

MAY/JUNE
2024

KSG

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CURRENT CONNECT



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WITH LOADED FEATURES

- **PRE-SHOTS** • **MAP CONNECT** • **PHILOSOPHY OF THE MONTH**
- **THEMATIC ESSAYS** • **CONTEMPORARY ETHICS CASE STUDIES**

NEW FEATURE: SNAPSHOT: THEMES OF THE MONTH

"Get your Mains Answer Evaluated through this Copy"

MESSAGE FROM DR. KHAN

Dear Students,

By the time this magazine reaches you, the 2024 prelims exam will be imminent. If you are among the candidates appearing, I wish you all the very best! May you achieve outstanding success.

Also, as this year's prelims papers circulate throughout ORN, it will be an opportune moment for all aspirants to assess their readiness and performance, or as I say, to self-audit.

When a determined student seeks guidance after investing significant resources and countless hours without success, s/he is encouraged to recognize the value of timely self-evaluation and self-auditing.

Never think of turning the time. Time your turn.

Self-audit is an integral aspect of meta-competition, where one **competes with oneself**. The term "audit," derived from "audire," means "to hear", and highlights the importance of **active listening and self-reflection**. Auditing involves an objective evaluation of one's performance and progress, limiting subjective perspectives. It is vital for enhancing one's self-potential.

Among the various types of audits, **operational audits** are vital at the personal level. They centre around **scrutinizing resource utilization, time management, and invested efforts**. This type of audit helps persons assess their execution and identify areas for improvement. This aspect of self-auditing ensures ongoing progress and keeps individuals on the right trajectory toward success.

It allows students to **make the necessary course corrections before external audits or assessments**. After all, **a bend is not an end, provided you turn in time**.

The practice of self-auditing holds immense value for students seeking academic success. By adopting an objective perspective and evaluating your performance, you can gain a sense of your **strengths, weaknesses, and possible areas for improvement**. Auditing is an **ongoing process** that instils a proactive mindset, allowing the concerned persons to steer their efforts towards success.

As you advance towards your goals, I hope you take the opportunity to conduct self-audits and succeed in the critical stages of your preparation.

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.

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

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

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

Team KSG

S. No.	GS -I	GS- II	GS- III	GS-IV	Mis
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

Legal position on live-in relationships

News Excerpt:

The **two-judge Bench** of the **Allahabad High Court (HC)** stated that a **Muslim cannot claim rights in a live-in relationship** when he or she has a **living spouse** and called such a relationship against the tenets of Islam.

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Live-in relation, i.e. cohabitation, is an arrangement whereby two people decide to live together on a long-term or permanent basis in an emotionally and/or sexually intimate relationship. The term is most frequently applied to unmarried couples.

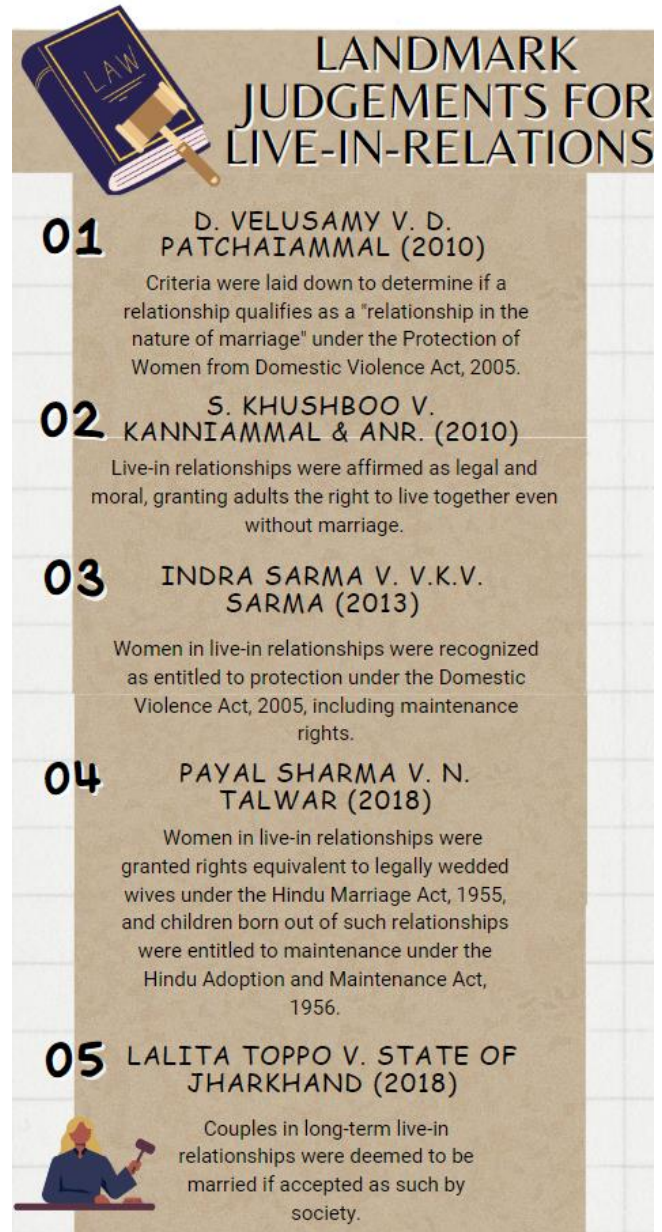
About the news:

- The petitioners claimed that they were adults in a live-in relationship and sought protection under **Article 21** of the Constitution (**protection of life and personal liberty**).
- The judges, however, stated that **Islamic tenets do not permit live-in relationships** during the **subsisting marriage**.
- The **position may be different if the two persons are unmarried** and the parties being major choose to lead their lives in a way of their own.
- The HC observed that **constitutional and social morality** in the matter of marriage institutions **must be balanced**, failing which social coherence for achieving the object of peace and tranquility in society will fade and disappear.
- The HC added that the **constitutional protection under Article 21** would **not lend un-canalized support** to such a right.

Recent orders regarding live-in relationships:

- In November last year, the **Supreme Court (SC)** stayed **orders** passed by lower courts, and the **Gujarat HC** awarded maintenance to a woman from the man she had been living with.
 - The SC order came after a Surat-based man challenged the HC order, arguing that their relationship could **not be termed a domestic relationship** as they were both married to other people at the time of cohabitation.
- In the same month, the **Punjab and Haryana HC** stated that a couple **living together without obtaining a divorce** from their previous spouse could not be classified as being in a "live-in relationship" or being in a union similar to marriage.
 - The court even felt that such an arrangement would amount to the **offence of bigamy** under **Sections 494/495** of the Indian Penal Code.

- Uttarakhand's Uniform Civil Code (UCC)** requires the **registration** of live-in relationships with the state administration.
 - Failure or even delay** in initiating the proceedings would invite a **jail term** of a **maximum of six months** as well as a **fine of ₹25,000**.
 - Couples planning to or already in live-in relationships will have to **register with district officials**.



LANDMARK JUDGEMENTS FOR LIVE-IN-RELATIONS

- 01 D. VELUSAMY V. D. PATCHAIAMMAL (2010)**
Criteria were laid down to determine if a relationship qualifies as a "relationship in the nature of marriage" under the Protection of Women from Domestic Violence Act, 2005.
- 02 S. KHUSHBOO V. KANNIAMMAL & ANR. (2010)**
Live-in relationships were affirmed as legal and moral, granting adults the right to live together even without marriage.
- 03 INDRA SARMA V. V.K.V. SARMA (2013)**
Women in live-in relationships were recognized as entitled to protection under the Domestic Violence Act, 2005, including maintenance rights.
- 04 PAYAL SHARMA V. N. TALWAR (2018)**
Women in live-in relationships were granted rights equivalent to legally wedded wives under the Hindu Marriage Act, 1955, and children born out of such relationships were entitled to maintenance under the Hindu Adoption and Maintenance Act, 1956.
- 05 LALITA TOPPO V. STATE OF JHARKHAND (2018)**
Couples in long-term live-in relationships were deemed to be married if accepted as such by society.

What have the Courts said about live-in relationships?

- As per **SC**, for a man and a woman **to live together is part of 'the right to life'**; therefore, a **live-in relationship is no longer an offence**.
- It has affirmed that live-in relationships are not illegal; however, it may be immoral from a societal perspective.

Adults have the right to live together even if they are not married.

- The concept of live-in relationships was recognized in the case of **Payal Sharma versus Nari Niketan by the Allahabad High Court.**

Legal framework for live-in relationship in India:

- While there is no specific law governing live-in relationships in India, certain provisions indirectly relate to them.
 - The **Hindu Marriage Act of 1955** provides for the registration of marriages and recognizes a woman's right to maintenance in case of separation.
 - The **Domestic Violence Act of 2005** and its amendments offer protection to women in domestic relationships, including those in live-in relationships, against violence and abuse.

PEPPER IT WITH:
Scope of Article 21, UCC, Domestic Violence Act of 2005

Way Forward:

- Overall, the **legal framework** for live-in relationships in India is **still evolving**, and more **comprehensive laws and policies** are **needed** to address the various issues and challenges couples face in such relationships.
- **Legal recognition and protection** for live-in relationships remain a topic of debate, and it's essential to stay informed about any developments in this area.

Supreme Court Restricts ED's Authority to Arrest PMLA Accused

News Excerpt:

The Supreme Court (SC) has ruled that when an accused responds to a summon and appears before the court, the **Enforcement Directorate (ED) must seek the court's permission to take the accused into custody.**

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More about the news:

- The SC Bench held that "If the accused appears before the special court pursuant to a summon, it cannot be treated as if he is in custody. Therefore, it is not necessary for the accused to apply for bail."
- The judgment stemmed from an appeal filed by **Tarsem Lal against the ED**, contesting a decision by the Punjab and Haryana High Court that denied him anticipatory bail.

About the Judgement:

- **Restriction on Arrest Power:**
 - The judgment restricts the ED's power to arrest individuals once a special court has taken cognizance of a case.

- The ED must separately apply for custody of a person appearing in court, demonstrating specific grounds necessitating custody.
- **Exemption from Personal Appearances:** Accused individuals who appear in a special court following summons may be exempted from future personal appearances, provided they comply with the court's directives.
 - **Procedure for Non-Appearance:** If an accused fails to appear after being summoned, the special court may issue a bailable warrant followed by a non-bailable one.
- **Custodial Interrogation:**
 - The ED must demonstrate specific grounds necessitating custodial interrogation to obtain custody of an individual who appears in response to a summons.
 - Custody will only be granted if the court is satisfied with the necessity for custodial interrogation, thereby protecting the right to liberty.
- **Further Investigation:** If the ED wishes to conduct further investigation into the same offence, it may arrest a person not named as an accused in the complaint under Section 44(1) (b) of the PMLA, provided the requirements of Section 19 (procedures of arrest) under the Act are met.

What is the PMLA?

- The anti-money laundering legislation was passed in 2002 and came into force on July 1, 2005.
- The **PMLA was showcased as India's commitment to the Vienna Convention on combating money laundering, drug trafficking, and countering the financing of terror (CFT).**
- The law aimed to curb the conversion of illegally earned money into legal cash. The Act empowered the ED to control money laundering, confiscate property, and punish offenders.

Rules under PMLA:

1. Stringent Bail Conditions:

- PMLA imposes stringent bail conditions on individuals accused of money laundering offences. A fundamental principle of **Anglo-Saxon jurisprudence** is that **a person is presumed innocent until proven guilty.**
- **However, PMLA inverts this principle.** All levels of courts often deny an accused bail because **Section 45 of the PMLA stipulates that a judge can grant bail only when convinced of the accused's innocence.**

2. Arrest Without Written Grounds:

- **Arrests often occur without written communication of grounds, violating Article 22(1) of the Constitution and Section 19(1) of PMLA, 2002.**

- **ED officers have repeatedly relied on verbal communication for arrests**, contravening legal requirements.

Further insights of the judgement:

- **Furnishing of Bonds:** The judgment clarifies that the ED must demonstrate specific grounds for custodial interrogation. However, the special court has the authority to direct the accused to furnish bonds under **Section 88 of the Code of Criminal Procedure (CrPC)**.
- **Bond as Undertaking:** Bonds furnished under Section 88 of the CrPC are deemed as undertakings and do not constitute bail.
 - Therefore, the conditions outlined in Section 45 of the PMLA pertaining to bail do not apply to them.

Way Forward:

The recent judgment marks a significant step towards safeguarding the right to personal liberty of individuals accused under the Prevention of Money Laundering Act (PMLA), particularly in light of the stringent conditions for bail. Additionally, it will serve to shield individuals from arbitrary arrest.

PEPPER IT WITH:
PMLA, CrPC, Vienna Convention, Concept of Bail

Are medical practitioners protected from Consumer Court proceedings?

News Excerpt:

The Supreme Court (SC) reconsidered its 1995 judgment in the **Indian Medical Association vs. V. P. Shantha** to decide whether medical professionals fall under the purview of service as per the **Consumer Protection Act, 2019 (CPA)** or not.

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More in the news:

Recently, the court held that lawyers, as 'professionals', could not be sued for providing faulty 'service' under the CPA.

About the 1995 case:

- **Argument:**
 - Legal proceedings under the CPA lie before **Consumer Redressal Commissions**, which are constituted at district, state, and national levels. The knowledge and experience of the President and the members of the commission require the capacity to deal with **“economics, law, commerce, accountancy, industry, public affairs or administration.”**
 - Therefore, since the members lacked knowledge of medical matters, they were not suited to deal with complex medical issues arising in cases dealing with the services of medical practitioners.

• **Judgement:**

- The court held that the burden is on the parties to provide the necessary evidence and material to allow the members to make an informed decision.
- Moreover, the court held that doctors owe certain duties to their patients—duties of care in deciding whether to treat the patient, what treatment to give, and how the treatment is administered. If the doctor does not exercise a "reasonable degree of care" and breaches one of these duties, the court holds that they can be liable for **deficiency in service**.

2024 status:

- **Exclusion of Professionals:** The court opined that the CPA is primarily aimed at protecting consumers from unfair and unethical business practices rather than regulating professions or professionals. It observed that the legislature did not intend to include professionals within the purview of the Act.
- **Definition of 'Service':** The court analyzed the definition of 'service' under both the 1986 and 2019 Acts of the CPA. It noted that services provided free of charge and those under a 'contract of personal service' are excluded from the definition. However, paid services fall within the ambit of the CPA.
- **Categories of Medical Services:** The court delineated three types of medical services: free services, paid services for all, and services exempted for certain categories unable to afford payment. It held that only the second and third categories are considered 'service' under the CPA.
- **Inclusion of Hospitals and Doctors:** The court emphasized the need to prevent inequality in healthcare by extending consumer protection to all patients, regardless of their ability to pay. Therefore, hospitals and doctors providing services to economically disadvantaged individuals, even for free, fall under the definition of 'service' under the CPA.
- **Nature of Doctor-Patient Relationship:** The court clarified that the doctor-patient relationship does not constitute a 'contract of personal service' as it does not involve an employer-employee or master-servant relationship. Therefore, the contract between a medical practitioner and a patient cannot be treated as a contract of personal service.

Legal Remedies and the Way Forward:

- **Tort:** Patients who believe they have suffered harm due to medical malpractice or negligence can file a **civil suit under tort law**, specifically under the principle of negligence. This avenue allows patients to seek compensation for the damage incurred.

PEPPER IT WITH:
Consumer Protection Act, 2019, RTI, 2005, IPC laws

- **Consumer Protection Act 2019:** Hospitals providing free services to certain sections and paid services to others are covered under the definition of 'services' given under section 2(17) of the Act. Patients can seek **remedies under Section 2(1)(o) for deficiencies in medical services.**
 - **Indian Penal Code (IPC):**
 - **Section 304A** deals with cases of death caused by negligence, allowing patients or their families to pursue criminal action against medical practitioners in cases of fatal negligence.
 - **Section 338** pertains to cases of causing grievous hurt by acts endangering life or personal safety, providing another avenue for legal recourse in cases of severe harm due to medical negligence.
- **Indian Medical Council (Professional Conduct, Etiquette, and Ethics) Regulations, 2002:** This regulation lays down the **standards of professional conduct and ethics** for registered medical practitioners in India. The patients can file complaints against doctors for their conduct.
- **Right to Information Act, 2005 (RTI):** Patients under **sections 2(f) and 2(j)** can seek information regarding their medical treatment, including medical records and treatment procedures, under the provisions of the RTI Act.

These legal remedies offer patients avenues for seeking justice and compensation in cases of medical negligence or malpractice. By utilizing these mechanisms, patients can hold healthcare providers accountable and ensure that their rights to quality healthcare and safety are protected.

'Share of Religious Minorities: A cross-country analysis' Report: EAC-PM

News Excerpt:

India's **Hindu population declined by nearly 8%** between 1950 and 2015, while the **Muslim population's share grew a record 43%** in the same period, according to a study by the Economic Advisory Council to the Prime Minister (EAC-PM).

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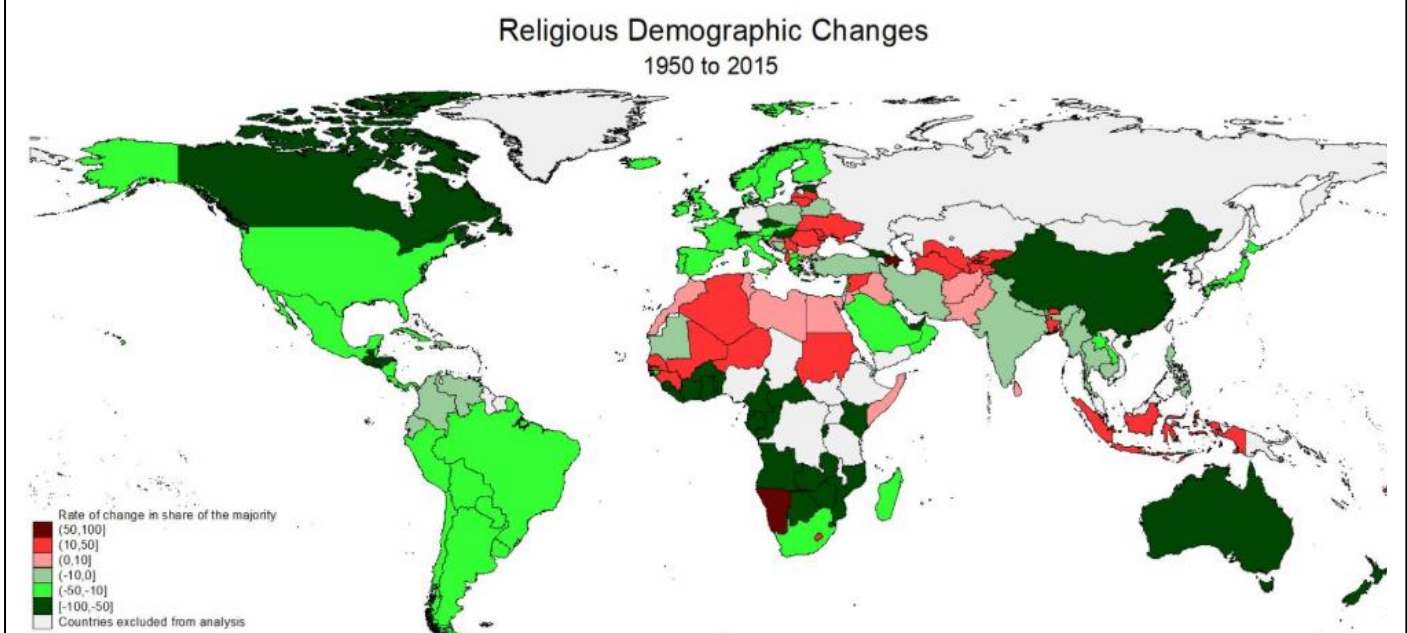
About the study:

Hypothesis: The main hypothesis is that a **reducing majority**, i.e. a negative rate of change in the share of the majority population (and tautologically an increase in the share of the minority population) from 1950-2015 means that **we can safely conclude that there exists an overall congenial environment for increasing diversity in the country.**

Methodology:

- The PM-EAC report analyzed religious composition changes across 167 countries from 1950 to 2015, focusing on nations with a majority religion defined in 1950. It excluded countries lacking a majority religion in 1950.
- Data was sourced from the **Religious Characteristics of States Dataset 2017**, and the study employed a descriptive approach, using changes in minority population proportions as proxies for broader policy impacts.
- This methodology ensured a systematic and reliable analysis of religious demographic shifts, highlighting trends and patterns over the 65-year period.

Figure - Representation of Change in Majority Religious Denomination (1950-2015)



Key highlights:

- The dipping majority population and rising minority population in India **were in line with global trends, also seen in Europe**, but stood out in relation to India's neighbours.
- The Indian experience is **similar to that of most of the world's high-income and liberal democracies**, such as OECD (Organization for Economic Co-operation and Development) countries, which have seen a major decline in the share of majority religion.
- Of **35 OECD countries studied**, 25 were from Europe, and the share of majority religious denominations has decreased by 29 percent in these countries.

India:

- The share of the majority **Hindu population decreased by 7.82 percent between 1950 and 2015** (from 84.68 percent to 78.06 percent).
- The share of the **Muslim population** in 1950 was 9.84 percent and increased to 14.09 percent in 2015 - **a 43.15 percent increase in their share**.
- The share of the **Christian population** rose from 2.24 percent to 2.36 percent - **an increase of 5.38 percent** between 1950 and 2015.
- The share of the **Sikh population** increased from 1.24 percent in 1950 to 1.85 percent in 2015 - **a 6.58 percent rise** in their share.
- The share of the **Buddhist population** witnessed a noticeable increase from 0.05 percent in 1950 to 0.81 percent.
- The share of **Jains** in India's population **decreased from 0.45 percent in 1950 to 0.36 percent in 2015**.
- The share of the **Parsi population** in India witnessed a **stark 85 percent decline**, reducing from 0.03 percent share in 1950 to 0.004 percent in 2015.

Criticism of the Methodology:

- The **method used to represent the Muslim numbers is not the same as the one used to present data for Buddhists and Jains**. If one were to apply the same calculations, it would show that the Buddhist population had increased by 1,520% during this time, when in fact, their share had increased from 0.05% to 0.81% of the total population.
- The latest NFHS (2019-2021) report released in May 2022, showed that the total fertility rate (TFR) for Muslims was at 2.36, only marginally higher than the 1.94 TFR recorded for the aggregate of all Hindu communities and of the national average, which was at 2.
- The media should **not portray the data selectively to only highlight the increase in the Muslim population**, misrepresenting broader demographic trends.

Way Forward:

- The report highlights a **global trend towards increased religious diversity**, with the majority religious denomination's share decreasing by approximately 22% from 1950 to 2015.
- India stands out in this context, with its **performance suggesting a conducive environment for fostering diversity within society**.
- India's inclusive policies and legal protections for minorities illustrate a conducive environment for diversity, **promoting better outcomes for disadvantaged groups and serving as a model for other nations**.

PEPPER IT WITH:

Total Fertility Rate, Religious Characteristics of States Dataset 2017, Economic Advisory Council of the PM

Centre takes away state powers for issuing NOC for the export of drugs

News Excerpt:

The **Union Government** has become the sole authority for issuing **manufacturing licences** for new drugs meant for exports, withdrawing the power from State Governments amid heightened global scrutiny of Indian-made drugs.

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Background:

- The move comes in the backdrop of multiple incidents where drugs and cough syrups manufactured in India have allegedly been found to be contaminated.
- Cough syrups imported by **The Gambia** were allegedly found to be contaminated with **diethylene glycol (DEG)** and **ethylene glycol (EG)**, resulting in cases of acute kidney injury among kids.
- An investigation led by the United States **Centers for Disease Control and Prevention (CDC)** and Gambian scientists "strongly suggested" that medications contaminated with **DEG or EG** imported into the country led to the cases among children.
- A large cluster of acute kidney injury cases affecting children in **The Gambia** in 2022 was associated with case fatality rates of more than **80%**.

More about the news:

- India's drug regulator has withdrawn powers delegated to the state licensing authorities to issue **no-objection certificates (NOC)** for the manufacture of unapproved, banned or new drugs for export purposes. This move comes in the wake of substandard Indian drugs causing health concerns in several countries.
- From now on, the sole licensing authority will be the **Central Drugs Standard Control Organisation (CDSCO)**, India's apex **drug regulatory body**.

- MoHFW has decided that the industry must be facilitated in filing fresh applications for NOC for the manufacture of unapproved/approved new drugs/banned drugs solely for export purposes from 15 May 2024 on online mode through **CDSCO zonal offices**.

About CDSCO:

- CDSCO serves as **India's National Regulatory Authority for pharmaceuticals**, medical devices, cosmetics, and certain categories of biological products.
- CDSCO is responsible for regulating the safety, efficacy, and quality of these products.
- It oversees various **aspects of the pharmaceutical industry, including the approval of new drugs, clinical trials, setting standards for drugs, advising the State Drug Control Organization on manufacturing practices, and enforcing import/export regulations.**
- It was formally set up **under the Directorate General of Health Services (DGHS)**, operating within the Ministry of Health and Family Welfare (MoHFW), Government of India.
- The **Drugs and Cosmetics Act, 1940, and the Drugs and Cosmetics Rules, 1945**, provided the legal framework for regulating drugs, cosmetics, and medical devices in India.
- Manufacturers will need to obtain the NOC from the CDSCO's respective zonal office through online mode (**SUGAM**).
- All state/UT drug Controllers are required to hand over all NOC issued from 20 August 2018 to 14 May 2024 to the respective **CDSCO zonal offices**.

Associated News: India decided to elevate its **Certificate of Pharmaceutical Product (CoPP)** to align with the **World Health Organization's Good Manufacturing Practices certification standards** to ensure transparency and maintain high quality in the pharmaceutical export process. The government aims to address safety and quality concerns persisting in the pharmaceutical industry by increasing oversight over the quantity and quality of products shipped by Indian companies and mandating strict adherence to WHO's good manufacturing practices guidelines. The decision to centralize the certificate issuance process and **involve CDSCO officials in joint inspections for issuing CoPP certificates** further enhances transparency and accountability.

Allowing manufacturers to divert un-exported quantities of pharmaceutical items with approval from both CDSCO and overseas regulators **addresses logistical challenges and minimizes wastage**, which is crucial for strengthening India's drug exports.

Standardizing the CoPP and WHO's certificates not only boosts confidence among exporters but also **reassures foreign regulatory bodies about the quality of Indian exports**.

Way Forward:

- The CDSCO's latest decision comes in view of the **Drug Consultative Committee's (DCC)** advice, which found that the process of obtaining NOCs from various state drug regulators for pharmaceutical products is a **time-consuming process**.
- The DCC also pointed out that delays in obtaining NOCs could cause delays in the export consignment since applicants must obtain an export NOC and a manufacturing license from state licensing authorities for each purchase order.

PEPPER IT WITH:
DCC, SUGAM Portal, Drugs and Cosmetics Act, 1940

A chance to settle a constitutional clash

News Excerpt:

The Supreme Court (SC) in **Property Owners Association vs State of Maharashtra** has a chance to resolve the clash between Fundamental Rights (FRs) and Directive Principles of State Policy (DPSP).

- The Constitution expressly makes FRs enforceable, while "DPSPs" are regarded as goals that the state is expected to work towards.

History of the clash between Fundamental rights & DPSP:

- Constitutional Provisions:**
 - Article 13** of the Indian Constitution declared that any law inconsistent with or in derogation of Fundamental Rights would be void.
 - On the other hand, **Article 37** states that DPSPs are not enforceable by any court but are fundamental in governance, guiding the state in making laws.
- Hierarchy of Rights:** Early judgments, like Mohd. Hanif Quareshi vs State of Bihar (1958) established that while the state should implement DPSPs, it must not do so at the expense of abridging FRs.
- Introduction of Article 31C:** The 25th Amendment, introduced in 1971, introduced Article 31C, aiming to protect laws made to implement certain DPSPs from judicial review under Articles 14 and 19.
- Kesavananda Judgement (1973):**
 - The landmark Kesavananda Bharati vs State of Kerala case established the Doctrine of Basic Structure, asserting that **Parliament's amending power is not unlimited and that any amendment** violating the Constitution's basic structure would be void.
 - While the 25th Amendment was partially struck down, the exemption of certain laws from FRs challenges remained ambiguous.

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- **42nd Amendment (1976):** Parliament further amended Article 31C through the 42nd Amendment, extending the protection to laws made in furtherance of any DPSP, not just Articles 39(b) and (c).
- **Minerva Mills vs Union of India (1980):** In this case, the SC declared the expanded Article 31C unconstitutional, emphasizing that while DPSPs provide the goals of governance, FRs constitute the means to achieve these goals.
- **Waman Rao vs Union of India:** In a subsequent case, Justice Y.V. Chandrachud held that the original, unamended Article 31C was valid, contradicting the ruling in Minerva Mills. However, this decision has been criticized for overlooking the potential infringement of FRs by laws made in furtherance of DPSPs.

About the case:

- Two questions of seminal importance are at stake in **Property Owners Association vs State of Maharashtra**, in which hearings concluded before a nine-judge Bench of the Supreme Court of India.
 - First, **what does the term "material resources of the community" used in Article 39(b) of the Constitution denote?**
 - Second, **are laws made in furtherance of the goal stipulated in Article 39(b)** — i.e., legislation aimed at securing ownership of resources and distributing them to best subserve the common good — **immunized from challenges premised on the FRs to equality and freedom?**
- The second of these questions sharply focuses on a clash between Part III of the Constitution, which delineates FRs, and Part IV, which enumerates DPSP.
- The Constitution expressly makes **FRs enforceable, while DPSPs are regarded as goals that the state is expected to work towards.**
- Here, the court will **decide on the validity of a law that allows a State government board to acquire complete control over dilapidated buildings if done with the consent of at least 70% of residents.**
- To resolve this, it will **examine whether the law furthers Article 39(b) under which it is purportedly made.**
- But even assuming it answers this in the affirmative, the question still remains: **can the statute also be tested on the touchstone of Articles 14 and 19?**

Way Forward:

- Regardless of the judgments in Waman Rao and Sanjeev Coke Manufacturing Company vs Bharat Coking Coal (1982), which followed it, **to date, there is no conclusive analysis from the SC on Article 31C, in the form**

PEPPER IT WITH:

FRs vs DPSPs, 42nd Amendment (1976), Article 39(b)

introduced by the 25th Amendment, and its adherence to the Constitution's basic structure.

- This has meant that FRs and DPSPs have been in perennial conflict. The court has a chance in Property Owners to resolve this clash and, in the process, provide a fillip to the Constitution's most cherished guarantees.

Elections 2024

News Excerpt:

There were Questions around the MCC, how many seats can a candidate contest? etc. related to the conduct of the elections.

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More About the News:

What is a Model Code of Conduct (MCC)?

- It is a **set of guidelines established** by the Election Commission of India (ECI) to regulate the conduct of political parties and candidates during election campaigns and polling.
- Although the MCC itself is not legally binding, certain actions outlined within it are considered electoral offences and corrupt practices under the Indian Penal Code (IPC) and the Representation of the People Act (RPA), 1951.
- While violating many MCC guidelines may not result in punitive actions, actions such as causing tension between castes, religious or linguistic communities, appealing to caste or communal feelings to secure votes or using places of worship for election propaganda are considered electoral offenses and corrupt practices. These actions can attract appropriate punishment under the IPC and the RPA, 1951.

Registration of Political Parties:

Political parties in India are registered under Section 29A of the RPA, 1951. Currently, there are 2,790 active registered political parties in India (as of May 2024). To register, a political party must submit a copy of its memorandum or Constitution declaring its allegiance to the Constitution of India and its commitment to uphold its principles.

Benefits of Registered Political Parties in India include:

- **Tax Exemption:** Donations received by registered political parties are exempt from tax under Section 13A of the Income Tax Act, 1961.
- **Common Symbol:** They are entitled to a common symbol for contesting general elections to the Lok Sabha and State Assemblies.
- **Star Campaigners:** They are allowed to designate **twenty 'star campaigners'** during election campaigns, providing a platform for prominent leaders to rally support.
- These enjoy additional benefits in India, whether at the national or state level,

- **Reserved Election Symbol:** Recognized parties are entitled to a reserved election symbol, which helps in brand recognition and voter identification.
- **More Star Campaigners:** Recognized parties can designate **forty 'star campaigners'** during election campaigns, amplifying their outreach and messaging.

Challenges regarding the deregistration of political parties:

- **Lack of Explicit Powers:** The RPA does not explicitly grant the ECI the power to deregister parties for various infractions, such as failing to contest elections or discrepancies in conducting inner-party elections.
- **Limited Grounds for Deregistration:** The Supreme Court, in *INC vs. Institute of Social Welfare & Ors (2002)*, held that the ECI can only deregister a political party under exceptional circumstances, such as registration obtained by fraud or if the party ceases to have allegiance to the Constitution.
- **Enforcement Challenges:** While violations of the MCC by recognized political parties are common, the ECI's response typically involves temporary campaign bans rather than deregistration.
- **Misuse of Funds:** Concerns arise over the utilization of income tax exemptions and donations by registered but unrecognized political parties, especially when a significant portion of them do not contest elections. This raises apprehensions regarding the potential misuse of funds and the risk of money laundering.

The rules for contesting Lok Sabha elections in India are governed by the RPA, 1951:

Cap on the Number of Seats:

- **Rule:** A candidate is permitted to contest an election from up to two constituencies, as per Section 70 of the RPA, 1951. However, **a candidate can hold only one seat at a time**, regardless of whether they have been elected from more than one seat, as stipulated by Section 70.
- **Consequences of Winning from Two Seats:** If a candidate wins from two seats, they can only hold **one seat at a time**. A by-election is necessary for the seat that the candidate vacates.
- **Proposed Amendments:** Both the ECI and the Law Commission have proposed further amendments to the RPA to restrict candidates from contesting from only one seat. This recommendation is based on the principle that a candidate cannot hold two seats simultaneously.

Qualifications:

- **For Membership of the Lok Sabha:** To contest in a Lok Sabha election, a person must be a registered voter in any constituency of the country and can contest from any seat in India, except in Assam, Lakshadweep, and

Sikkim. However, to contest Assembly polls in a particular state, a person must be a voter in that state.

- **Minimum Age and Educational Qualification:** The minimum age for contesting Lok Sabha and Assembly elections is 25, while for Rajya Sabha and State Legislative Councils, it's 30. There is no minimum educational qualification required to contest general elections in India.
- **Other Qualifications:** Candidates must be citizens of India, registered as valid voters in some constituency of the country, and not have been convicted of any offence punishable by more than two years of imprisonment.
- **Disqualification Criteria:** A person shall be disqualified from being chosen as or being a member of either House if they:
 - Hold any office of profit under the Government of India or any State.
 - Are of unsound mind and declared so by a competent court.
 - Are an undischarged insolvent.
 - Are not a citizen of India or have voluntarily acquired the citizenship of a foreign state.
 - Are convicted of any offence and sentenced to imprisonment of two years or more, even if out on bail pending appeal.

Way Forward:

- **Legislative Reforms:** Continue to review and update electoral laws to address emerging challenges and ensure they are in line with democratic values. This includes implementing recommendations from the ECI and the Law Commission to empower the ECI to deregister political parties and enhance accountability.
- **Enhanced Transparency:** Promote greater transparency in political party funding by enforcing stricter regulations, such as **reducing cash donation limits and enhancing monitoring mechanisms to prevent illegal contributions**. For example, there has been a recent ban on cash transportation in bank vehicles after sunset and monitoring of non-scheduled chartered flights.
- **Public Awareness:** Educate citizens about their rights and responsibilities in the electoral process, including the importance of voting, understanding candidate qualifications, and reporting electoral violations. Public awareness campaigns can empower voters to make informed decisions and hold elected representatives accountable.
- **Electoral Integrity:** Strengthen mechanisms to ensure electoral integrity, including **measures to prevent voter**

PEPPER IT WITH:

Model Code of Conduct, RPA, 1951, Star Campaigner

fraud, enhance cybersecurity, and safeguard against external interference.

- Investing in technology and infrastructure to improve election efficiency and security can bolster public trust in the electoral process.

Why is Indian youth not at the polls?

News Excerpt:

Election Commission data released ahead of the 2024 Lok Sabha polls shows **that low registration of first-time voters** and their **low participation** in the early phases of the election are concerning.

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More About the News:

There needs to be **honest introspection** on **what is holding Gen Z back** from participating in the electoral process.

Who is eligible to vote?

- The **61st Amendment to the Constitution (1989)** brought down the **voting age from 21 to 18**.
- It signalled India's trust in the maturity of its youth and keenness to empower them in decision-making.

Number of first-time voters:

- First-time voters** — the **18-19 age group** — currently estimated at **19 million**, are those who are on the electoral rolls by just becoming eligible.
- Youths in the **18-29 age group** number over **200 million** — more than a fifth of the total electorate — and certainly can influence the contours of the 18th Lok Sabha.
- Only **38% of eligible first-time voters**, which is **19 million out of 49 million**, have registered to vote in the 2024 national elections.
 - Only **17% of the youth population of Bihar**, the state with the highest concentration of youth, is registered to vote, compared to 21% in **Delhi**.
- ECI has launched the **Systematic Voters Education and Electoral Participation (SVEEP)** drive, which aims to strengthen all three: information, motivation, and facilitation.
 - SVEEP is an ECI voter awareness and outreach drive.
- It also sends a voting day alert to all Facebook users in India to inform and educate voters about the General Elections and nudge them to participate.

ECI efforts to increase youth electoral participation:

- Series of **youth-centric campaigns** to address low youth participation in elections.
- An **amendment of the RPA, 1950, in 2022** gave three additional dates — **April 1, July 1, and October 1**—to

register on the electoral roll **instead of only January 1 earlier**, thus reducing waiting time for young voters.

- Allowing 17-year-olds to file advance applications for registration.**
- Cinema theatres across the country are playing ECI voter awareness films, **ECI Song Main Bharat Hoon**, and **Hum Bharat Ke Matdata Hai** at regular intervals as part of **the Public Service Awareness (PSA) films**.
- Music App Spotify and bike app Rapido have been onboarded for voter awareness messages** across their platforms and channels.
- 'Turning 18' Campaign:**
 - It specifically **targets young and first-time voters**.
 - The primary objective is to galvanize youngsters to participate in the upcoming elections and address the critical issues of urban and youth apathy noticed in previous elections.
- 'You are the One' Campaign:**
 - This initiative aims to recognize and celebrate the **invaluable contributions** of **various stakeholders** involved in the electoral process.
 - From **voters and political parties to Booth Level Officers (BLOs), ground staff, polling parties, administrative personnel, media professionals, central forces, and security personnel**, each stakeholder plays a vital role in ensuring the integrity and efficiency of the electoral process.
- 'Verify Before You Amplify' () initiative:**
 - In response to the **proliferation of fake news and misinformation** online, the ECI introduced this initiative.

Way Forward:

Home to the largest youth aggregate in the world, and with half its population below 25 years, India deserves better from its youth. They must be torchbearers of electoral democracy through interested participation and not disengaged bystanders.

PEPPER IT WITH:
 61st Amendment, Systematic Voters Education and Electoral Participation (SVEEP), ECI, Article 324

PRE-SHOTS

Symbol Loading Unit (SLU)

News Excerpt:

While **rejecting the plea for 100% verification of Voter Verifiable Paper Audit Trail (VVPAT) slips** against the **Electronic Voting Machine (EVM) count**, the **Supreme Court (SC)** directed the Election Commission of India (ECI) to **"seal and secure"** the **Symbol Loading Unit (SLU) for 45 days** after the declaration of election results.

Background:

- Currently, only the three components of the EVM - the **ballot unit, control unit, and VVPAT** — are **stored for 45 days after the results**.
- This is the first time that SLUs, used to load candidate symbols onto the VVPATs, will also be available for examination along with the EVMs if a candidate challenges the results by filing an election petition in court.

What is SLU, and how does it work?

SLU plays a crucial role in the electoral process, particularly when it is used in conjunction with Voter Verifiable Paper Audit Trail (VVPAT) machines to load candidate symbols onto the VVPATs.

- The **SLU is used to load the candidates' symbols onto the VVPAT**.
 - It is a **matchbox-sized device** that is **first connected to a laptop** or personal computer. From there, a **symbol-loading application loads a bitmap file containing the candidates' names, serial numbers, and symbols**.
 - The **SLU is then connected to the VVPAT to transfer that file onto the paper audit machine**.
 - This is done under the **supervision of a district election officer**.
- The **SLUs come into the picture only a few days before polling in a particular seat**, when the EVMs are being commissioned, and the list/ order of contesting candidates is decided and set on the **ballot unit (the machine where you press the button to vote)** and the **VVPAT (which produces the paper audit trail of your vote)**.
- Candidate-setting can happen at any time, from five to two days before voting for a seat.
 - **Once the SLU is used to load symbols onto the VVPAT, the EVM is ready for use**. After this, the SLU is irrelevant to the actual voting process.

What happens to an SLU after symbols are loaded?

- Typically, a small number of SLUs are enough to load symbols onto all VVPATs for a seat.
 - According to EC officials, **it takes an SLU two to three minutes to load each VVPAT**.
- **Once the symbol-loading is complete, the SLUs are handed over to the concerned district election officer for safekeeping**.
 - They remain in the officer's custody until the day after voting.
 - Afterwards, the **SLUs are released to the engineers of the two EVM manufacturers, Bharat Electronics Ltd (BEL) or Electronics Corporation of India Ltd (ECIL)**, so they can be used to load symbols onto VVPATs for other seats in subsequent phases.

- Thus, in a multi-phase election like the ongoing one for the 18th Lok Sabha, an SLU is typically reused after one phase of polling to load symbols onto VVPATs meant for other seats in subsequent phases.

Regarding the recent SC directive:

- The court has said that the **SLUs should be sealed and stored immediately after the symbol-loading process for a seat is complete**.
- It must be stored for 45 days after the declaration of results so that it can be opened and examined like EVMs in case of an election petition.
- This directive effectively prevents the reuse of SLUs for loading symbols onto VVPATs for other seats, necessitating the need for more SLUs by the ECI.
 - Consequently, the EC will need more SLUs. The Commission currently has about 5,000 SLUs and will need an additional 2,000 to implement the SC's direction.

What has the Supreme Court said about microcontrollers?

- The **court has allowed candidates to seek verification of EVM software**.
 - This effectively means that a **candidate can ask ECI officials to check** the one-time programmable software in the **BU (Ballot Unit), CU (Control Unit), and VVPAT for tampering** in case of any doubts regarding the result.
 - This verification involves inspecting the burnt memory/ microcontrollers of these three components.
- The court has proposed a formula for doing this: engineers from the EVM manufacturers will conduct **checks on 5% of the EVMs per Assembly constituency or Assembly segment of a parliamentary constituency**.
- **Candidates must submit a written request within seven days of the announcement of results and will be responsible for the process's expense**.
 - This **right to seek verification is limited to those candidates who come in second or third**.
- Engineers from the manufacturing companies will certify the authenticity and intactness of the memory/ microcontroller.
 - **If any tampering is found, the candidate will be refunded the cost of verification**.
 - It has not said how the election result will be impacted.

ECI's action when the normal polling process is disrupted

News Excerpt:

The **Election Commission of India (ECI)**, under **Sections 58(2) and 58A (2)** of the **Representation of People Act (RPA), 1951**, declared the polls void in **11 polling stations in Manipur** and **8 in Arunachal Pradesh**.

Provisions to handle if the normal polling process is disrupted:

- India's election laws provide a framework for handling situations where the normal polling process is disrupted for any reason, including **damage to EVMs, booth-capturing, natural disasters, or a candidate's**

death.

- The provisions for **repolls, adjournments, and poll voiding** ensure that the democratic process remains fair, transparent, and uninterrupted.

- The **election law** currently states that a **candidate can file an election petition challenging a result in court within 45 days** of the declaration of results.
- During this period, the **EC machinery does not touch the EVMs**.
- If these machines now need to be unsealed for verification purposes, the poll panel will have to determine how this can be accomplished.

Circumstances when the normal polling process is disrupted	Options before ECI in each case
<p>Intentional destruction, taking away of EVMs:</p> <ul style="list-style-type: none"> Under Section 58 of the RPA (Fresh poll in case of destruction, etc., of ballot boxes), the ECI can declare the poll at a polling station to be void if: <ul style="list-style-type: none"> an unauthorized person has unlawfully taken away any EVM; any EVM has been accidentally or intentionally destroyed, or lost, or damaged, or tampered with; or a mechanical failure develops in any EVM during the recording of votes. 	<p>In such cases, the Returning Officer (RO) immediately informs the ECI and the Chief Electoral Officer (CEO) of the state about the relevant facts and material circumstances.</p> <ul style="list-style-type: none"> After this, the ECI can declare the poll void and formally fix the date and time for a new poll. The contesting candidates or their election agents are then informed in writing. A notice is also posted in public places along with an announcement by the beat of the drum in the polling area to inform the voters. During the repoll, the voters' left middle fingers are inked to distinguish between the mark made during the original poll (on their left forefinger) and the mark made during the repoll.
<p>Booth capturing:</p> <ul style="list-style-type: none"> Defined in Section 135A of the RPA, it includes all or any of the following activities by any person or persons: <ul style="list-style-type: none"> seizure of a polling station, affecting the conduct of elections; taking possession of a polling station, allowing only his or their supporters to vote; intimidating or threatening any elector and preventing him from going to the polling station; seizure of a counting place affecting the counting of votes; involvement of any person in government service in any of the above activities. Booth capturing is punishable for a term of not less than one year, which may extend to three years for laypeople, and not less than three years, extending to five years for government servants. 	<ul style="list-style-type: none"> Under Section 58A ('Adjournment of poll or countermanding of election on the ground of booth capturing'), in case booth capturing has taken place at a polling Station, the Presiding Officer of a polling station immediately closes the Control Unit of EVM and detaches the Ballot Unit(s) from the Control Unit under Rule 49X of the Conduct of Election Rules, 1961. Then, it informs the RO, who reports the full facts to the ECI through the fastest means of communication. The EC, based on the material facts, may <ul style="list-style-type: none"> declare the poll at that polling station to be void and direct a fresh poll on a new date or countermand the election in the constituency in case booth capturing has taken place in a large number of polling stations or if it has affected the counting of votes.
<p>Natural disasters and other disruptions to polling in case of:</p> <ul style="list-style-type: none"> A natural calamity like a flood, a severe storm. Non-receipt or loss or damage to essential polling materials like EVM, electoral roll, etc. Interruption or obstruction due to any riot or open violence. Non-arrival of the polling party due to obstruction or any other serious difficulty. Non-commencement of the poll within two hours from the scheduled time due to malfunctioning of 	<ul style="list-style-type: none"> The Presiding Officer of a polling station can adjourn the poll at a polling station under section 57(1) of the Representation of the People Act, 1951 <ul style="list-style-type: none"> After seeking the EC's approval on the date and hours, the adjourned poll will recommence from the stage at which it was left immediately before the adjournment. Contesting candidates or their agents are informed, and only electors who have not already voted before the poll was adjourned are permitted to vote.

EVM or any other reason.	
Death of a candidate: <ul style="list-style-type: none"> As per Section 52 of RPA, amended in 1996, the poll shall be adjourned only in case of the death of a recognized political party's candidate. <ul style="list-style-type: none"> A "recognized political party" refers to either a recognized national party or a party recognized as a state party in the state concerned for which the EC reserves a symbol under the Election Symbols (Reservation and Allotment) Order. 	<ul style="list-style-type: none"> The above provision applies if the candidate with a valid nomination dies at any time after 11.00 a.m. on the last date for making nominations until the commencement of the poll. <ul style="list-style-type: none"> The RO reports this fact to the ECI and orders the poll to be adjourned to a date to be notified later by the ECI. The EC then calls upon the concerned political party to nominate another candidate for the said election in place of the deceased candidate. The political party must make the nomination within seven days. If the list of contesting candidates has already been published before the adjournment of the poll, a fresh list of contesting candidates is prepared and published, including the name of the candidate nominated in place of the deceased candidate.

State cannot acquire property without proper procedure

News Excerpt:

The Supreme Court (SC) took a significant step to **protect private property** from arbitrary state takeover for a "**public purpose**", holding that compulsory acquisition without following mandatory procedures followed by a grant of compensation to the owners will not make the accession constitutional.

More about Judgement:

- A **SC bench** declared in a judgment that the **right to property** is protected as a **constitutional right** and has even been interpreted to be a human right.
- Compulsory acquisition will still be **unconstitutional if proper procedure is not established** and followed before depriving a person of his/her right to property.
- The judgment upheld a **Calcutta High Court** order rejecting an appeal filed by the **Kolkata Municipal Corporation** defending its acquisition of private land.
 - The court ordered the corporation to pay ₹5 lakh as costs within 60 days.

Constitutional Provisions:

- The **44th Constitutional Amendment** omitted the right to property as a fundamental right.
- However, Article 300A** provided that no person shall be deprived of his property, save by **authority of law**.
- A person's rights, even the history of liberty, have been safeguarded through the prescription and observance of mandatory procedures and processes of law.
 - The state must follow the prescribed procedures before acquiring private property.
 - The phrase '**authority of law**' in the Article should not be understood as merely the power of eminent domain vested in the state.
 - The requirement of a 'law' in **Article 300A** does not end with the mere presence of legislation that

empowers the state to deprive a person of his property.

Seven basic rights:

- The court laid down seven basic procedural rights of private citizens, which constitute the "**real content of the right to property under Article 300A**" that the state should respect before depriving them of their private property.
 - Right to notice** or the duty of the state to inform the person that it intends to acquire his property;
 - Right of the citizen to be heard** or the duty of the state to hear the objections to the acquisition;
 - Right of the citizen to a reasoned decision** or the duty of the state to inform the person of its decision to acquire property;
 - Demonstration of public purpose** or the duty of the state to demonstrate that the acquisition is exclusively for public purpose;
 - The citizen has the **right to receive fair compensation** for the acquired property.
 - Efficient and timely Acquisition** or the duty of the state to conduct the process of acquisition efficiently and within prescribed timelines;
 - Right to Conclusion:** The conclusion of the proceedings leads to vesting or the right of conclusion.
- The culmination of an acquisition process is not in the payment of compensation, but also in taking over the actual physical possession of the land. If possession is not taken, the acquisition is not complete.

'Eggshell skull' rule

News Excerpt:

The **Supreme Court (SC)** restored the compensation of Rs 5 lakhs awarded by the District Consumer Forum in a

medical negligence case by underlining that the state and central consumer courts incorrectly applied the '**eggshell skull**' legal principle.

What is the 'eggshell skull' rule?

- It is a common law principle applied in **civil litigation** when the offender would be liable for all injuries that might be intensified due to the peculiar conditions of the injured person that the offender might not have known.
 - The defendant would be held responsible for injuries caused to a person when he hit him on the head, even if the victim had a particularly delicate skull or an 'eggshell' for a skull.
- The origins of the eggshell skull rule are most often traced back to an 1891 Vosburg v. Putney case in Wisconsin, US.

More about SC stand on 'eggshell skull' rule:

- In its ruling on the case, the SC said that "A person who has an eggshell skull would be more severely impacted by an act, which an otherwise "**normal person**" would be able to withstand."
- The rule applies to claiming enhanced compensation for damage that is more than what could have been ordinarily anticipated to be caused by the defendant.

T.N. law on eviction from waqf property unconstitutional

News Excerpt:

The **Madras HC** has declared **unconstitutional** a 2010 amendment that brought waqf properties under the ambit of the **Tamil Nadu Public Premises (Eviction of Unauthorized Occupants) Act of 1976**.

More about the news:

- The HC held that the 2010 amendment was **repugnant to the Central Waqf Act of 1995**, which is a central legislation.
- The HC ruled that **encroachers of waqf properties can be evicted only by waqf tribunals** constituted pursuant to an amendment made to the Central legislation in 2013.
- The Bench refused to accept the State government's contention that the State law as well as the Central law could co-exist with the **Tamil Nadu Wakf Board CEO** being given the option of ordering eviction, **by invoking the State law**, against rank outsiders who had occupied waqf properties or to approach the tribunal, under **the Central law**, if there was a complicated dispute over title.

Parliament Intervention for Uniformity:

- The original provisions of the Waqf Act 1995 were not stringent enough to deal with encroachment or illegal occupation of waqf properties.
- Therefore, the **Sachar Committee recommended** that the **Public Premises (Eviction of Unauthorized Occupants) Act, 1971**, be applied to waqf properties as well, as these were also for the benefit of the public at large.
- The Parliament amended the **Waqf Act in 2013** to ensure uniformity across the country in the eviction of encroachments.
 - The 2013 amendment clearly stated that encroachers on waqf properties could be evicted only according to procedures prescribed **under the central enactment**.

Waqf Board

- A **Waqf Board** is a juristic person with the power to acquire and hold property and to transfer any such property.
- The board can sue and be sued in a court as it is recognized as a legal entity or juristic person.
- Each state has a **Waqf Board headed by a chairperson**, one or two nominees from the state government, Muslim legislators and parliamentarians, Muslim members of the State Bar Council, recognized scholars of Islamic theology and muta walis of the waqfs with an **annual income of Rs 1 lakh and above**.
- The Waqf Board has powers under the law to administer the property and take measures for the recovery of lost properties of any waqf, to sanction any transfer of immovable property of a waqf by way of sale, gift, mortgage, exchange or lease.
- However, the sanction will not be given unless at least two-thirds of the members of the Waqf Board vote in favour of such a transaction.

The story of indelible ink

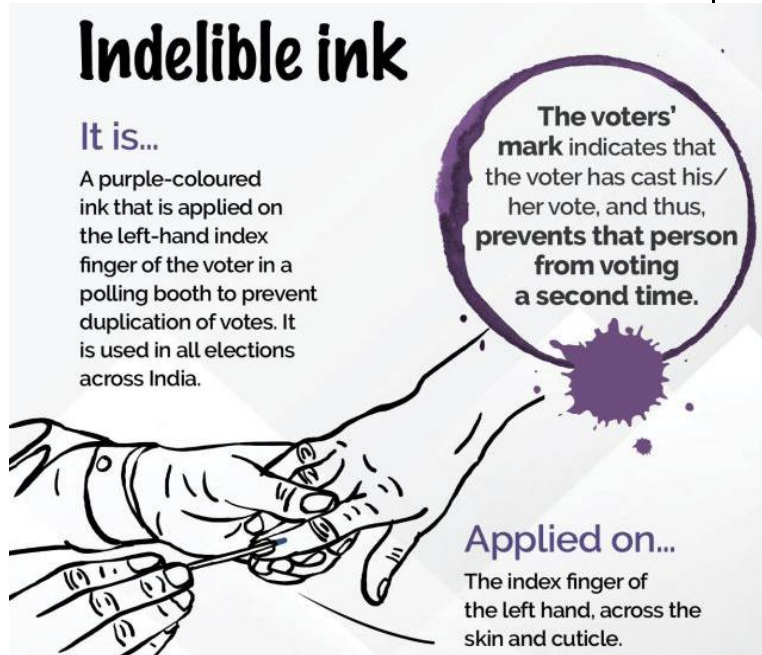
News Excerpt:

Devised as a method to prevent a person from **casting more than one vote**, the indelible ink has been used for decades in Indian elections.

What makes the ink indelible?

- The **purple colour ink** that is put on a person's finger once they have voted is made up of three elements — **chemicals, dyes**, and a special compound **silver nitrate**.
 - Silver nitrate is a **colourless compound** which **becomes visible** when **exposed to ultraviolet light, including sunlight**.

- The **higher silver nitrate's concentration**, say around **20 percent**, the higher will be the ink's quality.
- For up to **72 hours after application** it can remain **resistant to soap, liquids, home-cleansing, detergents, etc.**
- **Water-based** ink also contains a **solvent like alcohol** to **allow its faster drying.**



Who makes the indelible ink for Indian elections?

- The indelible ink was **first manufactured** at the ECI's request by the government's **Council of Scientific & Industrial Research (CSIR)**.
 - The ink was later **patented** by the **National Research Development Corporation (NRDC), New Delhi.**
- **Mysore Paints & Varnish Ltd.** has been **licensed to manufacture** the ink and has been in the business since 1962.

Export of the ink:

- Indelible ink is **exported to more than 25 countries** that include **Canada, Ghana, Nigeria, Mongolia, Malaysia, Nepal, South Africa** and the **Maldives.**

Election Seizure Management System (ESMS)

News Excerpt:

The Election Commission of India (ECI) recently held a **virtual training program** for **Andhra Pradesh officers** on the newly introduced Election Seizure Management System (ESMS).

About ESMS:

- The ESMS is a dedicated **technology platform** developed by ECI.
- It is for **real-time updates** on **seizures** (Cash/Liquor/Drugs/Precious Metal/Freebies/Other Items) from the field.
- The ESMS is a dedicated technology platform where all the enforcement agencies, such as police, transportation authorities, Central tax agencies and others, share information in real time.

• Key Features:

- Automate desired **reports** in the required format for all stakeholders.
- **Dashboard analytics** for received data from multiple agencies.
- Analysis of received data at the CEO Level.
- **Banks** may generate **QR code-based receipts** and issue them for **legal cash transfer.**

• Components:

- **Web-based application**
 - For User onboarding (State Nodal/District Nodal/FST/DLBC/Banks)
 - Issue Cash transfer letter (QR Code)
- **Mobile App**
 - Data entry for Intercept/Suo Motu Seizure and claim for Intercepted Seizure
 - Show analytics based on their jurisdiction

- The following agencies can use the application -
 - State Police Department (**SPD**)
 - Income Tax Department (**ITD**)
 - State Excise Department (**SED**)
 - Central/State Goods and Services Tax (**CGST/SGST**)
 - Directorate of Revenue Intelligence (**DRI**)
 - Directorate of Enforcement (**ED**)
 - Narcotics Control Bureau (**NCB**)
 - State Transport Department, etc.
- This new system was **introduced** during the recently conducted **Assembly elections** in the **five states** (Mizoram, Chhattisgarh, Madhya Pradesh, Rajasthan and Telangana).

Now, the ECI is **planning** to implement the system in **Andhra Pradesh.**

SOCIAL ISSUES

New Nutrition Guidelines

News Excerpt:

The **National Institute of Nutrition (NIN)** has published comprehensive guidelines on the diet of vulnerable groups, including pregnant and lactating women, children and the elderly.

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More about the news:

- With **non-communicable diseases (NCDs)** — **cardiovascular disease, cancers, diabetes, etc.** — rising and affecting adolescents and even children, NIN has published comprehensive guidelines on the diet of vulnerable groups.

National Institute of Nutrition (NIN):

- NIN is an Indian **public health and nutrition research centre** under **ICMR** located in **Hyderabad**.

Vision:

- To eliminate all forms of malnutrition in India through healthy, sustainable and environment-friendly diets and lifestyles.

Objectives:

- To identify various dietary and nutritional problems prevalent among different segments of the population in the country.
- To continuously monitor the diet and nutrition situation of the country.
- To evolve effective methods of management and prevention of nutritional problems.
- To conduct operational research connected with the planning and implementation of national nutrition programmes.
- Human resource development in the field of nutrition.
- To disseminate nutritional information.
- To advise governments and other organizations on issues relating to nutrition

Significance of a healthy diet:

- The guidelines say an estimated **56.4% of India's total disease burden** can be **attributed to unhealthy diets**.
- A healthy diet and physical activity** can prevent **80% of Type 2 diabetes cases** and **significantly reduce the burden of heart disease and high blood pressure**.

Dual nutrition challenge:

- Incidence of **micronutrient (zinc, iron, vitamins) deficiencies** ranged from **13% to 30% of children between ages 1 and 19**.
- The **prevalence of anaemia** in the country is at **40.6%, 23.5%, and 28.4%** in **children under age 5, ages 5-9, and 10-19** respectively.
- The **prevalence of anaemia** has risen due to **deficiencies in iron and folic acid**, stemming from the

consumption of unhealthy, highly processed, high-fat, sugar, and salt (HFSS) foods.

General Guidelines:

- The guidelines recommend getting the required nutrients from **at least eight food groups**, including **vegetables, leafy vegetables, roots and tubers, dairy, nuts, and oils**.
- Consumption of **cereals** — the staple of Indian meals — **should be restricted**.
 - They should contribute only **45% of the total energy** (instead of the 50-70% they currently do).
 - More proteins (pulses, meat, poultry, fish)** should be consumed, making up **14% of the total daily energy** (instead of only 6-9% now).
- Achieving adequate levels of **essential polyunsaturated fatty acids (PUFA)** and **B12** is a **challenge for vegetarians**.
 - The guidelines recommend the consumption of **flax seeds, chia seeds, walnuts, vegetables, and greens**.
- Salt and Sugar:**
 - Salt** consumption should be restricted to **5g a day**.
 - Guidelines strongly recommend **against** consuming highly processed foods that are typically high in fats, salt, and sugar.
 - NIN has advised Indians to **restrict sugar intake to 20 to 25 grams a day**.
- Oils and Fats:**
 - The institute also okayed **air-frying** as a mode of cooking for usually oil-intensive food items.
 - Another key suggestion is to **decrease the use of cooking oil** and obtain essential fatty acids through **nuts, oilseeds, and seafood**.
- Guidelines advise avoiding **protein supplements**.
- The NIN has also introduced guidelines for **interpreting packaged food labels** for the **first time**.

YOUNG & UNHEALTHY

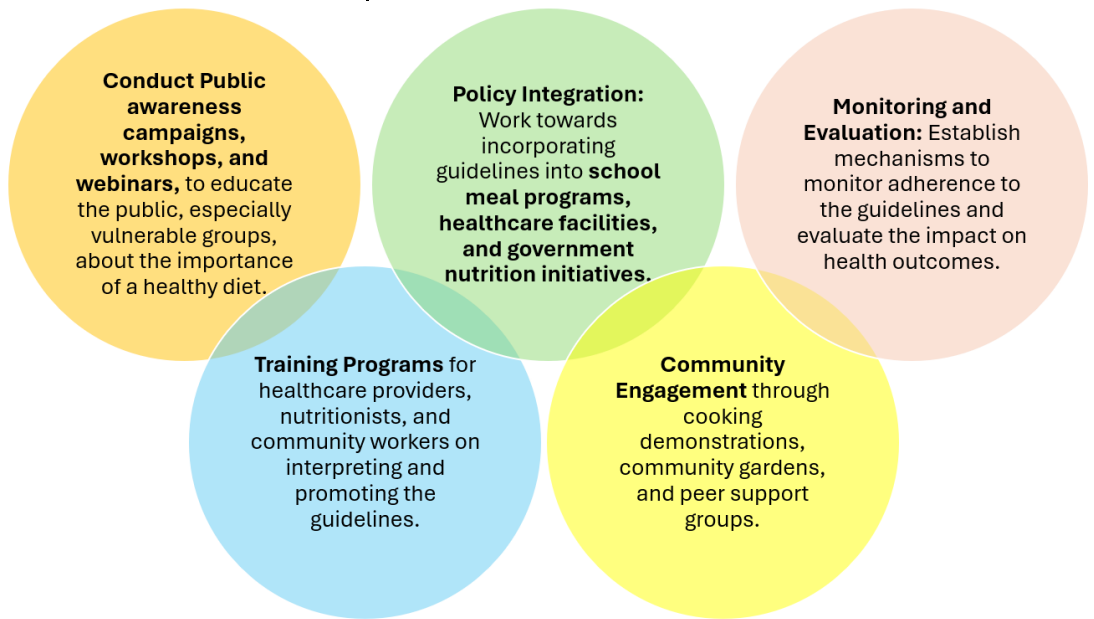
	1-4 yrs	5-9 yrs	10-19 yrs
DISEASES OF OVERNUTRITION (%)			
Overweight	3.7	4.9	4.9
Obesity	1.3	1.1	1.1
Pre-diabetes	10.3	10.4	10.4
Diabetes	1.2	0.6	0.6
Hypertension		4.9	4.9
High total cholesterol	3.2	3.7	3.7
DISEASES OF UNDERNUTRITION (%)			
Anaemia	40.6	23.5	28.4
MICRONUTRIENT DEFICIENCIES (%)			
Iron	32.1	17.0	21.5
Vitamin D	13.7	18.2	23.9
Vitamin A	17.5	21.5	15.6
Vitamin B12	13.8	17.2	30.9
Zinc	19.0	16.8	31.7

Source: ICMR-National Institute of Nutrition Report on Dietary Guidelines for Indians

Group-specific guidelines:

- Pregnant women:**

- **Small frequent meals** for those experiencing nausea and vomiting.
- The guidelines recommend the consumption of **lots of fruit and vegetables**, especially those **high in iron and folate content**.
- **Infants and children:**
 - For the **first six months**, infants should **only be breastfed** and **must not be given honey, glucose, or diluted milk**.
- **Elderly:**
 - The elderly should consume **foods rich in proteins, calcium, micronutrients, and fibre**.
 - Apart from pulses and cereals — with at least **one-third as whole grains** — at least 200-400 ml of **low-fat milk** or milk products, a fist full of nuts and oilseeds, and 400-500g of **vegetables and fruit** should be consumed.
 - **Exercise** is important to maintain bone density and muscle mass.
- **Cooking Utensils:**
 - NIN has termed **earthen cookware as the safest utensil** for cooking food and **warned about non-stick pans**.
 - Earthen pots are **eco-friendly, require less oil** for food preparation, and **preserve the nutrition of food**.
 - NIN has also issued guidelines for **using metal, steel, non-stick pans** and **granite stones**.
 - **Metal:** Storing acidic foods like chutneys and sambar in aluminium, iron, unlined brass, or copper vessels is unsafe.
 - **Stainless steel:** Generally considered safe, it doesn't leach.
 - **Non-stick pans:** Risky if heat is more than 170°C. Discard it if the coating is worn out or damaged.
 - **Granite stone:** Considered safe unless it contains Teflon coating. If so, medium-high temperature is advisable.



PEPPER IT WITH:
Non-communicable diseases (NCDs), National Institute of Nutrition (NIN)

Way Forward: Implementing the nutrition guidelines effectively can involve various strategies such as:

Expanded Programme on Immunization

News Excerpt:

The year 2024 commemorates **50 years** since the World Health Organization (WHO) launched the **Expanded Programme on Immunization (EPI)** in 1974. This program focused on **equity in childhood vaccine access**.

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Overview of the Essential Program on Immunization:

- Launched in 1974 by the WHO, the EPI's primary objective is to **establish equal access to life-saving vaccination** in **children** across all **geographical locations** and **socioeconomic statuses**.
- The program was introduced as the **eradication of the smallpox virus**, and a need to leverage the then **immunization infrastructure** and a **trained workforce** was recognized to expand the benefit of available vaccines.

Progress in coverage of vaccinations:

- In the early **1970s**, around **5% of children** in **low- and middle-income** countries had received **three doses of DPT**, which **increased to 84%** in **2022** at the global level.
- **Smallpox has been eradicated, Polio has been eliminated** from **all but two countries (Pakistan and Afghanistan)**, and **many vaccine-preventable diseases have nearly disappeared**.
- The number of children with three doses of **DPT (diphtheria-pertussis-tetanus)** has been rising over these years.

- In **India**, the coverage has increased every passing year and in **2019-21**, **76% of children** received the recommended vaccines.

Impact of EPI:

- Studies have shown that **vaccines have saved millions** of lives and **prevented billions of hospital visits** since the launch of EPI.
- **Economic analyses** have estimated that vaccines are **highly cost-effective interventions**, with every rupee spent on vaccination programmes ensuring a **seven- to elevenfold return**.
 - In **India**, the **private sector's share of overall health services** is nearly **two-thirds**; however, nearly **85% to 90%** of **all vaccines** are **delivered from government facilities**.

Challenges in universal immunization:

- In early 2023, **UNICEF's 'The State of the World's Children'** report revealed a concerning trend:
 - For the **first time in more than a decade**, childhood **immunization coverage had declined in 2021**.
 - In **2022**, globally, an estimated **14.3 million children received zero doses** (did not receive any recommended vaccine), while another **6.2 million children were partially immunized**.

Vaccines under the Universal Immunisation Programme:

1. BCG (Bacillus Calmette Guerin)
2. DPT (Diphtheria, Pertussis and Tetanus Toxoid)
3. OPV (Oral Polio Vaccine)
4. Measles
5. Hepatitis B
6. TT (Tetanus Toxoid)
7. JE vaccination (in high disease-burden districts)
8. Hib-containing Pentavalent vaccine (DPT+HepB+Hib) (In selected States)

Diseases Protected by Vaccination under UIP:

1. Diphtheria
2. Pertussis.
3. Tetanus
4. Polio
5. Tuberculosis
6. Measles
7. Hepatitis B
8. Japanese Encephalitis (known as brain fever)
9. Meningitis and Pneumonia caused by Haemophilus Influenzae type b

Need for Universal vaccination:

- **Diseases that are preventable with vaccines** are **becoming increasingly common in the adult population**. Therefore, it becomes imperative that government policies focus on the **vaccination of adults and the elderly**, as is happening in many countries.

- The recent announcement on **HPV vaccines** for **teenage girls** is a good start. Vaccines for **all age groups** should be made available for free at

Milestones covered under EPI of WHO and UIP of India	
1974	WHO launched the Expanded Programme on Immunization (EPI) .
1978	India launched the EPI in 1978 , which was later renamed the Universal Immunization Programme (UIP) in 1985 .
1980	The World Health Assembly declared smallpox eradicated (eliminated) .
1999	The Global Alliance for Vaccines and Immunization (GAVI) was created with the purpose of improving child health in the poorest countries.
2012	The Government of India declared 2012 as the "Year of Intensification of Routine Immunisation."
2014	India was certified Polio-free Polio by the Regional Polio Certification Commission in March 2014 .

government facilities.

- The **NTAGI** in India, which **recommends vaccine use**, should also start recommending vaccine use in adults and the elderly.
- Prevailing **myths and misconceptions** about vaccines must be **proactively addressed** to tackle **vaccine hesitancy**.
- Various **professional associations of doctors**, including **community medicine experts, family physicians, and pediatricians**, should work to **increase awareness** about vaccines among adults and the elderly.
- **Medical colleges and research institutions** should generate **evidence on the burden of diseases in the adult population in India**.

Way Forward:

- In **late 2023**, India launched a **pilot initiative for adult BCG vaccination** as part of efforts to **'end TB'** in India. The **COVID-19**

PEPPER IT WITH:
 Immunisation Agenda 2030 (IA2030), Global Vaccine Action Plan

vaccination of the adult population has sensitized the public **to the need** for and benefits of **adult vaccination**.

- In the **50th anniversary of the EPI**, it is time for **another expansion of the programme**, with a **focus on zero-dose children**, addressing **inequities in vaccine coverage**, and **offering vaccines to adults and the elderly**.

- It is time to make EPI an 'Essential Program on Immunization'.

Food Security Information Network (FSIN) on food crisis

News Excerpt:

According to the UN agencies and development groups, Food insecurity worsened worldwide in 2023.

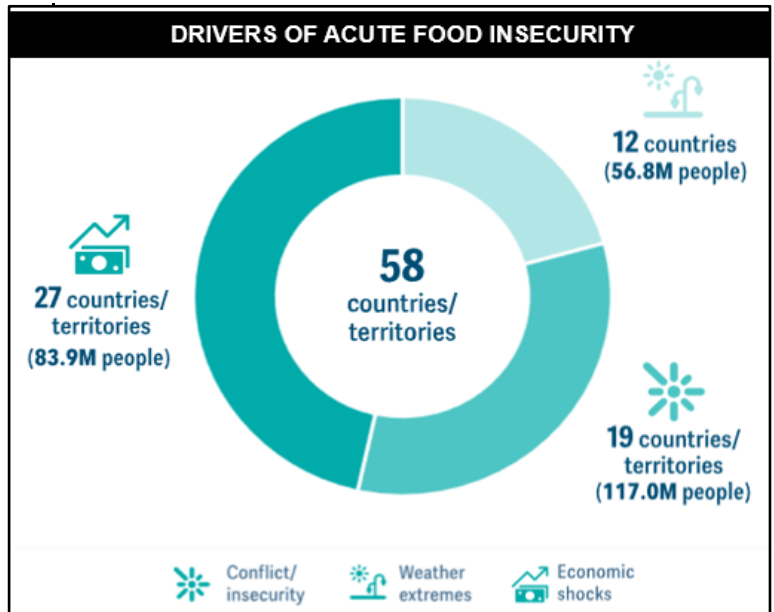
Key Points:

- With some **282 million people suffering from acute hunger** due to conflicts, particularly in Gaza and Sudan.
- Extreme weather events and economic shocks** also increased the number of people facing acute food insecurity, which grew by 24 million people compared with 2022, according to the latest **Global report on food crises** from the **Food Security Information Network (FSIN)**.
- 2023 was the fifth consecutive year of rises in the number of people suffering acute food insecurity, defined as when populations face food deprivation that threatens lives or livelihoods, regardless of the causes or length of time.
 - Much of last year's increase was due to the report's expanded geographic coverage and deteriorating conditions in 12 countries.
- More geographical areas experienced "**new or intensified shocks**" while there was a "**marked deterioration in key food crisis contexts such as Sudan and the Gaza Strip**".
 - Some 700,000 people, including 600,000 in Gaza, were on the brink of starvation last year, a figure that has since climbed yet higher to 1.1 million in the war-ridden Palestinian territory.
- The report found that, on a positive note, the **situation improved in 17 countries in 2023, including the Democratic Republic of Congo and Ukraine**.

Children starving:

- Since the first report by the **Global Food Crisis Network** in 2016, the number of food-insecure people has risen from **108 million to 282 million**.
- Meanwhile, the share of the population affected within the areas concerned has doubled, **from 11 percent to 22 percent**.
- Protracted major food crises are ongoing in **Afghanistan, the Democratic Republic of Congo, Ethiopia, Nigeria, Syria and Yemen**.
- War, climate chaos, and a cost-of-living crisis**, combined with inadequate action, meant that almost **300 million people faced an acute food crisis in 2023**.

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- One of the reasons is that Funding is not keeping pace with need.
- This is especially true as the **costs of distributing aid have risen**.
- For 2024, progress will depend on the end of hostilities, who stressed that aid could "**rapidly**" alleviate the crisis in Gaza or Sudan, for example, once humanitarian access to the areas is possible.

Food Security Information Network (FSIN):

- Technical global platform for exchanging expertise, knowledge, and best practices in food security and nutrition analysis.
- Purpose is to promote timely, accurate, independent and consensus-based food security and nutrition information while also highlighting and addressing critical data and information gaps.
- Plays a leading role in food security and nutrition data analysis and information, particularly in countries facing acute hunger.
- Supports evidence-based decision-making and promoting effective actions to eradicate hunger and malnutrition.
 - Since 2017, FSIN has worked closely with the **Global Network Against Food Crises (GNAFC)**.
- FSIN's work spans the effort of 16 global and regional partners committed to improving the availability and quality of food security and nutrition analysis for better decision-making.
- Funded by the European Union, FSIN is supported and guided by a Steering Committee and operates through a Secretariat.

Drivers of food insecurity:

- **Conflict/insecurity**
 - This includes **interstate and intrastate conflicts, internal violence, banditry and criminality, civil unrest, and political crises, which often lead to population displacements and/or disruption of livelihoods and food systems.**
 - Worsening conditions in **Haiti** were due to political instability and reduced agricultural production, **"where in the breadbasket of the Artibonite Valley, armed groups have seized agricultural land and stolen crops"**.

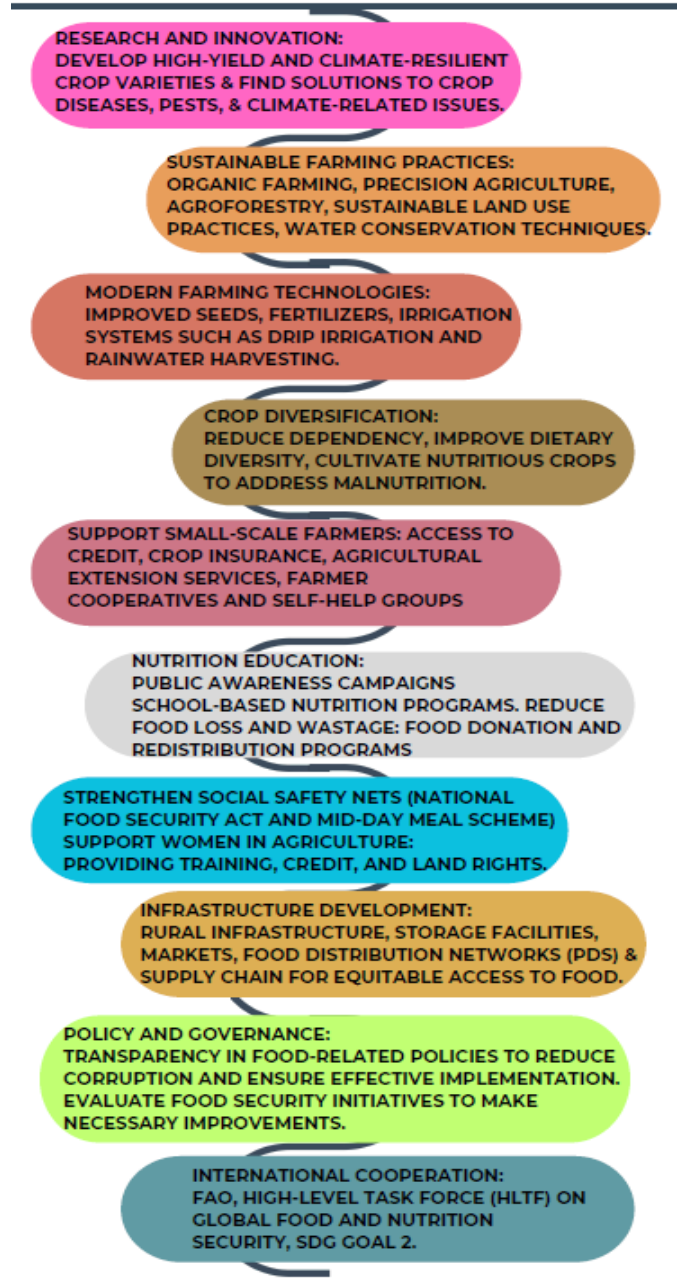
According to the report, situations of conflict or insecurity have become the main cause of acute hunger in **20 countries or territories where 135 million people have suffered.**

- **Weather extremes**
 - These include **droughts, floods, dry spells, storms, cyclones, hurricanes, typhoons and the untimely start of rainy seasons.**
 - Weather extremes drive food insecurity by directly affecting crops and/or livestock, cutting off roads and preventing markets from being stocked.
 - Extreme climatic events such as floods or droughts were the **main cause of acute food insecurity for 72 million people in 18 countries, and economic shocks pushed 75 million people into this situation in 21 countries.**
- **Economic shocks**
 - Macroeconomic shocks may lead to increases in acute food insecurity through, for instance, a **contraction in GDP leading to high unemployment rates and consequent loss of income for those affected households or a significant contraction in exports and/ or a critical decrease in investments and other capital inflows, bringing a significant currency depreciation and high inflation, increasing production costs and food prices and worsening terms of trade** which may lead to increases in acute food insecurity.

- **Crop pests and animal diseases**
 - Transboundary plant pests and diseases can easily spread to several countries and reach epidemic proportions.
 - **Outbreaks and upsurges can cause huge losses to crops and pastures, threatening farmers' livelihoods and the food and nutrition security of millions at a time.**

PEPPER IT WITH:
SDG 2, Food and Agriculture Organization (FAO), World Food Programme (WFP)

WAY FORWARD



Ultra-processed Foods Linked to Health Problems and Early Death

News Excerpt:

A recent study by **Harvard University**, spanning over 30 years, has highlighted the risks associated with consuming ultra-processed foods (UPF).

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What are Ultra-processed foods?

- Ultra-processed foods are those food items that **contain additives and ingredients not commonly found in home kitchens, such as artificial sweeteners, colours, and preservatives.**

- These products are characterized as **industrial formulations** primarily composed of **chemically modified substances** extracted from foods with minimal to no inclusion of whole foods.
- These are foods that are **high in saturated fats** and **lack nutrients and fibre**.
- UPFs include **packaged snacks, carbonated soft drinks, instant noodles, and ready-made meals**.

Key findings of the study:

- The data showed those who ate the most **ultra-processed food** had a **4% higher risk of death by any cause** compared to participants who ate the lowest amount.
- The people who regularly consumed **ultra-processed meats** faced a 13% higher likelihood of premature death over the study period.
- Moreover, those with diets **high in sugary and artificially sweetened beverages** saw a 9% increase in the risk of early death.
- There were **direct associations** between a higher intake of **ultra-processed foods** and a **greater risk of dying early, deaths from heart disease, common mental disorder outcomes, overweight or obesity, and Type 2 diabetes**.
- UPFs were also linked with a **higher risk of asthma, gastrointestinal issues, some cancers, and more**.
- The study found “**consistent evidence linking higher intakes**” of such foods with more than **70% of 45 health outcomes assessed**.
- A high intake of ultra-processed food could **increase anxiety by 53%** and the **risk of early death from any cause by 20%**.

How are ultra-processed foods hazardous?

- Excessive intake of **sodium, sugars or saturated fat** can elevate the risk of **chronic diseases**. Excessive sodium consumption, for instance, can **raise blood pressure**, potentially leading to heart disease.
- Consuming significant amounts of **foods and drinks with added sugars** has been associated with a **heightened risk of obesity and Type 2 diabetes**.
- Processed foods may also be linked to poor health because it **disrupts a healthy gut microbiome**.
- The heavy consumption of these foods alters the bacteria in our gut system, which can lead to **immune disturbance**.
- So, our **immune system wouldn't be able to stop the early development of cancer and cardiovascular diseases**.

Way Forward:

- There should be more focus on **unprocessed and minimally processed foods**, which include **fruits,**

vegetables, nuts, seeds, and unprocessed animal products like eggs, fish, and meat.

- This study highlights the importance of public health initiatives to reduce reliance on ultra-processed foods for **better overall health and longevity**.

PEPPER IT WITH:
'Jaivik Bharat' logo, Food Safety and Standards Act, 2006.

PRE-SHOTS

WHO launches first ever Patient Safety Rights Charter

News Excerpt:

WHO has launched a **Patient Safety Rights Charter** at the **Global Ministerial Summit on Patient Safety** held in **Santiago, Chile**.

About the Patient Safety Rights Charter:

- It is the **first Charter to outline patients' rights** in the context of **safety**.
- It outlines the core rights of all patients in the context of **health care safety** and **seeks to assist governments** and other stakeholders **in ensuring that patients' voices are heard** and their **right to safe health care is protected**.
 - It will support stakeholders in **formulating the legislation, policies and guidelines** needed to ensure patient safety.
- Everyone, everywhere, has the right to safety as a patient.
- Launching the Charter is a **tangible step toward achieving a safer, more equitable world**.

Patient Safety:

- Patient safety refers to the **processes, procedures and cultures** established in **health systems** that **promote safety** and **minimize the risk of patient harm**.
- It speaks about the fundamental principle of health care—'**Do no harm**'. Ensuring patient safety should be a global priority and a critical component of achieving the **Sustainable Development Goals** and delivering the right to health.
- It can be seen as an **indicator of countries' broader commitment to respect, protect and fulfil health-related human rights**

The 10 fundamental patient safety rights outlined in the Charter are the right to:

1. Timely, effective and appropriate care.
2. Safe health care processes and practices.
3. Qualified and competent health workers.
4. Safe medical products and their safe and rational use.
5. Safe and secure health care facilities.

6. Dignity, respect, non-discrimination, privacy and confidentiality.
7. Information, education and support decision-making.
8. Access medical records.
9. To be heard and fair resolution.
10. Patient and family engagement.

The challenge to patient safety:

- **Patient harm** in health care is a global challenge. It occurs in countries of all income settings and at all levels of healthcare delivery.
- Patient safety can be compromised due to **avoidable errors** such as **unsafe surgical procedures, medication errors, mis- or late diagnosis, poor injection practices, unsafe blood transfusion** and the **onset of life-threatening infections** such as **sepsis** and other healthcare-associated infections.
- **1 in every 10 patients** experience harm in healthcare; about **50% of this harm** is **preventable**.

Significance of the Charter:

Provide **healthcare workers, leaders, and governments** with **tools to build patient-centred healthcare systems**, improve patient safety, and reduce the risk of harm.

Provide **patients with the language to advocate** for themselves in healthcare settings and **facilitate continued collaboration between patients, their families and caregivers, communities, and health systems** to ensure everyone has access to **high-quality, safe healthcare**.

Global Ministerial Summit on Patient Safety:

- The **Sixth Global Ministerial Summit on Patient Safety** was held in **Santiago, Chile**, from 17 to 18 April 2024.
- At the summit, **ministers, healthcare leaders, and patient advocates** discussed how to bring change and sustain changes in **patient safety policies** and practices and the challenges and opportunities whilst implementing the **Global Patient Safety Action Plan**.
- Global Ministerial Summits on Patient Safety have significantly contributed to **raising awareness and driving the global patient safety movement**.
- A key achievement was the adoption of the World Health Assembly (WHA) **resolution "Global Action on Patient Safety"** in **May 2019**, which catalyzed the development of the **Global Patient Safety Action Plan 2021-2030**.
- The plan establishes a strategic direction and proposes a framework of action for relevant stakeholders to support patient safety worldwide.

Women childcare leave

News Excerpt:

Recently, The Supreme Court ruled that women's participation in the workforce is a constitutional right, and denying mothers childcare leave violates this right.

Background of the case:

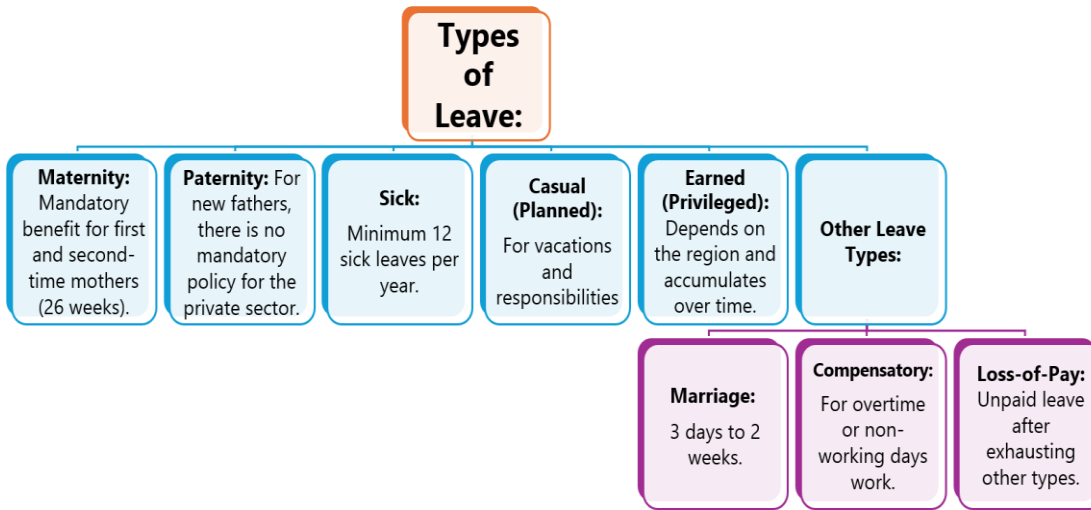
- The woman had approached the state seeking childcare leave as her son is suffering from **Osteogenesis Imperfecta**, a rare genetic disorder, and had undergone several surgeries.
 - Due to his continuous treatment, she had exhausted all her sanctioned leave. However, her application was declined on account of the state government's non-adoption of the provision of childcare leave—as provided under Rule 43-C of the **Central Civil Services (Leave) Rules, 1972**.

Supreme Court judgment:

- A bench of **Chief Justice of India D Y Chandrachud and J B Pardiwala** was hearing a plea from a woman. The court said the following:
 - Women's participation in the workforce is a matter of privilege and a constitutional entitlement protected by **Article 15** of the Constitution.
 - The state, as a model employer, cannot be oblivious to the special concerns of women in the workforce.
- Providing childcare leave to women sub-serves an important constitutional objective of ensuring that women are not deprived of their due participation as members of the workforce.
 - Otherwise, in the absence of provision for childcare leave, a mother may be constrained to leave the workforce.
- The court said it is **"conscious of the fact that ultimately the petition does trench on certain aspects of policy"** and added, **"equally the policies of the state must be synchronous with constitutional safeguards"**.
- **SC direction to Himachal Pradesh**
 - SC said the state must consider the entire aspect of granting childcare leave to mothers, including making special provisions consistent with the **Right to Persons with Disabilities (RPWD) Act** for mothers with children with special needs.
 - The court asked the state chief secretary to constitute a committee consisting of the state commissioner appointed under the **RPWD Act**, the secretary of the Women and Child Department, and the secretary of the Social Welfare Department to investigate all aspects of the matter.

- It directed that the panel's report be presented to competent authorities so that a policy decision could be made expeditiously.

- Following the recent notification, insurers are also prohibited from **refusing to issue policies to individuals with severe medical conditions like cancer, heart or renal failure, and AIDS.**



● IRDAI has also **reduced the waiting period for health insurance from 48 months to 36 months.**

○ All pre-existing conditions should be covered after 36 months, regardless of whether the policyholder disclosed them initially.

● Insurance companies are **barred**

from introducing indemnity-based health policies, which compensate for hospital expenses. Instead, they are **only permitted to provide benefit-based policies, offering fixed costs upon the occurrence of a covered disease.**

IRDAI removes age cap on health insurance purchase

News Excerpt:

The Insurance Regulatory and Development Authority of India (IRDAI) has removed the age limit for purchasing health insurance policies, effective April 1, 2024.

More about the news:

- **Previously, individuals were restricted to buying new insurance policies only until the age of 65.** With the recent changes, **anyone, regardless of age, is now eligible to purchase new health insurance.**
- Now, insurers must offer health insurance products catering to **all age groups.**
- They may design products specifically for **senior citizens, students, children, maternity,** and other groups as specified by the Competent Authority.
- The coverage is subject to offer and acceptance between the Insured and Insurer based on affordability for senior citizens and viability for Insurers.

Significance of the move:

- This move by the IRDAI aims to create a **more inclusive healthcare ecosystem** in India and **encourage insurance providers to diversify their product offerings.** This will lead to **better access to healthcare and reduced medical expenditures for senior citizens.**

Other changes introduced:

- IRDAI has also directed health insurance providers to **introduce tailored policies** for specific demographics, such as **senior citizens,** and establish **dedicated channels for handling their claims and grievances.**

The Insurance Regulatory and Development Authority of India (IRDAI):

- IRDAI is an **autonomous and statutory body** responsible for **managing and regulating India's insurance and reinsurance industry.**
- IRDAI is a **10-member body- a chairman, five full-time members, and four part-time members.**
- It was constituted under the **Insurance Regulatory and Development Authority Act of 1999** and has its headquarters in **Hyderabad.**

Activity-based curriculum drawn up for Anganwadi's

News Excerpt:

The National Framework of Early Childhood Stimulation framework document says learning begins at birth; staff in 14 lakh anganwadis will be trained, and parents are encouraged to engage toddlers in activities to reach milestones.

Key points about the National Framework of Early Childhood Stimulation 2024

- It lays down **month-by-month activities** for children from birth to 3 years of age to be conducted by parents, **anganwadi staff, and ASHA workers.**
- An internal committee comprising representatives from **the Ministry of Women and Child Development, the Ministry of Health and Family Welfare, the Department of School Education and Literacy, the**

Ministry of Education, the National Council of Educational Research and Training, the Institute of Home Economics, Delhi University, and civil society organizations has finalized the framework document.

- **The Navchetana**, activity-based curriculum follows the **National Education Policy 2020's** call for a continuum of learning. Staff of 14 lakh **anganwadis will be trained** on this curriculum.
- The curriculum involves talking, playing, moving, listening to music and sounds, and stimulating all the other senses — particularly sight and touch to reach developmental milestones across domains and develop **"early language, and emergent literacy and numeracy"**.
- The national framework provides detailed information on the **importance of brain development in the first 3 years**,
 - It provides detailed **information and step-by-step instructions** for caregivers and frontline workers.
- It includes **36 sets of activities for children from 0 to 36 months**,
 - Activities range from reaching for objects, imitating sounds, spinning bangles, and putting objects in and out of a jar **in the first year**
 - **After a year**, children can feed themselves, explore the house, help in the kitchen, play with dough, and use mirrors.
 - **At 18 months**, they scribble with crayons.
 - **At 24 months**, they sort and match shoes.
 - **By age three**, they cycle, say their names, and identify colours.
- The framework aims to help **identify children with developmental delays** so activities can be adapted accordingly.

Navchetana:

- **Navchetana**, the National Framework for Early Childhood Stimulation, aims to help children develop holistically, based on the principles of serve and return, **caregivers' three acts: love, talk, play, and positive guidance**.
- Special focus has been given to the **screening, inclusion and referrals of Divyang children**.
- The framework provides a stepping stone for children's long-term development, aiming to ensure that all children start their learning journeys on an equal footing. Further, it aims to empower **Anganwadi functionaries**, the world's largest women-led childcare workforce, with greater knowledge and capabilities for early childhood stimulation.

'High sugar' content in Nestle's baby food in India

News Excerpt:

- Nestle's baby food products sold in India have higher sugar content than the same products sold in European markets, according to a report released recently by a **Swiss NGO**, the **Public Eye and International Baby Food Action Network (IBFAN)**.

What does the report say?

- The report claims that **Nestle's wheat-based product, Cerelac**, which is sold **without any added sugars** in the **UK and Germany**, contained **2.7 grams** of added sugar per serving in **India**.
 - Cerelac is a brand of instant cereal for babies.
- The highest sugar content was found to be 7.3 grams in samples from the Philippines, where the information was not even declared on the packaging, the report said.

Why is added sugar not required by infants?

- Newborn babies primarily receive their nutrition from **breast milk** or **infant formula** in case of **inadequate breast milk availability**.
 - These sources already contain an **appropriate balance of sugars (lactose)** along with essential **fats**, proteins, minerals and **nutrients crucial** for a baby's growth and development.
 - Breast milk is **naturally sweet** due to **lactose**, which provides the necessary energy for the baby's growing body.
- Giving sugar beyond what is naturally present in breast milk or formula can be problematic for the child.

What are added sugars?

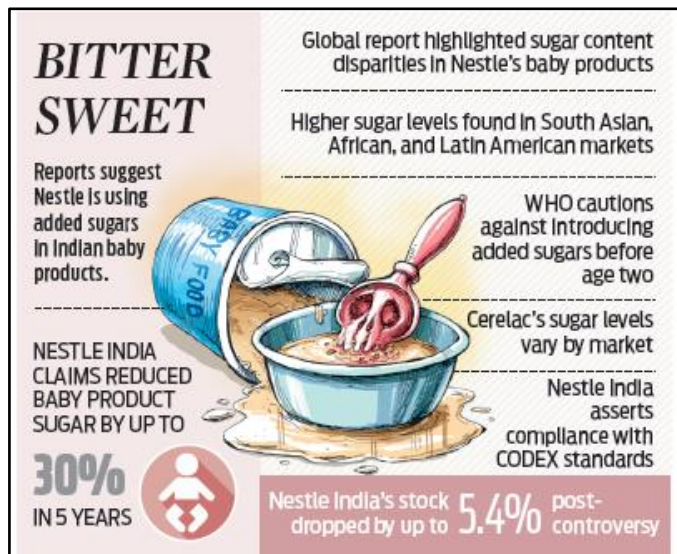
- Added sugars are **sweetening agents** such as **syrops** that are added to processed foods and beverages.
- They are **more harmful than the naturally occurring sugars** found in **fruits** and **milk**.
- When sugar is added to baby formula food, babies are much more likely to drink it because of its **pleasing taste**.

Why are added sugars harmful?

- The WHO advises against the introduction of added sugars before the **age of two years** to prevent **addictive eating habits**.
- Exposure to added sugars can lead to **weight gain**, obesity and an **increased risk of developing chronic diseases** such as **type 2 diabetes**, **heart disease** and **certain types of cancer** later in life.
- Additionally, **high sugar consumption** in infancy has been associated with an increased risk of **dental caries (tooth decay)** and **poor nutrient intake**, as sugary foods often displace more nutritious options in a child's diet.

How does such baby food harm the tender livers and pancreases of infants?

- Constant exposure to simple sugars places an **additional burden on the pancreas to produce insulin** (resulting in “hyperinsulinemia”), leading to its **exhaustion**.
 - This process also **induces resistance** to the **hormone leptin** and, in the process, **contributes to obesity**.
- Both **pancreatic exhaustion** and **excess body fat** raise **blood sugar levels** and release harmful substances known as “**inflammatory cytokines**”, which can **damage the kidneys and heart** and **lead to hypertension**.



What do Indian guidelines say?

- The regulations **do not prescribe an upper limit for added sugars**. They allow the use of corn syrup and malt in cereal-based infant food.
- Despite World Health Organisation (WHO) recommendations against added sugar in foods meant for children under **the age of three years**, Indian regulators do allow a limited amount of sucrose and fructose in baby food.
 - It also allows the use of **sucrose** and **fructose** as a **carbohydrate source**, provided it makes up **less than 20% of the carbohydrates in the food**.
- The **Food Safety and Standards Authority of India**, which regulates the manufacture, storage, distribution, sale, and import of food articles and establishes standards to ensure food safety, said that it is looking into the IBFAN report.

Only 3% of women have access to external funding in smaller cities

News Excerpt:

According to a new study, only **3% of women entrepreneurs in tier 2 and 3 cities in India** out of the 300

surveyed had **access to external funding** to **start or expand their businesses**.

More about the study:

- The study was part of a **white paper by the Reserve Bank Innovation Hub (RBIH) on women entrepreneurs transforming Middle India**.
 - It was released at an event organized by the **Federation of Indian Chambers of Commerce & Industry (FICCI)**.
- The study was undertaken because **gender-disaggregated data on credit** was not available earlier.

Key highlights of the study:

- Merely **3%** of the respondents accessed external funding, such as **bank loans** or **equity investments**, to start or expand their businesses.
 - About **62%** were **self-funded**, while **14.9%** received support from friends and family.
- Only **2%** of those surveyed availed of the benefits of **government policies** or grants.
- On average, women in India receive credit for only up to 27% of deposits made by them, whereas men receive up to 52%. According to the report, there is a **25% gender gap in access to credit on deposits**.

Information gap:

The white paper found a severe information gap

- in addition to the **vast gap in financing** for these **women-led ventures**.
 - The lack of gender-disaggregated data presents a **significant barrier to improving women's access to financial services**.

Challenges faced by women entrepreneurs:

- They have to **navigate business expansion** during **periods of childbearing and parenting**. Roughly **35% of the women were forced to temporarily pause** their entrepreneurial endeavours to **fulfil caregiving responsibilities**
- **45% of women transitioned into or joined family businesses** once their children reached a more independent age.

Support and motivation:

- Notably, **40.9% of women lived in joint families**, either with their parents or their parents-in-law, tapping into this support network to balance both familial and career demands.
- Motivations varied - while **32.17% were driven by personal interest**, **39.53% desired economic independence**.

Reserve Bank Innovation Hub (RBIH):

- The RBIH is a **wholly-owned subsidiary** of the **Reserve Bank of India (RBI)**.
- It was set up to **promote and facilitate an environment that accelerates innovation across the financial sector**.

- The RBIH has been registered as a **section 8 company** under **the Companies Act 2013**, having its registered office in **Hyderabad**.
- **Objectives:**
 - RBIH provides the platform to anchor a shared vision among all **financial ecosystem stakeholders** and aid them in crafting **forward-looking innovation strategies** while addressing the most pressing issues in the Indian financial sector.
 - RBIH aims to foster and evangelize innovation across the financial sector, enabling a billion Indians to have secure, frictionless access to suitable, sustainable financial products.

To achieve its objectives, RBIH partners and works with a network of **financial services providers, fintech innovation hubs, policymakers, technologists, academia**, and the **investor community**:

REPORTS

World Press Freedom Index

News Excerpt:

The index by **Reporters Without Borders (RSF)** ranks 180 countries on the ability of journalists to work and report freely and independently.

More about the News:

Press freedom has declined globally, with a **significant rise in political repression** targeting journalists and independent media outlets. Governments and political actors increasingly undermine media autonomy and resort to hostile actions such as harassment, detention, and disinformation campaigns.

Key Points:

- **Global Rankings:** Despite maintaining its **top ranking**, **Norway** has experienced a decline in its political score. Ireland, previously ranked 8th, has relinquished its leading position within the European Union to Denmark (2nd), with Sweden following closely in 3rd place.
- **India's Status:** **India** has improved its ranking to **159th, up from 161st last year**. However, the **score has deteriorated from 36.62 to 31.28**. Pakistan is ranked 152nd, while Sri Lanka is at 150th place. However, these rankings indicate ongoing challenges to press freedom in these countries.
- **Regional Challenges:**
 - **Maghreb and Middle East:** Governments in this region have intensified efforts to control and suppress the media through violence, arrests, and draconian laws. The impunity for crimes against journalists remains a significant concern.

- **Latin America:** Political repression of journalism is alarming, with examples such as **Argentina's president boasting about suppressing the free press and shutting down major news agencies**.
- **Europe:** Russia's crackdown on **independent journalism** has led to a significant exodus of journalists abroad, while Belarus continues to persecute journalists under the pretext of combating extremism.
- **Asia-Pacific Region:** Dictatorial governments in the region are tightening control over news and information. Countries like Afghanistan, North Korea, China, Vietnam, and Myanmar. have seen a decline in press freedom due to the mass imprisonment of media professionals and all-out persecution of local media.
- **Political Indicator Decline:** The Index reveals a decline in the political indicator, indicating that states and political forces are playing a decreasing role in protecting press freedom.
- **Use of Artificial Intelligence (AI):** RSF highlights the increasing use of AI, including deepfakes, in disinformation campaigns for political purposes.
- **Reporting on Environmental Issues:** Covering stories related to the environment has become increasingly dangerous, with 44 journalists killed over the past 15 years for reporting on environmental issues.

Implications: As Per the RSF, India's rise in press freedom rankings is due to declines in other countries rather than actual improvement.

Other reasons cited by RSF:

- **Unofficial State of Emergency:** Since the current union government assumed office in 2014, India's media landscape has experienced what RSF describes as an **"unofficial state of emergency."**
- **Harassment of Journalists:** Journalists critical of the government face harassment, including online abuse, threats, physical attacks, and legal prosecution. In regions like Kashmir, journalists are particularly vulnerable to harassment by authorities, including arbitrary detention.
- **Call for Action:** The RSF report highlights the urgent need for greater protection of journalists' rights and independence from government interference in India. It calls on authorities to address these challenges and uphold press freedom as a fundamental pillar of democracy.

The latest **World Press Freedom Index by Reporters Without Borders (RSF)** paints a complex picture of the state of press freedom worldwide, highlighting both improvements and ongoing challenges faced by journalists across different regions.

Global Report on Internal Displacement-2024

News Excerpt:

According to the **Global Report on Internal Displacement (GRID)-2024**, there were 75.9 million people living in internal displacement globally as of the end of 2023, up from 71.1 million in 2022.

More about the GRID report:

- The **Global Report on Internal Displacement** is an authoritative source for data, based on which the annual **Internal Displacement Monitoring Centre (IDMC)** is published.
- Each year, IDMC presents **validated estimates of internal displacements** caused by **conflict and**

Internal Displacement Monitoring Centre (IDMC):

- The Internal Displacement Monitoring Centre (IDMC) is the world's leading source of data and analysis on internal displacement.
- It was **established in 1998** as part of the **Norwegian Refugee Council (NRC)**.
- The centre informs **policy and operational decisions** that improve the lives of the millions of people living in **internal displacement** or at risk of becoming displaced in the future.

disasters and the **total cumulative number of IDPs worldwide**.

- The GRID also provides an overview of the year's most significant internal displacement situations, highlighting potential measures to address the issue across the **humanitarian, development, disaster risk reduction and climate change agendas**.

Key highlights of the GRID 2024:

Conflicts have driven a record 75.9 million people into internal displacement

- The number of **internally displaced people (IDPs)** has **grown by 50%** in the **last five years**.
- Conflicts in **Sudan, the Democratic Republic of the Congo (DRC) and Palestine** accounted for **nearly two-thirds of new movements in 2023**.
- **3.4 million new movements in the Gaza Strip** in the last quarter of 2023, leaving 1.7 million internally displaced by the end of the year

Regional trends:

- **Sub-Saharan Africa:**
 - **Sub-Saharan Africa**, which hosts **46% of the world's IDPs**, was again the region most affected by internal displacement in 2023.
- **Middle East and North Africa:**
 - The conflict in **Palestine** contributed to an **eight-fold increase in conflict displacements in the**

Middle East and North Africa in 2023 after three years of consecutive decreases.

- **Disaster displacement figures** were also the highest ever reported for the region, largely the result of earthquakes and floods.
- **East Asia and the Pacific:**
 - East Asia, particularly Myanmar and the Pacific countries recorded the **highest number of disaster displacements globally**.
- **South Asia:**
 - Conflict and disasters triggered **47% fewer displacements** than the **average of the past decade in South Asia**, although disasters still uprooted millions of people from their homes.
- **Americas:**
 - **Conflict and violence triggered the largest number of movements** in the **region** since records began in **2009**, with **Colombia and Haiti accounting for 85% of the total**.
- **Europe and Central Asia:**
 - **Europe and Central Asia** recorded by far the **highest number of disaster displacements** in 2023.
 - The earthquakes in **Türkiye** accounted for **most of them**, but wildfire, storm and flood displacements also increased around the Mediterranean basin.
 - Almost all the **conflict displacements** recorded in the region were associated with the conflict between **Russia and Ukraine**.

India-specific trends:

- Conflict and violence triggered **69,000 displacements in South Asia in 2023**, with **Manipur violence alone accounting for 67,000**. It is the **highest number of displacements** triggered by **conflict and violence in India since 2018**.
- **5.3 million people** were living in **internal displacement due to conflict and violence across South Asia** at the end of 2023.

Why does the number of IDPs keep increasing?

- New escalations of conflict, such as in **Sudan** and **Palestine**, forced millions of people to flee in 2023, adding to the tens of millions already living in displacement from ongoing or previous conflicts.
- **Earthquakes, storms, floods and wildfires** destroyed large numbers of homes, forcing more people to remain displaced at the end of the year.

What is needed to reduce the number of IDPs?

- **Supporting return, local integration or resettlement, and addressing IDPs' vulnerabilities is essential**.
- To prevent new and repeated displacement and end ongoing crises, governments need to **reinforce conflict resolution, peacebuilding, disaster risk reduction, poverty reduction and climate action**.

- **Better data** to inform **prevention and response**, as well as **monitoring progress** towards solutions, will help maximize the impact of these interventions.

World Migration Report 2024

News Excerpt:

The **International Organization for Migration (IOM)** launched the **World Migration Report 2024**, which reveals significant shifts in global migration patterns, including a record number of displaced people and a major increase in international remittances.

About the report:

- Since 2000, IOM has been producing its flagship world migration reports every two years.
 - The last two years saw **major migration and displacement events** that have caused great hardship and trauma, as well as loss of life. In addition to the conflicts in **Ukraine and Gaza**, millions of people have been displaced due to conflict.
 - There have also been large-scale displacements triggered by **climate- and weather-related disasters** in many parts of the world.
 - We also witnessed the **intensification of migration as a political tool** in democratic systems around the world, with some national elections being fought on **anti-immigration sentiment**, especially in Europe.

Key highlights of the report:

- The report highlights that **international migration remains a driver of human development and economic growth**, highlighted by a more than **650 percent increase in international remittances** from 2000 to 2022, rising from USD 128 billion to USD 831 billion.
- With an estimated **281 million international migrants (3.6% of the global population)** worldwide, the number of displaced individuals due to conflict, violence, disaster, and other reasons has surged to the **highest levels in modern-day records**, reaching 117 million.
- Of that 831 billion in remittances, 647 billion were sent by migrants to low- and middle-income countries. These remittances can constitute a **significant portion of those countries' GDPs**, and globally, these

Table 1. Key facts and figures from *World Migration Reports 2000 and 2024*

	2000 report	2024 report
Estimated number of international migrants	150 million	281 million
Estimated proportion of world population who are migrants	2.8%	3.6%
Estimated proportion of female international migrants	47.5%	48.0%
Estimated proportion of international migrants who are children	16.0%	10.1%
Region with the highest proportion of international migrants	Oceania	Oceania
Country with the highest proportion of international migrants	United Arab Emirates	United Arab Emirates
Number of migrant workers	–	169 million
Global international remittances (USD)	128 billion	831 billion
Number of refugees	14 million	35.4 million
Number of internally displaced persons	21 million	71.4 million

remittances now surpass foreign direct investment in those countries.

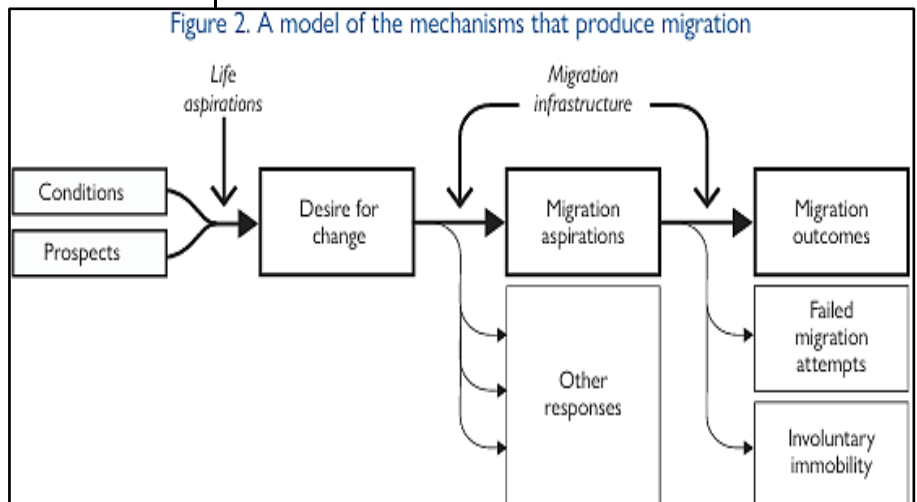
- **Intensification of ecologically negative human activity:** Overconsumption and overproduction linked to unsustainable economic growth, resource depletion, and biodiversity collapse, as well as ongoing climate change (including global heating), are continuing to grip the world.

Most migration is **regular, safe, and regionally focused, directly linked to opportunities and livelihoods**. Yet, misinformation and politicization have clouded public discourse.

Migration corridors:

Migration corridors represent an **accumulation of migratory movements over time** and provide a snapshot of how migration patterns have evolved into

Figure 2. A model of the mechanisms that produce migration



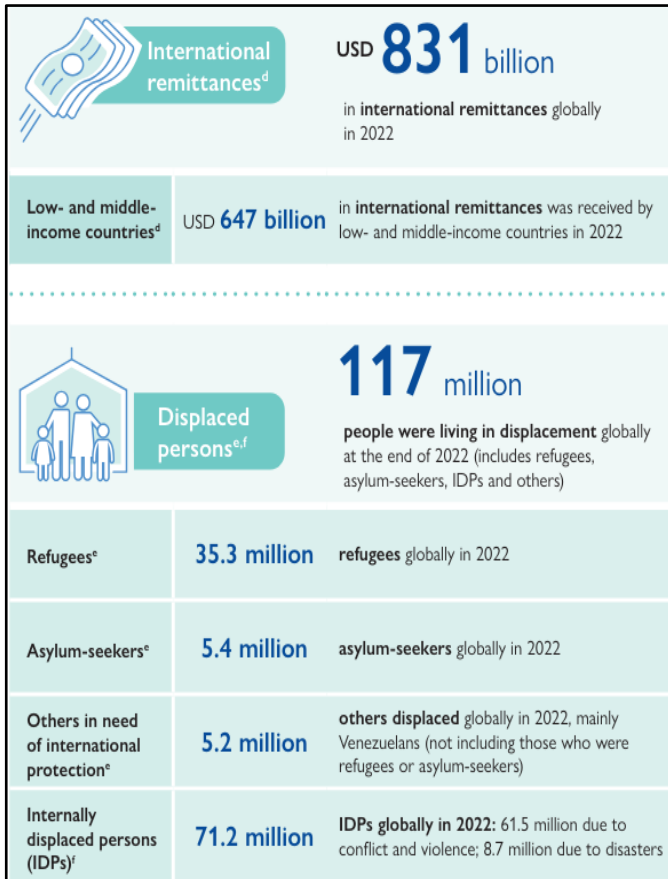
significant foreign-born populations in specific destination countries.

More than **40 percent of all international migrants worldwide in 2020** (115 million) were born in Asia, with nearly 20 percent primarily originating from six Asian countries, including **India (the largest country of origin)**, China, Bangladesh, Pakistan, the Philippines, and Afghanistan. **Mexico was the second-largest**

country of origin, and the Russian Federation was third.

Trends on international migrants (stocks) and international migration (flows).

Migrant groups are – namely, **migrant workers, international students, refugees, asylum-seekers, and internally displaced persons.**



With an estimated **281 million international migrants (3.6% of the global population)** worldwide, the number of displaced individuals due to conflict, violence, disaster, and other reasons has surged to the **highest levels in modern-day records**, reaching 117 million.

Refugees: By the end of 2022, there was a total of 35.3 million refugees globally, with 29.4 million under UNHCR’s mandate, and 5.9 million refugees registered by the **United Nations Relief and Works Agency for Palestine Refugees (UNRWA).**

Asylum Seekers: There were also approximately 5.4 million people seeking international protection and awaiting determination of their refugee status, who are referred to as asylum seekers.

Internally displaced persons: At an estimated 62.5 million, the total global stock of people internally displaced by conflict and violence in 65 countries and territories as of 31 December 2022 was the highest on record since IDMC began monitoring in 1998.

Regional dimensions of migration with a focus on six world regions:

Africa:

- The latest available stock data (2020) show that around 21 million Africans were living in another African country.
- **Irregular migration** to and from North Africa remains the defining feature of migration dynamics in the subregion, with **many migrants suffering human rights abuses such as Xenophobia and racism.**
- **Conflict and violence** continue to cause cross-border and internal displacement.

Asia:

- It was the origin of over **40 percent** of the world’s international migrants. In contrast to Africa, the largest internal displacements in Asia **were the result of disasters rather than conflict and violence.**
- The **Middle East remains a major origin of refugees and asylum-seekers** while also featuring some of the largest internally displaced populations in the world.

Europe:

- Nearly **87 million international migrants lived in Europe**; the **Russian Federation’s full-scale invasion of Ukraine** in February 2022 resulted in one of the largest and fastest displacements in Europe since the Second World War.

Latin America & Caribbean:

- Over 25 million migrants had made the journey north and were residing in Northern America. Intraregional migration in South America, including for labour, remains high.
- Latin America faces daunting challenges related to environmental degradation, disasters and climate change – including displacement.

Northern America:

- Nearly 59 million migrants from a variety of regions were residing in Northern America.
- As **labour shortages** take a toll on the economies of both Canada and the United States, both countries have enacted strategies to attract migrant workers to fill critical labour gaps.
- **Canada** continues to resettle more refugees than any other country globally.

Oceania:

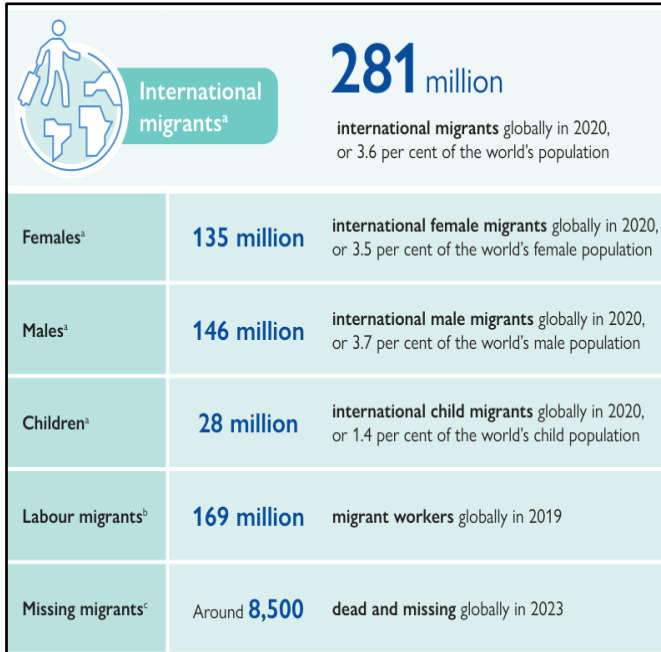
- Relative to their population, small island States, including those in Oceania, have the highest displacement risk **due to climate change.**
- Oceania, particularly Australia, remains a **top destination for international students.**

Gender and migration:

- This chapter provides an overview of the **interactions between migration and gender** across diverse geographies worldwide.
- It covers **family migration, marriage migration and displacement**, with a particular focus on labour

migration, one of the main – and highly gendered – types of migration.

- The chapter highlights the urgency of adopting a **gender-responsive approach** to migration governance to empower migrants of all genders and promote gender equality.



A post-pandemic rebound:

- COVID-19 has catalyzed or accelerated social transformations, both **temporary and structural, across regions.**
- These transformations include changes in **consumption patterns in developed and developing countries, high inflation and global economic slowdowns, and demographic changes.**

Conclusion:

In a world grappling with uncertainty, understanding migration dynamics is essential for informed decision-making and effective policy responses.

United Nations Population Fund's (UNFPA) State of World Population - 2024 report

News Excerpt:

India leads globally with an **estimated population of 144.17 crore**, followed by **China at 142.5 crore**, according to the United Nations Population Fund's (UNFPA) State of World Population - 2024 report.

Key highlights of the report:

- The report detailed that an estimated **24 percent of India's population is aged 0-14**, while **17 per cent is within the 10-19 age range.**
- The **segment aged 10-24** is estimated to constitute **26 percent**, with the **15-64 age group** making up **68 percent.**

- Additionally, **7 percent of India's population is aged 65 years and above**, with men's life expectancy at 71 and women's at 74.
- The **child marriage percentage in India was 23 percent between 2006 and 2023.**
- **Maternal deaths in India had fallen considerably**, accounting for **8 per cent** of all such fatalities worldwide.
- The report noted that **India continues to see dramatic inequities in maternal death risk.**
 - The UNFPA said recent research into India's 640 districts revealed that while **nearly a third achieved the sustainable development goal of reducing maternal mortality ratio below 70 per 100,000 live births**, 114 districts still have ratios of 210 or more.
 - The highest - 1,671 per 100,000 births - is seen in the Tirap district of Arunachal Pradesh, a rural area with a high proportion of indigenous peoples.
- The report noted that **women with disabilities are up to 10 times more likely to experience gender-based violence** than their peers without disabilities.
- Improvements in healthcare access have primarily **benefited wealthier women** and those who belong to **ethnic groups** that already have better access to healthcare.
- **Women and girls with disabilities, migrants and refugees, ethnic minorities, LGBTQIA+ people, people living with HIV, and disadvantaged castes all face greater sexual and reproductive health risks** and unequal access to sexual and reproductive health care.
 - Their vulnerability is **further compounded by powerful forces such as climate change, humanitarian crises, and mass migration**, which often have a disproportionate impact on women at the margins of society.
- The report said Dalit activists have argued for legal protection for women facing caste-based discrimination in workplaces and education.
 - **Almost half of Dalit women**, for instance, **receive no antenatal care, and high rates of gender-based violence** are considered a means of oppression and control.
- The report said millions of women and girls remain far behind, and progress is slowing or stalled on key measures - **800 women die every day giving birth, unchanged since 2016.**
 - **A quarter of women cannot say no to sex with their partner, and nearly one in 10 women cannot make their own decisions about contraception.**
 - In 40 per cent of countries with data, the report said women's bodily autonomy is diminishing.

United Nations Population Fund

- The United Nations Population Fund (UNFPA) delivers a world where **every pregnancy is wanted, every birth is safe, and every young person's potential is fulfilled**.
- The agency began **operating in 1969** as the United Nations Fund for Population Activities. In 1987, its name was changed to the United Nations Population Fund.
- The **goal** of UNFPA is to **ensure sexual and reproductive rights and choices for all**, especially women and young people, so that they can access high-quality sexual and reproductive health services, including voluntary family planning, maternal health care, and comprehensive sexuality education.
- It **aims to end unmet needs for family planning, preventable maternal death, and gender-based violence** and harmful practices, including child marriage and female genital mutilation, **by 2030**.

Global Education Monitoring (GEM) Report

News Excerpt:

Digital technologies and algorithm-driven software - especially social media - present high risks of privacy invasion, cyberbullying, and distraction from learning to young girls, according to the **UN Educational, Scientific and Cultural Organization's (UNESCO)** latest **Global Education Monitoring (GEM)** report.

GEM Report:

- Established in 2002, the GEM Report is an editorially independent report hosted and published by **UNESCO**.
- At the **2015 World Education Forum**, 160 governments mandated it to monitor and report on progress on education in the **Sustainable Development Goals (SDGs)**, with reference to the **SDG 4 monitoring framework** and the implementation of national and international strategies, to help hold all relevant partners accountable for their commitments.
- **SDG 4:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Key highlights:

Social media negatively affects well-being and reinforces gender stereotypes:

- Exposure to social media can **negatively affect** self-esteem and body image, particularly for girls.

- Consequently, this can impact their **mental health and well-being**, both of which are essential for academic success.
- **Facebook's research** found that 32% of teenage girls said **Instagram** made them feel worse when they felt bad about their bodies.
- Girls suffer more **cyberbullying** than boys.
 - Across **OECD countries** with available data, 12% of 15-year-old girls reported being cyberbullied, compared to 8% of boys.
- The rise of image-based sexual content, **AI-generated deepfakes**, and 'self-generated' sexual imagery circulating online and in classrooms.
- The findings demonstrate the importance of greater investment in education, including media and information literacy, and smarter regulation of digital platforms, which is in line with UNESCO's Guidelines for the Governance of Digital Platforms.

Negative gender stereotypes dampen girls' STEM aspirations:

- There is a feedback loop in which girls are exposed to **negative gender norms** amplified by **social media**.
 - Girls are steered away from studying **science, technology, engineering, and mathematics (STEM)** subjects that are considered **male-oriented fields**.
- **According to UNESCO data**, women make up only 35% of tertiary STEM graduates worldwide, a figure that has not changed in the past ten years.
 - Persistent biases deter women from pursuing STEM careers, ultimately resulting in a **lack of women in the technology workforce**.
- Women hold less than **25% of jobs** in **science, engineering, information, and communication technologies** fields across the world's leading economies.
- Evidence shows that the digital transformation is being led by men.
 - Although 68% of countries have policies in place to **support STEM education**, only **half of these policies** specifically support girls and women.
- Policy efforts should seek to **promote role models**, including on social media, to encourage career choices in STEM among young women.

Improving girls' access to STEM studies is key to ensuring that women participate on equal terms in the digital transformation of our societies and supporting the design of truly inclusive technology.

ECONOMY

Inheritance Tax in India

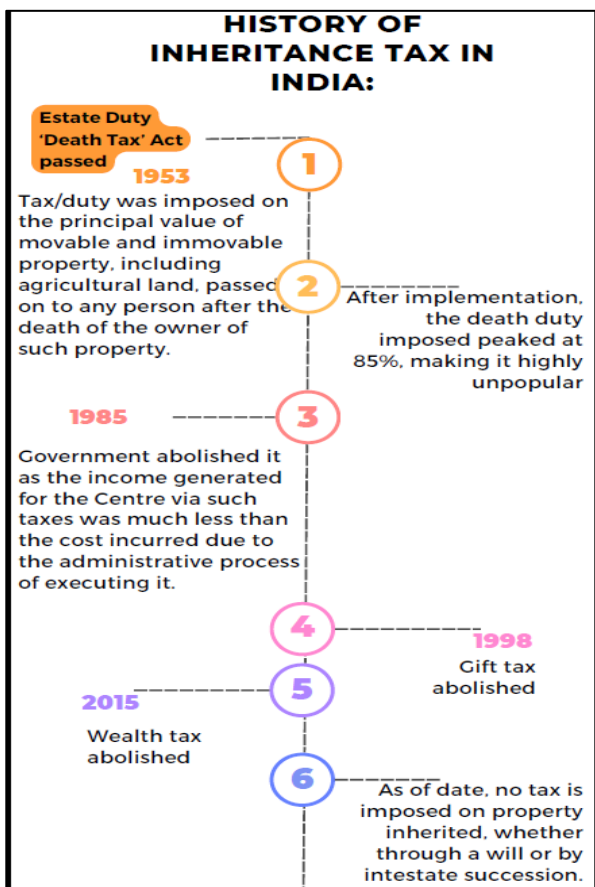
News Excerpt:

The use of inheritance tax as a tool for the redistribution of wealth to address income inequality has been discussed widely amid ongoing General Elections.

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What are Inheritance Tax and Estate Tax?

- **Estate and inheritance taxes** are two types imposed when a person passes away. Although they are both **related to death**, they have different targets.
- **Estate taxes** are applied to the **total value of the deceased person's property as of the date of death**. In contrast, **inheritance taxes** are **charged to the property's beneficiaries**.
- The tax amount is generally calculated based on the **value of the assets** remaining after all the exemptions and deductions have been made.
- The primary objectives of inheritance taxes are to **boost government revenue** and **promote wealth redistribution**.



Ways to tax wealth:

- Taxes are levied as a one-time levy on the **flow of income from wealth** at the **time of wealth transfer** or on the **stock of wealth** linked to the value of owned assets.

- There can be a **capital levy on income from wealth or ownership of assets** resulting in capital gains, **transfer taxes in the form of wealth tax, inheritance tax, estate tax, or gift tax** at the time of transfer of wealth or assets.
- Taxes can also be levied on a **combination of income and wealth**.

Shortcomings of inheritance/wealth tax:

- Wealthy taxpayers are seen as being **sensitive to high taxation** rates, which often results in the **flight of capital and investment to tax havens or jurisdictions with favourable tax rates**.
 - According to the EU Tax Observatory, an independent research laboratory at the Paris School of Economics, **global billionaires have effective tax rates equivalent to 0-0.5% of their wealth** due to the frequent use of **shell companies** to avoid income taxation.
 - Wealthy taxpayers often reduce the incidence of average tax rates by **exploiting loopholes** and **preferential treatments** of certain capital income.
- Also, high tax rates do not make sense if the **cost of collection** and **administration** of these taxes are high **compared to the revenues** that arise.
 - In the initial years of **estate duty**, **collections were lower than the budgeted estimates**.
 - The estate duty also did **not achieve its objectives** of reducing the unequal distribution of wealth and assisting states in financing their development schemes.
- The issue with **wealth tax** was the same.
 - Therefore, the **government abolished the wealth tax and replaced it with an additional 2% surcharge on the super-rich with a taxable income of over Rs 1 crore in 2015**.
- **The gift tax** was levied and abolished in 1958 and 1998, **respectively, citing lower revenues**.
 - It was, however, revived in a different form later.
 - In July 2004, the government introduced a gift tax to plug a loophole to prevent money laundering.
 - Thus, purported gifts from unrelated persons above the threshold of Rs 25,000 (later raised to Rs 50,000) were decided to be taxed as income. Gifts from blood relations, lineal ascendants and descendants, and gifts on occasions like marriage continued to be exempt.

Experience elsewhere:

- A **March 2024** note by the **International Monetary Fund (IMF)** said tax rates on wealth have **generally declined** worldwide over the past decades.

- **12 OECD members had wealth taxes in 1990, but only three (Switzerland, Spain, Norway) now levy a broad-based wealth tax.**
- According to leading financial firm **Pricewaterhouse Coopers (PwC)**, most **European, American, and even African nations levy inheritance tax.**
 - In Europe, the top nations levying tax on inherited properties are **France (60%), Germany (50%), the United Kingdom (40%), Spain (33%), and Hungary (18%).**
 - Other countries with **high inheritance taxes are Japan (55%), South Korea (50%), Ecuador (37%), Chile (25%), South Africa (25%) and Taiwan (20%).**

Way Forward:

- **Introduction of a Higher Threshold:** If the government plans to introduce an inheritance tax, it should implement a higher threshold to ensure that only the super-rich are taxed.
- **Exemptions for Donations:** Donations made by the super-rich to hospitals and universities should be exempt from inheritance tax calculations.
- **Enhancing Tax Administration Capacity:** Tax agencies should leverage advanced technologies to lower the costs of administering and monitoring compliance with the inheritance tax.
- **Adjustments to Complementary Taxes:** The government should revise complementary taxes, such as the Wealth Tax and Gift Tax, to prevent the super-rich from evading the inheritance tax.

PEPPER IT WITH:
Inequality, Land Value Tax (LVT), Taxation system in India

Standard Essential Patents (SEPs)

News Excerpt:

India remains the **only major economy that has not yet investigated** the potentially abusive licensing practices of technology companies that own SEPs.

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About the news:

- There is a possible crisis brewing in India over how certain technology companies are wielding 'standard essential patents' (SEP) **against the telecom manufacturing sector.**
- This directly affects **India's effort to build a domestic manufacturing industry for cellular phones.**
- So far, the issue of regulating SEPs has been left to the **Indian judicial system.**

What are SEPs?

- These are **patents that cover technologies that are adopted by the industry as "standards".** For example, technologies such as CDMA, GSM, and LTE are all industry standards in the telecom sector.

- Such technological standards are especially important **to ensure the interoperability of different brands of cellular phones manufactured by different companies.**
 - **For example,** once GSM was adopted as a standard, all manufacturers had to ensure that their handsets were compatible with GSM. Otherwise, there would be no demand for their phones.
- The **companies that own the SEPs theoretically gain enormously** because every cell phone manufacturer has to license the technological standards in question in order to survive in the market.
- The **lack of alternatives** also means that SEP owners can demand **extortionary royalties** or licensing terms from manufacturers that block competition. In economics, this is called the **"patent holdup" problem.**
- In theory, the SSOs are supposed to prevent such a scenario by requiring the owners of SEPs to license their technologies at a **fair, reasonable and non-discriminatory (FRAND) rate.**

Associated Problems:

- **Opaque Nature:**
 - The process of setting standards in the technology sector **is largely privatized and is opaque.**
 - It is also **dominated by "Standard-Setting Organizations" (SSOs),** run largely by private technology companies.
 - Countries such as India, which has little innovation in the telecom sector, have little influence over how standards are set or how SEPs are licensed.
- **Self-Regulation Model:**
 - In practice, this model of self-regulation by the technology industry has been marked with opacity and has **failed rather spectacularly,** as evidenced by the record fines that some of these SEP owners have had to pay worldwide for **engaging in anti-competitive practices.**
- **The Effect of Judicial Lethargy and Activism:**
 - Both judicial lethargy and judicial activism at the Delhi High Court have characterized the Indian response to the issue.
 - **Yet, the Delhi High Court has justified such judicial activism by invoking its "inherent powers to do justice."**
 - This judicial activism, combined with judicial delays, will hurt the government's attempt to attract more investment in the manufacturing sector, such as **under the "Production Linked Incentives" scheme for manufacturing in India.**

Case under study:

- In 2013, the **Competition Commission of India (CCI),** acting on a complaint by **Micromax** began an

investigation under the Competition Act into the issue of whether **Ericsson** abused its dominant position by demanding extortionate royalties for its SEPs.

- Ericsson challenged the CCI's power to do so before the Delhi High Court, arguing that the **Patents Act vested the power to remedy an abuse of patents only with the Patent Office.**
- The first round of litigation was resolved **in favour of the CCI** by a **single judge** on March 30, 2016.
- Ericsson then challenged this decision before the Division Bench of the **Delhi High Court**, where it remained pending for an astounding seven years until a judgment was delivered **against the CCI** on July 13, 2023.
- The CCI has appealed against this decision to the **Supreme Court of India**, where the matter remains **pending.**
- These trials are **complex and take time.** Also, they are **unprecedented** in the history of commercial law for the simple reason that there is no provision in the law granting judges such powers.

Way Forward:

- It is **time for the Indian government to intervene** and put in place measures to **regulate SEPs** before the judiciary causes further damage to India's manufacturing dreams. India will not be an outlier if it intervenes.
- The **European Parliament has already enacted one such set of measures to regulate SEPs.** India, arguably, has a much stronger case to push for similar, if not stronger regulatory measures, since it has no say in how SEPs are selected by SSOs, while also being compelled by international agreements to enforce patents of foreign technology companies.

PEPPER IT WITH:

Judicial lethargy and activism, Patent System in India

RBI's draft rules for payment aggregators

News Excerpt:

The **Reserve Bank of India (RBI)** has come out with draft guidelines for **payment aggregators' (PA) know-your-customer (KYC) requirements, due diligence of merchants, and operations of escrow accounts.**

What are the Payment Aggregators (PA):

- PAs are entities that **facilitate e-commerce sites and merchants to accept various payment instruments** from the customers for completion of their payment obligations.
- PAs unburden the merchants from creating a **separate payment integration system** of their own.

What exactly are the norms about?

- The **existing guidelines** cover the activities of PAs in **e-commerce sites** and other **online avenues.**
 - The **latest draft guidelines** propose to **extend these regulations to offline spaces**, entailing proximity or **face-to-face transactions.**
 - RBI observed back in June 2022 that the nature of activities carried out by the PAs, both online and offline, is similar, thus it aspires to bring in **synergy in regulation and data collection.**
- The proposed norms incorporate lessons from what happened this year with **Paytm Payments Bank (PPBL).**
 - The PPBL crisis was triggered by, among other things, major irregularities in the bank's **KYC** adherence.
 - The **Financial Intelligence Unit (FIU-IND)** had imposed a penalty of ₹5.49 crore having found that PPBL **"engaged in a number of illegal acts, including organising and facilitating online gambling."**
 - It added that the money generated from it was **"routed and channelled through bank accounts maintained by these (illegal) entities"** with the PPBL.
- With the expansion of the scope of operations of PAs, the RBI appears to be strengthening the ecosystem against any opacity.

Proposed RBI guidelines for payment aggregators:

- The primary focus of the guidelines is on **non-bank PAs** and, within them, the **offline extensions.**
 - **Non-banking entities** providing PA services at the **point of sale (PoS)**, that is, offline, would have to **inform the RBI within 60 days (after the circular is issued)** about their **intent to seek authorisation.**
 - As for **non-banking entities providing PA services online** — both those authorised and whose applications are pending — would be required to **seek approval**, about their existing offline PA activity, from the **Department of Payment and Settlement Systems** and the regulator **within 60 days** of the directions being mandated.
- **Banks providing physical PA services would not require any separate authorisation from the RBI.**
 - They are only **expected to comply with the revised instructions within three months** after they are issued.
- The **net-worth norms** for PAs which facilitate **face-to-face, or proximity payment transactions** now need to have a **minimum net worth of Rs 15 crore** while applying to the RBI for authorisation. They should have a **minimum net worth of Rs 25 crore by March 2028.**

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- The RBI's directions also stipulate that entities currently engaged in PoS activities must ensure they adhere to guidelines on **merchant on-boarding, customer grievance redressal and dispute management, baseline technology recommendations, security, fraud prevention and risk management framework** as per the previous framework **within 3 months**.

Changes in the KYC requirements:

- While KYC is **already mandatory** in the **existing guidelines**, the regulations seek to make the provisions more nuanced.
 - The regulations aim to **ensure that onboarded merchants do not collect and settle funds for services not offered on their platforms**.
- The RBI's proposed instructions categorise merchants into **small and medium merchants**.
 - **Small merchants** would constitute **physical merchants** with an **annual business turnover of less than ₹5 lakh** who are **not registered** under the **GST regime**.
 - **Medium merchants**, defined as **physical or online merchants** with **annual business turnover of less than ₹40 lakhs** who are **not registered under the GST**.
- RBI has proposed that the PAs undertake '**contact point verification**', that is, collect physical information to establish the existence of the firm.
 - They must also **verify the bank accounts** in which their funds are settled.
 - Medium merchants would also have to undergo contact point verification.
 - The PA would be expected to **establish their existence** by verifying one official document each of the **proprietor, beneficial owner or attorney holder**, and of the stated business.

- PAs must assign **risk-based payment limits** to the merchants. Based on their transaction pattern, the merchant could be migrated to a higher degree of due diligence.

Due Diligence:

- **Stricter customer due diligence measures** for payment aggregators have been proposed to ensure that **only eligible merchants** can access **digital payment services**.
- Besides, all PAs must join the financial intelligence unit (FIU) under the **finance ministry** to report any suspicious transactions.

Storage of card data:

- The draft regulations instruct that no entity, other than the **card issuer and/or card network, can store data** for proximity/face-to-face payments from **August 1, 2025**.

- All existing data stored by entities other than card issuers and card networks will have to be deleted.
- To track transactions and reconcile them, entities would be **allowed to store limited data**, that is, the **last four digits** of the **card number** and the **issuer's name**.

Way Forward:

- The draft guidelines are an **important step towards** having a **consolidated unified regulatory** view of the **merchant's services space** by explicitly including the aggregation of physical merchants along with online merchants.
- The amendments to the existing regulations provide clarity on several aspects including **role of third parties, marketplaces, classification of merchants, multiple PAs**, extension of **risk/due diligence requirements** to all merchants, etc.
 - The clarity of the regulations will also **boost the PA ecosystem**, improve **digital trust**, and **promote ethical practices**.
- While the increased net worth requirements will raise industry standards, they also ensure a **level playing field and enhance consumer protection**.
- Experts are also of the opinion that it's about time the industry realizes the **purpose of KYC**, which is to **prevent fraud**, and not just provide ease of use.

PEPPER IT WITH:
RBI, Payment and Settlement Systems Act, 2007, Payment Gateway

15% global minimum tax in Europe

News Excerpt:

Indian multinationals with a presence in **18 European Union nations, the UK, Vietnam, and South Korea**, will be subject to a **15% global minimum tax rule** after they implement rules for the tax reform.

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More on the news:

- Some **130 countries**, including **India**, have **signed on to the global tax reform**.
- However, the countries (European Union nations, the UK, Vietnam and South Korea) mentioned above have **implemented domestic rules**, which are **effective from 1 January 2024 or later**.
- Given the implementation of the **Global Anti-Base Erosion (GloBE) rules** in these countries from 1 January, **Indian-headquartered multinational business groups** with a presence there will be **required to comply with the GloBE rules even if India has yet to implement them**.

- Accordingly, **Indian multinational groups** will have to **provide for top-up tax**, if applicable, in their financial statements for the year ending 31 March 2024.
- **Eighteen of the EU's 27 nations** have put in place **domestic laws** for the **global minimum tax** as per the **EU directive**.
- The **consequence of failure to pay the new tax** would be a **top-up tax** in the jurisdiction applicable.
- Ideally, **most headquarters jurisdictions** would **impose the top-up tax**, but under some circumstances, it could be **other jurisdictions** in which the **multinational enterprise operates**.
- **Alternatively**, the **tax jurisdiction** where the **income arises** could **impose** a Qualified Domestic Minimum Top-Up Tax (QDMTT).

What is the top-up tax?

- It is the **difference between the globally agreed minimum tax rate of 15%** and the **effective tax rate (ETR)** the entity in the **low-tax jurisdiction** is subject to.
- **If the low-tax country does not neutralise its tax advantage** by introducing what is called a **Qualified Domestic Minimum Top-up Tax (QDMTT)**, the intermediate holding company or the ultimate parent in other jurisdictions will be subject to a top-up tax.

- **Strengthening Tax Administration and Enforcement:**
 - To ensure compliance with the global minimum tax rules, **developing countries need to strengthen their tax administration and enforcement mechanisms**.
 - This includes **investing in technology** and **capacity-building** to enhance their ability to monitor and collect taxes effectively.
 - Developing nations should also **consider collaborating with international organizations** and other countries to **share best practices** and enhance their tax administration capabilities.
- **Advocating for Equity and Inclusivity:**
 - Developing countries should **actively participate in international tax discussions to advocate for their interests** and ensure that the global minimum tax regime is fair and inclusive.
 - They should **seek to address concerns related to the distribution of taxing rights, the impact on tax revenues**, and the **potential disadvantages** faced by developing countries.
 - By actively engaging in the global tax reform debate, developing nations can influence the design and implementation of the global minimum tax.
- **Exploring Regional Cooperation:**

Potential Impact on Developing Countries:

<p>Potential loss of tax incentives: Elimination of tax incentives could discourage foreign direct investment (FDI) and hinder their economic development.</p>	<p>Tax incentives attract investments, and removal of these incentives could make them less competitive in the global market.</p>	<p>Potential loss of tax revenues to developed countries.</p>	<p>Under global minimum tax rules, if a developing country's tax incentives result in an effective tax rate below 15%, home country of multinational enterprises (MNEs) may collect minimum tax instead.</p> <p>This could lead to a shift of tax revenues from developing countries to developed nations, further exacerbating existing inequalities.</p>
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- Developing countries can also **consider exploring regional cooperation to address the challenges posed by the global minimum tax**.
- By collaborating with neighbouring countries, developing nations can **develop regional strategies to attract investment, harmonize tax policies, and collectively negotiate with MNEs**.
- Regional cooperation can help mitigate the potential disadvantages faced by individual developing countries and present a unified front in international tax discussions.

Navigating the Global Minimum Tax Landscape:

Given the potential challenges posed by the global minimum tax, **developing countries need to navigate this new tax landscape carefully**. Here are **some key considerations for developing nations**:

- **Reviewing and Modifying Tax Incentives:**
 - Developing countries should conduct a **comprehensive review of their existing tax incentives** to assess their compatibility with the global minimum tax regime.
 - This review should **aim** to identify and **modify any tax incentives** that may be **affected by the minimum tax rate of 15%**.

- **Diversifying the Economy:**
 - Developing countries should **focus on diversifying their economies to reduce their reliance on specific sectors or industries** that may be more susceptible to the impact of the global minimum tax.
 - By promoting economic diversification, developing nations can create resilient economies that are less vulnerable to changes in the global tax landscape.
- **Evaluating the Impact on FDI:**
 - Developing countries should **closely monitor the impact of the global minimum tax on FDI**.
 - Developing nations should **track investment trends, evaluate the effectiveness of alternative**

investment strategies, and adjust their policies accordingly.

- **Promoting Transparency and Accountability:**
 - Developing countries should **prioritize transparency and accountability in their tax systems to build trust and attract investments.**
 - By implementing robust **anti-corruption measures, promoting transparency, and enforcing strong corporate governance standards,** developing nations can create an enabling environment for investors.

What is the global minimum tax?

- The global minimum tax was **agreed upon by 137 countries** and jurisdictions as **part of the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS).**
- The **aim** of the global minimum tax is to **ensure that multinational enterprises (MNEs) pay a minimum tax rate of 15% in each country** where they operate, thus **preventing profit shifting and tax avoidance.**
- It consists of **two pillars:**
 - **Pillar one** focuses on addressing tax challenges arising from the digitalization of the economy.
 - **Pillar two,** known as the **Global Anti-Base Erosion (GloBE) rules,** establishes the base rate approach for the global minimum tax.
- It sets a minimum tax rate of 15% for MNEs with a turnover above a certain threshold.
- The intention is to **prevent MNEs from shifting profits to low-tax jurisdictions and engaging in harmful tax competition.**

Way Forward:

- **For India,** many experts expect the **Central Board of Direct Taxes (CBDT)** to come out with legislative amendments to the **Income Tax Act** to implement the global minimum tax regime and levy any top-up tax it needs.
- **Indian-headquartered groups with subsidiaries in low-tax jurisdictions,** especially those that have already announced the implementation of the 15% global minimum tax regime, should **evaluate its impact while preparing consolidated group financials.**

PEPPER IT WITH:
Global Minimum Tax, European Union, OECD, BEPS Programme

Global Financial Stability Report

News Excerpt:

The **International Monetary Fund (IMF)** released the latest global financial stability report **warning** about the **risks** to the **global financial system** from persistent **high inflation, rising**

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lending in the **unregulated credit market,** and **increasing cyber-attacks** on **financial institutions.**

What is the IMF's worry about inflation?

- The **IMF** believes that **investor enthusiasm about slowing inflation in the public** and a possible cut in interest rates by central banks **may be quite premature.**
- **Investors** have been **pushing up the prices of financial assets** such as stocks in recent months, **hoping that central banks** will soon begin **lowering interest rates** as inflation comes under control.
- **Although central banks** have **yet to lower interest rates,** investors may take falling inflation as a cue that they will soon flush the markets with more money to lower interest rates.
 - **So, they purchase financial assets in anticipation of greater demand** when banks lower interest rates, thus pushing up the prices of these assets right now.
- The **IMF** has also **warned** that **geopolitical risks,** such as the **ongoing wars in West Asia and Ukraine,** could **affect aggregate supply and lead to higher prices.**
 - **This might stop central banks from lowering rates anytime soon.**
- **If these risks persist,** the IMF believes **that investors** who have been **bidding up asset prices** and expecting fresh money from central banks to push up asset prices in the near future **may change their minds.**

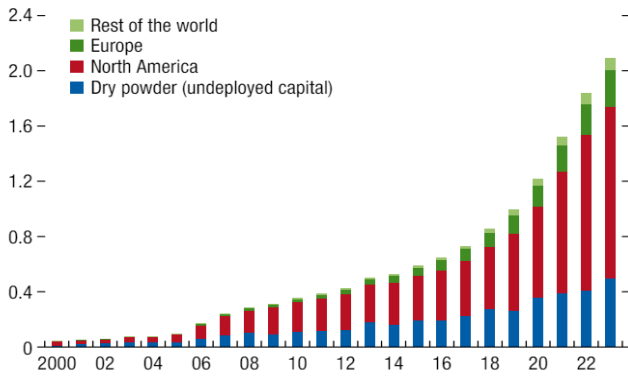
What does it mean for India?

- In 2023, **India** was the **second-largest recipient of foreign capital after the U.S.,** according to Elara Capital.
- However, **things could change quickly** if **Western central banks signal that they can keep interest rates high for a long time.**
 - This could **cause investors to pull money out of emerging markets like India** and **increase pressure on their currencies.**
- **If Western central banks fail to lower interest rates,** a **severe outflow of capital could cause further depreciation of the rupee** and affect the country's financial system.
- In such a scenario, the **RBI will likely defend the rupee by curbing liquidity to raise interest rates,** which could cause the economy to slow down.

What about the private credit market?

- In its report, the **IMF** noted that the **growing unregulated private credit market,** in which **non-bank financial institutions lend to corporate borrowers,** is a **growing concern.**

Figure ES.7. Private Credit Growth
(Trillions of US dollars)



- **Non-bank financial institutions lending to corporate borrowers** include **institutional investors** such as **pension funds** and **insurance companies**.
 - **Institutional investors** are investing in the private credit market because **they offer higher returns than normal investments**.
- Meanwhile, the **borrowers benefit** as they **cannot get convenient long-term funds through other venues**.
- The **IMF** is **worried** that the **borrowers** in the **private credit market may not be financially sound** and noted that **many of them do not have current earnings that exceed even their interest costs**.
- It also argues that **since these loans rarely trade in an open, liquid market** as many other securities do, it might be **hard for investors to gauge the risk involved**.
- **In a highly liquid market** where securities are traded frequently, investors price the **real risk behind a loan more immediately** and more **accurately**.
- **It may be the case** that **institutional investors** are fully **willing to bear the risk in return for higher returns**.
- **India** has also **seen the growth of a small private credit market** with the rise of **Alternative Investment Funds (AIFs)**.
 - The **Securities and Exchange Board of India (SEBI)** notes that **investments made through these funds**, although still small, have **more than tripled from ₹1.1 lakh crore in 2018-19 to ₹3.4 lakh crore in 2022-23**.

Increasing Cyber-Attacks:

- With growing digitalization, evolving technologies, and increasing geopolitical tensions, cyber incidents—especially those with malicious intent—are a **rising concern for macro financial stability**.
- Although most losses from cyberattacks are modest, the risk of extreme losses has been increasing. They acutely threaten the financial system because of its **exposure to sensitive data, high concentration, and technological and financial interconnectedness**.

Way Forward:

- Central banks should **avoid premature monetary easing** and appropriately push back against overly optimistic market expectations for policy rate cuts.
- Ensure that banks are prepared to access central bank liquidity and **intervene early to address liquidity stress** in the financial sector can mitigate financial instability.
- Given the potential risks of the fast-growing private credit market, authorities should consider a **more proactive supervisory and regulatory approach** to close data gaps.
- A cybersecurity strategy can strengthen the cyber resilience of the financial sector, **accompanied by effective regulation and supervisory capacity**, as well as by improved reporting of cyber incidents.

PEPPER IT WITH:
IMF, Private Credit, Alternate Investment Funds

PRE-SHOTS

RBI sets draft norms for web aggregators of loan products

News Excerpt:

RBI released draft guidelines for a regulatory framework for the aggregation of loan products by **lending service providers (LSP)** to enhance transparency and enable borrowers to have prior information about potential lenders.

More about News:

- **The Reserve Bank of India (RBI)** has proposed that banks and non-banking finance companies (NBFCs) should ensure that their **loan service providers (LSPs)** provide a **digital view** of all the loan offers available to the borrower from all the willing lenders that the LSP has arrangements.
- **The digital view** should include details like
 - the name of the lender,
 - the loan amount and tenor,
 - annual percentage rate, and
 - other key terms and conditions, enabling **fair comparison between offers**.
- The LSP should follow a consistent approach to ascertain the willingness of lenders to offer a loan, and this approach should be disclosed on their website.
- A link to the **key facts statement (KFS)** must be provided for each regulated entity (bank or NBFC).
 - **KFS** is a statement of key facts of a loan agreement **in simple and easier-to-understand language**, provided to the borrower in a standardized format.

- The content displayed by the LSP should be **unbiased** and should not directly or indirectly promote or push a product of a particular lender, including through **deceptive practices or patterns** that might mislead borrowers.
- The **RBI has defined an LSP** as an agent of a regulated entity (**banks and NBFCs**) that carries out functions like customer acquisition, underwriting support, pricing support, servicing, monitoring, and recovery of loans or loan portfolios on behalf of the regulated entities.
- The draft norms aim to **enhance transparency and enable borrowers** to have prior information about potential lenders through these **web aggregators or digital lending apps/platforms**.

Voluntary conversion of SFBs into universal banks

News Excerpt:

The Reserve Bank of India (RBI) came out with guidelines for the voluntary **conversion of small finance banks (SFBs) into universal banks**.

Background:

- The RBI granted licenses to the first set of SFBs, totalling 10, in 2015, and they began operations in 2016-17. As of the end of June 2023, 12 SFBs across the country were operational. With the merger of AU SFB and Fincare, **there are now 11 SFBs**.
- Most of them are now **eligible for such a conversion** after completing five years of operations.

The Guidelines for SFBs:

- The **"Guidelines for 'on-tap' Licensing of SFBs in Private Sector"**, dated December 5, 2019, provide a transition path for SFBs to become universal banks.
- These instructions are issued in the exercise of the powers conferred on the RBI under **Section 22 (1) of the Banking Regulation Act, 1949**.

Eligibility criteria:

- To be eligible for conversion into a universal bank, the RBI stipulates that **only listed SFBs will qualify**.
- Those intending to convert must have a **minimum net worth of Rs 1,000 crore**.
- Also, the SFBs must have a scheduled status and a satisfactory track record of at **least five years with a gross non-performing asset (NPA) of 3 percent or less** and a net NPA of 1 percent or less in the past two financial years.
- Furthermore, interested SFBs must have reported a **net profit in the past two financial years** and met the prescribed capital adequacy norms.
- The RBI requires SFBs to provide a **detailed rationale for their desire to convert into a universal bank**.

NOT SO SMALL

Name	Net worth (₹ cr)	Capital adequacy ratio (%)	FY23		Latest	
			Gross NPA (%)	Net NPA (%)	Gross NPA (%)	Net NPA (%)
AU SFB	12,496.8	20.1	1.66	0.42	1.7	0.6
Equitas SFB	5,968.7	21.7	2.76	1.21	2.6	1.2
Ujjivan SFB	5,083.0	24.4	2.88	0.04	2.2	0.2
Utkarsh SFB	2,973.2	22.6	3.23	0.39	2.5	0.0
ESAF SFB	2,442.0	21.0	2.49	1.13	4.2	2.2
Jana SFB	2,436.6	16.3	3.60	2.40	2.2	0.7
Suryoday SFB	1,742.7	27.8	3.13	1.55	3.1	1.4
Capital SFB	743.4	20.1	2.77	1.36	3.0	1.5

Data for AU SFB, Equitas SFB and Utkarsh SFB until March 2024; data for the rest until December 2023

All the above listed SFBs reported a net profit in FY23, and also in the trailing 12-month period ended Dec '23/FY24

Source: Capitaline
Compiled by BS Research Bureau

Those with a **diversified loan portfolio** will be preferred.

Norms for the shareholding pattern for SFBs wishing to convert to a universal bank.

- The central bank stated that there is **no mandatory requirement for SFBs to have an identified promoter**. However, the existing promoters will continue as the promoters when it transitions to a universal bank.
- Also, SFBs will **not be permitted to add or change their existing promoters** during the transitioning phase.
- After the transition to a universal bank, there will be **no new mandatory lock-in requirement** for the promoters.

State-level DPI adoption index

News Excerpt:

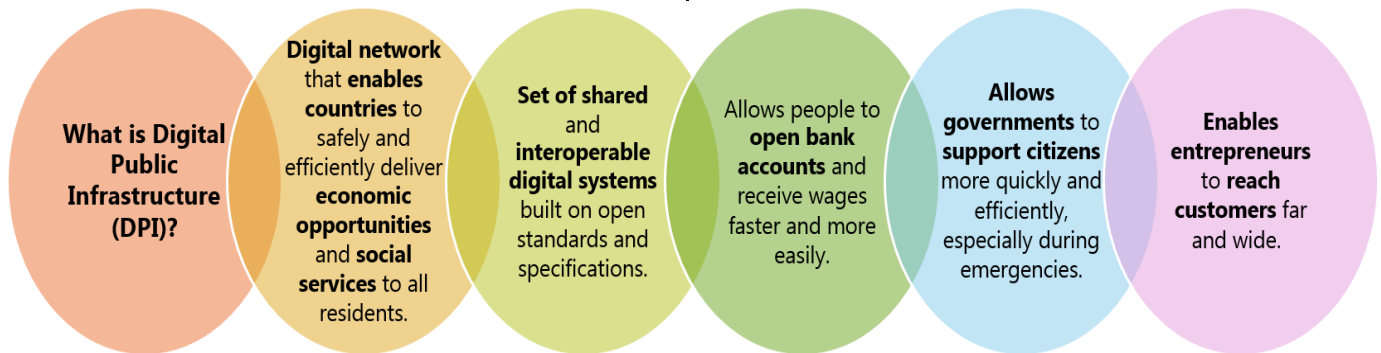
The **World Bank**, along with the **Ministry of Electronics & Information Technology (MeitY)**, is working on developing a state-level **Digital Public Infrastructure (DPI) adoption index**.

State-level DPI Index:

- The state-level DPI index will help analyse gaps to **strengthen the digital economy, support financial inclusion, and increase public-private innovation**.
- The Index would **evaluate different states** based on the **level of adoption of DPIs**. The main aim is to **encourage states to increase the use of DPIs**.

India's DPI:

- India's DPI, also known as **India Stack**, has been appreciated widely for **improving financial inclusion and increasing formalization in the economy**.
- It consists of digital identity through **Aadhaar**, real-time payment through the **UPI** platform, and other services like **account aggregator**.



- India's DPIs have led to the inclusion of **half a billion people** into the **banking system** and enabled the **direct transfer of benefits to millions**.
- Several foreign countries have also expressed interest in India's DPI.
 - Last year, the Centre signed memorandums of understanding (**MoUs**) with **eight countries** to offer them **India Stack** and **DPI at no cost** and with open-source access.
 - These were **Armenia, Sierra Leone, Suriname, Antigua, Barbados, Trinidad and Tobago, Papua New Guinea, and Mauritius**.
 - A global coalition led by the Central Government would take **India's DPI** model to **50 countries** in the **next five years**.
 - This coalition included the **World Bank** and the **International Monetary Fund (IMF)**.

SEBI proposes to facilitate domestic MFs to invest in overseas funds

News Excerpt:

Market regulator **Securities and Exchange Board of India (SEBI)** proposed to allow investment by domestic mutual funds that have a limited exposure to Indian securities in overseas funds.

More about the news:

- Currently, SEBI-registered mutual funds are allowed to invest in overseas securities, including **ADRs/GDRs** issued by Indian or foreign companies, equity of overseas companies listed on recognized stock exchanges, **IPOs/FPOs** for overseas listings, and government securities of investment-grade-rated countries.
- **SEBI** is proposing to allow domestic **mutual funds** to invest in overseas mutual funds/unit trusts (**mutual funds/Unit trusts**) that have exposure to Indian securities, subject to a limit of 20% of the overseas **MF/UT's** net assets.

Key Benefits from this decision:

- **Diversification:** This proposal allows domestic mutual funds to **diversify their portfolios** further by gaining exposure to overseas funds. Diversification can help

mitigate risks and potentially improve overall portfolio performance.

- **Access to Growth Opportunities:** This provides domestic mutual funds with access to the growth potential of the Indian economy. India's strong economic prospects make it an **attractive destination** for foreign investment, and participating in these opportunities can benefit domestic investors.
- **Risk Management:** The proposal includes a **limit of 20% exposure to Indian securities for overseas funds**, which helps manage the risk of over-concentration in a single market. Additionally, the six-month observance period allows domestic mutual funds to monitor and adjust their investments if the exposure exceeds the limit.
- **Market Efficiency:** Increased participation can contribute to the efficiency of both domestic and international markets. It can **enhance liquidity, price discovery, and market transparency**, benefiting investors and market participants.
- **Transparency and Governance:** SEBI's requirement for overseas funds to be managed by an officially appointed, independent investment manager/fund manager ensures transparency and adherence to governance standards. Periodic disclosure of portfolios to the public helps investors make informed decisions.
- **Alignment with Global Trends:** The proposal aligns with global investment trends where investors seek exposure to emerging markets like India. By facilitating investments in overseas funds with Indian exposure, SEBI enables domestic mutual funds to align with international investment strategies and market dynamics.

E-tail sector in India

News Excerpt:

The **e-tail sector in India**, which is expected to be nearly **USD 60 billion** in the financial year **2023-24**, is projected to grow at a **compounded annual growth rate (CAGR)** of **18%** by **2028-29**.

What is e-tailing?

- **E-tailing**, also known as **electronic retailing** or **e-retailing**, is the process of **selling online through digital channels like websites and apps**.
- Both physical stores and digital-only businesses participate in e-tail because of the benefits it can deliver, including **global reach** and **24/7 availability**.

Key highlights of the report:

- The findings were part of a report released by **Knight Frank** titled **'Think India Think Retail 2024'**.
- At the current consumption levels across all retail categories, the revenue potential of all shopping centres across **Tier 1** and **Tier 2** cities is expected to grow at a **CAGR** of **23%** during the same period.
 - **The compound annual growth rate (CAGR)** is the mean annual growth rate of an investment over a specified period of time longer than one year.
- The **Indian retail industry** is rapidly growing and accounts for **10% of the country's gross domestic product (GDP)** and **8% of the workforce**.
 - The sector is witnessing exponential growth with the **development of shopping centres and new retail destinations**, not just in major metros but also in Tier 2 cities.



Permanent deletion of transactions can help make e-rupee anonymous: RBI Gov

News Excerpt:

Reserve Bank of India (RBI) Governor said that permanent deletion of transactions can make the e-rupee or **Central Bank Digital Currency (CBDC)** anonymous and bring it at par with paper currency.

About RBI Governor's view on e-rupee:

- At the **BIS Innovation Summit**, RBI's Governor acknowledged the concerns around **privacy and anonymity** that have arisen since the introduction of the **e-rupee** in late 2022.
- He noted that the **electronic nature of the CBDC** leaves a trace of all transactions, unlike cash, which offers complete anonymity.
- To address these concerns, RBI's Governor stated that anonymity can be addressed through **legislation and/or through technology**. For example, through permanent deletion of transactions.
- The basic principle is that **CBDC can have the same degree of anonymity as cash**, no more and no less.
- The central bank continues to work on enhancing the e-rupee's features to promote **financial inclusion**.

- India plans to introduce **offline mode transferability and programmability for the CBDC**, which would enable transactions in areas with poor or limited internet connectivity, pointing out that one of the key features of cash is that it does not require network connectivity to work.
- India has made **CBDC non-remunerative** by making it **non-interest-bearing** to mitigate any potential risks of bank disintermediation.
- To widen the reach of the e-rupee, the RBI recently announced **the participation of non-banks in the pilot** with the expectation that their reach can be leveraged for the distribution of CBDCs and for providing value-added services.

Key points about the e-Rupee:

- It is a **central bank digital currency (CBDC)** issued by the Reserve Bank of India (RBI).
- It is a **digital version of the Indian Rupee** that operates using blockchain or distributed ledger technology.
- It is a **legal tender** and can be used as a medium of payment and a store of value, similar to physical cash.
- The conversion rate is **1 e-Rupee = 1 Indian Rupee**.
- It is different from **cryptocurrencies like Bitcoin** as it is centrally issued and regulated by the RBI, providing the stability of the Indian Rupee.

Thermal power plants can sell surplus power from 'linkage coal' in market

News Excerpt:

The Ministry of Power has clarified that coal-based thermal plants can use **linkage coal** to offer **surplus power** in the power market.

More about the news:

- The clarification was issued to ensure **"optimum utilization of generating stations"** as India braces for a **hotter-than-normal summer**, which is set to push **peak demand** to a record **260 GW**.
- The clarification referred to **Section 9(5)** of the **Electricity (Late Payment Surcharge and Related Matters) Rules, 2022**.
 - The rules **"provide for the sale of surplus power, which is within the declared generation capacity but not requisitioned by distribution companies"**.
- The thermal power plants can use coal supplied through long-term contracts to sell surplus electricity in the power exchange.

What is the coal linkage policy?

- The coal linkage policy is a **central government-designed guideline** for the **allocation of coal** among thermal power firms.
- The central government designated the **Central Electricity Authority** to design and issue **methodology for coal linkage**.
- Under the coal linkage policy, a **state's coal requirement** would be **clubbed** and **assigned** to the respective **state or state-nominated agencies**.
- Coal linkages would be awarded to designated state-owned power distribution companies (DISCOMs).
- The state, through DISCOMs, then, awards coal linkage according to applicant's need, efficiency and cost of power to the power plants in its territory including the private sector. Allocation to the private sector will be made through auction.

SHAKTI Policy:

- The Union Government on 17th May 2017 cleared the New Coal Linkage Policy known as **SHAKTI (Scheme to Harness and Allocate Koyla (Coal) Transparently in India)**.
- The Policy provides coal linkages to power plants that lack **fuel supply agreements (FSAs)** through **coal auctions**.

Why India is more dependent on thermal power plants?

- The **variability in renewable energy generation** puts pressure on the base load capacity, especially during evening hours of low sunlight and surging demand.
- India's reliance on coal and gas to meet peak demand is more pronounced given the absence of an **adequate energy storage infrastructure** in the country, which can help store excess energy generated by solar and wind plants during non-peak hours and release it during peak hours.

RBI allows standalone Primary Dealers to borrow in foreign currency

News Excerpt:

The Reserve Bank of India (RBI) announced that **Standalone Primary Dealers (SPDs)** may borrow in foreign currency from their parent companies and other authorized entities.

More about the news:

- **SPDs** will be allowed to access overdraft facilities in Nostro accounts **solely for operational use**.
- The RBI's move will help companies manage funding for their **foreign exchange business**.
- The circular further noted that "such borrowings shall be **within the limit for foreign currency borrowings**" prescribed in the RBI.
- Excess withdrawals not adjusted within five days must be reported to the RBI.

- The RBI has also announced changes in the **Net Overnight Open Position Limit (NOOPL)** for the calculation of capital charges on forex risk.
- Under the old system,
 - NOOPL was allowed to be fixed only by the **boards of the respective banks**.
 - However, the **boards of the respective authorized dealers** can now also decide to fix the NOOPL.
- The decision on NOOPL needs to be communicated to the RBI "immediately through the **Centralised Information Management System (CIMS)** or email.
 - However, such limits should not exceed 25 per cent of the total capital (Tier-I and Tier-II capital) of the authorised dealer.

- **SPDs** are either subsidiaries of **scheduled commercial banks** or entities incorporated abroad or those incorporated **under the Companies Act** and registered as **non-banking financial companies (NBFCs)**.
- **Nostro** is a bank account held in another country by a domestic bank but in the currency of a foreign country.
- **Net overnight open positions** are transactions that have not been squared off on an overnight basis.

CII brings out a new corporate governance charter for startups

News Excerpt:

The **Confederation of Indian Industry (CII)**, a leading industry body, has come up with a **Corporate Governance Charter** for startups to serve as a **self-governing code** in their compliance journey.

What is Corporate Governance?

Corporate Governance in India is a **set of rules, practices, and processes by which a company is guided and controlled**. It ensures that the company is run fairly to achieve the best interests of all stakeholders such as shareholders, investors etc.

About the Corporate Governance Charter:

- It will provide suggestions on corporate governance tailored for startups and offer guidelines suitable for different stages of a startup aiming to **enhance governance practices**.
- The Charter includes an **online self-evaluative governance** scorecard that startups can use to evaluate their **current governance status** and its improvement over time.
- The tool allows startups to measure their **governance progress**, with score changes indicating improvements in governance practices as assessed against the scorecard from time to time.
- The Charter is aimed at helping startups become **responsible corporate citizens** and enabling them to establish themselves as **well-governed entities**.

- The Charter has been curated to provide **guidance to startups during their life cycle**, segregated into **four stages**.

STAGES	FOCUS ON
Inception	The first focus remains on Board Formation, Compliance Monitoring, Accounting, Finance, External Audit, Policies for related party transactions, and Conflict Resolution Mechanisms.
Progression	The startup may additionally focus on the expansion of board oversight, monitoring key business metrics, maintaining internal controls, defining a hierarchy of decision-making, a focussed overview of finance, accounts, and external audit, setting up an audit committee, and risk & crisis management.
Growth	It also focuses on building stakeholder awareness towards the vision, mission, code of conduct, culture, ethics of the organization, functional policies & procedures, forming board committees, and ensuring Diversity, Equity & Inclusion (DE&I) on Board . They must also comply with the Companies Act 2013 and other laws, prioritize fund management, adhere to CSR & ESG standards, oversee strategic advancement, and manage human resources effectively.
Going Public	They may also expand their governance in terms of monitoring the functioning of various committees , focusing on fraud prevention and detection, grievance redressal mechanisms , minimizing information asymmetry, effective stakeholder management, succession planning, and board performance evaluation. At this stage, they should also review governance policies, internal controls, social media policies, and compliance programs to ensure compliance with the Companies Act 2013 and ensure timely statutory filings and disclosures.

Authorised Economic Operator (AEO) status

News Excerpt:

The Centre has given the Authorised Economic Operator (AEO) status to the **gem and jewellery sector**.

More about the News:

- The international trade landscape is crucial for global economic development, yet it faces **significant threats** from different nonstate organizations.
- Customs administrations** play a vital role in the international supply chain, balancing the need to facilitate legitimate trade while enhancing security measures.
- The AEO is a program that works under the **World Customs Organization (WCO) SAFE Framework of Standards to secure and facilitate global trade**.

Why AEO started?

The inception of the AEO scheme can be traced back to the **aftermath of the September 11, 2001, events in the US**, which prompted governments worldwide to recognize the vulnerability of the supply chain to terrorist activities.

- The framework comprises three pillars:**
 - Customs-to-Customs Partnership**
 - Customs-to-Business partnership**
 - Customs-to-other-Government stakeholders**
- The AEO program is a **fundamental component of Pillar II**, which focuses on fostering partnerships between Customs administrations and businesses to enhance supply chain security.
- India's AEO Program aligns with the commitments outlined in **Article 7.7 of the World Trade Organization's Trade Facilitation Agreement (TFA)**.
- Participation in the AEO program is voluntary**, allowing Indian Customs to enhance and streamline cargo security by fostering close collaboration with key stakeholders in the international supply chain.

SAFE Framework of Standards:

- In 2005, the **World Customs Organization (WCO)**, representing **178 Customs administrations**, adopted the **SAFE Framework of Standards**.
- This framework introduced the concept of the **Authorized Economic Operator (AEO)**, where parties involved in international goods movement are recognized by Customs as compliant with supply chain security standards, **granting them benefits** like simplified Customs procedures and reduced intervention.
- The **AEO model is increasingly embraced by Customs administrations worldwide**, aiming to **fortify the supply chain while benefiting the trading community**.
- In June 2015, a **new Pillar 3 was integrated to promote closer collaboration between Customs and other governmental agencies**, ensuring a coordinated and efficient response to the security challenges faced by the supply chain.

Mutual Recognition Agreements (MRAs):

- They serve as the international extension of various countries' domestic AEO Programs, acting as a **mechanism to harmonize minor differences and ensure seamless facilitation of benefits**.
- These agreements, a pivotal component of the WCO SAFE Framework, **aim to enhance end-to-end security in global supply chains and amplify advantages for traders worldwide**.
- Under MRAs, two customs administrations commit to recognizing the AEO authorization issued by each other's programs and offering reciprocal benefits to AEOs from the partner country.

- Currently, India has signed **MRAs with the Customs Administrations of South Korea and Hong Kong**, with additional agreements in the final stages of conclusion, including those with the United States of America and Taiwan.

Supreme Court declines to hear MSMEs' plea challenging 45-day payment rule

News Excerpt:

The Supreme Court has declined a plea by **MSMEs** challenging a rule under the **Income Tax Act** under which businesses are prohibited from extending credit to buyers beyond 45 days.

What is the 45-day MSME payment rule?

- To ensure timely payments to the **Micro, Small and Medium Enterprises (MSME)** sector, a new regulation was implemented from April 1.
- This regulation **requires companies to settle their dues with MSMEs within 45 days**.

What is Section 43B(h)?

- The **Finance Act 2023** introduced an amendment to the **Income Tax Act** by adding **clause (h) to Section 43B**.
- This clause stipulates that **any payments owed to MSMEs, not resolved within 45 days, will not qualify for tax deductions until the payment is made**.
- The aim is to **motivate larger entities to prioritise their settlements with MSME counterparts**, thereby promoting a more robust economic environment for these smaller businesses.
- Section **43B(h)** is **applicable to transactions that involve the purchase of goods or services** from enterprises registered under the **MSMED Act, 2006**.

Failure to comply with the rule:

- Failure to adhere to a 45-day timeframe would result in **penalties, including compounded interest penalties at three times the bank rate** set by the **Reserve Bank of India (RBI)**.
- The businesses risk losing the ability to deduct payments made to MSEs from their taxable income.

Government's reasoning to implement the rule:

- The provision **strengthens MSMEs' position** when **negotiating payment terms** with larger companies.
- Timely payments can **minimise potential disputes and legal hassles** over outstanding dues.
- It **encourages more transparent and accountable business practices** in the **MSME ecosystem**.

Impact of the new rule on the MSMEs:

- The new provision **might lead larger buyers to bypass small and medium suppliers** and instead opt to purchase from unregistered enterprises.

Impact of Payments Rule

New rule requires businesses to settle their dues with MSMEs within 45 days to claim tax benefits

The new rule came into force from April 1



Traders' bodies challenged the constitutionality of Section 43B(H) of the Finance Act 2023, citing its negative impact on the businesses, particularly MSMEs

Traders alleged that the amendment unfairly penalised small enterprises by restricting them from offering credit as per their discretion

MSME's stand on the new rule:

- The industry said **Section 43B (h)** is a **positive step towards a more efficient and fairer financial environment for MSMEs**.
 - The rule creates a **strong incentive for larger companies** to prioritise payments to MSMEs, ultimately benefiting the entire economy.
- The industry is in support of the government's decision as it will enable uninterrupted cash flow for traders.
- However, citing a **"lack of clarity"** regarding the applicability of the law to traders and other related provisions, they have urged the government to **suspend the implementation of the clause until sufficient clarification and nationwide dissemination of information could be achieved**.

IMF concerned about debt, fiscal challenges facing low-income countries

News Excerpt:

Shareholders of the International Monetary Fund (IMF) agreed on the importance of addressing challenges faced by low-income countries, many of which face unsustainable debt burdens.

More about the news:

- Multiple reports from the **IMF** and the **World Bank** have sounded the alarm about **economic developments and prospects in low-income developing countries**.
- The **IMF** lowered its **2024 growth forecast for low-income countries** as a group to **4.7% from an estimate of 4.9% in January**.
- In a separate report, the **World Bank** said **half of the world's 75 poorest countries** were experiencing a **widening income gap with the wealthiest economies** for the first time this century in a historical reversal of development.
- Almost **40 countries** saw **external public debt outflows in 2022**, and the flows likely worsened in 2023.

Recent steps by the IMF to support low-income countries:

- The IMF was working to **reinforce its ability to support low-income countries** hit hardest by recent shocks through a **50% quota share increase** and by **adding resources to its Poverty Reduction and Growth Trust (PRGT)**

Poverty Reduction and Growth Trust (PRGT):

- The PRGT is **IMF's** main vehicle for providing **concessional financing (currently at zero interest rates)** to **low-income countries (LICs)**.
- The PRGT's interest-free loans support well-designed economic programs that **help catalyse additional financing from donors**, development institutions, and the private sector.
- PRGT-supported programs also play a central role in creating the environment for successful **debt resolution in distressed countries**.

Impact of high debt levels on low-income countries:

- High debt levels posed a huge burden for low-income countries, including many in Sub-Saharan Africa, where countries face **debt service payments** of **12% on average**, compared to **5% a decade ago**.
 - **High interest rates in advanced economies** have lured away investments and **raised the cost of borrowing**.
- In some countries, **debt payments are up to 20% of revenues** which leaves those countries with **far fewer**

resources to invest in education, health, infrastructure and jobs.

Drip Pricing

News Excerpt:

The Centre recently warned about how **drip pricing** can surprise consumers with **"hidden charges"** and advised them to seek assistance if they encounter such surges in charges on a product's **MRP (maximum retail price)**.

About Drip Pricing

- Drip pricing is a strategy where only a portion of an item's cost is initially displayed, with the **full amount revealed** later during the purchase process.
- The charges often involve withholding **essential fees** like local taxes or booking charges or omitting necessary add-ons like internet access or amenities, which may be required for product or service usage.
- The price advertised, whether in print, email or on a website (referred to as the "headline price"), may not accurately reflect the **final cost to the consumer**.
- Companies prefer to present a **lower initial price** and later **disclose mandatory fees** to avoid alarming customers with unexpectedly high prices.
- Drip pricing complicates **comparison shopping** and disadvantages sellers who provide more transparent pricing structures.

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AGRICULTURE

The poultry industry needs urgent reforms

News Excerpt:

The current **outbreak of H5N1** is a result of unsafe conditions in **industrial livestock production**, which emphasizes the need for urgent poultry reforms.

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The scale of the biosecurity issue:

- The **first H5N1 infection** spilt directly from chickens to humans in **Hong Kong** in 1997. **In India, the first H5N1 patient** was reported in **Maharashtra** in 2006. An outbreak in December 2020 and early 2021 spread across **15 States**.
- This pathogen has **crossed** many **species barriers**, killing **polar bears** in the Arctic and **seals** and **seagulls** in **Antarctica**.
- With humans, the **World Health Organization (WHO)** estimates the **fatality rate for H5N1 at 52%**, based on the 463 deaths recorded since 2003 among the 888 people diagnosed with the virus.

The interconnectedness of human, animal, and environmental health:

- Almost all cases of human infection with avian influenza A (H5N1) have been linked to **close contact** with **infected birds** or **contaminated environments**.
 - In high densities, these contaminated environments are created by cramming chickens in **wired cages**, or **'battery cages'**. Animals are heavily stocked in **unsanitary conditions**.
 - Not only does this have a **detrimental effect** on the welfare of **animals** and the health of those who **consume the food** derived from it, but it also affects the **people working** at these facilities and **residing** in the vicinity.
- Local **farmers** periodically collect the **faecal matter** generated at these facilities for use as **fertilizer**. The amount of piled-up manure **exceeds the land's carrying capacity** and becomes a **pollutant**.
- Residents** are compelled to adopt measures such as **spraying insecticides** inside their homes, which leads to **breathlessness** and a **nauseating smell**.
- Hence, the impact of the emissions in the atmosphere, effluents in the water systems, and solid wastes in the soil generated by these industries is felt by humans, other animals, and the environment.

Challenges faced by poultry farmers:

- Due to **contract farming**, large debts, and a very **specialized skill set**, poultry farmers often find it **difficult**

to exit the industry **despite losses**. However, the myriad problems they face often **push them out of business**.

- Farmers suffer due to **market volatility** and **prevalent practices** pushed by industry giants. **For instance, antibiotics** are regularly given to birds as **prophylactics** and **growth promoters** so that more animals can be grown for greater profit.
- Furthermore, several antibiotics classified as **critically important** and highly important by the **WHO** are widely sold to farmers for **preventative use**.

Regulatory Compliance:

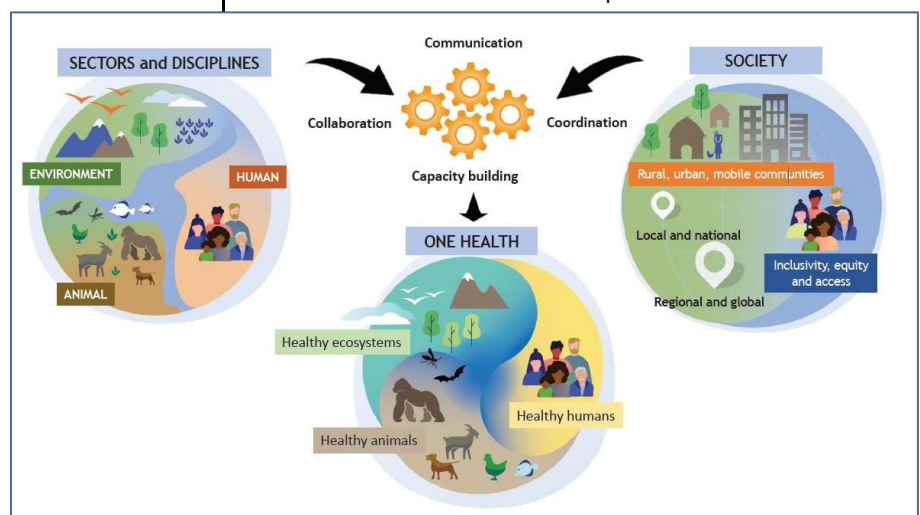
- The **Central Pollution Control Board (CPCB)** has classified poultry units with **more than 5,000 birds** as a polluting **industry** that requires compliance and regulatory consent to establish and operate.
- Keeping animals in **intensive confinement** constitutes a **crime** under the provisions of the **Prevention of Cruelty to Animals (PCA) Act, 1960**.
 - Moreover, the operational activities at these industrial facilities cause **unnecessary pain and suffering** to the animals because of mutilation, starvation, thirst, overcrowding, and other ill-treatment, which is also a violation of the PCA Act.

Way Forward:

- 269th Law Commission of India report:**
 - The Law Commission in **2017** placed on record a representation by the **Tata Memorial Centre** that contained **evidence** that **non-therapeutic antibiotics** given to poultry cause **antibiotic resistance** since living conditions are unhygienic.
 - It further said that more **open, cleaner, and ventilated living spaces** make animals less likely to need constant antibiotics, making their **eggs and meat safer** for consumption.

PEPPER IT WITH:

National Livestock Mission, H5N1 Virus, PCA Act, 1960, Contract farming act



- Finally, it made recommendations for **two draft rules** on the welfare of chickens in the meat and egg industries, noting that improved animal welfare results in better and safer food.
 - § These rules laid down **guidelines** based on existing laws and international best practices for animal care, waste management, and antibiotic use, among other things.
 - § However, the **Draft Rules** for the egg industry released by the Ministry of Agriculture and Farmers' Welfare in **2019** are **weak and tokenistic**. They must meet the recommendations of the Law Commission.
- Given the CPCB's **reclassification of the poultry industry** as a highly polluting '**orange category**' industry, strict oversight of compliance and enforcement of environmental regulations is needed. Addressing the situation in light of the **bird flu** public health crisis and the climate emergency is crucial.
- India's environmental laws and regulations must reflect the interconnectedness of animal welfare with public health, ecosystem health, and biodiversity conservation, as demonstrated by the **One Health principle**.

What is "One Health"?

- One Health is an **integrated, unifying approach** to balance and optimize the health of **people, animals, and the environment**. It is particularly important to **prevent, predict, detect, and respond** to global **health threats** such as the COVID-19 pandemic.
- The approach mobilizes **multiple sectors, disciplines, and communities** at varying levels of society to work together. This way, new and better ideas are developed that **address root causes** and create **long-term, sustainable solutions**.
- The One Health approach is particularly **relevant** for **food and water safety, nutrition, the control of zoonoses**, pollution management, and combatting antimicrobial resistance (the emergence of microbes that are resistant to antibiotic therapy).

Why agriculture may need a new export-import policy

News Excerpt:

In the fiscal year ending March 31, 2024, **India's agricultural exports declined 8.2%**, attributed to restrictions on various commodities such as cereals, sugar, and onions.

About the News:

- According to data from the **Department of Commerce**, **farm exports were \$48.82 billion**, down from the record \$53.15 billion in 2022-23 and \$50.24 billion in the previous fiscal year.

- During the **initial years** of the NDA government, agricultural exports experienced a **decline from \$43.25 billion in 2013-14 to \$35.60 billion in 2019-20**, while **imports rose from \$15.53 billion to \$21.86 billion**.
- This trend was largely due to a **decline in global agricultural commodity prices**, as indicated by the **UN Food and Agriculture Organization's (FAO) food price index dropping from an average of 119.1 to 96.5 points between 2013-14 and 2019-20**. The decrease in international prices made India's exports less competitive while increasing vulnerability to imports.
- However, the **global price recovery** following the **COVID-19 pandemic and Russia's invasion of Ukraine** led to a **surge in India's agricultural exports** and imports to all-time highs in 2022-23, with the FAO index reaching 140.8.

Drivers of Export:

- **Current Decline:** Export declines, **notably in sugar and non-basmati rice**, were significant contributors to the overall decrease, driven by governmental restrictions. During the current production year starting from **October 2023, no sugar exports were permitted**, resulting in a decrease to \$2.82 billion in 2023-24 from previous highs of \$5.77 billion and \$4.60 billion.
- **Domestic Reasons:**
 - Concerns regarding **domestic availability and food inflation** prompted a ban on **white non-basmati rice** exports in July 2023. Currently, only parboiled grain shipments are allowed within this segment, subject to a 20% duty.
 - **Wheat & Onion:** Wheat and onion exports also faced restrictions **due to domestic shortages and rising prices**.
- **Other Items:** While most other major agricultural export items experienced growth, a few, such as **buffalo meat, oil meals, and raw cotton**, fell short of their previous record levels achieved in earlier years.

Drivers of Import:

- **Trend:** The notable trend in imports is a **7.9% decrease in overall agricultural imports during the fiscal year 2023-24**, primarily attributed to a significant decline in imports of edible oils.
- **Vegetable Oil:** In 2022-23, India's imports of **vegetable fats exceeded \$20 billion**, coinciding with the aftermath of the Russia-Ukraine conflict when the FAO index and the vegetable oil sub-index averaged 140.8 points and 168.5 points, respectively.
 - However, in **2023-24**, the average **FAO index dropped to 121.6 points** and the **vegetable oil sub-index to 123.4 points**, resulting in **lower global prices** and reducing the vegetable oil import bill to below \$15 billion for the fiscal year.

- Despite the **decrease in spending on cooking oil imports, imports of pulses nearly doubled to \$3.75 billion in 2023-24**, reaching levels not seen since 2015-16 and 2016-17, when they were at \$3.90 billion and \$4.24 billion, respectively.

Way Forward:

- **Farmers** and agricultural traders, much like any other business operators, **seek stability and predictability in policies**.
- When governments **opt to ban or restrict agricultural exports**, including products like de-oiled rice bran (a byproduct of paddy milling used in animal feed), they **typically prioritize consumer interests over those of producers**. Such measures can have a more significant impact when implemented suddenly, as seen with the abrupt ban on wheat exports.
- Establishing export markets requires considerable time and effort. Many economists advocate for a **more predictable and rules-based approach to policy-making**. For example, implementing temporary tariffs instead of outright bans or quantitative restrictions.
- Similarly, the approach to imports also warrants attention. The Union government has eliminated import duties on most pulses and maintained a 5.5% duty on crude palm, soybean, and sunflower oil.
- However, these minimal tariffs contradict **government's goal of promoting crop diversification**, aiming to shift farmers away from water-intensive crops like rice, wheat, and sugarcane towards pulses and oilseeds, which are also significantly imported.

PEPPER IT WITH:

Minimum Export Price (MEP), Food Security, SAMPADA

PRE-SHOTS

Drones in agriculture could reduce pesticide use by 15%

News Excerpt:

The **University of Agricultural Sciences (UAS)** has completed the first round of testing on using **drones in agriculture**.

Results of the study:

- Results show that proper use of drones can **bring down the volume of pesticides required by at least 15%** and **improve efficiency by nearly 23%**.
- While **conventional spray methods recorded an efficiency of 65%**, **drone sprays recorded a higher efficiency of 88%**.

Need for Standard Operating Procedure (SOP) for the use of Drones:

- Currently, **India does not have a policy or guidelines** on the use of drones in agriculture.

- While farmers are increasingly shifting towards the use of drones, particularly to apply **foliar sprays, insecticides, and pesticides, crop damage is being reported** from all across the country because there are no SOPs in place.
- Many farmers just pay drone operators to get the farm sprayed. However, efficiency is not up to the mark, **resulting in low crop yield**.
- While using drones in agriculture is useful, determining the **amount of pesticide** that has to be used, the **height from which it has to be sprayed based on the wind direction**, and many such parameters play a crucial role in determining efficiency.

Significance of drones in agriculture:

- It **requires less manpower** and **helps prevent diseases due to pesticide inhalation**.
 - Using drones in agriculture can **save farmers a lot of manual work** and help them be **more precise with irrigation water**.
- In regions where water resources are scarce or overused, drones can help farmers **optimize irrigation practices**.

Balanced Fertilization

News Excerpt:

Capping consumption of Urea and DAP to correct **worsening plant nutrient imbalance** is likely on the new government's priority list after the Lok Sabha polls.

What is Balanced fertilization?

- Nutrient requirements such as **Nitrogen, Phosphate, and Potassium** are soil—and crop-specific. Using the right ratio of nutrients according to soil or crop requirements is known as "balanced fertilization."
- It discourages farmers from applying too much **urea, diammonium phosphate (DAP), or muriate of potash (MOP)** to the crops.
- Fertilizers are **basically food for crops**, containing nutrients necessary for plant growth and grain yields. Balanced fertilization means supplying these **primary (N, phosphorus-P, and potassium-K), secondary (sulphur-S, calcium, magnesium), and micro (iron, zinc, copper, manganese, boron, molybdenum)** nutrients in the right proportion, based on soil type and the crop's requirement at different growth stages.

Nutrient-based subsidy:

- The **nutrient-based subsidy (NBS)** system of the central government was introduced in **April 2010 to promote balanced fertilization**.
- Under it, the **government fixed a per-kg subsidy for N, P, K, and S**. The subsidy on any fertilizer was, thereby, linked to its nutrient content.
- **The idea behind NBS:**

- The underlying idea was to induce product innovation.
- It was also introduced to wean farmers away from **urea, DAP (18% N and 46% P content), and MOP (60% K)** in favour of complex fertilizers containing **N, P, K, S,** and other nutrients in balanced proportions with lower concentrations.

The challenge:

- The **restoration of controls** on the price of **non-urea fertilizers** has worsened the nutrient imbalances.
- An immediate challenge is to ensure a proper **"price hierarchy"** among **non-urea fertilizers**. That would mean pricing **DAP the highest, MOP the lowest, and complexes in between**.
- India is **heavily import-dependent on fertilizers**, be it finished products or intermediates and raw materials. **High global prices add to the country's foreign exchange outgo and also the government's subsidy burden**.

The opportunity:

- The cooling of **international prices gives some flexibility for the next government to rationalize MRPs of fertilizers and promote balanced plant nutrition**.
- This could involve **bringing urea under NBS and mitigating the impact** of a significant hike in its **MRP** by increasing the subsidy rates on other nutrients.
- In January, the Centre approved the **launch of sulphur-coated urea**, which contains **37% N and 17% S**.
 - Its MRP has been fixed at Rs 266.50 per bag, the same as for regular neem-coated urea.
 - But in this case, the bag will have only 40 kg, as against 45 kg for the latter, translating into a 12.5% price hike.

Oleander leaves - Poisoning

News Excerpt:

Kerala has banned the Oleander flowers from being used in temple offerings.

More about the News:

- **Two temple boards** under the control of the Kerala government have **prohibited the use of oleander flowers (commonly known as Arali) in temple offerings**.
- This decision follows the tragic death of a 24-year-old woman who accidentally consumed oleander leaves.

About Oleander:

- Scientifically known as **Nerium oleander**, it is



widely cultivated **globally in tropical, subtropical, and temperate regions**.

- Renowned for its **resilience to drought**, this shrub is commonly **used for landscaping and ornamental purposes**.
- In Kerala, it goes by the names **Arali and Kanaveeram**. It often serves as **natural green fencing along highways and beaches**. Various oleander varieties boast **different-coloured flowers**.

Historical Significance and Medicinal Uses:

Referred to as the **"desert rose"** in ancient texts, oleander holds a significant place in history for its medicinal properties.

- It has been trusted as a **remedy for various ailments**, including its purported roles as a hangover cure, in cancer treatments, and as an antiviral agent. **Both Romans and Arabs valued its healing potential** across a spectrum of health issues.
- The **Ayurvedic Pharmacopoeia of India (API)** acknowledges oleander's use in traditional medicine. It suggests that an **oil derived from the root bark can treat skin ailments**.
- **Classical Ayurvedic texts** frequently mention oleander, with **Charak Samhita** prescribing leaves of the white-flowered variety for external **application** in severe **skin conditions, including leprosy**.
- According to the **US National Institutes of Health**, oleander has been traditionally used against conditions such as **asthma, epilepsy, painful menstrual periods, malaria, skin problems, warts, ringworm, and indigestion**.

Toxicity:

Despite its inclusion in Ayurvedic formulations, oleander's toxicity has been widely recognized.

- The plant has historically been used both **therapeutically and as a means of suicide**. Its toxic nature stems from **cardiac glycosides, such as oleandrin, folinerin, and digitoxigenin**, which are present throughout the plant.
 - **Cardiac Glycosides:** Cardiac glycosides are **steroid compounds with pharmacological effects on cardiac muscle**, primarily enhancing heart contractions. However, their narrow therapeutic range often leads to overdose and toxicity.
- **Symptoms:** Symptoms of oleander poisoning include **nausea, diarrhoea, vomiting, skin rashes, confusion, dizziness, irregular heartbeat, bradycardia**, and, in severe cases, fatality. While symptoms typically last 1 to 3 days and may necessitate hospitalization, death is uncommon.

Peru-based top potato research centre to set up India wing

News Excerpt:

India is set to get a **regional centre** of the Peru-based **International Potato Center (CIP)**, the premier research-for-development organization focusing on **potatoes and sweet potatoes**.

About the news:

- **India and Peru** have concluded the **negotiations** and the Indian Agriculture Ministry has forwarded the proposal to establish the **CIP-SARC** to the **Committee on Establishment Expenditure (CEE)** headed by the **Expenditure Secretary**.
- Currently, two centres of the **Indian Council of Agricultural Research (ICAR)** work on **tuber crops** in India.
 - While the **Shimla-based ICAR-CPRI** (Central Potato Research Institute) is **working on potatoes**.
 - **Thiruvananthapuram-based ICAR-CTCRI** (Central Tuber Crops Research Institute) is **working on sweet potatoes**.
- India is the **second-largest potato producer and consumer** in the world after **China**. Together, they account for over **one-third of the global potato production**.
- Uttar Pradesh, West Bengal, and Bihar were the **top three potato producers** in 2020-21.

CIP-SARC:

- The **CIP-South Asia Regional Centre (CIP-SARC)** is expected to be established in **Agra**. It will serve farmers in **potato-belt states of India**, such as Uttar Pradesh,

Bihar, and West Bengal, and other **South Asian countries**.

- This will be **India's second** major international agricultural research institute, after the **Philippines-based International Rice Research Institute (IRRI) in Varanasi**, which was established in **2017**.
- The **CIP-SARC** is proposed to be **developed on the pattern of IRRI-SARC**.
- The **CIP-SARC** will focus on developing **new varieties of potato and sweet potato** that are **climate resilient, disease-free**, and suitable for processing.
- The CIP-SARC is on the **100-day agenda of the Ministry of Agriculture and Farmers' Welfare**.

International Potato Center (CIP):

- The **International Potato Center (CIP)** was founded in 1971 as a research-for-development organization with a focus on **potato, sweet potato, and Andean roots and tubers**.
- It delivers **innovative science-based solutions** to enhance access to affordable, nutritious food, foster inclusive, **sustainable business and employment growth**, and drive the **climate resilience** of root and tuber agri-food systems.
- **Headquartered in Lima, Peru**, CIP has a research presence in more than **20 countries in Africa, Asia, and Latin America**.
- It had set up its **first Asia centre** - China Center for Asia Pacific (**CCCAP**) in Yanqing, **China**. It serves the entire **East Asia and the Pacific region**.

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INTERNATIONAL RELATIONS

Maldives: India's three dilemmas

News Excerpt:

For the past six months, India's foreign policy has been grappling with the Maldives challenge.

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Elections in Maldives and subsequent realignment:

- Maldives recently held **parliamentary elections** in which a **pro-India president, Ibrahim Solih**, lost to a **pro-China challenger, Mohamed Muizzu**.
- As expected, the new president's successful visit to China was followed by a request for **India to withdraw its military personnel** from the country.

India's dilemmas:

India faces **three dilemmas** in the evolving situation in the Maldives.

Firstly, should India maintain a close association with the incumbent Maldivian government or adopt a quiet, more hands-off approach?

- This question is important because India's neighbourhood is a complicated arena, and, in most South Asian countries, relations with India tend to become a matter of intense **domestic politics**.
- If **New Delhi** is seen as **aligning too closely with one group** and **alienating the other**, the potential political

costs of such a behaviour might be high when the tides turn.

- After the **'India First'** policy and the **'India Out'** platform, India has been negotiating with the new government to ensure that its strategic influence and presence do not dissipate and that of **Turkiye** and **China** do not increase.

The second challenge for India is to ensure that foreign policy is not mixed with domestic politics.

- Foreign policy** is driven by **strategic interests**, whereas **domestic politics** operates on the **basis of partisan political interests**, and the two may not always match.
- In the case of the Maldives, the **inter-related issue of Lakshadweep Islands** and the **tourism industry** has highlighted this challenge.
 - As India sought to develop its Lakshadweep Islands and promote tourism there, Maldivian ministers reacted sharply.
 - They even crossed a line by using derogatory language against India's leadership.
 - However, the expression of anger on **social media** and the **public discourse** that emerged in the aftermath of this incident indicate the perils of mixing domestic politics with foreign policy.
 - Such practice is necessary and yet detrimental at the same time. It is necessary to send out a clear message that Indian interests should not be harmed.

However, should it be done in public through the media and social media, or should such a message be conveyed through diplomatic channels?

- It is detrimental in the sense that it underscores the necessity of **diversifying foreign and economic policy** options for the neighbouring countries.

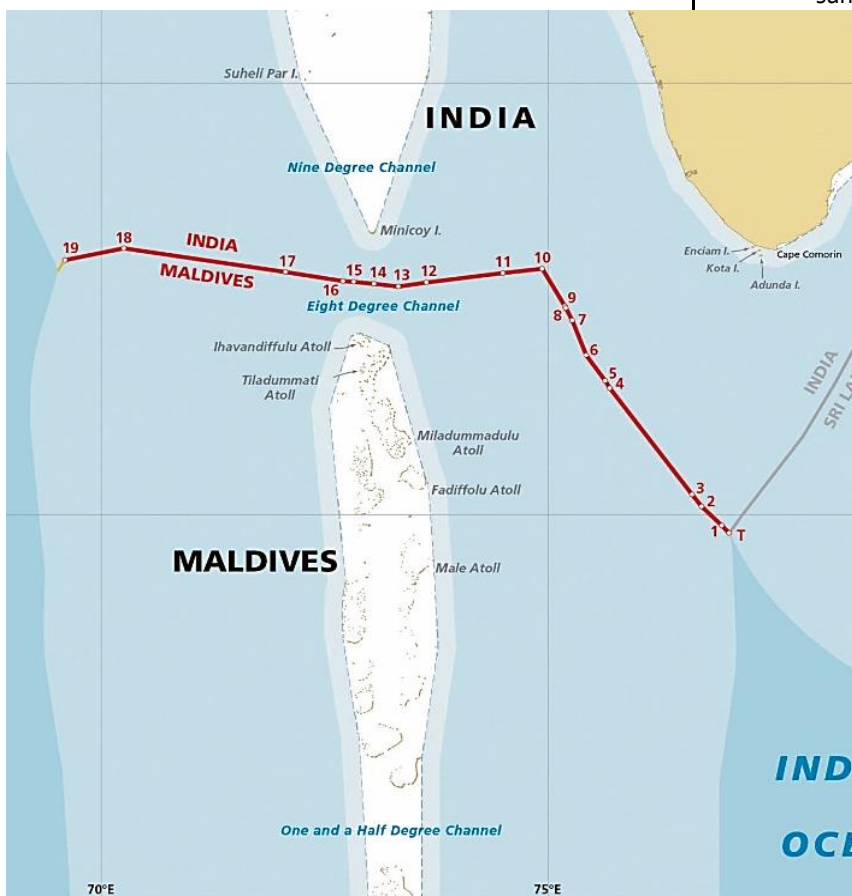
In the long term, dependence on India will perhaps be seen as an asset as well as a liability.

The third dilemma for India is between democracy and stability. Should India prefer democracy in the neighbourhood, or should the stability of a neighbouring country take precedence?

- For smaller states in India's neighbourhood, except **Sri Lanka**, democracy is a recent phenomenon.

Democracy will not always produce the desired results, as we can see in the Maldives.

- The defeat of an incumbent government and the change of guard is a good sign for Maldivian democracy. However, the **election**



results will also change the **orientation of foreign policy**.

- Democracy can also **incentivize politicians** to engage in a certain type of **political behaviour** that **may not always be appreciated in the context of foreign policy**.
- For India, the domestic politics in the neighbourhood have always presented difficult challenges. The Maldives elections also underscore the imperative to navigate this dilemma between democracy and stability.

PEPPER IT WITH:

Track-II Diplomacy, SAGAR doctrine, Gujral Doctrine

Way Forward:

- **Diplomatic Engagement:**
 - **High-Level Dialogues:** Initiate regular high-level diplomatic meetings to discuss mutual concerns and enhance cooperation. These meetings should focus on building trust and addressing contentious issues constructively.
 - **Track-II Diplomacy:** Encourage non-official channels of communication, such as think tanks, academic exchanges, and cultural interactions, to foster better understanding and reduce political tensions.
- **Economic Cooperation:**
 - **Trade and Investment:** Increase bilateral trade and investment opportunities. India can assist the Maldives in diversifying its economy, which is heavily dependent on tourism, by investing in sectors like fishing, infrastructure, and renewable energy.
 - **Development Projects:** Continue and expand India's support for infrastructure development in the Maldives. Projects such as the Greater Male Connectivity Project can be highlighted as symbols of bilateral cooperation.
- **Security Collaboration:**
 - **Maritime Security:** Enhance cooperation in maritime security to ensure the safety and security of the Indian Ocean region. Joint naval exercises and information-sharing mechanisms can be strengthened to address common threats like piracy and illegal fishing.
 - **Counterterrorism:** Collaborate on counterterrorism efforts by sharing intelligence and conducting joint training programs to combat radicalization and terrorism.
- **Regional and Multilateral Cooperation:**
 - **SAARC and IORA Engagement:** Use platforms like the South Asian Association for Regional Cooperation (SAARC) and the Indian Ocean Rim Association (IORA) to engage in dialogue and cooperative activities. Collaborative efforts in these

forums can help in addressing broader regional issues.

- **Climate Change and Environmental Cooperation:** Jointly address climate change challenges, which are critical for both nations. Collaborative projects in renewable energy, water management, and disaster resilience can be mutually beneficial.
- **Addressing Political Sensitivities:**
 - **Non-Interference Policy:** Adhere to a non-interference policy in each other's internal political matters. This can help build trust and reduce suspicions.
 - **Mutual Respect:** Ensure mutual respect for sovereignty and independence in decision-making processes. Recognize and address each other's core interests and concerns through dialogue.

India's stakes in Chabahar

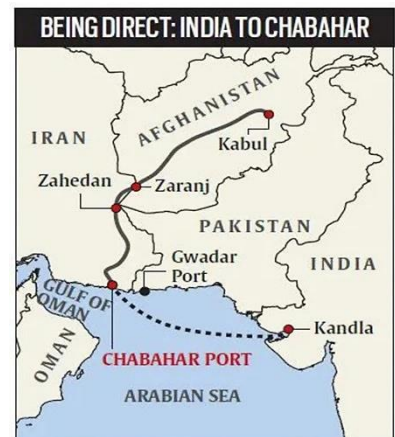
News Excerpt:

India and Iran have signed a **10-year contract** for the operation of a terminal at the strategically important Chabahar port in Iran.

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More About the News:

- India has been developing the port in **Chabahar on Iran's southeastern coastline along the Gulf of Oman**.
- This development aims to **facilitate the transportation of goods to Iran, Afghanistan, and central Asian countries, bypassing the ports of Karachi and Gwadar** in its rival Pakistan.
- The contract signing between **India Ports Global Ltd (IPGL) and the Ports & Maritime Organization of Iran (PMO)** occurred in **Tehran**.



Under the contract:

- **IPGL will invest around \$120 million in the port's equipment and operations** throughout the contract term.
- India **extended a credit facility in rupees, valued at \$250 million**, for jointly identified projects to enhance the port's infrastructure. Both nations plan to expand their collaboration in Chabahar beyond this period.
- Meanwhile, the **US has warned** that countries dealing business with Iran face a **potential risk of sanctions** despite the Chabahar port being previously exempt from US sanctions.

About Chabahar Port:

- Chabahar, situated in **Iran's Sistan-Baluchistan province**, is Iran's closest port to India, just at the **mouth of the Gulf of Oman**. Its location in the open sea offers convenient and secure access to large cargo vessels.
- **Emerging in the 1970s**, the modern Chabahar Port gained strategic **significance** for Tehran during the **Iran-Iraq war in the 1980s**.

Importance for India:

- For India, Chabahar presented **crucial strategic and economic opportunities, offering access to Afghanistan**, which had been hindered by Pakistan's hostility. The port is also **part of the proposed International North-South Transport Corridor (INSTC)**, a **multi-modal transportation project** linking the Indian Ocean and the Persian Gulf to the Caspian Sea via Iran and onward to northern Europe via St Petersburg in Russia.

About INSTC:

- **Initiated by Russia, India, and Iran, the INSTC is a multi-modal transportation route designed to link the Indian Ocean and the Persian Gulf to the Caspian Sea via Iran, extending onwards to northern Europe via St. Petersburg in Russia.**
- The INSTC envisages the transportation of goods from **Mumbai to Bandar Abbas** in Iran by sea, then from **Bandar Abbas to Bandar-e-Anzali on the Caspian Sea by road**, followed by shipping from **Bandar-e-Anzali to Astrakhan, a Caspian port in the Russian Federation, across the Caspian Sea**. Finally, goods are **transported by rail to various parts of the Russian Federation and Europe**.
- However, India's expanding ties with the United States disrupted the project's ambitious timelines. With the **US labelling Iran as part of the "axis of evil,"** it pressured India to reconsider its strategic ties with Tehran.

Recent developments in the role of the port:

- **India** has provided **six mobile harbour cranes**, including two with a **capacity of 140 tonnes** and four with a capacity of 100 tonnes, along with other **equipment valued at \$25 million**. Operating through its wholly-owned subsidiary, **India Ports Global Chabahar Free Zone (IPGCFZ)**, IPGL has managed Chabahar port since December 24, 2018.
- Since then, the **port has handled over 90,000 twenty-foot-equivalent units (TEUs)** of container traffic and more than 8.4 million metric tonnes (MMT) of bulk and general cargo. It has also facilitated the transfer of humanitarian aid, particularly during the Covid-19 pandemic.
- To date, **2.5 million tonnes of wheat and 2,000 tonnes of pulses have been trans-shipped from India to Afghanistan through Chabahar port**. In 2021, **India**

delivered 40,000 litres of environmentally friendly pesticide malathion to Iran through the port to combat locust attacks.

Chabahar and INSTC:

- The operationalization of long-term investment in Chabahar holds the potential to establish it as a crucial hub connecting **India with the landlocked nations of Central Asia and Afghanistan**.
- However, to fully capitalize on its commercial and strategic significance, integrating the port's development with the broader connectivity framework of the **International North-South Transport Corridor (INSTC)** is essential.
- In 2016, New Delhi and Tehran unequivocally signed a Memorandum of Understanding (MOU) to connect the Chabahar port with INSTC by constructing a 628 km-long **Chabahar-Zahedan rail link**.



The part that India will operate:

- **The Chabahar project consists of two distinct ports:**
 - Shahid Beheshti
 - Shahid Kalantari.
- India's investment is **specifically directed towards the Shahid Beheshti port**. In December 2017, the inauguration of the first phase of the Shahid Beheshti port marked a milestone, coinciding with **India's inaugural shipment of wheat to Afghanistan** through Chabahar. Subsequently, two years later, the port facilitated Afghan exports to India for the first time, with India receiving four such consignments that year.

Why did the US exempt Chabahar from sanctions in 2018?

- In 2018, the US had exempted India from certain sanctions for the **development of the Chabahar port and the construction of a railway line connecting it with Afghanistan**.
- The decision to give an exemption by the then **US President Donald Trump's** administration, which had

just imposed tough sanctions on Iran, was reportedly seen as a **recognition** by the US of **India's role** in the development of the Chabahar port, which was considered to be of **strategic importance** for the development of Afghanistan.

- Ultimately, the **US exit from Afghanistan** could be the reason why it **no longer views the Chabahar port project favourably** and has **warned of sanctions**.

Way Forward:

- The **potential synergy** between the International North-South Transport Corridor (INSTC) and Chabahar Port could **enhance Indian connectivity** with Russia and Eurasia.
- However, the conflict in Ukraine and the deterioration of Europe's relationship with Russia have introduced **complexities to the future** of this project, which only greater collaboration could solve.

PEPPER IT WITH:

INSTC, Chabahar-Zahedan rail link, India and Central Asia relations

History of India and Nepal's border issue

News Excerpt:

India has strongly reacted to the Nepal Government's decision to create a map depicting areas in India as part of its territory on a new currency note.

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The disputed territory:

- The territorial dispute is about a 372-sq-km area that includes **Limpiadhura, Lipulekh, and Kalapani** at the **India-Nepal-China trijunction** in Uttarakhand's Pithoragarh district.
- Nepal has claimed for long that these areas belong to it both historically and evidently.

Background of the current issue:

- The disputed map claiming Indian territories as Nepalese was adopted by **consensus in Nepal's Parliament four years ago in 2020**.
- But four years after **Nepal included the areas of Kalapani, Lipulekh and Limpiyadhura in its new map**, the government in Kathmandu has decided to come out with a **100 Rupees Nepalese currency** note that depicts the **country's map with the areas under Indian control**.

Origin of the dispute:

- The India-Nepal territory dispute has roots in the **Sugauli Treaty of 1815**, which followed the **Anglo-Nepalese War (1814-1816)**.
- The Treaty of Sugauli resulted in **Nepal losing a chunk of territory to the East India Company**.

- **Article 5** of the treaty took away the **jurisdiction of Nepal's rulers** over the land to the east of the **Kali River**.
- In January 2020, Nepal's parliament voted to change its map to include **Lipulekh, Kalapani, and Limpiyadhura** as part of its territory, whereas India didn't agree with this change.
 - The move was described by the Ministry of External Affairs as **"artificial", "unilateral"** and **"unacceptable"**. India had also asked Nepal to return to dialogue.
 - In May 2020, tensions rose when India opened a new **80 km road in Uttarakhand through the Lipulekh pass**, a route for the Kailash Mansarovar pilgrimage.

Impact of current dispute on India-Nepal ties:

- Despite the boundary dispute, both Nepal and India share a **unique relationship of friendship and cooperation**, characterized by **open borders and deep-rooted religious, cultural and people-to-people ties**.
- India is also Nepal's **largest trading partner** and is investing billions of dollars in infrastructure, including hydropower plants.
- However, the border dispute **threatens to derail the ties between the two countries**.



Way Forward:

- India and Nepal must chalk out their borders in a **formal and friendly manner** to avoid other disputes, such as the one over the Kalapani area.
- Both India and Nepal must invest in **negotiating new border management agreements** to take into consideration recent events.
- India should **resolve its border conflict with Nepal** through discussion as soon as possible, given that it already has an **unresolved border dispute with China in the Ladakh region**.

PEPPER IT WITH:

Border Disputes of India, Anglo-Nepalese War, Kali River

PRE-SHOTS

30th anniversary of the Marrakesh Agreement

News Excerpt:

The Marrakesh Agreement establishing the World Trade Organization was signed on 15 April 1994, leading to the birth of the WTO on 1 January 1995.

Marrakesh Agreement:

- The Marrakesh Agreement refers to the **foundational document that established the World Trade Organization (WTO)**. It was signed in Marrakesh, Morocco, by representatives of over 123 countries, marking the culmination of the Uruguay Round of trade negotiations.
- The agreement officially established the World Trade Organization as the **successor to the General Agreement on Tariffs and Trade (GATT)**, which had governed international trade since 1948. The agreement enshrines key principles of non-discrimination, transparency, and predictability in international trade relations, aimed at promoting open and fair trade practices among member countries.

Key Components:

- **Institutional Framework:** It outlines the organizational structure of the WTO, including its decision-making bodies, such as the Ministerial Conference, General Council, and Dispute Settlement Body.
- **Rules-Based System:** The Marrakesh Agreement emphasizes the importance of a rules-based system for international trade, providing a framework for negotiations, dispute resolution, and the enforcement of trade agreements.
- **Trade Agreements:** It incorporates various trade agreements negotiated during the Uruguay Round, covering areas such as trade in goods, services, intellectual property, and dispute settlement procedures.

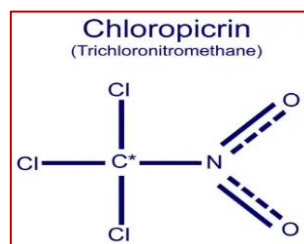
Chloropicrin: chemical weapon or pesticide?

News Excerpt:

According to reports, the United States has alleged that Russia utilized Chloropicrin, a chemical agent, against Ukrainian troops as a "method of warfare."

More About the News:

- The U.S. State Department accused Russia of having used a chemical weapon against Ukrainian forces in violation of the **Chemical Weapons Convention (CWC)** while also announcing fresh sanctions against Moscow.
- Russia also used "riot control agents (**tear gas**) as a



method of warfare in Ukraine, also in violation of the CWC.

Tear gas is a collective name for any lachrymatory — or tears-inducing — agent; popular examples include pepper spray and bromoacetone.

What is Chloropicrin?

- Chloropicrin is a versatile chemical compound utilized as a **fungicide, herbicide, insecticide, nematocide, and antimicrobial**.
- Also known as nitro chloroform, It appears as a colourless to yellow oily liquid.
- The **Center for Disease Control and Prevention (CDC)** characterize it as an irritant with tear gas-like properties, emitting a highly irritating odor and capable of absorption through inhalation, ingestion, and skin contact.
- It serves both as a **warfare agent and pesticide**, presenting health risks upon **inhalation**.
 - Manufactured through chemical reactions involving sodium hypochlorite and nitromethane, or chloroform and nitric acid, it was initially developed as a poison gas during **World War I by both the Allied and Central Powers**.

What happens if you come in contact with Chloropicrin?

- Symptoms may include eye damage, burning sensations in the **mouth, esophagus, and stomach, shortness of breath, nausea, dizziness, and bluish discoloration of the skin**.
- Severe exposure can lead to **pulmonary edema**, a potentially fatal condition where fluids accumulate in the lungs.
- While **Chloropicrin is not classified as a carcinogen**, its potential for causing developmental or reproductive toxicity through chronic or repeated exposure remains uncertain.

Has Chloropicrin been used before as a warfare agent?

- Chloropicrin was extensively used during World War I and stockpiled during World War II. **However, it is no longer authorized for military use.**

India-Nigeria Trade Committee

News Excerpt:

India and Nigeria have **identified areas** to increase cooperation for boosting economic ties during a recent visit **from India to Nigeria**.

More about the news:

- The Indian delegation consisted of officials from the **Reserve Bank of India (RBI), EXIM Bank of India, and the National Payments Corporation of India (NPCI)**.
- The deliberations of the **2nd Session of the India-Nigeria Joint Trade Committee** were forward-looking, indicative of the amicable and special relations between the two countries.

Key takeaways:

- The members undertook a detailed review of recent developments in bilateral trade and investment ties and acknowledged the **vast untapped potential** for **further expansion**.
- Both sides identified several areas of focus for enhancing bilateral trade as well as mutually beneficial investments.
- These include **resolving market access issues of both sides** and cooperation in key sectors such as:
 - Crude oil and natural gas
 - Pharmaceuticals
 - UPI
 - Local currency settlement system
 - Power sector and renewable energy
 - Agri and Food Processing
 - Education
 - Transport, railway and aviation
 - MSMEs.
 - Digital Economy and Digital Public Infrastructure
- They also agreed to the **early conclusion of the Local Currency Settlement System Agreement** to further strengthen bilateral economic ties.

India-Nigeria trade relations:

- Nigeria is **India's second-largest trading partner** in the **African region**.
- Bilateral trade between India and Nigeria **declined to \$7.89 billion** in **2023-24** from **\$11.8 billion** in **2022-23**.
- With a **total investment of \$27 billion**, about **135 Indian companies** are actively engaged in Nigeria.
- These investments traverse diverse sectors, encompassing infrastructure, manufacturing, consumer goods and services.

GPS Jamming and Spoofing

News Excerpt:

Estonia has accused **Russia** of **jamming GPS navigation devices** in the airspace above the **Baltic states**.

More in the news:

- There have been reports of a rise in **GPS interference** worldwide, particularly since last year, raising fears of an **increased risk of accidents if planes veer off-course**.
- The **disturbances have escalated** since **2022**, with Finnair pilots reporting interference, particularly in areas near the **Caspian Sea, the Black Sea, Kaliningrad**, and the **Eastern Mediterranean**.

What is GPS jamming and spoofing?

Global Positioning System (GPS):

- It is a network of satellites and receiving devices used for **positioning, navigation, and timing on Earth** in everything from **ships and planes** to **cars**.

- GPS is an important navigation tool in aviation, which has **replaced expensive ground devices** that would transmit radio beams to **guide planes toward landing**.

- However, it is also fairly easy to use **store-bought tools to block or distort GPS signals**, and **militaries** have invested in technology that can do so.



GPS jamming:

- **GPS jamming** uses a **frequency-transmitting device** to **block or interfere** with **radio communications**, usually by **broadcasting signals from the ground** that are **stronger than satellite-based signals**.

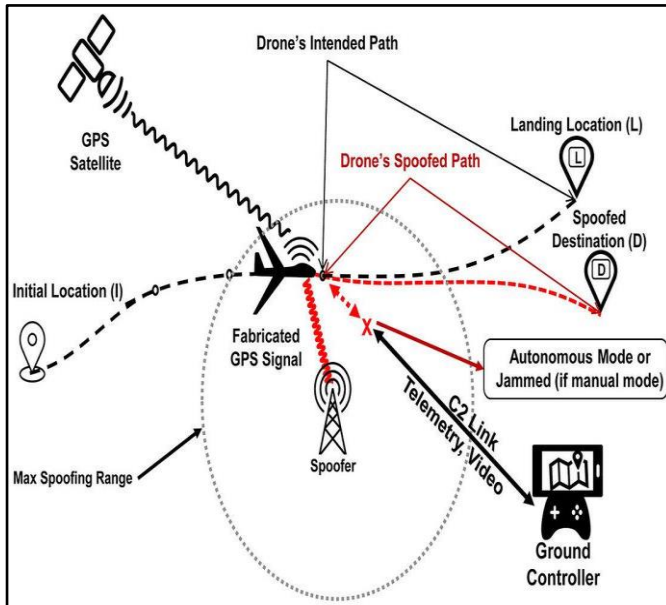
Spoofing:

- **GPS Spoofing** might involve **one country's military sending false GPS signals** to an **enemy plane or drone** to hinder its ability to function and is often considered **more disruptive and dangerous** than jamming.
- The problem for **commercial aviation** comes if that **false signal is picked up** by a **GPS receiver in a passenger plane**, potentially confusing the pilot and air traffic control by showing the wrong time or coordinates without warning.

Why is it a problem for airlines?

- **Most modern airliners** have a variety of **sensors and sources** to determine their **positioning, in addition to GPS**, meaning **they can fly if there is interference**.
- However, according to pilots and industry experts, **airlines still rely primarily on GPS**.

- If **jamming** or **spoofing** occurs, **GPS might have to be switched off** and **cannot be reset for the remainder of the flight in many cases.**



- That can cause **stress** and **delays** for **take-off and landing** because certain procedures require GPS to function.
- **GPS navigation is also the only form of navigation for some private jets.**
- Given the **diverse nature of jamming and spoofing devices**, it's **difficult for the airline sector** to come up with a sweeping **technological solution that can mitigate the risk.** Instead, authorities are looking to train pilots to verify jamming and spoofing sooner.

India-Indonesia defence industry and security cooperation

News Excerpt:

India and Indonesia have agreed to enhance collaboration in areas of **defence industry, maritime security, and multilateral cooperation** at the **seventh India-Indonesia Joint Defence Cooperation Committee (JDCC)** meeting held in **New Delhi.**

India-Indonesia relations:

- India and Indonesia have had a **Comprehensive Strategic Partnership since 2018** and have arrived at a **shared vision of the Indo-Pacific.**
- In current times, this partnership is characterised by **close cooperation in the bilateral and multilateral arena**, including frequent high-level interactions.
- Indonesia is an **important partner in India's Act East Policy** and the **Indo-Pacific region.**
- Indonesia is also keen to build its **own defence industry** and offered to share India's experiences in this regard and also to partner for long-term collaborations in the defence sector.

Why is the India-Indonesia defence cooperation important geopolitically?

- India and Indonesia are the **two largest democracies and economies** in the region, and their **defence partnership** holds significant importance for both countries and the broader region, given their **strategic locations, economic clout and shared maritime interests.**
- Both countries also signed the **Defence Cooperation Agreement-**
 - India and Indonesia share '**Vision on Maritime Cooperation**'.
 - Defence cooperation is marked by regular India-Indonesia Coordinated Patrol (**IND-INDO-CORPAT**), **bilateral army, and naval exercises** such as those of **Garuda Shakti** and **Samudra Shakti.**
 - The **first-ever India-Indonesia Defence Industry Seminar and Exhibition** was organised in Jakarta, which showcased the Indian defence industry and explored the potential for partners.
- **Indonesia is an immediate maritime neighbour of India**, and the two countries share the **Bay of Bengal.** About **80 per cent of the energy exports to East Asia** pass through the **Bay of Bengal.**
 - It is very important for India and Indonesia to keep this **Sea Link of Communication (SLOC) secured, and open**, and to ensure that no hostile country or entity chokes this.
 - Cooperation in **maritime security**, including **joint naval exercises, sharing of intelligence, and coordinated patrols**, helps safeguard vital SLOC and combat maritime threats like **piracy, smuggling and terrorism.**
- Given their geographical locations, India and Indonesia are prone to **natural disasters** like **earthquakes, tsunamis and cyclones.**
 - **Joint preparedness, disaster relief operations** and the **sharing of best practices in disaster management** can significantly enhance the resilience and response capabilities of both nations.
 - Collaboration in this area strengthens **civil-military cooperation** and reinforces the **humanitarian aspects of defence cooperation.**
 - This sort of exchange between India and Indonesia helps both countries in **Humanitarian Assistance and Disaster Relief (HADR) efforts.**
- The bilateral relationship deepened after the visit of the **Indian Prime Minister to Jakarta in September 2023**
- and **Indonesian President Joko Widodo to New Delhi for the G20 Leaders' Summit** held under India's presidency in **September 2023.**

India features on the U.S. 'Priority Watch List.'

News Excerpt:

The **United States Trade Representative (USTR)** has placed India again on the '**Priority Watch List**' because of a lack of adequate **intellectual property rights** protection and enforcement.

More about the news:

- There has been progress under the **US-India Trade Policy Forum** in addressing issues with trademark infringement investigations and pre-grant opposition proceedings. Still, numerous long-standing concerns remain, per the **US Trade Representative's 2024 Special 301 Report**.
- The US continues to urge India to join the **Singapore Treaty on the Law of Trademarks**, which expands protectable subject matter to include non-traditional marks such as sensory marks, colour, position, and movement marks.
- **No action** is threatened by the US against countries on the '**priority watch list**', but if a country slips further and is categorized as a '**priority country**', the US may impose '**retaliatory**' measures.

2024 Special 301 Report:

- The Office of the **United States Trade Representative (USTR)** released its **2024 Special 301 Report** on the adequacy and effectiveness of U.S. trading partners' protection and enforcement of **intellectual property (IP) rights**.
- It is an **annual review** of the global state of IP protection and enforcement.
- **USTR** conducts this review pursuant to Section 182 of the **Trade Act of 1974**, as amended by the Omnibus Trade and Competitiveness Act of 1988 and the **Uruguay Round Agreements Act**.
- **Seven trading partners** on the **Priority Watch List** present the most significant concerns regarding **insufficient IP protection, enforcement, or actions** that otherwise limited market access for persons relying on intellectual property protection.
 - **Argentina, Chile, China, India, Indonesia, Russia, and Venezuela.**
- **Twenty trading partners** are on the **Watch List** and merit bilateral attention to address underlying IP problems: **Algeria, Barbados, Belarus, Bolivia, Brazil, Bulgaria, Canada, Colombia, Ecuador, Egypt, Guatemala, Mexico, Pakistan, Paraguay, Peru, Thailand, Trinidad and Tobago, Türkiye, Turkmenistan, and Vietnam.**

Key challenges and concerns raised by the USTR regarding India:

- **Patent Issues:**
 - Potential threat of patent revocations.
 - Lack of presumption of patent validity.
 - Narrow patentability criteria under the **Indian Patents Act** impact companies across different sectors.
 - Costly and time-consuming pre- and post-grant oppositions.
 - Long waiting periods to receive patent grants.
 - Excessive reporting requirements.
- **Trademark Issues:**
 - High levels of trademark counterfeiting remain problematic.
 - Excessive delays in trademark opposition proceedings.
 - Lack of quality in trademark examination.
- **Trade Secrets and Copyright:**
 - Insufficient legal means to protect trade secrets in India.
 - High levels of piracy, particularly online, are faced by copyright holders.
- India still needs to **fully implement the WIPO Internet Treaties** and ensure that copyright statutory licenses do not extend to interactive transmissions.

India's stance:

- India maintains that its **intellectual property (IP)** laws strictly adhere to the Agreement on **Trade-Related Aspects of Intellectual Property Rights (TRIPS)** under the **World Trade Organization (WTO)**.
- India asserts that it is not bound by any global rules to change its IP laws, implying that it believes its existing legal framework **complies** with **international obligations**.

Permanent status: on Palestine and the UN

News Excerpt:

The **United States** has **vetoed** the United Nations Security Council (UNSC) resolution granting Palestine **full membership status at the UN**.

More about the news:

- The resolution, **proposed by Algeria**, was one more step in the world body's attempt to fulfil the promise made in 1947 when the UN General Assembly originally adopted its resolution, **partitioning the then-mandated Palestine into two states, one Jewish and one Arab**.
- The proposal received **12 votes in favour**, with the **United States casting a negative vote** and **Switzerland and the United Kingdom abstaining**.

- A Council resolution requires at **least nine votes in favour** and **no vetoes** from its five permanent members — China, France, the Russian Federation, the United Kingdom and the United States — to pass.
 - **The Algerian draft failed owing to a negative vote cast by a permanent member.**
- Only **Israel became a full member of the UN in 1949**. The state of **Palestine** received **permanent observer status in 2012**.

Arguments in favour of Israel:

- The **U.S.** said that it believed **Palestine** should not be granted membership through the UN process but through **“direct negotiations between the parties”**.
- The **Israeli Ambassador** added that to give Palestine full member status at this time, six months after the recent terror attacks by Hamas, would be **“the vilest reward for the vilest crimes”**.

Arguments in favour of Palestine:

- This is the time to **recognize Palestine’s long-denied right** — in the aftermath of the recent Hamas attack, Israel has bombed Palestinians both in the Gaza Strip and the West Bank indiscriminately.
- **Israel** has **continued its operations despite a UNSC ceasefire resolution** that even the U.S. signed on, and now threatens yet another offensive on Rafah, shows the dire **need for the Palestinian state to have a much stronger voice on the multilateral stage**.
- It is a **gross injustice to all Palestinians to conflate them with terrorist acts perpetrated by Hamas** — refusing to make a distinction between combatants and non-combatants only further marginalizes the pain of all victims of violence.

Significance of Palestine’s permanent membership in the UN:

- A Palestine in the UN fold would **ensure** that the **obligations of all UN members would bind the new state**.
- The contention that **Palestine could only be a state through “dialogue between the parties”** has a flaw:
 - As **Israeli Prime Minister Netanyahu** has **declared recently** that **he would never accept a Palestinian state** and intended to retain “full Israeli security control over all the territory west of Jordan.

Victory Day

News Excerpt:

On 9th May, Russia marked Victory Day, with President Vladimir Putin praising his military’s actions in Ukraine and criticizing the West for its involvement in global conflicts.

About the News:

- During his speech, Putin highlighted Russia’s dedication to preventing conflicts among major powers and asserted the country’s stance against any threats.
- This year’s Victory Day, occurring shortly after Putin’s fifth term began, carries added weight amidst ongoing geopolitical tensions, with Putin leading commemorative events across Russia honouring the nation’s wartime sacrifices.

What is Victory Day?

- The Victory Day, observed on **May 9th annually in Russia** and several former Soviet republics, **commemorates the triumph over Nazi Germany in World War II**. This day is marked by various ceremonies, including military parades, wreath-laying, and gatherings to honour veterans, fostering a sense of patriotic pride.
- The day holds immense significance as on **May 9, 1945, the German Instrument of Surrender was signed**, formally **ending the war** in Europe. This day symbolizes the resilience of the Soviet Union, with cities like Stalingrad, Kursk, and Leningrad (now St. Petersburg) standing as enduring symbols of the country’s ability to overcome monumental challenges.

Xenophobia

News Excerpt:

Recently, the US President said that the reason behind the economic trouble of India, China, etc. is Xenophobia, i.e. hatred towards foreign cultures.

More about the News:

- President Biden argued that xenophobia in countries like **India, China, Russia, and Japan has stalled their economic growth** while immigrants have made the United States stronger.
- He emphasized that one of the reasons the **U.S. economy is growing is because the country welcomes immigrants**.

What is Xenophobia:

- Xenophobia refers to **the fear or hatred of people from different countries or cultures**. It often manifests as prejudice, discrimination, or hostility towards individuals or groups perceived as foreign or unfamiliar.
- In extreme cases, xenophobia can **escalate into acts of physical violence**, including hate crimes, assaults, or even genocide.
- Strong feelings of national identity or cultural superiority may exacerbate xenophobic attitudes by fostering an **“us versus them”** mentality, which is often utilised by political leaders to gain support.

Xenophobia can be categorized into two main types:

- **Cultural xenophobia:** This form entails the rejection of aspects such as **language, clothing, music, and other cultural symbols** associated with a different group or nationality.
- **Immigrant xenophobia:** This type involves the rejection of individuals perceived as not belonging to the **societal "ingroup,"** which can include those of different religions or nationalities.
 - It often leads to **persecution, hostility, violence, and, in extreme cases, genocide.**

Examples:

- **Immigration policies** often reflect xenophobic attitudes, leading to discriminatory measures and bans targeting specific groups. For example, Donald Trump's presidential campaign is based on anti-immigrant policies.
- **Historical instances,** like the forcible displacement of Indigenous peoples in the U.S. and the implementation of residential schools in the U.S. and Canada, illustrate xenophobic practices aimed at assimilating or excluding certain cultural groups.
- The **COVID-19 pandemic** has seen a rise in violence against individuals of Asian descent, highlighting xenophobia **fuelled by fear and misinformation.**

Factors contributing to xenophobia include:

- **Social and economic insecurity** can prompt blame towards immigrants and minorities during times of hardship.
- **Limited contact with diverse groups** leads to mistrust or fear of the unfamiliar.
- **Media portrayals** often depict immigrants and minorities negatively, reinforcing prejudices.
- **Fear of the unknown,** which can extend to physical appearance and cultural differences, amplifies xenophobic attitudes.
- Xenophobia often originates from a **blend of upbringing, religious indoctrination, and past encounters.**

Effectively addressing xenophobia requires challenging various facets of one's identity and adopting new perspectives on the world.

Nakba Day

News Excerpt:

Nakba means "**catastrophe**" in Arabic and refers to the forced displacement of

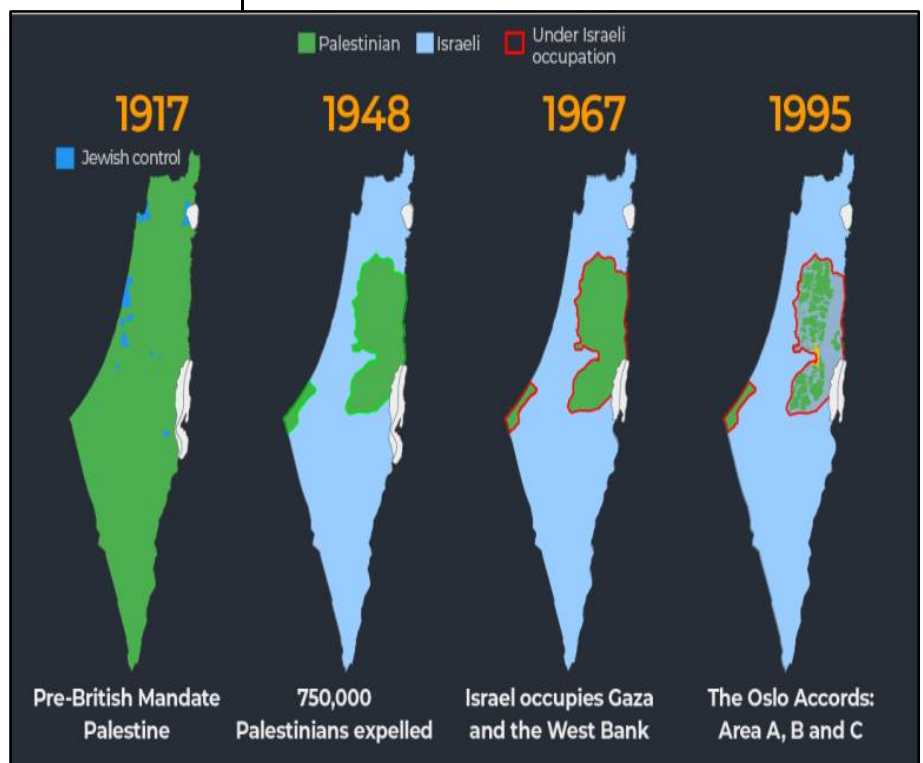
Palestinians to facilitate the creation of Israel.

About Nakba Day:

- On May 15, every year, Palestinians mark the **Nakba ("catastrophe" in Arabic),** referring to the displacement of thousands of Palestinians **and the near-total destruction of Palestinian society in service of the** creation of Israel.
- **Nakba Day** is observed on the day after Israel declared its independence on **May 14, 1948.**

Balfour Declaration and after:

- Jewish migration into Palestine picked up in the **20th century,** especially after the **Balfour Declaration of 1917.**
- The British promised to help the **"establishment in Palestine of a national home for the Jewish people."**
- With the collapse of the **Ottoman Empire in 1914,**
 - Palestine had come under the jurisdiction of **imperial Great Britain.**
 - By giving its support to **Zionist goals in Palestine,** the British hoped to shore up Jewish support for its **war effort.**
- **Post-war,** Britain began to actively enable **Jewish migration into Mandatory Palestine** and soon effected significant demographic changes in the region.
 - A 1920 **British survey estimated Palestine's population** at around 700,000, with Muslims comprising four-fifths and Jews numbering 76,000 in 64 settlements.
 - By 1945, the population exceeded **1.76 million,** with Muslims at **60%** and Jews over **31%.**




- The changing demographics fuelled **ethnic conflict**. Arab frustration soon manifested in the form of attacks on Jewish settlements,
 - In response, Jewish migrants organised to form armed militias to protect settlers and further usurp Palestinian land.
- In 1936, Palestinian Arabs launched a massive uprising against the British and Zionist settler-colonialists, known as the **Arab Revolt**.
- This **lasted till 1939** and was eventually violently crushed by the British authorities.

The catastrophe:

- Post-World War II, Britain decided to make an exit from Palestine and leave its fate up to the United Nations.

- On November 29, 1947, the **UN adopted Resolution 181**, recommending the **partition of Palestine into Jewish and Arab states**.
- The Jewish nation was allocated **55% of the land, the big city of Jaffa** with Arab majorities, key agricultural tracts, and important seaports. **Palestinian Arabs summarily rejected this proposal**.
- These militias forced the mass expulsion of Palestinians from their towns and villages in what Palestinians remember as the **Nakba**.

Since 1948, the **Nakba** has gone on to become a central aspect of **Palestinian identity**, with a significant population of **Palestinians living as refugees** in the Middle East and across the world.



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ENVIRONMENT

Green Growth

News Excerpt:

The recent heatwave has reminded countries of the stark risks posed by climate change and has brought the focus back on sectors like power and industry, which account for the bulk of carbon emissions.

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What is Green growth?

- It means fostering **economic growth and development** while ensuring that natural assets continue to provide the resources and **environmental services** on which our wellbeing relies.
- It involves rethinking growth strategies about their impact(s) on environmental sustainability and the environmental resources available to poor and vulnerable groups.
- The Ministry of Environment, Forests, and Climate Change (MoEFCC) recognizes green growth and poverty eradication to contribute to the vision of sustainable development.

What does Green Growth aim to achieve?

These policies are an integral part of the structural reforms needed to foster **strong, more sustainable, and inclusive growth**. They can unlock new growth engines by:

- **Efficiency:** It creates incentives for greater efficiency in the use of natural resources, reducing waste and energy consumption, unlocking opportunities for innovation and value creation, and allocating resources to the highest value use.
- **Investor Confidence:** Boosting investor confidence through greater predictability in how governments deal with major environmental issues.
- **New Markets:** Opening up new markets by stimulating demand for green goods, services, and technologies.
- **Fiscally sound policies:** Contributing to fiscal consolidation by mobilizing revenues through green taxes and the elimination of environmentally harmful subsidies, helping free up resources for anti-poverty programs in areas such as water supply and sanitation.

Obstacles to Green Growth in India:

- **Carbon-Intensive Industries:**
 - Power, steel, cement, chemicals, fertilizers, and refineries are key sectors contributing to India's carbon footprint.
 - Industries like power generation and manufacturing sectors substantially hinder India's transition to green practices.
- **Dominance of Fossil Fuel-Based Power Plants:**
 - Most of India's carbon emissions originate from fossil fuel-based power plants, exacerbating the

nation's carbon footprint and hindering efforts to address climate change effectively.

- **Voluntary Adoption Amid Regulatory Ambiguity:**
 - Despite the **absence of governmental mandates** mandating the transition to green technology, some companies have initiated voluntary efforts to adopt environmentally sustainable practices.
 - However, the lack of regulatory clarity poses challenges, exposing companies to risks associated with **uncertain policy frameworks**.
- **Risks Associated with Transition:**
 - Transitioning to green technology entails inherent risks, including **potential changes in policies, technology, market dynamics, and legal frameworks**.
 - The primary risk lies in **technological challenges**, which may impede companies' ability to adopt and integrate green technologies into their operations effectively.
 - This transition will require an estimated **Rs 11-12 lakh crore of investments** in RE power until 2030, along with over Rs 5-6 lakh crore in investments in transmission infrastructure and storage capabilities.

Government steps to promote green growth:

- **Promotion of Clean Energy Initiatives:**
 - **Production Linked Incentive (PLI) scheme** to boost solar panel manufacturing, funding for offshore wind and battery projects, and incentives for electric vehicles such as the **Faster Adoption & Manufacturing of Electric Vehicles (FAME) scheme**.
 - **National Green Hydrogen Mission** and issuance of **green bonds** serve to incentivize investments in environmentally sustainable practices.
- **Transition to Renewable Energy Sources:**
 - To reduce reliance on fossil fuel-based power generation, the government has set a target of **increasing the share of renewable energy to 50% of the total energy mix by 2030**.
- **Integration of Renewable Energy with Storage Systems:**
 - Ensuring a reliable and uninterrupted supply of energy from renewable sources necessitates the integration of wind and solar power with energy storage systems.
 - By harnessing the potential of **energy storage technologies**, India can overcome the intermittency challenges associated with renewable energy sources and enhance grid stability.
- **Carbon Capture and Storage (CCS) in Heavy Industries:**

- Industries with high carbon emissions, such as steel and cement manufacturing, are targeted to reduce their environmental impact.
- The government is exploring avenues for implementing CCS technologies to mitigate carbon emissions from these sectors, thereby aligning with India's commitment to achieving net zero emissions by 2070.

Way Forward:

<p>Mainstreaming in decision-making processes:</p> <ul style="list-style-type: none"> •Climate-resilient green growth strategies requires policy coherence and interdepartmental coordination. •Government can adopt green budgeting for India wherein all departments can prepare environmental budget statements highlighting key 'green' activities undertaken in their respective departments.
<p>Addressing data gaps:</p> <ul style="list-style-type: none"> •Collecting and synthesizing existing and new data is needed to facilitate preparation of strategies as well as evaluation of existing policy initiatives. •Data can be collected using existing management information systems.
<p>Mobilizing finance:</p> <ul style="list-style-type: none"> •In addition to public finance, private sector, banking institutions, and development agencies also becomes important to meet the growing demand for sustainable solutions.
<p>Commissioning pilots and technology demonstration:</p> <ul style="list-style-type: none"> •Pilots need to be commissioned in opportunity areas. •Technology demonstration should be encouraged in areas of RE, waste management, RE for cold storage applications, and natural resource management.
<p>Capacity building:</p> <ul style="list-style-type: none"> •Enhance financial, technical, and institutional capacities of government as well as the voluntary sector to enhance the skills and knowledge base. •Greater engagement between government, research and academia, nonprofit organizations, and the private sector is needed to support implementation.
<p>Understanding emerging issues:</p> <ul style="list-style-type: none"> •Better planning is needed for impending socio-economic transitions, such as urbanization and changes in economic structure (like increase in manufacturing). •Skill development and vocational education need priority action to create opportunities in key green growth- related sectors, especially RE, buildings, and industry.

Delhi's mounting waste crisis

News Excerpt:

The Supreme Court's recent criticism of **Solid Waste Management (SWM)** in New Delhi highlights a critical issue.

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What is the status of Delhi's SWM system?

- According to the 2011 Census, New Delhi's population was about 1.7 crore, which is expected to reach 2.32 crore by 2024 and 2.85 crore by 2031.
- Considering an average per capita generation of about **0.6 kg/day per person**, the city generates approximately 13,000 TPD of waste.
- About 90% of the waste generated in the city is collected by the **three municipal corporations**:
 - The Municipal Corporation of Delhi (MCD),
 - Delhi Cantonment Board,
 - The New Delhi Municipal Corporation.
- More than **3,800 tonnes** of solid waste per day (TPD) remain untreated in the national capital. This **waste reaches landfills** and **threatens public health and the environment**.

What about the processing capacity of SWM in Delhi?

- New Delhi has waste-processing facilities at Okhla, Bhalswa, Narela, Bawana, Tehkhand, SMA Industrial Area, Nilothi, and Ghazipur.
- These landfills, consisting of unprocessed wet and dry waste, **generate methane gases** and **leachates** and **cause landfill fires**, adversely affecting the surrounding environment.
- The accumulation of unprocessed waste in these landfills has led to a staggering **2.58 crore tonnes of legacy waste** piling up over **200 acres of land**.
- The MCD initiated **biomining** to reduce the amount of waste in 2019; this task will take another two to three years to complete.

Biomining:

- It refers to the **use of microorganisms in the recovery of metals** from ores.
- **Legacy waste contains significant amounts of valuable metals** and minerals that can be efficiently recovered through biomining, **reducing the need for virgin resource extraction**.

What are the MCD's challenges?

- **Lack of waste segregation at source:** Many households and commercial establishments don't do this, and as a result, unprocessed mixed waste enters landfills.
- **Non- Non-Availability of Land:** Waste processing plants need large land parcels of about 30-40 acres each, which is a challenge in Delhi. Delhi will need to **partner with its neighbouring States** to set up a few of these **composting plants**.
- **Public awareness of proper waste management** practices is also lacking, contributing to littering and improper disposal habits,

- The lack of regular waste collection services in certain areas also contributes to the buildup of waste and littering.
- A lack of coordination among various stakeholders leads to inefficient waste management.

What efforts need to be made?

- The quantity of waste is expected to increase in the coming years, along with the per capita waste generation.
 - The MCD should design a waste-management plan with a total design capacity of 18,000 TPD.
- Biodegradable wet waste should be composted or used to generate biogas.
 - The design capacity of the wet-waste-processing system should be set at 9,000 tonnes.
 - The capacity of composting facilities is around 500 tonnes per day, which means Delhi will need at least 18 composting or biogas plants to ensure no biodegradable wet waste reaches landfills.
- Non-biodegradable dry waste:
 - About 50-55% of the waste generated in Indian cities is biodegradable wet waste, 35% is non-biodegradable wet waste, and 10% is an inert component.
 - About 2% will be recyclable, and this can be sent to recycling facilities.
 - The remaining 33% won't yet be recyclable.
 - The non-recyclable dry waste fraction, which consists of plastics, paper, and textile waste, is called refuse-derived fuel (RDF).
 - This material has good calorific value and can be used to generate power in waste-to-energy projects, although the cost of power generation tends to be slightly higher.
- Decentralization of Waste Processing:
 - States like Tamil Nadu and Kerala have set up decentralized Micro-Composting Centres (MCC) of 5 TPD capacity at the ward level. These MCCs manage about 20% of the city's wet waste.

- Bengaluru has also set up ward-level Dry Waste Collection Centres (DWCCs) with 2 TPD capacities each. These DWCCs can help manage about 10% of dry waste.

Way Forward:

- Delhi's SWM system should integrate decentralized options for both wet and dry waste, backed by large processing facilities, to ensure all the waste generated is scientifically processed.
- The city must also ensure existing processing facilities operate at full capacity, while new facilities are built to ensure no waste goes untreated.
- Urban local bodies should also learn from best practices from other cities in India and abroad on efficient SWM processing.

Urban Heat Islands

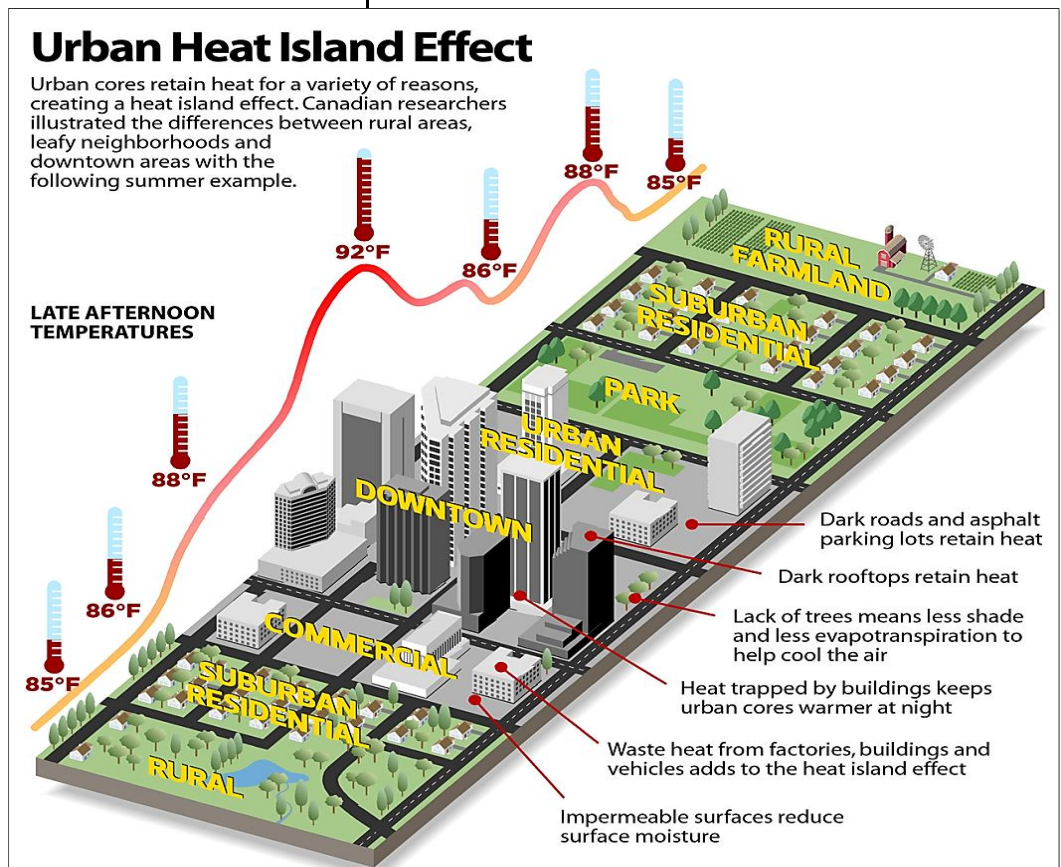
News Excerpt:

The problem of Urban heat islands can be solved with technology.

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What is an urban heat island?

- An urban heat island occurs when a city or parts of a city experience much warmer temperatures than nearby areas. They result from complex interactions between built environments, natural factors, and human activities.
- Around 80 percent of the people in India have experienced heat waves in the first 15 days of summer.



- **Impact:**
 - The informal sector is disproportionately affected by such urban heat stress.
 - It leads to **illnesses** and substantially impacts **energy consumption, air pollution levels in cities, human productivity patterns and overall ecology.**
 - They could lead to **temperature differences of up to six degrees centigrade within a given area or neighbourhood.**
 - Also, the **lack of water bodies can add to the heat effect.**
 - The **vulnerability of specific socio-economic groups** could also worsen the situation, such as various informal settlements in India that use heat-absorbent metal/asbestos sheets for roofing.
- According to a 2014 Indian Institute of Science report, the **ideal tree-human ratio should be seven trees for every person. The lack of trees increases the risk of exposure to higher temperatures.**
 - Indian cities have places with such **poor density of trees as one tree for 50 people** and also as low as **one tree for 450 people.** All these contribute to worsening the urban heat islands effect.

Tech for better weather/heat tracking in India:

- Various technological innovations have significantly improved weather and heat risk monitoring in India.
 - The **soft infrastructure of remote sensing satellites** provides valuable data for tracking weather patterns, land surface temperatures, and urban heat islands.
 - In addition, **hard infrastructure** involves **deploying sensors in cities** to gather real-time data on parameters like temperature, humidity, precipitation, and air quality, all contributing to heat risk monitoring.
- Advanced modelling techniques **driven by Artificial Intelligence (AI)** further enhance weather forecasts, enabling better preparedness for different weather events.
- While developed countries boast sophisticated systems due to more resources, India has made strides in utilizing technology to track urban heat islands. However, the **scale and resolution of India's monitoring networks still lag behind** those of developed nations.

Indian city governments using tech:

- Indian cities have leveraged technology to address urban heat issues, with success stories like **Ahmedabad's heat action plan** implemented in response to the devastating 2010 heatwave.
 - This initiative involved deploying **temporary monitoring stations, satellite-based heat maps, and early warning systems to identify vulnerable areas.**

- As a result, more than 24 cities and states across India are now preparing similar heat action plans, highlighting the value of technology-driven evidence and decision-support systems.

Startups using tech:

- **Various startups in the energy, building materials and mobility space** are working on tech to reduce the heat stress in urban areas.
- There are several startups focused on themes like **nature-based solutions — greening and improving natural infrastructure** like water bodies that are coming up.
- However, there are serious challenges in India for startups to mainstream such solutions and for governments to adopt them, as **tendering and procurement procedures are cumbersome** and have not caught up to on-board newer systems.

Tech for mitigation efforts against heat stress:

- This encompasses various technologies, including cool roofing materials, reflective building materials, and green infrastructure like vertical gardens and urban forests.
- Innovations such as **cool pavements and architectural-led designs for heat mitigation** are being studied in cities like Pune and Delhi.
- Health tech innovations offer customized **heat stress testing, alerts, and medication** based on individual vulnerabilities, emphasizing personalized approaches to mitigating heat-related health risks.
- Incorporating **heat-resilient designs in urban planning**, and including factors like building orientation and materials, is crucial for mitigating urban heat island effects.

Way Forward:

- **Use data-Driven Solutions** to enhance the accuracy and coverage of monitoring networks
- **Follow Urban Greening** by planting more trees, creating urban forests, integrating green spaces, vertical gardens and sustainable landscaping
- **Introduce and enforce building codes** that promote use of cool roofing materials, reflective surfaces, and architectural designs and the adoption of energy-efficient and heat-resilient construction practices.
- **Conduct outreach and educational campaigns to raise awareness** about the impact of urban heat islands and **empower communities** to participate in greening initiatives and heat mitigation efforts.
- **Foster collaborations** between government bodies, research institutions, startups, and communities to co-create innovative solutions for mitigating heat stress.
- **Support startups** working on heat mitigation technologies through streamlined procurement processes.
- **Integrate urban heat island mitigation strategies into urban planning frameworks and climate**

adaptation policies. Ensure that initiatives are aligned with national goals for sustainability and climate resilience.

The urban heat islands issue is an urban design and development issue that needs to be looked at from a bigger lens of economic policy, city management, and sustainable living in cities.

Constructed Wetlands

News Excerpt:

Kolkata East Wetlands in West Bengal, designated as a Ramsar site, features a vast network of natural and constructed wetlands.

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More about the news:

- Constructed wetlands represent **nature’s innovative solution for wastewater treatment** in India, offering significant contributions to sustainable industrial progress and water resource preservation.
- Amid the rapid development across diverse sectors, traditional treatment methods often fall short of addressing the diverse array of pollutants present, prompting a shift towards more comprehensive and nature-based solutions.
- Constructed wetlands emerge as a promising approach, providing effective treatment alongside environmental and economic benefits. These engineered ecosystems blend the sophistication of natural processes with human ingenuity, offering an eco-friendly alternative to conventional treatment methods.

What are constructed wetlands?

- Constructed wetlands are engineered structures **meticulously designed to mimic the functions of natural wetlands.** They consist of carefully selected vegetation, soil, and water, orchestrated to facilitate a seamless purification process.

Benefits:

Cost-Effectiveness:	<ul style="list-style-type: none"> Their construction and maintenance entail minimal energy consumption and lower operational expenses, thus appropriate for settings with limited resources.
Versatility:	<ul style="list-style-type: none"> Customized to address diverse forms of industrial wastewater, effectively managing a broad spectrum of pollutants and contaminants. Can be configured as either free-water surface or subsurface flow systems, based on particular needs of location and characteristics of the pollutants present.
Supplementary Environmental benefits:	<ul style="list-style-type: none"> As habitats for a wide array of plant and animal species, promoting biodiversity conservation. Contribute to ecosystem services such as flood control and carbon sequestration.
Scalability and adaptability:	<ul style="list-style-type: none"> Scalable: able to be adjusted to fit various industrial operations and spatial limitations. Adaptable: versatile, accommodating both centralized and decentralized wastewater treatment methods.

- Unlike traditional concrete tanks, these wetlands foster biodiversity, encompassing various life forms, from microorganisms to aquatic plants and birds, all engaged in the purification process. **Divided into subsurface flow (SSF) and surface flow (SF)** categories, constructed wetlands direct wastewater through gravel beds or porous media, promoting microbial activity that degrades organic matter. SF wetlands exhibit aesthetic appeal above the water’s surface, featuring gently flowing streams and lush vegetation.
- The **selection of plants is crucial**, serving as vital nutrient absorbers, particularly for nitrogen and phosphorus, functioning as living filters. Their **roots provide hospitable habitats for bacteria**, aiding in the breakdown of complex molecules into simpler compounds. Additionally, their roots oxygenate the soil, fostering an environment conducive to aerobic bacteria. As water navigates through their intricate root systems, nutrients are absorbed while contaminants are trapped, benefiting both plants and microbes.

Examples:

- Asola Bhatti Wildlife Sanctuary in Delhi** has a constructed wetland system that aids in purifying sewage from nearby settlements and also provides a sanctuary for diverse flora and fauna, thus contributing to regional biodiversity conservation.
- In **Chennai, Tamil Nadu, Perungudi and Kodungaiyur regions**, constructed wetlands have been implemented as part of their decentralized wastewater treatment strategy.
- The **Kolkata East Wetlands in West Bengal**, designated as a Ramsar site, feature a vast network of natural and constructed wetlands. These wetlands play a vital role in treating wastewater from Kolkata and its environs while also offering livelihood opportunities for local communities engaged in fishing and agriculture.

- In Haryana, **Palla village along the Yamuna River** hosts a constructed wetland system that treats wastewater from Delhi before discharge into the river, thereby improving water quality in the Yamuna and mitigating downstream pollution, benefiting both human populations and aquatic ecosystems.
- Auroville**, an international township in **Tamil Nadu**, has implemented decentralized wastewater treatment systems, including constructed wetlands, to manage sewage generated within its premises.
- In Rajasthan, the **Sariska Tiger Reserve** utilizes constructed wetlands for treating wastewater from nearby villages, addressing the sanitation needs of local communities while

maintaining the ecological integrity of the reserve and supporting wildlife habitat conservation.

Ways to deal with the challenges to harness the benefits of constructed wetlands in India:

- **Clear policies and regulatory frameworks** to encourage the adoption of constructed wetlands in industrial wastewater treatment.
- **Providing incentives and subsidies to incentivize industries** to invest in sustainable wastewater management practices.
- **Raising awareness and enhancing technical expertise** among stakeholders, including industry professionals, regulators and local communities, for the successful implementation and operation of constructed wetlands.
- **Continuous monitoring and research efforts** to evaluate the performance of constructed wetlands in diverse industrial settings.
 - This includes optimizing design parameters and addressing emerging challenges, such as new contaminants and the impacts of climate change.
- **Engaging local communities in the planning, design and management** of constructed wetlands fosters a sense of ownership and ensures the long-term sustainability of these systems.

Way Forward:

Constructed wetlands present a hopeful remedy for combating industrial wastewater pollution in India. By leveraging the **innate filtration capabilities of wetland ecosystems, these systems adeptly treat wastewater** and yield supplementary environmental advantages.

Through the implementation of appropriate policies, capacity-building initiatives and community involvement, constructed wetlands have the potential to significantly contribute to the attainment of sustainable industrial progress and the preservation of water resources for forthcoming generations.

Lakshadweep Coral Reefs

News Excerpt:

The **ICAR-Central Marine Fisheries Research Institute (CMFRI)** has found that **coral reefs in the Lakshadweep Sea** have undergone **severe bleaching** due to prolonged **marine heatwaves since October 2023**.

What are coral reefs?

- Coral reefs are **large underwater structures** composed of the **skeletons of colonial marine invertebrates** called **coral**.
 - The coral species that build reefs are known as **hermatypic**, or "**hard**," corals because they extract **calcium carbonate from seawater** to create a **hard, durable exoskeleton** that protects their soft, sac-like bodies.
 - Other species of corals that are not involved in reef-building are known as "**soft**" corals.

- These types of corals are flexible organisms, often resembling plants and trees and include species such as sea fans and sea whips.
- Each individual coral is referred to as a **polyp**.
 - **Coral polyps** live on the **calcium carbonate exoskeletons** of their **ancestors**, adding their own exoskeleton to the existing coral structure.
 - As the centuries pass, the coral reef gradually grows, one tiny exoskeleton at a time, until they become massive features of the marine environment.
 - Corals are **sessile animals**, i.e. they permanently attach themselves to the ocean floor.
- **Almost all of Lakshadweep's islands are coral atolls**, with their soil largely derived from corals and extant coral reefs around them.

What is coral bleaching?

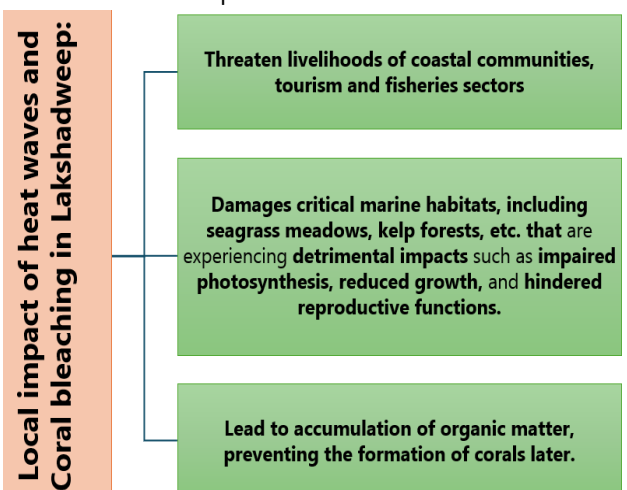
- When **corals are stressed by changes in conditions such as temperature, light, or nutrients**, they expel the **symbiotic algae** living in their tissues, causing them to **turn completely white**.
 - Corals expel the microscopic algae that live in their tissues and, in simple terms, produce food for them.
 - Without these algae, corals' tissues become transparent, exposing their white skeleton.
- **Bleached corals are not dead but** run the risk of starvation and disease. According to experts, without their algae, corals can survive for about two weeks.

What triggers coral bleaching?

- The leading cause of coral bleaching is **climate change**.
- Coral may bleach for other reasons, like extremely low tides, pollution, or too much sunlight.

Coral bleaching in Lakshadweep:

- Lakshadweep has been gripped by marine heat waves since October 2023, and coral bleaching was spotted only last week.
- If the water does not cool down, the bleaching can eventually lead to the death of Lakshadweep's corals.
- Lakshadweep Sea has previously seen coral bleaching events in 1998, 2010 and 2015, but the scale of the current one is unprecedented.



Coral Bleaching Stress Indicator:

- Scientists use the **Degree Heating Week (DHW)** indicator to measure accumulated heat stress in an area over the past 12 weeks by adding up any temperature that exceeds the bleaching threshold during that time period.
- DHW is calculated in **Celsius weeks**.
- The DHW indicator is an estimate of the thermal stress of corals and a **strong predictor of coral bleaching**.
- DHW is a widely used indicator and can be estimated from long term temperature logging and remote sensed satellite data.

How hot is the Lakshadweep Sea right now?

- Corals experience thermal stress when sea surface temperatures exceed 1 degree Celsius above the maximum mean temperature.
- This stress worsens if the high temperatures persist over a period of time.
- DHW values above 4 degrees Celsius weeks cause significant coral bleaching — a threshold that Lakshadweep has now crossed.
- However, Lakshadweep Sea has been consistently experiencing temperatures 1 degree celsius above the norm since October 27, 2023.
- Apart from excessive atmospheric heat (caused by Global Warming), shifts in ocean currents also lead to unusually high water temperatures.

Are marine heat waves and coral bleaching a problem for Lakshadweep alone?

- A 2022 study by the **Indian Institute of Tropical Meteorology (IITM)**, Pune, reported that **marine heatwaves are increasing in the Indian Ocean**.
 - The increase in marine heatwaves is primarily due to the rapid warming in the **Indian Ocean and strong El Nino**.
 - Earlier, these heat waves used to be rare in the tropical Indian Ocean, but have now become an annual affair.
- The **western Indian Ocean region** experienced the **largest increase in marine heatwaves** at a rate of about **1.5 events per decade**, followed by the **north Bay of Bengal** at a rate of **0.5 events per decade**.
 - During **1982–2018**, the **western Indian Ocean had a total of 66 events** while the **Bay of Bengal had 94 events**.
- An underwater survey showed that **85% of the corals in the Gulf of Mannar** near the Tamil Nadu coast **got bleached after the marine heatwave in May 2020**.

PRE-SHOTS

Mass sea anemone bleaching off Agatti island

News Excerpt:

Scientists at the **ICAR-National Bureau of Fish Genetic Resources (NBFGR)** have identified significant sea anemone bleaching off Agatti Island in the Lakshadweep group of islands.

About Sea Anemones:



- They are characterized by **soft bodies and stinging capabilities** and are closely associated with corals and live rocks.
- They typically **attach themselves to underwater surfaces** using a single adhesive foot called a basal disc and can have numerous tentacles.
- Known for their **vibrant colours, sea anemones form symbiotic relationships**, notably with Clownfish.
- Bleaching renders sea anemones **more vulnerable to diseases, ultimately leading to increased mortality**. This phenomenon, caused by the loss of symbiotic algae, threatens their long-term survival.
- The NBFGR has been working on sea anemones, aiming to **propagate them under controlled conditions**, as they are in high demand in the aquarium trade. Despite efforts, sexual reproduction has not been observed in captivity, prompting the **use of the bifurcation method for propagation**.
- Additionally, sea anemones are distributed along with Clownfish seeds to beneficiaries for further rearing in community aquaculture units, involving island women's participation.

Agatti Island:

- It is situated 459 km **west of Kochi**.
- **Fishing** is Agatti's most important **industry**. It is the only island besides Minicoy that is getting surplus fish. **Coir and copra** are the main industries next to fishing.
- The **climate of Agatti is similar to the climatic conditions of Kerala**. March to May is the hottest period of the year.

World's largest plant to extract CO₂ from air opened in Iceland

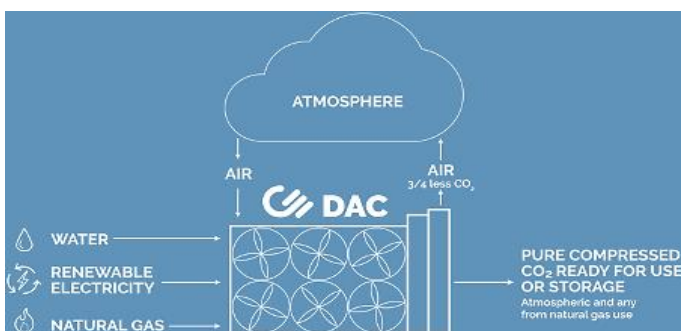
News Excerpt:

Climeworks has opened the **world's largest operational direct air capture (DAC)** plant to **suck carbon dioxide** out of the atmosphere with its huge plant in **Iceland**.

More about the news:

- Worsening climate change and inadequate efforts to cut emissions have led U.N. scientists to estimate **billions of tons of carbon must be removed** from the atmosphere annually to meet global climate goals.
- The **huge DAC plant** has a capacity to **capture 36,000 metric tons of CO₂ a year** and will be fully complete by the end of 2024.

What is Direct Air Capture?



- Direct air capture (DAC) technologies **extract CO₂ directly from the atmosphere** at any location, unlike carbon capture, which is generally carried out at the point of emissions, such as at a steel plant.
- DAC works by using a **technical process to suck carbon dioxide (CO₂)** out of the air and **store it, usually underground**.
- The CO₂ can be **permanently stored in deep geological formations** or used for a variety of applications.
- The removal process is **energy intensive**, but these plants in Iceland are powered by the country's **renewable geothermal power plants**.
- Critics of the technology say it is **expensive** and warn **focusing on removing CO₂ could deter companies from reducing their emissions** as much as possible.

46th Antarctic Treaty Consultative Meeting

News Excerpt:

The Ministry of Earth Sciences (MoES), Government of India, through the National Centre for Polar and Ocean Research (NCPOR), hosted the **46th Antarctic Treaty Consultative Meeting (ATCM 46)** and the **26th Meeting of the Committee for Environmental Protection (CEP 26)**.

About Antarctic Treaty:

- The Antarctic Treaty, **signed in 1959 and entered into force in 1961**, established Antarctica as a region

dedicated to peaceful purposes, scientific cooperation, and environmental protection.

- Over the years, the Treaty has garnered widespread support, with 56 countries currently party to it.

Antarctic Treaty Secretariat (ATS)

- It serves as the **administrative hub** for the Antarctic Treaty System.
- Established in 2004, the ATS **coordinates** the ATCM and CEP meetings, reposit and disseminates information, and facilitates diplomatic communication, exchanges, and management.
- It also **monitors compliance** with Antarctic Treaty provisions and agreements and provides assistance and guidance to Antarctic Treaty Parties on treaty implementation and enforcement matters.

National Centre for Polar and Ocean Research (NCPOR):

- It is India's premier R&D institution responsible for the country's research activities in the polar and Southern Ocean realms.
- NCPOR is an autonomous institution under **the Ministry of Earth Sciences (MoES), Government of India**.
- It is situated in Vasco da Gama, **Goa**.

About CEP:

- The CEP was established under the Protocol on Environmental Protection to the **Antarctic Treaty (the Madrid Protocol) in 1991**.
- The CEP advises the ATCM on environmental protection and conservation in Antarctica.

India's Role in the Antarctic:

- India has been a Consultative Party to the Antarctic Treaty since **1983**.
 - It participates in the decision-making process along with 28 other Consultative Parties to the Antarctic Treaty to date.
- India's first Antarctic research station, **Dakshin Gangotri**, was established in 1983. At present, India operates two year-round research stations: **Maitri (1989) and Bharati (2012)**.
- The permanent research stations facilitate Indian Scientific Expeditions to Antarctica, which have been ongoing annually since 1981.
 - In 2022, India enacted the Antarctic Act**, reaffirming its commitment to the Antarctic Treaty.
- As a signatory to the Antarctic Treaty, India remains dedicated to environmental protection, scientific cooperation, and peaceful operations in Antarctica.
- India's scientific and strategic endeavours in **the polar regions (the Arctic and Antarctic), the Himalayas, and the Southern Ocean** are under the National Centre for Polar and Ocean Research (NCPOR) in Goa.

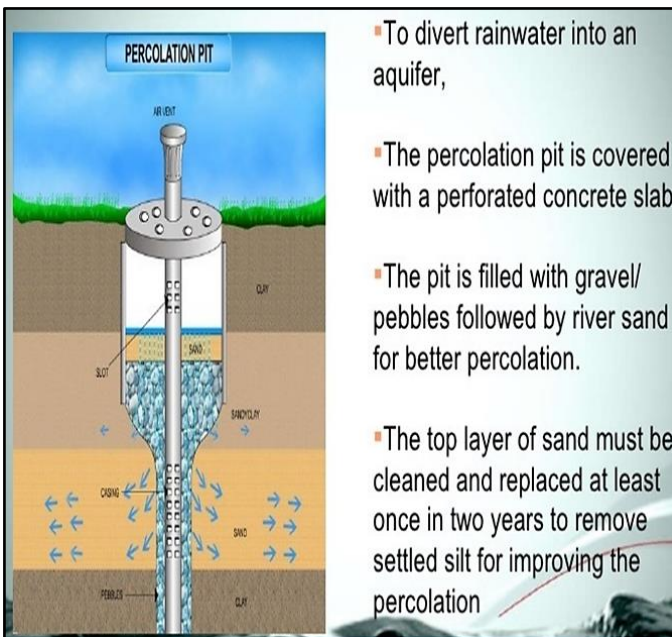
Percolation wells

News Excerpt:

A privately funded non-profit organization has pitched in to find a logical solution to **Bengaluru's water woes** using **Percolation wells**.

What are Percolation Wells:

- A percolation well is nothing, but a **hole dug into the ground**. It helps **draw water downward through the soil, recharging groundwater**.
- They are normally **12 feet deep** and **4 feet wide earthen structures** that are padded with concrete rings inside and filled with gravel.
- The **gravel traps rainwater** into the well and **percolates down to natural aquifers**.



- To divert rainwater into an aquifer,
- The percolation pit is covered with a perforated concrete slab
- The pit is filled with gravel/pebbles followed by river sand for better percolation.
- The top layer of sand must be cleaned and replaced at least once in two years to remove settled silt for improving the percolation

- Rain falls into the percolation well, water leaks into the soil in multiple layers and it goes down to the ground and **natural aquifers get activated**, instead of allowing rainwater to run off or form a cesspool and evaporate.

Significance of Percolation wells for Bengaluru:

- In the best monsoon scenario, Bengaluru's water situation may not improve much as it would not be able to hold more than 10% of rainwater **because its unplanned development, unbridled growth and concretization** drastically brought down the **water-holding ability of soil**. So even if the city gets reasonably good rains, its **water runs off**, forms a **cesspool**, or gets **evaporated**.
- **Percolation wells can help capture rainwater** so that the **groundwater table is restored, conserved and recharged** as the created percolation and filtration environment triggers **natural aquifers**.

World Bank-IMF Spring Meetings 2024- Liveable Planet Fund

News Excerpt:

Amid the world's "polycrisis", the **spring meetings of the World Bank and International Monetary Fund (IMF)** were held, which revolved around reforming the **global financial architecture**.

More About News:

- **The Development Committee** issued a statement acknowledging the heavy debt burdens and constrained fiscal space of many developing countries, leaving limited resources to build climate resilience.
- Eleven wealthy countries pledged \$11 billion to fund the **World Bank's three new financing tools** aimed at de-risking its programmes, attracting private-sector investments and boosting lending capacity.
 - The **Liveable Planet Fund**,
 - Portfolio guarantee platform
 - A hybrid capital instrument,

"Livable Planet Fund: It is designed to capture contributions from governments, philanthropies, and the private sector to help finance projects ranging from energy transition investments to healthcare delivery.

- The fund is named after the bank's new, expanded mission statement, **"to create a world free of poverty on a livable planet,"** endorsed last year to partly reflect its climate finance role.
- **Japan** committed to making the first contribution to the **Liveable Planet Fund**.
- The World Bank President highlights the importance of **private capital for climate action**.
- Despite commitments to align with the **Paris Agreement**, the World Bank continues to finance fossil fuels.
 - In its **'Paris Alignment Methodology'**, the World Bank committed to aligning 100 percent of its operations.
 - 85 percent of the operations of its private sector arms – **International Finance Corporation** and **Multilateral Investment Guarantee Agency**.
 - It promotes **natural gas as a transition fuel** despite mounting evidence questioning its cleanliness.
- **The World Bank's International Development Association (IDA)** replenishment, a source of concessional financing for low-income countries, The World Bank has called for raising \$30 billion in contributions to IDA.
 - A substantial portion of this money would be directed towards **climate finance**, since the World Bank has committed **45 per cent of its funds towards climate projects**.

- The **G20 Finance Ministerial** discussions focused on taxation of the super-rich, coordinating international tax initiatives, and climate challenges, with the creation of the '**Taskforce CLIMA**' by the **Brazilian G20 presidency**.

Taskforce CLIMA' by the Brazilian G20:

The **Task Force for the Global Mobilization Against Climate Change** will promote a high-level dialogue among governments, financial institutions, and international organisms to enhance global macroeconomic and financial alignment to implement the goals of the **United Nations Framework Convention on Climate Change (UNFCCC)** and the **Paris Agreement**.

India now 3rd-largest producer of solar power

News Excerpt:

According to a report from global energy think tank Ember, **India surpassed Japan** to claim the title of the **world's third-largest solar power generator in 2023**.

Key Points:

- The **Global Electricity Review 2024** was published, which offers a comprehensive examination of the global power landscape in 2023, drawing on data from individual countries.
- Accompanying this review is the world's inaugural open dataset on electricity generation in 2023, encompassing **80 nations** that represent **92 percent** of global electricity demand, along with historical data from **215 countries**.
- In 2023, solar energy achieved a milestone as it contributed **5.5 percent** to global production and India alone generated **5.8 percent** of its electricity from solar energy.

India's effort:

- India experienced the **world's fourth-largest surge in solar generation** in 2023, adding **18 Terawatt hours (TWh) to its capacity**, following **China (+156 TWh)**, **the United States (+33 TWh)**, and **Brazil (+22 TWh)**. India generated 113 billion units (BU) of solar power in 2023 compared to Japan's 110 BU.
 - These top **four countries collectively accounted for 75 percent of global solar growth that year**.
- For the nineteenth consecutive year, solar maintained its status as the fastest-growing electricity source worldwide, outpacing coal. **Global solar generation in 2023 exceeded six times that of 2015**, with **India experiencing a seventeen-fold increase** during the

same period. India's share of solar generation surged from **0.5 percent in 2015 to 5.8 percent in 2023**.

- According to the IEA **Net Zero Emissions** scenario, solar energy's contribution is projected to rise to **22 percent** of global electricity generation by 2030.
- **India** stands among the select few nations **committed to tripling renewable capacity by 2030**.

NABARD unveils Climate Strategy 2030 to mobilize green financing

News Excerpt:

National Bank for Agriculture and Rural Development (**NABARD**) unveiled its **Climate Strategy 2030 document** on **Earth Day**, which aims to address India's need for green financing.

About Climate Strategy 2030:

- The Climate Strategy 2030, a comprehensive blueprint, is designed to tackle India's growing demand for **green financing**.
- NABARD's Climate Strategy 2030 is structured around **four key pillars**:
 - **Accelerating green lending across sectors:** This pillar focuses on increasing green lending across various sectors to meet the rising demand for sustainable financing.
 - **Playing a broader market-making role:** NABARD aims to shape the green finance market, facilitating increased participation and investment in sustainable projects.
 - **Internal green transformation of NABARD:** This aspect of the strategy involves internal reforms within NABARD to align its operations and practices with environmental sustainability goals.
 - **Strategic resource mobilization:** NABARD intends to mobilize resources strategically to support and scale up green financing initiatives effectively.

Key challenges in green financing:

- India requires approximately **\$170 billion annually**, amounting to a cumulative total of over **\$2.5 trillion by 2030 for green financing**, but the **current inflows** are critically insufficient.
- As of **2019-20**, India garnered about **\$49 billion** in green financing, which is **merely a fraction** of what is needed.
- **Only \$5 billion** was **allocated** towards **adaptation and resilience**, reflecting the minimal private sector engagement in these areas due to **bankability** and **commercial viability challenges**.

Green finance:

- Green finance is a broad term that can refer to **financial investments flowing into sustainable development projects** and initiatives, environmental products, and policies that encourage the development of a more **sustainable economy**.
- It includes **climate finance** but is not limited to it. It also refers to a wider range of other environmental objectives, such as **industrial pollution control, water sanitation, or biodiversity protection**.
- **Mitigation and Adaptation finance** are specifically related to climate change-related activities:
 - Mitigation financial flows refer to investments in projects and programs that **reduce or avoid** greenhouse gas emissions (**GHGs**).
 - In contrast, adaptation financial flows refer to investments that **reduce the vulnerability** of goods and persons to the effects of climate change.

REPORTS

More than 70% of global workers exposed to climate change risks: ILO

News Excerpt:

A report titled "**Ensuring Safety and Health at Work in a Changing Climate**" has been released by the **International Labour Organization (ILO)**,

Key highlights of the report:

- **Workers**, especially the **world's poorest**, are **more vulnerable** than the general population to the dangers of **climate extremes such as heatwaves, droughts, wildfires, and hurricanes**.
 - They are often the first exposed or exposed for longer periods and at greater intensity.
- The **share of global workers exposed** to the most widespread hazard, **surging temperatures**, has **risen by around 5 percentage points** over the last two decades to **70.9%**.
 - Other climate dangers often co-exist, creating a **"cocktail of hazards,"** with UV radiation and air pollution each affecting 1.6 billion people.
 - **As a worker is likely to be exposed to multiple dangers** at once, it is **impossible to calculate exactly what portion of the 3.4 billion global workforce is at risk**.
- **Climate-related hazards** are being **linked to cancer, kidney dysfunction, and respiratory illnesses**, leading to deaths or debilitating chronic conditions or disabilities.
- According to the ILO report, **air pollution is the most deadly risk**, causing some 860,000 work-related deaths among outdoor workers annually.
 - **Those working in hot indoor environments or poorly ventilated spaces** are also at risk.

- **Excessive heat causes 18,970 occupational deaths each year**, and UV radiation kills 18,960 through non-melanoma skin cancer.
- In some cases, the **technologies meant to slow climate change**, like **solar panels** and **lithium-ion batteries for electric vehicles**, can **produce new dangers since they contain toxic chemicals**.

Impact of climate change on workers:

- **Almost 23 million occupational injuries attributed to excessive heat** are reported each year, costing, on estimate, 19,000 lives annually.
- These numbers do **not include** the more than 26 million people **who live with chronic kidney disease linked to workplace heat stress**.
- Furthermore, the **impact of global warming on workers** goes well **beyond heat exposure**.
- The **ILO said 1.6 billion workers worldwide were estimated to be exposed to ultraviolet radiation each year**, with more than 18,960 work-related deaths annually from non-melanoma skin cancer.

Workplace pollution:

- Another **1.6 billion people** were likely to be **exposed to workplace pollution**, resulting in up to 860,000 deaths among outdoor workers annually.
- **More than 870 million agricultural workers** are meanwhile likely to be **exposed to pesticides**, with more than 300,000 deaths attributed to pesticide poisoning each year.
- 15,000 work-related deaths annually are attributed to exposure to parasitic and vector-borne diseases.
- **As the hazards evolve and intensify**, it will be **necessary to re-evaluate existing legislation or create new regulations and guidance**.

Climatization caused by commercialization

News Excerpt:

A report on **International Forest Governance** launched at the 19th Session of the **United Nations Forum on Forests (UNFF19)**, has revealed the rising trend of the '**climatization**' of forests.

What is the "climatization" of the forest?

- "**Climatization of forests**" refers to the trend where **forests are increasingly valued primarily for their role as carbon sinks**, often at the expense of recognizing their **broader ecological and social significance**.
- This global shift **diminishes their intrinsic role in ecological and social welfare**.

What is International Forest Governance?

- It refers to the formal and informal sets of rules and relationships that define and regulate state and non-state actors in international forest affairs.
- The current platform for international forest governance is **more crowded and fragmented** than ever due to the **proliferation of new actors and instruments**.

More about the report:

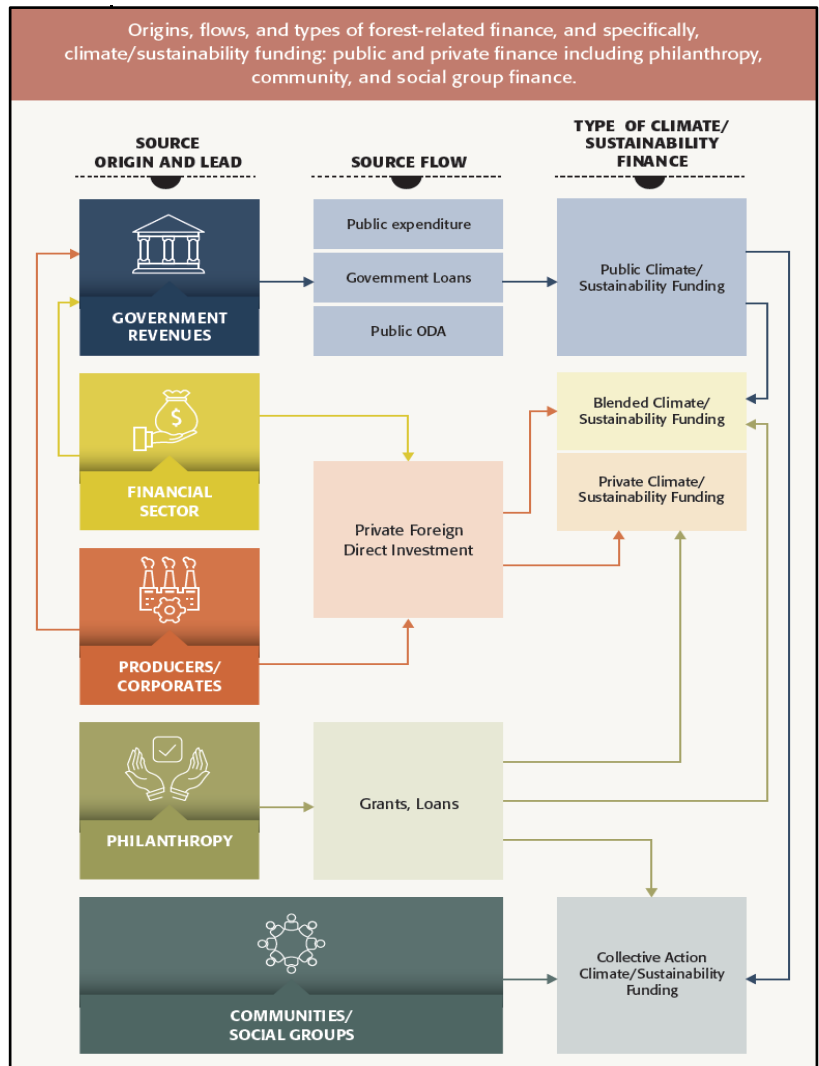
- “**International Forest Governance: A Critical Review of Trends, Drawbacks, and New Approaches**” was produced by the **Science-Policy Programme (SciPol)** of the **International Union of Forest Research Organizations (IUFRO)**.
- It is the **first global synthesis report** on international forest governance in the last **14 years**.
- The report analyses **developments in international forest governance since 2010** when the **IUFRO-led Global Forest Expert Panel (GFEP)** published its last global assessment.

Objectives of the report:

- This assessment is intended to:
 - Contribute to informed **forest-related international and regional political processes**,
 - raise awareness about **global challenges of international forest governance** and the critiques voiced in the scientific literature,
 - provide ideas for **future governance designs**.

Key highlights of the report:

- The **increasing urgency of the climate crisis has influenced the commodification of forests** for their carbon sequestration potential.
 - This has led to the **rise of new markets for carbon and biodiversity** that often **focus on short-term economic gains over long-term sustainability and justice**.
- The findings from the report indicated that **international forest governance** has had limited and difficult-to-measure success in reducing deforestation.
 - Although **progress** has been made to curb global deforestation rates in **tropical regions**, the report raises serious concerns over the crises of **climate change, biodiversity loss, and widening social and economic inequalities**.
- **Market-based approaches** to forest governance, such as forest carbon trading and zero-deforestation supply chains, have gained significant traction.
 - However, the report highlighted the risk of **perpetuating inequalities** and **creating unacceptable impacts on sustainable forest management**.
- While **community-led and philanthropic financing mechanisms** offer a promising alternative, their role has so far been limited.



- Other **non-commercial alternatives**, such as **state regulation and community-led initiatives**, could offer pathways for more effective forest governance.
- Market-based approaches can reinforce inequalities, as in the case of **Ghanaian cocoa farmers**.
 - They lack secure land rights and the capacity to meet the proliferation of formalized environmental standards, resulting in local and domestic livelihoods being increasingly excluded from markets.

Way Forward:

- The findings provide **actionable insights for land use and climate policymakers to spur the implementation of just and effective forest policies**.
- There should be more emphasis on **“ground-up and inclusive strategies”** in **international forest governance**, especially where forest finance is concerned.
- One major conclusion from this assessment is that the **complexity of international forest governance** is steadily increasing, and further efforts to coordinate actors and arrangements at all levels are urgently needed.

The International Union of Forest Research Organizations (IUFRO):

- IUFRO is a global, **non-profit, non-governmental** and **non-discriminatory** organization established in 1892 with headquarters in **Vienna, Austria**.
- IUFRO is the **leading global network for forest science cooperation**.
- The network is **open to all individuals and organizations** dedicated to forest and forest products research and related disciplines.
- IUFRO aims to contribute to achieving the **Sustainable Development Goals** set by the United Nations.

The UN Forum on Forests:

- The **UN Forum on Forests** is a functional commission of the **UN Economic and Social Council (ECOSOC)**.
- It is a subsidiary body with the main objective to promote the **management, conservation** and **sustainable development of all types of forests** and to strengthen long-term political commitment to this end.
- The Forum has **universal membership** and is composed of all Member States of the United Nations and specialised agencies.
- Since its establishment in 2000, the Forum has set many milestones including the **first UN Forest Instrument in 2007**, the **Global Forest Financing Facilitation Network (GFFFN) in 2015**, and **adoption of the first UN Strategic Plan for Forests 2030** and its **six Global Forest Goals in 2017**.
- **UNFF19** was organised from May 6-10, 2024, in **New York, United States**.
- UNFF 19 culminated in a declaration to take urgent and accelerated actions to halt deforestation and forest degradation and to prevent land degradation, including the implementation of the United Nations Strategic Plan for Forests and the achievement of the Global Forest Goals.

'Land squeeze': New pressures emerging from carbon and biodiversity offset projects

News Excerpt:

According to a new report, **soaring land prices, land grabs, and carbon schemes** are creating an unprecedented '**land squeeze**', threatening farmers and food production.

More about the report:

- The report is published by the **International Panel of Experts on Sustainable Food Systems (IPES-Food)**.
- The **IPES-Food** is an international **non-profit think tank** headquartered in **Brussels, Belgium**.

- Since 2015, IPES-Food has shaped the debate on **global food system reform through scientific reports & detailed policy recommendations**.

Key highlights of the report:

- The report titled '**Land squeeze**' exposed the alarming escalation of land grabbing in various forms, opaque financial instruments and speculation, rapid resource extraction and intensive export crop production.
- Major new pressures on land are emerging from '**green grabs**' for **carbon** and **biodiversity offset projects, conservation initiatives** and **clean fuels**.
 - These '**green grabs**', for which **huge swathes of farmland were being acquired by governments and corporations**, now account for **20%** of large-scale land deals, despite little evidence of climate benefits.
- This global trend of land grabs and green grabs particularly affected **sub-Saharan Africa** and **Latin America**, while **land inequality is growing** fastest in central-eastern Europe, North and Latin America, and South Asia.

Impact on the farmers and food security:

- **Farmers, Peasants, and Indigenous Peoples** are **losing their land** (or forced to downsize), while **young farmers face significant barriers** in accessing land to farm.
- '**Land squeeze**' is **inflaming land inequality** and making small and medium-scale food production increasingly unviable – leading to farmer revolts, rural exodus, rural poverty and food insecurity.
- The **financialization** and **liberalization** of land markets **are ruining livelihoods** and threatening the right to food.

Impact of government interventions:

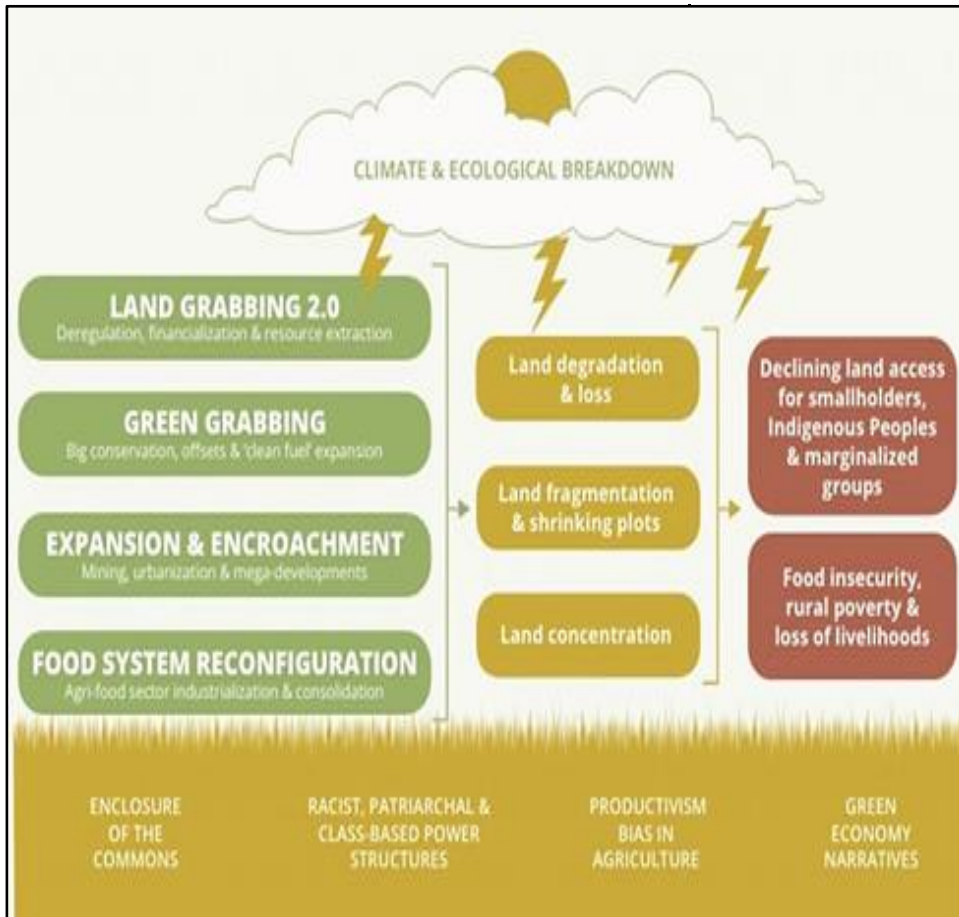
- The report pointed out how **governments' pledges** for **land-based carbon removals** alone add up to almost 1.2 billion hectares, equivalent to total global cropland.
- By **2023, carbon offset markets** were already **valued at \$414 billion** globally, a figure projected to rise to **\$1,800 billion by 2030**.

India-specific findings:

- The report points out that **India is a hotspot for land degradation** in Asia as its lands face increasing **threats of desertification** leading to **biodiversity loss** and **groundwater depletion**, with **detrimental impacts for agricultural productivity** and for the lives and livelihoods of pastoralists and other communities.

Important takeaways:

- **India's top 10% own 45% of farmland, and 70% of total land is degraded.**
- **Globally, 1% of the world's largest farms now control 70% of the world's farmland.**
- Since 2000, an area the size of Germany has been acquired through transnational land deals.



- More than **half of land grabs** are intended for **water-intensive crop production**, and **87% of land grabs occur in regions of high biodiversity**.
- **Carbon offset markets** i.e. 'Green grabs' now account for **20% of large-scale land deals**. It is expected to quadruple in the next 7 years.
- Over **half of government carbon removal pledges** on land risk interfering with small-scale farmers & Indigenous Peoples.

Way Forward:

- It's time decision-makers stopped shirking their responsibility and started to tackle rural decline.
- Instead of opening the floodgates to speculative capital, governments need to take concrete steps to halt bogus 'green grabs' and invest in rural development, sustainable farming and community-led conservation.

World Wildlife Crime Report 2024

News Excerpt:

The United Nations Office on Drugs and Crime (UNODC) unveiled the World Wildlife Crime Report 2024 in Vienna, Austria. This marks the third instalment in a series, building upon the previous publications from 2020 and 2016.

About the report:

- It presents **systematic analyses of wildlife crime harms and impacts**, probes the factors driving wildlife

trafficking trends, and takes stock of current knowledge about the effectiveness of the different types of interventions being put in place to resolve this problem.

- The records of **government wildlife seizures** that help inform global and thematic analyses in the current report are **significantly more comprehensive** than was the case for previous UNODC analyses due to the availability of the **National Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) Annual Illegal Trade Reports**.

- Since seizure data can provide **only a partial picture** of actual wildlife trafficking flows and trends, the current report also draws from a wide variety of additional sources such as **academic literature as well as consultation**.

Highlights of the report:

- **Rhinos (most affected animal), elephants, pangolins, cedars (most affected plant), rosewoods**

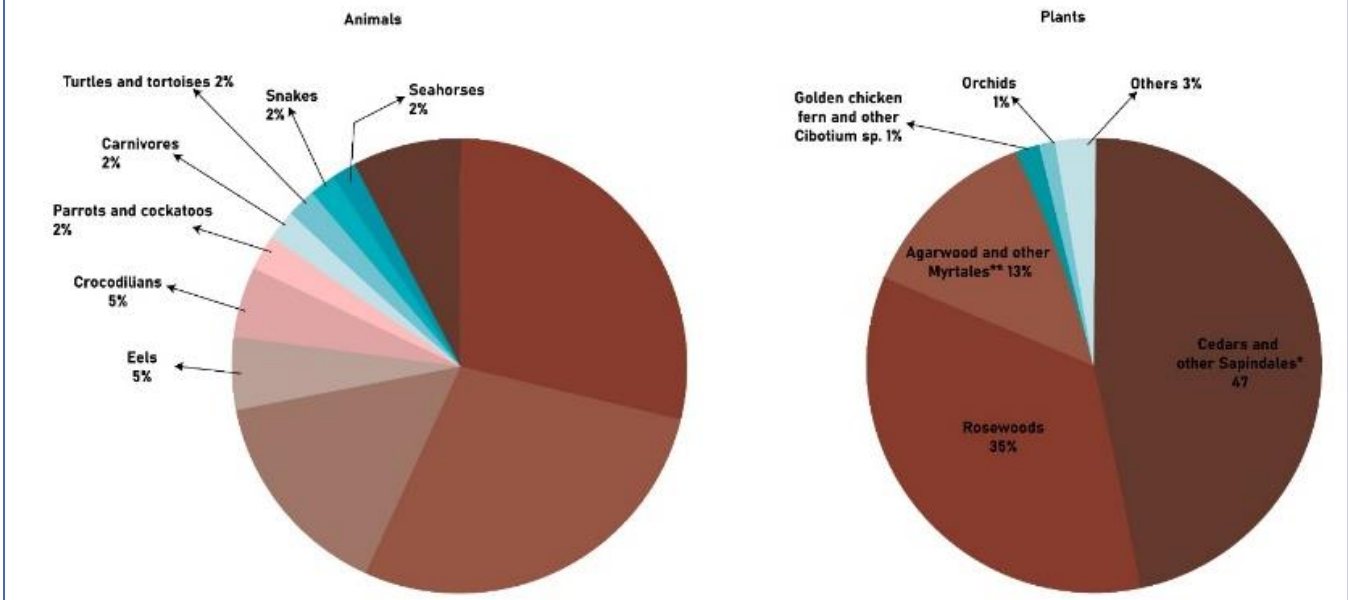
& **agarwood** are the most affected by the illegal wildlife trade.

Key Messages:

1. Wildlife trafficking **persists worldwide** despite two decades of concerted action at international and national levels—more rapid and measurable progress could be achieved if interventions were informed by stronger scientific evidence.
 - As a crude depiction of scale, these **seizures involved 13 million items reported by number and over 16,000 tons reported by weight** during these seven years.
 - For the first time in 2024, UNODC has populated an indicator on progress **towards SDG target 15.7** to end the trafficking of protected species of flora and fauna.
 - The apparent progress with **reductions in poaching and illegal trade in elephant ivory and rhinoceros horn** suggests the need for multifaceted interventions through policy engagement, law enforcement, and market suppression.
 - The diversity of institutions and intensity of initiatives working to reduce wildlife trafficking **have increased substantially** over the past decade, but to make the most of this effort there is a need for **more structured coordination**

Species most affected

Just 15 broad markets comprised the bulk of the observed illegal wildlife trade during 2015-2021 based on standardized seizure index



- between government and multilateral agencies, civil society organizations, academics, and the private sector.
- With thousands of wildlife species affected and a diverse range of distinct markets driving multiple environmental and societal harms, interventions to reduce wildlife trafficking need to be **prioritized and more strategic**.
 - Wildlife trafficking can play a role in triggering ecosystem-level impacts by **disturbing interdependencies** between different species and undermining related functions and processes.
 - Species depletion and ecosystem disruption caused by wildlife crime can undermine the many **socioeconomic benefits** that people derive from nature.
 - Wildlife trafficking can also have a **corrosive influence on governance** and the rule of law through corruption, money laundering, and illegal cross-border financial flows.
 - Corruption** undermines regulation and enforcement while **technology** accelerates the capacity of traffickers to reach global markets—criminal justice responses should be modernized, strengthened, and harmonized from source to end markets.
 - Organized crime** still remains a significant factor in many illegal wildlife sourcing and trading chains.
 - Gender** is a factor that shapes the roles of people involved in wildlife trafficking. Influencing factors

- include different experiences of and access to wildlife, expectations within familial structures, and
 - Established role differentiation.
 - Of particular importance is the **need to build robust corruption risk responses** for specialized public sector roles such as harvest, breeding and trade permit issuance, animal health and phytosanitary inspection, and control of specialized retail outlets.
- Wildlife crime is interconnected with the activities of large and powerful organized crime groups operating in some of the **most fragile and diverse ecosystems** from the Amazon to the Golden Triangle— addressing wildlife trafficking in these circumstances requires a broader strategy to address organized crime as a whole.

Way Forward: Learning from research into other crime sectors may help identify remedial approaches that might have a positive impact on wildlife trafficking.

IUCN Report on Regenerative Blue Economy

News Excerpt:

The **International Union for Conservation of Nature (IUCN)** has published a report titled “**Towards a Regenerative Blue Economy**,” outlining a clear definition and founding principles for a “**Regenerative**” **Blue Economy**.

What is the Blue Economy?

- There is no universally accepted definition of blue economy; however, according to the World Bank, it is defined as the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystems."

Types of Blue Economy according to the report:

IUCN report has put forward three types of Blue Economy from a conservation and sustainable development perspective:

1. THE 'BROWN BLUE' ECONOMY:

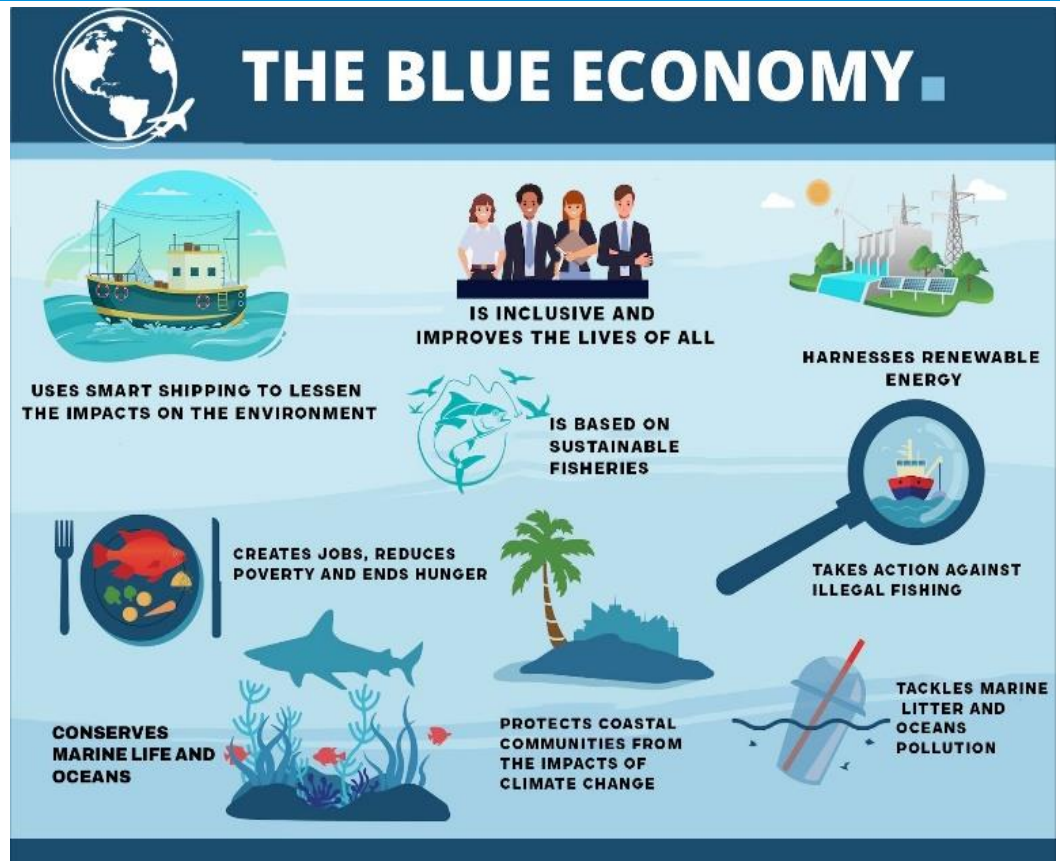
- It is the Blue Economy rooted in the maritime sector.
- It includes traditional activities of the maritime sector. It is anthropocentric and based on a conventional economic model.

2. THE SUSTAINABLE BLUE ECONOMY:

- A Sustainable Blue Economy unlocks multiple environmental, social and economic benefits and drives sustainable development.
- It provides essential benefits for current and future generations; restores protects, and maintains diverse, productive and resilient ecosystems; and is based on clean technologies, renewable energy, and circular material flows.

3. The Regenerative Blue Economy:

- It is inclusive, advocates for 'blue justice', and is based on a participatory, transparent, and inclusive governance model at multiple levels.
- This model is based on the broad principles of the ecosystem approach, respecting the rights of nations and coastal communities.
- In economic terms, a Regenerative Blue Economy seeks robust sustainability, prioritizing the preservation of blue natural capital.
- Certain activities, such as oil extraction, are excluded from this scope.
 - These activities are considered incompatible with the carbon reduction objectives of the 2015 Paris Agreement.
 - They are activities deemed too threatening for marine ecosystems, such as deep-seabed mining (DSM).



- Other sectors, such as fishing, aquaculture, and tourism, will need to adapt their practices to be included in the regenerative blue economy.

Key Developments:

- Rio+20 Summit (2012):** At the United Nations Conference on Sustainable Development, the "Blue Economy" was defined to include all marine sector economic activities that align with sustainable development principles.
- WWF Proposal (2015):** The World Wide Fund for Nature (WWF) introduced a comprehensive vision for a sustainable Blue Economy. This vision emphasized sustainability and inclusivity, moving beyond the traditional, simpler definitions of the Blue Economy.

The potential scope of Regenerative Blue Economy:

- Coastal ecosystems**, such as mangroves, tidal marshes and seagrass meadows, sequester and store more carbon per unit area than terrestrial forests and are now being recognized for their role in mitigating climate change.
- These ecosystems also provide essential benefits for climate change adaptation, including coastal protection and food security for many coastal communities.
- However, if the ecosystems are degraded or damaged, their carbon sink capacity is lost or adversely affected, and the stored carbon is released, resulting in carbon dioxide (CO₂) emissions that contribute to climate change.

- Dedicated conservation efforts can ensure that coastal ecosystems continue to play their role as long-term carbon sinks.

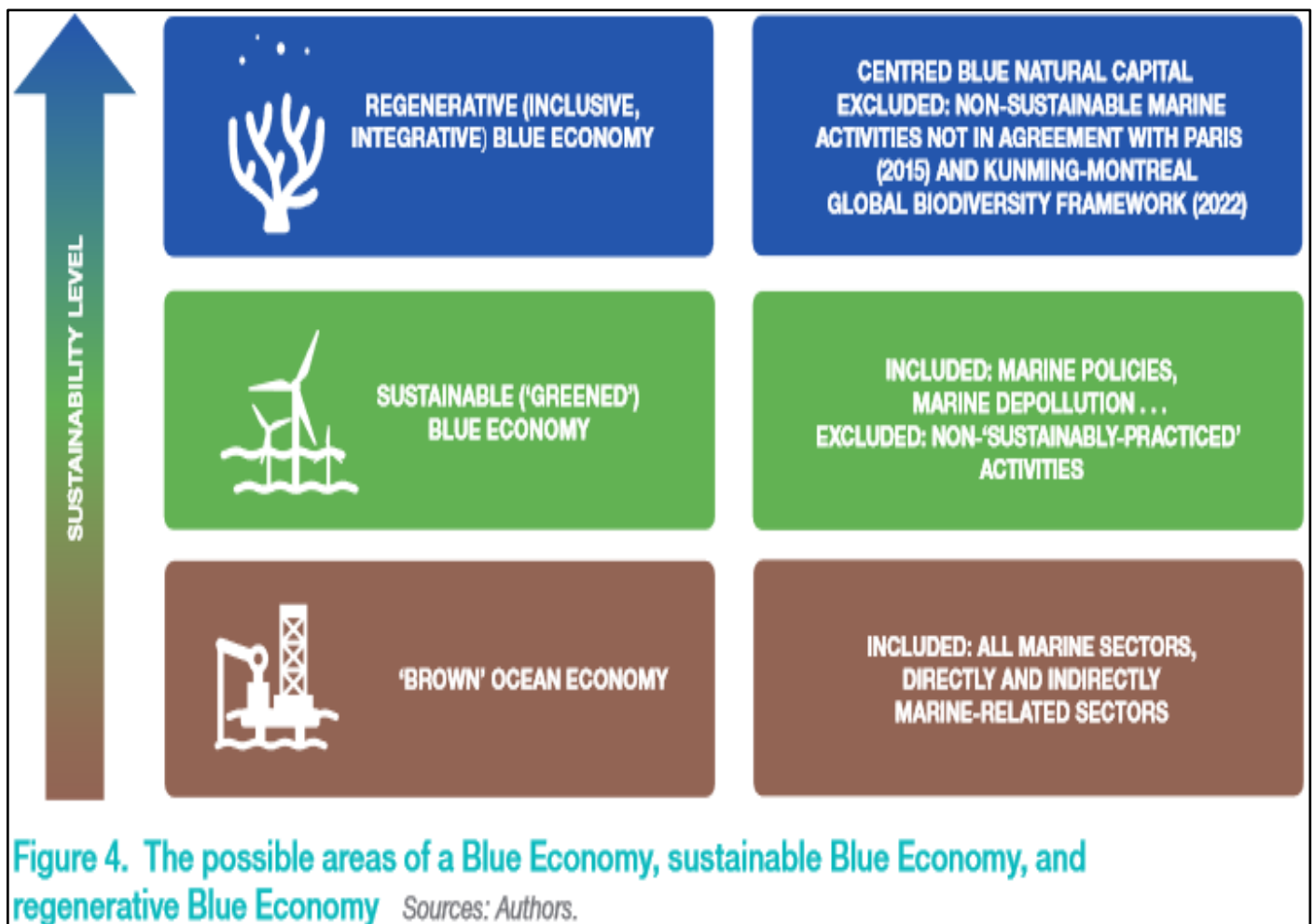
Financing Arrangements for the Blue Economy:

- **Public policies, incentives, taxation, and subsidies** play a crucial role in funding the **Blue Economy, Sustainable Blue Economy, and Regenerative Blue Economy.**
- Financing tools include **private investments** and **public-private partnerships (PPPs).**
- **International Cooperation:**
 - **OECD and World Bank (2020)** have evaluated international aid and **Official Development Assistance (ODA) for a sustainable Blue Economy.**
 - A **consortium** including **UNEP-FI, WWF, the European Commission, the World Resources Institute (WRI), and the European Investment**

Bank proposed principles for sustainable blue finance in 2018.

The Blue Economy faces several complex challenges:

- **Undefined Scope and Implementation:** The scope, principles, and implementation of the Regenerative Blue Economy are still evolving. As research and understanding progress, defining these aspects becomes crucial to ensure effective application.
- **Performance Assessment:** There is a need for consistent performance assessment tools that align with the principles of the Regenerative Blue Economy. Indicators such as the 'Ocean Impact Navigator', as mentioned, can help evaluate the positive impact on ocean and coastal socio-ecological systems.
- **Cross-Sector Sustainability Assessment:** Evaluating the sustainability of projects, strategies, or implementations within the Blue Economy, including governance processes at specified geographical levels.



SCIENCE & TECHNOLOGY

Skin-lightening creams laden with mercury take a toll on the kidney

News Excerpt:

Researchers from Kerala have reported a series of cases from **Malappuram district** where the regular use of fairness creams has been linked to **nephrotic syndrome**.

- **Heavy metal screening of blood and urine samples from these patients revealed high levels of mercury.**

More about News:

- An analysis of the fairness creams used by these patients also showed that some creams contained very **high levels of mercury**.
 - In some cases, **10,000 times above the permissible limit of 1 ppm**.
- The study published in **Kidney International journal** describes 15 such cases of **membranous nephropathy (a type of nephrotic syndrome)** traced to the use of these mercury-containing fairness creams.

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- The link between **face creams containing mercury and nephrotic syndrome** is well-established worldwide.

How does Fairness cream affect?

- The patients admitted to fairly regular usage of fairness creams before they began experiencing **non-specific or subtle symptoms**.
- The research team found **15 cases of Membranous Nephropathy (MN) linked to NELL-1**, which is a type of kidney disease.
 - In 13 out of the 15 cases, patients had a history of using fairness creams, many of which were unregulated brands promising rapid results and sold locally or online.
- The obsession with fair skin and the use of skin-lightening products is prevalent beyond **India and in African and Asian countries**.
- Despite widespread use, the serious systemic health issues caused by toxic cosmetic creams are not yet perceived as a **global public health issue**.

Zero Mercury Working Group (ZMWG)

- It is an **international coalition** of more than 110 public interest environmental and health non-governmental organizations from over 55 countries, formed in 2005 by the **European Environmental Bureau** and the **Mercury Policy Project**.
- ZMWG strives for **zero supply, demand, and mercury emissions from all anthropogenic sources, aiming to reduce mercury in the global environment to a minimum**.
- **Their mission** is to advocate and support the adoption and implementation of a legally binding instrument that contains mandatory obligations to eliminate or minimize the global supply and trade of mercury, the global demand for mercury, anthropogenic releases of mercury into the environment, and human and wildlife exposure to mercury.

About High proteinuria:

- A **nephrologist in Kozhikode** noticed a **specific pattern in cases of membranous nephropathy (MN)** diagnosed among his patients since 2021.
 - These patients had non-specific symptoms like **fatigue, mild edema, and frothy urine** but exhibited high levels of **proteinuria**, ranging from **6.5 to 22.2 g/day**.
- **Membranous nephropathy (MN)** is an autoimmune disease resulting in nephrotic syndrome, a condition where excessive protein is released into the urine (proteinuria), ultimately leading to **renal failure**.

Impact of Mercury:

Use of **inorganic mercury salts** in fairness creams can inhibit **melanin formation**, resulting in a lighter skin tone.

Chronic mercury poisoning from cosmetics is missed because different organs and tissues respond differently to mercury, resulting in **atypical clinical presentations**.

Mercury in face creams can be absorbed through sweat glands, Sebaceous glands, Hair follicles & through all tissues.

Repeated topical use results in systemic toxicity, manifesting as damage to the kidneys and nervous system.

Adverse effects listed by WHO include:

- Skin discolouration and Scarring, reduction in the skin's resistance to bacterial,
- Fungal infections,
- Anxiety, depression, psychosis and
- Peripheral neuropathy.

The **Minamata Convention on Mercury**, to which India is a signatory, is a global treaty "to protect human health and the environment from anthropogenic emissions and releases of mercury and mercury compounds" and it has been in force since 2017.

According to a new **Zero Mercury Working Group (ZMWG) report** released in October 2023, despite being banned by a **global treaty** it is widely used in various such products.

Way Forward:

Larger, **multi-centric systemic studies on chronic mercury poisoning**

PEPPER IT WITH:
 Membranous Nephropathy (MN),
 Zero Mercury Working Group (ZMWG),
 Minamata Convention

are required not just to understand the extent of the problem but also to persuade policymakers and regulators to clamp down on all cosmetics containing mercury.

New WHO sodium benchmarks aim to curb chronic conditions

News Excerpt:

Poor dietary habits contribute to an estimated 8 million deaths globally, with **2 million attributed to excessive sodium consumption.** To increase awareness, WHO has released the second list of Sodium Benchmarks.

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More about the news:

- In 2020, the World Health Organization (WHO) initiated the development of global standards, establishing maximum sodium levels in various food categories.
- **The goal is to achieve the global noncommunicable diseases (NCDs) target of a 30% reduction in average salt intake by 2025,** aiming for less than **5 grams of salt (< 2 grams of sodium) daily.**

Initiatives undertaken by the World Health Organization (WHO) and other stakeholders to address the issue of excessive sodium intake:

- **WHO Guidelines on Sodium Intake (2012):** The WHO emphasized the importance of reducing sodium intake in both adults and children in its 2012 guideline, recognizing it as crucial for preventing noncommunicable diseases (NCDs).
- **Efforts and Initiatives:** WHO has recognized reducing salt intake through food reformulation and setting target salt levels as a cost-effective intervention to combat unhealthy diets and prevent NCDs. This strategy has been labelled a **"best buy"** by WHO.
- **General Programme of Work 2019–2023:** WHO further emphasized the significance of salt reduction in its program, acknowledging that current efforts have been insufficient but experiences from various countries show progress is possible with clear targets.
- **Collaborative Efforts with Industry:** WHO collaborated with Chatham House and engaged the food and non-alcoholic beverage industry to enhance involvement in reducing sodium intake.
- **Engagement with the International Food and Beverage Alliance (IFBA):** WHO has been actively engaged in dialogue with IFBA to improve the nutritional quality of food and beverage products.

- **Focus on Sodium Reduction:** WHO highlighted sodium consumption as a significant dietary risk factor during meetings with industry representatives.
- **Establishing Sodium Benchmarks:** WHO proposed establishing sodium benchmarks as maximum limits to guide countries in formulating national policies and strategies.

About Sodium Reduction:

- **Importance of Sodium Reduction:** Elevated sodium intake elevates blood pressure, increasing the risk of cardiovascular diseases, the primary cause of NCD-related deaths globally. Additionally, it mitigates other health complications associated with high sodium intake, including chronic kidney disease, obesity, gastric cancer, and liver diseases.
- **Source of Sodium:** A significant portion of dietary sodium originates from processed foods like bread, cereal, grains, processed meats, and dairy products.

Way Forward:

- The World Health Organization (WHO) recommends individuals consume less than 5 grams of salt (<2 grams of sodium) daily, implying that the average population intake should be substantially lower than this threshold.
- There is an urgent need for accelerated progress to meet globally agreed-upon targets for reducing sodium intake and the associated NCD burden.

PEPPER IT WITH:
 NCDs, International Food and Beverage Alliance (IFBA), Sodium Benchmarks

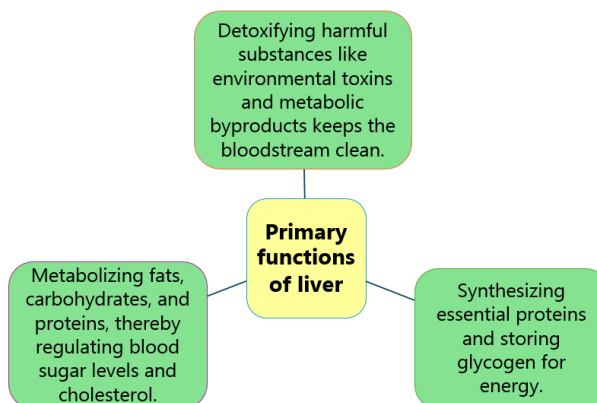
The dynamic duo: enhanced liver function and gut health

News Excerpt:

This article focuses on the **sybiotic relationship** between liver function and gut health, **shedding light on how nurturing one benefits the other.**

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Understanding liver function:



- The liver, referred to as the body's powerhouse, boasts a repertoire of functions crucial for our overall well-being due to its numerous essential roles.

Factors that can strain the liver include:

- Excessive alcohol consumption
- Poor dietary choices
- Viral infections
- Certain medications
- Prolonged strain on the liver can potentially lead to **liver diseases** such as: Fatty liver disease, Hepatitis, Liver cirrhosis etc.

The Gut: Gateway to Health

- The gut, or digestive tract, hosts trillions of microorganisms known as the **gut microbiota**. The gut microbiota aids in **Breaking down food, Synthesizing vitamins & bolstering the immune system**
- Maintaining a diverse and balanced gut microbiome is crucial for overall health. Modern lifestyles characterized by **processed foods, antibiotics, and chronic stress** often disrupt the delicate equilibrium of the gut microbiota.
- Disruption of the gut microbiota can pave the way for gastrointestinal disorders such as: **Irritable bowel syndrome (IBS), Inflammatory bowel disease (IBD), Leaky gut syndrome.**

Liver-gut axis:

- The liver and gut are involved in a **bidirectional communication system** where various molecules, hormones, and immune cells shuttle between the two organs, influencing each other's function.
- The **bile produced by the liver aids** in fat digestion and also acts as a signalling molecule in the gut, modulating the composition of the gut microbiota.
- Metabolites produced by **gut bacteria can influence liver** metabolism and inflammation.
- A healthy gut microbiome contributes to the **integrity of the gut barrier**, preventing harmful substances from leaking into the bloodstream and burdening the liver. **A compromised gut barrier can trigger systemic inflammation and liver dysfunction.**

Way Forward:

Because of this mutual interaction, supporting gut health appears to be the most viable way to support liver function. Some **strategies to optimize both** include:

- **Embrace a fibre-rich diet:** Fiber-rich foods like fruits, vegetables, whole grains, and legumes serve as prebiotics, nourishing beneficial gut bacteria.
 - Moreover, soluble **fibre binds to bile acids, aiding in their excretion.** It reduces **cholesterol levels**, thus alleviating **the liver's workload.**

PEPPER IT WITH:

Bowel Syndrome, gut bacteria, fatty liver disease and cirrhosis.

- **Incorporating probiotic-rich foods** like yoghurt, kefir, and kimchi introduces beneficial bacteria into the gut, fostering a diverse microbiome.
 - These microbes can **metabolize bile acids** and **modulate inflammation**, indirectly benefiting liver health.
- **Limit sugar and processed foods:** Excessive sugar and processed foods not only **disrupt the gut microbiota but also contribute to fatty liver disease** and insulin resistance.
- **Stay hydrated:** Hydration supports liver function by aiding in the **elimination of toxins** through urine and optimizing bile production for digestion.
- **Manage stress: Chronic stress** can wreak havoc on **gut health. Prioritizing stress management techniques** like meditation, yoga, or deep breathing exercises can mitigate its adverse effects.

Amending nuclear law to spur 'pink' hydrogen generation

News Excerpt:

India is in talks with large domestic companies to invest in the regulated nuclear sector, including promoting clean power.

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Important Points:

- **The Atomic Energy Act of 1962** restricts private ownership of nuclear plants. The central government holds the power to produce, develop, use and dispose of **'atomic energy'**.
 - After legislative amendments, such powers can be exercised through any authority/corporation established by the government in which the former holds at least **51 percent of the paid-up share capital.**

Significance of hydrogen:

- As India's aim to bolster nuclear capacity appears to be driven by clean energy goals, the hydrogen economy has gathered strong political patronage — especially with respect to **'green' hydrogen.**
- However, nuclear power can also enable large-scale hydrogen production without emitting greenhouse gases, making it promising.
 - Similar to green, **'pink' hydrogen is also generated through electrolysis but powered by nuclear energy.**
- Recent studies claim that **pink hydrogen** facilities can achieve a high-capacity factor due to the steady base load profile of nuclear power (involving both stability and density) relative to the intermittent supply from renewable sources.

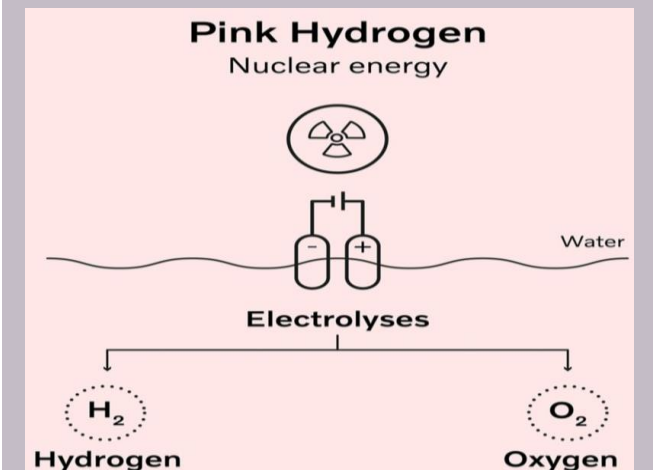
- High temperatures from nuclear reactors may also be used in other industrial processes.

Way Forward:

- Significant investments will be necessary to develop

Pink Hydrogen

- It is made using renewable energy to electrolyze water while emitting zero carbon dioxide.
- Pink hydrogen is a promising replacement for fossil fuels in the **cement industry, steel industry, aviation, and heavy transportation.**
- Nuclear power offers significant advantages for pink hydrogen production, including reducing production costs and emissions, making it a sustainable and more cost-effective alternative to conventional methods.



better technologies at scale.

- Amending the **Atomic Energy Act** to facilitate private investments is an idea whose time has come.

Future collaborations could focus on research, technology transfer, and scaling up hydrogen projects — whether green or pink. After all,

India's net-zero transition

will require multiple pathways — including **nuclear power and renewable energy.**

PEPPER IT WITH:

Different types of Hydrogen, Atomic Energy Act 1962, renewable energy,

**PRE-SHOTS
SPACE**

ISRO successfully tests a 3D-printed rocket engine

News Excerpt:

Indian Space Research Organisation (ISRO) achieved a major milestone with the successful hot testing of a liquid rocket engine manufactured through **Additive Manufacturing (AM) technology** — commonly known as 3D printing. The engine used is the PSLV upper stage.

About PS4 engine:

- It is the **uppermost stage of Polar Satellite Launch Vehicle (PSLV)**, comprising of two Earth storable liquid engines.
- It uses a **bipropellant combination of nitrogen tetroxide** as the oxidizer and **monomethyl hydrazine** as the fuel.

Why did ISRO use 3D printing to build the PS4 engine?

- The engine, PS4 was redesigned by ISRO for production using 3D printing using the **Laser Powder Bed Fusion technique.** This helped ISRO to bring down the number of parts in the engine from 14 to a single piece.
- **Benefit:** The space agency was able to eliminate 19 weld joints and saved 97% of the raw material. It also reduced the overall production time by 60%.

Other examples:

- NASA, in collaboration with various research institutions, has developed materials that can withstand extreme temperature fluctuations, radiation, and micrometeoroids.
- The first metal 3D printer for space, developed by Airbus for the European Space Agency (ESA), will soon be tested aboard the Columbus module of the International Space Station (ISS).



What is Additive Manufacturing (AM)?

- 3D printing, or AM, is a process that **uses computer-created design to make three-dimensional objects layer by layer.**
- It is an **additive process**, in which **layers of a material** like plastic, composites or biomaterials are **built up to construct objects that range in shape, size, rigidity, and colour.**

Opportunities:

- Since AM can be **set up easily without any tools and different materials can be used for production**, AM can adapt to any culture or location to fit multiple approaches of circular economy.
- Additive manufacturing has the **potential to positively affect human spaceflight operations** by enabling the in-orbit manufacture of replacement parts and tools, which could reduce existing logistics requirements for the International Space Station and future long-duration human space missions.

Challenges:

- **Many AM technologies are limited by the materials they can use.** Not all metals and plastics can be temperature-controlled enough for the conditions that AM requires.
- **Energy consumption of AM is still high.** Technological development is lacking in integrating renewable energy sources to power AM.
- **Intellectual property (IP) rights may hinder this process** since organizations need to share their product design with a third party to produce a specific part/item.

Sweden Joins Artemis

News Excerpt:

Sweden became the 38th country to sign **The Artemis Accord**.

More About the News: The Accords are a series of non-binding arrangements aimed at setting down norms to be followed in outer space.

- The Artemis Accords, **initially introduced by NASA** and the US Department of State in 2020, now boast 38 signatories, including India and Japan.
- They outline key **obligations from the 1967 Outer Space Treaty** and emphasize adherence to the Registration Convention and the Rescue and Return Agreement.

Space Law & Outer Space Treaties:

- In response to the Soviet Union's launch of Sputnik in 1957, the United Nations General Assembly swiftly established the **Committee on the Peaceful Uses of Outer Space (COPUOUS)**.
- **COPUOUS: Established in 1958 and made permanent in 1959**, it is a significant committee within the United Nations, **acting as a pivotal hub for international discussions on peaceful space exploration**.
 - COPUOUS facilitates information exchange, monitors space activities, and promotes global cooperation in space endeavours. It comprises **two subcommittees** established in 1962 to address legal issues and scientific and technical advancements, with administrative support provided by the **United Nations Office for Outer Space Affairs (UNOOSA)**.
- COPUOUS is instrumental in **formulating and upholding five treaties** and accompanying principles governing space exploration.
- The cornerstone treaty, **the Outer Space Treaty** ratified in 1967, enshrines key provisions such as the freedom of space exploration for all nations, the prohibition of weapons of mass destruction in space,

and the liability of states for damage caused by their space objects.

- The most recent conference, **UNISPACE+50, in 2018, celebrated the 50th anniversary of the first conference** and addressed the evolving role of COPUOUS in a rapidly expanding space exploration landscape.

Coordinated Lunar Time (LTC) for the moon

News Excerpt:

NASA's four-member Artemis crew is scheduled to fly around the moon in preparation for the **space agency's mission** to land on the moon again.

More about News:

- **National Aeronautics and Space Administration (NASA)** will establish a **Coordinated Lunar Time (LTC)** to standardize cislunar operations with the universal time followed on Earth.
- A consistent definition of time among operators in space is critical to successful space situational awareness capabilities, navigation, and communications.
- The **difference between the passage of time on the moon and Earth** is that "Time appears to pass more slowly where gravity is stronger, like near **celestial bodies**.
 - As a result, the **length of a second on Earth** is different to an observer under different gravitational conditions, such as on the moon."
- **Coordinated Lunar Time** will be the standard for measuring cislunar operations on space activities between the moon and Earth with **Coordinated Universal Time (UTC)**, the global time used to regulate time on Earth.

What is Coordinated Lunar Time (LTC)?

- The European Space Agency (ESA) launched a project called **'Moonlight'** in 2023 to design satellites for astronauts and robotic explorers to support NASA's moon mission **'Artemis.'**
- Due to the moon's slow rotation (one rotation every 29.5 Earth days), it would be practical to have ideally a single time zone for the moon. A single time zone is similar to the **Coordinated Universal Time (UTC)** used on Earth.
 - The **UTC** was formulated in the 1960s and is based on a weighted average of hundreds of atomic clocks, which measure time based on the vibration of atoms, ensuring extreme accuracy.
- **The White House's Celestial Time Standardization policy** seeks to assign a time standard to each celestial body and its surrounding space environment.

Issues in defining and implementing LTC.

- The process of defining **lunar time is complicated** by the effect of the moon's gravitational pull.
 - The **moon's weaker gravitational pull** causes clocks on the lunar surface to run faster than those on Earth, **as per the theory of special relativity**.
- The speed of a clock on the moon would vary **depending on its position** due to the moon's rotation, further complicating time measurement.
- With the **Artemis Program aiming** for a lunar landing as early as 2026, adapting to the challenge of lunar time measurement for long-duration stays is crucial.
- Once a working time system is established for the moon, similar time standards can be developed for other planetary destinations like **Mars**.

ISRO conducts key ignition tests

News Excerpt:

The **Indian Space Research Organisation (ISRO)** has successfully completed the **first ignition test** on the **Semi Cryogenic Pre-Burner Ignition Test Article**.

More about News:

- ISRO is developing a **2,000 kN thrust semi-cryogenic engine** working on a **Liquid Oxygen (LOX) Kerosene** propellant combination to enhance the payload **capability of LVM3** and for future launch vehicles.

Semi Cryogenic Engine: The semi-cryo system uses refined kerosene (a rocket-grade version named **ISROSENE** by **ISRO**) and liquid oxygen. It is designed to provide heavy-lift capability to future space transportation systems like the New Generation Launch Vehicle (NGLV).

Lead centre:

- **The Liquid Propulsion Systems Centre (LPSC)** is the lead centre for the development of semi-cryogenic propulsion systems, supported by ISRO's other launch vehicle centres.
- The propulsion modules were assembled and tested at the ISRO propulsion complex (**IPRC**), Mahendragiri.
 - As part of the engine development, a **pre-burner ignition test article**, which is a full complement of the engine power head system excluding the turbopumps, was realized.

First ignition trial:

- The first ignition trial was conducted successfully at the **semi-cryo-**



integrated engine test facility (SIET) at IPRC, Mahendragiri.

- The successful ignition of a **semi-cryo preburner** is a major accomplishment of ISRO in the development of semi-cryogenic propulsion systems.

Sympathetic solar flare

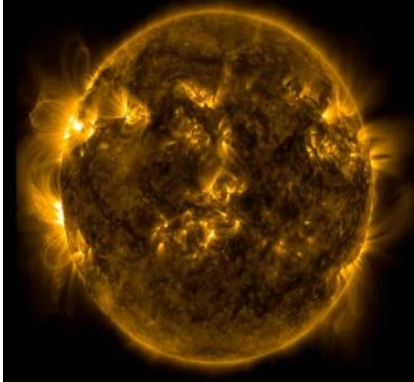
News Excerpt:

Solar flares erupt simultaneously in a **rare celestial event**, possibly heralding in the **Sun's dynamic 11-year cycle**.

More about the news:

- The sight of "**sympathetic solar flares**" in different regions of the star was captured by **NASA's Solar Dynamics Observatory**, showing complex magnetic interactions.
- The **four-part eruption** began, originating from **three sunspots** and a large magnetic filament.
- Each of the blast sites was separated by **hundreds of thousands of miles**, and the area between them covered around a **third of the solar surface facing Earth**.
- The concurrent blasts were part of one single eruption, known as a **sympathetic solar flare**.

What are sympathetic flares?

- Sympathetic flares are caused by **multiple eruptions** across the Sun's magnetic field, linked by massive magnetic field loops that lie above the solar surface.
 
- When one spot detonates, others follow suit. This leads to **coronal mass ejections (CMEs)** and **massive bursts of plasma**.
- Such solar activity is likely an **indication of the Sun reaching the peak** of its 11-year solar cycle known as **solar maximum**.
 - The peak is marked by **increased solar events like flares and CMEs**.
- This is the **third sympathetic solar flare** this year, following a pair of explosions in January and a duo of **X-class flares** in March.

Why is this event rare?

- Most sympathetic flares reported so far include **two linked flares**, ranging from small outbursts to X-class flares, the **most powerful class of solar flares the sun can produce**.

- The emission of four flares in unison makes this event **super-sympathetic**.

How can they impact Earth?

- If directed towards Earth, **they have the potential to**,
 - Disrupt power grids
 - Telecommunication networks
 - Orbiting satellites
 - Expose astronauts to dangerous doses of radiation
 - Minor class **G1 geomagnetic storms** could also **illuminate skies at lower latitudes with auroras**.

Flue-gas desulphurization (FGD)

- It is a set of technologies used to **remove sulfur dioxide (SO₂)** from exhaust flue gases of fossil-fuel power plants and from the emissions of other sulfur oxide emitting processes such as waste incineration petroleum refineries, cement and lime kilns.
- This is accomplished through either a **wet or a dry process**.

Dry FGD

- In the process of **dry scrubbing injection systems**, lime is used as a reagent to react and remove gaseous pollutants.

Wet FGD

- The process of wet scrubbing typically utilizes an **alkaline-based slurry of lime** to scrub gases.
- A shower of lime slurry is then sprayed into a flue gas scrubber, where the SO₂ is absorbed into the spray and becomes a wet **calcium sulfite**.
- One by-product of that sulfite is it can be converted to salable gypsum.
- Wet scrubbing provides high-efficiency sulfur dioxide removal capacity in addition to reducing any scaling potential.

TECHNOLOGY

Flue Gas Desulphurization (FGD) Technology

News Excerpt:

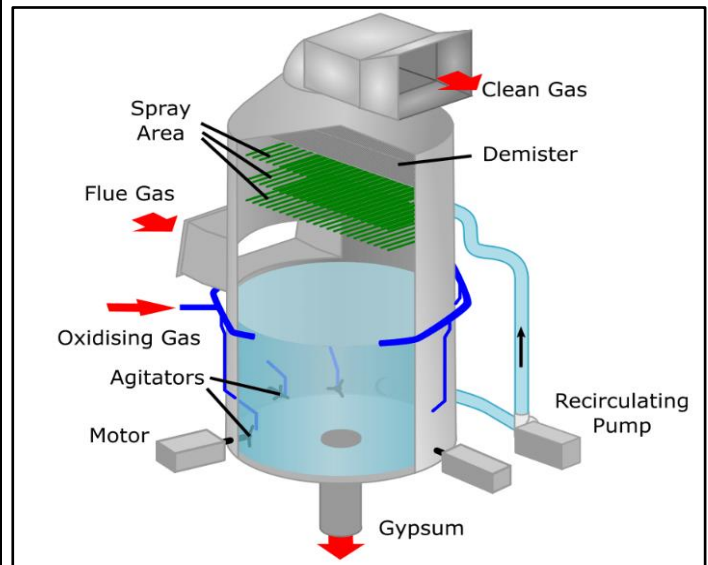
Union Minister for Power and **New and Renewable Energy (NRE)** recently presided over a high-profile meeting to review the results of a study conducted by IIT-Delhi on ambient atmospheric Sulphur dioxide (SO₂) concentrations and the effect of installing flue gas desulphurization (FGD) technology on SO₂ emissions in various cities.

More about News:

- FGD is the technology used to control sulfur dioxide (SO₂) emissions from coal-fired thermal power plants (TPPs).
- The **emission standard for SO₂** from coal-fired TPPs is acknowledged as the most challenging to meet, largely

because FGD technology is expensive and, until recently, heavily reliant on imports.

- The **technical and financial complexities of FGD installation**, as well as related regulatory issues, have been used **as reasons** to extend the deadlines for complying with the emission norms set by the **Ministry of Environment, Forest and Climate Change (MoEF&CC)** in 2015.
- **FGD operation** in power plants could **reduce import dependency on gypsum and Sulphuric acid**.



What is Xenotransplantation, and why pigs are used?

News Excerpt:

Richard Slayman, the first human recipient of a **pig kidney transplant** in March 2024, dies.

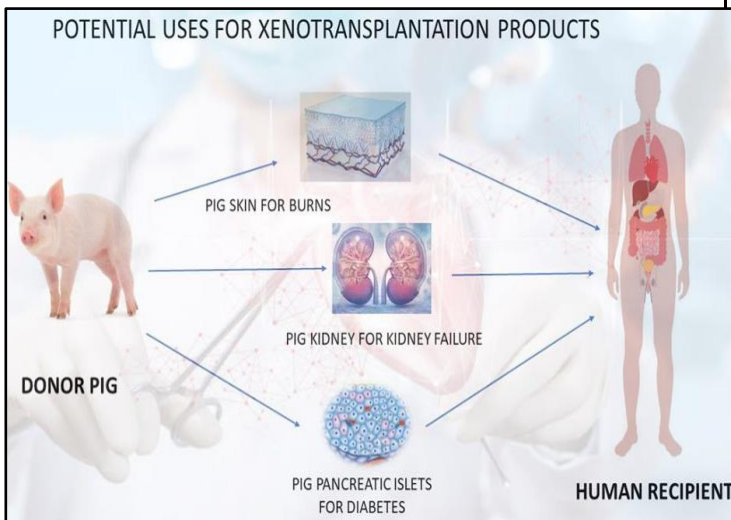
What is Xenotransplantation?

- According to the US Food and Drug Administration (FDA), "Xenotransplantation is any procedure that involves the **transplantation, implantation or infusion into a human recipient** of either (a) live cells, tissues, or organs from a nonhuman animal source, or (b) human body fluids, cells, tissues or organs that have had ex vivo contact with live nonhuman animal cells, tissues or organs."
- Essentially, it is the **use of animal cells and organs to heal humans**.
- Xenotransplantation involving the heart was first tried in humans in the 1980s.
- The need for such a procedure was felt because of the **significant gap between the number of transplants needed by patients and the availability of donor organs**.

How does Xenotransplantation happen?

- Sewing a pig kidney into a donated body isn't much different than a regular transplant, and post-surgery immune-suppressing drugs are standard, too.

- But there are several **crucial additional steps**:
 - The selected animal organ has to **undergo genetic modifications** so the human body does not reject it.
 - The gene editing technology **CRISPR-Cas9** was employed to "Remove certain pig genes that produce sugars with antibodies our immune systems react to" and "Add certain human genes to improve the kidney's compatibility with humans."
- Even after the operation, **constant monitoring needs to be done to check the body's response to the organ.**



Why are pigs often used for Xenotransplantation?

- Currently, **pigs, monkeys, chimpanzees, and baboons** are among the large animals that have been utilized in xenotransplantation.
- Because of their **similar organ sizes, physiological metabolisms, and immune systems to humans**, pigs are thought to be the best candidates to donate organs for xenografts.
- **For example**, In January 2022, the first xenotransplantation of a genetically modified pig heart was done. However, the patient passed away after two months due to a range of factors, including being tainted with a latent virus in the pig's heart, which may have contributed to the dysfunction of the transplant.

What are the complications of xenotransplantation?

- It has to be ensured that **body does not reject the organ.**
 - One method of doing this is **embedding the pig's thymus gland**, which is responsible for "educating" the immune system, underneath the outer layer of the kidney. This helps keep away any new or delayed immune responses.
- **Potential infection of recipients** with both recognized and unrecognized infectious agents and

the possible subsequent transmission to their close contacts and into the general human population.

- There is a possibility of **cross-species infection by retroviruses**, which may be latent and lead to disease years after infection.

World's brightest X-rays: China first in Asia to build next-generation synchrotron

News Excerpt:

China is on the brink of unveiling its cutting-edge **High Energy Photon Source (HEPS)** by the end of the year, showcasing some of the world's most powerful **synchrotron X-rays**.

More About the News:

China may become among the top-tier nations with fourth-generation synchrotron light sources. Situated approximately **50 kilometers from Beijing in Huairou**.

- **Cutting Edge Capabilities:** It is a **state-of-the-art installation** that will cater for outstanding science. Designed to **propel electrons** up to energies of **6 giga electron volts** within its 1.36-kilometre circumference storage ring, **HEPS will generate high-energy X-rays capable of penetrating deeply into samples**, unveiling intricate details at the nanometer scale, as reported by Nature.
- **Joining an Elite League:** HEPS **joins an exclusive league of fourth-generation synchrotrons**, including **MAX IV Laboratory in Sweden, Sirius in Brazil**, the Extremely Brilliant Source at the **European Synchrotron Radiation Facility in France**, and the **Advanced Photon Source in Illinois, USA**.

Applications of HEPS:

- **Advanced Materials Research:** HEPS's high-energy X-rays **enable researchers to study materials at the atomic and molecular level with unprecedented resolution**. This capability is crucial for understanding material properties, developing new materials, and improving existing ones, leading to advancements in fields such as electronics, aerospace, and renewable energy.
- **Improvement in Time Resolution:** Compared to third-generation synchrotrons, HEPS promises a **significant enhancement in experiment time resolution**. With measurements performed in hundreds of nanoseconds, HEPS surpasses its predecessors by a remarkable **10,000-fold improvement**, as emphasized by experts of IHEP (Institute of High Energy Physics).
- **Biomedical Sciences:** HEPS facilitates detailed structural analysis of biological molecules, including proteins and DNA, essential for drug discovery, disease diagnosis, and understanding biological processes at

the molecular level. It can aid in the development of novel therapeutic interventions.

- **Energy Research:** By enabling the study of materials and processes involved in energy production, storage, and conversion, HEPS contributes to advancements in renewable energy technologies, energy-efficient materials, and sustainable energy solutions.
- **Condensed-Matter Physics:** HEPS can help investigate the fundamental properties of condensed matter, including magnetism, superconductivity, and quantum phenomena. These studies contribute to the development of next-generation electronic devices, quantum technologies, and materials with tailored functionalities.
- **Drug Development and Design:** HEPS's ability to analyze the atomic structures of biomolecules facilitates rational drug design and optimization, accelerating the development of new pharmaceuticals with enhanced efficacy and reduced side effects.
- **Environmental Science:** HEPS enables researchers to study environmental pollutants, catalysts, and materials relevant to environmental remediation and pollution control.
- **Industrial Applications:** HEPS supports industrial research and innovation by providing access to advanced analytical techniques for characterizing materials, optimizing manufacturing processes, and developing novel products. This collaboration between academia and industry fosters technology transfer and enhances industrial competitiveness.

Cautious design of AI 'deadbots'

News Excerpt:

A new study urges caution in the development of Artificial Intelligence (AI) chatbots designed to mimic deceased loved ones, known as 'deadbots'.

More about Study:

- **Deadbots**, or griefbots, are **AI-enabled digital representations** of departed loved ones that simulate their language patterns and personality traits using their **digital footprint**, such as emails, social media posts, and voice recordings.
- While the idea of conversing with a lost loved one may be appealing to those coping with grief,
 - The study highlighted **potential risks** and **the need for safety standards** to ensure these technologies do not manipulate or cause psychological distress to users.
- The study presented **three scenarios** to highlight the potential risks of careless design of products that are technologically possible and legally realizable.
 - **These scenarios seem:**
 - Straight out of **dystopian sci-fi** and **underlines the need for regulations**

- **Ethical frameworks** to ensure these tools are used responsibly
 - Prioritize the **well-being of those grieving.**
- The **first scenario** describes a woman uploading all the data text and voice messages
 - she received from her grandmother on the app to create a simulation.
 - She then begins to chat and call her dead grandmother by paying for premium services initially.
 - Upon its expiry, she begins to receive advertisements from the deadbot, making her sick.
- In the **second scenario**, a parent uploads all **her data**, including text messages, photos, videos and audio recordings and trains the bot through regular interactions, tweaking its responses and adjusting the stories produced, to be able to chat with her son after she passes.
 - However, the app sometimes provides odd responses that confuse the child. For instance, when the son refers to his mother using the past tense, the deadbot corrects him, pronouncing that 'Mom will always be there for you'.
- **The third scenario** represents the case of an **old father creating his deadbot** to allow his grandchildren to know him better after he dies. But he does not seek the consent of his children, whom he designates as the intended interactants for his deadbot.

Artificial General Intelligence (AGI)

News Excerpt:

In a recent interview, Sam Altman, CEO of OpenAI, expressed his commitment towards the development of **Artificial General Intelligence (AGI)**.

What is AGI?

- AGI refers to a machine or software that can perform any intellectual task that a human can do.
- This includes **reasoning, common sense, abstract thinking, background knowledge, transfer learning,**
- **ability to differentiate between cause and effect, etc.**
- AGI aims to emulate human **cognitive abilities** such that it allows it to do unfamiliar tasks, learn from new experiences, and apply its knowledge in new ways.
- Humans learn through their experiences — **in school, home, or elsewhere; by talking to people or observing things; by reading books, watching television, reading articles, etc.**

How is AGI different from the AI we already use?

The main difference between AGI and the more common form of AI, also known as **narrow AI**, lies in its scope and capabilities.

- Narrow AI is designed to **perform specific tasks** such as image recognition, translation, or even playing games like chess—at which it can outdo humans, but it remains limited to its set parameters.
- On the other hand, AGI envisions a **broader**, more generalized form of intelligence, not confined to any particular task (like humans).

How can AGI help humanity?

AGI has innumerable positive implications.

- **In healthcare**, it can **redefine diagnostics, treatment planning, and personalized medicine** by integrating and analyzing vast datasets far beyond the capabilities of humans.
- **In finance and business**, AGI could automate various processes and enhance overall decision-making, offering real-time analytics and market predictions with accuracy.
- **When it comes to education**, AGI could transform adaptive learning systems that work towards the unique needs of students.
 - This could potentially democratize access to personalized education worldwide.
- AGI will lead to a **"lot of productivity and economic value"** and will be **"transformative"**, promising unprecedented problem-solving capabilities and creative expression.

HEALTH

WHO report on neglected tropical diseases

News Excerpt:

The World Health Organization (WHO) has released its Global Report on Neglected Tropical Diseases 2024.

More about the Report:

- The Report provides the Member States and the global community of partners with an **account of progress made in 2023** towards the **implementation of the Road map for neglected tropical diseases 2021–2030**.
 - Notably, the progress report is one of the agenda items included in the **World Health Assembly (WHA77)** agenda.
 - The upcoming 77th session of the World Health Assembly (**WHA77**) will take place in **Geneva** on 27 May–1 June 2024.
- The Report **highlights encouraging advancements in the battle against NTDs**.
- It highlights **key challenges**, ranging from a **slow post-COVID-19 recovery** to **funding uncertainties**, from **geopolitical disruptions to climate change**, from **gaps in knowledge and tools** to **insufficient data**, to illustrate the complexities inherent in addressing NTDs.

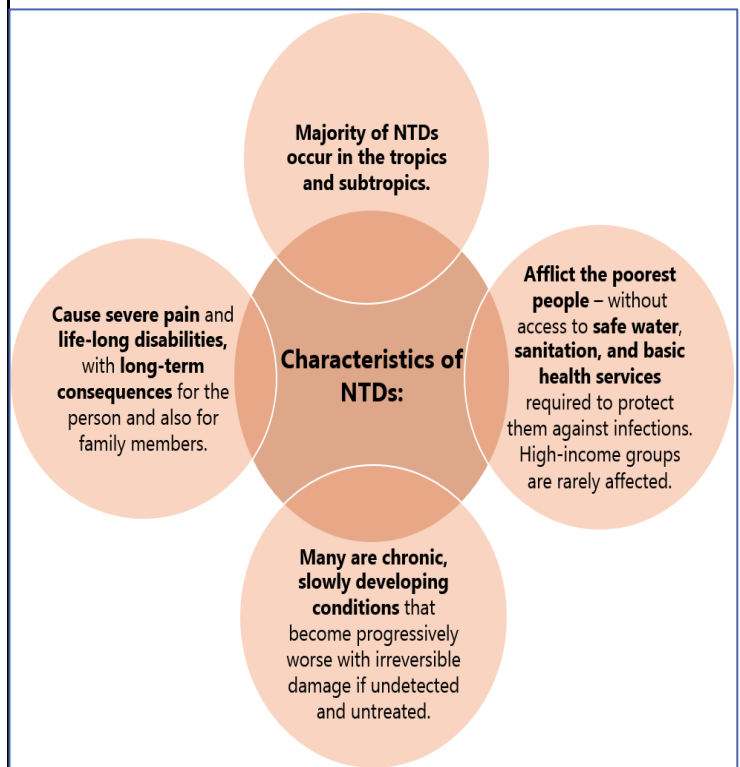
Key highlights of the Report:

Neglected tropical diseases (NTDs):

- **Neglected tropical diseases (NTDs)** are a diverse group of conditions caused by a variety of pathogens (including viruses, bacteria, parasites, fungi and toxins) and associated with **devastating health, social and economic consequences**.
- NTDs are mainly **prevalent among impoverished communities in tropical areas**, although some have a much larger geographical distribution.
- It is estimated that NTDs **affect more than 1 billion people**, while the number of **people requiring NTD interventions (both preventive and curative) is 1.6 billion**.

The infectious agents responsible for some NTDs include:

- **viruses (rabies and dengue)**
- **bacteria (leprosy, yaws, trachoma and Buruli ulcer)**
- **protozoa (leishmaniasis and trypanosomiasis)**
- **helminth parasites (schistosomiasis, lymphatic filariasis, onchocerciasis, intestinal worms and Guinea worms)**



- In **2022, 1.62 billion people** required interventions against neglected tropical diseases (NTDs).
- In **2023, five countries** were acknowledged by WHO for **eliminating one NTD**, and **one country** for **eliminating two NTDs**.

- As of **December 2023**, a total of **50 countries** have **successfully eliminated at least one NTD**, marking the **halfway point towards the 2030 target of 100 countries**.
- As of the end of **2022**, the number of **reported deaths from vector-borne NTDs** has **increased by 22% (as compared with 2016)**.
- Access to **water supply, sanitation, and hygiene** is **85.8% overall in NTD-endemic countries** and **63%** among the **population requiring interventions** against NTDs.
- In 2023, **noma (cancrum oris, gangrenous stomatitis)** was added to the list of NTDs.
 - Noma is a **rapidly progressing severe gangrenous disease of the mouth and the face**.
 - It mostly affects **children aged 2–6 years** suffering from malnutrition, infectious diseases, living in extreme poverty with poor oral health or weakened immune systems.
- NTD **medicine donation programmes** achieved significant milestones in 2023, delivering **2.1 billion tablets and vials**, 200 million more than in 2022.
- Key advocacy events carried out in 2023 included the **Global NTD Programme Partners' Meeting** and the **Reaching the Last Mile Forum**, which raised the visibility of NTDs in the global health agenda and increased resource mobilization.

Road map for neglected tropical diseases 2021–2030:

- **Ending the Neglect to Attain the Sustainable Development Goals: A Road Map for Neglected Tropical Diseases 2021–2030** was endorsed by the **73rd World Health Assembly in November 2020**.
- The road map **sets global targets and milestones to prevent, control, eliminate or eradicate 20 diseases and disease groups**, as well as **overarching and cross-cutting targets** aligned with the **Sustainable Development Goals**.

Overarching global targets for 2030:

The overarching global targets for 2030 are in line with the Sustainable Development Goals and WHO's 13th General Programme of Work:

- 90% fewer people are requiring interventions against NTDs.
- 75% fewer NTD-related Disability-adjusted life years (DALYs).
- 100 countries achieving elimination of at least 1 NTD.
- Eradication of 2 NTDs – dracunculiasis and yaws.

Cross-cutting targets for 2030:

The road map aims to renew momentum, proposes strategies that intersect multiple diseases, and advances actions focused on integrated platforms for the delivery of interventions. Consequently, a set of cross-cutting targets has been devised to measure progress in four areas:

- **Integrated approaches**
 - Reduce deaths from vector-borne diseases by 75%

- Achieve 75% integrated treatment coverage index for preventive chemotherapy
- 40 countries adopting skin NTD strategies
- **Multisectoral coordination**
 - Ensure 100% access to basic water supply, sanitation and hygiene in NTD-endemic areas.
 - Get 90% of countries integrating NTDs in national strategic plans
 - Protect at least 90% of the population from catastrophic out-of-pocket health expenditures due to NTDs
- **Universal health coverage**
 - Get 90% of countries include NTD interventions in their package of essential health services and budgeting for them
 - Ensure that 90% of countries have guidelines for the management of NTD-related disabilities within national health systems
- **Country ownership**
 - Ensure that 90% of countries report on all relevant NTDs
 - Ensure that 90% of countries collect and report NTD data disaggregated by gender

Three foundational pillars will support global efforts to achieve the targets:

- accelerate programmatic action (pillar 1)
- intensify cross-cutting approaches (pillar 2)
- change operating models and culture to facilitate country ownership (pillar 3).

WHO Broadens Definition of Airborne Diseases

News Excerpt:

After a drawn-out global controversy over the coronavirus, the WHO has updated its classification of how pathogens spread through the air.

Reason for the change in terminology?

- The change aims to help **identify, communicate about and respond to** existing and new **airborne pathogens**.
- It also hopes to **clear confusion about airborne transmission** that arose during the **COVID-19 pandemic** due to differing views on whether the coronavirus spread via smaller aerosols or larger droplets.

Earlier Terminologies:

- Before the pandemic, the WHO and other agencies typically recognized a few ways diseases could spread.
 - **"Contact transmission,"** in which someone picks up a pathogen either by **touching an infected person** directly or **through contact** with a contaminated surface.
 - **"Droplet transmission"** involved the **short-range spread of diseases** when people **coughed or sneezed droplets larger than 5 microns** (five-

millionths of a metre), which then landed directly on a victim's **mouth, eyes or nose**.

- "Airborne transmission" referred to just a handful of diseases that spread in **droplets smaller than 5 microns**, floating for long distances until someone inhaled them.

The new definition of airborne pathogens and diseases:

- Under the new terminology, **all particles expelled from the mouth or nose** of an infected person, **regardless of size**, are called "**infectious respiratory particles**" or **IRPs**.
- The descriptor "**through the air**" characterizes diseases where the main transmission mode involves IRPs travelling through or being suspended in the air.
- Within this new definition, WHO defines two types of transmission.
 - First is **airborne transmission** or inhalation, when **IRPs are expelled into the air** and inhaled by others at short or long distances, depending on factors like airflow and ventilation.
 - Second, **direct deposition**, when IRPs expelled by an infectious person are **deposited on the exposed mouth, nose or eyes** of a nearby person.

Difference between old and new terminologies:

- Earlier agencies have historically required **high levels of proof** before calling diseases airborne, which required very stringent containment measures; the new definition says the **risk of exposure** and **severity of disease** should also be considered.
- Past disagreements also centred around whether infectious particles were "**droplets**" or "**aerosols**" **based on size**, which the **new definition moves away from**.

Global implications of the change:

- This would have **legal, logistic, operational and financial consequences** that have global implications with regards to **equity and access**.
- The terminology sets **common language** that **engineers, physicists, clinicians, and epidemiologists** will be able to apply in determining the broad implications of airborne particles, along with the effectiveness of countermeasures like face masks and respirators.

Ethylene Oxide contamination in Indian Spices

News Excerpt:

Hong Kong and Singapore have banned the sale of Indian spice brands **MDH** and **Everest** after authorities detected the presence of **ethylene oxide** in several **spice mixes**.

More about the news:

- The **Centre for Food Safety (CFS)** of **Hong Kong** announced that it had detected **ethylene oxide** in a **few** masala mixes.

- Earlier in **2023**, the **US Food & Drug Administration** recalled **Everest Sambhar Masala** and **Garam Masala** as samples tested positive for **Salmonella**.

Ethylene Oxide:

- **Ethylene oxide** is a **cancer-causing agent** that can raise the risk of **breast cancer**, as well as cause **damage to the DNA, the brain, and the nervous system** in humans.
- Ethylene oxide is frequently reported to be associated with **lymphoma and leukaemia**.
- It is a **flammable colourless gas** that is used primarily to **produce other chemicals at room temperature**.
- Ethylene oxide is also used as a **disinfectant, fumigant, sterilizing agent and pesticide**.
 - The ability of ethylene oxide to **damage DNA** makes it an effective **sterilizing agent** but also accounts for its **cancer-causing activity**.
- It is mainly used to **sterilize medical equipment and cosmetics** and to **reduce microbial contamination in spices**.
- The primary routes of **human exposure** to ethylene oxide are **inhalation** and **ingestion**, which may occur through **occupational, consumer, or environmental exposure**.

Oxytocin

News Excerpt:

The Delhi High Court has issued directives to combat the use of **spurious Oxytocin hormone** in the dairy colonies across the national capital, stressing the need to address **animal cruelty** and **public health concerns**.

About oxytocin

- Oxytocin also known as the '**love hormone**'. Oxytocin is secreted by the **pituitary glands** of mammals during sex, childbirth, lactation or social bonding, and could be chemically manufactured and sold by pharma companies for use during childbirth.
- Oxytocin is administered to cattle to "**force milk let-down and increase the production of milk**".
- It is administered either as an **injection or a nasal solution**. It affects the health of the cattle but also **humans who consumed the milk**.

More about the Court's Direction:

- The court asked the Delhi government's **Department of Drugs Control** to conduct weekly inspections and register cases against **the administration of the hormone**.
- The HC further observed that these offences will be investigated by **jurisdictional police stations** wherein the dairy colonies are situated.
 - Delhi police to identify the **sources of oxytocin production, packaging and distribution**, and take action in accordance with the law.

- The High Court had constituted a **court commissioner** for inspecting nine dairy colonies in the Capital.
 - The court commissioner had flagged the “**rampant use**” of **oxytocin**.
- Since administering oxytocin amounts to animal cruelty and is a cognizable offence under Section 12 of **The Prevention of Cruelty to Animals Act, 1960**.

Measures suggested by the Court:

- Cattle in the dairies situated next to the landfill sites without doubt would feed on hazardous waste and their milk if consumed by humans, particularly children, (directly or indirectly) could have serious consequences.
 - There is an urgent need to rehabilitate and relocate the **Ghazipur Dairy and Bhalswa Dairy** forthwith as they are located next to the sanitary landfill sites.
- The dairies should be relocated in areas having proper sewage, drainage, biogas plants and ample open space for the grazing of the cattle.

BIOTECH

Biohacking

News Excerpt:

Biohacking is picking up in India, with followers trying everything from Cryotherapy to IV therapy.

About Biohacking:

- Biohacking is the practice of employing methods drawn from fields like biology, genetics, neuroscience and nutrition to enhance **physical or mental performance**, improve overall health and well-being, or achieve a specific health outcome (like weight loss).
- It’s also called **do-it-yourself (DIY) biology**.

Is Biohacking Safe?

- Biohacking is fighting a bad reputation in some circles because it’s **occasionally practised “ahead of**

science,” meaning people test hacks on themselves before they’re proven to work in a controlled clinical research setting.

- It’s crucial to approach biohacking with caution, relying on evidence-based information and consulting with healthcare professionals when necessary.

Age-Related Biohacking:

- **Cellular senescence** plays a role in age biohacking. As cells in the body are damaged by injury, stress or disease, they are removed by a natural process called **apoptosis**.
 - But as the body ages, it becomes less efficient at clearing these senescent cells. Their accumulation may lead to inflammation that can damage other nearby cells, accelerating the ageing process and the onset of disease.
 - If the production of senescent (damaged) cells can be stopped or reversed, then the aesthetic and physical changes that come with ageing can as well.
- For example:
 - Red light therapy, Stem cell therapy, Cryotherapy
 - The use of at-home **non-ablative lasers (NIRA)**
 - Using supplements for anti-ageing and mitochondrial support containing coenzyme Q10, polyphenols, L-carnitine and Urolithin A.

GOLDENE: A sheet of gold that is only one atom thick

News Excerpt:

Researchers have created a **free-standing sheet of gold** that is only one atom thick. This makes gold the **first metal** to be formulated into (freestanding) 2D sheets, opening up a host of exciting possibilities for the future.

Developing goldene:

- Goldene is the name given to a **one-atom-thick material made of gold**, developed by scientists from Linköping University in Sweden.
 - Since the 2004 **discovery of graphene**, scientists have found hundreds of 2D materials.
 - However, **creating atom-thin metallic sheets** has been challenging due to metals' tendency to form nanoparticles.
 - While gold sheets were made before, "**goldene**" was the **first standalone 2D metal**.
 - Goldene sheets are approximately 100 nanometers

Types of Biohacking:

Almost any tactic could be considered biohacking if an individual employs it to enhance **their biology** in some way.

Lifestyle:	Molecular:	Biologics:	Technology:
<ul style="list-style-type: none"> ◦ This focuses on making positive health & behaviour choices, and activate the biology of performance and longevity. ◦ Lifestyle is probably the most accessible way to experience biohacking, as it includes factors like dietary shifts, meditation and exercise. 	<ul style="list-style-type: none"> ◦ This involves the use of natural and synthetic molecules that can help shift one’s biology. ◦ For eg: Taking supplements. 	<ul style="list-style-type: none"> ◦ Biologics are cellular or biological products to improve or enhance biology like cells or small information packets (exosomes), which are biological bundles of DNA, mRNA proteins and growth factors. ◦ These need to be ingested, injected (like stem cells) or delivered intravenously (by IV transfusion). 	<ul style="list-style-type: none"> • Technology biohacks includes the use of devices like wearables (smartwatches), diagnostics (blood sugar monitors) and advanced machines like hyperbaric chambers or electromagnetic stimulators to stimulate more rapid physiological changes or healing. • In such cases, individuals can use that information to adjust their health for improved performance.

thick and 400 times thinner than the thinnest commercially available gold leaf.

Many potential applications:

- Scientists believe that super **thin, super light material** can potentially revolutionize the **electronics industry**.
- Goldene holds promise as a **great catalyst** because it's much more **economically viable** than thicker, three-dimensional gold.
- Potential applications of goldene include **carbon dioxide conversion, hydrogen-generating catalysis, selective production of value-added chemicals, hydrogen production, and water purification** due to its unique 2D properties.

GENERAL SCIENCE

World Energy Congress

News Excerpt:

The **26th World Energy Congress** was held in **Rotterdam** to shape the future of energy once again.

About World Energy Congress:

- The **26th World Energy Congress** co-hosted by the **World Energy Council** and the Netherlands **Ministry of Economic Affairs** and **Climate Policy** and took place from 22-25 April 2024.
- This edition of the **World Energy Council** celebrates **100 years** since the Council's formation and the **first World Energy Congress held in London**.
- **History:**
 - The origins of the World Energy Congress date back to shortly **after the First World War**.
- **Themed:** 'Redesigning Energy for People and Planet.'
- **Significance:**
 - The **26th World Energy Congress** is expected to be a critical turning point for leadership on clean and inclusive energy transitions worldwide.
- The World Energy Council has announced Riyadh, Saudi Arabia, as the official host of the **27th World Energy Congress to be held 26-29 October 2026**.

About World Energy Council India

- World Energy Council India is a **country member of the World Energy Council (WEC)**, a global body established in **1923** with the aim of promoting sustainable supply and use of energy.
- WEC India joined the Council in **1924**.
- It functions under the patronage of the **Ministry of Power, Government of India** and with the support of the **Ministries of Coal, New & Renewable Energy, Petroleum & Natural Gas and External Affairs**.

World Energy Council:

- The World Energy Council is the **world's oldest independent and impartial community** of energy leaders and practitioners.
- Through our Humanizing Energy vision, we involve

more people and communities in accelerating clean and inclusive energy transitions in all world regions.

- **Formed in 1923**, the **Council is a UN-accredited global energy body** that has convened diverse interests from across the full energy ecosystem for a century, and today has over **3,000 member organizations** and a **presence in nearly 100 countries**.

Network-as-a-service

News Excerpt:

Network-as-a-service (NaaS) provider **CloudExtel** has secured its **first external debt funding of Rs 200 crore**.

Network-as-a-Service (NaaS):

- It stands as a cloud service model wherein **clients lease networking services from providers**.
- With NaaS, customers can **manage their networks without the burden of maintaining physical infrastructure**.
- Operated through vendor software, NaaS enables companies to **establish networks solely through Internet connectivity, eliminating the need for hardware**.
- It serves as a **modern alternative to traditional networking setups** like VPNs and MPLS connections, as well as on-premise hardware such as firewalls and load balancers.
- This innovative approach to **routing traffic and enforcing security policies** has significantly reshaped enterprise networking architecture.

Scientists have developed a sodium battery that can be charged in seconds

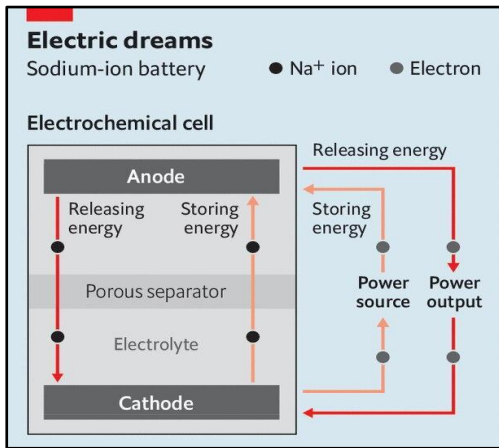
News Excerpt:

Researchers at the **Korea Advanced Institute of Science and Technology (KAIST)** have developed a **high-power hybrid sodium-ion battery** that can be charged in seconds.

More about the news:

- The study was published in the journal **Energy Storage Materials**.
- **South Korean** researchers **integrated anode materials** typically used in batteries with **cathodes suitable for supercapacitors**.
- The combination helped the battery to **achieve high storage capacities** and **rapid charge-discharge rates**.
- The study indicates that the battery can be a **viable next-generation alternative to lithium-ion batteries**.

Sodium ion battery:



- A **sodium-ion battery** is a type of **rechargeable battery** comparable to the ubiquitous lithium-ion battery, but it **uses sodium ions (Na⁺)** as the **charge carriers** rather than lithium ions (Li⁺).
- The **working principles** behind the cell construction of a sodium-ion battery are **virtually identical to those of lithium-ion batteries**, but sodium compounds are used instead of lithium compounds.
- Sodium-ion batteries are currently emerging as a **potential alternative to current lithium-ion battery technology** due to their lower cost, **higher availability**, and **reduced impact on the environment**.

Significance of Sodium-Ion Battery:

- A sodium-ion battery would be a lot **cheaper** and **potentially more feasible source** of energy due to its **comparative abundance** in the world around us.
 - Sodium is nearly **1000 times more abundant than lithium** and is a **less rare mineral**.

Lithium-ion battery	Sodium-ion battery
<ul style="list-style-type: none"> • Sodium is more than 500 times more abundant than lithium. It can also be extracted from seawater at a low cost. • Sodium is more environmentally friendly and can be transported at zero volt, making it safer. 	<ul style="list-style-type: none"> • Lithium availability is limited to a few countries, which is why prices have risen more than seven-fold since 2021. • Lithium is less environmentally friendly than sodium and must be always stored with a minimum charge, increasing fire risks.
<ul style="list-style-type: none"> • A Sodium-ion battery uses aluminum which is cheaper than copper. 	<ul style="list-style-type: none"> • Lithium-ion battery uses copper, which is three or four times more expensive than aluminum used on sodium batteries
<ul style="list-style-type: none"> • Sodium-ion battery has a higher operating temperature range. This means these can be used in more extreme temperatures without the risk of thermal runaway. 	<ul style="list-style-type: none"> • Lithium-ion battery has lower operating temperature range and can cause fire if operated in higher temperatures.
<ul style="list-style-type: none"> • Sodium-ion battery charges faster than lithium-ion variants and have a three times higher lifecycle. 	<ul style="list-style-type: none"> • Lithium-ion battery has a slow charge rate and smaller lifecycle compared to sodium-based batteries.

- The sodium batteries will have a wide range of applications in various **electronic devices** from **mobiles, electric vehicles, aerospace technologies** to **large-scale grid systems**.
 - The battery may potentially fulfil an **increasing demand for low-cost electrochemical energy storage** devices with **high energy density** for prolonged operation on a single charge and fast-chargeable power density.
 - At present, the **available sodium-ion batteries** are **poor in rechargeability** as they have a **low power density** while providing a **relatively high energy density**.

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DISEASES IN NEWS

Bird flu

News Excerpt:

The U.S. FDA has said that in a nationally representative commercial milk sampling study of pasteurized milk, about one in five of the retail samples tested positive for bird flu viral fragments.

Bird flu detection in new hosts:

- For years, H5N1, or **highly pathogenic avian influenza**, has been primarily **confined to the bird population**. But it **recently begun to infect a growing number of mammals**, suggesting that the **virus might be adapting and moving closer to becoming a human pathogen**.

Probable reasons for dairy cattle milk containing high concentrations of H5N1 virus fragments:

- The **propensity of the virus to infect the mammary glands of cows**.
- On evaluating the expression of H5N1 receptors in the mammary gland, respiratory tract and cerebrum of cattle, **both the human and the duck receptors were found to be highly expressed in the mammary glands**.
- In the mammary gland, the human receptors and the duck receptors were found to be widely distributed in the alveoli but not in the ducts.
- Chicken-type influenza receptors were common in the cow respiratory tract.
- The local viral replication in the mammary glands of cows as H5N1 has a high affinity for the receptor.

Impact on human infection of H5N1:

- **Cows might be one of the worst possible animal reservoirs for influenza** because of their **sheer number** and the degree of humans interaction.
- **Culling poultry has curbed previous bird flu outbreaks**, but it **isn't a viable option for cattle**.
- H5N1 could **even become endemic in cows**, while other strains related to H5N1 are already endemic in chickens and pigs in some parts of the world.

Possible solution:

- **If the virus is airborne, vaccinating cows might be an option.**
 - H5N1 vaccines have not yet been used in US cattle. However, influenza vaccines have **proved effective in pigs and poultry**, and researchers are beginning to test them against the H5N1 strain infecting dairy herds.

H5N1 Influenza:

- H5N1 is a type of **influenza virus** that causes a highly infectious, severe respiratory disease in birds called **avian influenza** (or "**bird flu**").
- There are also subtypes of avian influenza. Three of these – **H5N1, H5N6 and H7N9** – have been found to cause illness in humans as well.
 - While the letters in the names of these subtypes refer to a combination of proteins found in bird flu, the numbers indicate the subtype.
- **Human cases** of H5N1 avian influenza **occur occasionally**, but it is **difficult to transmit the infection from person to person**.
 - When people do become infected, the mortality rate is about 60%.
- The virus does not infect humans easily, and its spread from person to person appears to be unusual.
 - Almost all cases of H5N1 infection in people have been associated with **close contact with infected live or dead birds or H5N1-contaminated environments**.
 - There is no evidence that the disease can be spread to people through properly prepared and thoroughly cooked food.

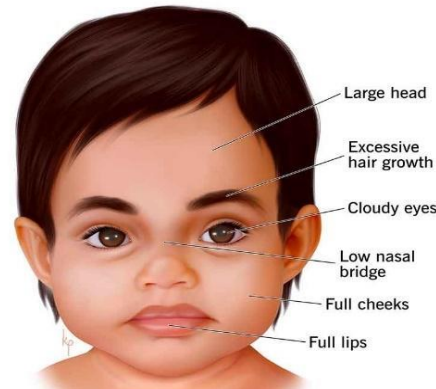
Mange outbreak among Asiatic wild dogs

News Excerpt:

The forest department is monitoring an outbreak of mange among a pack of **Asiatic wild dogs** in

More about News:

- Three animals from a pack of **Asiatic wild dogs (dholes)** around **Bokkapuram in MTR**, a **high human-wildlife interface area**, are believed to have been affected by **mange, a skin disease caused by parasitic mites**.
- **Conservationists from the Nilgiris** highlighted the need to remove **free-ranging feral dogs** from high interface areas shared by **humans and wildlife**, as well as **protected areas like tiger reserves**, as
 - They pose a **threat to wildlife** and can spread diseases **like mange, canine distemper, and rabies**.

<p>the Mudumalai Tiger Reserve (MTR) in the Nilgiris, which they strongly suspect has spread to the animals through the local feral dog population.</p>	<ul style="list-style-type: none"> • Conservationists called for Animal Birth Control (ABC) programs to be implemented and the removal of feral, free-ranging dogs from the landscape. <ul style="list-style-type: none"> ○ They propose capturing and treating affected animals before releasing them to curb disease spread. • Mange disease: <ul style="list-style-type: none"> • Mange can be caused by two types of mites: Sarcoptic and demodectic. • Demodectic mites naturally inhabit a dog's skin but cause infections when the mites overpopulate a dog with a weakened immune system. <ul style="list-style-type: none"> ○ This form of mange is not contagious to other dogs or humans. Most demodectic mange cases happen in puppies under 12 to 18 months of age. • Sarcoptic mange, also referred to as scabies, is contagious to both dogs and humans. <ul style="list-style-type: none"> ○ It occurs when a dog comes into contact with the <i>Sarcoptes scabiei</i> mite, and it mostly affects stray dogs that aren't on preventative medication.
<p>New Covid variant FLiRT</p> <p>News Excerpt: FLiRT, a group of new Covid-19 variants belonging to Omicron's JN.1 lineage, is spreading fast in the US, raising concern about a new wave of infections in summer.</p>	<p>Key Points:</p> <ul style="list-style-type: none"> • With new mutations, the variants KP.2 and KP 1.1 are considered to be more infectious than previous Omicron variants, but experts say the symptoms remain more or less the same. • KP.2 has reported to have taken over the JN.1 variant in the US although cases of hospitalization there remain low, as per media reports. • KP.1.1, another FLiRT variant, is also detected in the US, but seems to be less in circulation than KP.2. <p>About FLiRT</p> <ul style="list-style-type: none"> • According to the Infectious Disease Society of America, the nickname 'FLiRT' is based on the technical names for their mutations. <ul style="list-style-type: none"> ○ The World Health Organisation (WHO) has reclassified it as a variant of interest and advised close monitoring. • The most prominent FLiRT variant is KP.2, which has become the dominant strain in the U.S. and accounts for around 25% of new COVID-19 cases as of April 2024. • The FLiRT variants, especially KP.2, appear to have increased transmissibility compared to previous Omicron sub-variants. • Just like other COVID-19 strains that have gained dominance in the U.S. over the last year — JN.1, HV.1, EG.5 aka Eris, and XBB.1.16 or Arcturus — the FLiRT variants are part of the omicron family. • They also show the ability to evade immunity from prior infection and vaccines, though the extent is still under study. • Symptoms: <ul style="list-style-type: none"> ○ Sore throat, Cough, Congestion and runny nose, Fatigue or tiredness, Headache, Muscle or body aches. ○ Fever or chills, Loss of taste or smell (less common with Omicron than with earlier variants) <p>What's new about FLiRT, and what are its symptoms?</p> <ul style="list-style-type: none"> • These Covid variants are descendants of the JN. 1 variant that came in last December. They carry some fresh mutations that seem to be allowing it to spread easily.
<p>Hurler Syndrome</p> <p>News Excerpt: A treatment protocol that combines autologous stem cell transplants with gene therapy shows signs of correcting skeletal deformities in eight children with Hurler syndrome, a rare disease that stunts</p>	<p>About Hurler syndrome:</p> <ul style="list-style-type: none"> • Hurler syndrome was first described by German paediatrician Gertrud Hurler in 1919. • It is one of the 11 disorders of the mucopolysaccharidoses (MPS). • It is an inherited lysosomal disorder caused by the absence of alpha-L-iduronidase enzyme, which is responsible for the degradation of glycosaminoglycans (GAG or mucopolysaccharides). <div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Hurler syndrome</p>  </div>

<p>skeletal system growth.</p>	<ul style="list-style-type: none"> ○ Lysosomes are the parts of your cell that control molecular waste management (the storage, recycling and digestion of molecules). ○ This leads to a buildup of dermatan sulfate and heparin sulfate in multiple tissues and urinary excretion of these glycosaminoglycans, resulting in progressive deterioration and, eventually, death. ● Manifestations: <ul style="list-style-type: none"> ○ The infant with Hurler's disease appears normal at birth, but after 6 months, a coarse facial appearance can be noted. ○ Chronic rhinorrhea may suggest frequent colds or allergies. ○ Recurrent upper airway infection, otitis media, and hypertrophy of tonsils and adenoids may persist beyond early childhood. ○ Hearing impairment may be secondary to such events. ○ When these children attempt to sit, very mild kyphosis can be noticed, which will progress as the child grows older to the gibbous appearance typical of Hurler's disease. ○ Vision is impaired because of clouding of the corneas that can be detected in the first year of life. ○ Children with Hurler's disease may sit, walk, and develop early language skills, but soon these skills are lost. Severe mental retardation becomes apparent, and affected children become bedridden. ● Spread of the syndrome: The incidence of Hurler syndrome is approximately 1 in 100,000 births. Male and female children are equally affected. All races and ethnicities are at risk of inheriting the disease.
<p>West Nile Fever</p> <p>News Excerpt: West Nile fever cases have been reported from Thrissur, Malappuram, and Kozhikode districts of Kerala. Reports suggest ten individuals have contracted the virus, with two suspected fatalities.</p>	<p>About:</p> <ul style="list-style-type: none"> ● West Nile fever stems from a virus transmitted through bites of infected Culex mosquitoes. In contrast to Japanese Encephalitis, which primarily affects children, West Nile fever predominantly impacts adults. ● West Nile Virus (WNV) was first isolated from a woman in Uganda's West Nile district in 1937. It was detected in birds (crows and Columbiformes) in the Nile Delta region in 1953, and sporadic cases have been reported in Kerala since 2011, with the initial instances documented in the Alappuzha district. ● Mosquitoes become infected after feeding on birds carrying the virus in their bloodstream for a few days. The virus eventually reaches the mosquito's salivary glands. Subsequent mosquito bites may inject the virus into humans and animals, leading to potential illness. ● No instances of human-to-human WNV transmission through casual contact have been documented. ● Symptoms encompass headache, fever, muscle aches, dizziness, and memory impairments. Although many infected individuals remain asymptomatic, severe cases can result in neurological complications and, rarely, fatalities. ● With no specific vaccine or medication available, treatment mainly concentrates on symptom relief. Timely medical attention is essential for effective management and recovery. <p>Preventive Measures:</p> <ul style="list-style-type: none"> ● To date, preventing mosquito bites remains the most effective way to protect against fever. Residents are encouraged to wear protective attire, utilize mosquito nets and repellents, and employ mosquito-detering devices. ● Eradicating stagnant water in containers and surroundings is critical to halt mosquito breeding. There is a need for community vigilance and collaboration in identifying stagnant water or potential mosquito breeding sites.

INTERNAL SECURITY

Digital arrest

News Excerpt:

Due to the rapid surge in digital arrests, the **Central government collaborated with Microsoft** to block 1,000 Skype IDs involved in online blackmail, extortion, and intimidation.

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What is digital arrest?

- In the world of cybercrime, a new crime, '**digital arrest**', is rapidly increasing.
- The fraudsters deceive potential individuals by pretending to be government officials and law enforcement authorities.
- They **accuse their target of malicious involvement** in illegal activities, which could lead to serious legal consequences and prosecution.
- They demand a huge sum of money to resolve the issues and direct the victim to be quarantined unless the issue is resolved. **This is known as digital arrest.**

Modus Operandi of digital arrest:

- The Ministry of Home Affairs has outlined common ways entertained by the criminals to deceive individuals:
 - **Initial Contact:** Fraudsters initiate contact by phone, alleging involvement in illegal activities like trafficking drugs or fake passports.
 - **Threats:** They may claim that a family member has been detained due to criminal activities or an accident, instilling fear in the victim.
 - **Monetary Demands:** To avoid repercussions, victims are coerced into paying the fraudsters a large sum of money.
 - **Digital Arrests:** In some instances, victims are coerced into staying on video calls via platforms such as Skype until they comply with demands. The criminals create fake settings resembling police stations and wear uniforms to appear authentic.

Status of digital arrest:

- A large number of complaints have been made on the **National Cyber Crime Reporting Portal (NCRP)** about intimidation, blackmail, extortion, and digital arrests by cybercriminals posing as police officers, the Central Bureau of Investigation (CBI), Narcotics Department, Reserve Bank of India (RBI), and Enforcement Directorate (ED), etc.
- According to the **Intelligence Agencies**, these incidents are part of an online organized economic crime racket run by cross-border crime syndicates.

Government steps to curb it:

- **Ministry of Home Affairs: The Indian Cyber Crime Coordination Center (I4C)** has blocked more than 1,000 Skype IDs by collaborating with Microsoft.

- **Ministry of Communication:** The **Department of Telecommunications (DoT)** has issued advisories to alert citizens about fake calls threatening disconnection and has implemented various measures to combat suspected fraudulent communications:

- **CHAKSHU:** As part of the **Sanchar Saathi initiative**, 52 entities sending malicious and phishing SMSs have been blacklisted.
- **SMS and Handset Blocks:** Nationwide deactivation of 700 SMS templates and blacklisting of 348 mobile handsets have been carried out.
- **Re-verification and Disconnections:** As of April 30, 2024, 8,272 of the **10,834 flagged mobile** numbers for re-verification **were disconnected** due to failed re-verification.
- **Handset Blocks:** Nationwide blocking of 8.6 million mobile handsets has been enforced due to cybercrime and financial fraud involvement.

Indian Cyber Crime Coordination Center (I4C):

- The Indian Cyber Crime Coordination Centre (I4C) is an initiative of the **Ministry of Home Affairs**, Government of India, established **to address cybercrime** in a coordinated and comprehensive manner.
- It aims to tackle various issues related to cybercrime by improving coordination among different law enforcement agencies and stakeholders.
- The I4C scheme was **approved on October 5, 2018**, and since then, it has been working towards enhancing the nation's capacity to combat cybercrimes.

Objectives of I4C:

- To act as a nodal point to curb Cybercrime in the country.
- To strengthen the fight against Cybercrime committed against women and children.
- Facilitate easy filing of cybercrime-related complaints and identify Cybercrime trends and patterns.
- To act as an early warning system for Law Enforcement Agencies for proactive Cybercrime prevention and detection.
- Awareness creation among the public about preventing Cybercrime.
- Assist States/UTs in capacity building of Police Officers, Public Prosecutors and Judicial Officers in the area of cyber forensics, investigation, cyber hygiene, cyber-criminology, etc.

Way Forward:

- Stay vigilant and report any suspicious calls or threats to the cybercrime **helpline number 1930.**

PEPPER IT WITH:
Cyber Frauds,
CHAKSHU, I4C

- **Immediate reporting and awareness** are crucial in combating cybercrimes effectively.
- Given the dynamic nature of cybercriminal tactics, both authorities and the public must adopt a proactive approach. **Collaboration** among government agencies, technology companies, and law enforcement is essential in addressing the cybercrime threat.

India records highest number of Internet shutdowns in 2023

News Excerpt:

For the sixth year in a row, India led the world in internet shutdowns, disrupting the internet at least 116 times.

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More about the news:

In 2023, there was a concerning surge in internet shutdowns worldwide, marking it as the most severe year on record for such disruptions, as outlined in the latest **report** titled **"Shrinking democracy, growing violence: internet shutdowns in 2023** published by **Access Now organization.**"

What is an Internet shutdown?

- An internet shutdown is a **deliberate interruption of internet or electronic communications**, rendering them inaccessible or effectively unusable for a specific population or within a particular location.
- Typically orchestrated by a government or similar authority, these actions aim to control the flow of information and influence individuals' behavior.

Global Findings:

- **Unprecedented Levels of Shutdowns:** The year 2023 saw the highest number of internet shutdowns in a single year since monitoring began in 2016, with **283 shutdowns across 39 countries**. This represents a **41% increase from 2022**, signalling a significant escalation in the use of shutdowns to suppress expression and hinder access to information.
- **Conflicts as Primary Driver:** Conflicts emerged as the primary driver of shutdowns for the first time since 2016, with shutdowns intersecting with natural disasters as a new worrying trend. Shutdowns during conflicts exacerbated humanitarian crises, contributing to the most violent year on record.
- **Triggers for Shutdowns:** In 2023, key triggers for shutdowns included **protests, school exams, and elections**. Conflicts became the leading global driver for shutdowns, with more militaries employing them as part of deliberate strategies.
- **International Response:** Despite challenges, significant international support was provided to combat shutdowns in 2023, with stakeholders taking unprecedented action through initiatives like the **#KeepItOn Election Watch** and legal challenges,

urging governments to uphold human rights obligations.

- **Continued Concerns:** The fight against shutdowns continues, with elections slated for 2024 raising further concerns about the potential for increased shutdowns and their impact on democratic processes and human rights.

India Specific Findings:

- **Frequency and Scope of Shutdowns:** India led globally in internet shutdowns for the sixth consecutive year, with 116 shutdown orders issued in 2023. These shutdowns increasingly targeted regional areas rather than localized ones, indicating a broader application of this measure.
- **Extensive Impact:** Over the past five years, there have been over 500 shutdowns in India, affecting millions of citizens. Manipur, in particular, experienced a prolonged statewide shutdown for 212 days, severely impeding communication and documentation efforts, especially regarding human rights abuses.
- **Severe Consequences:** Shutdowns in Manipur and Punjab highlighted the widespread suffering caused by these measures. They affected millions of individuals and impeded various aspects of life, including business, education, and access to information.
- **Proliferation and Duration:** Shutdowns occurred at the national level and in 13 states, with some states implementing multiple shutdowns throughout the year. The duration of shutdowns also increased, with over 41% lasting five days or more, indicating a trend towards longer disruptions.
- **Targeting Mobile Networks:** The vast majority of shutdowns exclusively targeted mobile networks, despite the fact that most internet users in India rely on wireless services. This indicates a disproportionate impact on mobile users.
- **Prolonged durations:** The duration of shutdowns in India also increased in 2023, with over 41% lasting five days or more, compared to 15% in 2022. These shutdowns were compounded by the blocking of 14 messaging apps starting in early May, alongside 7,502 URL-blocking orders issued between January and October 2023.
- **Legal Framework and Challenges:** Despite a Supreme Court judgment in *Bhasin versus Union of India* affirming the right to free speech and online activities, officials have failed to publish shutdown orders, highlighting a lack of transparency and accountability in the process.
- **Economic Losses:** The economic repercussions of shutdowns are profound, with reports indicating losses of \$1.9 billion and a decline in foreign investment of \$118 million in the first half of 2023 alone.

- **Impact on Marginalized Groups:** Shutdowns disproportionately affect marginalized groups, exacerbating existing inequalities and hindering efforts towards equitable digitization, further widening the digital divide.

Way Forward:

- The prevalence of internet shutdowns in India **contradicts the government's professed commitment to a 'Digital India'** and undermines its credibility as a global leader in digitization.
- With over 500 documented shutdowns in the past five years, the Indian government **must prioritize ensuring an internet shutdown-free environment** if they aim to be recognized as credible advocates for digital access and human rights.

PEPPER IT WITH:

Internet Freedom, E-governance, Digital India

Centre to train State police forces on new criminal laws

News Excerpt:

The Central Government has rolled out an intense training program for the police and prison department personnel throughout the country on the new criminal laws.

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About the News:

- The main aim is to sensitize them to the transition from the colonial legacies to a new system of justice. The Indian government is replacing three outdated criminal laws with new, modern legislation.
- Effective from July 1, 2024, these laws aim to **expedite justice delivery and enhance the judicial system**, prioritizing universal access to justice.
- The ministry emphasized that the new criminal law includes several contemporary provisions **aligned with modern times and technologies**, envisioning a **more efficient policing** and justice system.

Old Laws Replaced:	New Laws Implemented:
● Indian Penal Code (1860)	● Bharatiya Nyaya Sanhita 2023
● Code of Criminal Procedure (1973)	● Bharatiya Nagarik Suraksha Sanhita 2023
● Indian Evidence Act (1872)	● Bharatiya Sakshya Adhinyam 2023

How it will be done?

- To facilitate this, the **Bureau of Police Research & Development (BPR&D)**, a key research and training body under the Ministry of Home Affairs (MHA), has devised comprehensive **training modules for trainers** and various other programs tailored to different levels of police and prison personnel.

- These resources are now available on the **Integrated Government Online Training (iGOT) portal for easy access**. Furthermore, BPR&D has shared these training modules with all States and Union Territories, urging them to conduct training sessions in their respective Police Training Institutes.

- The MHA **encourages active participation from Heads of police forces and prison departments** in organizing intensive training sessions for all personnel, ensuring no one is left behind.

PEPPER IT WITH: NIC, Bharatiya Nyaya Sanhita 2023, Bharatiya Nagarik Suraksha Sanhita 2023

- Additionally, the **National Informatics Centre (NIC) is conducting online training sessions** focusing on the technical aspects of implementing the new criminal laws.

Definition of Police:

- The police are an important organ of the State's justice system.
- The term **'police'** refers primarily to agents of the State whose function is the maintenance of law and order, especially the enforcement of the regular criminal Code.
- **"Police" and "Public order" are State subjects under the Seventh Schedule to the Constitution of India.**

BPRD:

- The Government of India in **1970 formally established the Bureau of Police Research and Development (BPR&D), under the Ministry of Home Affairs** giving a new orientation to the **existing Police Research and Advisory Council (1966)** with the primary objective of modernization of the police force.
- The Bureau actively supports states in the modernization efforts of both **State Police Forces and Correctional Administration**.
- Initially established with two divisions, Research, Statistics & Publication, and Development, the Bureau expanded its scope on the advice of the **Gore Committee by establishing a Training Division in 1973**.
- More recently, the BPR&D has been tasked with anchoring and coordinating the initiatives of the **National Police Mission**.

Key initiatives by BPRD:

- **VIMARSH 2023:** Vimarsh 2023 is jointly conducted by the Bureau of Police Research & Development (BPR&D), the Department of Telecom (DoT), and the Telecom Centre of Excellence (TCOE) to find indigenous solutions for some of the pressing issues of Cyber Security and Cyber Crime prevention, detection and investigation. BPR&D has been nominated as the Centre of Excellence for the purpose of 5G application use cases within MHA.
- **KAVACH-2023:** KAVACH 2023 is the National Level Cyber Security Hackathon, jointly conducted by MoE's Innovation Cell, AICTE, BPR&D, and I4C, MHA to identify innovative ideas and technological solutions for

addressing the cyber security and cybercrime challenges confronting Law Enforcement Agencies and common citizens.

- **Manthan (Intellithon):** India's first-of-its-kind hackathon focused on National Security and Surveillance and enabling the use of new technologies, including Artificial Intelligence and deep learning by our Law Enforcement Agencies, aims at Atma Nirbhar Bharat conducted with AICTE, launched in 2021 through a digital collaborative platform developed indigenously by Ministry of Education's Innovation Cell.
- **Smart India Hackathon-2020:** NCR&IC, BPR&D partnered with the AICTE, MHRD to conduct the hackathon, SIH-2020, which was organized from 1st to 3rd August 2020.

PRE-SHOTS

50 years of Pokhran-I

News Excerpt:

On May 18, 1974, at 8.05 AM IST, India achieved a historic milestone by successfully conducting its first nuclear test, codenamed "**Operation Smiling Buddha**," at the Pokhran Test Range in Rajasthan.

Key Points:

- **Motivations behind the Nuclear Test:**
 - The decision to pursue a nuclear test was driven by a **convergence of geopolitical and security imperatives**. India, facing existential threats from China and Pakistan, recognized the need for a robust deterrent to safeguard national security, especially in the **aftermath of the 1962 Sino-Indian War and the 1971 Indo-Pakistani War**.
 - Additionally, the global geopolitical landscape, marked by the nuclear arms race and **China's nuclear test in 1964**, underscored the urgency for India to develop its own nuclear capabilities.
 - Moreover, pursuing nuclear technology symbolized India's aspiration **for modernity and scientific advancement** on the global stage.
- **Execution of the Test:** On May 18, 1974, the nuclear device was detonated successfully at the Pokhran Test Range, marking India's entry into the nuclear age. Prime Minister Indira Gandhi emphasized the peaceful nature of the explosion, positioning it as a necessary step for national security and scientific progress. Despite international condemnation and sanctions, the test garnered widespread approval within India, bolstering national pride and strategic capabilities.
- **International Reactions:** The test elicited varied reactions from the international community, with some countries acknowledging India's scientific achievement

while others expressed concern and imposed sanctions. The test disrupted the Non-Proliferation Treaty (NPT) regime and recalibrated regional security dynamics, prompting Pakistan to accelerate its own nuclear weapons program. Despite diplomatic fallout, the test was perceived as a bold assertion of national sovereignty within India.

- **Impact on India's Nuclear Policy:** Operation Smiling Buddha laid the foundation for India's nuclear policy and strategic doctrine, marking the country's emergence as a nuclear-armed state. It influenced India's stance on nuclear non-proliferation and disarmament while shaping its position in international forums. The legacy of the test was further solidified by the Pokhran-II tests in 1998, underlining India's commitment to strategic autonomy and responsible nuclear stewardship.
- **Scientific and Technological Achievements:** Operation Smiling Buddha's success showcased India's scientific and technological capabilities, providing a significant boost to the country's research and development efforts. The test contributed to advancements in nuclear energy, medical applications, and industrial uses of nuclear technology, highlighting the nuclear program's transformative impact.
- **Challenges and Ethical Considerations:** Despite its significance, Operation Smiling Buddha raised ethical and moral considerations regarding pursuing nuclear weapons. The test underscored the inherent risks and ethical implications of nuclear testing, emphasizing the need for responsible stewardship and restraint in nuclear affairs. India's no-first-use policy reflects a commitment to ethical nuclear practices and the prevention of nuclear conflict.

Kamikaze Drones

News Excerpt:

India has developed its own Kamikaze Drones:

More About the News:

'Suicide' or 'kamikaze' drones, also referred to as **loitering aerial munitions (LAM)**, are becoming increasingly significant in ongoing conflicts such as the Russia-Ukraine war and the Israel-Hamas conflict.

About Kamikaze Drones:

- Kamikaze drones, also known as **Switchblade drones**, are compact unmanned aircraft armed with explosives, designed to be flown directly at a target, where **they detonate upon impact**. Unlike traditional drones, **kamikaze drones are single-use weapons**.
- **Precision Targeting and Flexibility:** These weapons boast the unique capability to **linger over a target area for extended durations until the target is identified**, offering precision-targeting capabilities and the

flexibility to alter targets mid-flight or abort missions if necessary.

- **Operational Capabilities:** Kamikaze drones can be **deployed for many miles behind the front line**, waiting in the airspace for targets to emerge. Equipped with cameras, they **provide real-time video downlinks for operators to identify and engage targets**. The Switchblade drones have the **ability to adjust the blast radius**, allowing operators to minimize collateral damage and even abort missions seconds before impact.
- **Indigenous Innovation:** In collaboration with the **Defence Research Development Organisation (DRDO), Kadet Defence Systems (P)**, has pioneered India's first Loitering Aerial Munitions (LAM) for the armed forces.
- **Versatile Design and Adaptability:** Various versions of the **domestically designed and manufactured** LAM systems are under development to **meet diverse operational requirements**, with **weights ranging from 15 kg to 120 kg** and **explosives payloads from 2 to 40 kg**.
- **Launch Flexibility and Future Plans:** These systems can be launched from the shoulder or vehicles, with plans for an air-launched version in development. The **LAM's range extends from 150 km to 300 km with a rocket-assisted canister launch** and a **hybrid vertical take-off and landing (VTOL) system**.
- **Cutting-Edge Technological Features:** The LAM systems integrate a range of cutting-edge technologies, including **Canister Aerial Loitering Munition (CALM)**, Combat UAVs with standoff capabilities for munition release, Tactical VTOL UAVs, and systems capable of swarming and manned-unmanned teaming operations.
- **Rapid Production and Market Potential:** With a contract secured for over 50 systems in 2024, Kadet Defence Systems (P) aims to scale up production to deliver an estimated 5,000 units within the next 2-3 years. The market size for LAMs in India is estimated to be around Rs 15,000 crore.

History of Kamikaze:

- The term "kamikaze" translates to "**divine wind**," originally **inspired by a typhoon that fortuitously dispersed a Mongol invasion fleet** threatening Japan in 1281.
- Kamikaze refers to **Japanese pilots during World War II who conducted intentional suicidal crashes into enemy targets, primarily ships**.
- Kamikaze planes were conventional fighters or light bombers, often loaded with bombs and extra fuel tanks before being flown deliberately to crash into their targets.

- This term also applies to the aircraft utilized in such attacks. The practice was **most prevalent from the Battle of Leyte Gulf in October 1944 until the war's end**.
- Kamikaze attacks resulted in the **sinking of 34 ships** and damage to hundreds of others during the war. At Okinawa, they inflicted the greatest losses ever suffered by the U.S. Navy in a single battle, resulting in the **deaths of nearly 5,000 men**.

India is one of the key geographies affected by phishing attacks

News Excerpt:

According to a new study by Verizon Business, India is one of the key countries affected by **phishing attacks**, where employees often click on malicious links or attachments that appear to be from legitimate sources, often leading to severe financial losses.

More about the study:

- There was a silver lining as far as India was concerned, as reporting practices have improved, with 20% of users now identifying and reporting phishing during simulation tests.
- The enterprises in India can significantly reduce human error in **cybersecurity** by adopting a **multi-pronged approach**.
- The 2024 **Data Breach Investigations Report** states that espionage attacks dominate the cyber security landscape in the **Asia-Pacific region**, including India.
- On average, it takes organizations surveyed in India, around 55 days on average to patch 50% of their critical vulnerabilities.
- **Non-malicious** human elements were involved in more than two-thirds of the breaches reported in India.

What is Phishing?

Phishing is a cybercrime in which a target or targets are contacted by **email, telephone or text message** by someone posing as a legitimate institution to lure individuals into providing sensitive data such as personally identifiable information, banking and credit card details, and passwords.

DRDO successfully tests missile-assisted torpedo release system

News Excerpt:

The Defence Research and Development Organisation (DRDO) successfully conducted the flight test of the **Supersonic Missile Assisted Release of Torpedo (SMART)** from **Dr APJ Abdul Kalam Island**, situated off the coast of Odisha.

About Supersonic Missile Assisted Release of Torpedo (SMART)

- It is a next-generation missile-based **lightweight torpedo** delivery system designed and developed by the DRDO and is aimed at boosting the Navy's anti-submarine warfare capabilities.
- The SMART missile system comprises a **long-range supersonic missile carrier** that can travel up to **643 km** and has a lightweight torpedo with a range of 20 km and a 50 kg high explosive warhead as the payload.

Features:

- The missile is a **canister-based missile system** that incorporates several advanced subsystems, including:
 - The **two-stage solid propulsion system**,
 - Electromechanical actuators,
 - Precision inertial navigation,
 - A datalink for mid-course updates
 - Terminal homing of the torpedo.
- SMART utilizes an advanced lightweight torpedo payload deployed using a **parachute-based release mechanism**.
- The missile was launched from a **ground mobile launcher**.
- The development of SMART is **aimed** at countering the increased deployment of submarines by the Chinese Navy in the **Indian Ocean region** and enhancing India's **self-reliance** in defence capabilities.



What is a Torpedo?

Torpedoes are cigar-shaped **projectiles** that are used to attack other submarines or boats.

The word torpedo comes from the name of a kind of **electric ray that numbs you with its sting** (Torpediniformes).

Torpedoes can also be used to attack a target on land. When a submarine fires torpedoes, they're torpedoing the target. Torpedoes explode upon impact, and they're very powerful weapons.

India was 4th largest military spender globally in 2023

News Excerpt:

A new report by the **Stockholm International Peace Research Institute (SIPRI)** reveals that India has become the **world's fourth-largest military spender** in 2023.

Key points related to the rise in India's military spending in 2023:

- India's military expenditure reached **\$83.6 billion in 2023**, reflecting a **4.2% increase from 2022**.
- India's rise in military spending reflects its growing focus on **modernization and self-reliance** on defence equipment.
 - This was a result of **growing personnel and operations costs** that comprised about 80 per cent of the total military budget.
 - Border tensions with neighbouring countries like **China and Pakistan** have likely influenced the increase in **India's military spending**.
- According to the report, 75% of India's military spending in 2023 was directed towards **domestically produced equipment**, marking the highest level ever and up from **68% in the previous year**.
- India's shift towards **domestic procurement of military equipment** reflects its aim of achieving **self-reliance** in arms development and production.

Rise in global military spending 2023

- As per the report the **five biggest spenders in 2023** – the **United States, China, Russia, India and Saudi Arabia** together accounted for **61 percent of world military spending**.
- This growth aligns with a broader trend of rising **global military spending**, which surged by **7% to a staggering \$2.43 trillion**.
- The report cites **several factors contributing** to the surge in global military spending.
 - The ongoing war in Ukraine has undoubtedly played a major role, with countries bolstering their defence capabilities in response to the conflict.
 - **Ukraine** became the **eighth largest military spender in 2023**, increasing its spending by 51%.
 - Additionally, escalating geopolitical tensions in **Asia and the Middle East** are also driving up military expenditures.
- **World military expenditure** increased for the **ninth consecutive year in 2023**, reaching a total of **USD 2443 billion**.
 - **The 6.8 per cent increase in 2023** was the steepest year-on-year rise **since 2009** and pushed global spending to the **highest level SIPRI has ever recorded**.
- In 2023, the global military burden, which is military spending as a percentage of global **GDP**, rose to **2.3%**.

- The average military expenditure as a **share of government expenditure increased** by **0.4 percentage points to 6.9% in 2023**.
 - Additionally, the **world military spending per person** reached its highest level since 1990 at **USD 306**.

Stockholm International Peace Research Institute (SIPRI):

- SIPRI was founded in **1966** and is a **Stockholm-based think tank**.
- It is an international institute **focused on conflict, armaments, arms control, and disarmament research**.
- SIPRI supplies **data, analysis, and recommendations** derived from open sources to policymakers, researchers, media, and the general public.
- SIPRI was founded through a resolution by the **Swedish Parliament**, and a significant portion of its funding was obtained through an **annual grant** from the Swedish Government.

19th Interpol Conference

News Excerpt:

At the recently concluded **19th Interpol Conference of Heads of National Central Bureaux in Lyon, France**, the Indian delegation said that online radicalization continues to pose a significant challenge to global security.

About 19th Interpol Conference:

- The event was attended by the **national central bureaux of 136 countries**, represented by senior police officials.
- The **aim of the event** was to strengthen the operational cooperation among the NCBs of Interpol to combat transnational crimes.
- The **National Central Bureau (NCB)** in each country is the nodal organization responsible for coordination with Interpol. In India, **the CBI is the designated NCB**.

India's Stand:

- The CBI Director highlighted the challenges posed by the nexus of organized crime, terrorism, and extremist ideologies.
 - He condemned **all forms of terrorism**, conveying there can be no distinction between "**good terrorism**" and "**bad terrorism**".
 - He also highlighted **India's efforts** to tackle crimes and detailed the role of institutions set by the government.

- The **three-member Indian delegation**, during its discussions with several countries, including **the United States, the United Kingdom, and Saudi Arabia**, emphasized the need for **swift information sharing through Interpol**, expediting mutual legal assistance referrals, and extradition requests in the fight against child sexual exploitation.

Interpol (International Criminal Police Organization)

- It is an intergovernmental organization.
- It has **196 member countries**.
- It helps police in all of these countries to work together to make the world a safer place.
- In each country, an **INTERPOL National Central Bureau (NCB)** provides the central point of contact for the General Secretariat and other NCBs.
- **An NCB** is run by national police officials and usually sits in the government ministry responsible for policing.
- The **General Assembly** is the governing body, and it brings all countries together once a year to make decisions.



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EXERCISES IN NEWS

Balikatan Exercise

News Excerpt:

The **United States** and the **Philippines** to participate in **annual Balikatan military exercise** at a time of growing tensions around **Taiwan** and the **South China Sea**.

More about Balikatan-2024:

- Balikatan is an **annual military exercise** between **US** and **Philippines** armed forces.
- This year's staging of Balikatan, the allies' **largest annual military drill**, will include a **joint sail in the disputed South China Sea** outside the **Philippines' territorial waters**.
 - It will be the first time that the Balikatan drills have extended beyond **12 nautical miles** off the Philippine coast and into **waters claimed by China**.
 - This year's war games are taking place at a time of increasingly **strained relations between China** and the **Philippines** as President Ferdinand Marcos Jr. (of Philippines) grew more assertive over territorial rights and bolstered ties with the US and its allies.
- The **French Navy**, a **first-time Balikatan participant**, and the **Australian Navy** will also join the manoeuvres.

Exercise Shakti

News Excerpt:

The 7th edition of the joint military exercise "Shakti" **between India and France** was held at the Umroi-based joint training node in Meghalaya.

About the exercise:

- Shakti is a **biennial training program** that **alternates between India and France**.
 - The **sixth edition** of Ex Shakti was conducted in November 2021 at the **Military School of Draguignan, France**.
- Exercise Shakti is conducted under **Chapter VII of the United Nations Mandate**.
 - It is strategically designed to elevate the capabilities of participating troops in conducting **multi-domain operations**, particularly in **sub-conventional scenarios**.
- This **fortnight-long exercise** will see 90 personnel from the **Indian Army's Rajput Regiment** and an equivalent number from **France's 13th Foreign Legion Half-Brigade (13th DBLE)** converge.

Indian Navy conducts mega exercise along east coast "Poorvi Leher"

News Excerpt:

The **Indian Navy** has carried out an extensive exercise "**Poorvi Leher**" along the **East Coast** as part of efforts to check its preparedness to meet any **maritime security challenges**.

More About Poorvi Leher Exercise:

- "The Indian Navy conducted **Exercise Poorvi Lehar** on the East Coast under the Operational Control of the **Flag Officer Commanding-in-Chief, Eastern Naval Command**.
- The exercise **Poorvi Lehar** involved **ships, submarines, aircraft, and special naval forces**.
- The exercise **aimed to validate procedures** for assessing the Indian Navy's preparedness to meet maritime security challenges in the region.
- The exercise was conducted in **multiple phases**,
 - Including **combat training in a realistic scenario** during the tactical phase and successful conduct of **various firings during the weapon phase** to reaffirm the Indian Navy's capability to deliver ordnance on target.
- With **aircraft** operating from diverse locations, a near-continuous maritime domain awareness was maintained throughout the Area of operations.
- In addition to the participation of assets from **Eastern Naval Command**, the exercise also witnessed the participation of assets from the IAF, **Andaman and Nicobar Command**, and **Coast Guard**, indicating a very **high degree of interoperability among the Services**.
- The exercise offered **valuable lessons to participating forces** operating under realistic conditions, thereby **enhancing their readiness to respond effectively to maritime challenges in the region**.

GEOGRAPHY

Geomagnetic Storm & Auroras

News Excerpt:

An exceptionally powerful geomagnetic storm struck Earth, and dazzling displays of auroras illuminated the night sky in several countries.

What is a geomagnetic storm?

- It is a **disturbance in the Earth's magnetosphere** caused by solar wind activity.
- On a scale from **G1 to G5**, **G5** is the strongest level of a **geomagnetic storm**, thus classified as "**extreme**" storm.
- The most recent **G4 (severe) storm** occurred on March 23, 2024, while the **Halloween Storms** in October 2003 marked the last **G5 (extreme) event**.

What are the Northern Lights?

- A severe solar storm occurs due to a **complex interplay of processes on the Sun's surface**. As nuclear reactions occur within the Sun, it regularly releases material into space through **solar flares and coronal mass ejections (CMEs)**.
- These charged particles from its corona create the **solar wind**. When this wind interacts with Earth's **ionosphere**, the aurora is born.
- In the **Northern Hemisphere**, it's called the **Northern Lights (aurora borealis)**; in the **Southern Hemisphere**, it's known as the **Southern Lights (aurora australis)**.
- Our planet's magnetic field directs these charged particles towards Earth's poles, causing the atmosphere to fluoresce.



Aurora Composition

- The vibrant colours of the auroras are **dictated by the chemical composition of Earth's atmosphere**. Each type of atom or molecule emits its own unique set of colours when absorbing and radiating energy. For instance, **nitrogen molecules produce red hues, while oxygen molecules create green ones**.
- Auroras provide **valuable insights into Earth's upper atmosphere, including details about its density, composition, flow speeds, and electrical currents**.
- The intensity and frequency of auroras are influenced by the solar cycle, which spans roughly 11 years. During periods of **heightened solar activity, such as solar maximum, auroras are brighter and more frequent**. We are **approaching the solar maximum**, which is predicted to peak between early 2024 and late 2025.
- Auroras are not unique to Earth; **they can be found on other planets with magnetic fields and atmospheres**, although they vary from Earth's auroras.

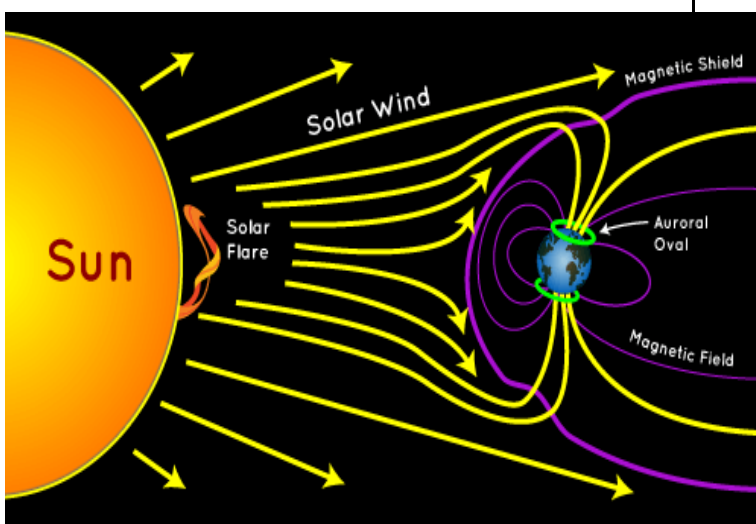
Impact of Solar Outburst:

When a solar outburst reaches Earth, it can significantly impact our **planet's space environment and technological infrastructure**.

- This interaction can lead to **disturbances in the ionosphere**, which can affect **communication and navigation systems** that rely on **radio waves**.
- **Satellites** orbiting close to Earth are particularly vulnerable to the effects of solar storms, as the charged particles can interfere with **their electronics and communications systems**.
- Additionally, the influx of charged particles **can induce electrical currents in power grids**, potentially **leading to power outages** and disruptions in electrical systems on the ground.

Unique Aurora Hybrid STEVE:

- In addition to traditional auroras, there's **another atmospheric phenomenon called STEVE ("Strong Thermal Emission Velocity Enhancement")**.
 - **STEVE appears as a distinct purple arc with a green picket-fence structure**, visible from lower latitudes than traditional auroras.
 - It's a unique type of aurora hybrid driven by **the heating of charged particles and electron interactions in the upper atmosphere**.



Blood minerals

News Excerpt:

The **Democratic Republic of Congo (DRC)** has written to Apple's CEO demanding answers on the sourcing of minerals used to manufacture the company's products.

About the News:

- The letter **alleges that Apple is procuring minerals smuggled from the DRC into Rwanda**, where their origins are supposedly obscured, to integrate them into the global technology supply chain.
- The eastern region of the DRC, rich in minerals such as **tantalum, tin, tungsten, and gold (referred to collectively as 3T or 3TG)**, has long been plagued by violence. These minerals are pivotal components in electronics.
- The **Dodd-Frank Act of 2010** mandates that **US companies disclose their use of conflict minerals** and ensure their supply chains do not contribute to human rights abuses in the DRC and neighbouring countries.

Conflict/Blood minerals: These are minerals sourced from regions where armed conflict and human rights abuses are prevalent. These minerals often fund the local armed groups and perpetuate violence, displacement of communities, and exploitation of workers.

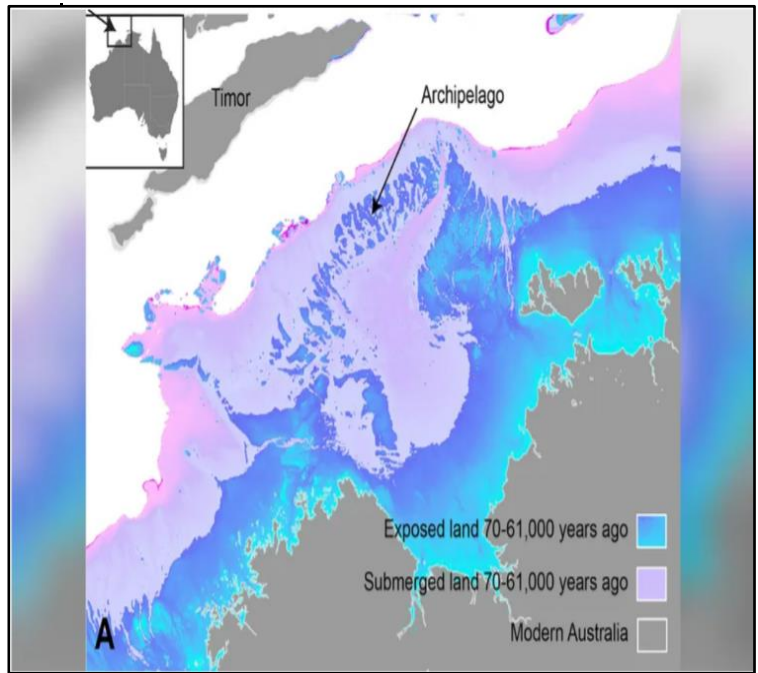
Sahul: The Atlantis-like supercontinent

News Excerpt:

Archaeologists recently discovered an Atlantis-like supercontinent named Sahul, which was visibly above the Earth's surface around 7,000 decades ago.

What is Sahul?

- It can be termed as a **supercontinent**, which stood exposed on the Earth's surface during the **Pleistocene epoch** when Earth was in the midst of the **last ice age**.
- Since the ice age led to **glaciation of water levels** on the planet, it exposed parts of land like Sahul, which **connected to currently known Australia to Papua New Guinea in the north and Tasmania in the South**, according to The Sun's report.
- The undersea territory was so large it could have functioned **as a stepping stone for migration from modern-day Indonesia to Australia**.
- It reveals how **Australia's first inhabitants migrated** across Sahul before it became modern-day Australia.
- These archaeological locations help to depict **when people migrated quickly around the globe from one part of the land to another**, under unfamiliar



conditions, in search of food and shelter during adverse times.

How did the researchers discover Sahul?

- Based on the available data and the **reverse engineering of geological and environmental conditions**, researchers were able to create a simulation of the landscape of Sahul between 75,000 and 35,000 years ago.
- The simulation also **incorporated possible migration routes from two locations in Southeast Asia** — West Papua and the Timor Sea Shelf — and archaeological sites spread across the modern-day landscape.
- Finally, the simulation incorporated estimates from **"Lévy walk foraging patterns"** — a type of movement **commonly used by hunter-gatherers to find food in unfamiliar landscapes**—which also helped to estimate the pace of migration.
- The new landscape evolution model allows for a **more realistic description of the terrains and environments inhabited** by the first hunter-gatherer communities as they traversed Sahul.
- The calculations showed that these intrepid humans likely traversed the landscape at a pace of about 1.15 kilometres per year, which the researchers say is **relatively swift**.

This study is the first to show the **impact of landscape changes on the initial migration on Sahul**, providing a new perspective on its archaeology. If such an approach is used in other regions, humans could also improve the understanding of humanity's **extraordinary journey out of Africa**.

First nation to lose all of its glaciers

News Excerpt:

Venezuela may be the first nation in modern history to lose all its glaciers after climate scientists downgraded its last one to an **ice field**.

More about the News:

- The **International Cryosphere Climate Initiative (ICCI)** said the **La Corona glacier** was now too small to be considered a glacier.



- In 1910, Venezuela was home to **six glaciers covering 1,000 square kilometres**.
 - By 2011, five of Venezuela's glaciers had vanished, leaving only the **Humboldt glacier**, also known as **La Corona**, struggling for survival in the **Sierra Nevada National Park**.
 - But now, this frozen landmark has diminished so drastically that it's been **redefined as an ice field**.
- During its peak, La Corona sprawled over **4.5 square kilometres (1.7 square miles)**, but now it extends to less than **0.02 square kilometres (2 hectares)**.
 - It is far below the **minimum size requirement for glacier classification**, which stands at 0.1 square kilometres (10 hectares).
- Over the **past five years**, research has revealed a staggering **98 percent decline** in glacial coverage in Venezuela from **1953 to 2019**.

International Cryosphere Climate Initiative (ICCI):

- ICCI was formed in **2009, immediately after COP-15 in Copenhagen**.
- It is a network of senior policy experts and researchers working with governments and organizations to create, shape, and implement initiatives **to preserve as much of the Earth's cryosphere as possible**.
- ICCI programs target **the unique climate dynamics at work in the cryosphere**, lending increased urgency to global climate efforts aimed at CO2 and other greenhouse gases by communicating the unexpected rapidity and global implications of cryosphere warming.

Catatumbo Lightning

News Excerpt:

Catatumbo lightning is a mesmerizing **natural phenomenon** that occurs over the **Catatumbo River in Venezuela**.

About Catatumbo Lightning:



- The specific lightning phenomenon associated with **Lake Maracaibo** is known as **Catatumbo Lightning**.
- It is named after the **Catatumbo River**, which feeds into the lake.
- A convergence of **several factors** gives rise to the unique conditions required for Catatumbo lightning.
 - Warm, moist air from the Caribbean Sea is pushed towards the **Andes mountains**, where it collides with cooler air descending from the peaks.
 - This collision creates a perfect storm of sorts as the **warmer air** is forced to rise rapidly by the shape of the local landscape.
 - As it does, it cools and condenses, forming **towering cumulonimbus clouds**.
 - The combination of strong winds and temperature differentials generates **electrical charges** within these clouds.
 - When the electrical potential within the clouds becomes too great, it discharges in the form of **lightning**.
- Catatumbo lightning is distinguished by its **frequency and duration**:
 - The strikes occur for up to **160 nights in a year**, with an average of **28 lightning strikes per minute at its peak**.
 - Due to this constant flow of current, the area has earned the title of **the lightning capital of the world**.

Lake Maracaibo

- Lake Maracaibo in **Venezuela** is the largest natural lake in **Latin America or South America**.
- It is the largest inlet of the Caribbean Sea in the **Maracaibo Basin of northwestern Venezuela**.
- It is termed an inlet because the tide brings in much of the water it receives from the **Atlantic Ocean**.
- Many rivers flow into Lake Maracaibo, the most important being the **Catatumbo River**.
- It is one of the **world's richest** and most centrally located **petroleum-producing regions**.
- Its **proximity to the Andes Mountains and the Caribbean Sea** creates a unique geographical setup that plays a crucial role in the frequency of lightning in the region.



Eta Aquariid meteor shower

News Excerpt:

The Eta Aquariid meteor shower, active since April 15, peaked on May 5 and 6, 2024.

About the Eta Aquariid meteor shower:

- The Eta Aquariid meteor shower is formed when the Earth passes through the orbital plane of the famous **Halley's Comet**, which takes about **76 years to orbit the Sun once**.
- While it was observed as early as 240 BCE, it was only in 1705 AD that astronomer Edmond Halley realized that the periodic appearances were re-appearances of the same comet. Last seen in 1986, **Halley's comet is due to enter the inner solar system again in 2061**.
- Like Eta Aquariids, the **Orionids meteor shower** is caused by Halley's Comet and appears every October.

Why are Eta Aquariids unique?

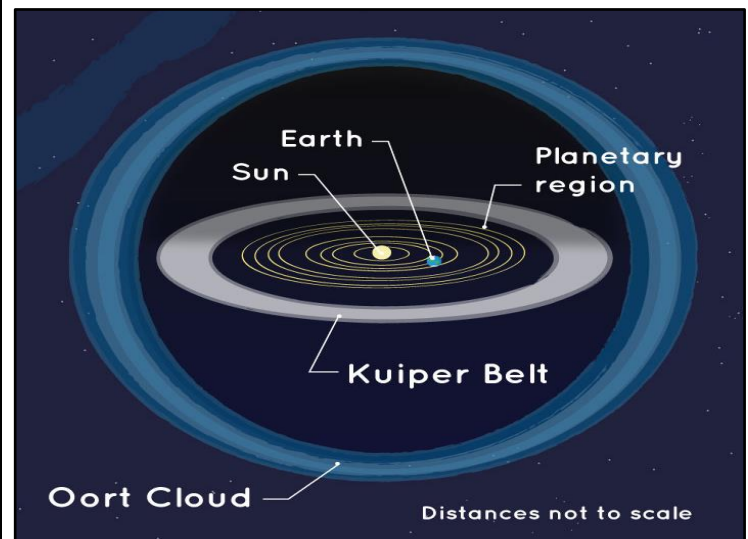
- The Eta Aquariid meteor shower is known for its rapid speed. This makes for long, glowing tails that can last several minutes.
- According to NASA, about **30 to 40 Eta Aquariid meteors can be seen per hour** during the meteor

shower's peak if observed from the Southern Hemisphere.

- This is due to the location of the **"radiant"** — the position in the sky where the meteor shower seems to come from.
- In the South, however, they can be seen higher up in the sky and are hence more visible.

What are comets?

- Comets are **composed of dust, rock, and ice** and orbit around the Sun in highly elliptical orbits, which can sometimes take hundreds of thousands of years to complete.
- According to NASA, **3,910 comets are currently known**, although billions more are theorized to be orbiting the Sun beyond Neptune in the **Kuiper Belt** and even more distant **Oort cloud**.
- **Comets come in different sizes**, although most are roughly 10 km wide.
 - However, as they come closer to the Sun, comets **"heat up and spew gases and dust into a glowing head that can be larger than a planet"**, according to NASA's website.
 - This material also forms a tail that stretches millions of miles.



How exactly are meteor showers related to comets?

- Meteors are simply grains of dust or rock that burn up as they enter the Earth's atmosphere. This burning also creates a brief tail.
- Since most meteors are tiny (**the size of a grain of sand**), they completely burn up in Earth's atmosphere.
 - However, occasionally, a large enough meteor passes through and hits the ground (**at which time it is called a meteorite**), often causing significant damage.
- **A meteor shower can be observed when Earth passes through the clouds of dust left behind in a comet's orbital plane.** The sky lights up with small and large

meteor tails as the debris left behind by the comet interacts with Earth's atmosphere.

Critical Minerals Summit

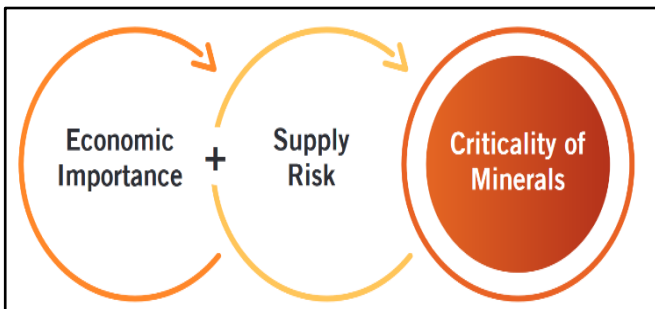
News Excerpt:

The Critical Minerals Summit concluded in **New Delhi** on a note of **strategic collaboration** and **policy insights**, marking significant strides towards **India's critical minerals objectives**.

Major takeaways from the summit:

- During the summit, emphasis was placed on a **cluster-based approach** to **promote synergies in mineral extraction, refining, and end-use**, particularly in **low-carbon technologies**.
- The discussion underscored the importance of **regulatory certainty, financing frameworks, and ESG standards** in attracting investors.

What are critical minerals?



- Critical minerals are those minerals that are **essential for economic development and national security**.
- A mineral is labelled as **critical** when the **risk of supply shortage** and **associated economic impact** is **(relatively) higher** than the other raw materials.

Significance of critical minerals:

- Critical minerals are the **foundation on which modern technology is built**. From **solar panels to semiconductors and wind turbines** to **advanced batteries for storage and transportation**, the world needs critical minerals to build these products.
- Simply put, there is **no energy transition without critical minerals**, so their supply chain resilience has become an **increasing priority for major economies**.
- India's future **economic prosperity** will depend on how well we use our vast energy and mineral resources to play to our strengths and how well we adapt to the global market shift towards zero emissions.

Factors impacting the criticality of these minerals:

- **The Government has released a list of 30 critical minerals for India.**
- The **Ministry of Mines** has increased its focus on exploring these minerals in the country through **the Geological Survey of India (GSI)** and other agencies.

Taam Ja': World's deepest blue hole

News Excerpt:

The discovery of the **world's deepest blue hole** in **Mexico's Chetumal Bay**, off the **southeast coast of the Yucatan Peninsula**, has captivated attention of geologists and marine biologists.

More about the discovery:

- The **Taam Ja' Blue Hole**, named after the **Mayan phrase for "deep water,"** was first **discovered in 2021**. However, it wasn't until recent measurements were taken that its true depth was revealed.
- This underwater sinkhole, known as the **Taam Ja' Blue Hole**, reaches at least **1,380 feet (420 metres)** below sea level, surpassing the previous record holder, the **Dragon Hole** in the **South China Sea**.

What is a Blue Hole?

- Blue holes are **water-filled vertical caverns** found in



coastal regions where the bedrock is made of **soluble material, such as limestone, marble, or gypsum**.

- They form when water on the **surface percolates through the rock, dissolving minerals and widening cracks**. Eventually, the rock collapses, creating a vertical cavern filled with water.
- Blue holes **typically contain tidally influenced water of fresh, marine, or mixed chemistry**.
- They **extend below sea level** for most of their depth and may provide access to submerged cave passages.

Significance of the discovery of Taam Ja' Blue Hole:

- The discovery of the Taam Jaa blue hole holds significance beyond its remarkable depth; it provides a glimpse into Earth's history by revealing **past climatic conditions** and **geological processes**.
- Eerie blue holes like Taam Ja' are **hubs of biodiversity**, hosting a wide array of plant and marine species, such as **corals, sea turtles, and sharks**.
- They are not only **helpful in research** but also offer crucial **insights into the ocean's health** and the **effects of human activities** on **underwater environments**.

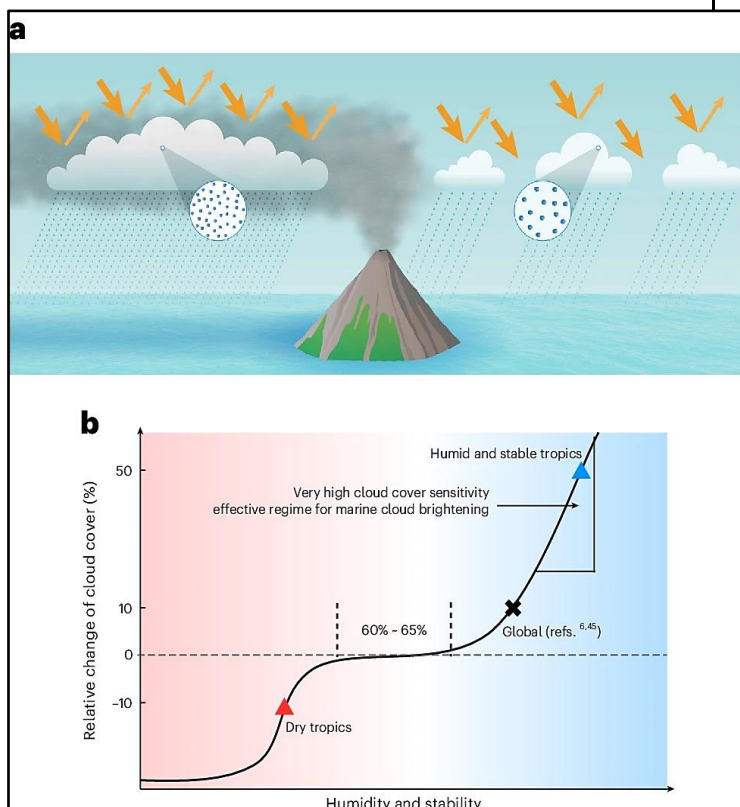
Marine Cloud Brightening

News Excerpt:

Recently, researchers combined **machine learning** and **long-term satellite observations** to **quantify aerosol fingerprints on tropical marine clouds**, using degassing volcanic events in Hawaii as natural experiences.

- They found that **cloud cover increased relatively by 50% in a humid and stable atmosphere**, leading to **strong cooling radiative forcing**.

About Marine Cloud Brightening (MCB):



- The **basic principle** behind the idea is **to seed marine stratocumulus clouds with seawater aerosol** generated at or near the ocean surface.
- These particles would have sufficiently **large salt mass to ensure their subsequent growth within the clouds** without being so large as to encourage precipitation formation and would be sufficiently numerous to

enhance the cloud droplet number concentration to values substantially higher than the natural ones, thereby **enhancing the cloud albedo**.

- Enhancing the droplet concentration affects the **cloud's macrophysical properties**, such as **cloud cover, longevity, liquid water content and thickness**, as a consequence of inhibiting precipitation formation and the timescale for the evaporation and **sedimentation of cloud droplets**.

Implications:

- The observational **evidence of strong aerosol cooling via interactions with tropical marine clouds** implies that the **high end of climate sensitivity is possible**.
- The findings indicate that **MCB could be more effective for climate intervention than global climate models** have suggested because cloud cover responses are strong and constitute 60–90% of aerosol cooling, which has not been effectively accounted for in global climate models.
 - The best practice to conduct MCB would be in humid and stable conditions.
- However, **MCB should be considered as a pain killer**, as it does **not address the cause of warming from anthropogenic greenhouse gases**.

Furthermore, researchers are far from a complete understanding of the risks or side effects of MCB, so further research is needed.

DISASTER MANAGEMENT

Expanding Glacial Lakes in the Indian Himalayas

News Excerpt:

The **Indian Space Research Organization's (ISRO)** long-term satellite imagery covering the catchments of **Indian Himalayan River basins** from **1984 to 2023** has shown **significant changes in glacial lakes**.

About the news:

- The **Himalayan Mountains**, often referred to as the **Third Pole** because of their extensive glaciers and snow cover, are highly sensitive to changes in the global climate.
- Glaciers across the globe have been experiencing **unprecedented rates of retreat and thinning** since the onset of the **Industrial Revolution in the eighteenth century**.
- This retreat leads to the formation of new lakes and the enlargement of existing ones in the Himalayan region.
 - Glacial lakes play a **crucial role as freshwater sources** for rivers in the **Himalayan region**.
 - However, they also pose significant risks, such as **Glacial Lake Outburst Floods (GLOFs)**, which can

have devastating consequences for communities downstream.

- **GLOFs** occur when glacial lakes release **large volumes of meltwater** due to the **failure of natural dams**, such as those made of **moraine or ice**, resulting in sudden and severe flooding downstream.
- Monitoring and studying the occurrence and **expansion of glacial lakes in the Himalayan region** is challenging due to **inaccessible and rugged terrain**.
- **Satellite remote sensing technology** proves to be an excellent tool for inventory and monitoring due to its wide coverage and revisit capability.
- Satellite data archives spanning the past 3 to 4 decades provide valuable insights into changes occurring in glacial lakes in the Indian Himalayan region.
- Of the 2,431 lakes larger than 10 hectares identified during 2016-17, 676 glacial lakes have notably expanded since 1984.
- Among **the expanding glacial lakes**, 130 are situated within India, with 65, 7, and 58 lakes located in the **Indus, Ganga, and Brahmaputra River** basins, respectively.
 - **601 lakes (89%)** have expanded **more than twice**.
- **Elevation-based analysis reveals that**
 - 314 lakes are located in the 4,000 to 5,000 m range, and 296 lakes are above 5,000 m elevation.
- The glacial lakes are categorized based on their formation process into **four broad categories**,
 - Moraine-dammed (water dammed by moraine).
 - Ice-dammed (water dammed by ice).

- Erosion (water dammed in depressions formed by erosion).
- Other glacial lakes.
- Among the **676 expanding lakes**, the majority of them are **Moraine-dammed (307) followed by Erosion (265), other (96), and Ice-dammed (8) glacial lakes, respectively**.
- Long-term changes in the **Ghepang Ghat glacial lake** (Indus River Basin) at an elevation of 4,068 m in Himachal Pradesh,
 - India shows a **178% increase in size** from 36.49 to 101.30 hectares between 1989 and 2022. The rate of increase is about **1.96 hectares per year**.

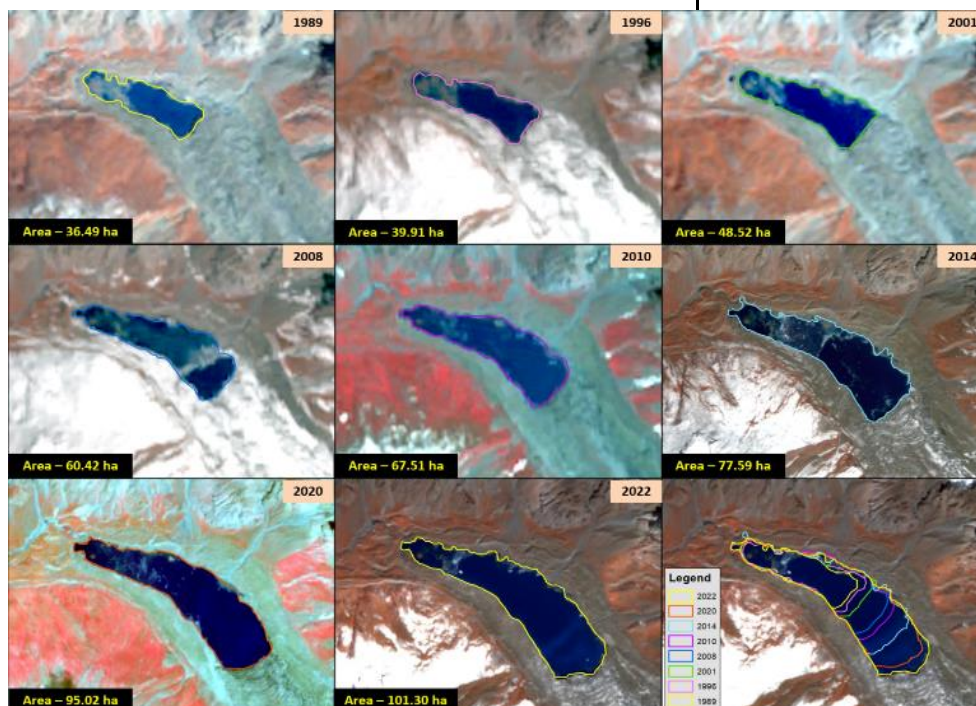
Asia worst hit by disasters in 2023: WMO report

News Excerpt:

The **World Meteorological Organization's 'State of the Climate in Asia 2023'** report notes that **Asia has warmed faster than the global average**, and the **warming trend has nearly doubled since the 1961-1990 period**.

Key data in the report:

- In **2023**, there were **79 events associated with hydrometeorological hazards, affecting more than nine million people** and directly **killing over 2,000 across Asia**.
 - **Over 80 per cent** of the reported **hydrometeorological hazards in Asia** were **flood and storm events**.



- **Over 60 per cent of the 2,000 deaths** due to disasters were **associated with flooding**, and over **15 per cent with storms**.

- **Only two disaster events** were reported in the region in 2023 compared to 2022.

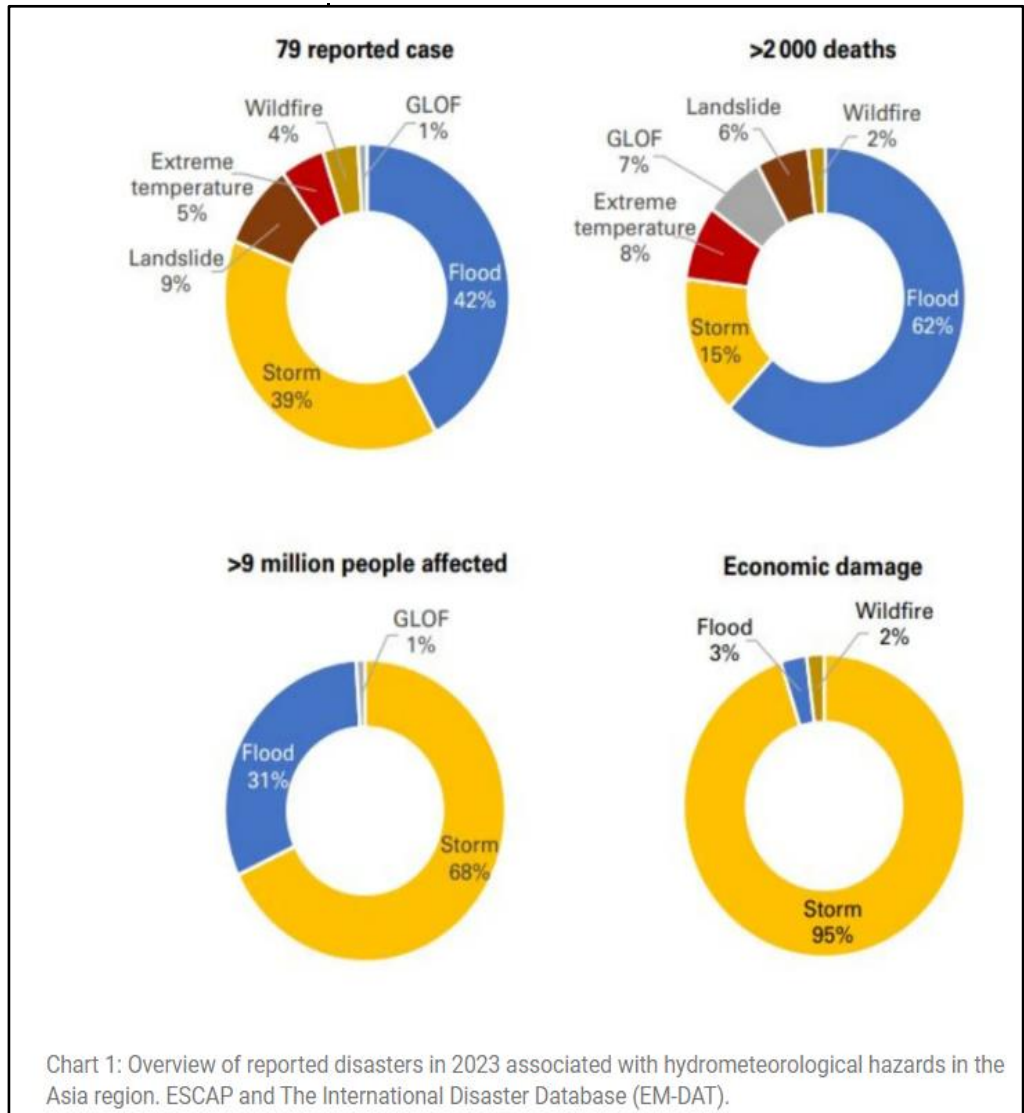
- However, the number of people impacted in 2023 was lower, as the 2022 Pakistan floods alone affected over 30 million people.

- In India, the impacts of extreme weather events were felt strongly as the country experienced severe heatwaves, rainfall-induced floods, glacial lake outbursts, and tropical cyclones.

- The report emphasized that the

accelerating rate of key climate change indicators such as surface temperatures, glacier retreat, and sea level rise will have major consequences for Asia, its economy, and its ecosystems.

- The report noted that severe heat waves in April and June 2023 resulted in about 110 deaths from heatstroke.
 - **Temperatures** were in the **42-43 degrees Celsius range** in the region during these heat-related deaths.
- Last year, a prolonged heatwave also affected much of Southeast Asia, extending westwards into **Bangladesh, eastern India, and parts of China.**
- **Flood events occurred in India during August 2023, and Himachal Pradesh and Uttarakhand recorded 25 deaths and extensive damage to infrastructure and agriculture.**
- **Triggered by heavy rainfall, the disaster compounded the effects of an earlier monsoon surge in June.**
 - The **Indian Government declared a state of emergency in the worst-affected areas**, initiating rescue and relief operations.
- The **Indian sub-continent experienced six tropical cyclones in 2023, which formed in the North Indian Ocean.**
 - **Four of the six cyclones—Mocha, Hamoon, Midhili, and Michaung—formed over the Bay of Bengal,** and two—**Biparjoy and Tej—formed over the Arabian Sea.**
 - The extremely severe cyclonic storm **Mocha made landfall along the Rakhine Coast in Myanmar** and killed 156 people.
- In **India, Michaung made landfall in south Andhra Pradesh** and claimed 22 lives.



- The report also noted the significant “**glacial lake outburst flood**” that occurred in **South Lhonak Lake in Sikkim last year.**
 - The incident had overtopped and **breached the Chungthang dam downstream on the Teesta River** and killed over 40 people, according to the Sikkim government.
- **This type of disaster is increasingly observed** because of **climate change-induced glacier retreat** and highlights the compounding and cascading risks faced by vulnerable mountain communities.
- Overall, the **report underscored the urgent need for concerted efforts to mitigate the impacts of climate change** and strengthen resilience to extreme weather events in Asia.

ART & CULTURE

Ganga Jatara

News Excerpt:

The centuries-old annual folk festival of Tirupati, Ganga Jatara, was celebrated.

About the festival:



- It is an annual folk festival observed in **southern India, including Karnataka, Rayalaseema, and Andhra Pradesh.**
 - The festival is **dedicated to Sri Thathaya Gunta Gangamma**, the Gramadevata (village goddess) of Tirupati, who is regarded as the younger sister of Lord Venkateswara.
 - It commences with **Chatimpu**, the official announcement, occurring at midnight on the second Tuesday of May, accompanied by the playing of musical instruments called **Dappu**.
- **Origin:** The festival originated in ancient times. It was established to commemorate the heroic feat of Gangamma, who vanquished a local chieftain known for his atrocities against women's **dignity**.

Rituals of the festival:

- During the festivities of Ganga Jatara, participants engage in unique rituals:
 - People wear **Vichitra Vesha Dharana** attire and symbolically **curse Goddess Gangamma** for seven consecutive days.
 - The culminating day, known as Ganga Jatara, witnesses a massive influx of devotees to Gangamma temples in Tirupati.
 - Devotees traditionally **offer Pongallu** (a dish made of rice and lentils) and sarees to Gangamma.
 - **Ragi Ambali**, a traditional porridge-like dish made from finger millet, is served to devotees visiting temples throughout the city.

- After midnight, a **clay idol of Gangamma (Viswaroopam)** is installed outside the temple, followed by the ceremonial smashing of the portico.
- Devotees eagerly collect the clay fragments, believed to possess **healing properties**, for preservation in their Puja rooms or consumption by mixing them with water.
- Fishermen in the Andhra region also celebrate Gangamma Jatara before commencing their fishing activities.

Ramcharitmanas, Panchatantra, and Sahridayaloka- Locana

News Excerpt:

India's **Ramayana, Panchtantra and Sahridayaloka Locana** have found their place in **UNESCO's Memory of the World Regional Register** for the 2024 cycle.



More about the News:

The **inclusion** underscores the global importance of preserving diverse narratives and artistic expressions that shape humanity's shared history.

- The **10th General Meeting of the Memory of the World Committee for Asia and the Pacific (MOWCAP)**, held in **Ulaanbaatar, Mongolia**, saw the inclusion of **20 items** from the Asia-Pacific region.
- Notable among these are the **illustrated manuscripts of Ramacharitmanas by Tulsidas** and the **15th-century manuscript of the Panchatantra fables.**
- **Hosted by Mongolia's Ministry of Culture, the Mongolian National Commission for UNESCO, and the UNESCO Regional Office in Bangkok**, this year's meeting celebrated "**human research, innovation, and imagination.**"
- In addition to literary treasures, the 2024 cycle recognized **the region's genealogical records, scientific discoveries, and technological innovations.**

- For instance, it acknowledged the sci-fi feminist author **Rokeya S Hossain from Bangladesh for her visionary narrative, "Sultana's Dream."** It highlighted joint research efforts by Australia and Tuvalu on coral reef formation.
- The meeting also emphasized the **importance of preserving regional literary traditions**, such as recognizing **Indigenous chants from the Philippines and the Panhcatantra Fables from India**, which have had a global influence.
- The **Indira Gandhi National Centre for the Arts (IGNCA) played a pivotal role** in securing this historic recognition during the MOWCAP's 10th meeting.

Additional Information:

Ramcharitmanas:

- Authored by **Goswami Tulsidas**, Ramcharitmanas is an epic poem that retells the story of the Hindu deity Rama, focusing primarily on his life, deeds, and teachings.
- Written in the **Awadhi dialect of Hindi**, it is considered one of the greatest works of Hindi literature and a cornerstone of the Bhakti movement.
- The text is revered for its **spiritual insights, moral lessons, and poetic beauty**.

Panchatantra:

- Compiled by **Pandit Vishnu Sharma**, the Panchatantra is a collection of ancient Indian fables and moral stories.
- **Originally written in Sanskrit**, it consists of interrelated animal tales that impart practical wisdom and ethical principles.
- The Panchatantra has been translated into numerous languages and has profoundly influenced world literature, particularly in the genre of animal fables.

Sahṛdayāloka-Locana:

- Authored by **Acharya Anandvardhan**, Sahṛdayāloka-Locana is a **Sanskrit commentary on the Dhvanyaloka**, a foundational text in Indian literary theory written by Anandavardhana.
- It elucidates **the principles of aesthetic experience and literary interpretation**, particularly focusing on the concept of suggestion (dhvani) in poetry.

UNESCO's Memory of the World Asia-Pacific Regional Register:

- The UNESCO Memory of the World Register is part of an international initiative **launched by UNESCO in 1992 to safeguard the documentary heritage of humanity**.
- It is a part of UNESCO's broader **Memory of the World Programme**, which aims to preserve and promote documentary heritage worldwide.
- The Asia-Pacific Regional Register focuses explicitly on

recognizing and safeguarding documentary heritage from countries within the Asia-Pacific region.

- This regional register is a prestigious platform for identifying and honouring significant documentary collections, archives, and manuscripts with exceptional cultural, historical, or literary value.
- Inclusion in the register **signifies the outstanding universal significance of the nominated items** and their contribution to humanity's collective heritage.

Sahitya Akademi Fellowship

News Excerpt:

Eminent **English author Ruskin Bond** was awarded the prestigious Sahitya Akademi Fellowship. He was also named a **Sahitya Akademi Fellow in 2021**.

About Ruskin Bond:



- Born in 1934 in **Kasauli, Himachal Pradesh**, Bond has been actively writing for over 50 years and has written in various genres of literature, including **short stories, children's books, novels, autobiographical works, and non-fiction**.
- His **notable works** include - Vagrants in the Valley, Once Upon a Monsoon Time, Angry River, Strangers in the Night, All Roads Lead to Ganga, Tales of Fostergeranj, Leopard on the Mountain, Too Much Trouble, A Flight of Pigeons.
- **Adaptations** of his stories were aired on Doordarshan as the TV serial '**Ek Tha Rusty**' and several of his stories - The Night Train at Deoli, Time Stops at Shamli and Our Trees Still Grow in Dehra - were included in the **school curriculum** in India.
- Bond received the **Sahitya Akademi Award in 1992, Sahitya Akademi's Bal Sahitya Puraskar in 2012, Padma Shri in 1999, and Padma Bhushan in 2019**, among other prestigious awards.

About Sahitya Akademi:

- The Government of India formally inaugurated the Sahitya Akademi on **12 March 1954**. It functions as an **autonomous organization**. It was registered as a society on 7 January 1956 under the **Societies Registration Act 1860**.

- Sahitya Akademi, India's **National Academy of Letters**, is the country's central institution for **literary dialogue, publication and promotion**.
- **Languages recognized:** In addition to the **22 scheduled languages** enumerated in the Constitution of India, **English** and **Rajasthani** are also recognized languages.
- The Sahitya Akademi's head office is in **New Delhi**. Regional Offices are in **Kolkata, Bangalore, Chennai, Mumbai, and Agartala**.

Types of fellowship	Types of awards
Sahitya Akademi Fellows: The highest honour the Akademi confers on a writer is by electing him as its Fellow. This honour is reserved for 'the immortals of literature' and is limited to 21 only at any given time .	Bhasha Samman: The Akademi instituted Bhasha Samman in 1996 to be given to writers, scholars, editors, collectors, performers or translators who have contributed considerably to the propagation, modernization or enrichment of the languages concerned.
Honorary Fellows: This is the highest honour conferred by the Akademi on literary persons of outstanding merit who are not nationals of India, and the number of such Fellows is limited to ten at any given time.	Sahitya Akademi Prize for Translation: The Sahitya Akademi has instituted an annual prize for translation from 1989 to be given to outstanding translations in the 24 languages recognized by it.
Premchand Fellowship: This fellowship would be given to scholars researching Indian literature or to creative writers from the countries of the SAARC region other than India.	Bal Sahitya Puraskar: This Award is given to an author based on his/her total contribution to children's literature and relates to books first published during the five years immediately preceding the year of the Award.
Dr Anandacoomaraswamy Fellowship: This fellowship will be offered to scholars from Asian countries who wish to pursue literary projects of their choice.	Yuva Puraskar: It relates to books published by an author aged 35 and below.

Koothandavar festival

News Excerpt:

Riya, a transwoman from Erode, was crowned Miss Koovagam at the annual Koothandavar festival in Villupuram, **Tamil Nadu**.

About the festival:

- It is dedicated to **the transgender community**.
- Annually during the Tamil month of Chithirai (April-May), thousands of transgender people from all over the country assemble in **Koovagam**, a tiny town in the

district of Kallakurichi, Tamil Nadu, to celebrate an 18-day festival known as **Koothandavar Thiruvizha**.

History and Significance:

- The Mahabharata contains an intriguing story about the main deity **Lord Koothandavar** who is linked with the **Pandava's triumph in the 18-day battle**.
- According to the Mahabharata, Koothandavar is **Aravan, the son of Pandava prince Arjuna**, who decided to become a human sacrifice so that the Pandavas might defeat the Kauravas in the Kurukshetra conflict.
- Koothandavar desired to experience marital life at least once before being sacrificed. Women, on the other hand, despised widowhood, and no one was willing to marry a prince who would die the next day.
- **Lord Krishna granted Aravan's desire by adopting the appearance of a woman, Mohini**.
- The next day, Aravan sacrificed his life, and Mohini mourned like a widow.
- Every year, transgender people who consider themselves the avatars of Mohini gather at the Koothandavar temple to celebrate this religious festival.
- During the 18-day festival, transgenders dress up like brides to marry Lord Koothandavar with a **nuptial thread known as Thaali**, recreating the ancient episode of Aravan and Mohini.
- The final day of the festival is known as the **day of sacrifice**.
- On this day, Lord Koothandavar is carried in procession around the temple whilst transgender people cut their nuptial threads to **grieve the loss of their spouse, Aravan, and portray widowhood**.



Six World Heritage Sites that occupy stolen Indigenous land: Report

News Excerpt:

Survival International, which campaigns for the rights of **indigenous and tribal peoples**, accused **UNESCO** of being complicit in the illegal eviction and abuse of Indigenous people in a new report launched on **World Heritage Day 2024**.

Key points about the Survival International Report:

- Many UNESCO World Heritage Sites are located on what were once indigenous lands.
- Serious and continuing **conservation-related rights** abuses of Indigenous people are taking place in and around these **World Heritage Sites**.
- The report lists **six World Heritage Sites** that occupy stolen Indigenous land -
 - Three in Africa (**Ngorongoro Conservation Area in Tanzania, Kahuzi-Biega National Park in DRC, and Odzala-Kokoua National Park in the Republic of Congo**).
 - Three in Asia (**Kaeng Krachan Forest Complex in Thailand, Kaziranga National Park in India, and Chitwan National Park in Nepal**).
- The report highlights specific cases of abuse, such as -
 - The Tanzanian government plans to evict thousands of **Maasai people** from **Ngorongoro Crater**.
 - The ongoing campaign since 2019 to purge the indigenous **Batwa people** from their ancestral lands in the **Kahuzi-Biega National Park**.
- **Survival International** also levelled serious charges against UNESCO on **Kaziranga in Assam**, globally famous for its **one-horned rhinos**:
 - Kaziranga National Park and Tiger Reserve in Northeast India has been a UNESCO WHS since 1985.
 - It is home to the **Mising and Karbi people**, as well as other Indigenous peoples brought to the area to work on the tea estates, collectively known locally as the **"tea tribes"**.
- Far from expressing alarm at the **extrajudicial killings in Kaziranga**, the UNESCO World Heritage Center, in its **2011 State of Conservation report**, praised a **government notification** that gives **forest officers immunity from prosecution** if they use firearms in the course of their duty as a "significant step to prevent poaching and boost staff morale."
 - The report claims that while **the number of extrajudicial killings has reduced in Kaziranga** after the **matter came to light in 2016**, the **indigenous people** living around the Park are still harassed and banned from entering their ancestral lands.
- Survival International calls on UNESCO to **remove World Heritage status** from any site where **human rights atrocities** against Indigenous peoples are occurring.



UNESCO World Heritage

- The **United Nations Educational, Scientific and Cultural Organization (UNESCO)** seeks to encourage the identification, protection, and preservation of cultural and natural heritage.
- This is embodied in an international treaty called the **Convention Concerning the Protection of the World Cultural and Natural Heritage**, adopted by **UNESCO in 1972**.
- At present in India, there are **42 World Heritage sites** out of which **34 are cultural sites, seven are natural sites and one is a mixed site**.

World Heritage Day 2024

- **World Heritage Day**, also known as **International Day for Monuments and Sites (IDMS)**, is celebrated annually on April 18 to **honour and preserve our heritage**.
- The theme for World Heritage Day 2024 is **'Discover and Experience Diversity.'** This theme highlights the richness of our history. It also reminds us to explore and appreciate the unique heritage of different communities.

Kaziranga National Park and Tiger Reserve (KNPTR):

- It is located in **Golaghat, Nagaon and Sonitpur districts of Assam**.
- It is the **oldest Park in Assam** and covers an area of 430 sq km along the river **Brahmaputra in the north and the Karbi Anglong hills in the south**.
- **National Highway 37** passes through the park area and tea estates, hemmed by table-top tea bushes.
- It is inhabited by **the world's largest population of one-horned rhinoceroses** (2,613 according to 2023 Census).
 - It is also known for the **"BIG FIVE"** mammals: **one-horned rhinos, tigers, elephants, Asiatic wild buffalos, and eastern swamp deer**.
- It was declared a **National Park in 1974**.
 - In 1985, **UNESCO declared Kaziranga National Park a World Heritage Site**.
- Over time, the tiger population also increased in Kaziranga, and that's the reason Kaziranga was declared a Tiger Reserve in **2007**.

The Ngorongoro Conservation Area:

- The Ngorongoro Conservation Area (809,440 ha) spans vast expanses of highland plains, savanna, savanna woodlands and forests from the plains of the **Serengeti National Park** in the north-west to the eastern arm of the **Great Rift Valley**.
- The area was established in 1959 as a multiple land use area, with wildlife coexisting with semi-nomadic

Maasai pastoralists practising traditional livestock grazing.

- It includes the spectacular **Ngorongoro Crater, the world's largest caldera**, and **Olduvai Gorge**, a 14km long deep ravine.
- In 1959, the Ngorongoro Conservation Area was separately designated. It was added to the **UNESCO World Heritage List in 1979**.
- The property has global importance for biodiversity conservation in view of the presence of globally threatened species, such as the **black Rhino**,
- Extensive archaeological research has also yielded a long sequence of evidence of human evolution and human-environment dynamics, including **early hominid footprints dating back 3.6 million years**.

Kahuzi-Biega National Park:

- A vast area of primary tropical forest dominated by two spectacular extinct volcanoes, **Kahuzi and Biega**.
- **Kahuzi-Biega National Park** is an exceptional habitat for the eastern lowland gorillas (or de Grauer), a sub-species endemic to the **Democratic Republic of the Congo (DRC)** and listed under the **endangered category in the IUCN Red Data Book**.
- The Park contains a flora and fauna of exceptional diversity, making it one of the most important sites in the **Rift Albertine Valley**.

Odzala-Kokoua National Park:

- **Odzala-Kokoua National Park in the Republic of Congo**, one of Africa's oldest national parks, covers an expansive 13,546 km² and lies in the heart of the Congo Basin, **the second largest rainforest in the world after the Amazon**.
- The Congo Basin spans more than two million square kilometres across six countries, accounts for 18% of the world's remaining rainforest and is one of the most biologically diverse and species-rich areas on the planet.

Kaeng Krachan National Park (KKNP)

- **Kaeng Krachan National Park (KKNP)** has been designated as **the largest national Park in Thailand**, covering 2,915 km² at the southern end of the **Tenasserim Mountain range**.
- The site is situated in a transition zoogeographical sub-region between **Sundaic, Indochinese and Sino-Himalayan** and consequently supports a rich and diverse species of wildlife and plants.
- There are several **endangered species such as tiger (Panthera tigris corbetti)** and **Siamese crocodile (Crocodylus siamensis)** within the area.
- It is a highly important landscape for conservation, considered a biodiversity hotspot and listed as an

ASEAN Heritage site in 2005.

Chitwan National Park:

- Established in 1973, Chitwan National Park (CNP) was **Nepal's first National Park**. Located in the **Southern Central Terai**, it formerly extended over the foothills. The property covers an area of 93,200 hectares and extends over four districts: **Chitwan, Nawalparasi, Parsa, and Makwanpur**.
- The Park is the last surviving example of the natural ecosystems of the **'Terai' region** and covers subtropical lowland, wedged between two east-west river valleys at the base of the **Siwalik range of the outer Himalayas**.
- The core area lies between the **Narayani (Gandak) and Rapti rivers** to the north and the **Reu River and Nepal-India international border** in the south, over the **Sumeswar and Churia hills**, and from the **Dawney hills** west of the Narayani, and borders with **Parsa Wildlife Reserve** to the east.
- In 2003, Beeshazar and associated lakes within the buffer zone were designated as a wetland of international importance under the **Ramsar Convention**.
- It is home to one of the last populations of **single-horned Asiatic rhinoceros** and is also one of the **last refuges of the Bengal Tiger**.

Srinagar likely to be tagged as World Craft City from India

News Excerpt:

The World Crafts Council International (WCCI), which works to recognize and preserve traditional crafts worldwide, has picked Srinagar to map its craft clusters before its final nomination as the **World Craft City (WCC)** from India this year.



More about the news:

- A **three-member team from the WCCI** is currently in Srinagar to inspect craft clusters, the processes involved, and the **status of artisans**.

- The team has inspected several clusters where artisans were working on local crafts, such as **Pashmina shawls, carpets, and papier mâché.**
- The WCCI evaluates cities based on parameters like **how crafts have kept themselves alive**, initiatives in place for artisans, and the age-old practices involved.
- Srinagar is currently one of the **cities** in India that will be eligible for the **WCC tag**, and the final announcement will likely be in the next two months.
- The **Indian National Trust for Art and Cultural Heritage-Kashmir (INTACH-Kashmir)** is collaborating with the J&K Handicrafts department to map the craft sector ahead of the final nomination.
- The WCC recognition would put a spotlight on the processes and mean **global acknowledgement and visibility of Srinagar's crafts.**

About Kashmir's craft:

- Kashmir's craft is mostly influenced by **Central Asian countries**, and it is home to **centuries-old handicraft practices.**
- According to the official data, Srinagar, which is spread over 416 square **kilometres**, has a registered artisan base of **20,822 craftsmen** who are involved in multiple disciplines, such as **papier mâché, walnut wood carving, hand-knotted carpet, Kani shawl, Khatamband, pashmina, and Sozni craft.**

- The total craft-related workforce in Srinagar stands at **approximately 1.76%.**
 - The contribution of handicrafts to the overall economy of **J&K stood at 2.64% by 2016-17.**

World Crafts Council International (WCCI)

- The WCCI, founded in 1964, is a **Kuwait-based organization** that works to **recognize and preserve traditional crafts worldwide.**
- The World Crafts Council AISBL was founded by Ms. Aileen Osborn Vanderbilt Webb, Ms. Margaret M. Patch, and **Smt Kamaladevi Chattopadhyay** at the 1st World Crafts Council General Assembly in New York on June 12, 1964.
- Since its inception, the World Crafts Council AISBL has been **affiliated with UNESCO** under Consultative Status for many years.
- The **World Crafts Council AISBL (WCC-International)** is an **international non-profit organization.**
- **The mission** is to **empower artisans, celebrate cultural diversity, contribute to sustainable development** by supporting the rich tapestry of global craftsmanship, and preserve languishing crafts from extinction.

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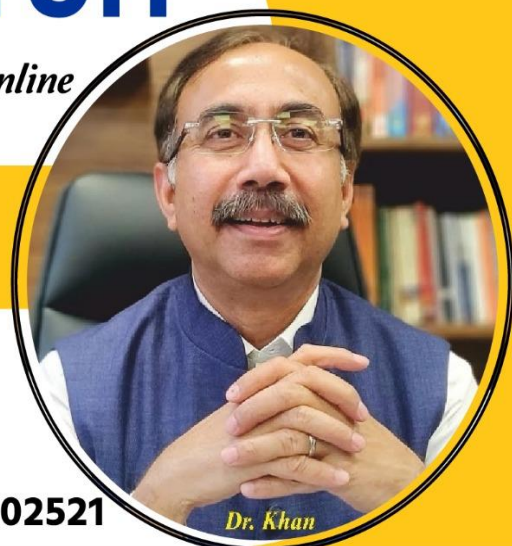
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MISCELLANEOUS

World Telecom Day

News Excerpt:

World Telecommunication and Information Society Day (WTISD) is celebrated every year in May to honour the founding of the **International Telecommunication Union (ITU)**.



Date and Origin:

- It is observed **annually** on **May 17th**.
- **World Telecommunication and Information Society Day (WTISD)** commemorates two significant events in the history of global communication.
 - **Firstly**, it marks the founding of the **International Telecommunication Union (ITU)** in 1865, when the first International Telegraph Convention was signed.
 - **Secondly**, in November 2005, **the World Summit on the Information Society (WSIS)** called upon the **United Nations General Assembly** to also declare May 17th as **World Information Society Day**.
- In 2006, the ITU Plenipotentiary Conference in Antalya, Turkey, agreed to **combine the two events as World Telecommunication and Information Society Day**.

Theme - 2024:

- **"Digital Innovation for Sustainable Development,"** is the theme of World Telecommunications and Information Society Day **2024**. The theme signifies how digital innovation may help link everyone and create sustainable prosperity for all.

Significance:

- The simultaneous commemoration of World Telecommunication Day and World Information Society Day demonstrates the **worldwide community's commitment** to promoting the development and application of **ICT** for the benefit of all people.
- It provides a forum for discussing the difficulties and possibilities posed by the fast-changing digital world, as well as reinforcing the importance of **digital inclusion** and **sustainable development** via the use of new technology.

Round table Discussion by DoT on "Sustainable Digital Development driven by AI"

- The discussion aimed at exploring the transformative potential that AI holds towards **sustainable development** and what more efforts are required from stakeholders to achieve the goals of SDG.
- Additionally, the event also focused on other initiatives of DoT that are using the power of AI, including
 - **The Sangam: Digital Twin**
 - **Citizen-centric portal Sanchar Saathi.**

Sangam Digital Twin: PoC to Showcase Practical Use Cases

- To demonstrate practical use cases for infrastructure planning and design, the DoT launched the **Sangam Digital Twin with AI-driven Insights Initiative**.
- The goal is to validate through real-world applications and demonstration of use cases, to showcase potential benefits in planning and designing of infrastructure using **Digital Twin, telecom data and AI**.

Citizen-centric portal Sanchar Saathi:

- Sanchar Saathi portal is a **citizen centric initiative** of the Department of Telecommunications to empower mobile subscribers, strengthen their security and increase awareness about citizen centric initiatives of the Government.
- **Sanchar Saathi empowers citizens** by allowing them to know.
 - The mobile connections issued in their name.
 - Citizens get disconnected the connections either not taken by them or not required by them, block, trace stolen/lost mobile phones
 - Check the genuineness of devices while buying a new/old mobile phone.
- Sanchar Saathi facilitates citizens for reporting suspected **fraud communication**.

Goldman Environmental prize

News Excerpt:

Chhattisgarh-based environment and **forest activist Alok Shukla** has been honoured with the prestigious **Goldman Environmental Prize**.



About the news :

- Alok Shukla, the convener of **Chhattisgarh Bachao Andolan** and founder of **Hasdeo Bachao Sangharsh**

Samiti, received the prize at a ceremony held in **San Francisco, United States**, alongside other recipients of this year's Goldman Environmental Prize.

- The **other winners** are Marcel Gomes (Brazil), Murrawah Maroochy Johnson (Australia), Teresa Vincente (Spain), Andrea Vidaurre (US), and Sinegugu Zukulu and Nonhle Mbuthuma (South Africa).
- Leading a **community campaign**, Shukla successfully advocated for the **preservation of 445,000 acres** of biodiversity-rich forests from 21 planned coal mines in Chhattisgarh.
 - The government **cancelled the auction of 21 proposed coal mines** in Hasdeo Aranya. The region's pristine forests—popularly known as the lungs of Chhattisgarh—are among the largest intact forest areas in India.
- Nearly **15,000 tribals** depend on the Hasdeo Aranya forests for their livelihood, cultural identity, and sustenance. These forests feed the **Hasdeo River**, which flows into the **Mahanadi River**.
 - Meanwhile, the region contains one of India's largest **coal reserves** — an estimated **five billion tons of coal** sit under the Hasdeo forests.

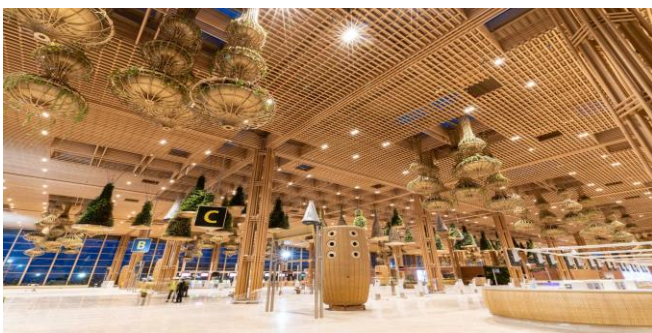
About Goldman Environmental prize:

- The Goldman Environmental Prize, established in **1989** by philanthropists **Rhoda and Richard Goldman** in **San Francisco**, is renowned as the foremost award for grassroots environmental activists worldwide.
- Also known as the **Green Nobel**, the prize recognizes grassroots environmental heroes from roughly the world's **six inhabited continental regions** — Africa, Asia, Europe, Islands & Island Nations, North America, and South & Central America.

Kempegowda International Airport

News Excerpt:

The **Kempegowda International Airport (KIA)** has been awarded the **Best Regional Airport in India and South Asia** at the **2024 Skytrax World Airport Awards**.



More about Kempegowda International Airport (KIA):

- **Skytrax** conducts a comprehensive customer satisfaction survey to evaluate airports worldwide.
- **KIA's Terminal 2** secured the **second position as the World's Best New Airport Terminal** for terminals opened in the 18 months prior to the **2024 World Airport Awards**.
 - The award for Terminal 2 covers the full range of **airport facilities, staff services, and customer experience evaluation**.
- Since opening in 2023, Terminal 2 has also received a **UNESCO Prix Versailles World's Most Beautiful Airport** award, a Special Prize for its **interiors, and LEED platinum** certification.

UNESCO's PRIX VERSAILLES:

- Announced each year at **UNESCO since 2015**, the Prix Versailles is a series of **architectural competitions** that shine a light on the finest contemporary projects worldwide.
- The Official pays tribute to **innovation, creativity, reflections of local heritage, ecological efficiency**, and the values of social interaction and participation, which the **United Nations holds in high regard** – is in line with the principles of intelligent sustainability, taking the **projects' ecological, social and cultural** impacts into consideration.
- The **Skytrax World Airport Awards** are globally renowned as a benchmark for airport excellence, recognizing airports that excel in delivering unparalleled customer experiences.

Skytrax World Airport Awards:

- The World Airport Awards began in 1999, when **Skytrax launched** its first global, **Airport customer satisfaction survey**.
- They are regarded as a **quality benchmark** for the world airport industry, assessing customer service and facilities across over **500 airports**.
- There is **no entry fee or any type of payment by an airport** (or other third party) to be included in the survey or awards, with the survey and awards process fully **funded by Skytrax**.
- In 2024, they are celebrating the **25th anniversary** of the World Airport Awards.

- KIA clinched the **Best Regional Airport** title following **rigorous evaluations of various frontline aspects**, including **check-in procedures, arrivals, transfers, shopping facilities, security, immigration processes, and departures at the gates**.
- For the 2024 Awards, feedback was collected from airport customers of over **100 nationalities** during a seven-month survey period conducted in over **550 airports worldwide**.

- It provides valuable insights into the customer experience across various aspects of airport service and facilities.

World Earth Day 2024

News Excerpt:

April 22 is celebrated worldwide as World Earth Day.

About the World Earth Day 2024:

- **Date and Theme:**
 - Earth Day is an annual event that falls on **April 22**. It is observed across the globe to demonstrate **support for environmental protection**.
 - The theme for World Earth Day 2024 is **Planet vs. Plastics**. The theme aims to raise **awareness** of the serious issue of **plastic pollution** and its **harm to nature**.
 - For Earth Day 2024, they aim to end plastic for planetary health and demands a **60% reduction in the production of all plastics by 2040**.



- **Significance:**
 - Earth Day reminds citizens worldwide of the importance of **environmental conservation** and sustainability.
 - It encourages them to come together and **take action** for a healthier planet and a brighter future.
 - The day raises awareness and inspires change, fostering a deep **connection with nature**.

Padma Awards

News Excerpt:

On April 22nd, President conferred the esteemed Padma awards to several personalities including former Vice President **M. Venkaiah Naidu**, **Sulabh International founder Bindeshwar Pathak**, **actor Mithun Chakraborty**, and numerous other prominent figures. The ceremonial event took place at the Rashtrapati Bhavan.

More About the News:

- The Padma Awards, among India's most esteemed civilian honors, are **annually announced on the eve of Republic Day**. These awards, categorized into Padma

Vibhushan, Padma Bhushan, and Padma Shri, aim to **recognize outstanding contributions across various fields with a focus on public service**.




- **Established in 1954**, the Padma Awards replaced the earlier civilian honors.
- **Bharat Ratna**, the highest civilian award, operates separately from the Padma Awards, being recommended directly by the Prime Minister to the President.








Features:



- **Padma Vibhushan:** The decoration is **primarily circular, with a geometric pattern overlaid**. The geometric pattern consists of a **square, with rectangles on each side breaking the circular design**. Knobs are embossed at the outer angles of the pattern. The obverse features an **embossed lotus flower with "Padma" above and "Vibhushan" below in Hindi**. The **reverse showcases the State Emblem and motto in Hindi**. The decoration is toned bronze.
- **Padma Bhushan:** This award is similar to Vibhushan with the only difference being the **word "Bhushan" instead of "Vibhushan" below the lotus flower on the obverse**. The inscription, geometric pattern, and border on both sides are of burnished bronze, and all embossing is of standard gold.
- **Padma Shri:** This decoration also shares the same dimensions and basic design as the Vibhushan and Bhushan. The key difference is that **it features knots at the outer angles of the pattern**. The obverse has a lotus flower with "Padma" above and "Shri" below in Hindi. The reverse displays the State Emblem and motto in Hindi.

SPECIES

SPECIES	ABOUT
<p>Neptis philyra News Excerpt: A rare butterfly species named Neptis philyra, has been discovered for the first time in India in Tale Valley Wildlife Sanctuary in Lower Subansiri district of Arunachal Pradesh.</p>	<p>About Neptis philyra:</p> <ul style="list-style-type: none"> It is a rare species of butterfly commonly known as long-streak sailor. Till date, the butterfly species was known to be found across various regions of east Asia, including eastern Siberia, Korea, Japan, central and southwest China. The butterfly has serrated wings with rich brownish-black on the upper side and yellow brown on the underside and fore wing white cell streak forming "hockey stick" markings with spots in space. The species, which is part of the Nymphalidae family, is known to prefer habitats such as evergreen forests, riverine vegetation, and rocky streams. 
<p>Golden Trevally Fish (Gnathanodon speciosus)</p> <p>News Excerpt: ICAR-Central Marine Fisheries Research Institute (ICAR-CMFRI) achieves captive breeding of high-value marine fish golden trevally.</p>	<p>About Golden Trevally Fish:</p> <ul style="list-style-type: none"> Description: It is a silver-grey fish with a yellowish colouration on the belly, scattered black patches, and all fins coloured yellow with a black tail. The juveniles are more golden in colour with black bands, giving them an attractive look, and making them desirable for aquarium keeping. It is a reef-associated fish and lives in the company of larger fishes like skates, sharks, and groupers. <ul style="list-style-type: none"> Juveniles of this species act as pilots for sharks. In India, the golden trevally is predominantly found at reef area fishing grounds in Tamil Nadu, Puducherry, Kerala, Karnataka, and Gujarat. It is an ideal candidate species for mariculture (marine aquaculture) due to its faster growth rates, good meat quality, and huge market demand for both consumption and ornamental purposes. <p>Significance of Golden Trevally Fish:</p> <ul style="list-style-type: none"> Golden trevally is ideal for sea farming due to its desirable qualities. Given the declining trend of its landings, the success in captive breeding of this fish has greater significance. It will offer opportunities for sustainable fish farming through mariculture practices, including sea cage farming. 
<p>Red Colobus</p> <p>News Excerpt: Conserving these Old-World primates could help save Africa's tropical forests.</p> <p>IUCN Status: Endangered or Critically Endangered (among 14 taxa)</p>	<p>More about Study of Red Colobus:</p> <ul style="list-style-type: none"> Red colobus are a rare group of imperilled monkeys spread across Africa and are primary indicators of biodiversity decline in the continent's tropical forests. Their declining populations "forewarn the fate of other large-bodied terrestrial vertebrates across African tropical forests and portend a bleak future for Africa's biodiversity. Scientists from nearly 20 institutions across the US, Europe, and Africa advocate for investment in red colobus conservation to safeguard: <ul style="list-style-type: none"> Africa's tropical forests, Biodiversity, Address climate change impacts, and Enhance food security and public health. Investing in and conserving the red colobus species "could have cascading net positive impacts on African tropical forest health in the face of a growing biodiversity crisis. Red colobus monkeys are one of two major simian groups globally. <ul style="list-style-type: none"> Colobines are primarily leaf-eating monkeys, as compared to the cercopithecines, which are omnivores. Cercopithecine species, including the macaques of south and southeast Asia, and the mangabeys, mandrills, drills and baboons of Africa, on the other hand are socially more complex. 

	<ul style="list-style-type: none"> • There are 17 red colobus species (18 taxa) ranging from Senegal in the west to the Zanzibar Archipelago in the east. • Red colobus is among the first mammal species to vanish from African forests due to their large body size, noisy group making them an easy target for hunters, and their curious behavior towards hunters instead of fleeing.
<p>Green Lynx Spider News Excerpt: Daryapur-based arachnologist has identified the green lynx spider, which was never discovered earlier.</p> <p>IUCN Status: Undocumented</p>	<p>About Lynx spider:</p> <ul style="list-style-type: none"> • Lynx spider, (family Oxyopidae), belong to a group of active spiders (order Araneida) that do not build a nest or web but capture their prey by pouncing upon them. • The lynx spiders are among the major predators of insects occurring in low shrubs and herbaceous vegetation. They are important predators of plant-damaging insects including bollworm & leafworm moth, and looper moth. • Lynx spiders are distributed worldwide. The eyes are arranged in a hexagon, and the abdomen usually tapers to a point. <p>More about the Green lynx spider</p> <ul style="list-style-type: none"> • The spider species has been named Peucetia chhaparajirvin, after the area Tal Chhapar in Rajasthan. • The spider was found in Tal Chhapar Wildlife Sanctuary in Churu district. • This spider is nocturnal and feeds on small insects. • Green lynx spiders feed on many species of moths, including some of the most key plant pests. 
<p>Walrus</p> <p>News Excerpt: One of Norway's Arctic islands recorded its first case of a walrus dying from bird flu. The walrus was found among six others on Hopen Island in the Svalbard archipelago last year.</p> <p>IUCN Status: Vulnerable</p>	<p>What we know about the case</p> <ul style="list-style-type: none"> • Around six dead walruses were found last year in the Svalbard islands, which are located halfway between mainland Norway and the North Pole. • This is the first time that bird flu (specific strain (H5N1 or H5N8)) has been recorded in a walrus. • The researcher stated that it is "not improbable" that some of the other walruses found also had bird flu. <p>Walrus:</p> <ul style="list-style-type: none"> • About: The walrus, scientifically known as Odobenus rosmarus, is a massive, seal-like mammal inhabiting Arctic seas. <ul style="list-style-type: none"> ○ There are two subspecies: the Atlantic walrus (<i>Odobenus rosmarus rosmarus</i>) and the Pacific walrus (<i>O. rosmarus divergens</i>). ○ They live in herds (highly sociable creatures) and can live up to 40 years in the wild. They migrate seasonally, with female Pacific walruses giving birth to calves during the spring migration north. • Physical Characteristics: One of the most recognizable features of walruses is their long tusks, which they use for various purposes such as hauling themselves out of water, breaking breathing holes in ice, and for aggressive displays during mating season. Both male and female walruses have tusks, with males using them to maintain territory. • Habitation: Walruses have adapted to their Arctic environment with several unique features. Their sensitive whiskers, called mustacial vibrissae, help them detect their favorite meals, especially shellfish, on the ocean floor. Their blubbery bodies enable them to withstand the cold temperatures of the Arctic waters, with the ability to slow their heartbeats to conserve energy. 

<p>Sumatran Orangutan</p> <p>News Excerpt: A male orangutan, on the Indonesian island of Sumatra, has been recorded on video using a medicinal plant to treat a wound on his face.</p> <p>IUCN status: Critically Endangered</p>	<p>About:</p> <ul style="list-style-type: none"> • Orangutans ('Man of the forest' in Malay) are one of the extant species of great apes. <ul style="list-style-type: none"> ◦ The others are the Common Chimpanzee, Gorilla and the Gracile Chimpanzee or Bonobo. • The International Union for Conservation of Nature (IUCN) has classified the Bornean and Sumatran orangutans as critically endangered species. • The flame-coloured orangutans are found on the islands of Sumatra in Indonesia and Borneo, which is divided between Malaysia, Indonesia and Brunei. • There are three types of orangutans taxonomically — the Sumatran, the Bornean and the Tapanuli. • Orangutans possess cognitive abilities comparable to those of the gorilla and the chimpanzee, which are the only primates more closely related to humans. • Female orangutans have the longest breeding interval of any mammal, giving birth on average once every eight years. 	
<p>Iberian Lynx</p> <p>News Excerpt: According to Spain's Ministry for the Ecological Transition, the species has demonstrated significant population growth in recent years.</p> <p>IUCN Status - Endangered</p>	<p>About Iberian Lynx: The 2023 census indicates that the population has doubled over the past three years, now totaling 2,021 individuals.</p> <ul style="list-style-type: none"> • Geographical Spread of Population: <ul style="list-style-type: none"> ◦ In total, 1,731 individuals (85% of the population) reside in Spain, while 291 are found in Portugal. Stable populations are concentrated in four Spanish regions of Andalusia, Castilla-La Mancha, Extremadura & Murcia. • Lynxes generally give birth between March and April. The average litter size is three, with rarely more than two young surviving. Gestation period is around 60-66 days. Rearing the young is the exclusive task of females. • The Iberian lynx feeds mostly on wild rabbits. • Except for the mating period, Iberian lynx are mostly solitary animals. • Threats to Species: <ul style="list-style-type: none"> ◦ Fragmentation and destruction of habitats due to infrastructure development. ◦ Expansion of urban areas leading to habitat loss and pollution. ◦ Large-scale monoculture plantations replacing diverse ecosystems. ◦ Overexploitation leading to population declines and extinction risks. ◦ Spread of viral/prion-induced diseases that can devastate native species populations. ◦ Climate Change & Severe Weather: Changes in climate causing shifts in habitat ranges. 	
<p>Orcas (Killer Whales)</p> <p>News Excerpt: Two people were rescued on May 12 after a group of orcas, also known as killer whales, sank their 15-metre-long sailing yacht in the Strait of Gibraltar, 22.5 kilometres off the coast of Morocco.</p> <p>IUCN Status: "Data Deficient"</p>	<p>Orcas:</p> <ul style="list-style-type: none"> • Despite their common name 'killer whale', orca are actually the largest species of dolphin. • Their dorsal fin can be used to recognise individuals, and males can measure an incredible 1.8 metres in height. • Killer whales are found in every ocean on the planet, and as well as being the most widely distributed, they are also one of the fastest sea mammals, reaching speeds of up to 55kmph. • Alaska sees an overlap of three distinct communities of Orca resident" fish-eating orca, "transient" mammal eaters, and offshore. • Killer whales have no natural predators, though when young they may be attacked by large sharks or other orca. <p>Conservation</p> <ul style="list-style-type: none"> • For majority of Orcas population, they are considered as "Data Deficient", however small subpopulation of orcas living in the Strait of Gibraltar; are listed as "Critically Endangered" by the IUCN. • The Southern Resident pods in the Northwest Pacific region are considered one of the most threatened cetacean species and are currently closely monitored by governmental offices. 	

<p>Cheetah</p> <p>News Excerpt: India is expected to host a delegation of Kenyan officials later this month to explore the possibility of sourcing cheetahs from the East African country for the next phase of Project Cheetah.</p> <p>IUCN Status: Vulnerable Asiatic & Northwest African Cheetah-Critically endangered</p>	<p>More about the news:</p> <ul style="list-style-type: none"> As part of Project Cheetah, India plans to introduce eight to 14 cheetahs annually for five years, subject to availability. Number of cheetahs just under 7500 individuals globally. Cheetahs have lost 90% of their global habitat. They now live in 9% of its historic range. About Cheetah: <ul style="list-style-type: none"> It is the fastest land animal (97-113 Kmph) in short bursts, was declared extinct in the country in 1952. Cheetahs primarily inhabit open grasslands and savannas, where their speed and keen eyesight are advantageous for hunting. They can also be found in semi-arid regions, scrublands, and lightly wooded areas across Africa, particularly in countries like Kenya, Tanzania, Botswana, Namibia, and South Africa. Unlike other big cats, cheetahs are diurnal, meaning they are primarily active during the day. They are solitary animals, except for females with cubs or during mating season. As carnivores, cheetahs primarily prey on small to medium-sized ungulates such as gazelles, impalas, and springboks. Female cheetahs typically give birth to a litter of 3-5 cubs after a gestation period of about 90-95 days. <p>Project Cheetah:</p> <ul style="list-style-type: none"> Project Cheetah is India's ambitious attempt to introduce African cats in the wild in the country. It was launched in 2022 when the first eight cheetahs were transported to Madhya Pradesh's Kuno National Park from Namibia. As of March 2024, there are 26 cheetahs in Kuno – 13 adults and 13 cubs. Ten cheetahs have died so far owing to illnesses and infections. <p>Gandhi Sagar Wildlife Sanctuary:</p> <ul style="list-style-type: none"> Located in Mandsaur district of Madhya Pradesh, it has been developed as a second site for Cheetah relocation in the country. 	
<p>Nilgiri Tahr</p> <p>News Excerpt: With a resolve to remove the Nilgiri Tahr (Nilgiritragus hylocrius) from the endangered status, the Tamil Nadu government will execute a synchronised survey of the State animal.</p> <p>IUCN Status: Endangered Schedule I: Wildlife (Protection) Act of India, 1972.</p>	<p>More details about the news:</p> <ul style="list-style-type: none"> The three-day exercise is being done to estimate the population of the Tahrs. India has taken support of the World Wide Fund (WWF) for Nature and the Wildlife Institute of India for population estimation. The third is IUCN, whose country director will be an observer in the exercise. While the bounded-count method will be used in all the areas, the double observer method is adopted additionally in large contiguous landscape having a major population in two areas like Grass Hills National Park and Mukurthi National Park and one block in Silent Valley National Park and two blocks in Eravikulam National Park. <p>Nilgiri Tahr</p> <ul style="list-style-type: none"> It is the only mountain ungulate in southern India amongst the 12 species present in India. It is also the state animal of Tamil Nadu. Earlier this endemic used to be found along the entire stretch of Western Ghats, is presently found only in small fragmented pockets. A large part of its population has been wiped out from its historical range. The existing populations are under severe stress due to habitat loss and hunting. As per the last assessment done in 2015 by WWF-India, there are 3,122 Nilgiri Tahr in the wild in Tamil Nadu and neighboring landscapes of Kerala, and a sizable portion is concentrated in the Anamalai Tiger Reserve (ATR). In 2020, the Nature Conservation Foundation found around 510 individuals in the ATR, which houses the second largest population of the species after the Eravikulam National Park in Kerala. The Tamil Nadu government has launched the Nilgiri Tahr conservation project to protect the state animal. The project aims to develop a better understanding of the Tahr. 	

SNAPSHOTS: THEMES OF THE MONTH

Note: These themes are inspired from the monthly magazines of *Yojana*, *Kurukshetra*, *Down to Earth* and *Economic & Political Weekly* with added inputs.

Yojana: Weaves of India

Introduction:

Weaving is deeply **ingrained** in the **social and economic fabric** of Indian **communities**. For centuries, it has **sustained** countless **artisans and their families**, offering a vital **means of livelihood** and **economic empowerment**.

History of weaving in India:

- Weaving in India dates back to the ancient **Indus Valley Civilization (3300-1300 BCE)**. Archaeological findings such as terracotta figurines, pottery, and seals depict individuals **draped** in intricately **woven garments**, indicating a deeper understanding of weaving techniques and textile craftsmanship.
- The **Rigveda (1500-500 BCE)** also contains references to weaving. Weaving was a practical necessity and held **religious** and **ceremonial significance**. Fabrics were used in rituals, offerings, and as symbols of prosperity and status.
- The **Achaemenid Empire** in the **north-western regions** of the Indian subcontinent facilitated cultural exchange by introducing **Persian motifs**, techniques, and weaving traditions to the region.
- The **Mughal Empire (1526-1857)** further shaped Indian weaving, particularly in the development of luxurious textiles like **brocades**, **muslin**, and **velvets**. Mughal emperors, patrons of the arts, fostered a flourishing textile industry.
- The introduction of **mechanised looms** and **synthetic dyes** during the colonial period transformed production methods, enabling **mass production** to meet the demands of both domestic and international markets.

Famous weaving styles and philosophical underpinnings:

- **Banarasi silk weaving**, celebrated for its opulence, elegance, and intricate patterns, exemplifies the **concept of 'Shringar'** (ornamentation) in Indian culture. It incorporates motifs inspired by **Mughal art** and employs **metallic threads**.
- **Kanchipuram silk weaving** embodies the philosophical **concept of 'Dharma,'** symbolising righteousness, duty, and virtue. Inspired by the temples of Kanchipuram in Tamil Nadu, the sarees are masterfully woven with **mulberry silk** in both warp and weft. They have solid-coloured borders and pallavs using intricate **korvai** and **petni** techniques. These have distinctive **zari** borders woven with **gold or silver** threads and captivating motifs—peacocks, elephants,

horses, Rudraksham, Thalampoorekku, and Mayil Chakra designs.

- **Paithani weaving** represents the **concept of 'Lakshya,'** symbolising aspiration, goal-setting, and spiritual elevation. It is prized for its intricate weave, vibrant colours, and peacock motifs (representing beauty, fertility, and divine protection). Traditionally crafted from pure silk with gold or silver threads, these sarees feature a unique **'tapestry weaving'** technique, in which the design is woven directly into the fabric rather than embroidered or printed.
- **Patola craft** from Gujarat, particularly Patola sarees, exemplifies the **concept of 'Vasudhaiva Kutumbakam'** (the world is one family). These textiles, created using the **double ikat** weaving technique, showcase intricate geometric patterns and motifs that symbolise harmony, balance, and cosmic order.

Regional diversity in Indian weaving:

- **Pochampally Ikat:** Originating from the **Nalgonda district** of **Telangana**, it has traditional geometric and abstract patterns. It is woven in **cotton and silk** and created by transforming yarns in different colours through tying (resisting) and dyeing the exposed areas repeatedly before weaving.
- **Kota Doria:** Named after its place of origin, **Kota** in **Rajasthan**, the fabric is a unique blend of **cotton and silk** in a square check pattern. The checked pattern, known as **'khat,'** is a distinguishing feature of Kota Doria.
- **Kunbi Sari:** The Goan Adivasi cotton sari, universally known as the Kunbi sari, was originally made in **Goa** on handlooms and is also mentioned in Tribal folk songs.
- **Pashmina woollen sari:** Kashmiri women skillfully hand-spun the fibre using local charkhas. The hand-spun yarn is then meticulously woven on handlooms by local weavers.
- **Mangalagiri Sari:** It belongs to the state of Andhra Pradesh. It features zari or golden thread work and is adorned with a Nizam border and Pallav.
- **Paturu Cotton Silk Sari:** Lightweight saris with a plain **Zari border**. Pallav is woven with stripes, whereas the body generally is plain.
- **Gopalpur Tussar Silk Sari:** It was registered under the Geographical Indications of Goods Act 1999 in 2012. The motifs used are **birds**, **chakra** (wheel), and **animal** motifs inspired by nature.
- **Mekhala Sari:** This is a popular sari from the state of Assam in India. It is decorated with zari figures inspired by traditional **Assamese motifs**.
- **Bhujodi Weaving:** This weaving style is located in the **arid region of Kutch**. One of the most remarkable

aspects of Bhujodi weaving is its use of locally sourced materials, such as **sheep wool and camel hair**.

- **Ashavalli Sarees:** Ahmedabad's artisans perfected handloom weaving, using fine **silk and cotton** yarns to create intricate designs. What sets Ashavalli sarees apart is their intricate weaving techniques, which include **kadwa** (brocading), **jala** (openwork), and **buta** (motif) work.
- **Mashru Textile:** Mashru fabric is characterised by its distinctive checkerboard pattern, created by alternating bands of silk and cotton threads in the warp and weft.

Significance of Indian weaves:

- **Crafting Culture:** Handloom products are a testament to exemplary artisanship and reflect the rich culture and civilisation of India. They are produced in various states across the country, including **Pashmina** (Kashmir), **Phulkari** (Punjab), **Chikankari** (Uttar Pradesh), **Muga Silk** (Assam), **Naga Shawls** (Nagaland), **Pochampally Ikat** (Telangana), **Kancheepuram Sarees** (Tamil Nadu), **Mysore Silk** (Karnataka), **Bandhani** (Gujarat), and **Paithani** (Maharashtra), among others.
- **Khadi, the icon of Indian independence:**
 - Gandhi introduced a new **hand-spun, handwoven** cloth under the **brand 'khadi'** and provided a **philosophical foundation**.
 - Gandhi urged his countrymen to boycott foreign clothing, igniting the **spirit of nationalism** through the Swadeshi Movement and making Khadi a symbol of national pride.
 - Through the Khadi Movement, Gandhi used his **nonviolent weapon** to challenge the core of colonial exploitation. He advocated for **Khadi as a key element** in the program to **reconstruct the rural economy** in a decentralised pattern.
 - The Khadi Movement also paved the way for the **empowerment** of the villagers, especially women.
- **Promoting sustainability:** What sets Indian Weaves apart in the quest for sustainability is their **inherent eco-friendliness**. Traditionally, Indian weavers have utilised **natural fibres** such as **cotton, silk, jute, and wool**, which are locally sourced and processed using ancient techniques with minimal environmental impact. These fibres are **biodegradable, renewable**, and support biodiversity, in contrast to synthetic alternatives that lead to pollution and resource depletion.
- **Social and economic empowerment:** Local communities have a strong tradition of **indigenous Indian weaving**, which promotes economic empowerment and social cohesiveness. Millions of artists make a living from weaving clusters located all throughout the nation; many of them are in rural locations with few other job options.

- The **handloom sector** is ranked **number two** after agriculture in India as an unorganised sector providing employment to more than **3 million people**.

- **Global appreciation:** The **cultural exchange** fostered by partnerships of traditional and contemporary artists cultivates a deeper global appreciation for India's textile heritage. Indian textiles, infused with **modern design**, adorn global fashion catwalks, demonstrating the **depth and variety** of the country's **cultural heritage**.

Opportunities in weaving:

- **Growing appeal:** Currently, buyers and sellers focus heavily on sustainable products. The **new generation** is **style-conscious** but **environment-savvy** and prefers stylish products that do not harm the environment. Handloom products satisfy both of these requirements for the new generation. **Urban clients** realise the importance and beauty of hand-crafted products and are prepared to pay a **premium** for them.
- **Collaboration:** Collaborations of **traditional artisans** with **contemporary designers** have provided a much-needed **platform** for the artisans to showcase their skills, preserve their craft heritage, and secure sustainable livelihoods. By **infusing** traditional techniques with modern design sensibilities, these collaborations help to make traditional textiles relevant to contemporary consumers, thus ensuring their continued **survival and evolution**.
 - Renowned designers like Himanshu Shani, Aneeth Arora, Anita Dongre, Rahul Mishra, Sabyasachi Mukherjee, and others lead this **comeback movement**.
- **New markets and design expertise:** These collaborations empower traditional communities in several ways. Artisans gain access to new markets, design expertise, and business opportunities.
- **E-commerce:** Growing e-commerce and the availability of **digital platforms** provide further **opportunities** for handloom producers to tap international markets, even from small towns and **remote locations**. Some organisations and corporate houses support weavers in the entire value chain, from providing raw materials to marketing their products.
- **Integration of technology:** The introduction of the **Kasturi Cotton Bharat brand**, with its **end-to-end traceability** using **blockchain technology**, is a groundbreaking initiative. It sets a **new standard** for transparency in the cotton textile value chain, uplifting the valuation of Indian cotton and promoting the rich textile heritage of India by combining traditional craftsmanship with a touch of luxury.

Challenges:

- According to some estimates, the handloom industry may be India's **largest source of employment**, next only to agriculture. Unfortunately, this sector's **lack of reliable data** is one of today's many challenges.
- Handloom products face the significant challenge of keeping the tradition of hand weaving alive. With more **emphasis on education** and increasing the availability of better-paying skilled jobs, traditional artisans are not inclined to introduce their new generation to the labour-intensive and mostly **low-paying** hand-weaving profession.
- The producers also face **competition** from **powerloom** and **machine-made fabrics**, which are often cheaper as they are less labour-intensive and available in much larger quantities.
 - The competitive disadvantage becomes more severe as the machine-made products look like **replicas of handwoven products**, and therefore, it becomes **difficult to differentiate** between a machine-made product and an authentic handwoven product.
- Most weavers work at home in villages and rural areas. **Fast-changing fashion** and **design preferences** are other challenges.

Government interventions:

Branding of Handloom Products: 'India Handloom' Trade Mark -

- Introducing the 'Handloom Mark' assured the customer that the handloom product was **authentic**. The 'India Handloom' brand provides a branding of handloom products that are of 'high quality with **zero defects and zero effect** on the environment.'
- The mark aims to ensure that exporters procure high-quality fabrics on time and **establish a unique image** for authentic handwoven products from India.
- 'India Handloom' has also been registered as a **trade mark** under the **Trade Marks Act 1999**.



IPR protection for Indian handloom products -

- The **Designs Act of 2000** and the **Geographical Indications of Goods Act of 1999** protect Indian handloom manufacturers' intellectual property (IP) rights.
- These acts intend to provide **IP protection** to exported handloom products in India and foreign markets.

Geographical Indications of Goods (Registration & Protection) Act, 1999 -

- The Geographical Indication (**GI**) tag is conferred on a product that is recognised by its **specific place of origin**. The GI tag conveys the **authenticity and source** of a product and its associated qualities.
- The **GI status** of handloom products **ensures** that they are **not copied and produced by machines**. This helps the weavers of these products overcome the price disadvantage, as machine-made products are cheaper than handwoven products.

Internationalisation of Indian handloom -

- The **World Customs Organization** assigned the handloom product-specific codes under its **Harmonized System (HS) classification**.
- **Indian handloom exports** were more than **US\$300 million** yearly from **2016-17 to 2019-20** (pre-COVID-19 years). However, **exports declined by 30%** immediately after COVID-19 in **2020-21**. Though some recovery can be observed in 2021-22, they have yet to reach the pre-COVID level.
- Indian handloom products are in significant **demand** in more than **20 countries** worldwide, mainly developed countries and the Middle East. The **US is a major market**, accounting for **around 40% of export demand** for India's handloom products in international markets in 2021-22.
- **Mats and mattings, carpets, rugs, bedsheets, pillow coverings**, and other handloom goods are among the main products that India exports. While **bed linens, curtains, kitchen and table linens, cushion covers**, and other home décor items account for **over 60%** of Indian handloom product exports, mats and mattings makeup over 30% of those exports.
 - Most of these products are exported from four major cities: **Karur, Panipat, Varanasi, and Kannur**.

Conclusion:

India's weaving industry, deeply **rooted in tradition and craftsmanship**, faces challenges yet holds substantial promise due to growing **global and domestic appreciation** for sustainable and artisanal products. **Government initiatives**, international **demand**, and **collaborations** with contemporary designers are key to reviving and sustaining this vital sector. **Harnessing e-commerce** and protecting intellectual property through legal frameworks will further **empower artisans**, ensuring the legacy and economic viability of Indian handlooms for future generations.

Kurukshetra: Green technologies

Green technologies:

- Green technologies are **inventions** that are primarily concerned with improving the **environment and conserving resources**. They vary from cutting-edge waste management techniques to renewable energy options like solar and wind power.

Significance of green technologies:

- Reduced Carbon Emissions:** Green technologies often focus on renewable energy sources such as solar, wind, and hydroelectric power. They are designed to improve energy efficiency in buildings, transportation, and industrial processes.
- Biodiversity preservation:** Sustainable agricultural practices and land management techniques supported by green technologies can help preserve biodiversity by protecting natural habitats and reducing habitat destruction.
- Innovation and competitiveness:** Investment in green technology creates new job opportunities, fosters innovation and drives technological advancements, leading to the development of new products, processes, and services.
- Energy independence and security:** By diversifying energy sources and promoting domestic production of renewable energy, countries can mitigate the economic risks associated with volatile oil prices and geopolitical tensions.
- Health benefits:** By transitioning to cleaner energy sources and adopting sustainable practices, we can mitigate health disparities and promote environmental justice.

- In India, renewable energy sources, including large hydropower, have a combined **installed capacity of 183.49 GW**, and about 13.5 GW of renewable energy capacity was added during 2023. **Solar energy contributed 75.57 GW**, and **wind energy contributed 44.15 GW**.

Case Study	Location	Initiative
Renewable Energy Transition in Germany	Germany	Transition to Renewable Energy Sources
Sustainable Transportation in Curitiba, Brazil	Curitiba, Brazil	Integrated Bus Rapid Transit System
Waste Management Innovations in Sweden	Curitiba, Brazil	Waste-to- Energy Plants and Recycling
Green Building Initiatives in Singapore	Sweden	Sustainable Building Design and Practices
Agro- ecological Farming Practices in Costa Rica	Singapore	Organic Farming and Biodiversity Conservation

Fig: Case Studies of Successful Green Technology Initiatives

Solar Power:

- Concentrated Solar Power (**CSP**) systems use mirrors or lenses to focus sunlight onto a receiver, generating heat that drives a turbine to produce electricity.
- Passivated Emitter and Rear Contact (**PERC**) solar cells are modified conventional cells that enable the cells to produce 6 to 12% more energy than conventional solar panels.
- Amorphous and crystalline silicon layers are combined in **heterojunction (HJT) technology**, resulting in panels with improved temperature performance and efficiency.

Wind Power:

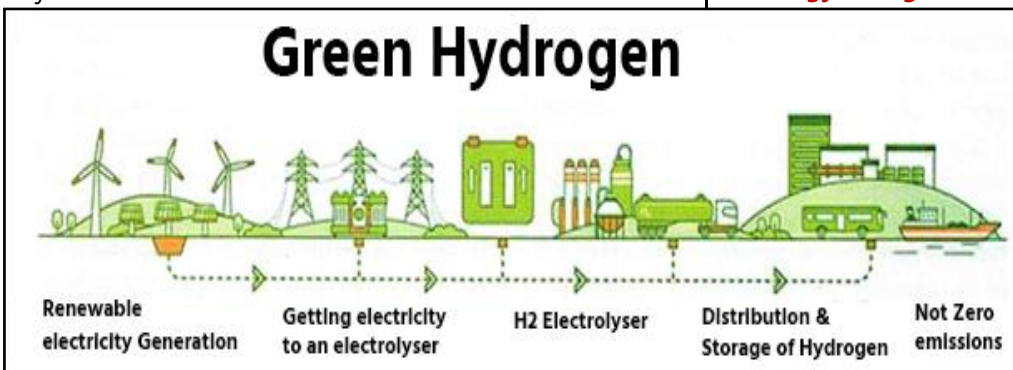
- Vertical-axis wind turbines (**VAWTs**) are an alternative to traditional horizontal-axis wind turbines. They are designed to capture wind from any direction, making them suitable for urban environments.

Energy storage-advanced technologies:

- Due to their widespread availability and affordable price, sodium and potassium ion batteries are becoming increasingly feasible alternatives to lithium-ion batteries (LIBs).
- An electrolyte based on water is used in **aqueous zinc-ion batteries**. Traditional **Li-ion batteries** utilize a liquid electrolyte, and **solid-state batteries** use a solid electrolyte.

Bio-Energy:

- Microbial fuel cells (**MFCs**) are **bioelectrochemical devices** that can directly convert chemical energy in



Key applications of Green technologies:

- Usage of green technology for clean and renewable energy - Present renewable energy scenario:

biodegradable organic matter to electrical energy by using exo-electrogenic bacteria as catalysts. *Geobacter* and *Shewanella* species have predominantly been utilized in MFC technology.

- Plant-microbial fuel Cells (**PMFC**) are based on the **principle of rhizodeposition**, which is the excretion of organic compounds from the roots and the source of electrons and electricity generation in a microbial fuel cell by electrochemically active bacteria.
- **Nuclear Power:** Nuclear energy is highlighted as the second-largest source of low-carbon electricity globally. It currently operates in 32 countries, contributing significantly to emissions reduction and energy demand. Advanced nuclear technologies, such as small modular reactors (SMRs), are being developed to broaden access to nuclear energy, particularly in regions with small electricity grids.
- **Green Hydrogen:** Green hydrogen production involves splitting water into hydrogen and oxygen using electrolysis powered by renewable energy sources like solar and wind. India, in particular, is focusing on the production and utilization of green hydrogen as part of its energy transition strategy. Hydrogen storage technologies, including fuel cells and electrolysis, are emerging as solutions for long-term energy storage and transportation.
- **Geothermal Heat:** Geothermal energy harnesses heat from within the Earth's core for electricity generation. Conventional geothermal power plants tap into hydrothermal resources near geysers and steam vents, while next-generation technologies explore superhot rock energy and medium/low-temperature hydrothermal resources. These innovations promise abundant and clean energy sources for electricity generation.

2. Usage of green technology in waste management - Green tech in waste management:

- **Smart Composting Systems:** These systems utilize sensors to monitor temperature, moisture levels, and aeration, optimizing the composting process and producing high-quality compost for use in agriculture or landscaping.
- **Waste-to-Energy Solutions:** The waste-to-energy technologies such as anaerobic digestion or biomass conversion generate renewable energy from organic waste materials.
- **Recycling Robots:** Introducing AI robotics into recycling centres enhances waste sorting efficiency, diverting recyclable materials from landfills. Studies show that incorporating robotics in recycling processes can increase recycling rates by up to 50%.
- **Pneumatic Waste Pipes:** Installing pneumatic waste pipes below public containers streamlines waste

transportation to processing centres, reducing the need for traditional trash pickups.

- **Digital waste monitoring systems:** They utilize IoT, mobile apps, and data analytics to streamline waste collection and disposal. These systems **integrate** stakeholders - **waste pickers, recyclers, ULBs, and citizens** via mobile apps, creating a **digital cloud** facilitating seamless tracking of the waste supply chain from collection points to recyclers.

Case Studies:

- Under the "**Hasiru Mane**" project in Karnataka, which was started by the **NGO Hasiru Dala**, women from **marginalized areas** are taught how to make compost out of organic waste, creating jobs and encouraging environmental care.
- In **Gujarat, Punsari village** exemplifies sustainable development by generating electricity from village waste.
- In **Punjab**, the "**Pind Cycle**" program incentivizes villagers to collect agricultural waste for biomass energy production, reducing crop burning incidents, improving air quality, and providing alternative sources of income for rural households.

3. Usage of green technology in biodiversity conservation -

- India, with just **2.4% of the land area**, has over **45,000 species of plants** and **91,000 species of animals**. Four of the 34 identified world hot spots are in India: Himalaya, Indo-Burma, Western Ghats, and Sundaland.

Geographic Information System (GIS) and Remote Sensing:

- All data kinds may be **created, managed, analyzed, and mapped** using a **GIS system**. It integrates **location data** with other kinds of descriptive information and links data to a map. It facilitates storing, manipulating, and retrieving **spatially referenced data**. It helps project the future—one can effectively use it for past, present, and future environmental studies.
- Data on biodiversity at the **landscape, regional, continental, and global spatial** levels may be obtained by **remote sensing**. Assessment and protection of biodiversity can benefit from the knowledge obtained by mapping certain land-cover types.

Case study of Namdapha National Park:

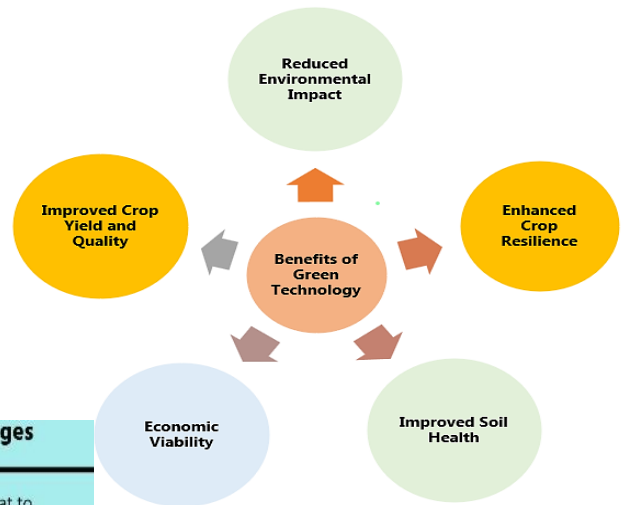
- A **spatial database** for Namdapha National Park in Arunachal Pradesh has been created, which would be very valuable in both the management and monitoring of resources, especially regarding rugged terrain conditions coupled with the park's inaccessibility.
- Indian Remote Sensing (IRS) **satellite IRS-P6, USS-III data** procured from the National Remote Sensing Centre (NRSC), Hyderabad, was used.

4. Usage of green technology in sustainable water management -

Success Stories:

- The **Deep Tunnel Sewerage System (DTSS)** is an underground system for Singapore's water management. The treated used water is reclaimed and further purified, with excess effluent discharged to the sea in an environmentally responsible manner. The DTSS has adopted green technologies like **energy-efficient pumps**, advanced **membrane bioreactors**, and a **cogeneration plant** that converts biogas into electricity.
- **Oil India's research unit** has discovered a process for reducing oil content in water bodies near the drilling pit. They have used a **Bio-remediating technique** to reduce oil contamination in water bodies.
- The **Werribee Treatment Plant** in Melbourne utilizes advanced tertiary treatment processes, such as membrane bioreactors and **ultraviolet disinfection**, to produce high-quality recycled water.

- **Green nanotechnology:** It enhances productivity while reducing pesticide usage. Its applications include pathogen detection, targeted delivery of nano-pesticides, and improved plant nutrient absorption.



S.No.	Green Technology	Principles	Advantages
1	Forward Osmosis	It uses a new eco-friendly chemical compound to draw the water molecules through a membrane leaving the salt behind. Then we separate the chemical from water through a heating process. This chemical can be reused in the process.	Use waste heat to drive separation. Low in energy use.
2	Clathrate desalination	This technique traps water molecules in carbon dioxide and pressurises water molecules into clathrate crystals. Later, these crystals are broken down to release freshwater.	New technology has been developed which increases the size of crystals. This technique is low on energy use and can be used for any kind of water quality.
3	Dewvapouration	This technique humidifies a stream of heated air by running a stream of saline water on a heated surface. Then collect the condensed water when the saturated air is moved along condensing heat transfer films.	Newer energy sources such as waste heat and/or solar are used in the process. The technique is highly cost-effective.
4	Freeze Desalination	It uses the phase shift of water from liquid to solid state to remove salt from the ice crystals. These ice crystals are then melted to produce fresh water. It uses density gradients to work.	Energy and cost-effective method

Challenges and barriers to the adoption of green technology:

- **Costs and investment:** Despite the long-term cost savings and environmental benefits, the initial investment required for green technology systems can be prohibitive.
- **Lack of Financial incentives:** The absence of financial incentives, subsidies, and supportive policies can hinder the adoption of green technology. Businesses and consumers may be less motivated to invest.
- **Technological challenges:** Some green technologies face technical limitations, performance issues, or scalability constraints that impede their widespread adoption. For example, renewable energy sources such as solar and wind power are intermittent and require energy storage solutions.
- **Market barriers and competition:** Established industries and vested interests in fossil fuels may resist adopting green technology, leading to market barriers and competition.

5.Usage of green technology for sustainable agriculture

- **Integrated Pest Management (IPM):** It involves preventive actions like growing disease-resistant crops and using deterrent strategies to discourage pests.
- **Agricultural biotechnology:** Professionals engineer pest—and disease-resistant plants to minimize environmental disruptions, thereby decreasing pesticide usage.
- **Drones and digital sensors:** Drones enable remote monitoring of crop development and gathering essential field data. Similarly, digital sensors monitor various farming aspects, such as microclimate and soil pH, contributing to sustainability.

- **Social and equity considerations:** Low-income communities, marginalized groups, and developing countries may face barriers to accessing clean energy, sustainable transportation, and other green technology solutions, exacerbating existing disparities and inequalities.

Policy approaches and strategies for promoting green technology:

- **Renewable energy targets:** Governments can mandate renewable energy standards, renewable portfolio standards (RPS), or feed-in tariffs to incentivize the deployment of renewable energy projects.

- **Financial incentives:** Providing financial incentives, subsidies, and tax credits for renewable energy deployment, energy efficiency upgrades, and sustainable practices can help offset the upfront costs and accelerate adoption.
- **Regulatory standards:** Establishing regulatory standards, building codes, and environmental regulations that mandate energy efficiency, emissions reductions, and sustainable practices can drive market transformation and ensure compliance with sustainability objectives.
- **Research and development funding:** Investing in research, development, and demonstration (RD&D) of green technologies stimulates innovation and advances technological solutions for sustainability challenges.
- **Outreach programs:** Educating the public, businesses, and policymakers about the benefits of green technology and sustainable practices is essential for building awareness and fostering behavioural change.

Conclusion:

Green technology is **crucial** for advancing **sustainable development**, effectively reducing carbon emissions, promoting biodiversity, and ensuring energy security. It drives economic growth through innovation and new job opportunities while addressing urgent environmental challenges. To conclude, we must remember the **words of Bob Brown**, the Senator of Australian Greens: "**The future will either be green or not at all.**"

Down To Earth: How hot is too hot?

Introduction:

- This year, the earth witnessed its **hottest March** on record. March 2024 was also the **10th straight temperature record-breaking month**, as per an April 9 report by the **EU's Copernicus Climate Change Service**.
- According to the recently issued annual "**Climate Summary of India**" by the India Meteorological Department (IMD), **2023** is the **second-warmest year** on record for India, with an average temperature **0.65 degrees Celsius higher** than the baseline established for 1981–2010.

Understanding the dual threat:

- When exposed to extreme heat, **humans cool off through sweating**, but **high humidity** can **hinder** this process by slowing or preventing sweat evaporation.
 - This reduced evaporation causes the body to feel hotter than the actual air temperature, potentially leading to a dangerous **rise in body temperature**.
- The body also **increases blood flow** to the skin to combat the heat. However, these **natural cooling mechanisms** may be **insufficient** in very high heat and humidity, risking a rise in core body temperature.

- Without relief, such as cooling down within a few hours, this situation can escalate to **heat exhaustion**, **heat stroke**, and even **cardiovascular strain**, which could be fatal, particularly for vulnerable individuals.

Need to include humidity in IMD's Criteria:

- On **March 27**, IMD declared this year's **first heatwave conditions** in isolated pockets of **west Rajasthan**. However, IMD's heatwave definition does not account for humidity, even though **India saw a 30% rise** in the magnitude of "**moist heat stress**" during 1980-2020, as per IMD's own report released in 2024.
- The **IMD definition of heatwave** does **not consider humidity** because the weather agency does not calculate a place's wet-bulb temperature.

Urban discomfort:

- A Delhi-based Centre for Science and Environment (CSE) study **analyzed urban heat islands** across nine diverse Indian cities to assess the pervasive heat burden resulting from urban development.
- The study, which covered cities of **different climatic zones** and sizes, demonstrated that urban heat stress is a widespread issue that is not confined to any specific climate or geography.
- From 2014 to 2023, **Nagpur** experienced the **highest heat stress at 97.79%**, followed by **Ahmedabad at 95.25%**, **Chennai at 88.51%**, and **Pune at 81.2%**. **Jaipur** and **Delhi** also faced significant heat stress. In contrast, **Hyderabad**, **Kolkata**, and **Bhubaneswar** experienced less heat stress, likely due to geographic advantages and more abundant water bodies.

Causes of heat stress:

- Urban heat stress in several Indian cities is exacerbated by **poorly designed infrastructure**, which includes densely built environments with impervious surfaces like **concrete** and **ineffective building materials** that do not facilitate heat mitigation or airflow.
- This issue is worsened by the **decline of blue-green spaces**, such as water bodies and vegetation, which naturally help cool the environment.
 - **Between 1999 and 2021**, significant **losses in natural cooling resources** were recorded: **Kolkata** lost **39% of its surface water** and **18.7% of its green cover**; **Pune** saw a reduction of **31.8% in surface water** and **91.3% in green cover**; **Jaipur** lost **21.5% of its surface water** and **88.6% of its green cover**; and **Delhi** lost nearly **half of its surface water** and **63.6% of its green cover**.
- The **India Cooling Action Plan** also highlights that **refrigeration** and **air-conditioning** contribute to **10% of global carbon dioxide emissions**, further complicating the environmental challenges.

Climate change displaying signs of thermal inequity:

- According to various studies, the **elderly**, **children**, and the **poor** are particularly vulnerable to extreme heat.

- The US Centers for Disease Control and Prevention (CDC) notes that the **elderly** are at risk due to **comorbidities** and **slower adaptation to temperature** changes. A Lancet report projects a **370% increase in annual heat-related deaths** among this group if global temperatures rise to just under 2°C by mid-century.
- **Children** are vulnerable due to their dependence on adults for hydration, prompting early or extended school summer vacations.
- The **poor**, often living in congested, polluted areas, face high heat exposure due to **poor living conditions and outdoor work**.
 - A study highlights that all of **Delhi** is at **dangerous humidex levels**, exacerbated by overcrowded slums with inadequate infrastructure.
- The **Centre for Policy Research** assessment found that most of India's **city, district, and state heat action plans fail** to identify and support these vulnerable groups effectively.

Climate change affecting formal economic policy-making:

- The **RBI's Monetary Policy Report 2024** says that despite all parameters showing positive trends in inflation trajectory, **food price uncertainties** are causing **high overall inflation**. The **erratic weather** is the reason why the food supply is being disrupted, adding to the high price rise.
 - It warns that **climate change's aftereffects** might **weaken** the transmission of **monetary policy actions** to financing conditions households and firms face.
 - The forecast for local and international **food prices** is significantly at risk from frequent and overlapping severe **climatic shocks**.
- Increasingly, **central banks** worldwide are **factoring climate change** into monetary policies.
- An **agricultural household** losing income from **erratic weather events** will also spend less. If the **shock** is regular, the **overall income** will also **decline** proportionately, pushing the household into **poverty**. Poverty will then **quickly spread** among people who work in agriculture and other similar fields that have closer contact with the climate. This is true for both **households** with an agricultural focus and **nations with a large agricultural population**.
- World Bank's report, "**The Great Reversal: Prospects, Risks, and Policies in International Development Association Countries**", estimates that **75 poor and least developed countries**, "eligible for grants and zero to low-interest loans from the World Bank's International Development Association (IDA) - **lose, on average, 1.3% of their GDP annually** due to natural

disasters. The losses are increasing, and extreme weather events have doubled in the last decade.

Protection from climate change is part of the right to life:

Legal interventions to combat climate change:

- **Wild Life (Protection) Act 1972**, the **Water (Prevention and Control of Pollution) Act 1974**, the **Air (Prevention and Control of Pollution) Act 1981**, the **Environment (Protection) Act 1986**, and the **National Green Tribunal Act 2010**.
- The **Energy Conservation Act of 2001** was amended in 2022 to provide the Central Government the authority to establish a **carbon credit trading program**.
- Despite regulations recognizing the adverse effects of climate change and seeking to combat them, there is **no single or umbrella legislation** in India relating to climate change and its attendant concerns.

Constitutional interventions related to climate change:

- **Article 48A** of the Constitution provides that the **State shall endeavour to protect** and improve the environment and safeguard the country's forests and wildlife.
- **Article 51 A - Clause (g)** states that it shall be the **duty of every citizen of India** to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures.
 - Though these are **not justiciable** provisions, they acknowledge the importance of the natural world.

Judicial interventions related to climate change:

- Recently, the **Supreme Court** has ruled that citizens' rights to be free from the negative consequences of climate change are **inextricably linked** to the basic **rights to equality and life**.
 - **Article 21** recognizes the right to life and personal liberty, and **Article 14** indicates that all persons shall have equality before the law and the equal protection of laws.
 - These articles are important sources of the **right to a clean environment** and the **right against the adverse effects of climate change**.

Case of making protection against climate change as a distinct right:

- Since the **destruction** caused by climate change only becomes **worse every year**, it is **imperative** that this be acknowledged as a **separate right**. A clean, stable environment free from the unpredictable effects of climate change is necessary for the full realization of the right to life.
- The **right to health** (which is part of the right to life under Article 21) is impacted by factors such as air pollution, shifts in vector-borne diseases, rising temperatures, droughts, shortages in food supplies due to crop failure, storms, and flooding.

FROM THE ARCHIVES

The previous judgements that are mentioned in the Supreme Court's latest verdict

VIRENDER GAUR VS STATE OF HARYANA, 1995

SC recognised the right to a clean environment while observing that ecological balance is critical for Right to Life (Article 21), and that any actions that pollute the environment should be regarded as amounting to violation of Article 21.

KARNATAKA INDUSTRIAL AREAS DEVELOPMENT BOARD VS C KENCHAPPA, 2006

SC took note of the adverse effects of rising sea levels and rising global temperatures.

BOMBAY DYEING VS BOMBAY ENVIRONMENTAL ACTION GROUP, 2006

SC recognised that climate change posed a "major threat" to the environment.

MC MEHTA VS KAMAL NATH, 2000

The Supreme Court (SC) held that Articles 48A and 51A(g), which say that the protection and improvement of natural environment is the duty of the State and every citizen, must be interpreted in light of Article 21.

- The **inability of underserved communities** to adapt to climate change or cope with its effects **violates the right to life** and the **right to equality**.
 - **For example**, If climate change and environmental degradation lead to **acute food and water shortages** in a particular area, poorer communities will suffer more than richer ones.
 - When **sea levels rise**, and oceanic problems ensue, people living in the Lakshadweep Islands will be in a disadvantageous position compared to people living in Madhya Pradesh.
 - Similarly, **forest dwellers or tribal and indigenous communities** are at high **risk of losing not only their homes but also their culture**. Indigenous communities' relationship with nature may be tied to their culture or religion. Their **distinctive culture** may be lost forever if their lands and forests are **destroyed** or if they are forced to flee their homes.
 - Climate change may **impact traditional activities** such as **fishing** and **hunting**, which are the **source of sustenance** for these people.

Case study:**HEAT SMART INITIATIVE:**

- In the diplomatic enclave of **Chanakyapuri, Delhi**, the **informal settlement of Vivekananda Camp**, housing around **2,000 waste-pickers** from West Bengal and Haryana, faces harsh conditions, including prolonged sunlight exposure and poor water availability. Since **March 2023**, residents Jharna, Kastura, and Dulali Khatun have been working as "**climate sakhis**," trained by Chintan Environmental Research and Action Group and SEEDS India to combat heat stress.
- Equipped with a **weather monitoring unit**, they **track temperature and humidity, sharing data with experts** who guide them on heat severity. They use colour-coded boards (**green, yellow, red**) to alert residents about heat precautions. Red signals severe heat, indicating minimal outdoor activity; yellow recommend hydration with water, lassi, buttermilk, and lemonade.
- Their work has led to **several benefits**, especially for women. **Promoting indoor cooking with gas** instead of outdoor coal or wood has **improved health** by reducing smoke exposure. The initiative has also **ended open waste burning** and **winter bonfires**. The sakhis **earn ₹11,000** through a fellowship and have expanded their efforts to other informal settlements in Delhi.

Way Forward:**Focus on microclimate:**

- Enhancing **blue (lakes, rivers, coasts)** and **green (grass, trees)** spaces is the most effective way to cool cities. It can potentially **reduce** ambient temperatures by **up to 5°C** over a 250 m distance. The **WHO** recommends **at least 9 sq m of green space per person**, ideally 50 sq m per capita.
 - Designing heat-resilient streetscapes with **shading and water elements** such as swales, rain gardens, and fountains can also help cool cities.
 - Integrating water-sensitive urban design with active systems like **evaporative wind towers** can reduce temperatures by 3-8°C.
- Smart solutions, such as **solar PV panels** on **shading devices** and **EV charging stations**, are necessary as urban car ownership increases.
- Replacing paved surfaces with **hollow grass pavers** further mitigates heat. Good construction materials and retrofits are crucial, including **shading devices, insulation, reflective materials, and cool and green roofs**.
 - **For example**, cool roofs can lower indoor temperatures by up to 5°C. **Telangana's cool roof policy** aims to achieve 300 sq km of cool roofs by 2028.
 - The Urban and Regional Development Plans Formulation and Implementation (**URDPI Guidelines**) released by the Union Ministry of Housing and Urban Affairs recommend that **cool roofs be mandatory** for city planning strategies.

Mitigation actions through ULBs -

- The Union government recognizes the critical role of urban local bodies (ULBs) in addressing **heat action, clean air, climate action, and energy conservation**. The **15th Finance Commission** has allocated ₹21,21,055 crore for ULBs, of which ₹238,196 crore for cities with million-plus populations, contingent on their performance in air quality, water supply, sanitation, and waste management.
 - **Current heat action is disaster-response oriented**, but the 15th Finance Commission framework can guide cities in implementing effective heat action measures.
- The **Emission Development Strategy**, submitted to the **UNFCCC** during the 27th Conference of the Parties to the UNFCCC in November 2022, outlines **local climate measures**, including **city climate action plans**. It **integrates them** with **master plans** and **building by-laws** and forms climate change cells at the ULB level for coordinated climate action.
- The city's investments in innovation, integration, and sustainability (**cities**) **2.0 initiative**, conceived by the Union Ministry of Home Affairs, are preparing a **three-tier framework** for climate action. Running from **2023 to 2027**, it aims to establish a **national climate data observatory, state climate centres, and climate action departments under ULBs**.
- Additionally, ULBs can **leverage** the Green Climate Fund (**GCF**) and **green bonds** for climate and heat-related projects, focusing on renewable energy, energy efficiency, clean transportation, green buildings, and waste management to mitigate heat impacts.

EPW Articles:

Why are Urban Indian Women More Affected by Unemployment Than Men?

News Excerpt: There is presence of a gender unemployment gap in urban India, wherein urban women face higher unemployment rates compared to men, despite having lower rates of labor force participation.

More About the News: This gap has been observed to widen over time. Even after adjusting for demographic factors, women still face elevated risks of unemployment. Notably, demographic characteristics explain very little of this gap, suggesting widespread discrimination in labour markets.

Key Points:

The sole demographic factor influencing unemployment is higher education, with the increasing educational levels among women contributing to the widening unemployment gap between 2011–12 and 2022–23. This burden of unemployment falls predominantly on young, highly educated women who already encounter significant challenges in the urban Indian labour market. An

examination of the gender unemployment gap in urban India from the 1990s to 2023 reveals persistent disparities and underscores the need for targeted interventions to address structural obstacles and discrimination faced by women in the workforce:

Table 1: UPSS Unemployment Rates, Prime-age Workers

	Aggregate		Rural		Urban	
	Men	Women	Men	Women	Men	Women
1993–94	2.14	1.62	1.48	0.82	4.1	6.47
1999–2000	2.56	1.76	1.82	1.07	4.62	5.89
2004–05	2.19	2.62	1.61	1.83	3.79	7.03
2011–12	2.12	2.37	1.74	1.64	3.02	5.32
2017–18	6.24	5.7	5.89	3.81	7.05	10.89
2022–23	3.35	2.99	2.82	1.87	4.74	7.61

Source: Unit-level data from NSSO and PLFS.

Long-term Persistence: The gender unemployment gap in urban India has endured since the early 1990s, indicating that it's rooted in structural factors rather than solely influenced by recent economic shocks like demonetization or the COVID-19 pandemic.

- **Widening Disparity:** Unlike trends in developed nations, the gender unemployment gap in urban India has widened over time, peaking in 2017–18. This suggests that despite economic growth, barriers to women's employment have either remained unchanged or intensified.

Table 7: Results of the Fairlie Decompositions

	1993–94	1999–2000	2004–05	2011–12	2017–18	2022–23
Women's unemployment	0.068	0.0709	0.0883	0.0751	0.1419	0.0927
Men's unemployment	0.0414	0.0464	0.0415	0.0344	0.079	0.0521
Difference	0.0266	0.0244	0.0469	0.0407	0.0629	0.0406
Total explained						
Women's coefficients	-0.0123	-0.006	-0.006	0.0074	0.0217	0.0134
Men's coefficients	-0.0052	-0.0018	-0.0005	0.0073	0.019	0.0103
N Women	15,948	15,742	18,099	13,441	14,127	17,673
N Men	57,685	62,716	56,873	48,897	52,727	50,837

Source: Author's calculations based on unit-level data from the EUS and PLFS. The sample consists of urban individuals aged 15 to 65 years.

- **Disproportionate Impact of Economic Shocks:** The analysis suggests that negative labour market shocks, such as those experienced in 2004–05 and 2017–18, tend to widen the gender unemployment gap, indicating that women bear a disproportionate burden during economic downturns.
- **Role of Labor Force Participation:** Despite lower labour force participation rates among women, their unemployment rates exceed those of men, indicating prolonged periods of joblessness for women actively seeking employment.

- **Education Paradox:** Despite advancements in women's education, higher educational attainment among women contributes to a growing unemployment gap between genders. This suggests that educational qualifications alone may not translate into employment opportunities for women.
- **Discrimination in Hiring:** Fairlie decompositions reveal that demographic characteristics explain little to none of the gender unemployment gap, indicating extensive discrimination in urban labour markets. This underscores the necessity for targeted measures to address gender-based discrimination in employment.

- **Contribution of Individual Characteristics:** When examining specific demographic characteristics contributing to the explained difference in unemployment rates (from 2011–12 to 2022–23), education emerges as the most significant predictor. The share of women with graduate degrees increased relative to men during this period, contributing significantly to the gender unemployment gap. Education is statistically significant throughout the analyzed periods and explains a substantial portion of the explained difference in unemployment rates, ranging from 80% in 2011–12 and 2017–18 to the entire explained difference in 2022–23.
- **Role of Education:** The rising educational attainment of women has strengthened the gender unemployment gap, highlighting the complex relationship between higher education and unemployment. While higher education can lead to increased wages and living standards, it also correlates with marked differences in unemployment rates across genders. Further research is needed to understand whether low rates of job creation for skilled workers or the lack of employability of graduates are the primary drivers of unemployment among highly educated individuals.

Addressing Gender Disparities:

- **Alternative Definitions of Unemployment:** Proposed definitions of unemployment for developing economies offer contextually relevant perspectives, highlighting the need to consider nuanced factors influencing unemployment.

Table 2: Shares of the Labour Force, Prime-age Workers (%)

	Rural		Urban	
	Men	Women	Men	Women
1993–94	50.49	27.95	16.97	4.59
1999–2000	50.51	26.81	18.20	4.48
2004–05	48.76	28.28	17.88	5.08
2011–12	50.65	22.28	21.58	5.49
2017–18	53.54	17.12	23.09	6.24
2022–23	49.21	25.78	18.78	6.22

Source: Same as Table 1.

Examining Unemployment Dynamics:

- **Distinct Periods of Employment Trends:** The analysis identifies two contrasting periods: one marked by high employment growth until 2004–05 and another characterized by significant job loss in 2017–18. Despite these differences, the gender unemployment gap persisted and even intensified.
- **Impact of Education:** Higher education among women exacerbates the gender unemployment gap, challenging the notion that education alone can mitigate gender disparities in employment.
- **Historical Context and Research Gaps:** While there's a historical focus on unemployment among educated young men, limited research exists on the specific challenges faced by women in the labour force. Further research is needed to explore these complexities.

The Fairlie decomposition method:

- **Explained Component:** The decomposition reveals that demographic characteristics do not fully explain the observed gender unemployment gap. Across all periods examined, the estimated difference in unemployment rates remains positive and increases over time. However, from 1993–94 to 2004–05, the explained component of the gap is negative, indicating that demographic characteristics alone cannot account for the observed gender disparities in unemployment rates. This suggests the presence of extensive discrimination in the hiring process, as evidenced by existing literature on gender discrimination in recruitment practices.

Table 9: Impact of Education on the Unemployment Gap (%)

	2011–12		2017–18		2022–23	
	Women's Coefficients	Men's Coefficients	Women's Coefficients	Men's Coefficients	Women's Coefficients	Men's Coefficients
Explained component as share of actual gap	18.18	17.94	34.50	30.21	33.00	25.37
Education as share of explained component	76.35	76.99	80.97	54.58	106.87	113.96
Education as share of actual gap	13.88	13.81	27.93	16.49	35.27	28.91

Source: Author's calculations.

- **Global Gender Disparities:** Gender gaps in unemployment are prevalent globally, with developing economies experiencing significant disparities. However, India has seen an increase in the urban gender unemployment gap over time, contrasting with trends in developed nations.
- **Future Research Directions:** The study calls for further research to delve into the underlying causes of the gender unemployment gap and evaluate the

effectiveness of policy interventions in addressing gender inequality in labour force outcomes.

Conclusion: Urgent attention is required to address rising unemployment and gender disparities in urban India. Policy interventions should focus on reducing discrimination, improving skills matching, and creating inclusive employment opportunities for women. Further research is essential to understand the evolving dynamics of labour markets and inform effective policy responses.

Exposing Chinks in Federal Fiscal Relations Kerala versus the Union Government

News Excerpt: The ongoing legal dispute between the Kerala government and the central government regarding the regulation of states' public debt brings to light crucial issues concerning federal fiscal relationships.

More About the News: The use of extra-budgetary borrowings to cover fiscal deficits poses challenges to the transparency of budgetary figures. Rather than resorting to court intervention, a consensus approach is advocated to address these issues.

Point of Contention:

- **Borrowing Limit Dispute:** The union government has imposed borrowing limits on Kerala based on a formula that takes into account various factors, including borrowing from all sources and deducting off-budget borrowing (OBB) and extra-budgetary resources (EBR) raised through state public undertakings. Kerala argues that this calculation method, particularly including net accruals from the public account as part of borrowing, goes against Article 293 and reduces its borrowing capacity significantly.
- **Impact on State Finances:** The reduction in borrowing limits has led to a significant shortfall in funds for Kerala, impacting its ability to implement budgetary plans and causing a financial crisis. The state claims that this interference by the union government disrupts its fiscal autonomy and jeopardizes its economic development goals, as outlined in its Fiscal Responsibility and Budget Management (FRBM) Act.
- **Union Government's Perspective:** The union government justifies its actions by citing concerns about Kerala's fiscal management and adherence to FRBM Act targets. It argues that Kerala's resort to OBBs and EBRs, facilitated by entities like the Kerala Infrastructure Investment Fund Board (KIIFB) and Kerala Social Security Pension Limited (KSSPL), bypasses fiscal discipline and could lead to a debt trap.
- **Legal and Constitutional Issues:** Kerala alleges that the union government's amendments to the FRBM Act, particularly the introduction of a general government debt cap, infringe upon its constitutional rights to manage its finances independently. The state also raises concerns about the arbitrary nature of these amendments and their impact on its ability to fulfil budgetary obligations.

The issue of off-budget borrowing (OBB) and extra-budgetary resources (EBR):

- **Transparency and Fiscal Discipline:** OBBs and EBRs are seen as non-transparent means of financing state budgets and fiscal deficits. By not disclosing such borrowings in the budget, the government compromises transparency and dilutes legislative oversight, which is crucial for effective public financial management.
- **Impact on Debt Levels:** The reliance on OBBs and EBRs has led to a higher debt-to-GSDP ratio for Kerala, surpassing the limit prescribed by the Fifteenth Finance Commission. This indicates unsustainable debt levels, which could have adverse consequences for the state's financial stability and overall economic health.
- **Concerns Raised by Authorities:** Both the Comptroller and Auditor General (CAG) and a Reserve Bank of India study have flagged Kerala's debt levels as concerning. The state is categorized among highly stressed states requiring urgent corrective measures, indicating the severity of the issue.
- **Union Government's Perspective:** The union government argues that public finance management is a national issue, and reckless borrowing by states could have adverse macroeconomic consequences for the entire country. It emphasizes the need for fiscal discipline and the avoidance of unsustainable debt accumulation.
- **Responsibility of the Union Government:** Under Article 293(4), the union government has the responsibility to fix the Net Borrowing Ceiling (NBC) to ensure macroeconomic stability. This includes considering factors such as overall government debt and fiscal discipline to prevent any potential domino effect that could endanger financial stability at the national level.

Kerala's response:

- **Relative Contribution to National Debt:** Kerala argues that its contribution to the general government debt in the country is relatively small, ranging from 1.7% to 1.75% during 2019–23. It contends that this minimal contribution does not pose a significant risk to macroeconomic stability compared to the union government's much larger outstanding liability, which exceeds the FRBM limit of 40% of GDP.
- **Jurisdictional Authority:** Kerala asserts its exclusive jurisdiction over its public debt, as stipulated in the state list. It emphasizes that just as the union government has control over its public debt, the states should have autonomy in managing theirs. Any attempt by the union to arbitrarily control state borrowing undermines this constitutional principle.
- **Asymmetric Borrowing:** The state government points out the asymmetric nature of borrowing between the union and states, highlighting the union's ability to borrow recklessly, as opposed to states. It criticizes the 2018 amendment to the FRBM Act for introducing what it perceives as an escape clause for the union to circumvent its fiscal targets.

- **Fiscal Priorities and Development Outcomes:** Kerala defends its higher fiscal deficit and debt levels as necessary outcomes of its investments in critical sectors like health and education, which have contributed to its high ranking in the Human Development Index (HDI) among Indian states. It argues that comparing its fiscal parameters with the average of other states is unfair, given its distinct priorities and achievements in human development.
- **Impact of Union's Policies:** Kerala attributes the adverse impact on its credit rating and borrowing costs to the union's fiscal weaknesses and mismanagement of public finances. It argues that the union's credit rating affects that of the states and their public enterprises, ultimately increasing the cost of borrowing for entities like the Kerala Infrastructure Investment Fund Board (KIIFB).

Where Does Kerala Stand?

- **Profligate Fiscal Behavior:** Kerala has exhibited profligate fiscal behaviour, with fiscal deficits exceeding 5% in both 2020–21 and 2021–22. Additionally, its debt ratio of around 40% is among the highest among Indian states. These factors, coupled with a primary deficit exceeding 2.5% of GSDP, raise concerns about fiscal sustainability.
- **Misinterpretation of Borrowing Limits:** Kerala's contention that public account liabilities or off-budget/extra-budgetary borrowings should not be considered part of total borrowings is deemed incorrect. Such borrowings create opacity in budget figures, rendering them unreliable and obscuring the actual fiscal deficit. The Comptroller and Auditor General (CAG) and finance commissions have expressed concern over both union and state governments exceeding their borrowing limits due to OBBs/EBRs.

No Less Guilty:

- **Union's Similar Infractions:** While the union government accuses Kerala of fiscal mismanagement, it is itself guilty of similar infractions. The union government's fiscal management has been critiqued for amendments to the FRBM Act, dubious concepts like effective revenue deficit, and continually shifting fiscal targets. It has resorted to draconian measures, such as retrospective taxation, to finance populist expenditures.
- **Amendments to FRBM Act:** The FRBM Act has been amended multiple times, each time shifting the targets for fiscal consolidation to future dates. These amendments have diluted the original targets of achieving a 3% fiscal deficit and zero revenue deficit, demonstrating a lack of commitment to fiscal discipline.

Deviation from fiscal target:

- **Amendments to the Escape Clause:** The amendment in 2018 expanded the scope of the escape clause to cover various contingencies such as national security, calamities, agricultural crises, and significant deviations in economic growth. While providing flexibility, it also set limits on deviations from fiscal deficit targets, aiming to maintain fiscal discipline.

- **Utilization of the Escape Clause:** The Finance Minister has invoked the escape clause to deviate from fiscal targets in certain years, notably in 2019–20 and 2020–21. These deviations were ostensibly due to factors like the COVID-19 pandemic and structural reforms with fiscal implications. However, the widening gap between targeted and actual deficits even before the pandemic raises questions about the efficacy of the FRBM Act.
- **Relevance and Compliance:** The widening disparity between targeted and actual deficits undermines the relevance of the FRBM Act, suggesting a lack of adherence to fiscal discipline. Additionally, the non-compliance with provisions like the submission of the Medium-term Expenditure Framework Statement further erodes the credibility of fiscal governance.
- **Accountability and Transparency:** The absence of submissions like the Medium-term Expenditure Framework Statement after 2019 highlights a lack of accountability and transparency in fiscal planning and management. This compromises the ability to assess the sustainability of borrowings and evaluate associated risks.

Fully Serviced Bonds:

- **Not unique to Kerala:** The issue of off-budget or extra-budgetary borrowings (OBB/EBR) is not unique to Kerala; the union government has also engaged in similar practices through entities like the National Highways Authority of India (NHAI), Indian Railway Finance Corporation (IRFC), and the National Small Savings Fund (NSSF).
- **NHAI and IRFC:** These entities raise funds through fully serviced bonds, with the union government servicing the debt through budget allocations. Despite being government liabilities, these borrowings are not included in the union budget. The CAG has noted concerns about the nature of these borrowings, considering them as EBRs that shift servicing responsibilities to future years.
- **NSSF:** The NSSF, part of the union's public account, enables off-budget borrowing without requiring parliamentary approval. While NSSF liabilities constitute part of the union government's total liabilities, they do not factor into the fiscal deficit calculation, leading to opacity in fiscal reporting.
- **The magnitude of OBB/EBR:** The magnitude of off-budget borrowings is significant, with the CAG estimating them to be over ₹1.75 lakh crore in a single fiscal year. These borrowings, not disclosed in the budget, significantly impact the actual fiscal deficit, potentially exceeding FRBM Act limits.
- **Challenges and Disputes:** The inclusion of OBB/EBR in determining states' Net Borrowing Ceilings (NBC) while excluding them from calculating the union's fiscal deficit reflects an asymmetry in approach. This has led to disputes between the union and states, such as the ongoing contention between Kerala and the union government.
- **Need for Resolution and Reform:** Resolving these disputes and addressing the broader issue of OBB/EBR requires consensus-building between the union and states. A consultative body like the Goods and Services Tax Council

could serve as an appropriate forum for such discussions. Additionally, revisiting and restructuring the FRBM Act, as recommended by the Fifteenth Finance Commission, could help address systemic issues and enhance fiscal transparency and accountability.

Conclusion: To address these issues, there is a need for comprehensive definitions of OBBs/EBRs and clear criteria for their disclosure in budgets. Additionally, a consultative forum involving the union government and all states, such as the Goods and Services Tax Council, could facilitate consensus-building on fiscal matters. Moreover, a review and restructuring of the FRBM Act, as recommended by the Fifteenth Finance Commission, may be necessary to enhance fiscal discipline and transparency across all levels of government.

Towards Tax Justice and Wealth Redistribution in India

News Excerpt: Discussions surrounding income and wealth inequality in India have surged recently, spurred in part by the publication of a study titled "Income and Wealth Inequality in India, 1922–2023: The Rise of the Billionaire Raj."

More About the News: This study revealed that economic disparities in India have reached unprecedented levels (Bharti et al. 2024a). Subsequent public debates have delved into various aspects, including the opacity of wealth statistics, suitable policies to address rising inequality, and the unique context of India, where income and wealth disparities are intricately linked with caste injustices. In this concise follow-up paper, we assess the significance and reliability of our findings amidst the dearth of official economic data. Leveraging our novel estimates, we propose concrete measures for wealth taxation and redistribution aimed at curbing extreme inequality in India and generating essential fiscal resources for bolstering critical social sector investments. Additionally, we demonstrate that such redistributive initiatives would primarily benefit the poor, lower castes, and middle classes while minimally affecting a small fraction of extremely affluent upper-caste families.

Income and Wealth Inequality at Their Highest Levels on Record:

- **The study "Income and Wealth Inequality in India, 1922–2023: The Rise of the Billionaire Raj"** sheds light on the historical trajectory and current state of income and wealth inequality in India. Here's a summary of the key findings and implications:
- **Methodological Approach:** The study adopts a comprehensive methodology, drawing on various data sources to construct long-run estimates of income and wealth inequality. This approach enables a nuanced understanding of inequality dynamics over time.
- **Trends in Inequality:** The research reveals a decline in income and wealth inequality post-independence, followed by a resurgence starting in the 1980s and escalating dramatically since the 2000s. Notably, there

has been a significant rise in top-end inequality, particularly in wealth concentration, in recent years.

- **Current Levels of Inequality:** India's top 1% income and wealth shares have reached historically high levels, with the wealthiest individuals controlling a disproportionate share of the country's total wealth and income. This disparity has widened significantly since the 1980s, surpassing levels seen during the colonial British Raj.
- **Comparative Analysis:** The study juxtaposes India's contemporary wealth disparity with historical contexts and international benchmarks, highlighting the severity of the country's inequality compared to global standards.
- **Income and Wealth Thresholds:** The research underscores the stark income and wealth disparities in India, with relatively low thresholds for entry into the top income and wealth percentiles. Meanwhile, the majority of the population earns minimal income, exacerbating economic inequality.
- **Wealth Distribution:** The study reveals the extreme concentration of wealth at the top, with a tiny fraction of the population holding a significant share of total wealth. This concentration is particularly pronounced among the ultra-rich, with average net wealth reaching staggering levels.
- **Implications:** The findings underscore the urgent need for policy interventions to address widening income and wealth disparities in India. Redistributive measures, targeted social welfare programs, and initiatives to tackle systemic inequalities, including those based on caste, are crucial for fostering inclusive growth and social cohesion.

Recent Critiques & Progressive Wealth Tax to Finance Redistribution to the Middle Class and Poor:

- **Critiques on Inequality Measurement:** The critiques highlight the challenges in accurately measuring income and wealth inequality in India due to limitations in data quality and transparency. Despite these challenges, the existing estimates provide a reliable basis for discussions on taxation and redistribution policies.
- **Response to Critics:** The authors defend their findings against attempts at "inequality denialism" and emphasize the rigour of their analysis. They acknowledge the need for better data but assert that the current estimates are credible and essential for addressing the inequality crisis.
- **Progressive Wealth Tax Proposal:** The proposal for a progressive wealth tax aims to address the extreme concentration of wealth among the top percentile in India. It targets the wealthiest individuals with a net wealth exceeding ₹10 crore, affecting only a small portion of the population.

- **Variants of Tax Package:** The proposal outlines three variants of the tax package, each with different tax rates and thresholds. These variants aim to generate significant tax revenues, ranging from 2.73% to 6.08% of GDP while ensuring that the burden falls primarily on the ultra-wealthy.
- **Democratic Debate and Policy Design:** The proposal emphasizes the importance of a democratic debate to determine the specifics of the tax package, including exemption thresholds, progressivity, and tax rates. It provides a framework for further discussion on tax justice and wealth redistribution in India.
- **Social Sector Investments:** The proposal underscores the need for increased investment in health, education, and other social sectors to benefit the broader population. By demonstrating the potential fiscal space created by the tax package, it advocates for prioritizing social sector spending to address societal needs effectively.

Wealth Inequality, Caste, and Redistribution:

- **Caste and Wealth Inequality:** The analysis reveals a stark disparity in wealth distribution across caste lines. Upper castes hold a significantly disproportionate share of national wealth, while SCs and STs possess far less wealth compared to their population shares. Indian billionaires are predominantly from upper castes, further illustrating the link between caste privilege and economic advantage.
- **Proposed Tax Justice Plan:** The proposed tax package includes an annual wealth tax and an inheritance tax, targeting only the wealthiest individuals with a high exemption threshold. By focusing on the top echelons of wealth, the plan aims to generate substantial tax revenues while minimizing the impact on the broader population.
- **Revenue Potential and Social Sector Investments:** The estimated revenues from the tax package could provide significant fiscal resources for investment in public education, health, and other social sectors. This is crucial given the historically low levels of public expenditure in these areas compared to global standards.
- **Impact on Caste Dynamics:** The proposed tax package is expected to benefit lower castes and the middle class while primarily affecting ultra-wealthy upper-caste households. By redistributing wealth and creating fiscal space for social sector investments, the plan aims to weaken the rigid link between social and economic inequalities rooted in the caste system.
- **Ethical and Practical Considerations:** The paper raises ethical concerns about extreme wealth concentration and its implications for social justice and political stability. It argues that addressing economic inequalities

through progressive taxation is not only instrumental for sustainable growth but also essential for ethical reasons, given the pressing social challenges faced by India.

- **Political Discourse and Policy Implications:** The discussion emphasizes the importance of ongoing public debate and political engagement on issues of wealth inequality and social justice. It calls for translating the momentum of public discourse into concrete policy actions, particularly in the context of the 2024 Lok Sabha election.

Conclusion: India's income and wealth disparities have surged to unprecedented levels, surpassing even those witnessed during the British Raj. This alarming concentration of economic resources poses grave risks, including stunting long-term growth, fostering social and political unrest, and allowing undue influence on governance. To tackle these inequities and pave the way for social sector investments, advocating for an annual wealth tax and an inheritance tax targeting only the wealthiest individuals above a substantial exemption threshold is crucial. The potential revenues generated, estimated at 2.5% to 5% of GDP, could significantly bolster public education and health budgets. Moreover, analyzing caste-coded data reveals the disproportionate wealth concentration among upper castes, underscoring the need for policies benefiting lower castes and the middle class. Despite attempts to sideline the issue, the 2024 Lok Sabha election has spurred a robust public discourse. It's essential that this momentum translates into concrete policy measures, including progressive wealth taxation, effective redistribution, and enhanced investment in social sectors, to foster a fairer and more prosperous India.

Shifting Trends in Global Migration

News Excerpt: The phenomenon of global migration has undergone profound changes over the past few decades, as highlighted in the World Migration Report 2024.

More About the News: With the global migrant population steadily increasing, reaching 281 million in 2020, migration has become a significant feature of the modern world. This report sheds light on the key trends and dynamics shaping global migration patterns, offering insights into the origin and destination of migrants, as well as the demographic composition of migrant populations.

The World Migration Report 2024 sheds light on the significant changes in the size and structure of global migration:

- **Increase in Global Migrant Population:** The global migrant population has steadily grown from around 84 million in 1970 to 161 million in 1995, reaching 281 million in 2020. This represents a marginal improvement in the momentum of migration, with the share of

migrants in the global population rising from 2.3% to 3.6% over this period.

- **Regional Distribution of Migrants:** Most of the increase in migrants has been to developed nations in Europe, North America, and Oceania, while it has been more restricted in Asia, Africa, and Latin America. Oceania has the highest share of migrants in its population, while the United Arab Emirates (UAE) ranks as the top destination nation for migrants.
- **Gender and Age Composition:** The gender composition of migrants has shown a slow increase in the ratio of male migrants, although female immigrants still outnumber male immigrants in countries like the US, Canada, France, Spain, Italy, and India. Additionally, the share of migrant children has fallen sharply from 16% to 10.1% over the last 25 years, possibly indicating more restricted avenues for legal emigration of entire families.
- **Migration for Employment:** A significant reason for migration is the pursuit of higher living standards and a more rewarding life, leading to international emigration flows being dominated by migrant workers, estimated to number around 169 million. Arab states are major destinations for migrant workers, accounting for almost 41.45% of their working population.
- **Increase in Remittances:** The growing preponderance of labour in the migrant population has led to a spectacular sevenfold increase in the size of global remittances over the last quarter-century, from \$128 billion in 1995 to \$831 billion in 2020. This amount is now estimated to be marginally higher than global foreign direct investments during the year.
- **Changing Nature of International Migration:** Contrary to common belief, international migration is increasingly becoming a flow between more affluent countries rather than just an influx from poor to rich nations. This is evidenced by significant changes in the list of top 20 origin and destination nations over the past 25 years.

The shifts in originating and destination nations, as well as the impact on high-income economies:

- **Changes in Top Originating Nations:** While the list of top originating nations has changed only marginally, there has been a substantial increase in the pace of emigration across countries. India has displaced Russia to become the largest originating nation, with the

number of emigrants more than doubling to 17.8 million between 1995 and 2020. Mexico moved up to the second position, while the emigration numbers from Russia dwindled marginally, and China saw its numbers double.

- **Shift in Human Development Index (HDI) of Originating Nations:** There has been a noticeable shift in the HDI composition of top originating nations, with a sharp drop in the number of low and medium HDI countries in the top 20 list. This suggests a preference for relatively more skilled migrants in recent times.
- **Changes in Top Destination Countries:** Similarly, there has been a drop in the number of low and medium HDI countries in the top 20 destination countries, with high and very high HDI nations increasingly dominating immigration trends. India remains the sole exception among low and medium HDI countries in the top 20 destination list.
- **Increase in Share of Migrants in Top Destination Nations:** The share of migrants in the total population of top destination nations has increased significantly, reflecting the growing intensity of migration in high-income economies. Countries like Canada, Jordan, Australia, Saudi Arabia, Hong Kong, Kuwait, and the UAE have seen substantial increases in the share of immigrants in their populations, reaching new highs in some cases.
- **Impact on High-Income Economies:** Migration has made significant inroads into many rich nations, with immigrants accounting for a notable proportion of the population in countries like Italy, France, the US, the UK, Spain, and Germany.

Conclusion: The report underscores the importance of addressing the diverse challenges and opportunities associated with migration, including issues related to labour migration, gender disparities, and demographic shifts. By recognizing the economic, social, and cultural contributions of migrants, societies can harness the potential of migration to foster inclusive growth and development. It is imperative to adopt a holistic approach to migration governance, one that prioritizes the protection of migrants' rights, promotes social cohesion, and maximizes the benefits of migration for all stakeholders. By embracing diversity and promoting inclusive policies, countries can harness the full potential of migration to build resilient and prosperous societies in the years to come.

CONTEMPORARY ETHICS CASE STUDY

Q. A reputed Drugs Multinational company based in the USA developed a Vaccine for the ongoing pandemic. The company got its product approved by the US FDA (Food and Drug Administration) authorities and launched it internationally.

The company increased its market share over time and earned substantial profit internationally. The company announced this achievement and indicated that the vaccine will soon be available for Indian households. However, the company requested the government to sign an indemnity clause, i.e., if there is any side effect or someone dies after taking the vaccine, the company will not be held accountable and prosecuted under Indian law. Along with that, direct usage authorisation and legal protection should be given over any side effects from using their shots.

The government has declined to meet the requests for legal protection over any side effects from using their shots. However, the government said They can have private tie-ups after necessary regulatory clearances. However, sovereign indemnity is something we can't give, and domestic trials will be mandatory for any pharma company, whether foreign or Indian.

You are currently the Director General of Health Services (DGHS). One day, you get a call from a person who happens to be a cabinet minister asking you to approve the vaccine without mass trial; however, there are media reports that in the countries where that vaccine was allowed, people who got administered were facing the problem of hypercoagulability (thickness of blood), and Myocarditis. In the meantime, the vaccine was approved for trials at a higher level, citing the reason for the public health emergency.

One day you sent a team of biologists for random sample testing of the vaccine. The random sample test conducted by the inspecting team found that the vaccine presented for the Indian market is of lower quality, including a few of them being rejected vials from other countries. Further investigation also discovered that the vaccine had severe side effects apart from what was previously found, and they also had plans to export the rejected vaccines to India for hefty profits.

A few weeks later, DM Karauli (Rajasthan) told you over the phone that three elderly citizens of his district died due to clotting of blood after just getting the vaccine dose 3 days back. Along with that, there was a sudden increase in cases in the Cardiology department of the District hospital.

The next day, a very prominent reporter of the leading daily told you in a meeting that he has a source claiming fudging of trial data of the vaccine. Now, you told the incidents to the minister concerned and advised him/her to stop the use of the vaccine, but the minister refused to stop the vaccine, citing the pressure from the opposition and the public interest at large as the pandemic is already taking many lives daily.

- (a) Examine the ethical dilemmas involved in the case.
- (b) What options are available to you? Critically analyse the options available and choose the best option.
- (c) You, being the DGHS, what step will you take so that such incidents are not repeated in future?

(Answer in 250 words) 20

THEMATIC ESSAYS

1. "A disciplined mind leads to happiness, and an undisciplined mind leads to suffering."
-Dalai Lama.
2. Those who seek a better life must first become a better person.
3. It is not because things are difficult that we do not dare; it is because we do not dare that things are difficult.



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PHILOSOPHY OF THE MONTH

Why do young men find themselves aimless, stuck?

Modern/western culture lacks key developmental elements, including rituals and rites of passage. When a man turns 18 in the US, the attitude is 'swim or die'.

Imagine the feeling of a **Spartan graduating** from the **Agoge**. Or, the moment a Maori youngster gets his tribal tattoos, marking his passage from initiate to intermediate – and perhaps even elder.

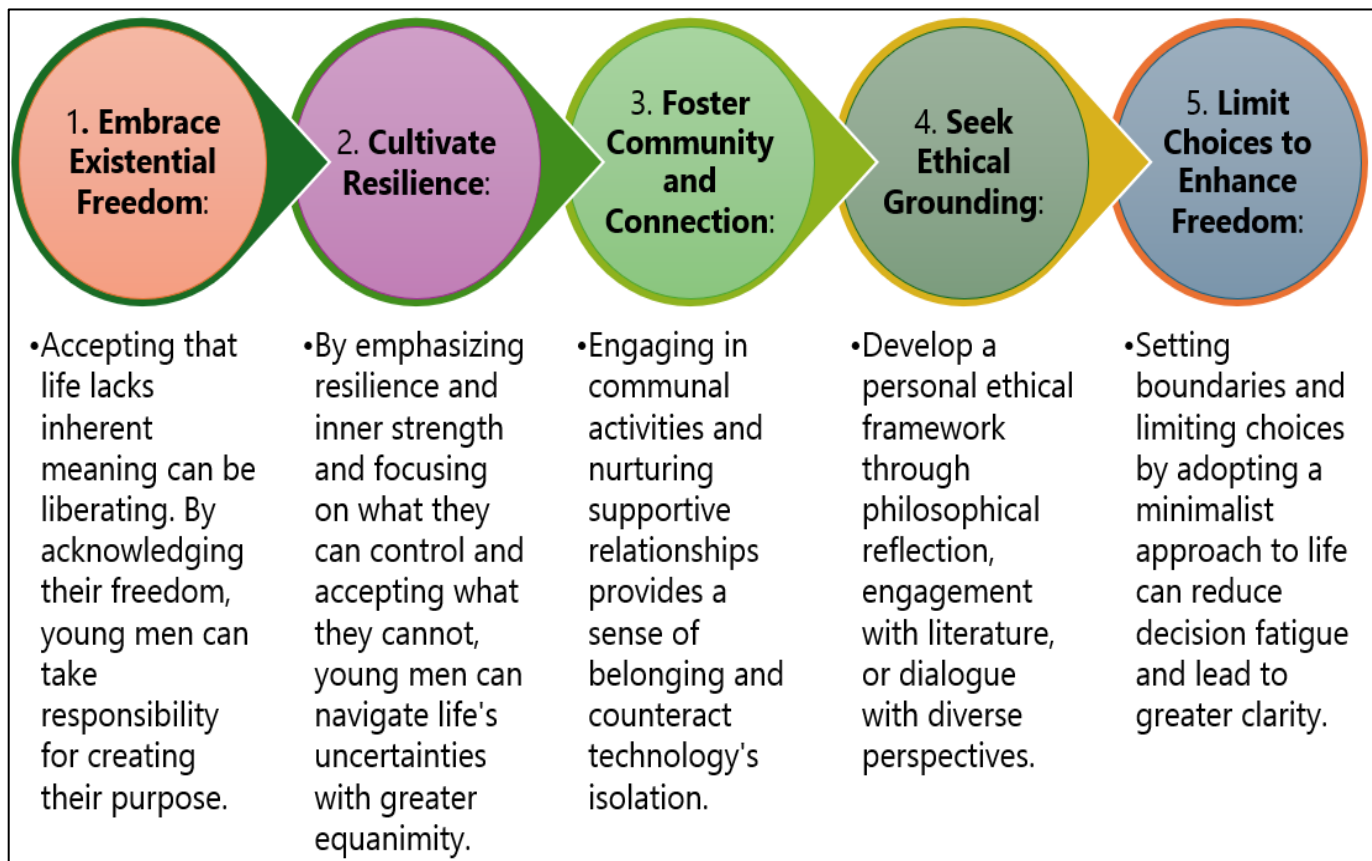
Compare that to when a **teenager** gets his first job at a fast-food restaurant or graduates from high school. **Rituals and rites of passage were held sacred** by cultures around the world. Our worlds had a sense of romance and mystery before **global connectivity made us homogenous**.

In modernity, there's **no incentive** to participate in one's community because **service and merit are decoupled**. This is why young men find themselves aimless, stuck, and thrashing for purpose and passion, and this is why elders have midlife crises.

When a **youngster lacks wisdom and guidance**, he lives on the precipice of spirituality and philosophy, able to perceive it but not enter the sea. As soon as a boy becomes a man, he is exploited for high return on investment (ROI). Expectations pile up from his workplace to his family.

Overcoming Aimlessness: A Philosophical Path Forward

Addressing the crisis of aimlessness requires a philosophical re-evaluation of life's purpose and values. Here are several strategies that can help young men find direction:



In conclusion, the aimlessness experienced by many young men is a multifaceted issue that calls for deep philosophical inquiry. By engaging with diversified aspects of happy life elements, young men can navigate out of inertia and toward a life of purpose and fulfilment. Through this struggle, a meaningful and authentic existence can emerge.

MAP CONNECT: WORLD

NEVATIM AIR BASE:
A few Iranian ballistic missiles penetrated Israel's defenses, inflicting minor damage on an airbase in southern Israel.

HANDLOVA:
The Slovak Prime Minister survived an assassination attempt in this city.

SVALBARD:
The last piece of privately owned land in this strategic archipelago in the Arctic is for sale, spurring China-Norway tensions.

HINGLAJ MATA TEMPLE:
An ancient cave temple in the Hingol National Park in Baluchistan province hosts Pakistan's largest Hindu festival, Hinglaj Yatra.

CORNWALL COAST:
A unique blue lobster washed up in the UK near the Celtic Sea and the English Channel.

HAINAN FREE TRADE PORT:
Hainan, China's only tropical island province in the South China Sea, has established a free trade port. Its strategic location is ideal for aerospace industry development.

TAMIS RIVER:
A prehistoric settlement in the Banat region in Serbia is believed to date back 7,000 years to the late Neolithic period and is associated with the Vinča culture.

NAKURU DAM:
A blockage in an underpass directing water to the Tongi River caused it to burst in Kenya's Nakuru County.

ALDEIA VELHA AND CACIQUE FONTOURA LAND:
Brazil has officially recognized two Indigenous territories, granting them legal protection against invasions by illegal loggers and gold miners.

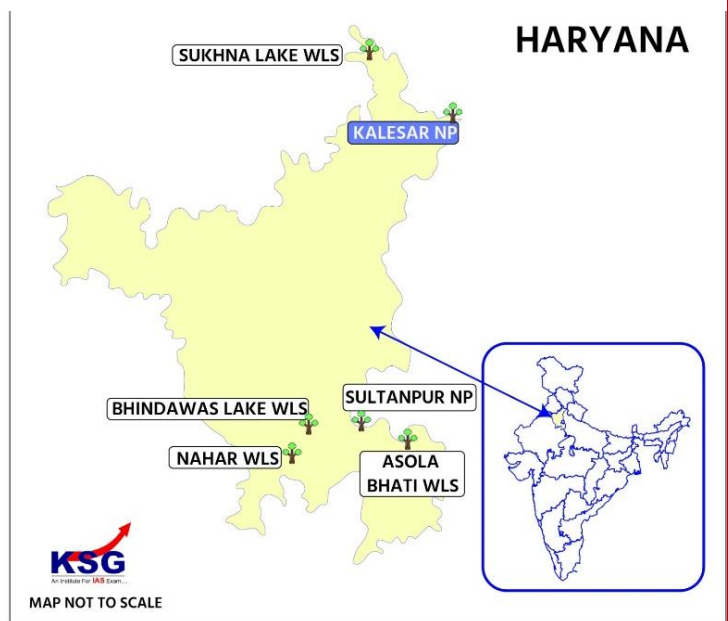
ATACAMA DESERT:
Researchers found Phylum Firmicutes bacteria thriving 13 feet below the surface, resistant to salt and can survive in oxygen-free conditions.

MAP NOT TO SCALE

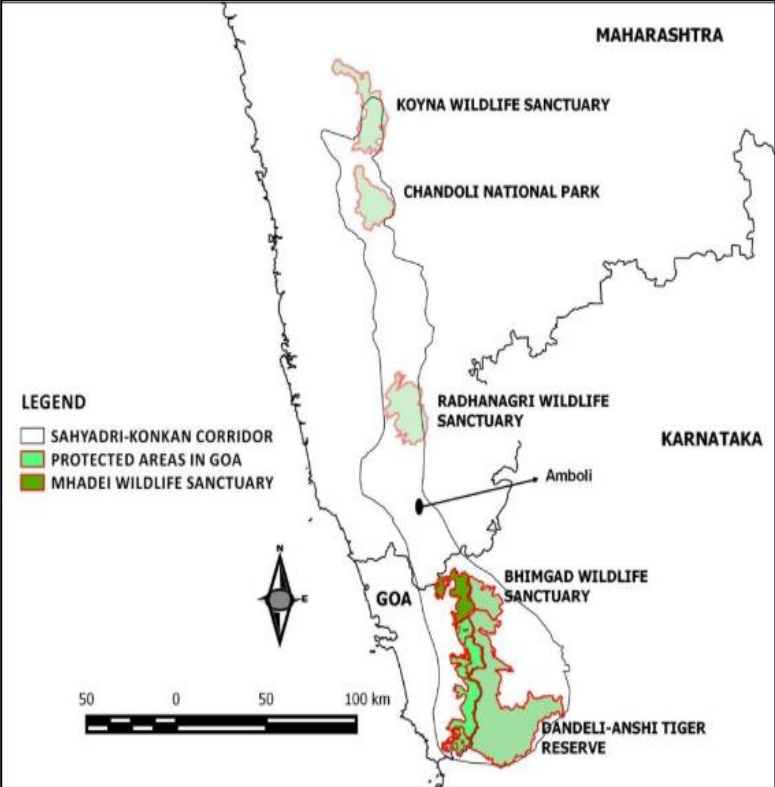
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PROTECTED AREAS: INDIA

AREAS IN NEWS	ABOUT:
<p>Pulicat Wetland</p> <p>News Excerpt: Concerns loom over damage to Pulicat wetland as claim settlement of villages in the sanctuary begins.</p>	<p>Pulicat Lake</p> <ul style="list-style-type: none"> Pulicat Lake is a saltwater lagoon on the Coromandel Coast of Andhra Pradesh state. It extends from the extreme southeastern portion of Andhra Pradesh into the adjacent portion of Tamil Nadu. It has a length of about (50 km) and a width of (5 to 16 km). Towns along the lake include Dugarajupatnam and Pulicat. Sriharikota Island separates Pulicat Lake from the Bay of Bengal, <ul style="list-style-type: none"> It is the site of Satish Dhawan Space Centre, India's satellite-launching facility. <p>More about News:</p> <ul style="list-style-type: none"> Initiation of settlement of claims for local communities residing within Pulicat Birds Sanctuary boundary limits has raised concerns over the shrinking of the sanctuary's eco-sensitive zone (ESZ). The State government plans to denotify a sizable area of the sanctuary. The process of rationalizing the sanctuary's boundaries has begun, with the settlement of claims being the first step towards denotifying the sanctuary. <p>Significance of Pulicat Lake:</p> <ul style="list-style-type: none"> Pulicat is a biodiversity hotspot that hosts around 250 species of birds, 50 of which are intercontinental species. Pulicat lagoon is unique in its vulnerability to shoreline dynamics and the presence of more mangrove plantations in the ESZ rather than in the Sanctuary area. <ul style="list-style-type: none"> Over one lakh people depend on it for livelihood and identity. Its importance to wildlife and role in Central Asian Flyway for birds. The Pulicat barrier island and associated sand systems act as critical cyclonic buffers and barricades against tidal and storm surges. It also acts as a climate buffer for the city, as the lagoon-wetland complex acts as a massive flood water catchment when cyclones hit the coast.
<p>Kalesar Wildlife Sanctuary</p> <p>News Excerpt: The Supreme Court stayed the construction of four proposed dams inside Kalesar Wildlife Sanctuary in Haryana's Yamunanagar district.</p>	<ul style="list-style-type: none"> Kalesar Wildlife Sanctuary is situated in the foothills of Shivalik ranges of mighty Himalayas. It falls under Yamunanagar District of Haryana, sharing boundary with three States viz., Himachal Pradesh, Uttarakhand & U.P. The Yamuna River lies to its east. Rajaji National Park, which is in Uttarakhand lies to the northeast of the park while the Simbalbara National Park nestled in Shivalik Hills lies to the north, sharing a border with Himachal Pradesh. In the west lies the Morni Hills. Kalesar National Park is named after the Kalesar (shiva) temple located in a protected area. The whole area is full of biodiversity, having dense Sal forests, Khair forests and patches of grasslands, which support an amazing variety of plants and animal species.



	<p>Fauna:</p> <ul style="list-style-type: none"> It houses many threatened animals like Leopards, Ghoral, Barking deer, Panthers, Sambar, Chital, Python, King Cobra, Monitor lizard etc. Occasionally Tigers and Elephants visit this park from Rajaji National Park. <p>Flora:</p> <ul style="list-style-type: none"> This forest has sal trees and Khair, Shisam, Tun, Sain, Chhal, Jhingan, Sain and Amla in Haryana forms a natural 'sal' tree belt.
<p>Sahyadri Reserve</p> <p>News Excerpt: The Maharashtra forest department is gearing up for translocation of a few tigers from the Tadoba-Andhari Tiger Reserve (TATR) in Chandrapur to Sahyadri, the lone tiger reserve in the state's western region</p>	<ul style="list-style-type: none"> The Sahyadri Tiger Reserve is in the Sahyadri Ranges of Western Ghats in Maharashtra. These ranges form a common boundary between Maharashtra, Karnataka and Goa, and consist of rich evergreen, semi-evergreen and moist deciduous forests. The name of the Reserve comes from the Sahyadri mountain range, which is a part of the Western Ghats of the north. The range of elevation of the area is 500 m to 1500 m above sea level. It is the first Tiger Reserve of Western Maharashtra and the fourth Tiger Reserve of the State spreading over two Protected Areas of Koyana Sanctuary (KWLS) and Chandoli National Park (CNP). The park is situated in the juncture of four districts Kolhapur, Sangli, Satara and Ratnagiri and forms a corridor between Koyana Wildlife Sanctuary and Radhanagri Wildlife Sanctuary aiding in the much-required animal movement. The history of the area dates to the Maratha Empire and many forts built or captured by the Maratha Emperor Shivaji Bhonsle can be found here. The region of the Sahyadri Tiger Reserve includes the area around the Koyana Dam, Warna River and many other small rivers and streams originating from the Western Ghats and flowing to the east. <p>Flora:</p> <ul style="list-style-type: none"> Western (Montane) Subtropical Hill Forests <ul style="list-style-type: none"> These types of forests are found on the higher ridges of Sahyadris where altitude exceeds 1000 mtrs. The growth is usually stunted, without distinct canopies and large blanks. West Coast Semi Evergreen Forests <ul style="list-style-type: none"> These forests are confined to the valleys where the general height of the trees in the top canopy varies from 12 to 20 mtrs. The density ranges from 0.5 to 0.7. Southern Moist Mixed Deciduous Forests <ul style="list-style-type: none"> The Sahyadri Tiger Reserve, in biogeographic province 5b of the Western Ghats, has dense forests, steep escarpments, and rocky plateaus called "Sadas" with thorny bushes. <p>Fauna:</p> <ul style="list-style-type: none"> The Sahyadri Tiger Reserve hosts endangered Tigers, Wild Dogs, Leopards, and 30 other mammal species, including Gaur, Sambar, Four-Horned Antelope, Mouse Deer, and Giant Squirrel. It also has Vultures, Crocodiles, Hornbills, endemic birds, and many snake species.



Kishtwar National Park

News Excerpt:

A team of four scientists from the University of Kashmir, Srinagar and the National Development Foundation, Jammu have captured **four snow leopards (Panthera uncia)** on camera in Kishtwar High Altitude National Park of the Union territory (UT) of Jammu and Kashmir's Chenab Valley region.

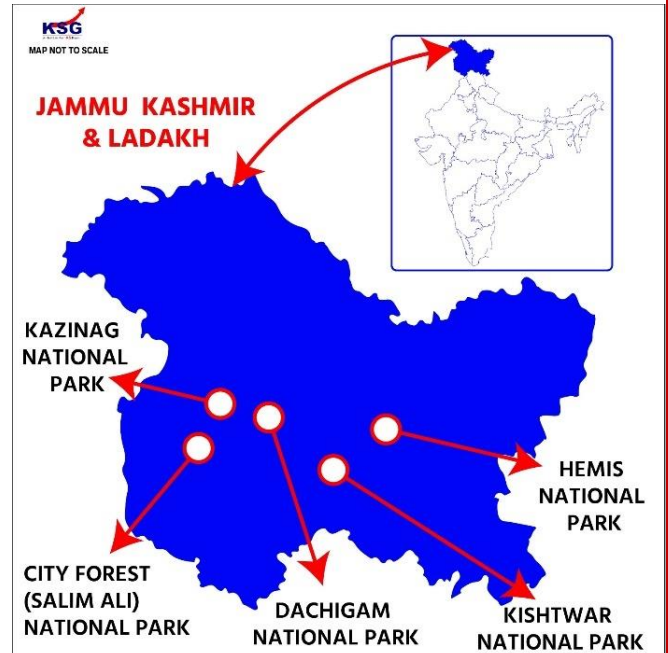
- Attributed as one of the **seven snow leopard reserves** under a project launched by the Central Government, the **Kishtwar High Altitude National Park** lies in **Doda District**, about 40km north-east of **Kishtwar Town**.
- The park was established to conserve the snow leopard species, its prey populations and its fragile mountain habitat. Spread over an area of 400 sq km., **the park was declared a national park on 4 February 1981**.
- With **Rinnay River** in the north, **Kibar Nala catchment in the south**, the Great Himalayas in the east and Marwa River in the west, the area lies in the Central Crystalline belt of the Great Himalayas.
- The altitude of the park ranges from **1700m to 4800m**.

Flora

- Kishtwar National Park, with varied topography, climate, and altitude, has diverse vegetation. Lower altitudes (1700-2400 m) feature **cedar, blue pine, walnut, poplar, hazel, bird cherry, ash, and yew**.
- The sub-alpine zone (3000-3700 m) has **silver fir and birch**. Key trees include Cedrus Deodara, Pinus Gerardiana, Pinus Wallichiana, and Juglans Regia. Higher areas have shrubs and herbs.

Fauna

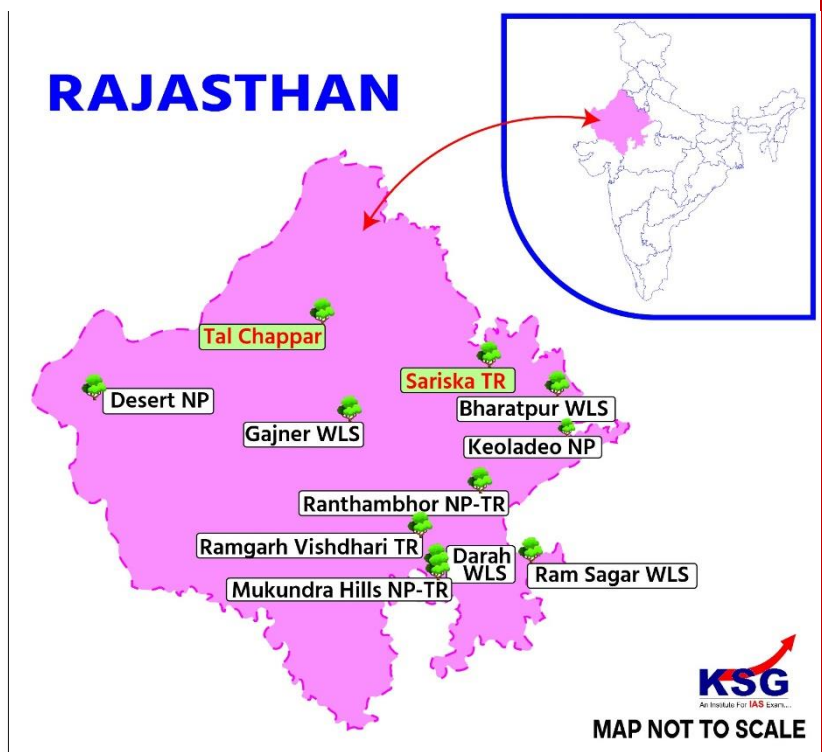
- The park, a snow leopard reserve, also hosts **Brown Bear, Himalayan Musk Deer, Hangul, Ibex, Wild Boar, Indian Muntjac, Serow, Himalayan Tahr, and Bharal**. Major birds include Himalayan Jungle Crow, Griffon Vulture, Bearded Vulture, Golden Oriole, Paradise Flycatcher, White-Cheeked Bulbul, and Indian Mynah.

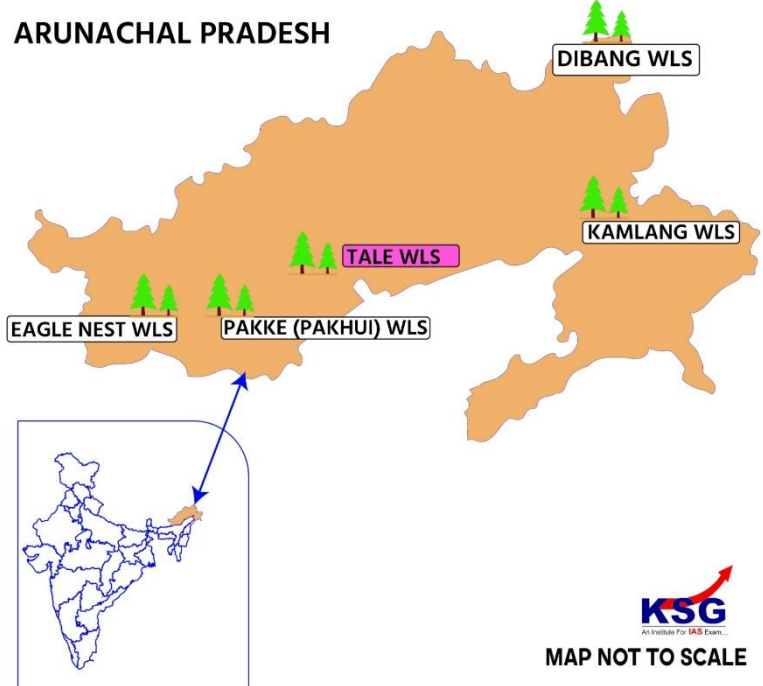


Sariska Tiger Reserve

News Excerpt: No mining activity will be permissible within one-kilometre radius of a critical tiger habitat (CTH), the Supreme Court said on Wednesday as it halted all mining activities being undertaken around the Sariska Tiger Reserve in Rajasthan.

- Sariska represents a tiger habitat spread over the **world's oldest** mountain range- the Aravallis.
- It is a resilient ecosystem with a **high prey density and** has the unique distinction of successfully reintroducing the tiger after its local extinction.
- **Sariska Tiger Reserve, the first tiger reserve** in the world to have successfully relocated tigers.
- It was declared a **sanctuary in 1955 and became a National Park in 1979**



	<p>Flora</p> <ul style="list-style-type: none"> • Sariska National Park, located in the western Aravali Hills of Rajasthan, offers rich flora amidst a desert landscape. Covering up to 300 plant species, • The dominant 'Dhok' tree occupies 90% of the park and provides food for animals like Sambhar Deer, Spotted Deer, and Nilgai. • The "Sacred Tree" known as "The flame of the forest," adds beauty with its bright blossoms. <p>Fauna:</p> <ul style="list-style-type: none"> • Sariska Tiger Reserve features Tigers, Leopards, Hyenas, Caracals. <ul style="list-style-type: none"> ○ Key herbivores are Nilgai, Sambar Deer, Spotted Deer, and Wild Pigs. Common primates are Langurs and Rhesus Macaques, often near temples. ○ Other mammals include Indian Civet, Rufous-tailed Hare, Mongoose, Palm Civet, Pangolin, and Porcupine. • Sariska also holds a variety of bird species including some winter migrants. It has a very high density of peafowl as well as grey francolin. • There are some unique birds in Sariska like white rumped vulture, painted spurfowl, Aravalli red spurfowl, Indian Cuckoo, common sand grouse, Indian pitta, great horned owl etc.
<p>Tal Chhapar Wildlife Sanctuary: News Excerpt: Green Lynx spider was found in Tal Chhapar Wildlife Sanctuary in Churu district.</p>	<ul style="list-style-type: none"> • Tal Chhapar, located in Sujangarh tehsil of Churu district of Rajasthan and spans 7.1977 square kilometers. • It was established as a "Reserved area" in 1962. • The sanctuary is home to over 4,500 Blackbucks, Chinkara, and more than 250 species of birds, including migratory raptors. • With its diverse perennial species and scattered bushes of thorny desert flora, the sanctuary's Mothai Grassland provides essential sustenance for its inhabitants.
<p>Tale Wildlife Sanctuary: News Excerpt: A rare butterfly species named Neptis philyra, has been discovered for the first time in India in Tale Valley Wildlife Sanctuary in Lower Subansiri district of Arunachal Pradesh.</p>	<ul style="list-style-type: none"> • The Tale Wildlife Sanctuary derived its name from "Tale", a variety of wild onion (Allium hookeri) which is abundant at Tale Valley situated within the Sanctuary. It is located in between Lower Subansiri and Kamle district. • The area of sanctuary is 337 Sq.km and lies roughly in between the Rivers: Subansiri, Sipu and Pange rivers surrounded by densely forested mountains. • It has undisturbed pristine climax vegetation which is the home of rare, elusive and graceful clouded leopards. • The Tale WLS is paradise for ornithologists and butterfly enthusiasts. • It is also home to some of the rare and unique orchid species in the State while some are endemic to this area. <div style="border: 1px solid black; padding: 10px;"> <p style="text-align: center;">ARUNACHAL PRADESH</p>  <p style="text-align: right;">KSG <small>Attributed for IAS Exam</small> MAP NOT TO SCALE</p> </div>