WEEKLY UPDATES

DATE : 30th Sept – 6th Oct

POLITY & GOVERNANCE

Strengthening Legal Framework Against Child Sexual Exploitation and Abuse Material (CSEAM) in India

Context: The Supreme Court of India recently issued a significant ruling concerning the possession, storage, and consumption of **Child Sexual Exploitation and Abuse Material (CSEAM)**. This judgment overturned a previous decision by the Madras High Court, which had dismissed charges against a person for merely possessing such material.

Key Highlights of the Judgment:

1. **Criminalizing Possession**: The Supreme Court ruled that **possessing, storing, or viewing CSEAM** is a criminal offense under the **POCSO Act**, reversing the earlier ruling by the Madras High Court.
2. **Terminology Change**: The Court emphasized that the term "**child pornography**" is inadequate and introduced the term **Child Sexual Exploitation and Abuse Material (CSEAM)** to better reflect the severity of the crime.
3. **Expanded Criminal Liability**: The ruling clarified that even **"constructive possession"**, where someone has control over CSEAM without physically having it, is punishable.
4. **Intent and Use**: Whether the material is for personal use or commercial purposes, the **criminal liability** applies equally.

Constitutional Provisions Safeguarding Child Rights in India:

1. **Article 15(3)**: Allows the State to make special provisions for the **protection and welfare of children**.
2. **Article 21**: Ensures the **right to life and personal liberty**, including the protection of children from exploitation and abuse.
3. **Article 39(e) & (f)**: Mandates the State to protect children from **abuse** and ensure opportunities for their **healthy development**.
4. **Article 47**: Focuses on improving public health, which includes preventing child exploitation and ensuring their welfare.

Key Legal Provisions under the POCSO Act, 2012:

1. **Section 13**: Defines **child pornography (now CSEAM)** and criminalizes its **creation, distribution, and possession**.
2. **Section 14**: Penalizes the **use of a child for pornographic purposes** and prescribes stricter punishment for repeat offenses.
3. **Section 15**: Imposes penalties for **storing CSEAM for commercial purposes**, ensuring legal consequences for storage or possession.
4. **Section 19**: Makes it mandatory to **report offenses** under the POCSO Act, holding citizens and tech companies accountable for reporting suspected CSEAM activities.

Importance of the Judgment:

1. **Broadening the Scope of CSEAM Laws**: Criminalizes even **possession**, thus closing legal loopholes that were previously exploited.
2. **Strengthening Child Protection Laws**: Reinforces the **POCSO Act** to effectively tackle **online child exploitation** by implementing stricter penalties.
3. **Victim-Centric Approach**: Prioritizes the **protection of victims**, advocating for quicker content removal and the **psychological well-being** of child victims.
4. **Role of Tech Companies**: Calls for tech platforms to **report CSEAM cases**, fostering better cooperation between law enforcement and online service providers.

Limitations of the Judgment:

1. **Lack of Consideration for Adolescent Behavior**: The judgment does not distinguish between **consensual adolescent exchanges** and exploitative content, which could result in the **criminalization of teenage behavior**.
2. **Overburdening Law Enforcement**: Calls for tech platforms to report cases without considering whether local law enforcement agencies are equipped to manage the potential surge in caseloads.
3. **Failure to Prioritize Content Removal**: The judgment does not place enough focus on the **immediate removal** of harmful content, which is critical for victim protection.
4. **Neglects Rehabilitation and Education for Offenders**: Although strict, the judgment does not address the need for **rehabilitation and education** for offenders, including minors involved in CSEAM cases.

Key Recommendations from the Court:

1. **Terminology Update**: Replace the term "**child pornography**" with **Child Sexual Exploitation and Abuse Material (CSEAM)** in all legal and judicial documents.
2. **Sex Education**: Advocate for **age-appropriate sex education** to promote an understanding of consent and prevent harmful sexual behaviors.

3. **Tech Platform Accountability**: Mandate that **social media and tech platforms** not only remove CSEAM but also report such content to local authorities as required by the POCSO Act.
4. **Public Awareness**: Encourage **public awareness campaigns** to destigmatize reporting and foster community vigilance around CSEAM.
5. **Support Services for Victims and Offenders**: Emphasize the need for **psychological counseling** and rehabilitation services for both victims and offenders, with options like **Cognitive Behavioral Therapy (CBT)**.

Comprehensive Survey on Manual Scavenging: A Step Towards Dignity and Safety for Sanitation Workers

Context: The Government of India, through its **NAMASTE programme**, is conducting the first-ever comprehensive survey to profile **Sewer and Septic Tank Workers (SSWs)** involved in hazardous cleaning. This survey aims to eliminate the practice of manual scavenging and improve the working conditions for sanitation workers.

Key Highlights of the Survey:

1. **Demographics of Sewer and Septic Tank Workers (SSWs)**:
    - **91.9%** of the 38,000 SSWs profiled belong to **Scheduled Castes (SC), Scheduled Tribes (ST), or Other Backward Classes (OBC)**.
    - Breakdown: **68.9% SC**, **14.7% OBC**, **8.3% ST**, and **8% from the general category**.
2. **Incidence of Deaths**:
    - Between **2019 and 2023**, **377 deaths** occurred due to hazardous sewer and septic tank cleaning.

NAMASTE Programme:

1. **Launch Year**: 2023-24.
2. **Ministry**: Ministry of Social Justice and Empowerment.
3. **Aims**:
    - **Mechanisation** of sewer and septic tank cleaning.
    - **Elimination of deaths** due to hazardous cleaning practices.
    - Empowerment of workers by transforming them into **sanipreneurs** (sanitation entrepreneurs).
    - Ensure **safety and dignity** through proper training and equipment.
4. **Targets**:
    - **Profile all SSWs** across India.
    - Provide **safety training**, protective gear, and mechanised equipment to eliminate manual cleaning.
    - Offer **financial support and subsidies** to help SSWs become self-employed.
    - Create a **centralised database** for policy implementation and tracking.

Progress:

1. **Profiled Workers**: Around **38,000 SSWs** profiled so far, with **12 States/UTs** completing the process.
2. **Validation**: As of 2023-24, **31,999 SSWs** have been validated.
3. **Financial Support**:
   - **₹2.26 crore** in capital subsidies provided to **191 beneficiaries** for self-employment projects.
   - **₹10.6 crore** in subsidies given to **413 workers and dependents** for sanitation-related projects.

Challenges and Gaps:

1. **Incomplete Profiling**: Several states, including **Chhattisgarh, Meghalaya, and West Bengal**, have yet to begin profiling.
2. **Data Discrepancies**: **Tamil Nadu** and **Odisha** are running their own programmes and not reporting data to the Centre.
3. **Social Composition of Manual Scavengers (2018 Data)**:
   - Of the **58,098 manual scavengers** identified until 2018, **97.2% belonged to SC communities**.
   - All identified manual scavengers received **₹40,000** as a one-time cash transfer, with **18,880** opting for **skills training**.

Best Practices:

1. **Eco-Sanitation Solutions**:
   - South Africa has implemented **"dry toilets"** and **ecological sanitation systems (EcoSan)** in areas with poor sewage infrastructure.
   - These systems reduce the need for manual cleaning, offering a sustainable solution for sanitation management.

Asymmetrical Federalism and the Demand for Ladakh's Inclusion in the Sixth Schedule

Context: Sonam Wangchuk, a renowned climate activist, was detained while leading protests advocating for **Ladakh's inclusion** in the **Sixth Schedule** of the Indian Constitution. The demand centers around safeguarding **Ladakh's cultural heritage**, ensuring **autonomy**, and promoting **economic development** for the region's indigenous populations.

Asymmetrical Federalism:

1. **Definition**:

- **Asymmetrical federalism** refers to a system where different regions or states within a federation are granted **varying degrees of autonomy and powers**.

2. **India's Case**:

- In India, some states and areas enjoy more **autonomy** under **constitutional provisions** like the **Fifth** and **Sixth Schedules**, in contrast to **symmetrical federations** like the **U.S.**, where all states have equal powers.

Fifth and Sixth Schedules: Origin and Current Application

1. **Historical Background**:

- Both schedules originate from the **Government of India Act, 1935**, designed to protect tribal areas by classifying them as '**excluded**' or '**partially excluded**' regions, aimed at safeguarding **tribal populations** from external interventions.

2. **Fifth Schedule (Article 244)**:

- Applies to '**Scheduled Areas**' designated by the **President**.
- Focuses on **tribal welfare**, **land rights**, and **advisory councils**.
- States covered include **Andhra Pradesh**, **Odisha**, **Gujarat**, **Maharashtra**, **Rajasthan**, **Himachal Pradesh**, among others.

3. **Sixth Schedule (Article 244A)**:

- Covers '**Tribal Areas**' in **Assam**, **Meghalaya**, **Mizoram**, and **Tripura**.
- **Autonomous District Councils (ADCs)** manage **legislative** and **administrative tasks**, granting more **autonomy** than the Fifth Schedule.

Why Ladakh Needs the Sixth Schedule?

1. **Cultural and Ethnic Protection**: Ladakh's **indigenous population**, including **Buddhist** and **Shia Muslim** communities, seeks **cultural preservation** and **governance autonomy** to protect their heritage.
2. **Demands for Autonomy**: Activists, including **Sonam Wangchuk**, argue that inclusion under the **Sixth Schedule** will provide **constitutional safeguards**, promoting **economic** and **social development** while preserving **cultural identity**.
3. **Tribal Representation**: Ladakh's significant **tribal population** would benefit from **Autonomous District Councils**, similar to northeastern tribal areas, allowing **greater local governance** and **self-determination**.

Positives of Being Under the Sixth Schedule:

1. **Increased Autonomy**: States under the Sixth Schedule enjoy **legislative, executive, and judicial autonomy**, helping preserve **tribal culture**. Example: **Meghalaya's ADCs** regulate **land** and **forests**, ensuring local control.

2. **Self-Governance**: Tribal communities manage their affairs, including **laws on land inheritance**, **social customs**, and **marriage**. Example: **Mizoram's ADCs** regulate **shifting cultivation**, a traditional practice.

3. **Development and Representation**: The Sixth Schedule allows for **tailored developmental programs**, supporting regional growth. Example: **Meghalaya's ADCs** have autonomy over **primary education** and **local roads**.

4. **Economic Upliftment**: Areas under the Sixth Schedule benefit from government schemes focused on **education**, **infrastructure**, and **healthcare**, improving **socio-economic conditions**.

Limitations of the Sixth Schedule:

1. **Limited Fiscal Powers**: ADCs often lack sufficient **financial autonomy**, relying heavily on **central and state funding**. Example: Some ADCs struggle with **tax collection** and **revenue generation**.
2. **Political Interference**: Although ADCs have autonomy, their laws need **Governor approval**, reducing actual independence. Example: **ADCs in Assam** face delays due to state interventions.
3. **Bureaucratic Delays**: Approval from **central or state authorities** can delay **law and policy implementation**. Example: **Tripura's tribal areas** experience central regulations overshadowing local rules.
4. **Exclusion of Non-Tribal Population**: Protections for tribal areas may lead to **conflicts** between **tribal** and **non-tribal communities** over resource allocation.

Conclusion & Way Forward:

- The demand for Ladakh's inclusion under the **Sixth Schedule** seeks to address the **unique cultural** and **ethnic concerns** of the region. By providing **greater autonomy** and empowering local governance, Ladakh can ensure **sustainable development**, better **tribal representation**, and the **protection** of its cultural identity.
- A **strategic approach** involving **constitutional amendments** and **community engagement** can safeguard Ladakh's interests while fostering **inclusive development** in line with India's commitment to **asymmetrical federalism**.

Judge's Asset Disclosure: Balancing Transparency, Accountability, and Privacy in the Indian Judiciary

Context:

- **Kerala High Court** leads with asset declarations of **37 out of 39 judges** available on its website, while courts like **Karnataka** and **Madras** have disclosed significantly fewer.
- Only **13% of High Court judges' assets** are publicly available, with **Kerala, Punjab & Haryana, and Delhi High Courts** contributing over **80%** of the total.
- Some courts, including **Bombay, Gujarat, and Telangana**, have not disclosed judges' asset declarations, citing **personal privacy** and the **confidential nature** of the information.
- A **Parliamentary Committee** recommended **mandatory asset disclosure** for judges in **August 2023**, but compliance remains limited.

Background:

1. **Supreme Court's Voluntary Resolution**:

- In **1997**, the **Supreme Court** adopted a **voluntary asset disclosure resolution** for judges.
- Several High Courts followed suit in **2009**, but updates have been inconsistent, with sparse disclosures after **2018**.

2. **Parliamentary Committee Recommendation**:

- The **Committee on Personnel, Public Grievances, Law, and Justice** recommended making **asset disclosure mandatory** for judges in **August 2023**.
- However, many courts maintain that such information is **outside the scope of the RTI Act**, citing concerns over **privacy**.

Key Issues:

1. **Transparency and Judicial Accountability**:

- **Asset disclosure** is a critical tool for ensuring **transparency** in the judiciary, enhancing **public trust**.
- Limited disclosures undermine **judicial accountability**, which is essential in a democratic setup.
- Kerala and a few other courts demonstrate **good practice** by publicly releasing judges' asset details.

2. **Concerns Over Personal Privacy**:

- Judges argue that their **personal privacy** could be compromised by public asset disclosures, particularly given the sensitive nature of their roles.

- Courts like **Bombay** and **Telangana** resist disclosures, emphasizing the **confidential** aspects of judicial information.

3. **RTI Act and Judicial Transparency**:

- The conflict between **public interest** and **individual privacy** becomes evident in discussions on whether **judges' assets** fall under the scope of the **RTI Act**.
- Many courts argue that such information is outside the **RTI's jurisdiction**, complicating efforts toward broader **judicial transparency**.

Conclusion: The issue of **judges' asset disclosure** in India reflects the larger challenge of achieving a balance between **transparency** and **privacy** in the judiciary. While the move to disclose assets promotes **accountability**, concerns around **privacy** continue to impede full compliance. The debate also underscores the **limitations of the RTI Act** and its application to the judiciary, making it a crucial topic in discussions around **governance, judicial reforms, and transparency**.

New Inclusions to Classical Language Status in India

Context: Prime Minister Narendra Modi recently praised the Union Cabinet's decision to grant **Classical Language status** to **Marathi**, **Pali**, **Prakrit**, **Assamese**, and **Bengali**. This move recognizes the **rich literary and cultural heritage** of these languages and emphasizes their contribution to India's cultural diversity.

Criteria for Classical Language Status:

1. **Historical Antiquity**: The language must have a **documented history** of at least **1,500 to 2,000 years**.
2. **Cultural Heritage**: The language should possess a **body of ancient literature** that is considered part of the **nation's cultural heritage**.
3. **Literary Tradition**: It must have an **original literary tradition**, independent of other languages or communities.
4. **Distinctness**: There must be a **clear distinction** between the **classical form** of the language and its **later evolutions**, indicating a **discontinuity**.

Presently Recognized Classical Languages in India:

Language	Year of Recognition
Tamil	2004
Sanskrit	2005
Telugu	2008
Kannada	2008

Malayalam	2013
Odia	2014

Benefits of Classical Language Status:

1. **International Awards**: Two major **international awards** are conferred annually to **scholars of eminence** in the classical language.
2. **Centre of Excellence**: The government establishes a **Centre of Excellence** for studies related to the classical language to promote **scholarly research**.
3. **Promotion and Research**: **Grants and funding** are provided to encourage the **study, research, and dissemination** of classical language literature and culture.
4. **Educational Support**: **Academic programs** are developed in **universities and institutes** to support the **study and promotion** of classical languages.

Assam's Co-Districts: A New Administrative Structure for Improved Governance

Context: Assam has become the first state in India to implement **Co-Districts**, a new administrative structure aimed at **decentralizing governance** and improving the **accessibility of public services**. The first phase of this initiative was launched on **October 4 and 5, 2024**, with **39 Co-Districts** being officially inaugurated.

About Co-Districts:

1. **What It Is**:
   - **Co-Districts** are **smaller administrative units** created under Assam's district administration to help **decentralize governance**.
   - These units are designed to bring **administrative services closer** to the citizens, especially in rural and remote areas.
2. **Objective**:
   - The main goal is to make **government services more accessible** by providing administrative functions closer to people's homes, thereby reducing the need for long-distance travel for basic services.
3. **Functions**:
   - **Co-Districts** manage administrative tasks such as:

- Issuing **ration cards** and **caste certificates**.
- Handling **land revenue matters** and **excise**.
- Managing **development** and **welfare programs**.
- **Disaster management** and emergency response.

- They also have **magisterial powers** to handle local legal and administrative matters.

Difference from Traditional Districts:

1. **Leadership**: **Co-Districts** are led by an **Assistant District Commissioner** (ADC), whereas traditional districts are managed by a **Deputy Commissioner** (DC).
2. **Size**: **Co-Districts** cover smaller **geographical areas** compared to traditional districts, making it easier for citizens in remote areas to access services.
3. **Autonomy**: While traditional districts have **full administrative control** over various departments, **Co-Districts** serve as a localized **extension** of these departments, thereby **reducing the administrative burden** on district offices.

Launch:

- The **first phase** of the initiative began in **2024** with the creation of **21 Co-Districts**, with **18 more** expected to be launched soon.
- The plan is to establish **Co-Districts in all 126 assembly constituencies** of Assam.

INTERNATIONAL RELATIONS

Yemen Attack: Escalation of Regional Tensions Amid Israel-Houthi Conflict

Context: Israel's military has launched air raids on **Houthi targets in Yemen**, raising concerns about a wider regional conflict following intensified Israeli military actions in **Gaza** and **Lebanon**. This development adds another dimension to the already complex situation in the **Middle East**, with the possibility of further destabilization.

Places in News:

1. **Ras Isa**:
   - A **strategic port** on the **Red Sea coast** of Yemen.
   - Known for its **oil export facilities**, Ras Isa is crucial for Yemen's **maritime trade** and **energy exports**.
2. **Hodeidah**:

- A vital **port city** on Yemen's western coast, **Hodeidah** is a key hub for importing goods and **humanitarian aid** into the country.
- Due to its strategic location, **Hodeidah** has been a focal point in the conflict, as controlling this port is critical for access to the **Red Sea**.

3. **Sanaa**:

- The **capital** and largest city of Yemen, **Sanaa** has historical and political significance.
- Under **Houthi control** since 2014, Sanaa has witnessed significant conflict amid the ongoing **civil war** in Yemen.

Significance:

- These attacks further complicate the **regional security situation**, with **Yemen**, already ravaged by civil war, becoming a theater for broader geopolitical conflicts.
- Strategic locations like **Ras Isa** and **Hodeidah** are critical not only for Yemen but also for **global maritime trade** and **energy security**.

Operation Northern Arrows: Israel's Ground Offensive Against Hezbollah Targets

Context: The **Israel Defense Forces (IDF)** have launched **Operation Northern Arrows**, a ground invasion targeting **Hezbollah's military infrastructure** in **southern Lebanon**, near the **Israel-Lebanon border**. This operation comes amid broader regional conflicts and rising tensions.

About Operation Northern Arrows:

1. **Launch**: The **IDF** initiated the operation as part of a broader military strategy to **neutralize Hezbollah targets** that pose an immediate threat to **northern Israel**.

2. **Objective**: The primary goal is to **eliminate Hezbollah's military capabilities** near the border and prevent further attacks on Israeli communities in the north.

3. **Military Strategy**:

i. **Localized Raids**:
- **IDF commandos** are conducting **limited, localized ground raids** in targeted areas of southern Lebanon.

ii. **Air and Artillery Support**:
- These raids are supported by **air cover** and **artillery** to ensure the success of ground operations.

iii. **Intelligence-Based Targets**:

- The targets are selected based on **precise intelligence** about Hezbollah's positions and infrastructure.

4. **Parallel Operations**: **Operation Northern Arrows** is occurring simultaneously with **Israel's military operations in Gaza** and other conflict zones, as part of a coordinated effort to address multiple threats.

Thermobaric Weapons: Mechanism and Implications

Context: Russia's use of **ODAB-1500 thermobaric weapons** in Ukraine has drawn global attention due to their **immense destructive power**.

About Thermobaric Weapons:

1. **Mechanism**:

- **Oxygen-Fueled Explosions**: Thermobaric weapons rely on the **atmosphere's oxygen** to fuel their explosions, unlike conventional explosives that carry both fuel and an oxidizer.
- **Fuel Cloud Ignition**: These weapons release a cloud of fuel that **ignites**, causing a high-temperature explosion and generating an **immense blast wave**.

2. **Features**:

- **Two-Stage Explosion**: The first stage disperses the fuel, and the second ignites it.
- **Effectiveness in Enclosed Spaces**: They are highly effective in confined areas like **buildings, bunkers**, or **tunnels**.
- **Human Impact**: The intense blast wave can **rupture organs** and cause severe injuries due to **pressure changes**.
- **Legal Status**: While **thermobaric weapons** are not explicitly banned, targeting civilians could potentially violate the **Hague Conventions**.

3. **History and Origin**:

- **Development**: First developed during the **Cold War** by both the **U.S.** and the **Soviet Union**.
- **Previous Use**: The U.S. used thermobaric weapons in 2001 against **al-Qaeda** in **Afghanistan**. Russia has deployed them in **Chechnya** and **Ukraine**.

Bagmati River: A Sacred and Vital Watercourse

Context: The **Bagmati River** is in the spotlight due to recent flooding and landslides across **Nepal**, causing widespread devastation and increasing the death toll to **112**.

About Bagmati River:

1. **Origin**: The **Bagmati River** originates from **Bagdwar** in the **Shivapuri Hills**, northwest of the **Kathmandu Valley**, at an elevation of approximately **2,690 meters**.

2. **Course**: The river flows through the **Kathmandu Valley**, passes through the **Chovar Gorge**, and continues southward through the **Shivalik Range** and **Terai region**.

   - It then enters the Indian state of **Bihar**, where it eventually joins the **Burhi Gandak River** after a course of **360 km**.

3. **Countries**: The river flows through both **Nepal** and **India**.

4. **Tributaries**: Notable tributaries include the **Manohara** and **Bishnumati Rivers**.

5. **Cultural Significance**:

   - The **Bagmati River** holds great cultural and religious importance for **Hindus** and **Buddhists**.
   - It is home to the **Pashupatinath Temple** (a UNESCO World Heritage Site) and the **Gokarneswor Temple**, both located in **Kathmandu**.

Rising Middle East Tensions and India's Strategic Concerns

Context: Recent tensions in the **Middle East** have escalated, with **Iran** and **Israel** exchanging missile strikes in **2024**, raising fears of a potential regional conflict. The situation threatens not only the involved nations but also poses risks to global stability and **India's strategic interests**.

Rising Tensions in the Middle East:

1. **Iran-Israel Conflict**:

   - The year **2024** has seen renewed **missile attacks** between Iran and Israel, mirroring earlier confrontations.
   - The risk of this conflict spilling over into other nations such as **Lebanon**, **Syria**, and **Iraq** is significant.
   - **Israel** aims to curtail **Iran's influence** in the region, especially through proxy groups like **Hezbollah**. In response, **Iran** continues its **geopolitical ambitions**, escalating tensions.

Importance of the Middle East for India:

1. **Energy Security**: **80% of India's crude oil** comes from the Middle East. A disruption caused by conflict would lead to **price surges** and threaten **India's energy supply**.

2. **Indian Diaspora**: Over **9 million Indians** live and work in the Middle East, contributing significantly to **remittances**. Ensuring their safety is a top priority for the Indian government.
3. **Strategic Investments**: Projects like the **India-Middle East-Europe Economic Corridor (IMEEC)** and **Chabahar Port** reflect India's long-term strategic and economic stakes in the region.
4. **Terrorism**: **Collaborative counter-terrorism efforts** between India and Middle Eastern countries are crucial to maintaining regional stability and security.

Other Stakeholders in the Region:

1. **Qatar**: A key **mediator** in the region, with connections to both **Iran** and **Israel**, and influence through its support of groups like **Hamas**.
2. **Saudi Arabia & UAE**: Both nations have a vested interest in **peace** and **stability** as they pursue long-term **economic visions**. They are also working towards **de-escalating tensions**.
3. **Turkey**: **Turkey** acts as a mediator through **back-channel diplomacy**, maintaining its status as a **regional power** while keeping dialogue open with all parties.
4. **United States**: As Israel's **key ally**, the **U.S.** plays a significant role in supporting Israel, while also attempting to prevent **further escalation** in the region.

Challenges:

1. **Energy Supply Disruptions**: Any intensification of conflict could destabilize the **global oil market**, directly impacting **India's economy**.
2. **Regional Volatility**: The conflict could expand, drawing in other actors like **Hezbollah**, **Syria**, or **Iraq**, causing further instability.
3. **Balancing Diplomatic Relations**: **India** faces the challenge of maintaining strong ties with both **Israel** and **Iran**, without being drawn into their regional conflict.
4. **Impact on Investments**: Projects like the **IMEEC** could face delays or setbacks due to the increasing instability in the region.

Way Ahead for India:

1. **Diplomatic Engagement**: India should leverage its established diplomatic ties with both **Israel** and **Iran** to **advocate for peace** and **stability**.

2. **Strengthening Energy Ties**: **Diversifying energy sources** will help India mitigate the risks associated with conflicts in the Middle East.

3. **Diaspora Safety**: The Indian government must have **evacuation plans** and other **safety measures** ready to protect its citizens in case the situation worsens.

4. **Maintaining Balance**: India's **non-alignment policy** should be maintained, ensuring it can act as a mediator if necessary without alienating key stakeholders in the region.

United States Commission on International Religious Freedom (USCIRF) and Its Concerns on India's Religious Freedom

Context:

- The **United States Commission on International Religious Freedom (USCIRF)** recently released a report highlighting concerns over **"collapsing religious freedom"** conditions in **India**.
- The report flagged issues related to India's **2024 national elections**, **anti-conversion laws**, the **Citizenship (Amendment) Act (CAA)**, and the **Uniform Civil Code (UCC)**.
- Concerns were also raised regarding the **expropriation of places of worship** and the **misuse of anti-cow slaughter laws**.

About USCIRF:

1. **Establishment**: Created under the **1998 International Religious Freedom Act (IRFA)**.
2. **Type**: An **independent, bipartisan** U.S. federal government commission.
3. **Functions**:
   - **Monitors and reviews** violations of religious freedom worldwide.
   - Provides **policy recommendations** to the **U.S. President**, **Secretary of State**, and **Congress**.
   - Publishes **annual reports** on global religious freedom and suggests U.S. policy actions based on its findings.
4. **Composition**: The commission consists of **nine commissioners**, appointed by the **U.S. President** or **Congressional leaders**. These commissioners are supported by **non-partisan staff**.
5. **Objective**: To **monitor and recommend actions** concerning religious freedom violations based on **international human rights standards**.

Concerns Raised in the 2024 Report on India:

1. **National Elections**: The USCIRF report expressed concern over rising **religious intolerance** and **political polarization** around **India's 2024 elections**.
2. **Legal Changes**: **Anti-conversion laws**: The report flagged these as contributing to religious discrimination and limiting religious freedom.

- **Citizenship (Amendment) Act (CAA)**: Highlighted as discriminating against specific religious groups.
- **Uniform Civil Code (UCC)**: Mentioned in the context of potential impacts on religious minorities' rights.

3. **Places of Worship**: Concerns over the **expropriation of places of worship**, which could restrict the rights of religious communities to practice their faith freely.

4. **Anti-Cow Slaughter Laws**: The report noted the **misuse** of these laws, which have disproportionately affected religious minorities.

Chagos Archipelago Dispute: Resolution of a Long-standing Colonial Legacy

Context: The **U.K.** and **Mauritius** have reached an agreement regarding the return of the **Chagos Archipelago** to **Mauritian sovereignty**, marking a significant step in resolving a historical dispute. This move is seen as the completion of **Mauritius' decolonization process**, particularly involving the **strategic Diego Garcia military base**.

About the Chagos Dispute:

1. **Colonial Background**:

   - The **Chagos Archipelago** was claimed by **Britain** in **1814** as part of its colonial rule over **Mauritius**.
   - In **1965**, before Mauritius gained independence, the U.K. **separated the Chagos Islands** to create the **British Indian Ocean Territory (BIOT)**.

2. **Military Leasing**:

   - In **1966**, Britain **leased Diego Garcia**, the largest island in the archipelago, to the **U.S.** for use as a **military base**.
   - The **native Chagossian population** was displaced during this process, leading to their forced removal and ongoing legal battles.

3. **Legal Disputes**: The **Chagossians** have long fought to return to their homeland, while **Mauritius** has continuously claimed **sovereignty** over the islands since gaining independence in **1968**.

4. **International Rulings**: In **2019**, the **International Court of Justice (ICJ)** ruled that the **U.K.** must **return the Chagos Islands** to **Mauritius**, stating that Britain's administration of the islands was **unlawful** under international law.

Geographical Location of Chagos Archipelago:

1. **Location**: The **Chagos Archipelago** is located in the **central Indian Ocean**, approximately **1,600 km south** of India's southern tip.
2. **Key Islands**: The archipelago includes notable atolls such as **Diego Garcia**, **Peros Banhos**, and **Danger Island**.
3. **Climate**: The region experiences a **tropical marine climate**, moderated by **trade winds**.
4. **Disputed Nations**:
   - The primary nations involved in the dispute are:
     - **U.K.** (current administrator).
     - **Mauritius** (claimant).
     - **U.S.**, involved due to its military base on **Diego Garcia**.

INTERNAL SECURITY

Naxalism in India: Challenges and Government Responses

Context: Recently, **security forces in Chhattisgarh's Bastar region** engaged in a significant operation against **Naxalites**, resulting in the death of **28 insurgents**. This represents one of the most notable successes in recent anti-Naxal operations, shedding light on the continuing **Naxal insurgency** and the measures being taken to curb it.

About Naxalism:

1. **Origins in Naxalbari**: The **Naxalite movement** began in **1967** in **Naxalbari village, West Bengal**, where peasants led an uprising against local landlords over **land disputes**.
2. **Maoist Ideology**: The movement was inspired by **Maoist political ideology**, advocating **armed rebellion** to overthrow the state and redistribute land and resources to **oppressed communities**.
3. **Spread to Tribal Regions**: Over time, Naxalism spread to underdeveloped and **tribal areas**, particularly in **Chhattisgarh**, **Odisha**, **Jharkhand**, and parts of **Andhra Pradesh**.

4. **Objective**: Naxalites aim to challenge the Indian state through **armed insurgency**, focusing on the **redistribution of land, wealth, and resources** to marginalized and tribal populations.

Red Corridor Zones:

- The **Red Corridor** refers to regions significantly affected by the **Naxalite-Maoist insurgency**. It includes parts of **Chhattisgarh**, **Odisha**, **Andhra Pradesh**, **Maharashtra**, **West Bengal**, **Jharkhand**, **Bihar**, and **Telangana**.

Reasons for Naxalism's Growth:

1. **Tribal Displacement**: Displacement due to **development projects** and **mining activities** has fueled resentment among **tribal populations**, making them vulnerable to Maoist recruitment.
2. **Socio-Economic Gaps**: **Poverty**, lack of education, and absence of government welfare programs in rural and tribal areas have deepened grievances against the state.
3. **State Negligence**: Lack of **infrastructural development**, poor connectivity, and weak governance in **Red Corridor** areas have created vacuums that Maoists exploit.
4. **Forest Rights**: The **Forest (Conservation) Act, 1980**, restricts access to forest produce, alienating **forest-dependent communities**.
5. **Government Focus on Security**: The government's emphasis on **security measures** rather than addressing socio-economic issues has left many grievances unresolved.

Government's Response to Naxalism:

1. **Legal Measures**:
   - **Unlawful Activities (Prevention) Act (UAPA)**: Declares Naxalite groups as terrorist organizations, enabling swift action.
   - **Relief and Rehabilitation Policy**: Encourages Naxalites to surrender and provides rehabilitation packages.
   - **Forest Rights Act, 2006**: Aims to restore **land rights** to tribal communities, addressing one of the root causes of the insurgency.
2. **Military Measures**:
   - **Operation Green Hunt**: Launched in **2010**, this counter-insurgency operation significantly reduced Naxal activities.

- **Greyhounds Force**: A special forces unit in **Andhra Pradesh** trained for **guerrilla warfare** against Naxalites.
- **Coordination with State Forces**: Improved cooperation between **central paramilitary forces** and **state police** to enhance intelligence and response.

3. **Developmental Measures**:

- **Aspirational Districts Programme**: Targets underdeveloped regions, including Naxal-affected areas, to improve **healthcare**, **education**, and **infrastructure**.
- **Skill Development Programs**: Focus on training tribal youth in **vocational skills**, reducing their dependency on Naxalism.
- **Infrastructure Development**: Road and telecom connectivity projects launched in remote areas to enhance access to services and governance.

Way Forward:

1. **Addressing Socio-Economic Grievances**: Addressing **land disputes**, **tribal rights**, and **poverty** through inclusive policies can help resolve some root causes of Naxalism.
2. **Enhanced Intelligence**: Improving **real-time intelligence gathering** and collaboration between **state and central forces** is crucial for counter-insurgency efforts.
3. **Sustained Development**: Ensuring the **long-term implementation** of development schemes and socio-economic programs in tribal and rural areas is vital.

GEOGRAPHY & DISASTER MANAGEMENT

Isostatic Rebound and Its Role in the Himalayan Uplift and Mount Everest's Growth

Context: A recent study suggests that **Mount Everest** has grown **15-50 meters taller** over the past **89,000 years** due to **isostatic rebound** triggered by the **erosion caused by the Arun River**. This process contributes to the elevation of other Himalayan peaks like **Lhotse** and **Makalu**, adding up to **2mm annually** to their height.

What is Isostatic Rebound?

1. **Definition**: **Isostatic rebound**, also called **post-glacial rebound** or **glacial isostasy**, refers to the **gradual rise of Earth's crust** after the removal of a **heavy load**, such as **ice sheets** or **eroded landmasses**. This adjustment happens because the **lithosphere** (Earth's crust and upper mantle) behaves **elastically** over time.

2. **Process**: **Heavy loads**, like **glaciers** or **eroded landmasses**, depress the Earth's surface. When these are removed, the **crust rebounds** upwards in response to the reduced pressure, similar to how a floating object rises when weight is removed.
   - This process can take **thousands of years** and often continues long after the load, such as glaciers, has disappeared.

3. **Geographical Significance**:
   - Isostatic rebound is significant in areas once covered by **ice sheets**, like **Scandinavia** and **Canada**. It also occurs in **mountainous regions**, such as the **Himalayas**, where **erosion** plays a key role.

Impact of Isostatic Rebound on Mount Everest and Neighboring Peaks:

1. **Mount Everest Growth**: The study indicates that **Mount Everest** has grown taller than expected due to **erosion** by the **Arun River**. This erosion leads to a reduction in landmass, causing **isostatic rebound**, which raises the peak's height.

2. **Effect on Neighboring Peaks**: Peaks like **Lhotse** and **Makalu** also experience elevation increases due to **isostatic rebound**, with an estimated rise of **2mm annually**.

3. **Himalayan Uplift**: The **Himalayas** have been rising for the past **50 million years** due to the collision between the **Indian** and **Eurasian plates**. The **Arun River's erosion** provides an additional boost to this ongoing process of uplift.

Importance of Isostatic Rebound:

1. **Compensation for Erosion**: Isostatic rebound helps **maintain the height of mountains** by lifting the landmass that is being eroded. This ensures that mountainous regions like the Himalayas continue to rise even as erosion occurs.

2. **Influence on Sea Levels**: As the Earth's crust rebounds, it can influence **sea levels** by displacing large volumes of water or adjusting coastal regions.

3. **Tectonic Activity**: Isostatic rebound can impact **tectonic activity** in certain regions by redistributing the weight on Earth's surface, potentially leading to seismic activity.

About the Arun River:

1. **Origin**: The Arun River originates in the **Tibet Autonomous Region of China**.
2. **Flow**: It flows through **Tibet** and **Nepal** before joining the **Saptakoshi River** in Nepal, which later merges with the **Ganges** in India.
3. **Tributaries**: Major tributaries of the Arun River include the **Barun River** and the **Sankhuwa River** in Nepal.
4. **Influence on India**: While the Arun River does not directly flow through India, it influences the **Ganges Basin**, contributing to the hydrological system in **northern India**.

Mount Erebus: Antarctica's Active Volcano and Its Unique Features

About Mount Erebus:

1. **Location**: Situated on **Ross Island, Antarctica**, **Mount Erebus** holds the distinction of being the **southernmost active volcano** on Earth.
2. **Volcano Type**: It is a **stratovolcano**, characterized by its **conical shape** formed from alternating layers of **lava** and **ash**.
3. **Discovery**: Discovered in **1841** by **British explorer Sir James Clark Ross**, the volcano was named after his ship, the **HMS Erebus**.
4. **Elevation**: Mount Erebus stands at **3,792 meters** (12,441 feet), making it the **second-highest volcano in Antarctica**.
5. **Lava Lake**: The volcano is known for its **persistent lava lake**, which has been active since at least **1972**. This is one of the few **long-lived lava lakes** in the world.
6. **Eruptions**: Mount Erebus typically exhibits **Strombolian eruptions**, a type of volcanic activity characterized by the ejection of **molten lava bombs** and minor explosions.
7. **Proximity to Research Stations**: The volcano is monitored closely due to its proximity—about **40 km**—to **McMurdo Station (U.S.)** and **Scott Base (New Zealand)**, two of the most important research stations in Antarctica.
8. **Unique Feature**: Notably, Mount Erebus **emits micro-crystals of gold**, a rare phenomenon that further adds to the geological interest surrounding this Antarctic volcano.

Bihar Floods: Causes, Impacts, and the Way Forward

Context: Bihar faces **annual floods** that displace millions and disrupt livelihoods. The region's **geographic vulnerability** and **ineffective flood control measures** exacerbate the problem, leading to persistent flooding during the monsoon season.

Geographic Conditions Contributing to Flooding in Bihar:

1. **Proximity to the Himalayas**:
   - **North Bihar** lies downstream from Nepal, and rivers such as the **Kosi**, **Gandak**, and **Bagmati** originate from the **Himalayas**.
   - These rivers carry large amounts of **sediment** from the loose soil of the Himalayas, making the region more **flood-prone**.
2. **River Sedimentation**: The young Himalayan rivers are **sediment-heavy**, which increases the risk of **overflow** during the monsoon when rainwater increases river volume.
3. **Flat Terrain**: Bihar's **flat plains** make it difficult for floodwaters to drain quickly, leading to **prolonged waterlogging**, especially during the monsoon.
4. **Permanent Waterlogged Areas**: **Chaurs**, or low-lying areas, complicate **drainage** and result in **long-term waterlogging** in some regions.
5. **Impact of Embankments**: **Embankments** along rivers like the Kosi have narrowed their channels, causing **sediment buildup** and making the riverbeds **shallower**, increasing the risk of floods.

Causes of Flooding in Bihar:

1. **Heavy Rainfall in Nepal**: **Flash floods** are often triggered by heavy rainfall in the **Himalayan regions of Nepal**, which drains into Bihar's rivers.
2. **Overflowing Rivers**: During monsoons, **snow-fed** and **rain-fed** rivers breach their banks, flooding large areas.
3. **Embankment Failures**: **Structural issues** with embankments lead to **breaches**, exacerbating flood damage.
4. **Waterlogging from Small Rivers**: **Encroachment** on drainage channels and **silted rivers** cause further water stagnation.

5. **Release of Water from Barrages**: The release of water from **Nepal's barrages**, such as the **Kosi barrage**, contributes to increased water levels in Bihar.

Way Forward to Handle Floods:

1. **Integrated Flood Management**: Building additional **barrages**, **dams**, and improving embankments, coupled with **early warning systems** and **quick response policies**, is necessary.
2. **Collaboration with Nepal**: The long-pending proposal to build a **dam on the Kosi** requires **diplomatic collaboration** with Nepal for upstream water management.
3. **Strengthening Embankments**: Regular **maintenance** and **modernization** of embankments, along with **widening river channels** to manage sediment, are critical for mitigating floods.
4. **Non-structural Solutions**: Improved **flood forecasting**, **risk reduction policies**, **disaster management training**, and **community awareness programs** are essential for **flood preparedness**.
5. **Rehabilitation of Affected Populations**: Providing **sustainable resettlement options** for communities in flood-prone areas can prevent annual displacement.

Best Practices:

1. **Chennai: Stormwater Drainage System**: After the **2015 floods**, Chennai redesigned its **stormwater drainage system**, expanding it and connecting it to **natural water bodies** for efficient water flow and drainage during heavy rainfall.
2. **Surat: Flood Early Warning System (FEWS)**: **Surat** uses a **Flood Early Warning System (FEWS)** to predict and monitor floods, especially in the **Tapi River basin**, allowing for **timely evacuations** and **damage minimization**.

ECONOMY

Annual Survey of Industries 2022-23: Key Highlights and Industrial Growth in India

Context: The **Annual Survey of Industries (ASI)** for the financial year **2022-23** was released by **NITI Aayog CEO B.V.R. Subrahmanyam**, showcasing the significant growth of India's **industrial sector** and its contribution to the national economy.

Summary of Key Findings:

1. **Industrial Sector Growth**: India's **industrial sector** exhibited **robust growth** in the financial year 2022-23, reflecting a strong recovery post-pandemic.

2. **Employment**: The sector added **22 lakh jobs**, surpassing **pre-pandemic employment levels**, indicating a positive trend in job creation within the industry.

3. **Gross Value Added (GVA)**: The **GVA** of the industrial sector increased by **7.3%** in 2022-23 compared to the previous year, underlining the sector's growing contribution to the economy.

4. **Key Growth Drivers**: Industries such as **basic metals**, **coke**, **refined petroleum products**, **food products**, **chemicals**, and **motor vehicles** were the major contributors, accounting for **58% of the total industrial output**.

5. **Top States**: **Maharashtra**, **Gujarat**, **Tamil Nadu**, **Karnataka**, and **Uttar Pradesh** emerged as leaders in terms of **GVA**, contributing over **54% of the total manufacturing GVA**.

   - These states also employed around **55% of the total manufacturing workforce**, underscoring their importance in the country's industrial landscape.

6. **Wages and Emoluments**: **Average wages** in the industrial sector increased by **6.3%** in 2022-23, reflecting an overall improvement in employee compensation.

Significance:

- **Employment Growth**: The addition of **22 lakh jobs** shows strong industrial recovery and growth in employment opportunities.
- **Economic Contribution**: The **7.3% GVA growth** is a key indicator of the industrial sector's substantial contribution to the Indian economy.
- **Regional Growth**: States like **Maharashtra**, **Gujarat**, and **Tamil Nadu** continue to be the industrial powerhouses, both in terms of **output** and **employment**.
- **Sectoral Drivers**: The focus on **basic metals**, **refined petroleum**, **chemicals**, and **motor vehicles** indicates which sectors are driving the growth in India's industrial landscape.

India's Core Sector Output Falls to Nine-Month Low in August 2024: Key Trends and Insights

Context: India's **core sector output** witnessed a decline, slipping to a **nine-month low** in **August 2024**, with a **1.8% contraction** in year-on-year growth. This marks the first contraction in the core sector in over three and a half years.

Trends in India's Core Sector Output (August 2024):

1. **Overall Contraction**: The core sector output contracted by **1.8%** in August 2024, a sharp drop compared to the **6.1% growth** recorded in July.

2. **Negative Growth in Key Industries**:

   - **Coal**: Registered the steepest decline, down by **8.1%**.
   - **Electricity**: Fell by **5%**, marking the first contraction in 13 months.
   - **Cement**: Declined by **3%**, its worst performance in nine months.
   - **Refinery Products**: Dropped by **1%**, the second fall in three months.
   - **Natural Gas**: Declined by **3.6%**, contracting for the second consecutive month.
   - **Crude Oil**: Fell by **3.4%**, continuing a three-month streak of negative growth.

3. **Modest Growth in Fertilizers and Steel**:

   - **Fertilizers**: Increased by **3.2%**.
   - **Steel**: Grew by **4.5%**, although this was its slowest growth in 26 months.

Reasons for the Decline:

1. **Base Effect**: The sharp contraction in August can be attributed to the **high base** from the previous year (13.4% growth in August 2023), making the current figures appear lower by comparison.

2. **Monsoon Impact**: The **late withdrawal of the monsoon** disrupted coal production and electricity generation, impacting industrial activities across sectors.

3. **Global Economic Uncertainty**: Ongoing global economic challenges have affected demand, especially in **energy-intensive industries** like electricity and coal.

4. **Supply Chain Disruptions**: **Logistical bottlenecks** and fluctuations in international markets for **crude oil** and **natural gas** have hampered the output of refinery products and crude oil.

5. **Seasonal Factors**: **Reduced construction activity** during the monsoon season contributed to the lower output in the cement and steel sectors.

Background on the Index of Eight Core Industries (ICI):

1. **Released by**: The **Index of Eight Core Industries (ICI)** is published by the **Office of the Economic Adviser** under the **Department for Promotion of Industry and Internal Trade (DPIIT)**, Ministry of Commerce & Industry.

2. **Base Year**: The base year for the ICI is **2011-12**.

3. **Frequency**: The ICI is published **monthly**.

4. **Significance**: The core sector represents **40% of the weight** in the **Index of Industrial Production (IIP)** and serves as a critical barometer for India's **industrial performance**.

Insights from PLFS Report 2023-24: Employment Trends and the Road Ahead

Context: The **National Statistical Office (NSO)** recently released the **Periodic Labour Force Survey (PLFS)** report for 2023-24, highlighting trends in **employment**, **unemployment**, and **labor force participation** in India.

Key Data Points:

1. **Unemployment Rate**: Unemployment stood at **3.2%** in 2023-24, the same as 2022-23, marking the first time no year-on-year decline has been observed since the survey began in 2017-18.

2. **Labour Force Participation Rate (LFPR)**:

   - The **LFPR** increased to **60.1%** in 2023-24 (up from 57.9% in 2022-23).

   - **Rural LFPR** rose to **63.7%**, and **urban LFPR** increased to **52%**.

3. **Worker Population Ratio (WPR)**: **WPR** improved to **58.2%**, with a breakdown of **76.3% for males** and **40.3% for females**.

4. **Unemployment by Gender**: Female unemployment increased to **3.2%** (from 2.9%), while male unemployment slightly decreased to **3.2%** (from 3.3%).

5. **Urban-Rural Divergence**: **Rural unemployment** saw a slight rise to **2.5%** (from 2.4%), while **urban unemployment** improved, falling to **5.1%** (from 5.4%).

6. **Increase in Self-Employment**: The share of **self-employed individuals** rose to **58.4%**, from 57.3% in 2022-23.

Positives and Negatives:

Positives	Negatives
Increase in **Labour Force Participation Rate (LFPR)**	Stagnant unemployment rate at **3.2%**, signaling a lack of sufficient job creation.

Marginal improvement in job quality, with salaried workers rising to **21.7%**	**Youth unemployment rate** remains high at **10.2%**, especially for females (11%).
Worker Population Ratio (WPR) increased to **58.2%**	Increase in **self-employment**, much of which is informal or unpaid work.
Urban unemployment rate fell to **5.1%**	**Gender disparity**: Female unemployment rose to **3.2%** from 2.9%.
Rising participation in the workforce post-pandemic	**Challenges in creating formal jobs**, leading to more people in informal employment roles.

Way Ahead:

1. **Sectoral Diversification**: Invest in sectors like **manufacturing**, **renewable energy**, and **technology** to create **higher-wage and productive jobs**.
2. **Strengthening MSMEs**: Provide **targeted financial support** and ease regulations for **MSMEs** to recover and boost employment in the informal sector.
3. **Human-Centric Tech Adaptation**: Focus on **labor-intensive sectors** like healthcare and sustainable manufacturing, which are less likely to be affected by **automation**.
4. **Industry-Aligned Skilling**: Align skilling programs with **emerging sectors** such as **artificial intelligence (AI)**, **green jobs**, **cybersecurity**, and **data analytics** to meet future job demands.
5. **Encouraging High-Potential Services**: Emphasize growth in sectors like **e-commerce**, **logistics**, and **online education** to create employment across varying skill levels.

Lifting of Non-Basmati White Rice Export Ban: Implications for India and the Global Market

Context: On **September 28, 2024**, the **Government of India** lifted the export ban on **Non-Basmati White Rice**, marking a significant shift in its trade policy to balance domestic needs and international demand.

Recent Decision Points:

1. **Minimum Export Price (MEP)**: The government imposed an MEP of **$490 per tonne** on Non-Basmati White Rice to regulate export prices.

2. **Reduction in Export Duty**:

   - The **20% export duty** on Non-Basmati White Rice was **removed**.
   - Export duties on **husked rice**, **parboiled rice**, and **paddy** were reduced from **20% to 10%**.

India's Status in Global Rice Exports:

1. **Global Leader**: India is the **second-largest producer** and **largest exporter** of rice, accounting for **33%** of the world's rice exports in 2023, with exports totaling **17 million tonnes**.

2. **Competitors**: Major competitors include **Thailand** and **Vietnam**, with other exporters like **Pakistan**, **Cambodia**, and the **United States**.

3. **Export Categories**: India exports two main categories: **Basmati** and **Non-Basmati** rice.

   - In 2023-24, **Basmati rice** accounted for one-third of total exports (52.42 lakh tonnes), while major Non-Basmati varieties like **parboiled rice** and **Non-Basmati White Rice** constituted the bulk of Non-Basmati exports.

Impacts of Lifting the Ban:

Domestic Level:	International Level:
1. **Increase in Retail Prices**: Lifting the ban may lead to further **price hikes** in the domestic market, where prices have already risen due to **inflationary pressures**. 2. **Benefit to Farmers**: **Farmers** growing premium varieties such as **Sona Masoori** are expected to benefit from expanded **export opportunities**. 3. **Support for Welfare Schemes**: **State governments** are allowed to purchase rice for welfare schemes, ensuring a safety net for **lower-income communities**.	1. **Boost to Exporters**: The decision will revive trade, particularly benefiting **exporters** in countries like **Kenya**, **Vietnam**, and **Malaysia**, which rely on India's Non-Basmati White Rice. 2. **Global Market Stabilization**: India's return to the global rice market will help **stabilize international prices**, especially after earlier bans disrupted global rice supplies. 3. **Strengthening International Relations**: India's role in providing **food security** to countries in **Southeast Asia** and **Africa** will strengthen, reinforcing **trade ties**.

Way Ahead:

1. **Balanced Export-Import Policies**: The government should carefully **monitor domestic supply** and **global demand** to prevent domestic inflation while maintaining robust export growth.
2. **Focus on Production**: Investing in **irrigation**, **infrastructure**, and **yield-improving technologies** will be essential to sustain **high production levels**.
3. **Promote Diversification**: Encouraging diversification of **rice varieties** and exports can provide stable income for farmers and enhance India's **global competitiveness**.

Conclusion: The decision to lift the ban on **Non-Basmati White Rice exports** and impose a **minimum export price** aims to balance **domestic availability** with **global demand**. This policy shift is expected to benefit both **farmers and exporters**, while reinforcing India's position as a **key global rice supplier**.

Ministry of Textile Initiatives: Fostering Cleanliness, Digital Safety, and Worker Welfare

Context: The **Ministry of Textiles** has undertaken several initiatives aimed at improving **workplace hygiene**, promoting **cyber safety**, and ensuring the welfare of **sanitation workers (Safai Mitras)**. These activities align with national goals of cleanliness, digital governance, and labor welfare.

Key Initiatives:

1. **Cleaning of Office Premises**: This initiative focuses on maintaining a **clean and organized work environment** by regularly cleaning office spaces. It aims to improve **hygiene** and promote a **productive atmosphere** within government offices.
2. **Cyber Hygiene Activities**: These activities involve promoting **safe digital practices** to protect data and digital assets from **cyber threats**. The program also seeks to raise awareness about **cyber security** among employees and ensure the **secure use of digital infrastructure**.
3. **Safai Mitra Suraksha Shivirs**: These are camps dedicated to the safety and well-being of **sanitation workers**. The program provides **health check-ups**, distributes **safety gear**, and offers training to sanitation workers, focusing on improving their **working conditions** and ensuring their **safety**.

Maharashtra Designates Indigenous Cow Breeds as 'RajyaMata-Gomata' with Support Scheme for Goshalas

Context: The **Maharashtra government** has designated the State's **indigenous cow breeds** as **'RajyaMata-Gomata'** due to concerns over their declining numbers. This decision highlights the **cultural, nutritional**, and **economic significance** of native cow breeds in the state.

Key Highlights:

1. **Subsidy Scheme**:

   - The government introduced a subsidy of **₹50 per cow per day** to support **goshalas** (cow shelters), encouraging the rearing of indigenous cow breeds.
   - The scheme will be implemented **online**, with **district verification committees** monitoring subsidy distribution.

2. **Cultural and Nutritional Importance**:

   - Indigenous cows hold **religious** and **scientific** significance.
   - Their **milk** is highly regarded for its **nutritional value**, contributing to **organic farming** and **Ayurvedic** practices.

3. **Goshalas Support**:

   - The scheme aims to support the functioning of goshalas, ensuring the **preservation** and **protection** of native breeds.

4. **Opposition Criticism**:

   - The **Congress opposition** criticized the move, calling it politically motivated ahead of the **Assembly elections**. They questioned the **clarity** of the government's resolution.

Indigenous Cow Breeds in Maharashtra:

1. **Deoni**: Found primarily in the **Marathwada** region, known for its adaptability to the local climate.
2. **Lal Kandhari**: Also native to **Marathwada**, valued for its contribution to **milk production** and **organic farming**.
3. **Khillar**: Predominantly raised in **Western Maharashtra**, known for its strength and versatility.
4. **Dangi**: A breed from **Northern Maharashtra**, recognized for its resilience to harsh climatic conditions.
5. **Gaolao**: Commonly found in the **Vidarbha** region, this breed plays a significant role in **organic farming** and **milk production**.

Significance:

1. **Cultural and Religious Importance**: Indigenous cows hold deep **religious** and **cultural** value in India, especially in rural areas where they are considered sacred.
2. **Nutritional and Agricultural Contributions**:
   - The **milk** of indigenous breeds is known for its **health benefits** and is used in **Ayurveda**.
   - These breeds contribute to **organic farming**, where their dung and urine are utilized as natural fertilizers and pesticides.

Challenges and Prospects for India's Diamond Industry Amid Global Geopolitical Tensions

Context: The **Indian diamond industry**, especially in **Surat**, is facing severe economic downturns due to **global geopolitical tensions**, including the **Russia-Ukraine war** and the **Gaza conflict**. These issues have

impacted both the **supply chain** and **global demand**, causing widespread **job losses** and **economic challenges**.

Overview of the Indian Diamond Industry:

1. **Global Leader**: India processes over **90% of the world's diamonds**, making it the global hub for diamond cutting and polishing.
2. **Employment**: The industry employs approximately **5 million people**, particularly in regions like **Surat**.
3. **Exports**: In **2022**, diamond exports from India were valued at **$23 billion**, which fell to **$16 billion** in **2023** due to the global economic downturn.
4. **Global Share**: India contributes **19%** of total global diamond exports.

Issues Faced by the Diamond Industry:

1. **Supply Chain Disruptions**: **Sanctions on Russia**, one of the largest diamond suppliers, have limited the availability of **raw diamonds**, creating supply chain bottlenecks.
2. **Global Demand Slump**: Major markets like the **U.S.**, **Europe**, and **China** have reduced demand for diamonds, affecting India's export revenues.
3. **Job Losses and Suicides**: Over **50,000 job losses** in Surat and more than **70 suicides** in the past year highlight the economic hardship faced by workers due to the industry's downturn.
4. **Oversupply and Price Drop**: Even with limited demand, production continued, leading to a **5-27% drop in polished diamond prices**.
5. **Rise of Lab-Grown Diamonds**: **Lab-grown diamonds**, a cheaper alternative to natural diamonds, are gaining market share and further impacting the traditional diamond industry.

Way Forward for the Indian Diamond Industry:

1. **Diversify Export Markets**: Focus on emerging markets in **Asia** and **Africa** to reduce dependency on traditional buyers like the U.S. and Europe.
2. **Support for Workers**: Implement **government relief measures** such as **financial aid** and **retraining programs** for displaced workers to help them transition to other sectors.
3. **Boost Lab-Grown Diamond Industry**: Leverage India's expertise in diamond cutting to expand into the **lab-grown diamond** sector, which is growing due to its affordability and sustainability.
4. **Global Cooperation**: Collaborate with international players to **find alternate sources** of rough diamonds, reducing reliance on regions impacted by geopolitical issues.
5. **Technological Upgradation**: Invest in **innovation and technology** to improve productivity and maintain **global competitiveness** in the diamond cutting and polishing industry.

More About Lab-Grown Diamonds:

1. **Chemical Properties**: Lab-grown diamonds have the same **chemical, physical, and optical properties** as natural diamonds.
2. **Origin**: Created using technology that replicates **natural geological processes**.
3. **Production Methods**:
   - **HPHT Method**: Mimics natural diamond formation through **extreme pressure and temperature**.
   - **CVD Method**: Uses **carbon gas** to form diamonds under controlled temperature and pressure.

Cruise Bharat Mission: Boosting India's Cruise Tourism and Employment by 2029

Context: The **central government** of India has launched the **five-year Cruise Bharat Mission**, aiming to significantly boost **cruise tourism** in India. The mission targets **1 million cruise passengers** and aims to create **400,000 jobs** by the year **2029**.

Key Objectives of the Cruise Bharat Mission:

1. **Aim**: The mission aims to double **cruise passenger traffic** by 2029, create a robust ecosystem that fosters **employment**, strengthens **maritime trade**, and positions India as a prominent **global cruise destination**.
2. **Targets**:
   - **1 million cruise passengers** by 2029.
   - **400,000 jobs** in the cruise sector.
   - Increase **river cruise passengers** from **0.5 million** to **1.5 million**.
   - Expand the number of **international cruise terminals** from **2 to 10**.
   - Grow the number of **river cruise terminals** from **50 to 100** by **Phase 3**.
3. **Nodal Ministry**: **Ministry of Ports, Shipping, and Waterways** will oversee the mission's implementation.

Features of the Cruise Bharat Mission:

1. **Phased Implementation**:
   - **Phase 1 (2024-2025)**: Focus on conducting **market studies**, forming **cruise alliances**, and modernizing existing **cruise terminals**.
   - **Phase 2 (2025-2027)**: Develop **new cruise terminals** and activate **high-potential locations**.
   - **Phase 3 (2027-2029)**: Integrate **cruise circuits** across the **Indian Subcontinent** to enhance cruise tourism routes.

2. **Sustainable Infrastructure Development**:

- Build **terminals**, **marinas**, **water aerodromes**, and **heliports**.
- Emphasize **digitalization** (e.g., **facial recognition**) and **decarbonization** (e.g., **shore power**) to ensure **sustainable operations**.
- Develop a **National Cruise Infrastructure Masterplan 2047**.

3. **Operational Efficiency**:

- Enhance operational processes using **digital solutions**, such as **e-clearance systems** and **e-visa facilities**, to streamline the cruise experience.

4. **Cruise Promotion & Circuit Integration**:

- Boost **international marketing** and attract **investment** in the cruise sector.
- Host the **"Cruise India Summit"** and establish **alliances** with neighboring countries such as **UAE**, **Maldives**, and **Singapore** to create **regional cruise circuits**.

5. **Regulatory and Financial Policies**:

- Develop **fiscal incentives** and tailored **cruise regulations** to support the industry.
- Launch a **National Cruise Tourism Policy** to provide a clear regulatory framework.

6. **Capacity Building & Employment**:

- Establish a **Centre of Excellence** for **cruise-related research** and innovation.
- Create **National Occupational Standards** for the cruise industry, encouraging **youth employment** and skills development.

SEBI's New Reforms in Equity Derivatives: Curbing Speculation and Enhancing Market Stability

Context: SEBI has introduced major reforms in the **equity index derivatives (futures and options)** framework. These measures aim to curb **speculative trading**, protect **retail investors**, and enhance **market stability** in India's financial markets.

Recent SEBI Reforms and Their Implications:

1. **Recalibration of Contract Size for Index Derivatives**:

- **Reform**: The minimum contract size for index derivatives has been increased to **₹15 lakh** from the earlier range of ₹5-10 lakh, effective **November 20, 2024**.
- **Implication**: Raises the **entry barrier**, ensuring participants have **adequate risk tolerance**, thus reducing speculative trading by smaller retail investors.
- **Impact**: Discourages small traders from taking excessive risks, promoting **responsible trading** and reducing market volatility.

2. **Upfront Collection of Options Premium**:
   - **Reform**: From **February 1, 2025**, trading members must collect the **options premium upfront** from buyers.
   - **Implication**: Reduces **misuse of leverage** in options trading, enforcing financial discipline and reducing default risks.
   - **Impact**: Protects investors from **over-leveraged positions**, minimizing potential **market instability**.
3. **Rationalization of Weekly Expiring Derivatives Products**:
   - **Reform**: Only one benchmark index per exchange will offer **weekly expiring derivatives**, effective **November 20, 2024**.
   - **Implication**: Limits **frequent speculative trades** that often lead to **short-term volatility** on expiry days.
   - **Impact**: Reduces speculative pressure, promoting **long-term stability** in the market.
4. **Intra-Day Monitoring of Position Limits**:
   - **Reform**: Starting **April 1, 2025**, SEBI will monitor **position limits intra-day**, rather than just end-of-day.
   - **Implication**: Prevents **excessive speculative positions** from building up during the trading day.
   - **Impact**: Ensures **real-time compliance**, improving market stability and reducing sudden spikes in volatility.
5. **Removal of 'Calendar Spread' Treatment on Expiry Day**:
   - **Reform**: Effective **February 1, 2025**, **calendar spread benefits** will not be available on the contract expiry day.

- **Implication**: Traders will be forced to execute **rollovers earlier**, reducing the build-up of speculative positions on the expiry day.
- **Impact**: Eases **expiry-day volatility**, stabilizing prices of derivatives during expiration.

6. **Increase in 'Tail Risk' Coverage on Expiry Day**:

- **Reform**: An additional **Extreme Loss Margin** of **2%** will be imposed on **short options contracts** on expiry day.
- **Implication**: Provides protection against **extreme market movements** and reduces risk.
- **Impact**: Improves **market resilience** by guarding against rare, **high-impact market events**.

Impact on India:

1. **Curbing Speculation**: The larger **contract sizes** and **upfront premium collection** will reduce excessive speculation, particularly by small traders, encouraging more **disciplined investment** strategies.
2. **Market Stability**: Limiting **speculative positions**, monitoring **intra-day trading**, and addressing volatility on **expiry days** will contribute to **smoother market operations** and **long-term investor confidence**.
3. **Protecting Retail Investors**: These reforms safeguard **retail investors** from significant losses due to aggressive short-term trading practices, promoting **responsible trading behaviors**.
4. **Promoting Capital Growth**: By focusing on **financial discipline** and reducing short-term speculation, the reforms aim to foster **capital formation** and **sustainable economic growth**.

Insolvency and Bankruptcy Board of India (IBBI): Key Functions, Powers, and Composition

Context: The **Insolvency and Bankruptcy Board of India (IBBI)** celebrated its **Eighth Annual Day** on **1st October 2024**, marking its continued efforts in regulating and overseeing insolvency processes under the **Insolvency and Bankruptcy Code (IBC), 2016**.

About Insolvency and Bankruptcy Board of India (IBBI):

1. **Establishment**: Established on **1st October 2016** under the **Insolvency and Bankruptcy Code (IBC), 2016**.
2. **Aim**: The IBBI is responsible for ensuring the **efficient implementation** of the IBC, facilitating **time-bound resolution** of insolvency cases for **individuals**, **partnership firms**, and **corporate entities**.

Functions of IBBI:

1. **Regulation of Professionals**: IBBI regulates **insolvency professionals**, **insolvency professional agencies**, **entities**, and **information utilities** involved in the resolution process.
2. **Oversight of Processes**: It oversees processes related to **corporate and individual insolvency resolution**, **liquidation**, and **bankruptcy** under the IBC, ensuring that they are conducted within the prescribed timeframe.
3. **Eligibility and Examination**: IBBI sets **eligibility criteria** for insolvency professionals and conducts their **qualifying exams**, ensuring high standards of competency.
4. **Information Management**: It collects, maintains, and disseminates information related to **insolvency** and **bankruptcy cases**, contributing to transparency in the process.

Powers of IBBI:

1. **Enforcement of Rules**: IBBI enforces rules and regulations related to **corporate** and **individual insolvency resolutions**, ensuring compliance with the **time-bound** mandates under the IBC.
2. **Regulatory Frameworks**: It establishes **regulatory frameworks** for insolvency professionals and related entities, setting standards to ensure the **efficient functioning** of the insolvency ecosystem.

Composition of IBBI:

1. **Chairperson**: Appointed by the **Central Government**.
2. **Government Representatives**: Three members, one each from the **Ministry of Finance**, **Ministry of Corporate Affairs**, and **Ministry of Law** (ex-officio members).
3. **RBI Representative**: One member **nominated by the Reserve Bank of India (RBI)** (ex-officio member).
4. **Additional Members**: **Five other members** appointed by the Central Government, with at least three being **full-time members**.

Tenure of Members:

1. **Chairperson and Non-Ex-Officio Members**:

   - Serve for **five years** or until they reach the age of **65 years**, whichever is earlier.
   - Eligible for **re-appointment**.

National Mission on Edible Oils – Oilseeds (NMEO-Oilseeds): Boosting Self-Reliance in Edible Oils

Context: The **Union Cabinet**, led by Prime Minister **Shri Narendra Modi**, approved the **National Mission on Edible Oils – Oilseeds (NMEO-Oilseeds)** in 2024, marking a significant step towards **self-reliance in edible oils** and boosting **domestic oilseed production**.

About NMEO-Oilseeds:

1. **Origin**:
   - Launched in **2024** as part of India's broader **Atmanirbhar Bharat** (self-reliance) agenda.
   - It follows the **National Mission on Edible Oils – Oil Palm (NMEO-OP)**, which was launched in **2021** with an outlay of **Rs 11,040 crore**.
2. **Ministry**: The mission is overseen by the **Ministry of Agriculture and Farmers' Welfare**.
3. **Funds**: **Total outlay** of **Rs 10,103 crore**, with the **Central Government contributing Rs 7,150 crore** and **State Governments contributing Rs 2,953 crore**.

Aims of NMEO-Oilseeds:

1. **Increase Domestic Oilseed Production**: From **39 million tonnes (2022-23)** to **69.7 million tonnes** by **2030-31**.
2. **Reduce Dependence on Imports**: Targeting **25.45 million tonnes** of domestic edible oil production by **2030-31**.
3. **Boost Production of Key Oilseeds**: Focus on **rapeseed**, **groundnut**, **soybean**, **sunflower**, and **sesame**.
4. **Promote Fallow Land Cultivation**: Encouraging the cultivation of oilseeds on **fallow lands** and promoting **intercropping** practices.
5. **Utilize Modern Technologies**: Implementing technologies like **genome editing** to improve seed quality and production.

Key Features of the Scheme:

1. **Aadhaar-Authenticated e-Vouchers**: For EV buyers to ease the demand incentive process.
2. **Promotion of e-Ambulances**: Allocation of **Rs 500 crore** to promote **e-ambulances**.
3. **Seed Hubs and Storage Units**: Creation of **65 seed hubs** and **50 storage units** to improve **seed infrastructure**.

4. **Value Chain Clusters**: Formation of over **600 Value Chain Clusters** across **347 districts**, covering **10 lakh hectares** annually.
5. **Fallow Land Cultivation Expansion**: Expanding **oilseed cultivation** on rice and potato fallow lands by **40 lakh hectares**.
6. **Post-Harvest Infrastructure**: Enhancing infrastructure to extract more oil from **cottonseed**, **rice bran**, and other sources.
7. **SATHI Portal**: A portal to enable **States** to coordinate with stakeholders for the **timely availability of quality seeds**.

Current Status:

1. **Import Dependency**: India currently relies on imports for **57% of its edible oil demand**.
2. **Minimum Support Price (MSP)**: **MSP for oilseeds** has been significantly increased to ensure better prices for farmers.
3. **Farmer Support**: The **Pradhan Mantri Annadata Aay Sanrakshan Abhiyan (PM-AASHA)** supports farmers through **price support** and **deficiency payment schemes**.
4. **Import Duty on Edible Oils**: A **20% import duty** on edible oils has been imposed to protect domestic producers and encourage **local cultivation**.

India's Employment Growth: A Positive Trajectory from 2016-2023

Context: India has experienced significant employment growth over the years, adding approximately **17 million jobs** between **2016-17 and 2022-23**, representing a **36% increase**. This challenges the notion of "jobless growth" and showcases a positive relationship between **GDP growth** and **job creation** across key sectors.

Summary of India's Employment Growth (2016-2023):

1. **Employment Growth**:
   - Employment in India grew by **36%**, adding **17 million jobs** between **2016-17 and 2022-23**.
   - This growth reflects a **positive correlation** between **economic expansion** and **job creation**, countering the idea of **jobless growth**.
2. **Worker Population Ratio (WPR)**: The **WPR** increased by **9 percentage points**, showing a **26% rise** in employment from **2017 to 2023**, according to **Periodic Labour Force Survey (PLFS)** data.
3. **Consumption-Driven Growth**: India's economic growth has been driven by **domestic consumption**, indicating that more people are finding employment and **boosting demand**.

4. **Employment Elasticity**: Between **2017 and 2023**, a **1% increase in GDP** led to a **1.11% rise in employment**, showing a strong connection between economic and job growth.

5. **Sectoral Job Creation**: The **services sector** showed high labor intensity with a **labor-capital ratio of 1.17**, indicating **robust job generation** in this sector.

Sector-Specific Insights:

1. **Improved Labor Market**: The **unemployment rate** decreased to **3.2%** in **2022-23**, demonstrating a significant improvement in the labor market.
2. **Sectoral Shift**: Although **45%** of the workforce is still employed in **agriculture**, there is a notable **shift toward manufacturing and services** sectors.
3. **Youth Employment**: **Youth unemployment** (ages 15-29) decreased from **17.8%** in **2017-18** to **10%** in **2022-23**.
4. **Female Labor Participation**: **Female labor force participation** has seen a steady increase due to **policy support** and initiatives aimed at encouraging women in the workforce.
5. **Wage Growth**: **Rural wages** grew at a **6.9% CAGR** from **FY15 to FY22**, while **urban wages** grew at **6.1%**, reflecting higher **labor demand** across both rural and urban areas.

Economic Growth:

1. **Real GDP Growth**: Real GDP grew by **8.2%** in **FY23-24**, demonstrating India's strong economic recovery.
2. **Manufacturing Sector**: The **manufacturing sector** grew by **9.9%** in **FY23-24**, recovering from a previous decline of **-2.2%** in **FY22-23**.

SCHEMES IN NEWS

Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA): A Holistic Approach to Tribal Developmen

Context: On **Mahatma Gandhi's birth anniversary**, Prime Minister **Shri Narendra Modi** launched the **Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA)** from **Hazaribagh, Jharkhand**, with a focus on improving the quality of life for **tribal communities**.

Key Details of Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA):

1. **Ministry**: The scheme is overseen by the **Ministry of Tribal Affairs**.

2. **Funds Allocated**: The total outlay for the scheme is **Rs. 79,156 crores**, with **Rs. 56,333 crores** from the **Central Government** and **Rs. 22,823 crores** from the **State Governments**.

3. **Aim**: The Abhiyan aims to cover **63,843 villages** in tribal areas, focusing on filling gaps in **social infrastructure**, **health**, **education**, and **livelihood** through **25 targeted interventions**.

Features of the Scheme:

1. **Comprehensive Coverage**: The scheme will cover **549 districts** and **2,911 blocks** across **30 States/UTs**, targeting villages with **tribal-majority populations**.
2. **Multi-Ministerial Convergence**: **17-line ministries** will collaborate to implement **25 interventions**, ensuring a **coordinated approach** to tribal development.
3. **Holistic Development**: The scheme builds on the success of **PM-JANMAN** and focuses on addressing **critical gaps** in **tribal education**, **healthcare**, **social infrastructure**, and **livelihood**.
4. **Saturation of Services**: The scheme aims to **saturate** tribal communities with essential services in **education**, **healthcare**, and **livelihood**, ensuring no gap in service provision.
5. **Infrastructure Development**:Inauguration of **40 Eklavya Model Residential Schools** (EMRS) and laying foundations for **25 more**.

- The goal is to have **728 schools** functional by **March 2026**, benefiting **3.5 lakh tribal students**.

PM E-DRIVE Scheme: Boosting Electric Vehicle Adoption in India

Context: The government of India has launched the **PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM E-DRIVE)** scheme, aimed at accelerating the adoption of **electric vehicles (EVs)**. The scheme replaces the **FAME India Phase II** initiative and has a **financial outlay of Rs 10,900 crore** over two years.

About PM E-DRIVE Scheme:

1. **Ministry**: The scheme is administered by the **Ministry of Heavy Industries (MHI)**.
2. **Scheme Replaces**: **Faster Adoption and Manufacturing of Electric Vehicles in India Phase II (FAME India Phase II)**.
3. **Aim**: To **accelerate the transition to electric vehicles** by offering financial incentives and establishing a **robust EV charging infrastructure**.
4. **Financial Outlay**: Total allocation of **Rs. 10,900 crores** over a period of two years.

Key Features and Allocations:

1. **Subsidies and Incentives**: Subsidies will be offered to promote electric two-wheelers (**e-2Ws**), three-wheelers (**e-3Ws**), **e-ambulances**, **e-trucks**, and other emerging electric vehicles (EVs).
2. **E-buses**: **Rs. 4,391 crores** allocated for the procurement of **14,028 e-buses** by **state transport units**, facilitating greener public transport.
3. **E-vouchers**: **Aadhaar-authenticated e-vouchers** for EV buyers will be introduced. These will be signed by both the buyer and dealer and uploaded on the **PM E-DRIVE portal**, ensuring transparency in demand incentives.
4. **E-ambulances**: **Rs. 500 crores** allocated for **e-ambulances**, with safety standards developed in consultation with the **Ministry of Health and Family Welfare (MoHFW)** to ensure reliable and safe electric emergency services.
5. **Demand Aggregation**: **Convergence Energy Services Limited (CESL)** will manage **demand aggregation** for EVs in cities with populations exceeding 40 lakhs, such as **Delhi**, **Mumbai**, and **Kolkata**.

Prime Minister's Internship Scheme: Empowering Youth Through Skill Development and Employment Opportunities

Context: The government has launched the **pilot phase** of the **Prime Minister's Internship Scheme**, with a goal to provide **1.25 lakh internship opportunities** during the fiscal year **2024-25**. This ambitious scheme is a crucial part of the **Prime Minister's Package for Employment and Skilling**.

About the PM Internship Scheme:

1. **Origin**: Announced in the **Budget 2024-25** as part of the **Prime Minister's Package for Employment and Skilling**.
2. **Aim**: To offer **1 crore youth** practical work experience in **top 500 companies** over five years, enhancing their **employability** and promoting **skill development**.
3. **Budget**:
   - **₹2 lakh crore** overall allocation.
   - **₹2,000 crore** allocated for the fiscal year **2024-25**.

Eligibility Criteria:

1. **Age**: Youth aged **21-24 years** who are not currently in full-time employment or education.

2. **Qualifications**: Applicants must hold qualifications such as **high school diplomas**, **ITI certificates**, or **graduate degrees** (e.g., **B.A.**, **B.Sc.**, **B.Com.**).

3. **Exclusions**: Candidates from **IITs**, **IIMs**, and those holding **advanced degrees** (e.g., **MBA**, **CA**) are not eligible.

Key Features of the Scheme:

1. **Internship Duration and Stipend**: **12-month internships** with a stipend of **₹5,000** (₹4,500 from the government, ₹500 from companies).

2. **Insurance Coverage**: Interns are insured under government schemes like the **PM Jeevan Jyoti Bima Yojana**.

3. **Incidentals Grant**: A one-time grant of **₹6,000** is provided to cover incidental expenses.

4. **Support Systems**: The scheme includes a **multilingual helpline** and a **grievance redressal system** to support interns.

Significance of the Scheme:

1. **Enhances Employability**: Provides youth with **hands-on work experience**, improving their **employability** in various industries.

2. **Skill Development**: Focuses on **skill development** in **real-world job environments** across sectors like **pharma**, **auto**, and **agriculture**.

3. **Atmanirbhar Bharat Vision**: Supports the government's vision of **self-reliance (Atmanirbhar Bharat)** by creating a **skilled workforce** that contributes to national economic growth.

Modified Eco-mark Scheme: A Step Toward Sustainable Consumption and Production

Context: The **Modified Eco-mark Scheme**, introduced in **2024**, aims to align with the **LiFE** (**Lifestyle for Environment**) mission, promoting **eco-friendly products** and sustainable consumption. This updated scheme replaces the earlier version from **1991**, with a stronger focus on **resource efficiency**, **environmental protection**, and **sustainable production**.

Key Features of the Modified Eco-mark Scheme:

1. **Accreditation Based on Environmental Criteria**: Products are accredited based on **specific environmental standards** to ensure they cause **minimal environmental harm** during production, use, and disposal.
2. **Reduction in Energy Consumption**: Emphasizes minimizing **energy usage** during production processes.
   - Promotes the **circular economy** by encouraging the use of **recycled materials** and **eco-friendly production methods**.
3. **Accurate Labeling**: Mandates **clear labeling** to prevent **misleading claims** about a product's sustainability, ensuring **transparency** for consumers.
4. **Implementation and Monitoring**: Overseen by the **Central Pollution Control Board (CPCB)** and the **Bureau of Indian Standards (BIS)** to ensure compliance with eco-friendly standards.

Significance of the Scheme:

- **Sustainability**: Encourages the adoption of **sustainable practices** by manufacturers, reducing the overall **environmental impact**.
- **Consumer Awareness**: Helps consumers make informed choices by promoting **environmentally friendly products**.
- **Circular Economy**: Supports the transition toward a **circular economy**, minimizing waste and promoting resource efficiency.
- **LiFE Mission**: The scheme is in alignment with India's **LiFE mission**, promoting **eco-conscious lifestyle choices** for environmental conservation.

ENVIRONMENT & ECOLOGY

Eco-Sensitive Areas (ESAs) and the Balancing Act Between Conservation and Development

Context: The **Karnataka government** has requested the Union Ministry of Environment, Forest, and Climate Change (**MoEF&CC**) to withdraw the **sixth draft notification** on declaring **Eco-Sensitive Areas (ESAs)** in the **Western Ghats**, a move reflecting the ongoing debate between environmental protection and development.

About Eco-Sensitive Areas (ESAs):

1. **Definition**: ESAs are regions surrounding **protected areas** such as **national parks** and **wildlife sanctuaries** that act as **buffer zones** to minimize the adverse effects of human activities on biodiversity.
2. **Governance**: ESAs are governed by the **Environmental (Protection) Act, 1986**, and are part of the **National Wildlife Action Plan (2002-2016)** under the MoEF&CC.
3. **Origin**: ESAs were introduced to create **buffer zones** around protected areas. The **Western Ghats Ecology Expert Panel** (Gadgil Committee) and **Kasturirangan Committee** recommended these zones to conserve fragile ecosystems, particularly in the Western Ghats.

Activities in ESAs:

- **Prohibited**: Commercial mining, polluting industries, large hydroelectric projects, sawmills, and commercial use of wood.
- **Regulated**: Tree felling, construction of hotels/resorts, commercial water use, installation of electrical cables, and changes in agricultural practices.
- **Permitted**: Organic farming, rainwater harvesting, use of renewable energy, and continuation of traditional agricultural practices.

Comparison Between Madhav Gadgil's Report and Kasturirangan's Report:

Aspect	Madhav Gadgil Report	Kasturirangan Report
Approach	Bottom-up approach involving **local communities**.	Top-down approach emphasizing balance between **development** and **conservation**.
ESA Coverage	Proposed **100% of the Western Ghats** as ESA.	Proposed **37% of the Western Ghats** as ESA.
Local Involvement	Strongly recommended **local participation** via Gram Sabhas.	Minimal local participation, focusing on bureaucratic processes.
Development	Restricted **development activities**, especially in high-priority areas (ESZ-1).	Allowed controlled development in less sensitive areas.
Mining and Quarrying	Recommended a **complete ban** on mining in ESAs.	Proposed **phasing out** of mining over time.
Power Projects	Opposed **large hydropower projects** in sensitive zones.	Allowed hydropower projects with **extensive studies**.

Significance of ESAs:

1. **Conservation of Biodiversity**: ESAs regulate human activities to prevent **environmental degradation** and protect **biodiversity**.
2. **In-Situ Conservation**: Help conserve **endangered species** in their natural habitats (e.g., **One-horned Rhino** in Kaziranga).
3. **Minimizing Man-Animal Conflict**: Maintaining **Forest corridors** reduces conflicts between humans and wildlife.
4. **Buffer Zones**: ESAs act as **shock absorbers** for ecologically fragile areas, balancing **development** and **conservation**.
5. **Climate Resilience**: Protecting natural landscapes helps ecosystems adapt to **climate change**.

Challenges:

1. **Development vs. Conservation**: Finding the right balance between **economic growth** and **environmental protection** remains a challenge.
2. **Impact on Local Livelihoods**: Restrictions on activities in ESAs can adversely affect **communities** dependent on natural resources.
3. **Inconsistent Policies**: Variation in ESA implementation across states leads to **confusion** and challenges in enforcement.
4. **Encroachment**: **Illegal mining, deforestation**, and human encroachments threaten the effectiveness of ESAs.
5. **Lack of Local Participation**: Limited involvement of **local communities** weakens compliance and effectiveness.

Way Ahead:

1. **Community Involvement**: Strengthen local participation through **Gram Sabhas** and **local bodies** in ESA management.
2. **Sustainable Development**: Promote **eco-friendly alternatives** like **organic farming** and **eco-tourism** in ESAs.
3. **Clear and Consistent Policies**: Standardize ESA policies across regions to **prevent loopholes** and ensure uniform enforcement.
4. **Scientific Assessments**: Conduct thorough **environmental impact assessments (EIAs)** before approving developmental projects in ESAs.
5. **Alternative Livelihoods**: Provide **financial support** and training to communities for **alternate, sustainable income sources**.

Pusa-2090: A Sustainable Rice Variety for Reducing Stubble Burning and Enhancing Crop Efficiency

Context: The **Indian Agricultural Research Institute (IARI)** introduced **Pusa-2090**, a new high-yield rice variety, to address environmental challenges, particularly **stubble burning**, caused by the widely cultivated **Pusa-44** variety in **Punjab** and **Haryana**. **Pusa-2090** offers similar yields but matures faster, helping mitigate air pollution and improve crop management.

Key Features of Pusa-2090:

1. **Developed by**: **Indian Agricultural Research Institute (IARI)**, New Delhi.
2. **Genetic Composition**: Pusa-2090 is a **crossbreed** between **Pusa-44** and **CB-501**, an early-maturing **Japonica rice line**. It combines the high yields of **Pusa-44** with the **shorter duration** of CB-501.

Comparison: Pusa-2090 vs. Pusa-44

Feature	Pusa-2090	Pusa-44
Maturity Time	120-125 days	155-160 days
Yield	34-35 quintals per acre	35-36 quintals per acre
Stubble Burning	Less likely due to shorter growing period	Common due to late harvesting
Water Requirement	Requires 5-6 fewer irrigations	Requires 29-30 irrigations
Suitability for Crop Rotation	Highly suitable due to early harvesting	Limited, as late harvesting delays subsequent crops

Significance of Pusa-2090:

1. **Environmental Impact**: The shorter maturation time reduces the need for **stubble burning**, a major contributor to **air pollution** in northern India, especially Punjab and Haryana.
2. **Water Efficiency**: **Pusa-2090** requires fewer irrigations, promoting **water-efficient farming** in water-scarce regions. This is crucial for the sustainability of agriculture in Punjab and Haryana, where water resources are under stress.
3. **Improved Productivity**: Due to **early harvesting**, farmers can clear their fields earlier, allowing for timely sowing of **wheat** or other crops. This ensures better crop rotation and higher productivity throughout the year.
4. **Sustainability**: **Pusa-2090** supports more **environmentally friendly farming** practices by addressing pollution from stubble burning, reducing water usage, and facilitating smoother crop rotations.

Endangerment of Swallowtail Butterflies in Assam's "Citrus Belt" Due to Overexploitation of Medicinal Host Plants

Context: A recent study has revealed that the **overexploitation of 25 medicinal host plant species**, particularly in the **citrus belt** of Assam, is threatening the survival of **Swallowtail butterflies** in their forest habitats. The region, known for its diverse citrus plants, plays a crucial role in supporting the ecosystem of these butterflies.

About Swallowtail Butterflies:

1. **Scientific Name**: Family **Papilionidae**, including species like **Papilio machaon** and **Papilio slateri**.
2. **Types**:

- Notable species include:
  - **Blue-striped mime** (*Papilio slateri*),
  - **Bhutan glory** (*Bhutanitis lidderdalii*),
  - **Kaiser-i-Hind** (*Teinopalpus imperialis*).

3. **Distribution**: Found globally, with **69 species** recorded in **Northeast India**.
4. **IUCN Status**: Some species are categorized as **globally endangered**.
5. **Features**: Swallowtail butterflies are large, colorful insects with distinct **forked hindwings** resembling a **swallow's tail**.

Threats to Swallowtail Butterflies:

1. **Overexploitation of Host Plants**: Key host plants, particularly from the **citrus plant family** used for **medicinal purposes**, are being overharvested, affecting butterfly habitats.
2. **Illegal Activities**: **Ilegal tree felling** and **deforestation** are reducing available habitats.

1. **Illegal cattle farming** in protected areas also contributes to habitat destruction.

3. **Agricultural Impact**: **Tea cultivation** and the use of **pesticides** near butterfly habitats are detrimental to their survival.
4. **Habitat Destruction**: **Shrinking Forest cover** due to development and agricultural expansion is a significant cause of habitat loss.

Conservation Efforts: Swallowtail Conservation Action Plan

1. **IUCN Designation**: India's **Northeast** has been designated a **"Swallowtail-rich zone"** by the **IUCN**, which focuses on the conservation of these butterflies by promoting **habitat preservation**.

2. **Conservation Strategies**: Efforts to protect **69 species** of swallowtail butterflies include:
    - **Sustainable use of host plants** to prevent overexploitation.
    - **Forest habitat preservation** to maintain the natural ecosystem.

About Citrus Plants:

1. **Scientific Name**: Belongs to the **Rutaceae family**.
2. **Distribution**: Found in Assam's **citrus belt**, which contains **52 varieties** of citrus plants.
3. **Reasons for Decline**: The primary reasons for the decline are **overharvesting for medicinal purposes** and **habitat destruction**, threatening both the citrus plants and swallowtail butterflies.

Evolving Elephant Census Methods in India: A Shift Toward Precision

Context: The **Environment Ministry** has delayed releasing the **elephant census report**, "**Status of Elephants in India 2022-23**," due to the ongoing census in the Northeast. Despite the delay, the census highlights a significant shift in methods to achieve **more accurate population estimates**.

Old vs. New Elephant Census Methods:

Aspect	Old Method (Pre-2002)	New Method (Post-2022)
Direct Count	Simple **headcount** of elephants based on sightings	Refined **direct count** using **sample block method**, where **5 sq km blocks** are surveyed
Dung Count	Introduced in **2002**: Indirect method based on **dung decay** and **defecation rates** to estimate populations	Still in use, but now combined with advanced **genetic methods** in selected landscapes
Genetic Mark-Recapture	**Not used**	DNA analysis of **elephant dung samples**, identifying individual elephants through **microsatellite markers**
Extrapolation	Numbers extrapolated based on **limited observations**	**Extrapolated data** combined with **genetic data**, increasing accuracy for unsurveyed regions
Combined Estimation	Old methods lacked integration with other wildlife data	Now **synchronized with tiger census data** for better landscape-level management and policy recommendations

Advanced Methods for Accurate Census:

1. **Genetic Mark-Recapture**: DNA analysis of **elephant dung** provides individual elephant identification using **microsatellite markers**, ensuring **more precise population estimates**.
2. **Dung Count**: Continues to be used, estimating populations by assessing the **dung decay rate** and **defecation rate**, but now combined with **genetic data** for enhanced accuracy.
3. **Synchronized Census**: The elephant census is now **synchronized with the tiger census**, enabling better **landscape-level management** and **conservation policy formulation**.

Protection Status of Elephants:

- **IUCN Status**: Listed as **Endangered** on the IUCN Red List.
- **Wildlife (Protection) Act, 1972**: Elephants are listed in **Schedule I**, providing the highest protection in India.
- **CITES**: Included in **Appendix I**, which prohibits **international trade** except under specific circumstances.

World Green Economy Forum 2024: Empowering Global Action for a Sustainable Future

Context: The **World Green Economy Forum 2024** took place in **Dubai, UAE**, on **October 2nd and 3rd, 2024**, uniting global leaders to address critical environmental challenges. The forum revolved around the theme **"Empowering Global Action: Unlocking Opportunities and Advancing Progress"**, focusing on innovative and sustainable practices to advance towards a **net-zero future**.

Key Points:

1. **Summit Location**: Held in **Dubai, UAE**.
2. **Theme**: **"Empowering Global Action: Unlocking Opportunities and Advancing Progress"** emphasizes the need for **global cooperation**, **innovation**, and **sustainable practices** across industries.
3. **Aim**: To promote **global collaboration** and develop **innovative solutions** for critical environmental issues, particularly focusing on areas like **energy**, **decarbonization**, **climate finance**, and **sustainability**.

Features of the Forum:

1. **Sessions on Decarbonization**: The forum hosted sessions addressing **decarbonization** in **heavy industries** and how **AI** can contribute to **sustainability** efforts.
2. **Sustainable Aviation Fuel (SAF)**: Discussions on the future of **Sustainable Aviation Fuel (SAF)** with a target to produce **300 million tonnes by 2050** to reduce carbon emissions in the aviation sector.

3. **Public-Private Partnerships and Philanthropy**: The forum highlighted the importance of **public-private partnerships** and **philanthropy** to drive **climate solutions** and ensure **sustainable development**.
4. **Renewable Energy and Power Grid Challenges**: Panels focused on **renewable energy integration**, overcoming **power grid challenges**, and strategies to reduce the **carbon footprint** across sectors.
5. **Youth Involvement**: A special emphasis on the role of **youth** in **climate action**, encouraging their participation in leading global environmental transformations.

Alignment with Global Climate Goals:

- The forum's agenda aligns with the **Paris Agreement** and other global climate targets, advocating for collaboration between **governments**, **industries**, and **civil society** to achieve **sustainable development** and advance toward a **net-zero world**.

BIOTECHNOLOGY & HEALTH

Kerala's Operation Amrith: Combating Antimicrobial Resistance (AMR)

Context: Kerala has initiated **Operation Amrith**, a key effort to address the growing threat of **Antimicrobial Resistance (AMR)** by enforcing strict regulations on the sale of antibiotics. This operation focuses on curbing the **over-the-counter (OTC)** sale of antibiotics, a practice that significantly contributes to AMR.

Key Features of Operation Amrith:

1. **Objective**: The primary aim is to **curb the irrational use of antibiotics** by prohibiting their sale without a prescription, thereby reducing the spread of **antimicrobial resistance**.
2. **Launched by**: **Kerala Government** in **2023**.
3. **Enforcement of 2011 H1 Rule**: **Operation Amrith** strictly enforces the **2011 H1 rule**, which **bans the OTC sale** of all classes of antibiotics (first, second, and third-line) unless prescribed by a certified medical professional.

- The operation targets **pharmacies, hospitals, and medical stores** to ensure full compliance with this regulation.

4. **Differentiation from Other States**: Unlike other states, Kerala continues to adhere to the **2011 rule**, while many others have adopted the **modified 2013 rule**, which permits OTC sales of **first-line antibiotics**.
5. **Antibiotic Stewardship**: The initiative promotes **responsible use of antibiotics** to combat misuse and reduce the risk of AMR, ensuring that antibiotics remain effective for future generations.

Targets of Operation Amrith:

1. **End OTC Sales by 2024**: The goal is to **completely stop the OTC sale** of antibiotics without valid prescriptions by the **end of 2024**.
2. **Reduction in Antibiotic Misuse**: As a result of the operation, there has already been a significant **₹1,000 crore decline** in antibiotic sales, reflecting early success in controlling misuse.

Nipah Virus in India: A Recurrent Public Health Threat

Context: The **Nipah virus (NiV)** continues to pose a significant public health concern in India, particularly in **Kerala**, where recurrent outbreaks have resulted in fatalities. This **zoonotic virus**, which is transmitted from animals to humans, has a high mortality rate, prompting immediate government action and the implementation of preventive measures.

Overview of Nipah Virus:

1. **Origin**: **Nipah virus** first emerged in **Malaysia** in 1999 among pig farmers. It was later detected in **Bangladesh** and **India** around 2001.
2. **Transmission**: The primary host of NiV is **fruit bats** (commonly known as **flying foxes**), and the virus can be transmitted to humans through **contaminated food** or direct contact with **infected animals** or **humans**.

- **Human-to-human transmission** has also been documented, particularly in healthcare settings.

3. **Symptoms**: **Early symptoms**: Fever, headache, muscle pain, nausea, and sore throat.

- **Severe cases**: Progression to dizziness, drowsiness, and **neurological issues** such as **acute encephalitis**, which may lead to coma or death.

Nipah Virus Outbreaks in India:

1. **Siliguri, West Bengal (2001)**: The first documented Nipah outbreak in India involved **human-to-human transmission**, primarily among healthcare workers.
2. **Kerala Outbreaks**:

- **2018**: Kerala reported **17 fatalities** due to Nipah, concentrated in **Kozhikode**.
- **2023**: Six confirmed cases were reported in Kerala, including **two deaths**.
- **2024**: Kerala recently confirmed **two more deaths** attributed to the virus.

Treatment and Management:

1. **No Specific Treatment or Vaccine**: Currently, there is **no specific antiviral treatment** or **vaccine** available for Nipah virus.
2. **Supportive Care**: Treatment focuses on **intensive supportive care**, managing symptoms, and preventing complications through methods like **ventilatory support** and fluid management.
3. **Experimental Treatments**: The antiviral **Ribavirin** has shown **limited success** in reducing mortality rates, though it is not a definitive cure.

Marburg Virus Disease: A Hemorrhagic Fever with High Fatality Rates

Context: Rwanda has reported eight deaths from the **Marburg Virus Disease (MVD)**, an Ebola-like hemorrhagic fever. The outbreak underscores the danger posed by this virus, which has no authorized vaccine or specific treatment.

About Marburg Virus Disease (MVD):

1. **Origin**: The **Marburg virus** was first discovered in **1967** in **Marburg, Germany**, after laboratory workers were exposed to infected **green monkeys** from Uganda.
2. **Cause**: MVD is caused by the **Marburg virus**, a **zoonotic RNA virus** from the **Filoviridae family**, closely related to **Ebola**.
   - The **natural reservoir** of the virus is the **African fruit bat** (*Rousettus aegyptiacus*).
3. **Transmission**: The virus spreads through:
   - **Contact with infected bats** or animals.
   - **Human-to-human transmission** via blood, bodily fluids, or contaminated surfaces.
4. **Symptoms**: **Early Symptoms**: Fever, chills, headache, muscle aches, rash, nausea, and diarrhea.
   - **Severe Symptoms**: Liver failure, shock, hemorrhaging, and multi-organ failure.
5. **Fatality Rate**:

- The case fatality rate (CFR) varies between **24% and 88%**, depending on the outbreak and the quality of care.

6. **Treatment**: Currently, there is **no specific treatment or vaccine** for Marburg virus disease.

   - **Supportive care** includes:
   - Administration of **fluids**.
   - **Oxygen therapy**.
   - **Blood transfusions** to maintain body functions and improve survival chances.

Pandemic Preparedness and Emergency Response Framework: NITI Aayog's Recommendations for Future Public Health Emergencies

Context: NITI Aayog has constituted an expert group to recommend a comprehensive **Pandemic Preparedness and Emergency Response Framework**, four years after the outbreak of **COVID-19**. The aim is to enhance India's capacity to manage future public health emergencies effectively.

Key Challenges and Learnings from the COVID-19 Pandemic:

1. **Governance**: Lack of **clear risk communication systems** and **rapid response Standard Operating Procedures (SOPs)** for delegation of power and decision-making.
2. **Legislation**: Existing laws such as the **Epidemic Diseases Act (EDA)** and **National Disaster Management Act (NDMA)** were inadequate for managing modern pandemics. There is a need for a dedicated **Public Health Act**.
3. **Surveillance and Data Management**: Challenges in **data integration**, **forecasting**, and developing early warning systems. The pandemic highlighted the need for **comprehensive pandemic surveillance** integration.
4. **Research and Development**: While **public-private collaborations** were effective, structured mechanisms that **link research institutions with industries** need to be established for better response.
5. **Regulatory Reforms**: **Delays in emergency authorization** of vaccines and therapeutics due to unclear and **unharmonized global regulatory norms**.

Future Pandemic Threats and Preparedness:

1. **Global Preparedness**: Align **national preparedness** with **global core capacities** to prevent the cross-border spread of infectious diseases.

2. **Cross-Sectoral Collaboration**: Enhance coordination between **public health authorities** and **disaster management agencies** to ensure an integrated and efficient pandemic response.
3. **Risk Assessment and Community Engagement**: Focus on **accurate information dissemination** and proactive **community engagement** to counter misinformation and promote trust.
4. **Resource Availability**: Ensure **sufficient funds and resources** are available for pandemic response efforts.
5. **One Health Approach**: Develop **integrated surveillance systems** for zoonotic and emerging infectious diseases, emphasizing the **human-animal-environment interface**.

NITI Aayog's Proposed Pandemic Preparedness and Emergency Response Framework:

1. **Public Health Emergency Management Act (PHEMA)**:
   - Recommended to **replace the outdated Epidemic Diseases Act (1897)** and **National Disaster Management Act (2005)** for more effective pandemic and health emergency management.
   - The new law would empower governments to respond to **pandemics**, **non-communicable diseases**, **disasters**, and **bioterrorism**.
   - Establishes **public health cadres** at both national and state levels.
2. **Empowered Group of Secretaries (EGoS)**:
   - A proposed panel headed by the **Cabinet Secretary** to oversee **pandemic preparedness** and response.
   - EGoS would develop **SOPs for pandemics** and provide guidance on governance, finance, R&D, and surveillance during health crises.
3. **Strengthening Surveillance**:
   - Focus on monitoring **human-bat interfaces**, given the viral links between bats and diseases like COVID-19.
   - Create a **national biosecurity and biosafety network** for disease surveillance.
   - Establish an **emergency vaccine bank** for rapid vaccine deployment in future outbreaks.
4. **Early Warning and Forecasting**:
   - Build an **epidemiology forecasting network** to predict disease transmission and monitor countermeasures.
   - Set up **Centres of Excellence (CoE)** to develop **diagnostics**, **vaccines**, and **therapeutics** for priority pathogens, as identified by the **World Health Organization (WHO)**.

SCIENCE & TECHNOLOGY

Understanding Neutrino Fog and Its Impact on Dark Matter Detection

Context: The **LUX-ZEPLIN (LZ) experiment**, a leading global dark matter detection effort, has reported new findings, placing unprecedented restrictions on the possible identity of **dark matter particles**. However, these efforts face significant challenges due to the phenomenon known as **"neutrino fog."**

About Neutrino Fog:

1. **Definition**: **Neutrino fog** refers to the interference created by **neutrinos**, nearly massless particles produced by sources like the **Sun** and **cosmic events**, which pass through matter, including dark matter detectors, without much interaction.

2. **Why It Occurs**:

   - **Neutrinos** are extremely difficult to detect because they rarely interact with other particles.
   - In **dark matter detection experiments**, neutrinos create **background noise** that resembles the weak signals scientists expect from dark matter particles.

Why Neutrino Fog Matters:

1. **Challenge in Detection**: Neutrinos produce signals that can be **indistinguishable from dark matter**, making it difficult for scientists to confirm whether a detection is due to dark matter or neutrinos.
2. **Limits on Sensitivity**: The **neutrino fog** acts as a boundary for how sensitive **future dark matter detection experiments** can be. As experiments become more advanced and sensitive, this background interference limits their ability to isolate potential dark matter signals.
3. **Scientific Implications**: **Developing methods** to differentiate between neutrino signals and dark matter signals is one of the key challenges in advancing dark matter research. Without overcoming this barrier, experiments may struggle to push beyond current detection limits.

Significance: Neutrino fog represents a fundamental hurdle in the quest to detect **dark matter**. While experiments like **LUX-ZEPLIN** continue to push the boundaries of what is possible, the challenge of differentiating **neutrinos from dark matter** remains a critical aspect of ongoing research. Overcoming this challenge could lead to breakthroughs in our understanding of the **universe's unseen matter**.

India's Maiden Venus Orbiter Mission (VOM): A Step Forward in Space Exploration

Context: India's maiden mission to Venus is set for launch in **March 2028**, marking the country's first venture to study the **atmosphere**, **surface**, and **solar interactions** of the planet. This mission represents a major milestone in **India's space exploration efforts**.

About Venus Orbiter Mission (VOM):

1. **Launch Year**: Scheduled for **March 2028**.
2. **Objective**: The mission aims to study:
    - **Venus' atmosphere** and its composition.
    - **Surface characteristics** and **topography**.
    - **Solar X-ray interactions** with the planet.
    - **Subsurface analysis** using advanced instrumentation.
3. **Sanctioned Budget**: The mission has been allocated a budget of **₹1,236 crore**.
4. **Launch Vehicle**: The mission will be launched using **Launch Vehicle Mark-3 (LVM-3)**, India's most powerful rocket.
5. **Targeted Window**:
    - **Earth departure date**: March 29, 2028.
    - **Venus arrival date**: July 19, 2028, following a **112-day journey**.
6. **Mission Features**: **19 payloads**:
    - **16 Indian**.
    - **2 Indian-international collaborations**.
    - **1 international payload**.
- **Aerobraking technique** will be used to achieve a low-altitude science orbit (200×600 km) around Venus.
- **Five-year scientific exploration period** post-orbit insertion, allowing extensive study of the planet.

Other Venus Missions:

Past Missions:	Future Missions:
1. **Venera Series (1961-1984)**: Soviet Union's successful series of missions, including **flybys**, **orbiters**, **landers**, and **balloons** to study Venus. 2. **Pioneer Venus (1978)**: NASA mission focused on Venus' **atmosphere**, **cloud structure**, and **surface** using radar. 3. **Magellan (1989)**: Another NASA mission, famous for **mapping Venus' surface** using **radar imaging**. 4. **Akatsuki (2010)**: A **JAXA mission** studying **Venus' atmospheric circulation**.	1. **VERITAS (2026)**: A **NASA radar mission** to map Venus' **geology**. 2. **DAVINCI (2026)**: Another NASA mission aiming to study **Venus' atmosphere**. 3. **EnVision (2030s)**: **ESA's radar mission** to map Venus' surface and study its geology.

Bharat-Gen: India's Indigenous Generative AI Initiative for Inclusive Public Service Delivery

Context: Bharat-Gen, a generative AI initiative launched by India, aims to enhance **public service delivery** while promoting inclusivity in **Indian languages**. This initiative reflects India's commitment to developing AI technologies that respect and incorporate its **linguistic diversity** and **cultural context**.

Bharat-Gen Overview:

1. **Developed By**: Led by **IIT Bombay** under the **National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS)**.
2. **Aim**:
   - To create **generative AI models** that support India's **linguistic diversity** and are contextually aware of its **cultural nuances**.
   - Bharat-Gen is the **world's first government-funded Multimodal Large Language Model (LLM) project**.

Features of Bharat-Gen:

1. **Multilingual & Multimodal**: Bharat-Gen models cater to both **text** and **speech**, supporting a wide range of **Indian languages**, ensuring inclusivity for multiple forms of communication.

2. **India-Centric Data**: The AI models are trained using **curated datasets** focused on **India's languages** and **cultural contexts**, making them relevant to Indian users.
3. **Open-Source Platform**: Bharat-Gen is **open-source**, allowing **startups, researchers**, and **innovators** to build on foundational AI models, democratizing AI access across sectors.
4. **Data-Efficient Learning**: Bharat-Gen is effective in training AI models for **low-resource languages** with limited digital presence, enabling better service delivery in underserved regions.

Significance of Bharat-Gen:

1. **Cultural Preservation**: Bharat-Gen ensures the **representation** and **preservation** of India's diverse languages and **cultural heritage** in the digital world, promoting their use in AI systems.
2. **Digital Sovereignty**: By developing **indigenous AI solutions**, Bharat-Gen reduces India's reliance on **foreign technologies**, enhancing the country's **digital sovereignty**.
3. **Inclusive Development**: The initiative aims to make AI **accessible to all citizens**, particularly those in **underserved regions**, promoting **equitable digital access**.
4. **Strengthening the AI Ecosystem**: Bharat-Gen encourages **innovation** in India's **AI research community**, fostering **global collaborations** and supporting the growth of **AI startups**.

Fluorescent Nanodiamonds (FNDs): Properties, Challenges, and Applications in Emerging Technologies

Context: Fluorescent Nanodiamonds (FNDs) have garnered significant attention due to their **unique chemical and physical properties**, making them valuable across various industries. A recent experiment involving the **ultra-high-speed spinning** of FNDs has highlighted their potential in both **theoretical physics** and **practical applications**.

About FNDs: Chemical and Physical Properties

1. **Composition**: FNDs are **nanometer-sized diamonds** composed of **carbon nanoparticles**.
2. **Stability**: They are highly **stable under light**, **non-toxic**, and capable of maintaining **fluorescence** over long periods.
3. **Fluorescence**:
   - FNDs emit light at a **lower frequency** when irradiated with **higher-frequency light**. Unlike many other fluorescent materials, FNDs have a **longer fluorescence lifespan**, making them superior for certain applications.
4. **Non-blinking**: Unlike many nanoscales fluorescent materials, **FNDs do not blink**, maintaining continuous fluorescence, which is beneficial in applications requiring **consistent signal output**.

Technology Process in Formation

1. **Production**: FNDs are created under **high-temperature** and **high-pressure conditions**, similar to the processes that form natural diamonds.
2. **Doping**: FNDs can be **doped with nitrogen atoms**, forming **nitrogen vacancy (NV) centres**, which can host **electron spin qubits**—a key element in **quantum computing**.
3. **Vacuum Levitation**: In a groundbreaking experiment, researchers **levitated FNDs in a high vacuum** and spun them at **ultra-high speeds** (up to **20 million revolutions per second**), helping advance the understanding of their **quantum properties**.

Limitations

1. **Technical Challenges**: Earlier experiments struggled with **loss of nanodiamonds** in a vacuum and controlling the **spin qubits** effectively, posing a challenge to further progress.
2. **Complexity**: The **manipulation of spin qubits** in levitated FNDs requires **intricate experimental setups**, involving the use of **electric and magnetic fields** to maintain control over the quantum systems.

Applications of FNDs

1. **High-Resolution Imaging**: FNDs are used in **biological imaging** due to their stable fluorescence, allowing researchers to **track cells** over extended periods.
2. **Temperature Sensing**: FNDs are highly sensitive and used in **microscale temperature sensing**, enabling precise monitoring of small-scale environments.
3. **Sensors**: Their ability to detect **acceleration** and **electric fields** makes FNDs valuable in **strategic industries**, including defense and aerospace.
4. **Quantum Physics**: **FNDs doped with NV− centres** are critical in exploring **quantum superposition** and other **quantum mechanical properties**, contributing to advancements in **quantum computing** and **quantum research**.
5. **Gyroscopes**: The **Berry phase** generated by rotating FNDs opens possibilities for their use in **rotation-sensing gyroscopes**, potentially revolutionizing navigation systems.

Polymer Nanocomposite for Energy Harvesting and Road Safety Sensors

Context: Researchers from the **Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru**, have developed a **polymer nanocomposite** with applications in **pressure sensing** and **energy harvesting**, which

has led to the creation of a **road safety sensor prototype**. This breakthrough can significantly enhance road safety and power generation through **piezoelectric effects**.

About Polymer Nanocomposite:

1. **Chemical and Physical Properties**:
   - The **polymer nanocomposite** is composed of **vanadium disulfide (VS2) nanoparticles** integrated into **polyvinylidene difluoride (PVDF)**, a **piezoelectric polymer**.
   - **VS2** provides **high surface charge properties**, enhancing the **piezoelectric effect** of **PVDF**.
   - Exhibits properties such as:
     - **High flexibility** and **durability**.
     - **Energy-harvesting capabilities** for pressure sensing applications.
   - It generates electricity through the **piezoelectric effect**, which converts **mechanical pressure into electrical energy**.
2. **Departments Involved**:
   - Developed by **CeNS**, Bengaluru.
   - **Funded** under the **INSPIRE Faculty Fellowship Program** by the **Department of Science and Technology (DST), India**.

Features of the Polymer Nanocomposite:

1. **Self-Powered Sensor**: The nanocomposite can **generate energy** through pressure without the need for an **external power source**.
2. **Energy Harvesting**: The sensor can **store energy** produced via the piezoelectric effect and **power electronic devices**.
3. **Smart Application**: Ideal for use in **road safety sensors** to alert vehicles approaching **dangerous turns** or **high-risk zones**.

Significance:

1. **Sustainable Energy Generation**: Demonstrates potential for **sustainable**, **flexible energy generation**, contributing to energy-efficient systems.
2. **Road Safety**: Can significantly **reduce accident rates** by providing **real-time alerts** at critical road junctions or turns.
3. **Application in Advanced Technology**:
   - The use of such **smart sensors** opens doors for advancements in **wearable technology**, **artificial intelligence**, and **automation sectors**.

- It contributes to the development of **self-powered devices** in various industries.

PLACES IN NEWS

The Canary Islands: Key Facts and the Tragic Migrant Crisis Near El Hierro

Context: **Rescue crews** have resumed the search for **48 missing migrants** after their boat capsized near **El Hierro**, one of the **Canary Islands**. This incident could become the deadliest in 30 years of crossings from **Africa to the Canary Islands**, a common route for migrants seeking entry to **Europe**.

About the Canary Islands:

1. **Location**: The **Canary Islands** is an **archipelago** located in the **Atlantic Ocean**, about **1,300 km south of mainland Spain** and **115 km west** of the **African coast** (specifically, **Morocco**).
2. **Controlled by**: The Canary Islands are an **autonomous community of Spain** and are politically part of the country.
3. **Origin**: The islands were formed millions of years ago by **volcanic eruptions**, giving them a distinctive **volcanic landscape** with rugged terrains and mountainous features.
4. **Climate**: The Canary Islands have a **subtropical climate**, with **warm temperatures** year-round and little seasonal variation, making it a popular tourist destination.
5. **Vegetation**: The rich **volcanic soil** and favorable climate support a variety of **vegetation**, with distinct plant species depending on the **elevation** of the islands.

El Hierro Island:

1. **Location**: **El Hierro** is the **southernmost** and **westernmost** of the Canary Islands, situated off the **African coast**.
2. **Features**: Known as the "**Meridian Island**," **El Hierro** is the **second-smallest** of the main Canary Islands, with an area of **268.51 square kilometers**.
   - The island is characterized by **volcanic landscapes**, **rugged terrain**, and a **subtropical climate**.
3. **Capital City**: The capital of El Hierro is **Valverde**, and the island has a population of around **11,659** (as of 2023).

Vuhledar: A Strategic City in the Ongoing Ukraine-Russia Conflict

About Vuhledar:

1. **Location**: **Vuhledar** is in **Volnovakha Raion**, in the **Donetsk Oblast** of eastern Ukraine. It is positioned **57 km southwest of Donetsk**, a major city in the region.
2. **Geographical Context**: Situated on an **elevated plain**, Vuhledar holds significant **strategic importance** as it is the **highest point** in the region. This makes it a valuable location for controlling surrounding areas and advancing military operations.
3. **Strategic Importance**: **Russia** has been attempting to take control of Vuhledar to **advance north** towards key **regional transportation hubs** like **Kurakhove** and **Pokrovsk**, which are crucial for supply lines and troop movements.
4. **Economic Background**: Developed in the **1960s**, Vuhledar was planned to become a key economic center in connection with the **coal industry** of the **Donbas region**. Despite its economic potential, it has remained a relatively **small economic node** compared to larger cities in the region.
5. **Geological Importance**: Vuhledar is in the **Donbas region**, which is known for its **coal-rich deposits**. The city's economy is tied to **coal mining**, making it part of one of Ukraine's major **coal-producing regions**.