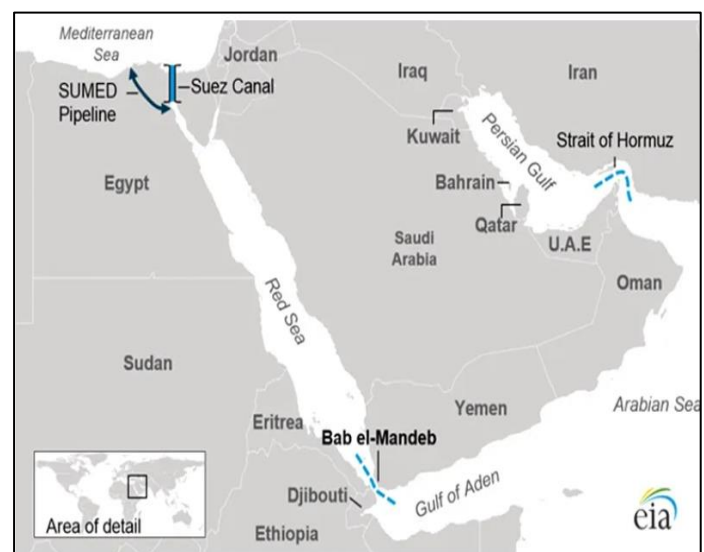
Features:

Smallest & lightest aircraft in its class	Dimensionally smallest and an extensive use of composite structure to make the aircraft lighter.
Excellent flight safety record	Remarkable achievement of accident free flying.
Compound Tail-Less Delta	Increases the capacity to carry wider range of weapons like Bombs, Missiles etc. It has the capability to fire variety of weapons with required precision and accuracy.
In Flight Refueling (IFR) Probe	Enhances range during mission undertaken. IFR capability has been proven for day and night operations.
Architecture-based	Indigenously designed which provides interoperability, scalability and portability.
Quadruplex-Redundant Fly-By-Wire	Fully redundant quadruplex digital fly-by-wire flight control system to ease handling by the pilot.
AESA RADAR	Electronically Scanned Array RADAR with low probability of interception.

Operation Prosperity Guardian

News Excerpt:

The U.S.A. has announced the creation of a multinational naval protection force to safeguard Red Sea commerce.



Why is this initiative needed?

- The Houthis rebel group has attacked multiple merchant vessels and forced companies to suspend shipping through these regions.

- In a related incident, Yemen's Houthi rebels seized a cargo ship **bound for India** in the crucial **Red Sea** shipping route and took its **25 crew members hostage**.
- This has raised fears of another dimension being added to the ongoing Gaza conflict.
- Seizing vessels in the sea like this can also involve many other countries with stakes in the maritime trade in the sensitive region.

About the initiative:

- It will involve the navies of **Bahrain, Canada, France, Italy, Netherlands, Norway, Seychelles, Spain, the UK, and the US**.
- The task force will fall under the **Combined Maritime Forces**, a multinational alliance tasked with defending the world's shipping lanes, such as the **southern Red Sea, the Gulf of Aden, and the Bab-el-Mandeb**.

EXERCISES IN NEWS:

Name of the Exercise	Partnering Country	About
VAJRA PRAHAR	United States of America	<ul style="list-style-type: none"> • This is the 14th Edition of the Indo-US Joint Special Forces exercise. • It was conducted in Umroi Cantonment, Meghalaya. • It is a platform to enhance interoperability and strengthen defence cooperation. • Other Indo-US exercises: <ul style="list-style-type: none"> ◦ Army: Yudh Abhyas ◦ Air Force: Cope India
SURYA KIRAN-XVII	Nepal	<ul style="list-style-type: none"> • The 17th Edition of the Joint Military Exercise between India and Nepal army was conducted in Pithoragarh, Uttarakhand. • It is an annual event conducted alternatively in the two countries. • The exercise will concentrate on medical training, aviation-related topics, environment conservation, and the use of drones and counter-drone measures. • The exercise aims to improve cooperation in counterterrorism operations in hilly areas and jungle warfare.
AUSTRA-HIND	Australia	<ul style="list-style-type: none"> • Instituted in 2022, this was the second Edition of the Joint Military Exercise. • It is planned to be an annual training event to be conducted alternatively in India and Australia. • In 2023, it was conducted in Perth, Australia. • Casualty Management, Evacuation, Sniper Firing, Surveillance, etc were a part of the training exercise.
VINBAX	Vietnam	<ul style="list-style-type: none"> • Vietnam-India Bilateral Army Exercise (VINBAX) was instituted in 2018. • It is an annual training event conducted alternatively in India and Vietnam. • Ideas were exchanged on modern methods to construct roads, helipads, ammunition shelters, and observation posts in operational areas. • The Exercise will culminate with a Validation Exercise, wherein standards attained by both contingents will be showcased.

ART & CULTURE

Saint Mirabai

News Excerpt:

'Sant Mirabai Janmotsav' 2023 marks the **525th birth anniversary of Sant Mirabai**, which was celebrated with great pomp in Uttar Pradesh.

- During this event, the Indian PM also unveiled a **commemorative stamp and coin** as a tribute to Mirabai.

About Mirabai:

- Mirabai was born in **1498** in the Kudki region of Marwar state, now known as the Pali district of Rajasthan, in the Rajput royal family.
- She was **married to the Prince of Mewar**, Bhoj Raj. After his death, she left the luxurious life and embarked on her spiritual journey.
- Mirabai became a **disciple of Ravidas**, a saint from a caste considered "untouchable".
- Mirabai is well known for her fond love towards **Lord Krishna**.
- She composed innumerable bhajans expressing her intense devotion. Her songs openly challenged the norms of the "upper" castes and became popular with the masses in Rajasthan and Gujarat.
- She advocated for social issues like **inequality prevailing due to birth, poverty, age, and sex**.
- Her most famous **song is 'Payoji Maine Naam Ratan Dhan Payo'** and she is also mentioned in **Bhaktamal**, written by **Nabha Dass**.

Bhakti Movement in India:

- The Bhakti movement is also divided into two different ideological streams:
 - '**Saguna**' (those poet-saints who composed verses extolling a god with attributes or form)- The Saguna Bhaktas, like Tulsidas, upheld the caste system and the supremacy of the Brahmans and preached a religion of surrender and simple faith in a personal God, having a strong commitment towards idol worship.
 - '**Nirguna**' (those extolling a god without and beyond all attributes or form)- The Nirguna Bhaktas, like Kabir, rejected the varnashrama and all conventions based on caste distinctions.
- In Southern India:**
 - The Bhakti Movement originated in the Tamil region during the 6th-7th centuries A.D. The seventh to ninth centuries saw the emergence of new religious movements led by the **Nayanars** (saints devoted to Shiva) and **Alvars** (saints devoted to

Vishnu) who came from all castes, including those



BHAKTI MOVEMENT IN INDIA

considered "untouchable" like the Pulaiyar and the Panars.

- However, it gained prominence during the 12th century, when **Basavanna**, a minister in the **Kalachuri Dynasty**, initiated a significant phase of the Bhakti movement in the Kannada region.
- In Western India: 13th to 17th century**
 - In Maharashtra, the Bhakti movement gained momentum in the late 13th century, led by the Varkaris like **Saint Dyanadev, Namdev, Tukaram, Janeshwar, Eknath**, and women like **Sakkubai**.
 - They rebelled against societal norms and defied Brahminical dominations through their writings and poems.
- In Northern India: Tulsidas, Kabirdas, Ravidas and Surdas**
 - The Bhakti movement eventually reached North India until the 15th century.
 - For example, **Saint Ramanuja** introduced the **doctrine of Vishistadvaita**, which stood in contrast to the complete **mono-ism**.

Significance of the Bhakti Movement:

- Awareness:** Awakened Hindus and Muslims (through Sufism) to the futility of ritualism and superstitions.

- **Resistance to the Orthodox system:** One of the most significant social impacts was the rejection of caste distinctions by followers of the Bhakti movement. The practice of 'Sati' faced resistance, and the Bhakti saints emerged as social reformers condemning various social evils.
- **Life lessons:** The movement instilled a powerful message that promoted hard work, honest means of earning wealth, and social service to the poor. It emphasized humanitarian values, contentment, and self-control.

PEPPER IT WITH:
Important Bhakti Saints like Ramananda, Sankaradeva, Ramanuja, Basavanna

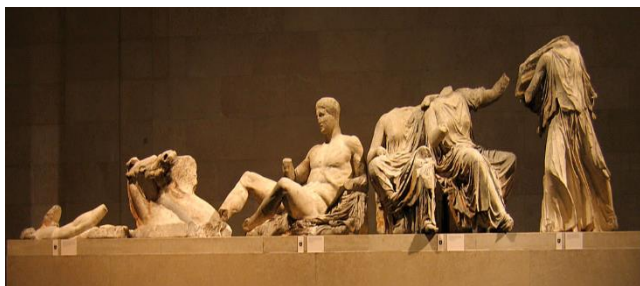
Parthenon Sculptures or Elgin Marbles

News Excerpt:

British PM Rishi Sunak cancelled a meeting with his Greek counterpart Kyriakos Mitsotakis over the status of the Parthenon Sculptures housed at the British Museum.

What are the Parthenon Sculptures?

- The Parthenon Sculptures at the British Museum are more than 30 ancient stone sculptures from Greece that are more than 2,000 years old.
- Most of them originally adorned the walls and grounds of the Parthenon temple on the rocky Acropolis hill in Athens.
- Completed in 432 BC, the temple is dedicated to the goddess Athena and is seen as the crowning glory of Athens' Golden Age.
- While one notable sculpture, which is 75 meters long, depicts a procession for the birthday of Athena, others show gods, heroes or mythical creatures.



Current Controversy and Colonial Legacy related to Parthenon sculptures:

- **British views on reaching of Parthenon sculptures to Britain:**
 - They were removed from the Parthenon in the early 19th century by Thomas Bruce, the 7th Earl of Elgin and then-British ambassador to the Ottoman Empire.

- The marble was taken to Britain and purchased by the British Museum.
- **Greek views on Parthenon sculptures reaching to Britain:**
 - **Lord Elgin (British Ambassador)** was granted a permit (firman), and between 1801 and 1805, removed about half of the remaining sculptures from the ruins of the Parthenon.
 - While Athens accused Lord Elgin of theft, he insisted he had permission to remove the marble from the Ottoman Empire, which used to control Athens at the time.
 - All of Elgin's collection of antiquities was then transported to Britain.
 - Athens has been demanding the return of the sculptures since it became independent.
 - The campaign gained momentum in the 1980s after Greek Oscar-nominated actress Melina Mercouri launched a movement for their return when she was the Culture Minister between 1981 and 1989.

About the History and Culture of Parthenon Sculptures:

- The Parthenon Sculptures are from **Athens, Greece** (then the city-state of Athens).
- The Parthenon was constructed **between 447 and 432 B.C.E.** under the direction of sculptor and architect **Phidias**.
- When Athens was selected as the new country's capital in 1834, most of the post-Roman period structures on the Acropolis were removed to accommodate further archaeological exploration and to return the site to a state that reflected Greece's idealized '**Classical**' past.
 - It became a **symbol for the modern nation-state of Greece** following independence from the Ottoman Empire in 1832.
- It was known as a period of **artistic and military triumph** and was considered the golden age of ancient Greece.

Garba dance included in the UNESCO list

News Excerpt:

Gujarat's folk dance 'Garba' was included in UNESCO's list of Intangible Cultural Heritage.

About Garba:

- It is a traditional Indian folk dance that honours, worships, and celebrates the **feminine form of divinity**.



- Garba originated in villages of Gujarat and is usually associated with Gujarati folk music. Despite new changes, the songs have managed to remain rooted in traditional culture.
- It symbolizes **celebration, devotion, gender inclusivity, and social equality, transcending boundaries.**
- Garba is celebrated for nine days during the festival of **Navaratri**, which is dedicated to the worship of Shakti.

About the News:

- Through its **intergovernmental committee, UNESCO's 2003 convention** on Safeguarding of the Intangible Cultural Heritage recognized 'Garba of Gujarat' during its **18th session in Botswana.**
- Garba of Gujarat is now India's **15th inscription** on the UNESCO Representative List of Intangible Cultural Heritage of Humanity. It described the 'Garba' as a **ritualistic and devotional dance** performed throughout the State of Gujarat and across India.
- Previous Indian inclusions** in the prestigious list include:
 - Durga Puja in Kolkata (2021)
 - Kumbh Mela (2017)
 - Yoga (2016)

About UNESCO:

- The United Nations Educational, Scientific and Cultural Organization (UNESCO) was born on **November 16 1945.**
- UNESCO has **195 Members** and **8 Associate Members** and is governed by the General Conference and the Executive Board.
- UNESCO's mission** is to contribute to building a culture of peace, the eradication of poverty, sustainable development, and intercultural dialogue through education, the sciences, culture, communication, and information.

UNESCO's 2003 Convention:

- The **Convention for the Safeguarding** of Intangible Cultural Heritage is a UNESCO treaty adopted by the **UNESCO General Conference on October 17 2003.**
- The convention **entered into force in 2006.**
- The list of the Intangible Cultural Heritage of Humanity of the 2003 UNESCO Convention currently has some **704 elements** corresponding to **5 regions** and **143 countries.**

Hornbill Festival 2023

News Excerpt:

Nagaland's Chief Minister has informed that **the U.S.A., Germany, and Colombia** would be the **partner countries for the Hornbill Festival 2023.**

- About the Hornbill Festival: Hornbill Festival is specifically celebrated on '**Nagaland Statehood Day**' (December 1), which continues for about 10 days.
- It is known as the "festival of all festivals," which is usually celebrated in Nagaland during **December** every year.

- It is held at Naga Heritage Village, Kisama, which is about 12 km from Kohima.



Associated

Tribes: Angami, Ao, Chakhesang, Chang, Dimasa, Kachari, Garo, Khiamniungan, Konyak, Kuki, Lotha, Phom, Pochury, Rengma, Sangtam, Sumi, Yumchungru, and Zeliang.

- Aim:** To revive and protect the rich culture of Nagaland and display its extravaganza and traditions.
- The festival gets its name from the Indian Hornbill, which is a bird among the folklores and tribes of Nagaland and can be commonly seen prancing around in the forests of Nagaland.

About Great Hornbill:

- IUCN status:** Vulnerable.

- Other Hornbill species found in India:**

- Rufous-Necked Hornbill (*Aceros nipalensis*): Vulnerable status
- Wreathed Hornbill (*Rhyticeros Undulatus*): Vulnerable status



- Location:** The great hornbill is native to the forests of India, Bhutan, Nepal, mainland Southeast Asia and Sumatra. Its distribution is fragmented in the Western Ghats and the foothills of the Himalayas.
- Social Relations:** In Nagaland's indigenous traditions, the Great Indian Hornbill is considered sacred.
 - It is also known as the '**farmer of the forest**' as it helps conserve ecological balance and habitats.
 - It is predominantly **frugivorous** (predominantly feeding on fruits) but also preys on small mammals, reptiles, and birds.
- The great hornbill is long-lived, living for nearly 50 years in captivity.

2000-year-old Copper coins found at Mohenjo-Daro

News Excerpt:

Archaeologists have discovered a remarkably unusual cache of 2000-year-old coins within the remains of a Buddhist shrine at Mohenjo-Daro in Pakistan.

About the news:

- The coins and the stupa are expected to belong to the **Kushan Empire**, a mainly Buddhist polity and the controller of a large territory ranging from the Aral Sea through areas including present-day Uzbekistan, Afghanistan, and Pakistan into northern India.
- Reason for the Green colour of coins:** These coins are made of copper. **When copper is exposed to air in the presence of moisture, it leads to corrosion. This process, over time, leads to copper turning greenish.** (Corrosion refers to the process of slow deterioration of metals)



About Mohenjo-Daro:



- This site contains the remnants of one of the oldest civilizations, i.e. **Indus Civilization**.
- The name "Mohenjo-daro" literally means "**the mound of the dead**" in the local Sindhi language.
- Like other Indus sites, Mohenjo-Daro also boasts of elaborate town planning, 90-degree street grids, a developed drainage system, and monumental buildings such as the **Great Granary and the Great Bath**.
- It was designated a **UNESCO World Heritage site in 1980**.

Kambala Festival

News Excerpt:

The Namma Kambala **buffalo race** is making its debut in Bengaluru this year.

About Kambala Festival:

- Kambala is a traditional folk sport of **buffalo race** events popular in **coastal Karnataka districts**.
- Kambala is derived from 'gampa kala,' where gampa refers to **wet mud or slush**. It is performed on **two parallel race tracks** filled with slushy water.
- History:** The **Hoysala Kings began the event** to see if buffaloes could be taught and used in battle. The Hoysalas were astounded by the buffaloes' speed and began racing them against one another.
- Between November and March, the Kambala season typically **begins after the southwest monsoon**, after the **tilling season** and **before seedling planting**.
- Buffaloes:** Buffalo owners and farmers in the region take excellent care of their buffalos, and the best of them are **well-fed, oiled, and groomed** in preparation for a race in Kambala.
- Major Events:** Over 45 villages in coastal Karnataka celebrate the Kambala race yearly.



Legalization of the Kambala Festival:

- Animal Welfare Organizations have criticized the sport, claiming it involves **animal cruelty**.
- The celebration of Kambala was stopped in Karnataka based on an order of the **Supreme Court dated May 7, 2014**.
- After the Tamil Nadu government used an ordinance to **legalize Jallikattu in 2017**, the State Government of Karnataka was forced to pass an ordinance **legalizing Kambala in 2017**.
- The Prevention of Cruelty to Animals (Karnataka Second Amendment) Act, 2017**, now **allows** it to be done with limits to prevent animal cruelty.
- The present edition in Bengaluru is part of an **effort to popularise it** among the **urban community** and promote it for **Indian buffalo breed conservation**.

Kairouan Walls

News Excerpt:

Tunisia's historic Kairouan walls collapse.

About Kairouan walls:

- Founded in 670, Kairouan flourished under the **Aghlabid dynasty** in the 9th century. Despite transferring the political capital to Tunis in the 12th century, Kairouan remained the Maghreb's principal holy city.
- It served as the capital of the Muslim world in North Africa for four centuries until Tunis became Tunisia's political capital in the 12th century.
- Recognized as a **UNESCO World Heritage site in 1988**.
- Its rich architectural heritage includes the **Great Mosque**, with its marble and porphyry columns, and the 9th-century **Mosque of the Three Gates**, distinguished as the oldest known mosque with a sculpted facade.



Channapatna toys

News Excerpt:

According to UNODC, Toys made in Channapatna have become part of children's academic activities in Afghanistan.

About Channapatna toys:

- The famed wooden toys are made by artisans in and around Channapatna town (popularly known as "Gombegala Ooru" or the "Toy-City" of Karnataka) of Ramanagara district, which is around 60 km from Bengaluru.
- The craft has diversified over time; besides the traditional ivory wood ("Aale mara"), other woods—including rubber, sycamore, cedar, pine and teak—are also used.



- Channapatna toys are **ideal for children** as **chemical dye is not used** in them, and they come **without sharp edges**.
 - The history of Channapatna toys can be traced back to Tipu Sultan's reign, former ruler of the Kingdom of Mysore in the 18th century. He was so impressed with the craftsmanship of Persian artisans that he invited them to train local craftsmen in toy-making. This marked the beginning of the Channapatna toy industry.
 - This traditional craft of Karnataka has received the **Geographical Indication (GI) tag in 2005**.
- Gift to Afghanistan:**
- Karnataka State Rural Livelihood Mission donated Channapatna toys to many children in Afghanistan through the Ministry of External Affairs.
 - Over 500 toys made of ivory and wood were sent to children in Afghanistan, and local women's self-help groups specially made educational and entertainment toys for children aged up to 12.
 - Rs 4.98 crore** has been released for the toys cluster at Channapatna.
 - It is a joint venture by the **State and Union governments**.
 - According to the **United Nations Office on Drugs and Crime (UNODC)**, hundreds of children in Afghanistan have been affected by drug abuse.
 - These Channapatna toys forge a **bridge of hope and empowerment**, bringing India and Afghanistan closer in a heartwarming embrace of shared humanity.

United Nations Office on Drugs and Crime (UNODC):

- Established in **1997**.
- Headquartered in Vienna**, it operates 20 field offices.
- Objectives:**
 - Educate people** throughout the world about the **dangers of drug abuse**.
 - Strengthen international action** against illicit drug production and trafficking and drug-related crime.

Guru Teg Bahadur

News Excerpt:

The Prime Minister recalled the martyrdom of Guru Teg Bahadur (1621-1675), calling the ninth Sikh Guru a beacon of courage and strength.



About Guru Tegh Bahadur:

- Guru Tegh Bahadur (1621- 1675) was born as Tyaga Mal.
- He came to be known by the name Teg Bahadur (Mighty of The Sword), given to him by his father, Guru Hargobind Sahib (Sixth Guru), after he showed his bravery in a battle against the Mughals.
- He was the ninth of ten Gurus of the Sikh religion.

His contribution towards society:

- He built the city of **Anandpur Sahib**, which is located in the Ropar district (bordering Shivalik Hills and Sutlej River) in Punjab. Here the last two Sikh Gurus lived and where Guru Gobind Singh Ji founded the **Khalsa Panth** in 1699.
- He is remembered for giving up his life for freedom of religion as he was resistant to the forceful conversions of '**Kashmiri Pandits**' and '**non-Muslims**' to Islam during Aurangzeb's reign.
 - Due to this, he was publicly beheaded on **November 24, 1675**, on the orders of the **Mughal emperor Aurangzeb** in Delhi for refusing to convert to Islam.
 - This day is observed as the '**Shaheedi Divas**' of Guru Tegh Bahadur. **Even though there is still confusion about the date.**
 - **Gurudwara Sis Ganj Sahib** (Chandni Chawk, Delhi) marks the place of his execution.
- He contributed over **100 poetic hymns to Granth Sahib**, covering various topics, such as the nature of God, human attachments, body, mind, dignity, service, etc.

8th Wonder of the World: Angkor Wat

News Excerpt:

Angkor Wat, located in Cambodia, has recently earned the world's prestigious title of the **8th wonder**.

Art and Heritage at Angkor Wat:

- The Angkor Wat, built by King Suryavarman II in the 12th century, was the first Hindu temple dedicated to Vishnu.
- It was gradually converted into a major **Buddhist temple** by his successor, **Jayavarman VII**, who also built the famous Buddhist temple of Bayon nearby.
- It is famous for its statue of **eight-armed Vishnu**, also believed and worshipped by the locals as their protecting deity.
- The Hinduism to Buddhism transition is evident in the **intricate carvings** that adorn the temple walls. They depict scenes from **Hindu and Buddhist mythology**.
- They include the well-known **Angkor Wat Temple** and the **Bayon Temple in Angkor Thom**, which has numerous **sculptural decorations**.
- It is a famous place globally and has **surpassed Pompeii to be the eighth Wonder of the World**. It's a massive religious monument and UNESCO World Heritage Site, covering about 500 acres.



What are the criteria for selection of the New Wonders of the World?

- The criteria for selecting the new wonders have always been **debated** over the years. (no specific criteria)
- According to "New 7 Wonders", the factors considered include the **time span** that covers **human history**, a **structure** that humans must have built, **full-scale geographic dimension**, **artistic and cultural values**, **presenting diversity**, being **universally recognizable**, etc.

GOVERNMENT SCHEMES

'AGNI' Initiative

News Excerpt:

Recently, the **Central Council for Research in Ayurveda Sciences (CCRAS)** launched the **"Ayurveda Gyan Naipunya Initiative" (AGNI)** for physicians practising in the field of Ayurveda.

Central Council for Research in Ayurvedic Sciences (CCRAS):

- It is an autonomous body of the Ministry of AYUSH (Ayurveda, Yoga & Naturopathy, Unani, Siddha and Homeopathy), Government of India.
- It is an apex body for the formulation, coordination, development and promotion of research on scientific lines in Ayurveda and Sowa-Rigpa, a system of medicine.

Aim of AGNI Initiative:

- To promote research for **mainstreaming pragmatic Ayurveda practices** through scientific validation and evidence-based appraisal.
- To provide a **platform to Ayurveda practitioners** for reporting their innovative practices & and experiences in various disease conditions.
- To promote the **culture of reporting evidence-based practice** among Ayurveda Practitioners.
- To document the reported **successful therapeutic regimens for various disease conditions** involving Single drug/ Formulation/ Procedures for education and academics.
- To identify the interested Ayurveda practitioners for **collaboration in creating a database through applications and capacity building** through training in research methods and good clinical practices.

PM-ASHAA scheme

News Excerpt:

The Central Government asserts ample pulse stocks under the Price Support Scheme (PSS) for market intervention.

- It is considering restructuring PSS and Price Stabilization Fund (PSF) to improve inventory and procurement management for effective market price control.

About the news:

- The **PSS** became part of the broader **PM-ASHAA scheme** in September 2018.
- Under the **revised PSS**, the overall **procurement** quantity by the Central Government is **restricted to**

25% of the actual production of the commodity for that particular season.

- Both PSS and PSF cater to farmers' need to get a remunerative price and shield consumers from excessive speculation.
- A move has been initiated to bring PSF back into the agriculture ministry.
- The **Standing Committee of Parliament** recently recommended bringing the **PSF and PSS under one roof**.

Price Stabilization Fund (PSF):

- The Price Stabilization Fund (PSF) was set up in 2014-15 under the **Department of Agriculture, Cooperation & Farmers Welfare (DAC&FW)**.
- The PSF scheme was transferred from DAC&FW to the **Department of Consumer Affairs (DOCA)** w.e.f. 1st April, 2016.
- Objectives:**
 - To promote direct purchase from farmers /farmers' association at farm gate/Mandi.
 - To maintain a strategic buffer stock that would discourage hoarding and unscrupulous speculation.
 - To protect consumers by supplying such commodities at reasonable prices through calibrated stock release.

Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA):

- The PM-AASHA is a transformative agricultural scheme introduced in **2018** under the aegis of the **Ministry of Agriculture & Farmers Welfare** in India.
- This was launched to **secure equitable and remunerative prices** for the nation's hardworking farmers.
- It aims** to enhance agricultural productivity and reduce the cost of cultivation, boosting and securing farmers' income in the long run.
- PM-AASHA is a beacon of hope designed to alleviate the economic challenges faced by those who toil tirelessly to feed the nation.

Components of PM-AASHA:

- The three components outlined under the scheme are the Price Support Scheme (PSS), the Price Deficiency Payment Scheme (PDPS), and the Pilot of the Private Procurement and Stockist Scheme (PPSS).
- PSS, PDPS, and Pilot PPSS are implemented by the **Department of Agriculture, Cooperation & Farmers Welfare**.

Price Support Scheme (PSS)	Price Deficiency Payment Scheme (PDPS)	Private Procurement & Stockist Scheme (PPSS)
<ul style="list-style-type: none"> It involves the physical procurement of pulses, oilseeds, and copra by Central Nodal Agencies, with active participation from State governments. Objective: Through physical procurement, the scheme aims to ensure fair prices for these commodities and provide price support and stability to farmers cultivating pulses, oilseeds, and copra. The National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) and the Food Corporation of India (FCI) are designated for PSS operations at the state and district levels. The Central Government bears procurement expenses and losses incurred during the process, supporting agricultural income. 	<ul style="list-style-type: none"> PDPS covers notified oilseeds, offering direct payments to pre-registered farmers equal to the difference between the Minimum Support Price (MSP) and the selling/modal price. PDPS aims to ensure fair income for oilseed farmers by bridging the gap between MSP and market prices. Transparent auctions in notified market yards facilitate this process, and payments are directly transferred to farmers' registered bank accounts. Market-oriented Approach: The scheme uniquely excludes physical crop procurement, focusing on compensating farmers for price differentials at market disposal. The inclusive coverage benefits various oilseed farmers, contributing to agricultural growth and income stability. Central government support follows established norms, ensuring scheme effectiveness and longevity. 	<ul style="list-style-type: none"> PPSS introduces private sector participation in procurement operations as a pilot initiative, complementing PDPS for oilseeds. The scheme, akin to PSS, substitutes it in pilot districts, with private agencies procuring commodities at MSP when market prices fall below, adhering to PPSS guidelines. The primary objective of PPSS is to pilot private sector involvement in procurement operations, learning from the experience to expand private participation potentially. PPSS, as a component, aims to facilitate private stockists in procuring oilseeds at MSP from registered farmers during market price declines, fostering market-driven approaches and supplementing government-led procurement initiatives.

Drawbacks of PM-AASHA:

- **Limited crop coverage:** PM-AASHA focuses on pulses, oilseeds, and Copra, neglecting other vital crops. This leaves farmers cultivating different crops without the scheme's benefits.
- **Operational challenges:** Efficient implementation hinges on seamless procurement, logistics, and timely payments. Inadequate infrastructure and operational issues in certain regions hinder the scheme's success.
- **Administrative overhead:** Scheme management entails significant administrative burdens, such as farmer registration, procurement oversight, and payment processing, requiring substantial resources.
- **Market distortions:** PSS interventions may disrupt markets by government agencies procuring large quantities, potentially sidelining private traders and impacting open market price discovery.
- **Resource allocation:** PM-AASHA involves substantial funds. Ensuring efficient resource use and preventing misuse pose critical challenges for the government.
- **Dependency on government:** While offering crucial support, the scheme may foster farmers' reliance on government intervention for price stability and income security, lacking long-term sustainability.

AI-based software 'Gajraj'

News Excerpt:

Indian Railways develops 'Gajraj' AI software using optical fibre cable (OFC) to **prevent train-elephant collisions** in multiple states.

About the news:

- The software triggers alerts within **200 meters**, detecting suspicious movements near railway tracks using AI and OFC.
- 'Gajraj' distinguishes between elephants, other animals, and humans by identifying variations in optical signals.
- Alerts are sent to **locomotive pilots**, control room personnel, and section station masters upon detecting movement.
- There is a critical need for the initiative, as **45 elephant fatalities** in train accidents in the past three years.
- The software, successfully tested in **Assam**, is set to be deployed across 700 km of elephant corridors in **multiple states** within the next eight months.

Elephant Corridors in India:

- Elephant corridors can be described as a **strip of land** that enables elephant movement between two or more friendly habitats.
- Elephant corridors have increased to **150 against 88** registered by the Government of India in 2010. The elephant population in the country is estimated to be over **30,000**.
- A new elephant corridor report released by the Central Government showed a **40 %** increase in elephant corridors across **15 elephant range states** in India.
- The east central region** contributed to 35 %, that is, 52 corridors, while the northeast region was the second largest with 32 %, meaning 48 corridors in total.
- Southern India** registered 32, which is 21 % of the elephant corridors, while **northern** India was lowest with 18 corridors or 12 %.
- The increase in the elephant corridors also reflected that elephants have expanded their ranges in the **Vidarbha region of Maharashtra**, neighbouring **Chhattisgarh** and **southern Maharashtra** bordering **Karnataka**.

Indian Forest & Wood Certification Scheme (IFWCS)

News Excerpt:

The Ministry of Environment, Forests and Climate Change (MoEFCC) has launched the Indian Forest & Wood Certification Scheme.

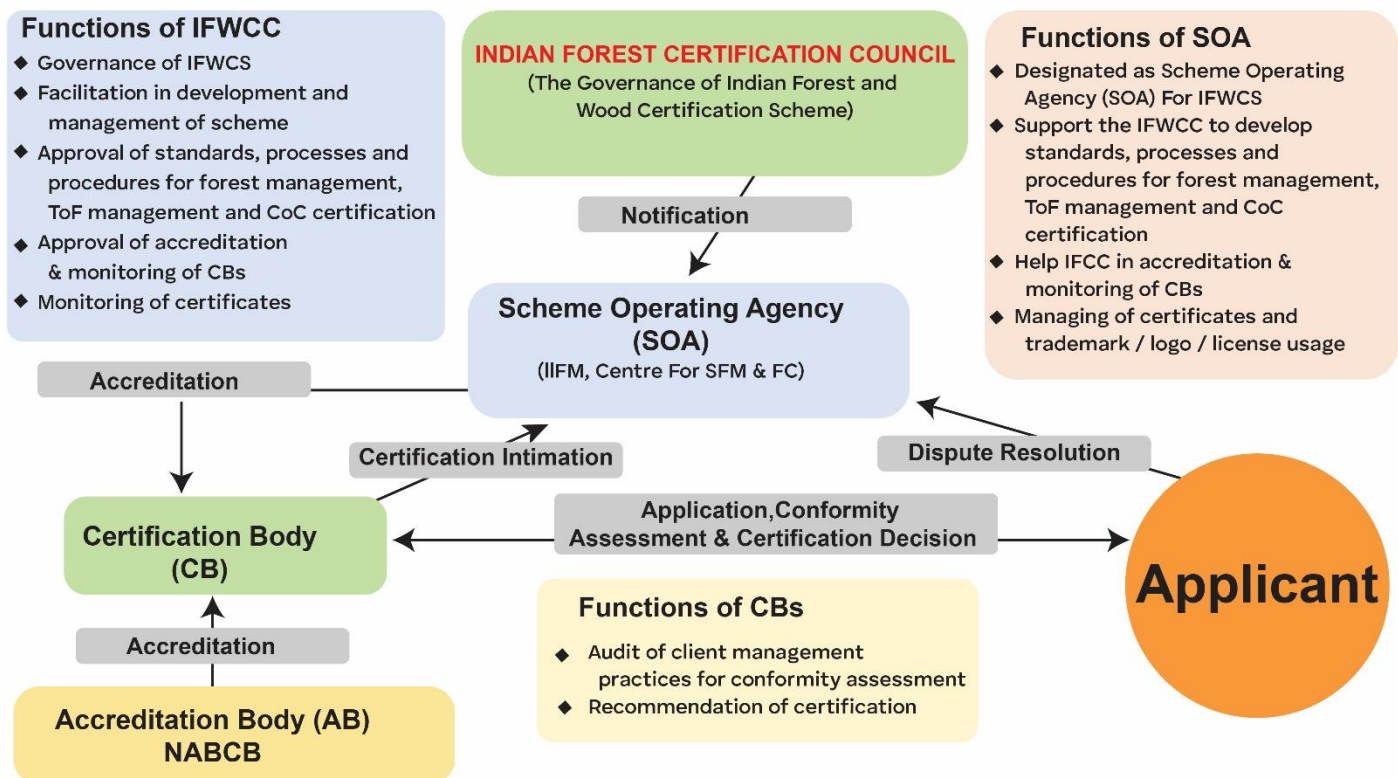
About IFWCS:

- It is India's national forest certification scheme launched to promote sustainable forest management (SFM), agroforestry, and the management of trees outside forests in the country.

Features:

- Certifications:** The scheme includes voluntary **third-party forest management certification**, tree outside forest management certification (**ToF**), and chain of custody certification (**CoC**).
- Market incentives:** It will provide **market incentives** to various entities that will work as responsible forest management and agroforestry practices in their operations.
- Basis of Scheme:** Forest Management certification is based on the **Indian Forest Management Standard**, consisting of -
 - 8 criteria,
 - 69 indicators and

Indian Forest and Wood Certification Scheme - IFWCS - (MoEF&CC)



Overview of Indian Forest and Wood Certification Scheme (IFWCS)

www.ksgindia.com

DELHI VN: 9717380832 & DELHI ORN: 9811293743 | JAIPUR: 8290800441 | PATNA: 7463950774 | RANCHI: 9939982007 | BHOPAL: 7509975361 |
INDORE: 7314977441 | BENGALURU: 7619166663 | HYDERABAD: 79960 66663 | IMPHAL: 9650245599 | SRINAGAR: 98712 35599 | MUMBAI: 9871265599

- 254 verifiers.
- A **separate Trees Outside Forests Standard** has also been introduced as a part of the scheme.
- **Applicability:** IFWCS is applicable across the country, both in **forest areas** and **TOF plantations** on **government, private, agroforestry** and other lands.
 - The certification applies to both **timber** and **non-timber forest produce (NTFP)**.
- **Administered by:**
 - The scheme will be **overseen by** the Indian Forest and Wood Certification Council (**IFWCC**).
 - It will be **operated by** the Indian Institute of Forest Management (**IIFM**), Bhopal, designated as the **Scheme Operating Agency (SOA)**.

Tax Inspectors Without Borders (TIWB)

News Excerpt:

Tax Inspectors Without Borders (TIWB) launched a program in Saint Lucia.

About the news:

- **India** has been chosen as the Partner Administration and will provide Tax Experts for this program.
- In collaboration with the TIWB Secretariat and support of the UNDP Country Office, Barbados, and the Eastern Caribbean, India aims to aid Saint Lucia in strengthening its **tax administration** by transferring technical knowledge and skills to its tax administration and sharing best practices.
- This programme is expected to be of 12-18 months' duration.
- The program will focus on the effective use of the automatic exchange of information under the **Common Reporting Standard (CRS)** framework.

About Tax Inspectors Without Borders (TIWB):

- It is a joint initiative of the **Organisation for Economic Cooperation and Development (OECD)** and the **United Nations Development Programme (UNDP)** supporting countries in **building tax audit capacity**.
- **Aim:** To transfer technical know-how and skills to developing countries' tax auditors and share general audit practices.
- **Objective:** To facilitate well-targeted, specialized tax audit assistance in developing countries worldwide.
- TIWB Programmes complement the broader efforts of the international community to strengthen **cooperation on tax matters** and contribute to developing countries' domestic resource mobilization efforts.

GIAN Scheme

News Excerpt:

The central government approves **the fourth phase** of the roll-out of the Global Initiative on Academic Network (**GIAN**) scheme.

About the Scheme:

- The GIAN scheme **aims** to attract **international scientists** and **entrepreneurs** to India's higher education institutions, enhancing the country's **academic resources**, accelerating **quality reform**, and elevating India's **scientific and technological capacity** to global excellence.
- The scheme will include all **IITs, IIMs, Central Universities, IISc Bangalore, IISERs, NITs**, and **IIITs**, followed by good **State Universities** with significant spinoffs.
- **Foreign faculty** will be involved as distinguished adjuncts, visiting professors of practice, and delivering short or semester-long courses.
- The **Ministry of Education (MoE)** is preparing to restart the fourth phase of the Global Initiative of Academic Networks (**GIAN**) eight years after its brief discontinuation during the COVID period, following a recommendation from the National Institute of Educational Planning and Administration (**NIEPA**).
- The **funding** for the courses by the Institutes shall be **partially** supported through various schemes, including but not limited to-
 - **Plan / Non-Plan Funds** of the Institute
 - Other designated funds from **TEQIP, UGC, AICTE, DST, DSIR** and other Government entities
 - **Sponsorships** from various agencies like industry/foundations
 - Fees from participants and other sources.

Key findings about the scheme:

- Since the inception of GIAN, the Central government has spent **at least 126 crore** in payment to support foreign **faculty's travel and honorarium**.
- Each foreign faculty member is paid **\$8000** for a **week** of teaching and **\$12,000** for conducting a **two-week course**.
- Since 2015-16, 1,612 foreign faculty members have visited India to deliver courses from 59 countries.
- **39%** of 1,772 courses were delivered in Indian Institute of Technology (**IIT**) campuses, while 241 (**10.8%**) occurred in **State Universities**. The rest were conducted at the Indian Institutes of Information Technology (**IIITs**), Indian Institute of Sciences (**IISc**), Indian Institutes of Science Education and Research (**IISERs**), management institutes, Central universities,

and All India Council of Technical Education's (AICTE) engineering colleges.

- Up to **41.4%** of academicians visiting India belonged to the **U.S.**, while the rest consisted of experts from the **U.K., Germany, Canada, France, Italy, Nordic countries, China, Japan** and **Taiwan, ASEAN** countries, and others.
- Up to **72,000** Indian students directly **benefitted**.

Issues with the scheme:

- IITs** are already very **well-funded**, and several foreign faculties regularly come there. However, there is a shortage of **faculty** and **expertise** in the **State Universities** and **regional colleges**.
- Many foreign faculty members are reluctant to **upload videos** of their lectures and research for public online consumption.

Way Forward:

- We need to make more efforts for renowned faculties to visit **State universities** and **smaller colleges**, which require more exposure to high-quality lecturership.
- The **MoE** has now insisted in this fourth phase, approval process that those experts who will allow **video recording** and **optional web-casting** of their course will be given **preference**.
- MoE is also planning to make the **repository of GIAN lectures** available to universities across India through an **online consortium** to be used as a teaching and assessment **tool**.

Pro Bono Legal Services Programme (Nyaya Bandhu)

News Excerpt:

Ministry of Law and Justice has released the Pro Bono Legal Services Programme statistics.

1. Pro Bono Legal Services Programme:

- It was launched in **2017**.
- Under it as of **30th November, 2023** -
 - 10629 advocates** have directly registered across **24 State Bar Councils**.
 - 89 Law schools** have joined the **Pro Bono Club Scheme**.
 - 22 High Courts** have constituted **Pro Bono Panels** in which 1354 advocates have enrolled.
- The scheme is being offered under the **umbrella scheme** "Designing Innovative Solutions for Holistic Access to Justice" (**DISHA**), launched for **2021-2026** by the **Ministry of Law and Justice**.
- The Nyaya Bandhu programme is **aimed at** -
 - Enhancing **"access to justice"** for **marginalized sections** of the society.

- State's **constitutional obligation** to provide **"free legal aid"** for all.
- Definition of "Applicant"**: An applicant includes any individual who is marginalized or disadvantaged as per the definition laid out under **Section 12** of the **Legal Services Authority Act 1987**. It includes -
 - Member of a Scheduled Caste
 - Member of a Scheduled Tribe
 - Victim of trafficking in human beings or beggars as referred to in Article 23 of the Constitution
 - Woman or a Child
 - Person with disability
 - Person in custody
 - An industrial workman
 - Victim of a mass disaster, ethnic violence, caste atrocity, flood, drought, earthquake or industrial disaster
 - A person with an annual income less than as specified under the law
 - Other (such as senior citizens)
- Definition of "Advocate"**: Any lawyer with a valid practicing **license** registered with any State Bar Council is eligible to volunteer his/her legal services.
- The **Nyaya Bandhu app** aims to improve access to justice by enabling marginalized individuals, known as "Applicants," to connect with volunteered "Advocates" through a mobile application.
- The programme seeks to establish an institutional structure promoting pro bono culture in India.
- The programme facilitates the delivery of quality legal assistance to marginalized communities and also ensures that lawyers who volunteer their valuable time and efforts towards this public service are duly recognized for their contribution.

2. Pro Bono Club Scheme:

- It has been conceptualized to strengthen the existing pro bono programme by **integrating law schools** and **students** within its fold.
- Selected **law students** (known as 'Pro Bono Associates' or PBA) are **part of Pro Bono clubs** attached to law schools and helmed by a dedicated faculty in charge.
- Key objectives of Pro Bono Club:**
 - To improve efficiency and quality of pro bono legal services by assisting pro bono advocates through law students.
 - To instill in young legal minds their responsibility to community by understanding and practicing pro bono legal services for the unassisted and disadvantaged persons in the societies.

• Activities of Pro Bono Clubs:

- Pro Bono Litigation Assistance
- Community Care Legal Assistance (CCLA)
- Research, Documentation & Reporting
- Promote Alternative Dispute Resolution Mechanism
- Recognition and Awards for PBAs and Alumni Nyaya Bandhu Advocates

3. Pro Bono Panels:

- To strengthen the Nyaya Bandhu network, the Department of Justice has set up and integrated **pro bono panels of lawyers** in each **High Court** (curated and moderated by the respective High Courts), within its Nyaya Bandhu programme.
- It **envisages** integrating the Nyaya Bandhu programme within the institutional framework of the **justice system** in India.
- **Nyaya Bandhu Panel Framework at High Court:**
 - The implementation and moderation framework for this initiative is **web based**, with each High Court provided with a **unique login** to register the names of the Nyaya Bandhu panel members.
 - This database is simultaneously **embedded** within the **Nyaya Bandhu portal**, expanding its reach.

Established Provisions:

- The **Constitution** of India under **Article 39A** directs the State to provide **free legal aid** to the poor and weaker sections of the society, to promote justice based on equal opportunity.
- Further, **Articles 14 and 22 (2)** of the Constitution ensure **equality before the law**.
- Also, the United Nations Sustainable Development Goal (**SDG**) **16** underscores the obligation of States **"to ensure equal access to justice for all"**.

Qaumi Waqf Board Taraqqiati Scheme

News Excerpt:

Ministry of Minority Affairs has implemented the Qaumi Waqf Board Taraqqiati Scheme to provide financial assistance to State Waqf Boards.

More details on the news:

- Under the scheme, financial assistance is provided to **State Waqf Boards (SWBs)** to computerize and digitize Waqf records.

- The Ministry also supports the SWBs for the deployment of manpower, viz. Assistant Programmer, Survey Assistant, Accountant, and Legal Assistant, setting up of Video Conferencing Facility, Centralized Computing Facility (CCF) & Enterprise Resource Planning (ERP) Solution for modernizing and better administration of SWBs.
- During the **15th Finance Commission** period, fund provision for 2021-22 to 2025-26 under the Qaumi Waqf Board Taraqqiati Scheme (QWBTS) is Rs. 70 crore.
- Under the scheme, funds are provided to Waqf Boards as per the **defined modules of the scheme** on receipt of the proposal. Further amounts are released only on receipt of UC of previous releases.

Waqf:

- It is a form of charitable endowment in Islamic law where property ownership is transferred to God (Allah), dedicating it permanently for **religious or charitable purposes**.
- The person making the waqf, known as the **waqif**, specifies the purposes for which the income generated by the property should be used.
- This may include supporting the poor and needy, maintaining religious institutions, providing education, or funding other charitable causes.
- The Jawaharlal Nehru government in **1954** passed the **Waqf Act**, leading to the centralization of waqfs. The **Central Waqf Council**, established in **1964**, serves as an advisory body to the Centre on matters related to waqf properties.

State Waqf Boards (SWBs):

- **State Waqf Boards** are **Statutory Bodies** constituted under **The Waqf Act, 1995** (as amended in Year 2013).
- SWBs are in most **States, and UTs** for the superintendence of Waqf properties fall under their geographical areas.
- These committees work towards **managing, regulating, and protecting** the Waqf properties by forming District Waqf Committees, Mandal Waqf Committees, and Committees for the individual Waqf Institutions.
- The State Waqf Board is empowered to decide any question which arises as to whether a particular property is a Waqf property or not or whether a Waqf is a **Sunni Waqf** or a **Shia Waqf**.

MISCELLANEOUS

Digital Twins

News Excerpt:

The Survey of India (SOI) has signed an agreement with Genesys International to create 3D maps of major cities and towns by 2035, in line with the National Geospatial Policy's goal of making 'Digital Twins' of urban areas.

About 'Digital Twins':

- The concept of '**digital twins**' refers to a **virtual replication of a real object, process, or service** at the core of the new digital revolution.
- **National Geospatial Policy** stated its goals to bring out a high-resolution topographical map of "**every inch**" of India by **2030** and make **digital twins** of India's major cities and towns **by 2035**.

Survey of India:

- It is the **National Survey and Mapping Organization of India under the Department of Science & Technology**, set up in 1767.
- It is the custodian of India's map and has been assigned the **nation's Principal Mapping Agency role**.
- Survey of India dedicates itself to advancing theory, practice, collection, and geospatial data applications and promoting an active exchange of information, ideas, and technological innovations.

National Geospatial Policy, 2022:

- The Policy is a citizen-centric policy that seeks to strengthen the Geospatial sector to support national development, economic prosperity and a thriving information economy.
- The Policy builds on a conducive environment generated by the "**Guidelines for acquiring and producing Geospatial Data and Geospatial Data Services including Maps.**"

Significance of Digital Twins:

- These maps can be used in various planning applications with high-resolution images.
- The digital twinning of urban areas will **help disaster management and provide details on vulnerability aspects** of properties and infrastructure through digital terrain/surface models.
- It can facilitate **better decision-making** for all kinds of facilities and services in urban areas, including traffic planning, real estate development, revenue (property tax) collection and ecological planning.
- It will also **help policymakers understand how infrastructure will function in different situations**,

such as high-footprint events, population increases, or natural disasters.

About The Agreement:

- The Agreement will allow **Genesys** to generate '**three-dimensional digital twins**' for 'major Indian cities and towns, develop an '**urban 3-D data model**,' and "license" geospatial data products to buyers in a '**content-as-a-service**' model.
- Genesys International **will use the SOI's nationwide state-of-the-art national survey network of over 900 Continuously Operating Reference Stations (CORS)** to provide real-time **location-based mapping and positioning services** with an **accuracy of + / - 3cm**, as well as host an array of different positioning services targeted to cater to the needs of different segments of the geospatial and scientific communities.

CORS (Continuously Operating Reference Stations):

- CORS is a GPS or GNSS reference station that continuously and permanently delivers real-time location information for a defined area.
- It is capable of **precise location-based services** that offer centimetre-level positioning services in real-time.
- The Survey of India will operate the CORS Network.
- The Survey of India has established **over 1,000 CORS stations** around the country.

Genesis International Private Limited:

- It is a **non-profit mapping company incorporated in 1997**.
- **Genesys** is a mapping company that uses **aerial and ground-mapping methods** to create digital maps.
- The company has built digital twins of **Ayodhya, the Dharavi slum cluster in Mumbai, Kochi, and Kanpur**, among other applications.

Future Endeavours:

- Combining the CORS technology with Genesys' mapping expertise improves the accuracy and reliability of geospatial data, opening up new opportunities for India's development.

ESIC bags 'ISSA Vision Zero 2023' Award

News Excerpt:

Employees State Insurance Corporation (ESIC) bags the 'ISSA Vision Zero 2023' Award at the 23rd World Congress on Safety and Health at Work in Sydney, Australia.

About the news:

- ESIC was awarded "ISSA Vision Zero 2023" as it had great success in outreach in the field of workplace safety and health by aligning the prevention strategy

besides post-accidental mechanisms for medical care and cash benefits to the workers and their dependents.

- "Vision Zero" is a transformational approach to the prevention of accidents at workplaces, integrating the three dimensions of safety, health, and well-being at all levels of work.

World Congress on Safety and Health at Work:

- First held in 1955, it is one of the largest international conferences for work health and safety.
- It has developed into a global forum where over 3000 participants exchange ideas, discuss research and best practices, and look at practical solutions to critical occupational safety and health issues.
- The motto of the 2023 World Congress is **Shaping Change: Collaborating for a Healthier and Safer World of Work.**

International Social Security Association (ISSA):

- It is the principal international institution bringing together social security agencies and organizations worldwide. Founded in 1927, it has headquarters at the International Labour Office in Geneva, Switzerland.
- The ISSA aims to promote dynamic social security as the social dimension in a globalizing world by supporting excellence in social security administration.
- The ISSA provides access to information, expert advice, business standards, practical guidelines and platforms for members to build and promote dynamic social security systems worldwide.

Indira Gandhi Peace Prize - 2023

News Excerpt:

The **Indira Gandhi Prize for Peace, Disarmament, and Development for 2023** has been jointly awarded to **Daniel Barenboim** and **Ali Abu Awwad**.

About the awardees:

- They were recognized for their work in bringing together **Israeli and Arab youth** and people for a **non-violent resolution of the Israel-Palestine conflict**.
- **Daniel Barenboim:**
 - He is an **Argentine-born** distinguished **classical pianist**.
 - He is well known for his relentless **use of music to foster harmony in West Asia**.
- **Ali Abu Awwad:**
 - He is an eminent **Palestinian peace activist** working tirelessly with the people of Palestine and Israel for a peaceful resolution of the ongoing conflict in the Middle East.
 - In 2014, he co-founded a local **Palestinian-Israeli initiative** called **Roots**, promoting understanding, non-violence, and transformation.

About the Indira Gandhi Peace Prize:

- This is **awarded annually** to a person or organization **without any distinction of nationality, race, or religion** in recognition of creative efforts towards enlarging the scope of freedom and enriching the human spirit **since 1986**.
- It consists of an **award of Rs. 2.5 million** and a trophy with a citation.

Langlands Program

News excerpt:

- Langlands Program is the World's Largest Math Project Connecting Number Theory and Harmonic Analysis.

About:

- Robert Langlands awarded the Abel Prize in 2018, initiated the Langlands Program in 1967, connecting **representation theory to number theory**.
- Langlands Program aims to find connections between **number theory** (study of numbers) and **harmonic analysis** (study of periodic phenomena).
- It bridges the gap between **discrete arithmetic** (numbers like integers) and **continuous mathematical** objects (like waves).

Significance of Programme:

- Andrew Wiles and Richard Taylor (The British mathematicians) used Langlands' conjectures to prove Fermat's final theorem **in 1994**.
- The Program has also assisted mathematicians in creating new automorphic functions from existing ones. They recognize that such possibilities could be critical in proving the Ramanujan conjectures, many of which remain unanswered.

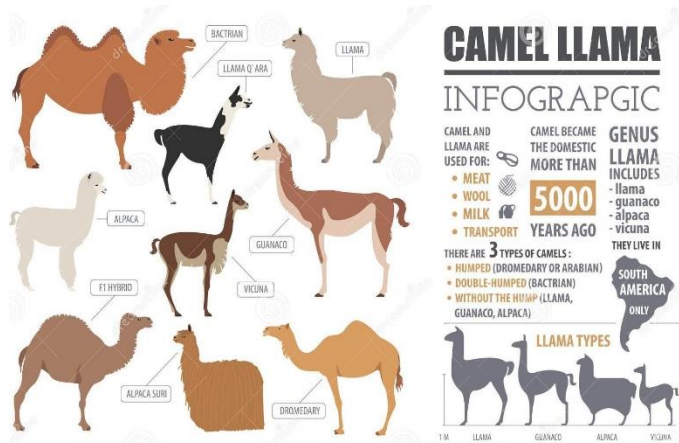
UN has declared 2024 the International Year of Camelids

News Excerpt:

The United Nations has declared 2024 as the International Year of Camelids (IYC 2024) to highlight the significant contributions of camelids – alpacas, Bactrian camels, dromedaries, guanacos, llamas, and vicuñas – to the livelihoods of millions in over 90 countries.

About Camelids:

- Camelids are a fascinating group of **even-toed ungulates belonging to the family Camelidae**.
- They possess remarkable adaptations that enable them to **thrive in arid and high-altitude environments, making them well-suited for harsh terrains across the globe**.
- There are two primary classifications within the Camelidae family-



Old World Camelids:

- These are primarily found in northern Africa and central Asia.
- Notable examples include **Dromedary Camels and Bactrian Camels**.

- **South American Camelids (New World Camelids):** This category includes llamas, alpacas, guanacos, and vicuñas. They are native to South America and exhibit their own distinct characteristics and adaptations.

Significance of camelids:

- **Importance in Livelihoods:** Camelids, thriving in harsh environments, play a crucial role in advancing Sustainable Development Goals (SDGs) addressing hunger, poverty eradication, women's empowerment, and sustainable ecosystem management, especially among Indigenous Peoples and local communities.
- **Resilience and Essential Resources:** These animals exhibit remarkable **resilience in extreme climates and provide essentials like milk, meat, and fibre where other livestock struggle**, significantly impacting the culture, economy, food security, and livelihoods, especially in Andean highlands and arid areas in Africa and Asia.
- **Goals of IYC 2024:** The International Year of Camelids aims to raise **global awareness** about their untapped potential, necessitating increased investment in the camelid sector.
- **Endorsement and Support:** The Food and Agriculture Organization (FAO) recommended the designation and endorsed by the UN General Assembly in 2020. Positive feedback from stakeholders, including the International Camel Organization (ICO), signifies recognition and support within the camelid community.

Meghalaya's Lakadong turmeric gets a GI tag.

News Excerpt:

The conferred Geographical Indication (GI) tag on Lakadong turmeric marks a significant milestone for Meghalaya, signifying a historic achievement in the state's cultural and agricultural domain.

- The GI tag has not only recognized Lakadong turmeric but also extended to other cultural treasures: Garo Dakmanda (traditional dress), Garo Chubitchi (an alcoholic beverage), and Larnai pottery made from black clay in Larnai village.

About the News:

Lakadong Turmeric:





- This specific turmeric variety is found in the Lakadong area of Jaintia Hills in Meghalaya.
- It is renowned for its high curcumin content, around 6.8 to 7.5%, which is significantly higher than other varieties.
- It generally shows a darker colour and is cultivated organically without using fertilizers.
- The GI tag is expected to assist farmers in marketing the authentic product and gaining customer access.




Curcumin:






- It is a **natural polyphenol compound** found in **turmeric**, a spice derived from the **Curcuma longa** plant.
- It is responsible for the vibrant **yellow colour** of turmeric and is known for its various **health-promoting** properties.
- Curcumin might offer potential benefits in managing **metabolic syndrome**, **reducing pain**, and aiding in managing **inflammatory** and degenerative **eye conditions**.

- **Garo Dakmanda:** It is a handwoven **ankle-length lower garment worn** traditionally by Garo women in Meghalaya. This traditional attire reflects the cultural heritage of the Garo community.
- **Garo Chubitchi:** This **alcoholic beverage** is a rice-based fermented drink consumed during feasts and ceremonies in the Garo community. Its recognition via the GI tag could help preserve its cultural identity and expand its market reach.
- **Larnai Pottery:** This pottery is made from black clay sourced from Larnai village and has been passed down through generations. The art form's recognition with the GI tag acknowledges its unique craftsmanship and cultural heritage.

SPECIES IN NEWS

Species	News Excerpt	Details
Gambusia Fish/ Mosquitofish: 	<p>A new study has revealed that the two species of mosquitofish have invaded various ecosystems across India.</p> <ul style="list-style-type: none"> To combat the mosquito problem, several governmental and non-governmental organizations in Andhra Pradesh, Odisha, and Punjab have released mosquitofish into nearby water bodies. 	<ul style="list-style-type: none"> Gambusia affinis and Gambusia holbrooki are two species of mosquitofish. <ul style="list-style-type: none"> Gambusia was first introduced to India in 1928, during the British reign to prey on mosquito larvae, decreasing the mosquito number as they have a high breeding capacity. Gambusia was no longer recommended by the World Health Organization as a mosquito control agent in 1982 due to the following concerns: <ul style="list-style-type: none"> Among the top 100 harmful invasive alien species due to Voracious eating habits and aggressive behaviour in newly introduced habitats. Poses a danger to the native aquatic biodiversity. <p>In 2018, the government of India's National Biodiversity Authority declared <i>G. affinis</i> and <i>G. holbrooki</i> as invasive alien species.</p>
Noa-Dihing Music Frog (Nidirana noadihing) 	<p>Scientists have identified a new 'Music Frog species in Arunachal Pradesh.</p>	<ul style="list-style-type: none"> Noa-dihing frog is named after the Noa-Dihing river of Arunachal Pradesh. This new frog comes from the genus Nidirana, which has been found for the first time in India. <ul style="list-style-type: none"> The <i>Nidirana</i> species is originally from Japan, Taiwan, China, Vietnam, Laos, and Thailand. This frog has "Rounded" snout and "smooth" skin with bony protrusions on its back.
North American Wolverine 	<p>The North American wolverine gained U.S. protection as a threatened species citing threats to the animal's snowy habitat from climate change.</p> <p>IUCN status: Least concerned.</p> <p>Classified as threatened only in Montana, Idaho, Wyoming and Washington states.</p>	<ul style="list-style-type: none"> It is the largest land-living species in the weasel family or mustelids. Ferrets, badgers, martens, otters are other members of mustelid family. Wolverines have a wide variety of nicknames: glutton, woods devil, Indian devil, ommeethatsees (a Cree Indian word), carcajou, quickhatch, nasty cat, and skunk bear. Range: Alaska, Canada, and Russia, Diet: Ferocious predators- prey mostly on mammals such as rabbits and rodents. Scavengers- eating the carrion (carcasses) of large animals.
Black leopards 	<p>Through video traps deployed for the ongoing tiger census, Odisha forest officials discovered two black leopards, or melanistic leopards in two separate jungle locales.</p> <p>Protection Status: IUCN status: Vulnerable</p>	<ul style="list-style-type: none"> A black leopard is usually called a black panther or jaguar. A black leopard is dark in color due to 'melanism'- it's a condition, wherein the whole skin of the animal, including its spots, is black. A black panther has darkish brown (or black) fur with black rosettes and is sometimes visible under favourable light conditions. Besides India, <i>Panthera pardus fusca</i> is also found in Nepal, Bhutan, and parts of Pakistan. Black leopards are found more in regions with the highest rainfall and dense foliage.

		<ul style="list-style-type: none"> They are found in all kinds of forests – rainforests, deciduous forests, and alpine coniferous forests. There are a total 9 subspecies of leopards found in the world: African, North China, Persian, Sri Lankan, Indian, Javan, Arabian, Indochinese, Amur
Red Panda: 	<p>In exchange for two Siberian Tigers, the Padmaja Naidu Himalayan Zoological Park sent two Red Pandas to Cyprus's Pafos Zoo.</p> <p>Protection Status:</p> <ul style="list-style-type: none"> Red Pandas: <ul style="list-style-type: none"> IUCN Red List: Endangered CITES: Appendix I Giant Pandas: <ul style="list-style-type: none"> IUCN Red List: Vulnerable CITES: Appendix I 	<ul style="list-style-type: none"> It is a small arboreal mammal found in Sikkim, Arunachal Pradesh, Darjeeling, and Kalimpong districts of West Bengal. It is the state animal of Sikkim. Outside India, it is found in Nepal, Bhutan, the northern mountains of Myanmar, and China. It thrives best at 2,200-4,800m in mixed deciduous and conifer forests with dense understories of bamboo. The world has two panda species: the Giant Pandas and the Red Pandas. India is home to both subspecies of Red Panda: <ul style="list-style-type: none"> Himalayan red panda Chinese red panda The Siang River in Arunachal Pradesh splits the two phylogenetic species.
Giant ancient salamanders 	<p>The video of giant ancient salamanders living inside caves in southwest China has sparked awe and concern within the scientific community.</p> <p>Protection Status: IUCN Status: Critically Endangered</p>	<ul style="list-style-type: none"> They are one of the largest amphibians (5.9 feet long and weighs 140 pounds) with a large head, small eyes, and dark, wrinkled skin. They have poor eyesight, so their skin is covered by sensory nodes that detect vibrations and help them find prey. Adults can absorb oxygen directly through their porous skin. These are mostly aquatic and live in cold, fast-flowing water where oxygen is in good supply. Salamanders live all over the world, including Europe, Asia, North America and South America. (USA has the largest population). Threats: Overexploited for the luxury food market, farming practices, over-harvested from the wild, habitat loss.
Indian Star Tortoise (<i>Geochelone elegans</i>) 	<p>The Border Security Force (BSF) has thwarted a cross-border wildlife smuggling attempt and rescued 296 Indian star tortoises that were being smuggled to Bangladesh.</p> <p>Protection Status:</p> <ul style="list-style-type: none"> Wild Life Protection Act 1972: Schedule IV CITES: Appendix I IUCN Red List: Vulnerable 	<ul style="list-style-type: none"> Indian star tortoises are mostly found in west Pakistan, Sri Lanka, and the central and southern regions of India. It usually inhabits dry, arid, open environments including grasslands and scrub woodlands. There are three major populations of the species — in the western part and the southern part of India, and Sri Lanka. It is extremely fragmented habitat is heavily impacted by rising urbanization and agricultural operations. 90% of the trafficking in star tortoises comes from the global pet market, according to the Wildlife Crime Control Bureau.
Indian Tent Turtles	<p>Directorate of Revenue Intelligence (DRI), Zonal Unit, Lucknow, seized 436 baby Indian Tent turtles.</p> <p>Protection Status: IUCN: Least Concern</p>	<ul style="list-style-type: none"> The species is native to India, Nepal and Bangladesh, with three subspecies recorded from the region viz., P. t. tentoria, P. t. circumdata and P. t. Flaviventer. The colour varies according to each subspecies. <ul style="list-style-type: none"> Tentoria: olive or brownish head with a red postocular spot, and the carapace is brown in colour.

	<p>Wildlife Protection Act, 1972: Schedule I CITES: Appendix II</p>	<ul style="list-style-type: none"> ◦ Circumdata: olive green head with pink postocular spot; the carapace is brownish olive green in colour. ◦ Flaviventer: brownish olive colour head with pink patch behind the eyes, the carapace is brownish olive. • Its habitats include still water pools on the riverside and slow-running water near the river banks.
<p>Santjordia pagesi</p> 	<p>Scientists discovered the rare St. George's cross medusa jellyfish near a Japanese volcanic crater in 2002. Now they have confirmed it is a new species altogether named Santjordia pagesi.</p>	<ul style="list-style-type: none"> • Name Origins: The name "Santjordia" is derived from Saint George in Catalan, symbolizing the distinctive cross-shaped stomach that sets this jellyfish apart. • Habitat: This jellyfish has been exclusively found at considerable depths of 2,700 to 2,800 feet near the Sumisu Caldera, a volcanic crater near the Ogasawara Islands, located around 600 miles southeast of Tokyo, Japan. • Potential Venom: It might possess a novel type of venom characteristic to cnidarians, indicating potential uniqueness in its venomous properties compared to other jellyfish species.
<p>Sangai (Rucervus eldii eldii)</p> 	<p>The Manipur government has conveyed concerns to the Centre regarding a hydroelectric modernization plan in the state's renowned Loktak Lake. Protection Status:</p> <ul style="list-style-type: none"> • IUCN Status: Critically endangered <p>Schedule 1 of the Wildlife (Protection) Act 1972</p>	<ul style="list-style-type: none"> • The Sangai deer is also called a dancing deer. It is the state animal of Manipur. • The Sangai deer has a very long brow line. It has uniquely distinctive antlers that can reach a height of 1 m or 100 cm. • The Sangai deer are only found in Keibul Lamjao National Park in Manipur. • A ten-day festival is celebrated every year from November 21st to November 30th. It is called the Sangai festival.
<p>Pangolin</p> 	<p>Genomic analyses reveal poaching hotspots and illegal trade in pangolins from Africa to Asia.</p> <ul style="list-style-type: none"> • Pangolins are among the most trafficked mammals in the world—with demand primarily in Asia and in growing amounts in Africa—for their meat and scales. 	<ul style="list-style-type: none"> ◦ Pangolins are nocturnal animals that live in burrows and eat termites and ants. They are also called scaly anteaters because of their preferred diet. • There are eight species of pangolin: ◦ 4 Species in Africa: Black-bellied pangolin, White-bellied pangolin, Giant ground pangolin and Temminck's ground pangolin. ◦ 4 Species in Asia: Indian pangolin, Philippine pangolin, Sunda pangolin and the Chinese pangolin. • It may thrive in a variety of environments, such as grasslands, agricultural areas, and bamboo forests, tropical forests. • The Indian pangolin is distributed throughout the Indian subcontinent.
<p>Ghol or Black spotted Crocker (Protonibea diacanthus)</p> 	<p>The state Government of Gujarat has announced the Ghol species as the State Fish of Gujarat at the Global Fisheries Conference India 2023.</p>	<p>About Ghol fish:</p> <ul style="list-style-type: none"> • It is widely distributed in the Indo-Pacific from the Persian Gulf to the Pacific Ocean. • It is exported to countries of south-east Asia (Hong Kong, Singapore and Malaysia). • Usage: <ul style="list-style-type: none"> ◦ Ghol fish's skin has been recognized as a good source of high-quality collagen (used for wine, beer and cosmetics). ◦ Traditional medicine (believed to prevent bleeding in patients with urinary problems). ◦ The heart of the Ghol fish is believed to boost immunity. ◦ Its fins are used to make soluble fins.

CONTEMPORARY ETHICS CASE STUDY

Q. You are currently posted as the DM of a district having a large population of a Rajput community. You belong to the same community however you do not subscribe to the views of casteism. One day your subordinate, the District Food & Supplies Officer (DFSO) comes to meet you to get some signatures on the files, and you share a friendly bond with him. He also belongs to the same community.

While having casual communication with DFSO, you noticed a file for a transfer of the ration shop from one village to another; you enquired about it verbally, and he told you that the fair price shop (FPS) owner was giving less grains than prescribed quantity so he suggested a transfer. You signed the document confirming his transfer.

On the next day, you came to know that the FPS owner against whom you have signed the transfer order has tried to commit suicide, alleging that he was already facing the social boycott on top of that, the transfer order by the DM will eventually lead to the collapse of his income. The Dalit owner of Fair Price Shop revealed that the ration cards of some individuals belonging to the Thakor community were invalid; therefore, he denied them the ration.



**SCAN THIS QR FOR
MODEL ANSWER**

Aggrieved by this, they collected the ration cards of all the villagers and passed a resolution against our shop.

This unfair act broke him financially, and he attempted suicide by consuming a poisonous substance. Thankfully, he survived, but his leg had to be amputated because of the venomous impact the substance caused.

His Son filed a police complaint against four persons belonging to the Rajput community. He has also lodged a complaint against you, citing provisions of the SC/ST act, for pushing his father to commit suicide by persuading villagers to boycott the shop. Sarpanch told a local newspaper that there were complaints from the villagers that they were not getting ration in proper quantity. Therefore, we demanded that the ration cards be transferred from his FPS to a nearby village. The FPS shop owner denied all these allegations, saying the boycott was due to the casteist mindset of the people and said, "We have proof of the delivery of the quantity of ration made by us."

Considering this case, answer the following questions:

- a. What are the options available to you to meet the above situation? Critically examine each of the options.
- b. What are the ethical dilemmas you are facing in such a situation?
- c. What course of action would you adopt to diffuse the above situation and come clean out of it?

(Answer in 250 words) 20

PHILOSOPHY OF THE MONTH

Can happiness be taught? We say YES!

News Excerpt:

A first-of-its-kind school for imparting lessons on **humanity and societal happiness** will take root in **Assam's Bodoland Territorial Region (BTR)** in 2024.

"Not everything that is faced can be changed, but nothing can be changed until it is faced"- James Baldwin.

This region has faced **ethnic conflicts and extremism** for years, and this has generated mistrust in the local population. The conflict is usually not about ethnic differences themselves but about **underlying** political, economic, social, cultural, or territorial matters.

Ethnic conflicts are often accompanied by **gross human rights violations**, such as genocide and crimes against humanity, and by economic decline, state failure, environmental problems, and refugee flows. **All of these factors lead to human suffering and scar people for generations.**

Thus, it is necessary to **correct past mistakes, apologize, and move on** by ensuring that the same mistakes are never repeated.

This "Happiness" school aims to:

- **Train community leaders to ensure happiness through** conflict resolution and peace.
- **Instil in youth the human values for** co-existence in a region and tolerance of people **of diverse faiths, cultures, languages, and ethnicities — all interdependent.**
 - Teach them to remove **conscious and unconscious biases** to help increase self-awareness and understanding of others.

This **method of conflict resolution** is familiar; South **Africa** offers a great precedent in this regard. **The formation of the Truth and Reconciliation Commission (TRC) in 1995-96 helped to deal with injustices that happened during the Apartheid years.**

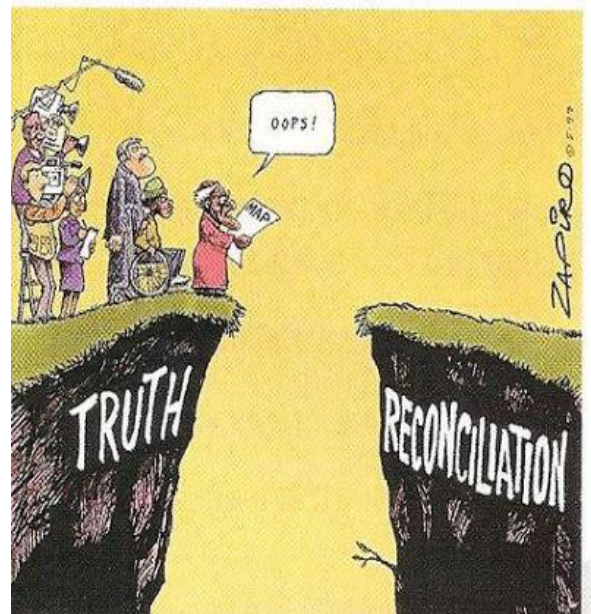
In a broad sense, the TRC was a success because it helped heal the nation of South Africa while simultaneously healing individuals. It did this by providing a forum through which people could proactively address the past to move forward.

The idea of "Ubuntu", or interrelatedness, is a primary reason for the effectiveness of the TRC in South Africa.

Ubuntu is a concept in which your relationships with other people shape your sense of self. It's a way of living that begins with the premise that **"I am" only because "we are."** This philosophy is the prime example of **"Ethics of Care"**.

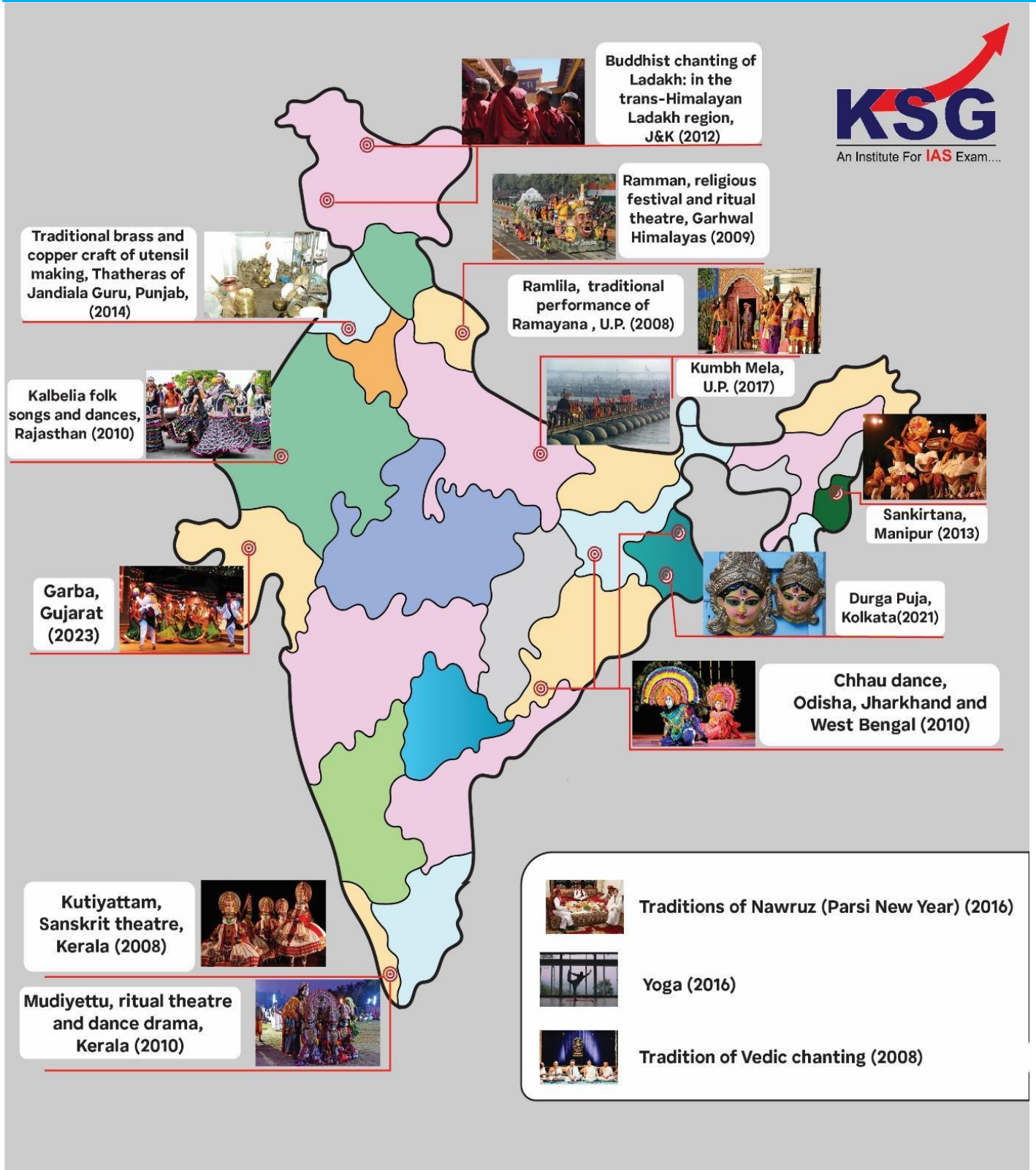
Over the past three decades, the same approach has been adopted in more than 40 countries, such as Canada, Australia, the Philippines, and South Korea.

Choosing a **restorative route** to deal with gross human rights violations rather than a **retributive route** has made all the difference.



MAP CONNECT

India



Buddhist chanting of Ladakh: in the trans-Himalayan Ladakh region, J&K (2012)

Ramman, religious festival and ritual theatre, Garhwal Himalayas (2009)

Ramlila, traditional performance of Ramayana, U.P. (2008)

Kumbh Mela, U.P. (2017)

Sankirtana, Manipur (2013)

Durga Puja, Kolkata (2021)

Chhau dance, Odisha, Jharkhand and West Bengal (2010)

Traditions of Nawruz (Parsi New Year) (2016)

Yoga (2016)

Tradition of Vedic chanting (2008)

Traditional brass and copper craft of utensil making, Thatheras of Jandiala Guru, Punjab, (2014)

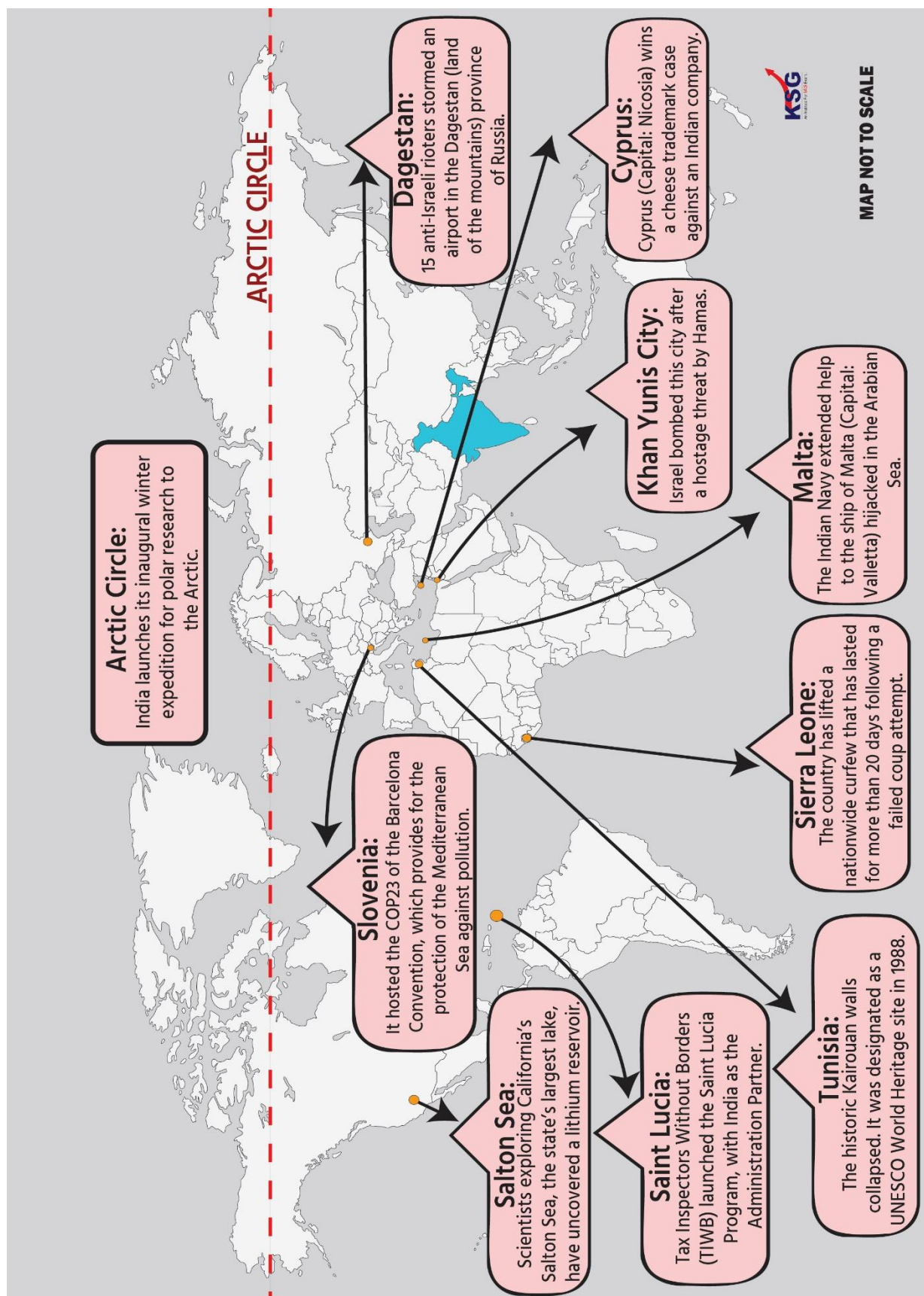
Kalbelia folk songs and dances, Rajasthan (2010)

Garba, Gujarat (2023)

Kutiyattam, Sanskrit theatre, Kerala (2008)

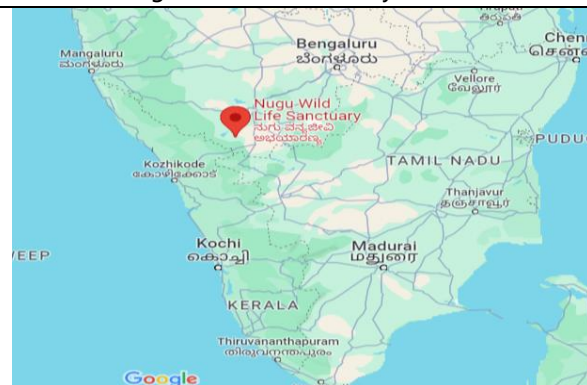
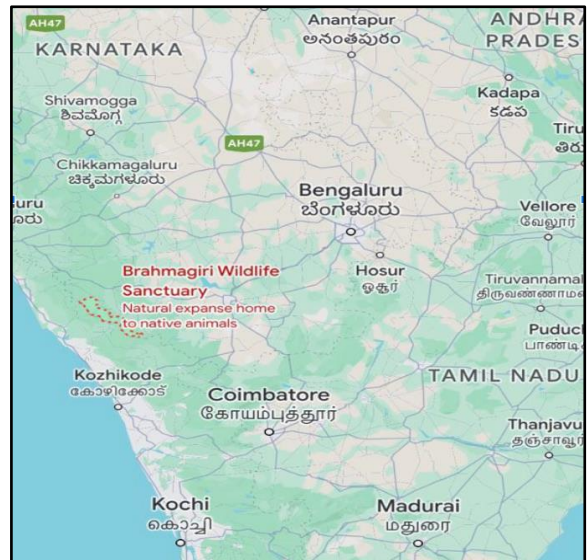
Mudiyettu, ritual theatre and dance drama, Kerala (2010)


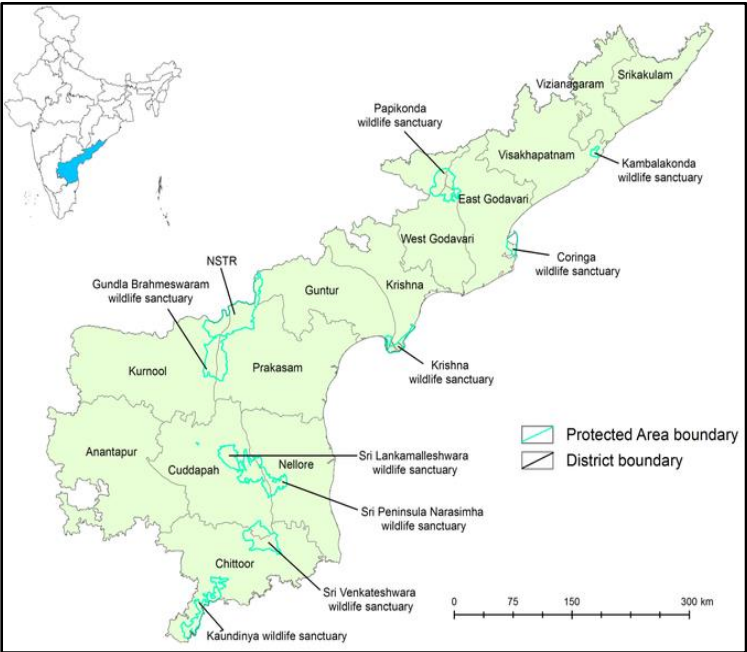
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An Institute For IAS Exam....

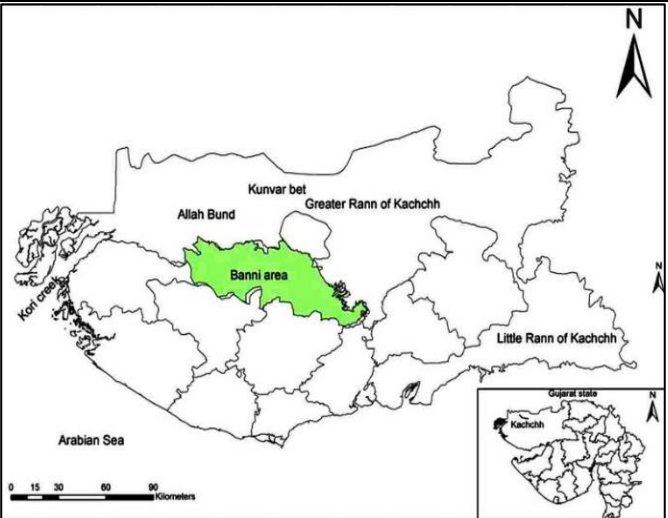
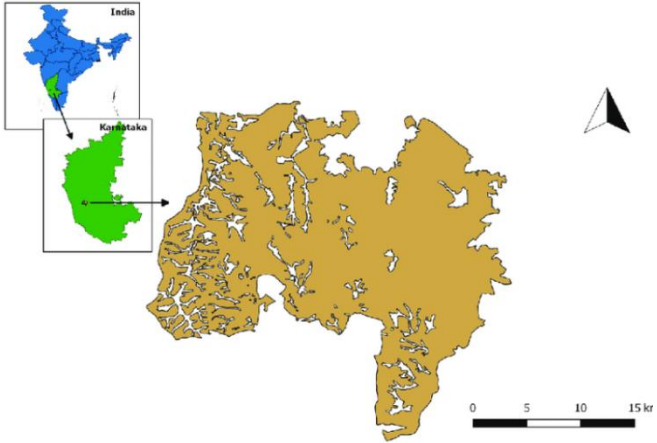


PROTECTED AREAS IN NEWS

Barapole River Makkoottam Brahmagiri Wildlife Sanctuary	<p>News Excerpt: Residents accuse the Makkoottam Brahmagiri Wildlife Sanctuary authorities of uprooting and destroying cassava crops grown by locals recently.</p> <p>About Brahmagiri Wildlife Sanctuary (BWS):</p> <ul style="list-style-type: none"> The BWS is located on the Karnataka-Kerala border, in the Kodagu district of Karnataka. It adjoins Aralam Wildlife Sanctuary in Kerala. It is separated from the Nagarhole National Park by a narrow strip of coffee estates and from the Pushpagiri Wildlife Sanctuary by a thick evergreen forest corridor and coffee estates. The region includes the entire forest areas of Brahmagiri Ghat and Urti Reserve Forests and was declared a sanctuary in 1974. <ul style="list-style-type: none"> River Barapole bifurcates Urti Reserve Forest and Brahmagiri Reserve Forest. It was declared an Eco-Sensitive Zone (ESZ) in 2017. <ul style="list-style-type: none"> The Sanctuary also acts as an important corridor for elephants to move between Rajiv Gandhi National Park and Talacauvery Wildlife Sanctuary in Karnataka and Wayanad and Aralam Sanctuaries in Kerala. The Sanctuary is a catchment for River Cauvery, an important River of Karnataka. Lakshmanthirtha and Ramathirtha are the tributaries of River Cauvery that originate from Brahmagiri Wildlife Sanctuary and many perennial streams also originate from the Sanctuary. Fauna: Tiger, Leopard, Wild Dog, Asiatic Elephant, Gaur or Indian Bison, Sambar, Lion Tailed Macaque, Nilgiri Langur Flora: Consists of evergreen and semi-evergreen forests interspersed with shola grasslands. <p>About Barapole River:</p> <ul style="list-style-type: none"> It is located in South Kodagu, at a distance of 27 km from Gonikoppal and 78 km from Madikeri. The turbulent river flows through the dense forests of Brahmagiri Wildlife Sanctuary.
Nugu Wildlife Sanctuary	<p>News Excerpt: The National Tiger Conservation Authority (NTCA) has recommended to the authorities that the Nugu Wildlife Sanctuary abutting the Bandipur Tiger Reserve be declared as a core critical tiger habitat.</p> <p>About Nugu Wildlife Sanctuary:</p> <ul style="list-style-type: none"> Nugu Wildlife Sanctuary is situated in Heggadadevanakote Taluka of Mysore district and comprises Lakshmanapura State Forest and adjacent revenue lands. This sanctuary is situated north of Bandipur National Park. The Ministry of Environment, Forests, and Climate Change declared Nugu Wildlife Sanctuary an eco-sensitive zone due to excessive commercial tourism, aiming to protect dense elephant populations.
Changthang Wildlife Sanctuary/Fir st Night Sky Sanctuary	<p>News Excerpt: South East Asia's first Night Sky Sanctuary - The Dark Sky Reserve will be a part of Changthang Wildlife Sanctuary.</p> <p>About Night Sky Sanctuary - The Dark Sky Reserve:</p>

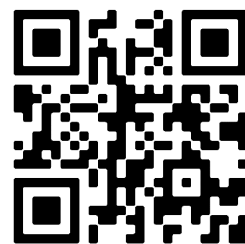


	<ul style="list-style-type: none"> It is dedicated to maintaining the night sky's darkness, allowing people to see celestial objects more clearly, making it an ideal spot for stargazing enthusiasts. It will boost astro-tourism in India and be one of the world's highest-located sites for optical, infrared and gamma-ray telescopes. A tripartite MoU was signed among the UT Administration, Ladakh Autonomous Hill Development Council (LAHDC) Leh and the Indian Institute of Astrophysics (IIA), Bengaluru. Location: It will be located at Hanle village in eastern Ladakh as a part of Changthang Wildlife Sanctuary and adjacent to the Indian Astronomical Observatory, the second-highest optical telescope in the world, of the Indian Institute of Astrophysics at Hanle at an elevation of 4500 metres. 
Kambalakonda Wildlife Sanctuary Eastern Ghats Nature Interpretation Center	<p>News Excerpt: A Nature Interpretation Centre, a new project of the Andhra Pradesh Forest Department will be located along the periphery of the Kambalakonda Wildlife Sanctuary in Visakhapatnam, Andhra Pradesh.</p> <p>About the Natural Interpretation Centre:</p> <ul style="list-style-type: none"> This centre will be a unique blend of nature and art, where conservation, education, and artistic expression will converge. It is a bilingual project in English and Telugu. This centre will showcase the critical ecosystems of the Eastern Ghats and also show the association of tribal communities with the forests. It is divided into different sections such as marine, coastal, and wetland ecosystems. The mangrove ecosystem replica is the highlight of the Nature Interpretation Centre. <ul style="list-style-type: none"> As the state of Andhra Pradesh is vulnerable to cyclones, a separate mangrove wall highlights how a mangrove forest stands like a wall of defence along the Andhra Pradesh coast protecting it from storms and cyclones. <p>About the Kambalakonda Wildlife Sanctuary:</p> <ul style="list-style-type: none"> It is named after the local hillock "Kambalakonda" and covers an area of 71 square kilometres. It is located in the Eastern Ghats region in Andhra Pradesh and was granted legal status in the year 2002. Fauna: <ul style="list-style-type: none"> The invertebrate fauna includes insects, arachnids, etc. 

	<ul style="list-style-type: none"> ○ Reptilian fauna is represented by Russell viper, Common Cobra, Chameleon, etc. ○ Avifauna includes Paradise flycatchers, Tree pie, Quails, Partridges, etc. ○ The mammalian fauna includes mammals like Leopard, Barking Deer, Jackal, etc and Indian Leopard is its Indicator species. <ul style="list-style-type: none"> ■ Indian Leopard is categorized as "Vulnerable" under the IUCN Red List. <p>● Flora: Kambalakonda Wildlife Sanctuary hosts dry evergreen forests with scrubs and meadows, a highly threatened and unique forest type seen only in Tamil Nadu and Andhra Pradesh in India.</p>
Banni Grasslands, Kutch	<p>News Excerpt: Cheetahs to return to Gujarat as Centre approves breeding centre in Banni grasslands.</p> <p>About:</p> <ul style="list-style-type: none"> ● Banni Grasslands used to be the habitat of cheetahs, which became extinct over time. ● To support the restoration of the cheetah population in the country, the state government of Gujarat prepared a proposal under the National Compensatory Afforestation Fund Management Authority (National CAMPA) for using Banni Grassland as one of the centres. ● The National Tiger Conservation Authority (NTCA) will monitor the progress of the project. ● Spanning 2,618 sq km, it is located along the northern border of Kachchh district in the state of Gujarat. ● They are among the largest 2 stretches of contiguous grassland in India. ● It is home to 40,000 Maldharis, a pastoral community known for rearing high-yielding buffaloes and cows. ● It consists of two ecosystems in juxtaposition, viz., wetlands and grasslands. 
Shettihalli Wildlife Sanctuary (SWS)	<p>News Excerpt: Recently, the National Green Tribunal (NGT) has asked the state government to resolve the issues in the delay in the notification of eco-sensitive zone (ESZ) status for SWS.</p> <p>ESZ is a designated area around a protected area where certain activities are regulated to minimize human impact and protect the surrounding environment.</p> <p>About SWS:</p> <ul style="list-style-type: none"> ● The geographic location of Shettihalli Wildlife Sanctuary in the central part of Western Ghats, Karnataka state. ● It is spread over parts of three taluks of Shimoga district: Shimoga, Hosnagara and Thirthahalli taluks. ● Declared Wildlife Sanctuary in 1974. ● Main rivers- Thunga and Kumadwhathi ● Fauna- Sambar, Indian Gaur, Tiger, Elephant, Sloth bear, etc. ● Mandagadde Natural Bird Sanctuary, is also a part of this Sanctuary. ● The vegetation in the region mainly consists of dry deciduous, moist deciduous and semi-evergreen types. ● The Sanctuary receives rainfall from southwest monsoon. 

THEMATIC ESSAYS

1. There is no truth. There is only perception.
2. We realize the importance of our voice when we are silenced.
3. The universe is under no obligation to make sense to you.



SCAN THIS QR FOR
MODEL CONTENT

MAINS PRACTICE QUESTION

- Q1. What do you understand by **Southern Annular Mode (SAM)**? Describe the significance of a recent study about the SAM by the Indian National Centre for Ocean Information Services (INCOIS) and discuss its impact on the Indian Ocean region.
- Q2. Climate change has increased the frequency and intensity of natural hazards, increasing the importance of **multi-hazard early warning systems**. Discuss the future approach to meet multi-hazard early warnings in the context of The Global Status of Multi-Hazard Early Warning Systems 2023 report.
- Q3. What do you understand by the **E-Prime layer**? Explain its development process and highlight its significance in the context of the earth's interior.
- Q4. **The dollarization** of local currencies is a recent trend in the world economy. Discuss its impact on the local and world economy.
- Q5. In recent years, **India-Australia relations** have charted a new path of transformative development. Analyze the above statement in the light of 2+2 Ministerial Dialogue and highlight the areas of cooperation between them.
- Q6. Recently, **gene therapy through CRISPR** has been explored to treat sickle cell anaemia. Critically analyze the importance and challenges associated with CRISPR technology.
- Q7. Discuss **antimicrobial resistance (AMR)** as a global health crisis. Highlight the efforts of India and the world to curb AMR and give effective suggestions to curb it.
- Q8. In light of the surge in India's Defence exports, highlight the importance of the **Aakash missile system** and mention how it contributes to India's Defence exports.
- Q9. A new technique called **Universal Dynamic Crosslinker (UDC)** has emerged to merge diverse plastics into strong and recyclable materials. Explain its various aspects and importance.
- Q10. In the past decades, there has been increased creation of **space or orbital debris**. What examples have led to space debris, and explain the various initiatives taken to ensure effective space debris resolution?
- Q11. Animal husbandry is a major component of agriculture. Discuss the role of animal husbandry in doubling farmers' income in light of the **Basic Animal Husbandry Statistics 2023 report**.
- Q12. **Global Standards for Millets**, often called 'superfoods', can boost sustainable agriculture and help achieve a healthier world. Elaborate.
- Q13. Explain the constitutional provisions and procedure for the **suspension of a Member of Parliament** from either of the houses.
- Q14. What is the need for **All India Judicial Services**, and how will it impact the transparency of the judicial system? Discuss the challenges associated with its implementation.
- Q15. The new era is the era of artificial intelligence, but there are many complexities and issues associated with it that are scary. In light of this statement, discuss the importance of the **Global Partnership on AI (GPAI)** and other initiatives to use such technology for the betterment of society and the world.

PT ORIENTED QUESTION

1. With reference to the Basic Animal Husbandry Statistics Report, 2023, consider the following statements:

1. It has been published by the Ministry of Fisheries, Animal Husbandry & Dairying.
2. It is released annually, based on the Integrated Sample Survey (ISS) outcomes.
3. According to the data published, Uttar Pradesh tops in both milk and meat production for the year 2022-23.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

2. The Bab-el-Mandeb Strait connects which two of the following water bodies:

- (a) Persian Gulf and Arabian Sea
- (b) Red Sea and Gulf of Aden
- (c) Arabian Sea and the South China Sea
- (d) Red Sea and the Mediterranean Sea

3. Operation Prosperity Guardian recently seen in the news is related to:

- (a) Formation of a Multilateral Naval Protection Force to protect the Red Sea
- (b) The unsuccessful attempt of a Maldivian Coup resisted by India
- (c) India's new anti-terrorist operation proposed in the SCO
- (d) New initiative of the United Nations to help guard children from child marriages.

4. Consider the following statements regarding the Constitutional Benches:

1. The Constitution of India (COI) provides for the setting of the Constitutional Benches.
2. According to the COI, a minimum of five judges needs to sit to decide a case involving a "substantial question of law".

Which of the statements given above is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 or 2

5. With reference to the concept of Dollarisation, consider the following statements:

1. It refers to using the U.S. dollar in addition to or in place of the country's indigenous currency.
2. It is common in developing nations with weak central monetary authority

3. The dollarised economy faces the loss of monetary autonomy.

4. The currency volatility increases after dollarisation.

Which of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) Only three
- (d) All four

6. Which one of the following statements are correct regarding COP 28?

1. Green Credits Initiative was launched by India in 2023-24 budget under Mission LiFE.
2. Phase-out of fossil fuels was included for the first time in the final outcome document by India.
3. India is not a signatory of Green pledge, Health pledge and Lead IT 2.0 initiatives.

Select the incorrect answer using the code given below:

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

7. With reference to the LEADS (Logistics Ease Across Different States) initiative, which of the following statements is/are correct?

1. LEADS 2023 report is released by the Union Ministry of Commerce and Industry,
2. It categorizes States based on their geographic demographics into 4 categories
3. This initiative promotes healthy competition between the states.

Select the correct answer using the code given below:

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

8. With reference to the Group of 20 (G20), which of the following statements is/are correct?

1. The G20 was created in 1999 for the Finance Ministers and the Central Bank Governors only.
2. There is no permanent secretariat or staff for the G20.
3. It consists of 19 countries and 2 organizations.

Select the correct answer using the code given below:

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

9. With reference to the weight of crude oil, consider the following statements:

1. Heavy crude evaporates slowly and contains material used to make heavy products like asphalt.
2. Light crude requires less processing and produces a greater percentage of gasoline and diesel than heavy oil.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 or 2

10. With reference to the Accredited Compensatory Afforestation (ACA) program, consider the following statements:

1. It allows project developers to purchase afforested land from public entities only.
2. It aims to prove that economic activities like coal mining can coexist with environmental preservation.
3. It was introduced by the Forest (Conservation) Rules of 2022.

Which of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

11. Which of the following countries constitutes the "Lithium Triangle"?

1. Chile
2. Bolivia
3. Brazil
4. Argentina

Select the correct answer from the code given below:

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

12. With reference to the All India Judicial Services (AIJS), Consider the following statements:

1. Article 312 of the Constitution provides for establishing AIJS.
2. AIJS shall not include any post inferior to that of a High Court Judge.
3. The Constitution provides for the appointment of District Judges by the Governor in consultation with High Court judges.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

13. Consider the following statements:

1. The suspension of MPs is mentioned under the Constitution and the parliamentary procedures.

2. A member can be suspended, at the maximum, for the remainder of the session only.

Which of the statements given above is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 or 2

14. Consider the following pairs:

Name of the Exercise India's Partnering Country

1. Vajra Prahar Nepal
2. Surya Kiran Mongolia
3. VINBAX Vietnam

How many of the pairs given above is/are correctly matched?

- (a) Only one
(b) Only two
(c) All three
(d) None

15. With reference to hydrographic surveys, consider the following statements:

1. It is carried out by ships, which use methods such as sonar to understand the various features of a water body.
2. Only 25 percent of the coastal countries have adequate hydrographic capabilities.
3. India does not have this capability.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

16. With reference to the Brahmagiri Wildlife Sanctuary, consider the following statements:

1. It is located in the Kodagu district of Karnataka.
2. It is an important corridor for elephants to move between Kerala and Karnataka.
3. The Sanctuary is a catchment for River Cauvery.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

17. With reference to the Banni Grasslands, consider the following statements:

1. This used to be the habitat of cheetahs before they became extinct over time.
2. It is home to Maldharis, a pastoral community
3. It consists of two ecosystems in juxtaposition, viz., wetlands and grasslands.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

18. With reference to Garba, consider the following statements:

1. Garba of Gujarat is now India's 15th inscription on the UNESCO Representative List of Intangible Cultural Heritage of Humanity.
2. Durga Puja in Kolkata and Kumbh Mela also feature in the same list.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 or 2

19. With reference to the Hornbill Festival, consider the following statements:

1. It is specifically celebrated on the 'Nagaland Statehood Day'.
2. It is known as the 'farmer of the forest'.
3. It is predominantly frugivorous.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

20. Consider the following statements:

1. Guru Teg Bahadur ji built the city of Anandpur Sahib.
2. He was publicly beheaded on the orders of the Mughal emperor Aurangzeb.
3. Gurudwara Sis Ganj Sahib in Delhi marks the place of his execution.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

21. Angkor Wat temple has recently earned the world's prestigious title of the 8th wonder of the world. It is located in which country?

- (a) Mongolia
(b) Cambodia
(c) Laos
(d) Fiji

22. With reference to the Indira Gandhi Peace Prize, consider the following statement:

1. This is awarded annually and can be given to a person as well as to an organization.
2. It is awarded without any distinction of nationality or religion.
3. 2023 prize has been awarded for the work towards non-violent resolution of the Russia- Ukraine conflict.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

23. With reference to the Lakadong Turmeric, consider the following statements:

1. This specific turmeric variety is found in the Lakadong area in Meghalaya.
2. It is renowned for its high curcumin content.
3. This curcumin is responsible for the vibrant yellow colour of turmeric.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

24. With reference to Sickle Cell disease, consider the following statements:

1. It is an inherited red blood cell disorder.
2. The sickled shaped cells, block blood flow to the rest of the body.
3. Only those who receive a pair of faulty genes from both parents have the symptoms.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

25. Consider the following statements:

1. Universal Dynamic Crosslinker is a technique to merge diverse plastics into strong and recyclable materials.
2. There is no compromise on their individual characteristics of the plastics being blended.

Which of the statements given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 or 2

26. With reference to the Diel Vertical Migration, consider the following statements:

1. It is defined as the migration up and down in the ocean all over the planet.
2. It is not a daily phenomenon.
3. It plays an important role in carbon sequestration all over the planet.

How many of the above statements are correct?

- (a) Only one (b) Only two
(c) All three (d) None

27. Consider the following statements:

1. Late Blight disease is a fungal disease.
2. It usually affects the tomato and the potato plant in humid regions.

Which of the statements given above is/are correct?

- (a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 or 2

28. With reference to Mpox, consider the following statements:

1. The first definitive proof of sexual transmission of Mpox in Africa has been found in Congo.
 2. It is a bacterial disease.
 3. Person to person transmission is possible.
- How many of the above statements are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

29. Consider the following statements:

1. A type of long-term debt instrument issued by a company to raise funds from the public is called a debenture.
 2. Convertible debentures usually give a high rate of return compared to non-convertible debentures.
- Which of the statements given above is/are correct?

- (a) 1 only

- (b) 2 only
(c) Both 1 and 2
(d) Neither 1 or 2

30. With reference to the SIDBI (Small Industrial Development Banks), consider the following statements:

1. It is a statutory body constituted under the Industries Development Board Act, 1995.
2. It is a wholly owned subsidiary of IDBI (Industrial Development Bank of India).
3. It promotes development and commercialization of indigenous technology and adaptation of imported technology.

How many of the above statements are correct?

- (a) Only one
(b) Only two
(c) All three
(d) None

ANSWER KEY:

1. C	7. D	13. B	19. C	25. C
2. B	8. D	14. A	20. C	26. B
3. A	9. C	15. B	21. B	27. C
4. C	10. B	16. C	22. B	28. B
5. C	11. B	17. C	23. C	29. A
6. B	12. B	18. C	24. C	30. A




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DELHI - 110009

📞 97173 80832 | 📞 88605 88805

BENGALURU
KORAMANGALA

A1, 2nd FLOOR, MAMMOOR PLAZA,
ABOVE AIRTEL OFFICE,
2nd CROSS ROAD,
5th BLOCK KORAMANGALA,
BENGALURU - 560095

📞 76191 66663 | 📞 080-4854 4393

BHOPAL
M.P. NAGAR

PLOT NO. 48, 1st & 2nd FLOOR,
BEHIND SARGAM TALKIES,
ZONE-II M.P. NAGAR, BHOPAL,
MADHYA PRADESH - 462011

📞 75099 75361 | 📞 91798 95361

PATNA
EXHIBITION ROAD

ABOVE TOYOTA SHOWROOM,
CEAT COMPOUND, EXHIBITION ROAD,
NEAR GANDHI MAIDAN, PATNA - 800001

📞 74639 50774 | 📞 0612-2500 961

JAIPUR
TONK ROAD

403-404, 4th FLOOR, APEX TOWER,
LAL KOTHI, TONK ROAD,
JAIPUR - 302015

📞 82908 00441 | 📞 0141-4052 441

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📞 90077 09895

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