WEEKLY UPDATES

DATE : 25th Nov- 30th Nov

POLITY & GOVERNANCE

Preamble of the Indian Constitution: Context and Implications

Relevant Syllabus Section- GS Paper II: Indian Constitution – Historical Underpinnings, Amendments, Features, and Basic Structure

Context

The **Supreme Court** dismissed petitions challenging the inclusion of "**socialist**" and "**secular**" in the Preamble of the Indian Constitution, terms introduced via the **42nd Amendment Act, 1976** during the Emergency period.

Case Details and Judgment

Case Names

1. **Dr. Balram Singh v. Union of India**
2. **Dr. Subramanian Swamy v. Union of India**
3. **Ashwini Upadhyay v. Union of India**

Judgment Highlights

- The **Supreme Court upheld** the inclusion of **"socialist"** and **"secular"**, affirming their alignment with the **Constitution's basic structure**, as established in:
  - **Kesavananda Bharati v. State of Kerala (1973)**
  - **S.R. Bommai v. Union of India (1994)**
- The Court stated that Parliament's amendment power extends to the Preamble under **Article 368**.
- Petitions were dismissed as **flawed** and lacking legitimate cause, citing the 44-year delay since the 42nd Amendment.

Amendment of the Preamble

42nd Amendment Act, 1976

- Introduced **"Socialist"** and **"Secular"** between **Sovereign** and **Democratic**.
- Updated **"Unity of the Nation"** to **"Unity and Integrity of the Nation"**.
- Followed recommendations of the **Sardar Swaran Singh Committee**.

44th Amendment Act, 1978

- Reversed many Emergency-era changes but retained **"socialist"** and **"secular"**.

Meaning of "Socialist" and "Secular"

Socialist

- Refers to a **welfare state**, promoting **economic and social justice**.
- Aims to reduce **inequalities** and ensure **collective well-being** without eliminating private enterprise.

Secular

- Implies **equal treatment** of all religions without favor or discrimination.
- Guarantees **religious freedom** and ensures **state neutrality** in religious matters.

Reasons for Inclusion

1. **Strengthening Constitutional Values**: Reaffirmed principles already embedded in the Constitution, such as **Fundamental Rights** and **Directive Principles of State Policy**.
2. **Addressing Emergency-Era Criticism**: Highlighted India's commitment to **equality** and **inclusivity** during politically challenging times.
3. **Global Alignment**: Positioned India alongside nations that prioritize **democratic socialism** and **secularism**.

Government Programs Reflecting Socialist and Secular Ideals

Socialist Initiatives

- **MGNREGA**: Rural employment guarantee.
- **Public Distribution System (PDS)**: Ensures food security.
- **Right to Education (RTE)**: Free and compulsory education.
- **Awas Yojana**: Housing for economically weaker sections.

Secular Initiatives

- **Minority Welfare Programs**: Scholarships and skill development.
- **Places of Worship Act, 1991**: Protects the religious character of sites.
- **Special Courts for Communal Violence**: Ensures justice and communal harmony.
- **Articles 25-28**: Safeguard **religious rights** under the Constitution.

Challenges and Limitations

1. **Misuse of Secularism**: Politicization of the term for **electoral gains**.
2. **Economic Inequality**: Persistent income gaps hinder **socialist goals**.
3. **Religious Intolerance**: Rising **communal tensions** challenge secular ideals.
4. **Implementation Issues**: Inefficient delivery mechanisms affect **welfare program efficacy**.

About the Preamble

Features

- **Introduction to the Constitution**: Summarizes its philosophy and objectives.
- **Core Values**: Highlights **sovereignty**, **socialism**, **secularism**, **democracy**, and **republicanism**.
- **Guaranteed Ideals**: Ensures **justice**, **liberty**, **equality**, and **fraternity**.

Components

- **Source of Authority**: Declares the **people of India** as the source of the Constitution.
- **Nature of the State**: Defines India as a **Sovereign, Socialist, Secular, Democratic, Republic**.
- **Objectives**: Specifies **justice, liberty, equality, and fraternity** as national goals.
- **Date of Adoption**: Marks **November 26, 1949**, as the adoption date.

Judicial Interpretation of the Preamble

1. **Berubari Union Case (1960)**: Initially ruled that the Preamble is not a part of the Constitution but aids in its interpretation.
2. **Kesavananda Bharati Case (1973)**: Reversed the earlier ruling, declaring the Preamble an integral part of the Constitution.
3. **LIC of India Case (1995)**: Reaffirmed that the Preamble is part of the Constitution but is not enforceable in courts.

Conclusion

The inclusion of **"socialist"** and **"secular"** in the Preamble reflects India's unwavering commitment to **justice**, **equality**, and **inclusivity**. Despite challenges, these principles remain integral to the country's **democratic vision**. Strengthening their **practical implementation** will help uphold the ideals enshrined in the **Constitution** and guide India's socio-economic progress.

Places of Worship Act, 1991: A Legal Framework for Religious Harmony

Relevant Syllabus Section

- **GS Paper II**: Indian Constitution – Features, Amendments, and Fundamental Rights
- **GS Paper I**: Communalism, Secularism, and Social Harmony

Context

The **Shahi Jama Masjid** in Sambhal, Uttar Pradesh, is embroiled in a dispute over claims that it was built on a Hindu temple site. This has raised protests and discussions invoking the **Places of Worship Act, 1991**.

About the Places of Worship Act, 1991

Objective

- The Act seeks to **prohibit the conversion** of places of worship and preserve their **religious character** as it existed on **August 15, 1947**.
- Designed to uphold **secular principles** and prevent communal tensions over historical claims.

Key Provisions

1. **Section 3:** Prohibits the **conversion** of any place of worship, wholly or partly, to a different religious **denomination** or **segment**.
2. **Status Quo:** Ensures the **religious character** of all places of worship remains as it was on **Independence Day (August 15, 1947)**.
3. **Bar on Legal Claims:** Prohibits filing of legal suits or claims to alter the status of any place of worship in violation of the Act.

Exemptions

1. **Ayodhya Dispute**: Excluded as the case was already **sub-judice** when the Act was enacted.
2. **Ancient Monuments**: Covered under the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.
3. **Resolved Disputes**: Excludes disputes resolved by **mutual consent** or already settled before the Act's enforcement.

Significance

1. **Preservation of Secularism:** Prevents **alteration of religious status** to ensure the secular fabric of India.
2. **Communal Harmony:** Reduces the potential for **religious conflicts** and **historical revisionism**.
3. **Historical Continuity:** Recognizes and protects **historical and cultural heritage** as it existed at the time of independence.

Challenges

1. **Interpretational Ambiguity**: Disputes over **historical claims** often create debates around the scope of the Act.
2. **Judicial Review**: Periodic challenges to the constitutionality of the Act may arise in courts.
3. **Exemptions**: Certain **exceptions**, like Ayodhya, may set **precedents** for further disputes.

Celebrating 75 Years of India's Constitution: Significance and Role

Relevant Syllabus Section

- **GS Paper II**: Indian Constitution – Historical Underpinnings, Features, and Governance

Context

On the occasion of the **75th Constitution Day** (Samvidhan Divas) on **November 26, 2024**, the **President of India** highlighted the enduring relevance and transformative role of the **Indian Constitution**, adopted by the **Constituent Assembly** on **November 26, 1949** and operationalized on **January 26, 1950**.

Understanding the Constitution

- A **constitution** is a set of **fundamental principles** governing the functioning of a state.
- It may be:
  - **Written** (e.g., India, USA).
  - **Unwritten** (e.g., Britain).

Significance and Role of the Indian Constitution

1. Protecting Fundamental Rights

- **Articles 12 to 35** in Part III guarantee Fundamental Rights to all citizens.
- **Example:** In **Justice K.S. Puttaswamy v. Union of India**, the Supreme Court declared the **Right to Privacy** as part of **Article 21** (Right to Life and Personal Liberty).

2. Promoting Social Justice

- Provisions aimed at ensuring **equality** and protecting vulnerable groups:
  - **Abolition of Untouchability (Article 17)**.
  - **Protection of Minority Rights (Articles 25 to 28)**.

3. Fulfilling Societal Aspirations

- Envisions a **progressive society** by promoting:
  - **Environmental protection** under **Article 48A** (Directive Principles of State Policy).
  - **Education for all children** under **Article 45** (Directive Principles of State Policy).

4. Enabling Coordination

- Establishes a **legal framework** defining the structure and functioning of government institutions, ensuring **minimal coordination** in society.

5. Protecting Secularism

- **Articles 25 to 28** ensure **freedom of religion**.
- Example: The **Supreme Court in S.R. Bommai v. Union of India (1994)** held that **secularism** is a fundamental part of the **basic structure of the Constitution**.

Key Observations

The Constitution of India:

1. Provides a **blueprint for governance**, ensuring justice, liberty, equality, and fraternity.
2. Balances individual rights with societal welfare through **Fundamental Rights** and **Directive Principles**.
3. Embodies the spirit of **secularism**, fostering unity amidst diversity.

Judiciary Faces Over 5,600 Vacancies Across Courts

Relevant Syllabus Section

- **GS Paper II**: Governance, Constitution, Polity
- **GS Paper II**: Judiciary

Current Vacancies in the Judiciary

1. **Total Vacancies**:
   - There are **over 5,600 vacancies** across various courts in India, including:
     - **2 vacancies** in the **Supreme Court (SC)**.
     - **364 vacancies** in the **High Courts (HC)**.
     - **5,245 vacancies** in **district courts**.

Reasons for Vacancies

1. **Periodic Vacancies**:
   - **Retirement**, **resignation**, **demise**, and **elevation** of judges are common causes of vacancies.
   - Increase in the **sanctioned strength** of courts further leads to vacancies.
2. **Time-Consuming Collegium Process**:
   - The judicial appointment process involves **consultation** and **approval** from various authorities, making it **lengthy** and **complex**.
   - Appointments for **High Court** judges are governed by **Articles 217 and 224** of the Constitution.
3. **Other Factors**:
   - **Delays in examinations** for judicial appointments at lower courts.
   - **Low salaries**, **high workload**, and **pressure** on judicial officers discourage talented lawyers from joining the judiciary.

Impact of Judicial Vacancies

1. **Justice Delayed**:
   - Over **19,500 cases** are pending in the **Supreme Court**, and **27 lakh cases** are pending in the **High Courts**.
   - Other contributing factors to the backlog include **inadequate infrastructure**, **frequent adjournments**, and the **absence of strict timelines**.
2. **Low Judge-to-Population Ratio**:
   - The current **judge-to-population ratio** is **below 25 per million** (as per 2024).
   - In 2002, the **All India Judges Association case** directed that the ratio should be **50 per million** by **2007**, but this target remains unmet.
3. **Workload and Stress**:
   - The low number of judges relative to the population causes **work stress**, increasing the likelihood of mistakes in judgment.

Way Forward

1. **National Judicial Appointments Commission (NJAC)**: Revisiting the **NJAC framework** could balance **judicial independence** with **accountability**, streamlining the process of judicial appointments.
2. **All India Judicial Service (AIJS)**: A **centralized recruitment process** for **district** and **subordinate courts**, similar to the **civil services**, could attract **more talent** and ensure uniformity in the judiciary.
3. **Article 312**: **Article 312** of the Constitution allows for the creation of **All-India Services**, which could be applied to the judiciary to improve recruitment processes.
4. **Streamlining the Appointment Process**: Simplifying the **appointment process** and **conducting periodic assessments** of judicial strength could improve the efficiency and effectiveness of the judicial system.

ICA Global Cooperative Conference

GS Paper II: Governance – Statutory Bodies and Cooperative Governance

Key Highlights

- **Historic Event in India**: The **ICA Global Cooperative Conference** is being organized in India for the **first time in its 130-year history**.
- **Theme**: **"Cooperatives Build Prosperity for All"**, aligned with India's vision of **"Sahkar Se Samriddhi"**(Prosperity through Cooperation).

About ICA

- **Founded**: In **1895**, London.
- **Purpose**: A global organization to **unite, represent, and serve cooperatives** worldwide.
- **Members**: Includes **306 member organizations** across **105 countries**.
- **Role**:
  - Serves as the **apex body** for the cooperative movement.
  - Provides a **global platform** for collaboration, knowledge sharing, and coordinated action.

Women in the Constituent Assembly: Contributions and Legacy

Relevant Syllabus Section

- **GS Paper I**: Role of Women, Social Empowerment, and Indian History
- **GS Paper II**: Indian Constitution – Development, Features, and Governance

Context

The **Constituent Assembly of India**, tasked with drafting the **Indian Constitution**, comprised **299 members**, including **15 remarkable women** from diverse backgrounds. These women played a pivotal role in shaping India's **governance framework** and advocating for **equality and social justice**.

Key Women Members of the Constituent Assembly

1. Ammu Swaminathan (1894-1978)

- **Background**: From **Palakkad, Kerala**; married to Subbarama Swaminathan.
- **Contributions**:
  - Advocated for **gender equality** in a male-dominated assembly.
  - Actively spoke on the **Hindu Code Bill**, despite facing ridicule.

2. Annie Mascarene (1902-1963)

- **Background**: Born in **Travancore** to a Latin Christian family; a legal scholar.
- **Contributions**:
  - Championed **universal adult franchise** and a **strong Centre**.
  - Supported **local government autonomy** to empower grassroots governance.

3. Begum Qudsia Aizaz Rasul (1909-2001)

- **Background**: From a **royal family in Punjab**, later opposed **purdah** after marriage.
- **Contributions**:
  - Opposed **separate electorates** for religion, promoting **Indian nationalism**.
  - Focused on the **upliftment of Muslims** and emphasized national unity.
- **Post-Independence**: Became a **Rajya Sabha member** and promoted **women's hockey**.

4. Dakshayani Velayudhan (1912-1978)

- **Background**: First **Dalit woman graduate** in science; from the Pulaya community.

- **Contributions**:
  - Opposed **separate electorates**, emphasizing **nationalism and equality**.
  - Advocated for **social justice** and the **eradication of caste-based discrimination**.

5. Renuka Ray (1904-1997)

- **Background**: Born in **Pabna**, now in Bangladesh; influenced by Gandhi and studied at the **London School of Economics**.
- **Contributions**:
  - Strongly supported the **Hindu Code Bill** and **women's inheritance rights**.
  - Opposed **women's reservation**, viewing it as a **barrier to women's growth**.

Significance of Their Contributions

1. **Advocating Gender Equality** : Pioneered discussions on **equal rights** for women in **education**, **property**, and **public life**.
2. **Challenging Societal Norms**: Opposed regressive practices like **separate electorates** and **gender-based discrimination**.
3. **Strengthening the Constitution**: Focused on principles of **equality**, **social justice**, and **national integration**.
4. **Role Models for Empowerment**: Their participation inspired future generations of women to engage in **politics and governance**.

Australia Implements World-First Law Banning Under-16s from Social Media

Relevant Syllabus Section

- **GS Paper II**: Governance – Regulation of Media, Government Policies for Vulnerable Sections
- **GS Paper III**: Technology – Social Media, Digital Ethics

Key Provisions of the Law

- **Accountability for Platforms**:
  - Platforms like **TikTok** and **Meta** will be held **liable** for failing to prevent children under **16 years** from creating accounts.
  - Mandates **social responsibility** to curb **social media addiction** and ensure **child safety**.

Reasons for Social Media Addiction Among Children

1. **Brain Reward Circuit Exploitation**: Social media creates **dopamine-triggered addictive loops**, leading to continuous engagement.
2. **Lack of Emotional Connections**: Adolescents turn to social media as a **substitute** for genuine interpersonal relationships.

Impact of Social Media Addiction

1. **Screen Time Displacement**:
   - Replaces **physical activities** with online interactions.
   - Leads to **erosion of real-life relationships**, **social skills**, and **FOMO** (Fear of Missing Out).
2. **Productivity Drain**:
   - Disrupts critical activities like **studies**, **sports**, and other **extracurriculars**.
3. **Psychological Effects**:
   - Exposure to **idealized achievements** fosters **unrealistic expectations**.
   - Causes **cyberbullying**, **low self-esteem**, and issues with **focus and concentration**.
4. **Health Concerns**:
   - Adversely affects **brain development**, leading to **depression**, **sleep disorders**, and **eating disorders**.
5. **Exposure to Harmful Content**:
   - Increases vulnerability to **suicide**, **self-harm**, and **extreme viewpoints**.

Negative Impacts of the Ban

1. **Curtails Positive Uses of Social Media**:
   - **Digital Competence**, **social integration**, **creative expression**, and **collaborative learning** may be hindered.
   - Reduces access to **interest-based networking opportunities**.
2. **Risk of Unsafe Internet Use**:
   - May drive children to use **unsafe platforms**, such as the **Dark Web**.

Alternative Approaches to Social Media Ban

1. **Age Restrictions by Platforms**:: Platforms like **Meta** enforce a **self-imposed minimum age of 13 years**.
2. **Technology-Based Tools**: Introduce tools that promote **productive and safe use** of social media.
3. **Adopting Best Practices**:
   o Example: **Digital De-Addiction Centres (D-DAD)** by Kerala Police provide free **counseling** to digitally addicted children.

Conclusion

The law marks a **progressive step** towards addressing **social media addiction among children**. However, it is vital to strike a balance between **regulation** and enabling **positive digital engagement**, emphasizing **awareness**, **parental guidance**, and **technological safeguards** for sustainable outcomes.

Rule 267 of the Rajya Sabha and its Implications

Relevant Syllabus Section

- **GS Paper II**: Governance, Constitution, Polity – Parliament and the Role of Rajya Sabha

About Rule 267

1. **Purpose**: **Rule 267** is part of the **Rules of Procedure and Conduct of Business in the Council of States (Rajya Sabha)**. It allows Members of Parliament (MPs) to suspend the day's agenda and discuss an **urgent matter** with the **Chairman's approval**.
2. **Process**:
   o MPs can submit a **written notice** to **suspend all listed business** and raise a topic of **national importance** or urgency.
   o The **Chairman** has the authority to approve or reject the request.
3. **Context**: The rule enables the **Rajya Sabha** to address pressing issues without waiting for scheduled discussions or motions. It provides MPs the flexibility to raise matters that may not be covered under the day's agenda.

Concerns About Frequent Use of Rule 267

1. **Overuse of Rule 267**: The **Rajya Sabha Chairman** recently expressed concerns about the **frequent invocation** of Rule 267, suggesting that it is being used too often, disrupting the scheduled business of the House.
2. **Impact on Parliamentary Proceedings**:
   o Excessive use of **Rule 267** can cause **disruptions** and **delay** the proceedings of the House, leading to **inefficiency** in handling the legislative business.
   o The rule was designed for **urgent matters**, but frequent suspensions could undermine the **orderly functioning** of the Rajya Sabha.

Significance of Rule 267

1. **Flexibility in Addressing National Issues**: Rule 267 ensures that **important issues** can be discussed even if they are not part of the agenda, providing a platform for MPs to raise concerns that need immediate attention.
2. **Limitations**: It is essential for **Rajya Sabha** to maintain a balance in using Rule 267, ensuring that only **urgent** and **critical matters** are raised while preserving the efficiency of the legislative process.

INTERNATIONAL RELATIONS

UNGA Adopts Resolution for Treaty Negotiations on Crimes Against Humanity

Relevant Syllabus Section

- **GS Paper II**: International Relations – Important International Institutions, Agreements, and Treaties
- **GS Paper III**: Security Challenges and Their Management

Introduction

The **United Nations General Assembly (UNGA)**, through its **Sixth Committee**, has approved a resolution to convene the **United Nations Conference of Plenipotentiaries on Prevention and Punishment of Crimes Against Humanity**. This marks a significant step toward establishing an international treaty dedicated to addressing **crimes against humanity**.

Key Features of the Initiative

1. Role of the Sixth Committee

- The **Sixth Committee** of the UNGA is the primary forum for addressing **legal issues** within the Assembly.
- It plays a crucial role in defining international legal standards and frameworks.

2. Definition of Crimes Against Humanity

- Based on the **Rome Statute**, crimes against humanity include **murder, rape, torture, apartheid, deportation, and persecution**.
- These acts are committed as part of a **widespread or systematic attack** on civilian populations under **state or organizational policy**.

Need for a Dedicated Treaty

1. **Gap in International Humanitarian Law (IHL) :** Existing laws, such as the **Geneva Conventions**, focus on crimes during **armed conflicts** but fail to address crimes committed in **non-armed conflict situations**.
2. **Comprehensive Framework:** A treaty would provide **legal pathways** for victims and enable countries to incorporate **crimes against humanity** into their **national legal systems**.
3. **Fostering Global Cooperation:** A treaty would facilitate **mutual legal assistance** and strengthen **cross-border collaboration** in prosecuting crimes.

Existing Mechanisms to Address Crimes Against Humanity

1. International Frameworks

- **Geneva Conventions (1949)**: Focuses on humanitarian protection in armed conflicts.
- **Biological Weapons Convention (1972)**: Prohibits biological weapons.
- **Chemical Weapons Convention (1993)**: Prohibits chemical weapons.
- **Rome Statute (1998)**: Establishes the International Criminal Court to prosecute individuals for genocide, war crimes, and crimes against humanity.

2. India's Framework

- **Article 51** of the Constitution directs the state to promote **international peace**, **security**, and adherence to **international law** and treaty obligations.

UNHCR Launches Global Appeal 2025 to Address the Refugee Crisis

Relevant Syllabus Section

- **GS Paper II**: International Relations – Important International Institutions, Issues Relating to Development and Management of Social Sector/Services.
- **GS Paper III**: Security Challenges and Their Management in Border Areas, Forced Migration.

Introduction

The **United Nations High Commissioner for Refugees (UNHCR)** launched a **$10 billion Global Appeal 2025** to address the growing challenges of the **global refugee crisis**. This initiative aims to provide **critical support**, ensure **protection**, and implement **sustainable solutions** for refugees, displaced persons, and stateless populations worldwide.

Global Refugee Crisis

1. Definition: A **refugee** is someone forced to flee **conflict** or **persecution**, crossing an international border to seek safety.

2. Current Statistics

- **117.3 million people** worldwide are forcibly displaced (UNHCR Global Trends Report 2023).
- **40% of displaced individuals are children.**

3. Key Causes

- **Conflict and Violence**: Civil wars, such as in **Syria**.
- **Persecution**: Targeted attacks, e.g., **Myanmar's Rohingya crisis**.
- **Climate Change Impacts**: Disasters leading to displacement.

Challenges in Addressing Refugee Issues

1. Refugees' Challenges

- Lack of **basic necessities** like food, shelter, and healthcare.
- **Discrimination and exclusion** from mainstream society.
- Vulnerability to **human trafficking** and exploitation.

2. Host Countries' Challenges

- Population surges causing strain on **resources** like healthcare and housing.
- Increased **unemployment** and potential **social tensions**.
- **Economic burdens** due to limited international assistance.

Initiatives to Address the Refugee Crisis

1. Global Initiatives

- **Global Compact on Refugees (2018)**: Provides a **framework** to support refugees and host countries.
- **Global Refugee Forum**: A **quadrennial platform** for discussing solutions for refugees and host communities.
- **United Nations Relief and Works Agency (UNRWA)**: Established in **1949** to assist **Palestine refugees**.

2. Role of UNHCR

- **Establishment**: Founded in **1950** by the UN General Assembly.
- **Headquarters**: Geneva, Switzerland.
- **Mandate**: Protecting the rights and building a better future for people forced to flee.
- **Operational Reach**: UNHCR operates in **136 countries**.
- **Achievements**: Awarded the **Nobel Peace Prize** in 1954 and 1981.

Gelephu Mindfulness City: Bhutan's Model for Zero-Carbon Living

Relevant Syllabus Section

- **GS Paper II**: India and Its Neighborhood – Relations, International Agreements
- **GS Paper III**: Environment – Sustainable Development, Conservation, and Renewable Energy

Context

Bhutan's Prime Minister, **Tshering Tobgay**, showcased the **Gelephu Mindfulness City** as a landmark **zero-carbon project** aligned with Bhutan's philosophy of **Gross National Happiness (GNH)**. The project has garnered Indian support, symbolizing the deep ties between the two nations.

About Gelephu Mindfulness City

Vision

- A sustainable city promoting **zero-carbon development**, **harmony**, and **Bhutan's GNH philosophy**.
- Envisioned by **King Jigme Khesar Namgyel Wangchuck** to create a **global benchmark** for sustainable living.

India's Role

- Collaborative investment in infrastructure, strengthening **India-Bhutan ties**.
- Viewed as a **cooperative initiative** benefiting both nations by promoting sustainability and regional cooperation.

Key Features

Scale and Land Use

- **Area**: Spread over **2,500 sq. km**, comprising **2.5%** of Bhutan's landmass.
- Includes **national parks**, **wildlife sanctuaries**, and **renewable energy facilities** generating **4,000–5,000 MW**.

Governance

- A **Special Administrative Region (SAR)** with **self-governance**, independent **judiciary**, and **law-making powers**.

Urban Design

- **Mandala-style neighborhoods** connected by **inhabitable bridges** spanning **35 rivers and streams**.
- Infrastructure for **low-rise, eco-friendly buildings** to ensure environmental and personal well-being.

Economic and Social Development

- Focuses on **hydroelectric power generation** and **hydroponic farming**.
- Hosts **spiritual centers**, **markets**, and **healthcare facilities** integrating **traditional** and **modern medicine**.

Significance of Gelephu Mindfulness City

1. **Environmental Sustainability:** A **zero-carbon urban model** aligning with Bhutan's role as the world's only **carbon-negative nation**.
2. **Global Leadership:** Showcases Bhutan as a **pioneer** in balancing development with ecological preservation.
3. **India-Bhutan Relations:** Strengthens diplomatic ties through **strategic cooperation** in sustainable development.
4. **Economic Potential:** Renewable energy facilities bolster Bhutan's **hydropower exports**, contributing to economic self-reliance.
5. **Human-Centric Development:** Emphasizes **well-being**, **community harmony**, and **economic equity**, guided by Bhutan's **GNH philosophy**.

Israel-Hezbollah Ceasefire Agreement: Overview and Provisions

Relevant Syllabus Section- GS Paper II: International Relations – Conflict Resolution, Role of United Nations

Context

Israel and Lebanon have agreed to a **US-backed ceasefire** proposal to end a **13-month border conflict** between the **Israel Defense Forces (IDF)** and **Hezbollah** in Lebanon. This conflict had escalated into an all-out war, drawing international attention.

Key Provisions of the Ceasefire Agreement

1. **Israel**
   o **IDF Withdrawal**: Complete withdrawal to the **Blue Line** within **60 days**.
   o **Blue Line**: A **de facto border** established by the **United Nations (UN)** in 2000 to demarcate boundaries between Israel and Lebanon.
2. **Hezbollah**: **Disarmament**: Removal of all **fighters** and **weapons** from the region south of the **Litani River**.
3. **Lebanon**
   o Deployment of the **Lebanese Army** and **UN Interim Force in Lebanon (UNIFIL)** to replace the IDF and Hezbollah in **South Lebanon**.
   o Prohibition of **foreign forces** or **supply of arms** in the region without the consent of the Lebanese government.

Role of UN Resolution 1701

1. **Background**: Passed by the **UN Security Council (UNSC)** in **2006** to end the **Israel-Hezbollah war** of the same year.
2. **Stipulations**
   o Only the **Lebanese Army** and **UNIFIL** are allowed to operate in the area south of the **Litani River**.
   o Aims to prevent **Hezbollah's militarization** in the region and ensure **stability along the border**.

Significance of the Ceasefire Agreement

1. **Regional Stability**: Reduces the risk of further escalation, benefiting the **Middle East's geopolitical stability**.
2. **International Collaboration**: Demonstrates the **UN's influence** in mediating and enforcing peace agreements.
3. **Humanitarian Relief**: Eases the suffering of civilians caught in the conflict, providing opportunities for **rehabilitation and reconstruction**.
4. **Strengthening Governance**: Empowers the **Lebanese government** and **UNIFIL** to take control of volatile regions, limiting the influence of armed non-state actors.

India-Bangladesh Relations: An Overview

Relevant Syllabus Section- GS Paper II: International Relations – Bilateral Relations

Context

India expressed **deep concern** after the arrest of a Hindu monk in Bangladesh on sedition charges, urging the **Bangladesh government** to ensure the safety and security of **Hindus and other minorities**.

Historical Background

1. **Pre-Partition Bond**: Cultural and linguistic ties existed before **Partition (1947)**, which led to family separations and migration.
2. **1971 Liberation War**: India played a crucial role in **Bangladesh's independence** from Pakistan, offering **military** and **moral support**.
3. **Post-Independence Cooperation**: India was the **first nation** to recognize Bangladesh as an independent country, fostering strong bilateral ties.
4. **Shared Sacrifices**: Commemoration of **Vijay Diwas** highlights shared historical and cultural respect.

Areas of Cooperation

1. **Economic Partnership**: Bangladesh is India's **largest trading partner in South Asia**, with bilateral trade valued at **$18.2 billion (2021-22)**.
2. **Connectivity**:
   o Restoration of **rail links** and **inland waterways** such as the **Protocol on Inland Water Transit and Trade (PIWTT)**.
   o Development of projects like the **Agartala-Akhaura rail link**.
3. **Development Assistance**: India has extended **$8 billion** in **Lines of Credit (LoCs)** for **infrastructure development** in Bangladesh.
4. **Cultural Exchange**: Institutions like the **Indira Gandhi Cultural Centre (IGCC)** promote shared heritage.
5. **Defence Collaboration**: Joint exercises like **CORPAT** and **Bangosagar naval drills** enhance **maritime security ties**.

Challenges in Bilateral Relations

1. **Water Sharing Disputes**: Unresolved issues over rivers like the **Teesta** and **Brahmaputra** impact livelihoods and trust.
2. **Illegal Immigration**: Cross-border migration creates **socio-economic** and **political strain** in India's bordering states.
3. **China's Influence**: Bangladesh's growing ties with **China**, including investments under the **Belt and Road Initiative (BRI)**, pose **strategic challenges** for India.
4. **Terrorism and Insurgency**: Cross-border movements of **insurgent groups** and **extremist elements** affect regional security.
5. **Non-Tariff Barriers**: Trade growth is hindered by **lengthy customs procedures** and **regulatory obstacles**.

Way Forward

1. **Resolve Water Disputes**: **Time-bound solutions** for rivers like the **Teesta** through **mutual dialogue**.
2. **Enhance Connectivity**: Develop **coastal**, **road**, and **rail networks** to improve **economic and cultural ties**.
3. **Energy Collaboration**: Strengthen partnerships in **clean energy** and finalize projects like the **India-Bangladesh Friendship Pipeline**.
4. **Counter China's Influence**: Provide **technological**, **financial**, and **strategic support** to Bangladesh to balance regional geopolitics.
5. **Address Refugee Issues**: Collaborate on a **regional framework** through **SAARC initiatives** to manage refugee crises effectively.

India Re-elected to the United Nations Peacebuilding Commission (UNPBC) for 2025–2026

Relevant Syllabus Section- GS Paper II: International Relations – United Nations, Peacekeeping, and Global Security

About the United Nations Peacebuilding Commission (UNPBC)

1. **Genesis**: The **UN Peacebuilding Commission** was established in **2005** as an **intergovernmental advisory body** to support peace efforts in countries affected by conflict.
2. **Composition**: The commission consists of **31 member states**, elected from the **General Assembly**, **Security Council**, and the **Economic and Social Council**.
   o **Top financial contributors** and **troop-contributing countries** to the **United Nations system** are also members.
3. **Mandate**: The primary mandate of the **UNPBC** is to bring together all relevant **actors** to mobilize **resources**, advise on **strategies for post-conflict peacebuilding**, and ensure the **recovery** of nations from conflict.

India's Role in the UN Peacebuilding Commission

1. **Re-election**: **India** has been **re-elected** to the **United Nations Peacebuilding Commission** for the **2025–2026** term, reaffirming its pivotal role in **global peacebuilding** efforts.
2. **Contributions to Peacekeeping**: India is among the **largest contributors of uniformed personnel** to **UN Peacekeeping missions**, with **more than 6,000 personnel** currently deployed worldwide.

Significance of India's Re-election

1. **Global Leadership in Peacebuilding**: India's re-election strengthens its leadership in supporting **peacebuilding initiatives** in conflict-affected regions globally.

2. **Commitment to Global Peace**: India's consistent contributions to **UN Peacekeeping** underline its longstanding commitment to promoting **peace**, **stability**, and **recovery** in post-conflict nations.

Cascais Declaration Adopted at the 10th Global Forum of UNAOC

Relevant Syllabus Section- GS Paper II: International Relations – International Organizations, their Role in Global Peace

About the United Nations Alliance of Civilizations (UNAOC)

- **Establishment**: The **UNAOC** was founded in **2005** to serve as a soft-power political tool for the **United Nations Secretary-General**, aimed at promoting conflict prevention and conflict resolution.
- **Objective**: The primary goal of UNAOC is to promote **tolerance**, **peaceful coexistence**, and build **bridges between cultures** through dialogue and understanding.

Key Highlights of the Cascais Declaration

1. **Promotion of Tolerance and Peaceful Existence**: The **Cascais Declaration** emphasizes the importance of promoting **tolerance** and ensuring **peaceful existence** among different cultures and societies.
2. **Artificial Intelligence in Dialogue**: The declaration **recognizes the potential of artificial intelligence (AI)** as a tool to foster **intercultural** and **interreligious dialogue**, especially in combating **misinformation** and **hate speech**.
3. **Inclusive and Transformative Education**: The **Cascais Declaration** acknowledges the central role of **inclusive**, **quality**, and **transformative education** in promoting **dialogue**, **peace**, and **human rights** across nations.

Significance of the Cascais Declaration

1. **Global Peace and Intercultural Cooperation**: The declaration strengthens the global commitment to **peacebuilding** by advocating for the use of technology, particularly AI, in bridging cultural divides.
2. **Educational Empowerment**: By emphasizing **transformative education**, the declaration highlights the role of education in creating **inclusive societies** and advancing **human rights**.

DEFENCE & INTERNAL SECURITY

National Security Guard (NSG)

Establishment

- Created under the **National Security Guard Act, 1986**.
- Known as a **Federal Contingency Zero Error Force**.

Key Features

1. **Purpose**:
   - Designed to combat **anti-terrorist activities** in all forms.
   - Used only in **exceptional situations** to prevent major terrorist acts.
2. **Structure**: Modeled on the pattern of **SAS (UK)** and **GSG-9 (Germany)**.
3. **Control**: **Administrative and operational control** under the **Union Ministry of Home Affairs**.

Recent Development

- A **permanent NSG hub** has been established in **Jammu City** to counter major **terror attacks**.

ECONOMY

Urban Civic Bodies: Challenges and the Way Forward

Relevant Syllabus Section- GS Paper III: Economics – Infrastructure, Resource Mobilization, and Urbanization

Context

A recent **RBI report on municipal finances** highlights significant challenges faced by urban civic bodies, including **low revenue generation**, **over-dependence on government transfers**, and **limited capacity** to meet urban development demands.

Key Data on Urban Civic Bodies (Source: RBI Report on Municipal Finances)

1. Property Tax Revenue

- Contributes **0.12% of GDP (2023-24)**.
- Accounts for **16% of municipal revenue receipts** and **60% of own tax revenue**.

2. Revenue Receipts

- Municipal receipts form only **0.6% of GDP (2023-24)** compared to **9.2% (Central)** and **14.6% (State governments)**.
- The **top 10 municipal corporations** generate **58%** of total municipal revenue receipts.

3. Grants and Transfers

- Central government grants increased by **24.9% (2022-23)**.
- State transfers grew by **20.4%**.

4. Municipal Bonds: Total outstanding bonds amount to **₹4,204 crore (March 2024)**, constituting only **0.09% of total corporate bonds**.

5. Digitalisation

- **GIS-based property tax mapping** is suggested to improve compliance and minimize revenue leakages.

Challenges Faced by Urban Civic Bodies

1. Low Revenue Generation

- **Abysmally low property tax collection.**
- Heavy reliance on **state and central government transfers**, compromising financial autonomy.

2. Operational Inefficiencies

- Weak **enforcement of tax laws**.
- Revenue leakages due to inefficient collection systems.

3. Underutilized Financing Options

- Limited adoption of **municipal bonds** and **Public-Private Partnerships (PPPs)** for funding urban projects.

4. Infrastructure and Service Delivery Gaps

- Insufficient funds for **basic urban services** like roads, drainage, and sanitation.

5. Dependence on Upper Tiers

- Over-reliance on **state and central government transfers**, hampering long-term planning and financial stability.

Way Forward

1. Strengthening Own Revenue Sources

- Reform **property tax structures** to reflect real property valuations.
- Implement **GIS-based property tax mapping** to increase compliance and reduce revenue leakages.

2. Enhancing Non-Tax Revenues

- Regularly revise **user charges** for water supply, waste management, and other civic services.
- Leverage **digital platforms** to streamline fee collection processes.

3. Leveraging Innovative Financing

- Expand participation in the **municipal bond market**.
- Promote **PPPs** in areas like urban transport, waste management, and renewable energy projects.

4. Optimizing Expenditures

- Digitize operations to improve **cost-efficiency**.
- Automate routine processes to allocate resources for **capital investments**.

5. Ensuring Timely Transfers

- Develop a **rule-based framework** for predictable and timely state and central transfers.

6. Capacity Building

- Provide **technical training** to local bodies to enhance planning, tax enforcement, and project implementation capacities.

National Cooperative Development Corporation (NCDC)

GS Paper III: Inclusive Growth and Development

Key Event

- The **91st General Council Meeting** of the **NCDC** was held in Delhi.

About NCDC

- **Established**: In **1963** through an **Act of Parliament**.
- **Ministry**: Functions under the **Ministry of Cooperation**.

Functions

1. **Promotion and Financing**:
   - Supports **production, marketing, storage, and trade** of agricultural produce.
   - Funds **rural industrial cooperative sectors** and projects related to **water conservation and irrigation**.
2. **Rural Development**:
   - Finances **primary and secondary cooperative societies** for specific rural services.
   - Provides **loans and grants** to state governments for cooperative financing.

Significance of Cooperatives in India

1. **Economic Inclusion**: Cooperatives empower marginalized communities by ensuring equitable access to resources.
2. **Agricultural Development**: Play a key role in **rural development** through **marketing, storage, and irrigation** initiatives.
3. **Social Impact**: Promote **community participation** and foster **local entrepreneurship**.

Production Linked Incentive (PLI) Scheme: A Boost to Indian Manufacturing

Relevant Syllabus Section- GS Paper III: Indian Economy – Inclusive Growth, Investment Models, and Industrial Policy

Context

Launched in **2020**, the **Production Linked Incentive (PLI) Scheme** aims to make India a **global manufacturing hub** by encouraging **investments**, fostering **innovation**, and promoting **self-reliance**.

What is the PLI Scheme?

- The PLI Scheme provides **financial incentives** to companies (both domestic and foreign) for manufacturing in India.
- Rewards are based on **incremental production and revenue** over five years.
- Initially focused on three industries, it has now expanded to **14 critical sectors** to promote **import substitution**, **employment generation**, and **technological development**.

Features and Sectors Covered

Features

- **Performance-driven financial incentives** to promote scale.
- Encourages adoption of **advanced technologies**.
- Focus on **self-reliance**, **export growth**, and **job creation**.
- Targets **import substitution** to reduce dependency on foreign goods.

Sectors Covered

- **Large-scale electronics manufacturing (LSEM)**
- **Pharmaceuticals and medical devices**
- **Automobiles and auto components**
- **Telecom and networking products**
- **Renewable energy and solar PV modules**
- **Advanced chemistry cell (ACC) batteries**
- **White goods**, **drones**, **textiles**, **food products**, and **specialty steel**

Budget Outlay

- **Total Allocation**: ₹1.97 lakh crore (~$24 billion).
- Strategic funding across **14 sectors** to enhance:
  - **Domestic manufacturing**
  - **Exports**
  - **Technological development**

Achievements and Impact

Overall Impact

- **₹1.46 lakh crore** investments realized by **August 2024**.
- Generated **₹12.50 lakh crore** production and **₹4 lakh crore exports**.
- Created **9.5 lakh jobs**.

Sector-Specific Achievements

- **Electronics**:
  - Transitioned to a **net exporter** of mobile phones.
  - Production reached **33 crore units** (2023-24), with **5 crore units exported**.
- **Pharmaceuticals and Medical Devices**:
  - Became the **3rd largest producer by volume**, exporting **50% of production**.

    o Reduced import dependency on bulk drugs.
- **Automotive**:
  - o Attracted **$8 billion** in investments.
  - o Boosted production of **high-tech automotive components**.
- **Renewable Energy**: Expanded **solar PV module production** with a **65 GW capacity** under the second tranche.
- **Telecom**: Achieved **60% import substitution** and became a major exporter of **4G and 5G equipment**.
- **Drones**: Witnessed a **seven-fold growth**, driven by MSMEs and start-ups.

Challenges

- **Limited Value Addition:** Over-reliance on **assembly** rather than **end-to-end manufacturing**.
- **WTO Constraints:** Rules restrict tying incentives to **domestic value addition**, posing compliance issues.
- **Ambiguity in Disbursal:** Absence of **standardized parameters** for fund allocation.
- **Data Gaps:** Lack of centralized databases to track **outcomes** such as investments and job creation.
- **Complex Supply Chains:** Difficulty in developing **high-tech industries** like **semiconductors** due to fragmented supply chains.

Way Ahead

1. **Policy Evaluation:** Assess the **cost-effectiveness** of job creation, production outcomes, and export growth.
2. **Transparent Incentives:** Standardize criteria for **disbursal of funds** to ensure **accountability**.
3. **Strengthening Value Addition:** Focus on **entire supply chains** to deepen **domestic manufacturing** capabilities.
4. **Database Development:** Build **centralized systems** to track investments, jobs, and exports.
5. **Expand Target Sectors:** Prioritize **emerging industries** like **green hydrogen**, **semiconductors**, and **AI** for inclusion.

Narasapur Crochet Lace: Awarded Geographical Indication (GI) Tag

Relevant Syllabus Section

- **GS Paper I**: Indian Art and Culture – Traditional Crafts and Handicrafts
- **GS Paper III**: Economy – Intellectual Property Rights

Context

The **Narasapur Crochet Lace** from **West Godavari District, Andhra Pradesh**, has been awarded the **Geographical Indication (GI) Tag**, recognizing its unique craftsmanship and cultural significance.

About Narasapur Crochet Lace

Craftsmanship

- Made using **cotton threads** in a variety of colors.
- Intricate **lacework** is woven with **thin crochet needles** of varying sizes.
- Known for its **delicate patterns** and **precision**.

Cultural Importance

- Represents a rich heritage of **handicrafts** from Andhra Pradesh.
- Primarily crafted by women artisans, contributing to **local livelihoods** and **community development**.

About the Geographical Indication (GI) Tag

- **Definition:** A **name or sign** assigned to products that correspond to a specific **geographical location**.
- **Validity:** GI tag is valid for **10 years**, after which it can be renewed.
- **Legislation:** Governed by the **Geographical Indications of Goods (Registration and Protection) Act, 1999**.
- **Nodal Ministry:** Administered by the **Department for Promotion of Industry and Internal Trade (DPIIT)** under the **Ministry of Commerce and Industry**.

Significance of the GI Tag for Narasapur Crochet Lace

1. **Economic Boost**

- Enhances the **market value** of the product.
- Provides **better income opportunities** for artisans.

2. **Cultural Recognition:** Promotes **traditional craftsmanship** at the national and international levels.
3. **Legal Protection:** Protects against **unauthorized usage** of the product name, ensuring the artisans' **intellectual property rights**.
4. **Preservation of Craft:** Encourages the continuation of **traditional practices**, ensuring the **sustainability** of the art form.

PAN 2.0: Revolutionizing Tax Compliance

Relevant Syllabus Section- GS Paper III: Economic Development – Indian Taxation System, Reforms

Context

The Cabinet Committee on Economic Affairs approved **PAN 2.0**, a comprehensive upgrade to the existing **Permanent Account Number (PAN)** system, ensuring **seamless tax compliance** and enhanced **data security**.

About PAN

Origin: Introduced in **1972**; revamped in **1995** to improve **tax compliance**.

Purpose

- Links individuals and entities with their **tax-related transactions**.
- Ensures **transparency** and streamlines **tax filing** processes.

Comparison of PAN and PAN 2.0

ASPECT	PAN	PAN 2.0
INTRODUCTION YEAR	1972 (revamped in 1995)	**2024 (Planned Upgrade)**
ISSUANCE SYSTEM	Multiple platforms	Unified **portal** for all PAN/TAN services
APPLICATION PROCESS	Partially online	**Fully online, paperless** process
QR CODE	Introduced in 2017	**Enhanced dynamic QR code** with real-time data
UPDATES/CORRECTIONS	Fee-based updates	**Free updates** for name, DOB, and address
DATA SECURITY	No centralized data vault	**PAN Data Vault** for cybersecurity
BUSINESS IDENTIFIER	Tax-related activities only	Unified **business identifier** for systems
GRIEVANCE REDRESSAL	Limited to individual portals	Streamlined via **unified portal**
EXISTING PAN VALIDITY	Remains valid	Remains valid; upgrade available for free

Significance of PAN 2.0

1. **Ease of Compliance**: Fully digital, paperless system reduces bureaucratic delays.
2. **Enhanced Security**: Centralized **data vault** ensures protection against fraud.
3. **Integration**: Acts as a **unified business identifier** across various government systems.
4. **User-Centric Features**: Free updates and **streamlined grievance redressal** enhance user experience.
5. **Economic Benefits**: Improves **transparency** and ensures **efficient tax administration**, contributing to economic growth.

Solar Projects in the Indo-Pacific

Overview

- A **Project Implementation Agreement** has been signed between the **Ministry of External Affairs, India**, and the **International Solar Alliance (ISA)**.
- Focus: Development of solar projects in **Fiji**, **Comoros**, **Madagascar**, and **Seychelles**.
- **Funding**: $2 million financial support from India.
- **Alignment**: The initiative aligns with the **Wilmington Declaration** adopted during the **Quad Leaders' Summit (2024)**.

Key Features

1. **Project Implementation**: **ISA** will act as the **Project Implementing Agency**.
2. **Significance**:
   - Enhances **renewable energy collaboration** in the **Indo-Pacific region**.
   - Contributes to **energy security** and **climate change mitigation**.

About the International Solar Alliance (ISA)

- **Genesis**: A joint initiative by **India and France**, conceptualized during **COP21** in Paris (2015).
- **Objective**: Combat **climate change** through the promotion of **solar energy solutions**.
- Focus on mobilizing over $1 trillion in investments for solar projects globally.

OPEC+ and Oil Prices

Context

- **Oil Prices**: Both **Brent Crude** and **West Texas Intermediate (WTI) Crude** have witnessed price hikes.
- **Anticipation**: Speculation that **OPEC+** may delay a planned **increase in oil production** during its upcoming meeting.

About OPEC+

1. **Genesis**: Formed in **2016** when the **Organization of the Petroleum Exporting Countries (OPEC)** partnered with 10 additional oil-producing countries.
2. **OPEC (Core Group)**:
   - **Established**: In **1960** by **Iraq**, **Iran**, **Kuwait**, **Saudi Arabia**, and **Venezuela**.
   - **Members**: Algeria, Congo, Equatorial Guinea, Gabon, Libya, Nigeria, and UAE.
3. **Non-OPEC Members in OPEC+**: **Russia**, **Azerbaijan**, **Bahrain**, **Brunei**, **Kazakhstan**, **Mexico**, **Malaysia**, **Oman**, **South Sudan**, and **Sudan**.

Significance of OPEC+

- Controls a substantial share of **global oil supply**, influencing global **oil prices**.
- Decisions by OPEC+ impact **global energy markets** and play a critical role in stabilizing **oil economies**.

Ministry of Mines Launches First-Ever Offshore Mineral Block Auction

Relevant Syllabus Section

- **GS Paper I**: Economic Geography – Distribution of Resources
- **GS Paper III**: Environment and Economy – Energy Resources, Blue Economy

Context

The **Ministry of Mines** has initiated the **first-ever auction** of **offshore mineral blocks** within India's **Exclusive Economic Zone (EEZ)**, marking a significant milestone in unlocking offshore resources.

Key Details of the Offshore Mining Auction

1. **Mineral Blocks**: **13 blocks** spanning the **Arabian Sea** and **Andaman Sea**.
2. **Types of Minerals and Corresponding Regions**:
   - **Construction Sand**: Off the coast of **Kerala** in the Arabian Sea.
   - **Lime-Mud**: Off the coast of **Gujarat** in the Arabian Sea.
   - **Polymetallic Nodules and Crusts**: Off the coast of **Great Nicobar Islands** in the Andaman Sea.

About Offshore Mining

1. **Definition**: The process of retrieving **mineral deposits** from the seabed at depths of more than **200 meters**.
2. **Potential**: The **Geological Survey of India (GSI)** has identified **6 lakh sq. km** of offshore areas with potential for mineral extraction.

Significance of Offshore Mining for India

1. **Enhanced Mineral Availability**: Facilitates **Atmanirbharta** (self-reliance) in **critical minerals** like gold, copper, cobalt, nickel, and rare earth elements.
2. **Boosts Blue Economy**: Unlocks economic potential of offshore resources, reducing **import dependence**.
3. **Supports Key Sectors**: Minerals are essential for:
   - **Infrastructure Development**.
   - **High-Tech Manufacturing** (e.g., semiconductors, batteries).
   - **Green Energy Transition** (e.g., renewable energy technologies).

Challenges in Offshore Mining

1. **Limited Private Participation**: High capital requirements and technical expertise deter private investments.
2. **Environmental Impact**: Risks include **marine ecosystem disruption** and **habitat destruction**.
3. **Skill and Technology Gaps**: Requires **highly skilled labor** and advanced technologies for exploration and extraction.

Steps Taken for Offshore Mining

1. **National Geological Data Repository (NGDR) Portal**: Developed by **GSI**, it provides exploration data to facilitate informed decision-making.
2. **Deep Ocean Mission**: Focuses on exploring and extracting **polymetallic nodules** and other deep-sea resources.
3. **Offshore Areas (Existence of Mineral Resources) Rules, 2024**: Defines stages of exploration, classification of mineral resources, and guidelines for sustainable practices.

Global Wage Report (2024-25) by International Labour Organization (ILO)

Relevant Syllabus Section

- **GS Paper II**: Issues Relating to Poverty and Employment
- **GS Paper III**: Inclusive Growth and Development

Key Findings of the Report

1. Trends in Wage Growth

- **Global Trends**: After a decline in **2022**, **global real wage growth** recovered in **2023**.
- **Regional Trends**: **Asia and the Pacific**, **Central and Western Asia**, and **Eastern Europe** witnessed **faster average wage growth** compared to other regions.
- **India**: **9.5%** of Indian workers are classified as **low-paid wage workers**.

2. Trends in Labour Income Inequality

- **Decline in Wage Inequality**: Witnessed a **declining trend globally**, but **remains highest** in low-income countries and lowest in high-income countries.
- **Informal Economy**:
  o Women and workers are **overrepresented** at the low end of the wage distribution.
  o Informal employment has **increased** due to insufficient **formal job creation**.

3. Labour Productivity (1999–2024)

- Labour productivity has **increased more rapidly** in high-income countries compared to real wages, highlighting a widening gap between productivity and wage growth.

Way Forward

1. **Increased Research**: Robust **data and statistics** should be used to measure and estimate changes in inequality effectively.
2. **National Strategies to Reduce Wage Inequality**: Wages should align with:
   - **Economic factors**.
   - **Worker and family needs**.
   - **Gender equality** and **non-discrimination**.
3. **Redistribution of Income**:
   o Utilize **taxes** and **social transfers** to reduce wage inequality.
   o Implement policies promoting:
     - **Labour productivity**.
     - **Decent work**.
     - **Formalization** of the informal economy.

Additional Insights

- **Palma Ratio**: A measurement of inequality that divides the **total hourly wages of the top 10%** of wage distribution by the **total hourly wages of the bottom 40%**.

World Food Programme (WFP) Releases 'Global Outlook for 2025' Report

Relevant Syllabus Section

- **GS Paper II**: International Relations – Humanitarian Assistance and Global Issues
- **GS Paper III**: Economic Development – Food Security, Hunger, and Poverty

Key Highlights of the Report

1. **Global Hunger Crisis**:
   o **343 million people** in **74 countries** are acutely food insecure.
   o **1.9 million people** are on the brink of **hunger**.
2. **Key Drivers of Hunger**:
   o **Armed violence** is a significant driver of hunger in **14 out of 16 hotspots** such as **Sudan** and **Gaza**.
   o **Food inflation** and **extreme weather events** further exacerbate food insecurity.
   o **65%** of those acutely food-insecure live in **fragile/conflict-affected regions**.
3. **Funding Requirement**:
   o The **World Food Programme (WFP)** requires **US$16.9 billion** to assist **123 million** of the world's most vulnerable people facing food insecurity.

India-Specific Situation

1. **Undernourishment in India**: India is home to **a quarter of all undernourished people** globally.
2. **Poverty**: **21.25% of India's population** lives on less than **US$1.90 a day**.
3. **Chronic Malnutrition**: **38% of children aged 6-59 months** are grappling with **chronic malnutrition**.

WFP's Approach to Combating Hunger

1. **Long-Term Solutions**: Investing in **local nutritious food solutions**, **fortification**, and **social protection systems** to reduce long-term food insecurity.
2. **Empowering Vulnerable Communities**: Strengthening **livelihoods**, enhancing **climate resilience**, and supporting communities to withstand shocks.
3. **Institutional Capacity Building**:
   o Increasing **institutional capacity** at the local level.
   o Addressing **gender inequalities** that affect food insecurity.

About the World Food Programme (WFP)

1. **Overview**: The **WFP** is the world's largest **humanitarian agency** focused on saving lives during emergencies and supporting communities to become **self-sufficient** and **resilient** to future shocks.
2. **Establishment**: Created in **1961** by the **UN General Assembly** and the **Food and Agriculture Organization (FAO)**.
3. **Global Presence**: WFP operates in over **120 countries**.
4. **Funding**: Funded through **voluntary donations** from **governments**, **corporates**, and **private donors**.
5. **Recognition**: Awarded the **Nobel Peace Prize in 2020** for its efforts in combating hunger globally.

Ministry of Petroleum and Natural Gas Highlights Achievement of Ethanol Blended Petrol (EBP) Programme

Relevant Syllabus Section- GS Paper III: Economic Development – Energy, Biofuels, and Environment

About the EBP Programme

1. **Objective**: Launched in **2003** to promote the blending of **ethanol** in **petrol**, reducing dependency on fossil fuels.
2. **Target**: Aim to achieve **20% ethanol blending** in petrol by **2025-26**, advancing the timeline from the original goal of **2030**.

Initiatives Facilitating EBP Programme

1. **National Policy on Biofuels (2018)**: Policy framework aimed at **expanding biofuels** and reducing dependence on imported fossil fuels.
2. **Ethanol Interest Subvention Schemes (EISS)**: Launched to foster the establishment of **Dedicated Ethanol Plants (DEPs)** to support ethanol production.
3. **Reduction in GST on Ethanol**: GST on ethanol for the **EBP Programme** reduced from **18% to 5%** to encourage ethanol production.
4. **Re-introduction of Administered Price Mechanism**: Implemented to stabilize ethanol prices and ensure a sustainable supply.
5. **Amendment to Industries (Development & Regulation) Act, 1951**: Facilitated the **smooth movement of ethanol** across the country, supporting the EBP Programme.

Key Benefits of the EBP Programme

1. **Foreign Exchange Savings**:
   o ₹**1.08 trillion** saved since **2014** by reducing reliance on imported crude oil.
   o **18.5 million tonnes** of crude oil substituted with ethanol.
2. **Environmental Sustainability**:
   o **55.7 million metric tonnes** of **carbon emissions** reduced due to ethanol blending.
3. **Sugar Industry Benefits**:
   o **Ethanol production** helped sugar factories reduce surplus sugar inventory and provided revenue to clear cane farmers' dues.

What is Ethanol?

1. **Definition**: Ethanol (C_2H_5OH) is a **renewable fuel** made from sugarcane, maize, wheat, and other high-starch crops.
2. **Blending with Petrol**:
   o Ethanol is blended with petrol in various concentrations to reduce emissions and enhance engine performance.
   o Examples:
      ▪ **E20**: Petrol blended with **20% ethanol**.
      ▪ **E100**: **93-93.5% ethanol** mixed with **5% petrol** and **1.5% co-solvent**.
3. **Flex-Fuel Vehicles (FFVs)**: Designed to run on varying ethanol blends, up to **E100**.

Asian Development Bank (ADB) Supports India's Atmanirbhar Clean Plant Programme (CPP)

Relevant Syllabus Section

- **GS Paper II**: Government Policies and Interventions for Development and Welfare of Sectors
- **GS Paper III**: Economic Development – Agriculture and Food Security

About the Atmanirbhar Clean Plant Programme (CPP)

1. **Genesis and Approval**: The **Clean Plant Programme (CPP)** was approved under the **Mission for Integrated Development of Horticulture (MIDH)**, a **Centrally Sponsored Scheme** aimed at the holistic development of the horticulture sector in India.
2. **Purpose**: The primary goal of the programme is to provide farmers with access to **virus-free, high-quality planting material**, which will lead to **increased crop yields**.

Key Components of the CPP

1. **Clean Plant Centers (CPCs)**: **9 state-of-the-art CPCs** equipped with **advanced diagnostic therapeutics** and **tissue culture labs** for ensuring clean planting material.
2. **Certification Framework**: Supported by a regulatory framework under the **Seeds Act of 1966**, ensuring standardization and quality control in plant material certification.
3. **Infrastructure Development**: Support for **large-scale nurseries** to develop the required infrastructure for quality horticulture production.
4. **Implementation**: The programme will be implemented by the **Ministry of Agriculture and Farmers Welfare** through the **National Horticulture Board (NHB)** and the **Indian Council of Agricultural Research (ICAR)** from **2024 to 2030** with **50% assistance from ADB**.

Other Key Initiatives for the Horticulture Sector

1. **CHAMAN (Coordinated Programme on Horticulture Assessment and Management using Geoinformatics)**: Develops scientific methodologies for **estimating the area** and **production of horticultural crops** using geoinformatics.
2. **Kisan Rail Services**: Aims to enhance the transportation of **perishable goods**, including fruits and vegetables, across the country.
3. **Capital Investment Subsidy Scheme**: Offered by **NHB** to support infrastructure development in the horticulture sector.

India's Horticulture Sector at a Glance

1. **Contribution to Agricultural GDP**: Horticulture contributes around **33%** to the gross value of **agricultural GDP** and covers **18%** of agricultural land in India.
2. **Export Revenue**: The sector contributes over **₹4 lakh crore** annually in **agricultural exports**.
3. **Global Standing**: India is the **second-largest producer** of **fruits and vegetables** globally, according to the **Food and Agriculture Organization (FAO)**.

SOCIETY & SOCIAL ISSUES

Reang Tribe: A Particularly Vulnerable Tribal Group (PVTG)

Relevant Syllabus Section

- **GS Paper I**: Indian Society – Salient Features of Tribes, Cultural Diversity
- **GS Paper II**: Welfare Schemes for Vulnerable Sections

Context

The **Reang community**, a **Particularly Vulnerable Tribal Group (PVTG)**, has requested recognition of their language, **Kaubru**, highlighting their cultural and linguistic identity.

Key Facts about the Reang Tribe

Background

- **Demographics**: The Reang tribe is the **second-largest tribal community** in Tripura.
- **Ethnic Origin**: They belong to the **Indo-Mongoloid race**.

Economic and Agricultural Practices

- **Nomadic Lifestyle**: Traditionally nomadic, their livelihood is rooted in:
  - **Jhum cultivation** (shifting agriculture).
  - **Food gathering activities** for sustenance.

Religious Beliefs

- Predominantly **Hindus**, with many following **Vaishnavism**.
- Deep belief in **spirits** and the **existence of the soul**, showcasing their connection to nature and spirituality.

Social Structure

- **Endogamous Community**: Members marry strictly within their own community, reflecting strong cultural preservation.

Cultural Heritage

- **Hojagiri Dance**:
  - A **unique traditional dance** performed exclusively by women in teams of **4–6**.
  - Male members accompany the performance by:
    - **Singing the lyrics**.
    - Playing instruments like **drums**.

Particularly Vulnerable Tribal Group (PVTG) Status

- **Dhebar Commission**: Identified **75 PVTGs** in India based on vulnerability indicators like:
  - **Pre-agricultural level of existence**.
  - **Low population growth**.
  - **Economic backwardness**.

Significance of Recognizing Kaubru

1. **Preservation of Linguistic Identity**: Recognition of **Kaubru** ensures the protection of their **linguistic heritage**.
2. **Cultural Empowerment**: Strengthens their **cultural identity** and fosters **community pride**.
3. **Inclusive Development**: Ensures the Reang tribe is part of India's **inclusive growth agenda** while addressing their specific needs.

India Signs the Final Act of Riyadh Design Law Treaty (DLT)

Relevant Syllabus Section

- **GS Paper II**: International Agreements and their Implications
- **GS Paper III**: Intellectual Property Rights (IPRs) – Importance and Government Initiatives

Context

India has signed the **Final Act of the Riyadh Design Law Treaty (DLT)**, adopted by the **World Intellectual Property Organization (WIPO)** after nearly two decades of negotiations. This reinforces India's commitment to fostering **inclusive growth** and strengthening its **intellectual property (IP) ecosystem**.

About the Design Law Treaty (DLT)

Key Provisions

1. **Multiple Designs in One Application:** Applicants can include multiple designs in a single application under specific conditions, simplifying the registration process.
2. **Filing Date Requirements:** Ensures granting of a filing date to prevent rights loss due to delays.
3. **Confidentiality:** Allows applicants to keep designs unpublished for at least **six months** after securing a filing date.
4. **Grace Period:** Provides a **12-month grace period** following the first disclosure of a design, ensuring prior disclosure does not affect registration validity.
5. **E-filing Systems:** Introduces **e-filing systems** and electronic exchange of priority documents, streamlining the registration process.

Significance of DLT

1. **Empowering Startups and SMEs:** Protects **designs globally**, enhancing **competitiveness** and facilitating **growth** for startups and SMEs.

2. **Simplifying Procedures:** Reduces procedural complexity, makes processes more **predictable** and **affordable**.

3. **Protecting Traditional Knowledge:** Integrates **design protection** with **traditional knowledge** and **cultural expressions**, safeguarding indigenous creations.

4. **Promoting Global Creativity:** Standardizes procedural requirements, reducing **administrative burdens** and encouraging **global collaboration** in design innovation.

About Intellectual Property (IP)

Definition: IP refers to creations of the mind, including **inventions**, **designs for industrial articles**, **literary and artistic works**, **symbols**, etc., used commercially.

Types of IP

- **Patents**: Protect inventions.
- **Copyrights**: Safeguard literary and artistic works.
- **Trademarks**: Identify brands or products.
- **Trade Secrets**: Protect confidential business information.
- **Geographical Indicators (GIs)**: Mark products tied to a specific geographical location.

Rights: IP rights grant creators or owners **exclusive benefits** from their creations, governed by statutory laws.

About WIPO

- **Established**: 1967.
- **Headquarters**: Geneva, Switzerland.
- **Members**: 193 countries, including India.
- **Objective**: Promotes the **protection of intellectual property rights (IPRs)** globally.

India's Commitment to IPRs

Signing the DLT aligns with India's broader objectives:

1. **Boosting Innovation**: Strengthens IP ecosystems to foster **startups** and **MSMEs**.
2. **Global Integration**: Promotes collaboration with international IP frameworks.
3. **Cultural Preservation**: Protects **traditional knowledge** and **cultural heritage**.

Violence Against Women: Key Insights from the UN Report

Relevant Syllabus Section

- **GS Paper I**: Indian Society – Role of Women, Social Empowerment
- **GS Paper II**: Governance – Mechanisms for Protection and Improvement of Vulnerable Sections

Context

The **United Nations (UN)** has highlighted a concerning increase in **violence against women and girls**, particularly in domestic settings, noting that homes remain the **most dangerous place** for women globally.

Key Findings of the UN Report on Violence Against Women (2023)

Global Statistics

- **51,100 women and girls** were killed globally by intimate partners or family members, up from **48,800 in 2022**.
- On average, **140 women are killed daily** in domestic settings.

Key Insights

1. **Proportion of Victims**: **60% of female homicide victims** were killed by intimate partners or family members.
2. **Male-Female Comparison**: **Men** constitute **80% of global homicide victims**, but most male deaths occur **outside the home**, unlike women.
3. **Drivers of Violence**:
   o **Gender stereotypes** and **societal norms** perpetuate violence.
   o **Impunity for perpetrators** remains a significant barrier to justice.

Regional Disparities

- Women in **developing countries** are disproportionately affected.
- Cultural and economic factors aggravate domestic violence in specific regions.

Way Forward

1. **Strengthen Legal Frameworks**: Ensure stricter enforcement of **domestic violence laws**.
2. **Awareness Campaigns**: Challenge **gender stereotypes** and promote **gender equality**.
3. **Support Systems**: Improve access to **shelters**, **hotlines**, and **counseling services** for victims.
4. **Global Collaboration**: Align domestic policies with UN's **Sustainable Development Goal (SDG) 5** on gender equality.

The Siddi Community: Cultural Legacy and Marginalization

Relevant Syllabus Section

- **GS Paper I**: Indian Society – Diversity, Vulnerable Groups, and Cultural Heritage
- **GS Paper II**: Welfare Schemes for Marginalized Communities

Context

The Siddi community, descendants of **East African Bantu peoples**, is gaining attention through artistic expressions like the film **"Rhythm of Dammam"**, highlighting their rich cultural heritage and historical roots in India.

About the Siddi Tribe

1. Descendants

- Origin: Primarily of **Bantu peoples** from **East Africa**, brought to the Indian subcontinent as:
  - **Slaves** during Arab, Portuguese, and Sultanate eras.
  - **Soldiers**, **sailors**, and **merchants** in various capacities.

2. Historical Background

- **Early Arrival**:
  - First arrived at **Bharuch port** (Gujarat) in **628 AD** with **Arab merchants**.
- **Slave Trade**:
  - Brought to India by:
    - **Arab conquerors**.
    - **Portuguese traders**.
    - **Deccan Sultanates**.
- **Prominent Figures**:
  - **Malik Ambar**: A notable military leader and regent of the Ahmednagar Sultanate.
  - **Jamal-ud-Din Yaqut**: A royal courtier in Delhi's Slave Dynasty.

3. Distribution in India

- Found in **Karnataka**, **Goa**, **Gujarat**, **Maharashtra**, **Andhra Pradesh**, and **Tamil Nadu**.
- Predominantly live in **rural** or **forested areas**, often marginalized.

4. Cultural Features

- **Religious Diversity**: Practitioners of **Islam**, **Hinduism**, and **Christianity**.
- **Unique Practices**:
  - Musical instruments like **dammam**, **duf**, and **gumte**.
  - Shared rituals such as **ancestor worship**.
- **Languages**: Speak **Konkani**, **Urdu**, **Marathi**, and regional dialects.

Challenges Faced by the Siddi Community

1. **Marginalization**

- Often viewed as **outsiders**, despite centuries of residence in India.
- Limited access to **education**, **healthcare**, and **employment opportunities**.

2. **Economic Disparity:** Predominantly dependent on **agriculture** and **daily wage labor**, leading to poverty.
3. **Lack of Representation:** Minimal representation in **politics** and **decision-making processes**.
4. **Cultural Erosion:** Struggle to preserve their **unique cultural identity** amidst modernization and migration.

Government Initiatives

1. **Scheduled Tribe Status**: Recognized as **Scheduled Tribes** in states like Karnataka, Gujarat, and Goa, enabling access to welfare schemes.
2. **Skill Development Programs**: Focused on **livelihood generation** and cultural preservation.
3. **Tribal Welfare Schemes**: Access to **education**, **healthcare**, and **financial aid** under tribal welfare initiatives.

Significance of the Siddi Community

- Represents India's **cultural diversity** and long history of **Afro-Asian interaction**.
- Their contributions to history, such as Malik Ambar's military strategies, showcase their resilience and skill.

'Bal Vivah Mukt Bharat' Campaign: Towards Eliminating Child Marriage in India

Relevant Syllabus Section

- **GS Paper II**: Issues Relating to Development and Management of Social Sector/Services – Women and Children
- **GS Paper I**: Social Empowerment, Role of Women

Context

The **Union Minister for Women and Child Development** has launched the **'Bal Vivah Mukt Bharat' Campaign**, a national initiative aimed at **eliminating child marriage** in India by adopting a **collaborative and citizen-centric approach**.

About the Campaign

Focus Areas

- Targeting **seven states** with the highest burden of child marriages.
- Implemented in nearly **300 high-burden districts**.

Collaborative Effort: Calls on every **State and Union Territory** to develop an **action plan** to reduce child marriage rates below **5% by 2029**.

Child Marriage Free Bharat Portal

- A dedicated **online platform** for citizens to:
  - **Report child marriage incidents.**
  - **File complaints.**
  - Access information about **Child Marriage Prohibition Officers (CMPOs)**.

Status of Child Marriage in India

Reduction in Child Marriage

- **NFHS-5** data shows: Decrease from **47.4% (2005–06)** to **26.8% (2015–16)**.

Disparities Based on Wealth

- **40% of females** in the **lowest quintile** married before 18 years, compared to **8%** in the **highest quintile**.

States with High Prevalence

- **West Bengal**, **Bihar**, **Tripura**, **Jharkhand**, **Assam**, **Andhra Pradesh**, **Rajasthan**, and **Telangana** are identified as high-prevalence states.

Consequences of Child Marriage

- **Health Issues**: Early pregnancies increase maternal and infant mortality rates.
- **Educational Loss**: Girls are often forced to drop out of school.
- **Economic Disempowerment**: Limits opportunities for skill development and employment.
- **Social Impact**: Perpetuates cycles of poverty, gender inequality, and domestic violence.

Government Measures

1. **Prohibition of Child Marriage Act, 2006 (PCMA)**

- Prohibits child marriages where:
  - Females are under **18 years**.
  - Males are under **21 years**.

2. **International Commitments:** India is a **signatory** to the **United Nations Convention on the Rights of the Child**.
3. **National Awareness Programs:** Conducted by the **National Commission for Protection of Child Rights (NCPCR)** to raise awareness and combat child marriages.

Way Forward

1. **Strengthen Legal Frameworks**: Strict enforcement of the **PCMA, 2006** to deter child marriages.
2. **Community Engagement**: Mobilize **local leaders**, **women's groups**, and **youth organizations** to create awareness.
3. **Educational Initiatives**: Promote **universal education**, particularly for girls, to delay marriage age.
4. **Economic Empowerment**: Provide **vocational training** and **employment opportunities** for adolescent girls.
5. **Technological Integration**: Use the **Child Marriage Free Bharat Portal** effectively to monitor and act on reported cases.
6. **Address Root Causes**: Tackle **poverty** and **gender inequality**, the primary drivers of child marriage.

Koraga Tribe and Operation Smile

Relevant Syllabus Section

- **GS Paper I**: Indian Society – Role of Vulnerable Sections
- **GS Paper II**: Government Policies and Interventions for Vulnerable Groups

Koraga Tribe

1. **Habitat**:
   - Found in **Kasaragod district** (Kerala) and **Karnataka**.
   - Classified as one of the **Particularly Vulnerable Tribal Groups (PVTGs)**.
2. **Status**: Recognized as a **Scheduled Tribe** under the **Presidential Order of 1956**.
3. **Traditional Occupation**: Known for **basket-making**.
4. **Language**: Speak **Tulu**, but also have their **independent language**.
5. **PVTG Classification**: Identified by the **Ministry of Home Affairs**, with **75 PVTG communities** in India.

Operation Smile

1. **Objective**: Launched by the **Kerala Government** to **rehabilitate and support homeless individuals**.
2. **Recent Development**: Under **Operation Smile**, the **Koraga community** in Kerala is set to receive **land titles**, enhancing their **livelihood opportunities** and **social security**.

Jarawa Tribe

About the Tribe

1. **Location**: Inhabit the **western coasts** of **South and Middle Andaman Islands**.
2. **Population**: Estimated at **341 individuals**.
3. **Occupation**: Practice a **hunter-gatherer lifestyle**.
4. **Status**: One of the **original inhabitants** of the Andaman and Nicobar Islands, alongside the **Great Andamanese**, **Onge**, **Sentinelese**, and **Shompen**.
5. **PVTG Status**: Classified under **Particularly Vulnerable Tribal Groups (PVTGs)**.

Recent Development for Jarawa Tribe

- **Electoral Roll Inclusion**: For the **first time**, members of the **Jarawa tribe** have been enrolled in the **electoral roll**, enabling political representation and fostering integration while ensuring their **rights and traditions** are safeguarded.

GEOGRAPHY AND DISASTER MANAGEMENT

Soaring Water Demand and Groundwater Depletion Cause Earth's Axis Shift

Relevant Syllabus Section

- **GS Paper I**: Physical Geography – Movements of the Earth, Climate Change
- **GS Paper III**: Environmental Degradation, Water Resources

Context

A study published in **Geophysical Research Letters** reveals that **excessive groundwater extraction** between **1993 and 2010** has caused the Earth's rotational pole to shift by **31.5 inches (80 cm)** eastward. This highlights the significant impact of **human activities** on the planet's physical dynamics.

Key Findings of the Study

1. **Axis Shift Due to Groundwater Depletion**: The movement of water from **aquifers to oceans** altered Earth's **mass distribution**, causing the **rotational pole** to shift at a rate of **4.36 cm per year**.
2. **Impact on Sea Levels**: The redistribution of water contributed to a **0.24-inch rise in global sea levels**.
    - **Sea Level Variations**:
        - **Increase**: Near **10 mm rise** in most oceans.
        - **Decrease**: Observed in the **Indian Ocean** and the **Pacific Ocean**, adjacent to regions of groundwater depletion like **Northwestern India** and **Western North America**.
3. **Challenge to Climate Models**: The findings indicate that previous models underestimated the impact of groundwater depletion, focusing mainly on **ice sheet melting**.

Motion of the Earth

1. **Types of Motion**:
    - **Rotation**: The spinning of Earth on its axis, causing **day and night**.
    - **Revolution**: Earth's movement around the **sun** in an elliptical orbit, responsible for **seasons**.
2. **Axis Tilt**: The Earth's axis is inclined at an angle of **66½°** to its orbital plane and **23½°** from the vertical.
3. **Effects of Inclination**:
    - **Day and Night**: Caused by **rotation**.
    - **Seasons**: Result from the **tilt** and Earth's **revolution**, leading to variations in sunlight and heat distribution.
    - **Climate Zones**: The tilt contributes to the creation of **different climatic regions** on Earth.

Implications of Groundwater Depletion

1. **Environmental Impact**: Groundwater depletion exacerbates **sea level rise**, intensifying **coastal flooding** and erosion.
2. **Geophysical Changes**: The shift in Earth's axis can alter its **gravitational field**, impacting **satellite navigation** and other geospatial systems.
3. **Regional Effects**: Areas with excessive depletion, such as **Northwestern India**, face **diminished aquifers**, threatening **water security** and agriculture.

Way Forward

1. **Sustainable Water Management**: Promote **rainwater harvesting**, **aquifer recharge**, and **efficient irrigation techniques**.
2. **Global Cooperation**: Enhance international efforts to manage **shared water resources** and address **groundwater depletion**.
3. **Technological Solutions**: Use advanced tools like **satellite monitoring** and **GIS mapping** to track changes in groundwater and Earth's axis.
4. **Public Awareness**: Educate communities on the long-term impacts of **over-extraction** and encourage sustainable practices.

National Landslide Risk Mitigation (NLRM) Project Approved by HLC

Relevant Syllabus Section

- **GS Paper III**: Disaster Management – Mitigation and Preparedness Strategies
- **GS Paper I**: Geography – Natural Disasters

Context

The **High-Level Committee (HLC)**, chaired by the **Union Home Minister**, has approved funding for the **National Landslide Risk Mitigation (NLRM) Project** in **15 states**. This initiative will be financed through the **National Disaster Mitigation Fund (NDMF)** to enhance disaster mitigation and management.

Need for NLRM Project

1. **Preventable and Predictable Nature**: Unlike earthquakes or tsunamis, **landslides can be predicted and prevented** with the right strategies.
2. **Scientific Investigation and Management**: Promotes a **culture of research and scientific management** of landslides.

About National Disaster Mitigation Fund (NDMF)

1. **Established**: Constituted in **2021** under the **Disaster Management Act, 2005**, based on the recommendations of the **15th Finance Commission**.
2. **Purpose**: Exclusively for **disaster mitigation projects**, managed by the **National Disaster Management Authority (NDMA)**.

Landslide Management in India

Technological Approaches

- **Remote Sensing and GIS**: Used for **landslide hazard zonation mapping** to identify high-risk zones.
- **Real-Time Monitoring**: Utilizes **sensors**, **satellite data**, and **drones** to develop early warning systems.

Preventive Measures

1. **Structural Measures**: **Retaining walls**, **slope stabilization**, and **drainage improvement**.
2. **Non-Structural Measures**: **Land use regulation**, **afforestation**, and prevention of **deforestation**.

Institutional Coordination

- Strengthen collaboration among **NDMA**, **Geological Survey of India (GSI)**, and **State Disaster Management Authorities (SDMAs)**.

About Landslides in India

1. **Definition**: Movement of **rock, debris, or earth** down a slope due to **gravity**.
   - Example: **Wayanad, Kerala**.
2. **Global Context**: India ranks among the top four countries with the **highest landslide risk** (ISRO Landslide Atlas).
3. **Factors Contributing to Landslides**
   - **Natural Factors**: Intense **rainfall**, **seismic activities**, etc.
   - **Anthropogenic Factors**: **Deforestation**, unplanned construction, and **mining activities**.

Other Measures for Landslide Management

1. **National Landslide Susceptibility Mapping Program**: Launched by **GSI** in **2014-15** to map and assess landslide-prone areas.
2. **Landslide Risk Mitigation Scheme**: Provides **financial support** for **site-specific landslide mitigation projects**.
3. **NDMA Guidelines**: Issued **Management of Landslides and Snow Avalanches** guidelines for mitigation and preparedness.

Significance of NLRM Project

1. **Disaster Mitigation**: Reduces **human and economic losses** by targeting high-risk zones.
2. **Capacity Building**: Strengthens the **preparedness and response capabilities** of local authorities.
3. **Scientific and Technological Advancement**: Enhances the use of **modern technologies** like GIS and real-time monitoring for disaster prediction and management.
4. **Environmental Protection**: Promotes **afforestation** and **sustainable land use practices**, reducing anthropogenic risks.

Baltic Sea and Its Geopolitical Importance

Relevant Syllabus Section

- **GS Paper I**: Physical Geography – Geographical Features and their Impact
- **GS Paper II**: International Relations – Geopolitical Tensions

Context

The recent **cutting of undersea cables** in the **Baltic Sea** has heightened geopolitical tensions, particularly amidst the ongoing **Ukraine war**.

About the Baltic Sea

1. **Geographical Location**:
   o Part of the **North Atlantic Ocean**, situated in **Northern Europe**.
   o Separates the **Scandinavian Peninsula** from continental Europe.
2. **Surrounding Countries**: **Denmark**, **Germany**, **Poland**, **Lithuania**, **Latvia**, **Estonia**, **Russia**, **Finland**, and **Sweden**.
3. **Connections**: Linked to the **Atlantic Ocean** through the **Danish Straits**, playing a vital role in **global trade and connectivity**.
4. **Physical Characteristics**:
   o **Average Depth**: 55 meters.
   o **Deepest Point**: 459 meters.
5. **Notable Features**:
   o **Gulfs**: Gulf of Bothnia (north), Gulf of Finland (east), Gulf of Riga (south).
   o **Rivers**: Over **250 rivers** drain into it, with the **Neva River** being the largest contributor.
   o **Islands**: Hosts over **20 islands and archipelagos**, with **Gotland** (off Sweden's coast) as the largest.

Geopolitical Importance of the Baltic Sea

1. **Strategic Location**: Acts as a key **maritime route** for trade and military operations between Northern Europe and the rest of the world.
2. **Economic Significance**: Major **shipping route** for energy resources, particularly **Russian oil and gas**.
3. **Security and Tensions**: A hotspot for **NATO and Russian naval activities**, especially in light of the **Ukraine conflict**.
4. **Energy and Infrastructure**: Home to critical infrastructure like **undersea cables**, **pipelines**, and **shipping lanes**.

HISTORY, ART & CULTURE

Janjatiya Gaurav Divas: Honoring Tribal Heritage and Contributions

Relevant Syllabus Section

- **GS Paper I**: Indian Culture – Role of Tribal Communities in Heritage Preservation
- **GS Paper II**: Welfare of Vulnerable Sections – Government Policies for Tribal Development

Context

Janjatiya Gaurav Divas is celebrated annually on **November 15th** to commemorate the birth anniversary of **Bhagwan Birsa Munda**, a tribal leader and freedom fighter. This day recognizes the **contributions of tribal communities** to India's **freedom struggle** and **cultural heritage**.

Role of Tribals in Heritage Preservation

1. Cultural Heritage

- **Oral Traditions and Storytelling**:
    o Example: **"U Sier Lapalang" folktale** of the Khasi-Pnar community reflects their **reverence for nature**.
- **Rituals, Festivals, and Ceremonies**:
    o Example: **Hornbill Festival** of the Nagas promotes the **unique cultural diversity** of Nagaland.
- **Traditional Crafts and Art Forms**:
    o Example: **Warli paintings** by the Warli tribes showcase the **interconnection between humans and nature**.
- **Traditional Medicine**:
    o Tribals conserve and use plants as **medicinal herbs** for ailments like **bone fractures**, **snake bites**, and **muscular pain**.

2. Biodiversity Conservation

- **Conservation of Protected Areas**:
    o Example: **Soliga tribes** in the **Biligiri Rangaswamy Temple (BRT) Wildlife Sanctuary, Karnataka**, use **traditional knowledge** to conserve forest ecology.
- **Sacred Natural Spaces**:
    o Example: **Mawphlang Sacred Forest** protected by the Khasi for over **800 years** due to belief in the deity **Labasa**.
- **Wildlife Protection Practices**:
    o Example: **Bishnoi tribes** are known for protecting animals like **blackbuck** and **chinkara**.

Government Initiatives Supporting Tribals

1. **Support to Tribal Research Institutes (TRIs)**: Promotes **R&D** in **tribal languages**, **traditions**, and **medicinal practices**.
2. **Tribal Cooperative Marketing Development Federation (TRIFED)**: Provides **marketing support** for tribal products to ensure fair prices.
3. **Pradhan Mantri Van Dhan Yojana**: Leverages **tribal knowledge and skills**, integrating **technology** to create viable **economic opportunities**.

Significance of Janjatiya Gaurav Divas

- **Recognizes Tribal Contributions**: Highlights their role in India's **freedom struggle** and **cultural preservation**.
- **Preserves Indigenous Heritage**: Promotes **awareness and respect** for tribal traditions, biodiversity conservation, and cultural diversity.
- **Fosters Inclusion**: Strengthens the role of tribals in **nation-building** through targeted **development initiatives**.

Ramappa Temple: UNESCO World Heritage Site and Recent Developments

Relevant Syllabus Section

- **GS Paper I**: Art and Culture
- **GS Paper II**: Governance, Constitution, Polity – Heritage Preservation

About Ramappa Temple

- **Location and History**:
  - The **Ramappa Temple**, also known as the **Kakatiya Rudreshwara Temple**, is a **13th-century Hindu temple** located in **Palampet village**, Mulugu district, **Telangana**, India.
  - Built during the **Kakatiya dynasty** (1212-1234 CE), it is dedicated to **Lord Shiva**.
  - The temple was **inscribed as a UNESCO World Heritage Site** in **July 2021**, marking it as India's **39th World Heritage Site**.

Architectural Highlights

1. **Innovative Construction**: The temple is known for its **lightweight, porous 'floating bricks'** which reduce the weight of the roof, enhancing its **earthquake resistance**.
2. **Distinctive Features**:
   - It boasts **intricately carved granite and dolerite beams** and **pillars**.
   - The temple has a **pyramidal Vimana (stepped tower)**, which is a key feature of the **Kakatiya style** of architecture.

Recent Developments

- **SASCI Scheme Funding**:
  - The **Government of India** has approved a **₹141 crore loan** under the **Special Assistance to States/Union Territories for Capital Investment (SASCI)** scheme.
  - The loan is aimed at developing the **Ramappa Circuit** to improve **tourism infrastructure** and promote **sustainable tourism** in the region.

Significance of the Temple

- **Cultural and Historical Value**: The **Ramappa Temple** is a symbol of the **Kakatiya dynasty's architectural ingenuity** and holds immense **cultural** and **historical significance**.
- **Government's Commitment**: The **SASCI scheme funding** underscores the government's efforts to **preserve** and **promote India's rich heritage** while boosting tourism.

AGRICULTURE

National Mission on Natural Farming (NMNF): A Standalone Centrally Sponsored Scheme

Relevant Syllabus Section- GS Paper III: Agriculture – Sustainable Practices, Government Policies, and Natural Resource Management

Context

The **National Mission on Natural Farming (NMNF)** has been launched as a **Centrally Sponsored Scheme** under the **Ministry of Agriculture & Farmers' Welfare**, with a total outlay of **₹2,481 crore**. The scheme is aligned with the 15th Finance Commission cycle (2025-26).

Background

- In **2019**, **Zero Budget Natural Farming (ZBNF)** was renamed as **Bhartiya Prakritik Krishi Paddhti (BPKP)** and made a sub-scheme of **Paramparagat Krishi Vikas Yojna (PKVY)**.
- From **2023-24**, BPKP was renamed as the **National Mission on Natural Farming (NMNF)**.

Key Highlights of NMNF

Implementation

- Target: Establish **15,000 clusters** in willing Gram Panchayats.
- Reach: Cover **1 crore farmers** and initiate **Natural Farming (NF)** in **7.5 lakh hectares** over two years.
- Focus: Preference to areas already practising **Natural Farming**.

Key Features

1. **Bio-input Resource Centres (BRCs)**: **10,000 centres** to be established for providing **ready-to-use inputs** like Jivamrit, Beejamrit, and other bio-products.
2. **Model Demonstration Farms**: To be set up at **Krishi Vigyan Kendras (KVKs)**, **Agricultural Universities (AUs)**, and farmers' fields for **hands-on training**.
3. **Awareness and Mobilization**: Awareness generation through **Krishi Sakhi** for **mobilization and training** of farmers.
4. **Certification and Branding**: A **simple certification system** for farmers and **common branding** for market access.
5. **Monitoring Mechanism**: Real-time **geo-tagged monitoring** through an **online portal** for implementation tracking.
6. **Convergence**: Explore convergence with **existing schemes** and **support structures** to maximize impact.

About Natural Farming

Definition: A **chemical-free**, **livestock-based** farming approach that integrates **crops, trees, and livestock**, promoting **functional biodiversity** and soil health.

Key Components

1. **Beejamrit**: Seed treatment using cow dung and other natural inputs to ensure seed vitality.
2. **Jivamrit**: A bio-stimulant promoting microbial activity in the soil.
3. **Mulching**: Covering soil surfaces with live or dead biomass to conserve moisture and improve fertility.
4. **Whapasa**: Enhances water vapour condensation through **earthworm activity** in the soil.
5. **Plant Protection**: Use of **biological sprays** to prevent pest attacks.

Significance of NMNF

1. **Sustainability**: Reduces dependency on **chemical fertilizers and pesticides**, ensuring **ecological balance**.
2. **Livelihood Support**: Strengthens farmers' income by reducing input costs and providing market branding.
3. **Environmental Benefits**: Promotes **soil health**, conserves water, and supports biodiversity.
4. **Awareness and Training**: Empowers farmers through hands-on **training** and capacity building.

5. **Convergence for Efficiency**: Integrates existing schemes to ensure **holistic agricultural development**.

Centre Announces Funding and Mentorship for 'Tomato Grand Challenge' Winners

Relevant Syllabus Section- GS Paper III: Agriculture – Marketing, Supply Chain, and Price Stabilization

Context

The government has announced **funding and mentorship** for the winners of the **'Tomato Grand Challenge' (TGC)**, launched in **2023** by the **Department of Consumer Affairs** in collaboration with the **Ministry of Education (Innovation Cell)**. The initiative seeks **innovative and scalable solutions** to address challenges in the **tomato supply chain**.

About TOPs (Tomatoes, Onions, and Potatoes)

1. **Significance**
   o **Largest cultivated, produced, and consumed vegetables** in India.
   o Account for over a **third of the Consumer Price Index (CPI)** vegetable category.
2. **Challenges**
   o Wide **price fluctuations** due to:
     ▪ **Seasonal production cycles** (lean and bumper seasons).
     ▪ **Weather shocks** and pest attacks.
     ▪ Limited **storage infrastructure**, concentrated in a few states (e.g., U.P, Punjab).
   o Unorganized markets lacking robust networks like **milk cooperatives**.
   o **Diverse varieties** complicate marketing interventions under schemes like **Operation Greens**.

Key Issues with Tomato Supply Chain

1. **Seasonal Production**
   o Lean seasons lead to **supply shortages** and high prices.
   o Bumper harvests result in **gluts** and low prices.
2. **Natural Factors**: Vulnerability to **weather events** and **pest attacks** exacerbates price volatility.
3. **Storage Accessibility**: Inadequate **storage facilities**, often privately owned, increase losses.
4. **Market Inefficiency**: Lack of organized frameworks for **seamless producer-consumer connectivity**.

Initiatives for Price Stabilization of TOPs

1. **Operation Greens**: Launched to tackle price volatility in **TOPs**, later extended to other fruits and vegetables (**TOP to TOTAL**).
2. **Gramin Agricultural Markets (GRAMs)**: Development of **village-level haats** for direct farmer-to-consumer sales.
3. **Mission for Integrated Development of Horticulture (MIDH)**: Supports **low-cost onion storage structures** and overall horticulture development.
4. **Other Initiatives**
   o **Agricultural Marketing Infrastructure (AMI)**: Development of rural godowns.
   o **Kisan Rail Service**: Quick transportation of perishable goods.
   o **Price Stabilization Fund (PSF)**: Helps control extreme price fluctuations.

Tomato Grand Challenge (TGC)

Objectives

- Stabilize the **tomato supply chain** by addressing key challenges.
- Promote **innovative and scalable solutions** to mitigate price fluctuations.

Focus Areas

- **Production**: Enhance efficiency in **seasonal production cycles**.
- **Storage**: Develop cost-effective storage systems.
- **Market Connectivity**: Streamline connections between **producers and consumers**.

Support for Winners

- **Funding**: Financial aid to implement winning solutions.
- **Mentorship**: Expert guidance to refine and scale solutions.

Way Forward

1. **Strengthen Storage Infrastructure**: Develop **region-specific cold storage systems** to reduce losses.
2. **Promote Innovation**: Encourage **research and startups** focusing on **agriculture supply chains**.
3. **Empower Farmers**: Increase awareness and accessibility to **government schemes** like GRAMs and Kisan Rail.
4. **Develop Cooperative Models**: Establish networks similar to **milk cooperatives** for efficient price stabilization.

ENVIRONMENT & ECOLOGY

COP29 Concludes with the Baku Climate Unity Pact

Relevant Syllabus Section

- **GS Paper III**: Conservation, Environmental Pollution and Degradation, Environmental Impact Assessment
- **GS Paper II**: International Relations – Important International Institutions and Agreements

Introduction

The **Baku Climate Unity Pact**, adopted at COP29 of the UNFCCC, highlights the global commitment to addressing climate challenges. It focuses on three key aspects:

- **New Collective Quantified Goal (NCQG) on Climate Finance**
- **Global Goal on Adaptation (GGA)**
- **Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme**

Key Highlights of the Pact

1. **New Collective Quantified Goal (NCQG) on Climate Finance**

- **Objective**: Establishes a **new financial target** to support countries in adapting to **climate disasters** and benefit from the clean energy revolution.
- **Significance**: Mobilizes resources to protect **livelihoods and economies** while accelerating investments in **renewable energy**.

2. **Global Goal on Adaptation (GGA)**

- **Baku Adaptation Roadmap**: Provides a framework to advance **adaptation actions** under Article 7 of the Paris Agreement.
- **Article 7, Paragraph 1**: Defines the Global Goal on Adaptation as enhancing **adaptive capacity** to contribute to **sustainable development**.
- **Adaptation Approaches**: Recognizes both **incremental** and **transformational strategies**:
  - o Aims to safeguard the **well-being of people**.
  - o Supports the **UAE Framework for Global Climate Resilience**.

3. **Sharm el-Sheikh Mitigation Ambition and Implementation Work Programme**

- **Customized Strategies**: Emphasizes the diversity of **national and local circumstances**, rejecting a **one-size-fits-all** approach.
- **Collaborative Efforts**: Encourages cooperation among **cities, local communities, subnational authorities**, and **national governments**.
- **Digital Platform Proposal**: Discusses a **platform** to enhance implementation and monitoring of **mitigation actions**.

Global Matchmaking Platform for Industrial Decarbonization Launched at COP29

Relevant Syllabus Section

- **GS Paper III**: Environmental Conservation, Climate Change, and Energy
- **GS Paper II**: International Relations – International Organizations and Initiatives

Introduction

At **COP29**, the **United Nations Industrial Development Organization (UNIDO)**, in collaboration with the **Climate Club**, launched the **Global Matchmaking Platform (GMP)**. This initiative aims to drive **industrial decarbonization** by fostering international partnerships and providing technical and financial support for sustainable industrial practices.

Key Features of the Global Matchmaking Platform (GMP)

1. Objective: Boost international cooperation to enable **developing and emerging economies** to adopt **climate-friendly industrial development**.

2. Secretariat: The GMP is a **support mechanism** under the Climate Club, with its **secretariat hosted by UNIDO**.

3. How it Works

- Matches **country-specific needs** with **global technical and financial assistance**.
- Focuses on reducing emissions in **energy- and emissions-intensive industrial sectors**.
- Open to **all developing and emerging economies**.

Understanding Industrial Decarbonization

1. Definition: The process of implementing **energy-efficient and sustainable practices** to reduce the **carbon footprint of industries**.

2. Key Strategies

- Adoption of **low-carbon technologies**.
- **Decarbonizing End-Use Energy** by transitioning to **renewable energy sources**.
- **Carbon Capture, Utilization, and Storage (CCUS)** technologies.

3. Need for Industrial Decarbonization

- Industrial activities contribute to **25% of global energy-related CO2 emissions**.
- Decarbonization is vital for achieving **net-zero emissions by 2050**.

Initiatives Supporting Industrial Decarbonization

1. Global Initiatives

- **Industrial Deep Decarbonization Initiative (2021)**:
  - Co-led by **India** and **UK**.
  - Stimulates global demand for **low-carbon industrial materials**.
- **Alliance for Industry Decarbonization**:
  - Coordinated by the **International Renewable Energy Agency (IRENA)**.
  - Focuses on decarbonizing **industrial value chains**.

2. India's Efforts

- **Perform, Achieve and Trade (PAT) Scheme**: An energy efficiency credit trading system for industries.
- **Steel Industry Decarbonization**: Initiatives led by the **Ministry of Steel** to adopt **renewable energy** and **green hydrogen**.

UNEP Publishes Global Peatland Hotspot Atlas, 2024

Relevant Syllabus Section- GS Paper III: Environmental Conservation, Biodiversity, Climate Change, and Ecology

Context

The **United Nations Environment Programme (UNEP)** has released the **Global Peatland Hotspot Atlas, 2024**, building on the earlier **Global Peatlands Assessment (2022)** and **Global Peatland Map 2.0**. These are key products of the **UNEP Global Peatlands Initiative**, launched at **UNFCCC COP 2016** in Marrakech.

About Peatlands

1. Definition

- **Peatlands**: **Terrestrial wetland ecosystems** where waterlogged conditions inhibit the complete decomposition of plant material, leading to the accumulation of **peat**.
- **Peat**: Partially decomposed plant remains formed under waterlogged conditions.

2. Global Distribution

- **Coverage**: Peatlands account for **3.8% of the world's land area**.
- **Regions**: Found in diverse environments:
  - **Tropical peat swamps**: South East Asia and Congo Basin.
  - **Permafrost regions**: Russia and Canada.
  - **High mountain peatlands**: Andes and Himalayas.

3. Degradation

- **Extent**: Nearly **12% of global peatlands** are degraded.
- In India, **over 60%** of peatlands are degraded.

4. Threats

- **Human activities**: Agriculture, peat extraction, industrial activities, and infrastructure development.
- **Emissions**: Degraded peatlands contribute **4% of global anthropogenic emissions**.

Significance of Peatlands

1. Carbon Storage: Peatlands hold the **world's largest terrestrial carbon stock**, storing at least **550 Gigatonnes of carbon**, which is more than twice the carbon stored in all the world's forests.

2. Biodiversity Conservation: They provide habitats for **rare and threatened species**, playing a critical role in preserving biodiversity.

3. Ecosystem Services

- **Water Regulation**: Purify and regulate water for human consumption and agriculture.
- **Climate Regulation**: Peatlands have a **net cooling effect** on the global climate.

Global and Regional Initiatives

1. Global Efforts

- **Guidelines for Global Action on Peatlands (2002)**: Framework for sustainable peatland management.
- **UNEA-4 Resolution (2019)**: Focuses on the **conservation and sustainable management of peatlands**.

2. UNEP Global Peatlands Initiative: Launched in **2016** to address the challenges of peatland degradation and foster sustainable practices.

COP29: Full Operationalization of the Loss and Damage Fund (LDF)

Relevant Syllabus Section- GS Paper III: Conservation, Environmental Pollution, Climate Change, and International Agreements

Context

Under the **COP29 Presidency**, key agreements for the operationalization of the **Loss and Damage Fund (LDF)** were signed, including the **Trustee Agreement**, **Secretariat Hosting Agreement (SHA)** with the **World Bank**, and the **Host Country Agreement** with the **Republic of the Philippines**. The fund will begin financing projects in **2025**.

About the Loss and Damage Fund (LDF)

- **Establishment:** The LDF was agreed upon during **COP27 (Egypt)** and operationalized during **COP28 (Dubai)**.
- **Objective:** To provide **financial assistance** to countries most **vulnerable to climate change impacts**, addressing **losses and damages** that exceed the limits of adaptation.
- **Scope:** Includes **economic losses** (e.g., destruction of infrastructure) and **non-economic losses** (e.g., disappearance of cultures or livelihoods).
- **Financial Mechanism:** Support will be extended in the form of **grants** and **concessional financing** to aid affected countries.

Key Decisions at COP29

1. **Trustee Agreement**: Formalizes the World Bank's role as the **trustee** of the fund, ensuring efficient financial management.
2. **Secretariat Hosting Agreement (SHA)**: Establishes the **World Bank** as the fund's secretariat, enabling streamlined operations.
3. **Host Country Agreement**: Signed with the **Philippines**, designating it as the host country for the LDF, providing an administrative and operational hub.

Challenges in LDF Implementation

Governance

- Ensuring **adequate and sustainable funding** for the LDF.
- Determining **eligibility criteria** for beneficiaries and fund allocation.
- **Location disputes** over hosting and managing the fund.

Financial Issues: Balancing the interests of **donor** and **recipient countries**, maintaining equity and transparency.

Scientific Challenges: Defining **loss and damage** and assessing **climate impact attribution** with scientific accuracy.

Other Funds Addressing Climate Change

1. **Green Climate Fund (GCF)**: Provides finance for **low-emission** and **climate-resilient development** in developing nations.
2. **Adaptation Fund**: Supports **concrete adaptation projects** in vulnerable countries.
3. **Least Developed Countries Fund (LDCF)**: Focuses on providing **grants** to **least developed countries** for climate adaptation initiatives.

Significance of LDF

1. **Addressing Vulnerabilities**: Provides **immediate financial relief** to nations facing **irreversible climate impacts**.
2. **Promoting Global Solidarity**: Strengthens **international collaboration** in addressing **climate justice** for vulnerable communities.
3. **Boosting Climate Negotiations** :Acts as a **confidence-building measure** for developing countries, ensuring equity in climate negotiations.
4. **Non-Economic Losses**: Recognizes and compensates for **cultural and lifestyle losses** that are not quantifiable in monetary terms.

Basic Animal Husbandry Statistics (BAHS) 2024: Key Highlights and Insights

Relevant Syllabus Section- GS Paper III: Agriculture – Animal Husbandry and Allied Sectors, Livelihoods, and Food Security

Context

The **Ministry of Fisheries, Animal Husbandry & Dairying** released the **Basic Animal Husbandry Statistics (BAHS) 2024** on **National Milk Day (26th November)**, commemorating the birth anniversary of **Dr. Verghese Kurien**, the **Father of the White Revolution in India**.

Key Findings for 2023-24

1. Milk Production

- **Total Output**: **239.30 million tonnes**.
- **Growth Rate**: Registered a **5.62% growth** over the past decade (2014-15).
- **Top States**: **Uttar Pradesh**, **Rajasthan**, and **Madhya Pradesh**.
- **Global Ranking**: India is the **leading milk producer globally**.

2. Egg Production

- **Total Output**: **142.77 billion eggs**.
- **Growth Rate**: **6.8% growth** over the past decade.
- **Top States**: **Andhra Pradesh** followed by **Tamil Nadu**.
- **Global Ranking**: India ranks **2nd in egg production**.

3. Wool Production

- **Total Output**: **33.69 million kg**.
- **Growth Rate**: Marginal growth of **0.22%** over the last year.

About Animal Husbandry

- **Definition**: Involves **livestock raising** and **selective breeding** to develop genetic qualities and behaviors of animals for **profitability**.
- **Products**: Includes **milk, meat, eggs, and wool**.

Significance of Animal Husbandry

- **Economic Contribution:** Contributed **30.19%** of total **agriculture and allied sector GVA (2021-22)** at constant prices.
- **Livelihood:** Supports **8 crore farmers and landless laborers**, ensuring **food security** and economic stability.
- **Nutritional Role:** Provides high-protein foods like **milk**, **meat**, and **eggs**, vital for combating malnutrition.

Challenges in the Sector

1. **Diseases**: Outbreaks of **Lumpy Skin Disease** and **Foot and Mouth Disease (FMD)** affect productivity and animal health.
2. **Low Productivity**: Indigenous breeds often have lower yields compared to crossbreeds or exotic breeds.
3. **Vaccination**: Inadequate coverage of **preventive vaccinations** for livestock.

Government Initiatives to Boost Animal Husbandry

1. **Rashtriya Gokul Mission (2014)**: Objective: Conservation and development of **Indigenous Bovine Breeds**.
2. **Animal Husbandry Infrastructure Development Fund (AHIDF)**: Encourages investments in **dairy processing**, **product diversification**, and **meat processing**.
3. **National Livestock Mission (NLM)**
   - Focus on **employment generation** through entrepreneurship in sectors like **poultry**, **piggery**, and **small ruminants**.
   - Aims to **increase per animal productivity** through **breed improvement**.

Biomedical Waste Management: A Critical Environmental Concern

Relevant Syllabus Section- GS Paper III: Conservation, Environmental Pollution, and Degradation

Context

The **HIV epidemic** and incidents like the **"Syringe Tide"** exposed the hazards of improper **biomedical waste disposal**, prompting global and national reforms to safeguard public health and the environment.

Historical Background

1. **HIV Epidemic (1983)**: Discovery of **HIV** by Luc Montagnier and Robert Gallo emphasized risks from medical waste.
2. **Syringe Tide (1987)**: **U.S. beaches polluted** with medical waste, sparking outrage and regulatory action.
3. **India's Scenario**: The first HIV case (1986) and absence of biomedical waste laws revealed significant management gaps.

Outcomes of Global and National Responses

United States

- **Medical Waste Tracking Act (1988)**: Categorized hospital waste as **hazardous**, introducing systematic handling and disposal protocols.
- **Transparency and Accountability**: Established global benchmarks for **regulatory frameworks**.

India

- **Judicial Interventions**: **Supreme Court case (1996)** highlighted waste mismanagement, prompting nationwide reforms.
- **Biomedical Waste (Management and Handling) Rules, 1998**: Recognized biomedical waste as hazardous and empowered **pollution control boards**.
- **Updates in 2016 and 2020**: Enhanced protocols incorporating **technological advancements**.

Key Features of India's Biomedical Waste Management

1. **Waste Segregation and Color-Coding**: **Color-coded containers** (yellow, red, blue, white) ensure proper handling and identification.
2. **Treatment and Disposal Technologies**:
   o **Incineration**: Infectious and pathological waste.
   o **Autoclaving and Microwaving**: Disinfects sharps and other categories.
   o **Deep Burial**: For rural areas where incineration isn't feasible.
3. **Occupational Safety for Healthcare Workers**: **PPE provision**, regular training, and immunizations against diseases like **Hepatitis B**.
4. **Monitoring and Compliance Mechanisms**: **Pollution Control Boards** oversee waste generation and disposal.
   o **Annual reporting**, surprise inspections, and audits are mandatory.
5. **Common Biomedical Waste Treatment Facilities (CBWTFs)**: Shared facilities reduce costs for smaller healthcare units.

Limitations in India's Biomedical Waste Management

1. **Inadequate Infrastructure**: Rural areas face a shortage of **treatment facilities**, leading to unsafe disposal practices.
2. **Weak Enforcement**: Poor compliance with **segregation and disposal protocols** due to lax monitoring.
3. **Occupational Hazards**: Insufficient **PPE** and training expose workers to health risks.
4. **Low Public Awareness**: Informal waste handlers and the public are unaware of **biomedical waste dangers**.
5. **Overburdened CBWTFs**: Uneven distribution limits waste management efficiency.

Way Forward

1. **Strengthen Rural Infrastructure**:
   o Establish additional **CBWTFs** in underserved areas.
   o **Example**: Tamil Nadu's CBWTF model for small healthcare units.
2. **Enhance Monitoring and Accountability**:
   o Real-time tracking with **barcoding** and **GPS systems**.

- o **Example**: Kerala's **Integrated Biomedical Waste Management Monitoring System (IBMWMS)**.
3. **Improve Capacity Building**:
   - o Regular training, mandatory PPE, and vaccinations for waste handlers.
   - o **Example**: Mumbai municipal hospitals include **safety training** in protocols.
4. **Promote Technological Innovations**:
   - o Use eco-friendly methods like **plasma pyrolysis** and **waste-to-energy plants**.
   - o **Example**: AIIMS New Delhi employs advanced **autoclaving and disinfection** technologies.
5. **Raise Public Awareness**:
   - o Community education campaigns on **biomedical waste risks**.
   - o **Example**: Incorporate biomedical waste awareness into the **Swachh Bharat Abhiyan**.

BIOTECHNOLOGY & HEALTH

International Pathogen Surveillance Network (IPSN)

About IPSN

- **Established by WHO Hub for Pandemic and Epidemic Intelligence** in Berlin in **2021**.
- Aims to provide the world with better **data, analytics, and decision-making tools** to detect and respond to health emergencies.

Key Features

- **Global Network**: Brings together **Pathogen Genomic Surveillance (PGS)** actors to improve access and equity in pathogen monitoring.
- **PGS Defined**: Involves the **monitoring and analysis** of genetic material of pathogens (viruses, bacteria, fungi, parasites).
- **Catalytic Grants**: Supports partners from **low- and middle-income countries** to enhance **capacity in pathogen genomic analysis**.

Ministry of Health and Family Welfare Designates Snakebite as a Notifiable Disease

Relevant Syllabus Section

- **GS Paper II**: Governance, Constitution, Polity – Health-related Policies and Initiatives
- **GS Paper II**: International Relations – Global Health Governance

What are Notifiable Diseases?

1. **Definition**: **Notifiable diseases** are diseases that, by law, must be reported to government authorities when identified.
2. **Responsibility**: The **state government** is responsible for notifying the disease and ensuring proper implementation of reporting procedures.
3. **Purpose**: The collection of data on notifiable diseases allows **authorities** to monitor their spread and provides **early warnings** of potential outbreaks.
4. **Examples**: Other diseases that are typically notified include **AIDS**, **hepatitis**, **dengue**, etc.
5. **WHO's Role**: According to the **WHO's International Health Regulations**, countries are required to report certain diseases to the **World Health Organization (WHO)**.

Snakebite as a Notifiable Disease

1. **Designation**: The Ministry of Health and Family Welfare (MoHFW) has now designated **snakebite cases** and **deaths** as a **notifiable disease**.
2. **National Action Plan**: MoHFW launched the **National Action Plan for Prevention and Control of Snakebite Envenoming (NAPSE)** with the aim of **halving snakebite-related deaths and disabilities** by **2030**.

SCIENCE & TECHNOLOGY

Space Junk and Its Impact: A Growing Concern

Relevant Syllabus Section- GS Paper III: Science and Technology – Awareness in Space Technology and Environmental Impact

Context

The rapid increase in satellite launches, with over **10,000 active satellites** currently in orbit, has led to a rise in **space junk pollution**, posing significant challenges to both space and Earth's environment.

About Space Junk and Its Impact

1. Definition of Space Junk: Space junk includes **defunct satellites**, spent **rocket stages**, and other debris that remain in orbit or disintegrate during re-entry into Earth's atmosphere.

2. Pollutants Released: Burning satellites release pollutants such as:

- o **Aluminum**
- o **Nitrogen oxides**
- o **Carbon monoxide**
- o **Black carbon**
- These pollutants **accumulate in the stratosphere**, leading to long-term environmental consequences.

3. Threat to the Ozone Layer

- **Aluminum oxide** released from space debris acts as a **catalyst for ozone depletion**.
- It counteracts the progress made by the **Montreal Protocol**, which successfully curbed the use of CFCs.

4. Stratospheric Changes

- Pollutants like **copper and other metals** alter atmospheric chemistry.
- These changes can promote **cloud formation**, disrupting the natural balance of the atmosphere.

5. Climate Impacts

- **Soot particles** from re-entry debris absorb solar energy, potentially warming the upper atmosphere.
- This disruption in **climate patterns** can have cascading effects on the Earth's weather systems.

6. Long-Term Ripple Effects

- **Ecosystem Disruption**: Changes in atmospheric chemistry can indirectly harm ecosystems.
- **Weather Patterns**: Alterations in the upper atmosphere may influence global weather systems.
- **Human Health**: Pollutants may eventually impact air quality and human health.

Gamma Rays and the MACE Telescope: Advancing High-Energy Astrophysics

Relevant Syllabus Section- GS Paper III: Science and Technology – Awareness in Space Technology, Astrophysics, and Developments in Science

Context

The **MACE Telescope**, the **world's highest imaging Cherenkov telescope**, was inaugurated on **October 4** in **Hanle, Ladakh**. This milestone will advance research in **cosmic gamma rays** and high-energy astrophysics.

About Gamma Rays

Definition: Gamma rays are the **shortest wavelength** and **highest energy** form of **electromagnetic radiation**.

Sources

- Produced by:
  - **Pulsars**
  - **Supernovae**
  - **Black Holes**
  - **Gamma-Ray Bursts (GRBs)**
  - **Dark Matter Particle Interactions**

Properties

- **Energy**: Exceeding **100,000 eV** (electron volts).
- **Biological Hazard**: Harmful to living cells, used in medical treatments like radiotherapy.
- **Blocked by Earth's Atmosphere**: Gamma rays do not reach Earth's surface and must be detected using specialized instruments.

Detection Mechanism

- **Imaging Atmospheric Cherenkov Telescopes (IACTs)**:
  - Detect gamma rays indirectly by observing **Cherenkov Radiation**.
  - **Cherenkov Radiation**: Faint blue light produced when gamma rays interact with **atmospheric molecules**, resulting in electron-positron particle showers.

About the MACE Project

- **Location:** Situated in **Hanle, Ladakh**, at an altitude of **~4,300 meters**, making it the **world's highest imaging Cherenkov telescope**.
- **Development: Indigenously built** by the **Bhabha Atomic Research Centre (BARC)** in collaboration with **ECIL** and other Indian partners.
- **Objective:** Study **high-energy gamma rays** to understand the universe's most energetic phenomena, such as:

  - **Supernovae**
  - **Black Holes**
  - **Gamma-Ray Bursts (GRBs)**

Technology: Employs **Cherenkov imaging technology** to detect **cosmic rays** and observe high-energy astrophysical events.

Significance

- Enhances India's capabilities in **cosmic-ray research**.
- Positions India as a key player in **multi-messenger astronomy**, integrating data from gamma rays, neutrinos, and gravitational waves.
- Strengthens India's global standing in **high-energy astrophysics research**.

Significance of Studying Gamma Rays

1. **Understanding Cosmic Events:** Provides insights into extreme cosmic phenomena like **supernova explosions** and **black hole behavior**.
2. **Advancing Astrophysics:** Helps decode the physics of **high-energy particles** and their interaction with the universe.
3. **Technological Development:** Drives innovation in detection technologies like **Cherenkov imaging systems**.
4. **Global Collaboration:** Positions India in the international scientific community for **cosmic research** and **space exploration**.

Union Cabinet Approves AIM 2.0: Boosting Innovation and Entrepreneurship

Relevant Syllabus Section

- **GS Paper III**: Science and Technology – Developments in Innovation and Entrepreneurship
- **GS Paper II**: Government Policies and Interventions

Context

The **Union Cabinet** has approved the continuation of the **Atal Innovation Mission (AIM)** under **NITI Aayog** as **AIM 2.0**. This initiative aims to enhance India's **innovation ecosystem** and foster entrepreneurship to meet the growing demands of a **dynamic economy**.

Key Highlights of AIM 2.0

Budget Allocation and Duration

- **Budget**: ₹2,750 crore
- **Duration**: Till **March 31, 2028**

Key Objectives

AIM 2.0 focuses on strengthening the **innovation and entrepreneurship ecosystem** through:

1. **Increasing Inputs (Innovators and Entrepreneurs)**
   - **Language Inclusive Program of Innovation (LIPI)**:
     - Establish **Vernacular Innovation Centers** in scheduled languages within existing incubators.
   - **Frontier Program**:
     - Develop customized innovation templates for **Jammu & Kashmir**, **Ladakh**, **North Eastern States**, and **Aspirational Districts and Blocks**.
2. **Improving Success Rate (Throughput)**
   - **Human Capital Development Program**:
     - Focused on producing innovation professionals such as **managers, teachers, and trainers**.
   - **Deeptech Reactor**:
     - A research sandbox for **commercializing research-based deep-tech startups**.
   - **State Innovation Mission (SIM)**:
     - Support states and UTs under NITI Aayog's **State Support Mission**.
   - **International Innovation Collaborations Program**:
     - Initiatives like **Annual Global Tinkering Olympiad** and bilateral/multilateral engagements with advanced nations.
3. **Improving Output**
   - **Industrial Accelerator Program**:
     - Establish industry accelerators in critical sectors using the **Public Private Partnership (PPP)** model.
   - **Atal Sectoral Innovation Launchpads (ASIL)**:
     - Create platforms akin to **iDEX** (Innovations for Defence Excellence) in central ministries.

About AIM 1.0

Launch Year: Initiated in **2016** to build new innovation infrastructure and strengthen India's **nascent innovation ecosystem**.

Key Components

1. **Atal Tinkering Labs (ATLs)**:
   - Established at the **school level** to foster creativity and innovation among students.
   - Over **10,000 ATLs** are operational across the country.
2. **Atal Incubation Centres (AICs)**:
   - Set up at **universities, institutions, and corporates** to nurture startups.
3. **Other Initiatives**:
   - **Atal Community Innovation Centres (ACICs)**: Focus on underserved areas.
   - **Atal New India Challenge (ANIC)**: Encourages technological solutions for pressing national challenges.

Significance of AIM 2.0

1. **Inclusivity in Innovation**: Focus on **vernacular languages** and **geographically diverse regions** ensures that innovation reaches every corner of the country.
2. **Strengthening Ecosystems**: Enhances collaboration between **industry, academia, and startups** to create scalable solutions.
3. **Boosting Deep-Tech Startups**: Initiatives like **Deeptech Reactor** and **Industrial Accelerators** push India toward becoming a leader in **frontier technologies**.
4. **Global Competitiveness**: International partnerships under AIM 2.0 strengthen India's position as a **global innovation hub**.

5. **Economic Growth**: Facilitates **job creation** and **entrepreneurship**, contributing to India's **self-reliance** and **economic prosperity**.

Challenges

1. **Implementation Gaps**: Ensuring efficient execution across diverse geographies.
2. **Equitable Resource Allocation**: Balancing resources between developed and underserved areas.
3. **Technological Adaptation**: Encouraging MSMEs and startups to adopt cutting-edge technologies.
4. **Monitoring and Evaluation** :Measuring success rates and ensuring accountability in fund utilization.

ISRO's Shukrayaan: India's First Venus Mission

Relevant Syllabus Section- GS Paper III: Science and Technology – Developments in Space Technology, Applications, and Challenges

Context

The Government of India has approved ISRO's **Mission Shukrayaan** (Venus Orbiter Mission, VOM), which aims to study the **atmosphere**, **surface**, and **solar interaction** of Venus. The mission is set to launch in **2028** under the **Department of Space**.

About Venus Orbiter Mission (VOM)

Launch Timeline: Scheduled for **2028** by the **Indian Space Research Organisation (ISRO)**.

Key Objectives

1. **Atmospheric Studies**
   o Examining **dust** in the Venusian atmosphere.
   o Analyzing the **solar X-ray spectrum** near Venus.
   o Studying **Venusian airglow** (light emissions from the atmosphere).
2. **Surface Mapping**
   o Mapping Venus's **surface topography** for insights into its geology and evolution.
3. **Technology Demonstration**
   o Testing **aerobraking**: Utilizing Venus's atmosphere to adjust spacecraft orbit.
   o Advancing **thermal management techniques** in extreme environments.

Payloads on Mission Shukrayaan

- **16 Indian Payloads**: Advanced scientific instruments for studying Venus.
- **Collaborative Payloads**:
   o **VISWAS** and **RAVI**: Indian-international collaborations.
   o **VIRAL**: International payload contributed by France.

Significance of Mission

1. Scientific Exploration

- Enhances understanding of Venus's **atmospheric composition** and dynamics.
- Contributes to knowledge about the **evolution of the solar system**.

2. Climate Change Insights

- Venus's atmosphere, rich in CO_2, mirrors a **runaway greenhouse effect**.
- Studying Venus can offer valuable lessons for tackling **climate change** on Earth.

3. Technological Advancements

- Advances ISRO's capabilities in **deep space exploration**, including:
   o **Aerobraking** techniques.
   o Thermal management in **harsh environments**.

4. Broader Understanding

- Sheds light on Earth's evolution and the dynamics of **atmospheric chemistry**.

Challenges for Mission Shukrayaan

1. **Extreme Conditions:** Venus's surface temperatures can reach **475°C**, and atmospheric pressure is **92 times that of Earth**, posing risks to **spacecraft components**.
2. **Corrosive Atmosphere:** The presence of **sulfuric acid clouds** can corrode components made of **steel** and **titanium**.
3. **Operational Difficulties**

- **Lack of sunlight** reduces energy generation for solar panels.
- Navigating Venus's **harsh terrain** and atmosphere requires advanced engineering solutions.

Global Missions to Venus

Past Missions

- **Mariner 2 (USA, 1962)**: First successful Venus flyby.
- **Venus Express (ESA)**: Focused on atmospheric studies.
- **Magellan (NASA)**: Mapped the surface of Venus.
- **Akatsuki (Japan)**: Focused on atmospheric dynamics.

Future Missions

- **Venus Life Finder Mission** (Rocket Lab and MIT).
- **DAVINCI** and **VERITAS** (NASA).
- **EnVision** (ESA): Focused on subsurface and atmospheric studies.

Biofloc Technology (BFT)

What is BFT?

- A **closed, tank-based fish farming method** that utilizes **beneficial microbes** (flocs) to maintain water quality.

Key Features

1. **Water Quality Maintenance**: **Heterotrophic bacteria** convert organic waste into microbial biomass, which serves as an **additional food source** for fish or shrimp.
2. **Sustainability**: Reduces the need for frequent **water changes** by naturally cleaning the water.

Benefits

- Enhances **aquaculture productivity**.
- Minimizes **environmental impact** by reducing water pollution.
- Cost-effective solution for **sustainable aquaculture practices**.

Recirculating Aquaculture Systems (RAS)

What is RAS?

- A **closed-loop aquaculture technique** that recycles water through advanced filtration systems.

Key Features

1. **Controlled Environment**: Automated culture tanks with **mechanical and biological filtration units** maintain water quality.
2. **Efficient Water Use**: Enables high-density fish farming with minimal water wastage.

Benefits

- Reduces dependency on natural water sources.
- Supports **year-round production** of high-value aquatic species.
- Minimizes **aquaculture's carbon footprint**.

Surface Hydrokinetic Turbine Technology (SHKT)

What is SHKT?

- A renewable energy innovation that generates electricity by harnessing the **kinetic energy of flowing water**, without relying on potential energy.

Key Features

- Operates without **large dams** or reservoirs.
- Utilizes flowing water in **canals** or **hydropower tailrace channels**.

Significance

1. **Cost-Effective**: Scalable and affordable renewable energy solution.
2. **Ease of Installation**: Highly suitable for **remote locations** where power-grid infrastructure is absent.
3. **Sustainability**: Promotes low-impact, clean energy generation.

Nafithromycin: India's First Indigenous Antibiotic

About Nafithromycin

- Launched by the **Ministry of Science & Technology**, developed under the **Biotechnology Industry Partnership Program (BIPP)**.
- Marketed as **"Miqnaf"** by Wolkardt Pharmaceuticals.

Applications

1. Treats **Community-Acquired Bacterial Pneumonia (CABP)** caused by drug-resistant bacteria.
2. Focuses on vulnerable populations, such as **children** and the **elderly**.

Advantages

- **Ten times more effective** than existing antibiotics.
- Provides a **safer**, **faster**, and **better-tolerated** treatment option.
- Tackles **Antimicrobial Resistance (AMR)**, a significant global health challenge.

Indian Chemical Council (ICC) Conferred with 2024 OPCW Hague Award

Relevant Syllabus Section

- **GS Paper II**: International Organizations and Agreements
- **GS Paper III**: Science and Technology – Chemical Safety and Security

Context

The **Organisation for the Prohibition of Chemical Weapons (OPCW)** has awarded the **2024 Hague Award** to the **Indian Chemical Council (ICC)** in recognition of its contributions to **chemical safety** and ensuring compliance with the **Chemical Weapons Convention (CWC)**. This marks the **first time** a chemical industry body has received this prestigious award.

About the Hague Award

1. **Established**: **2014**, to honor contributions aligned with the **Chemical Weapons Convention (CWC)**.
2. **Purpose**: Recognizes outstanding work in advancing **chemical safety**, security, and the goals of the **CWC**.

About the Chemical Weapons Convention (CWC)

1. **Genesis**: Came into force in **1997**; has **193 States Parties**, including **India** as an original signatory.
2. **Aim**: **Eliminate weapons of mass destruction (WMDs)** by prohibiting:
   - **Development**, **production**, **acquisition**, **stockpiling**, **transfer**, or **use** of chemical weapons.
3. **Implementation Body**: The **Organisation for the Prohibition of Chemical Weapons (OPCW)**, headquartered in **The Hague**, Netherlands.
4. **Global Recognition**: OPCW was awarded the **Nobel Peace Prize (2013)** for its efforts in chemical disarmament.
5. **Chemical Weapons**: Defined as **toxic chemicals** intended to cause harm or death, along with equipment specifically designed to weaponize them.

Implementation of CWC in India

1. **National Authority Chemical Weapons Convention (NACWC)**:
   - **Responsible Body**: Implements the Convention in India.
   - **Established**: Under the **Chemical Weapons Convention Act, 2000**.
2. **Key Functions**:
   - Monitors compliance with the CWC.
   - Ensures that India's chemical industries operate within the CWC framework.

About Indian Chemical Council (ICC)

1. **Overview**: The **apex national body** representing all branches of India's **chemical industry**.
2. **Genesis**: Established in **1938** to drive growth and support the **chemical sector**.
3. **Industry Representation**: Represents **over 80%** of India's **$220 billion chemical industry**, including:
   - Organic/Inorganic Chemicals
   - Plastics
   - Petrochemicals
4. **Contributions Recognized by OPCW**:
   - Promoted **chemical safety and security**.
   - Ensured compliance with the **CWC** provisions.

Significance of the Award

1. **Global Recognition**: Highlights **India's leadership** in chemical safety and disarmament.
2. **Industry's Role**: Demonstrates the importance of private sector participation in advancing **global safety norms**.
3. **Boost for Indian Chemical Sector**: Enhances India's position in the **global chemical industry**.
4. **Alignment with Sustainable Goals**: Promotes responsible and sustainable use of chemicals, advancing **peaceful applications**.

India's Performance in Network Readiness Index (NRI) 2024

India's Ranking

- **Rank**: India climbed **11 positions**, securing **49th rank** in 2024, compared to **60th rank** in 2023.
- **Score**: Improved from **49.93** in 2023 to **53.63** in 2024.

Key Highlights of India's Performance

1. **Top Rankings**:
   - **1st**: AI Scientific Publications, AI Talent Concentration, ICT Services Exports.
   - **2nd**: FTTH/Building Internet Subscriptions, Mobile Broadband Internet Traffic, International Internet Bandwidth.
   - **3rd**: Domestic Market Scale.
   - **4th**: Annual Investment in Telecommunication Services.
2. **Income Group Performance**:
   - Ranked **2nd** among **lower-middle-income countries**, following Vietnam.

About the Network Readiness Index (NRI)

1. **Purpose**: Assesses the **network-based readiness** of **133 economies** to leverage **Information and Communication Technologies (ICT)** for future preparedness.
2. **Pillars of Assessment**: **Technology**, **People**, **Governance**, and **Impact** (54 variables).
3. **Publication**: Jointly published by the **Portulans Institute** and **Saïd Business School**, University of Oxford.

India's Digital Advancement

1. **Telecommunication Infrastructure**:
   - Tele-density increased from **75.2% to 84.69%** over the past decade.
   - Wireless connections reached **1.19 billion**.
2. **Broadband Access**:
   - The **'Digital India' initiative** expanded broadband access to rural areas.
   - Internet subscribers rose from **251 million to 944 million**, with a significant increase in wireless internet usage.
3. **5G Services**: Launched in **2022**, improving India's global mobile broadband speed ranking from **118 to 15**.
4. **Future Vision**: **'Bharat 6G Vision'** aims to position India as a leader in future telecom technologies.

Significance

- Highlights India's **technological innovation** and **digital transformation**.
- Strengthens India's position in the global **digital economy**.
- Reflects the success of government initiatives in boosting **digital infrastructure** and connectivity.

Surge in Unified Payments Interface (UPI) Fraud Cases in FY24

Relevant Syllabus Section

- **GS Paper II**: Government Policies and Interventions
- **GS Paper III**: Technology – Cybersecurity and Digital Payments

Key Findings

- **Reported Losses**: Since 2022-23, UPI-related frauds resulted in a cumulative loss of approximately ₹**2,100 crore** across **2.7 million incidents**.
- **UPI Growth**:
  - In FY24, UPI processed **131.12 billion transactions** valued at ₹**200 trillion**, with over **400 million users**.
  - Financial frauds increased by **166%** in 2023-24 compared to 2022-23 (RBI report).

Types of UPI Frauds

1. **Phishing Attacks**: Cyber attackers send **phishing emails** or messages to deceive users into sharing sensitive information.
2. **Malware Attacks**: Smartphones are infected with **malicious software**, compromising UPI transactions.
3. **Social Engineering Fraud**: Exploiting users' trust through **fear or urgency** to extract confidential details.
4. **Vishing (Voice Phishing)**: Fraudsters impersonate **bank officials** or **UPI service providers** via fake calls.

Challenges in Digital Transactions

1. **Cybersecurity Threats**: Digital financial frauds amounted to ₹**1.25 lakh crore** over the last three years (Indian Cybercrime Coordination Centre).
2. **Third-Party Risks**: Vulnerabilities arise from **dominant internet platforms** or **digital banking solution providers**.
3. **Digital Illiteracy**: Only **13% of rural** and **37.1% of urban** populations are digitally literate.
4. **Infrastructure Issues**: Limited **digital infrastructure** and **interoperability challenges**.

Initiatives to Prevent Cyber Frauds

1. **Indian Cybercrime Coordination Centre (I4C)**: Established under **MHA** to combat cybercrime.
2. **CERT-In**: **National nodal agency** for responding to computer security incidents.

3. **PMGDISHA (Pradhan Mantri Gramin Digital Saksharta Abhiyan)**: Promotes **digital literacy** in rural India.
4. **Cyber Swachhta Kendra**: Focuses on detecting **botnet infections** and ensuring **cyber hygiene**.

Way Forward

1. **Strengthen Cybersecurity Framework**: Develop robust measures for **user authentication** and **transaction security**.
2. **Public Awareness Campaigns**: Educate users about identifying and preventing **phishing** and **social engineering attacks**.
3. **Digital Literacy Initiatives**: Expand programs like **PMGDISHA** to enhance digital skills in **rural areas**.
4. **Stronger Regulatory Oversight**: Enforce stricter **compliance norms** for third-party platforms and payment service providers.

International Atomic Energy Agency (IAEA) Highlights Role of Nuclear Techniques

Relevant Syllabus Section

- **GS Paper III**: Science and Technology – Innovations in Agriculture, Energy, Health, and Environment
- **GS Paper II**: International Relations – Role of International Organizations

Key Applications of Nuclear Techniques in Different Spheres

1. **Medical**:
   - **X-ray diagnostic tools**: Crucial for the **timely detection** and treatment of conditions like **breast tumours**.
   - **Radioactive iodine (I-131)**: Used to treat **thyroid cancer** and other thyroid-related conditions.
2. **Energy**: **Nuclear energy**: Produces approximately **10% of the world's electricity**, according to the **International Energy Agency (IEA)**.
3. **Agriculture**:
   - **Fallout Radionuclide (FRN) Technique**: Measures **soil radionuclide concentrations** to analyze **erosion patterns**.
   - **Radioimmunoassay (RIA) technology**: Detects **hormone levels** in animals, enabling precise timing for **artificial insemination**.
4. **Environment**:
   - **Isotope hydrology**: Uses **stable and radioactive isotopes** to track the movement of **water** in the **hydrological cycle**.
   - **Monitoring extreme weather events**: Isotopic techniques aid in studying and predicting weather patterns.
5. **Industry**: **Tracers in industrial equipment**: Used in costly industrial systems to gather data that helps extend the **operative life** of equipment.
6. **Other Areas**:
   - **Food Safety**: **Food irradiation** involves exposing food to **gamma rays** to eliminate bacteria and extend shelf life.
   - **Radioisotope Thermal Generators (RTGs)**: Power devices used in **space missions**.

Key Global and National Initiatives to Promote Nuclear Techniques

1. **Global Initiatives**:
   - **Atoms4Food**: Launched by **IAEA and FAO**, this initiative supports countries in utilizing nuclear techniques to **enhance agricultural productivity** and **reduce food losses**.
   - **International Thermonuclear Experimental Reactor (ITER)**: Under construction in **France**, this project will be the world's largest **Tokamak device** to test magnetic confinement and produce **fusion energy**.
2. **India's Initiatives**:
   - **Pradhan Mantri Kisan SAMPADA Yojana (PMKSY)**: Provides **multiproduct food irradiation units** to promote **food safety** and agricultural productivity.
   - **Bhabha Atomic Research Centre (BARC)**: Develops **high-yielding seed varieties** by inducing mutations using **Gamma radiation**.

India's Astronauts Advance Training for Axiom Mission 4 to the International Space Station

Relevant Syllabus Section: GS Paper III: Science and Technology – Space Technology

Key Developments:

- **Mission Overview**: The Axiom Mission 4 (Ax-4) is a private astronaut mission to the International Space Station (ISS), coordinated by NASA and Axiom Space. It is set to launch aboard a SpaceX Falcon 9 rocket and Crew Dragon capsule. This mission marks a significant collaboration between India and the United States in space exploration.
- **Indian Astronauts' Selection**: In July 2024, the Indian Space Research Organisation (ISRO) selected two of its trained Gaganyaan astronauts for the Ax-4 mission:
    - **Group Captain Shubhanshu Shukla** (Prime)
    - **Group Captain Prasanth Balakrishnan Nair** (Backup)
- **Training Milestones**:
    - **August 2024**: The selected astronauts commenced their training at NASA's Johnson Space Center in Houston, Texas.
    - **November 2024**: They successfully completed the initial phase of their training, which included familiarization with ISS modules, spacecraft systems, and emergency preparedness protocols.
- **Training Objectives**:
    - **Spacecraft Systems**: Understanding the operational aspects of the Crew Dragon capsule.
    - **Emergency Preparedness**: Training to handle potential in-space emergencies.
    - **Scientific Research**: Preparing for experiments and technology demonstrations aboard the ISS.
- **Significance**:
    - This mission represents the first ISRO-NASA collaboration for a crewed spaceflight to the ISS.
    - The experience gained will be invaluable for India's Gaganyaan program, which aims to send Indian astronauts to space.
- **Future Prospects**:
    - The Ax-4 mission is expected to launch from NASA's Kennedy Space Center in Florida.
    - The knowledge and experience gained from this mission will be crucial for future space exploration efforts, including India's Gaganyaan mission.

WELFARE SCHEMES AND POLICIES

One Nation One Subscription (ONOS): Transforming Access to Research in India

Relevant Syllabus Section

- **GS Paper II**: Governance – Government Policies and Interventions for Development in Education and R&D
- **GS Paper III**: Science and Technology – Developments and Promotion of Scientific Research

Context

The **Union Cabinet** has approved the **One Nation One Subscription (ONOS)** scheme, aiming to provide **universal access** to international scholarly research and journals. This aligns with the government's vision of **Atmanirbhar Bharat** and **Viksit Bharat@2047**, fostering a culture of **research and development** in India.

About One Nation One Subscription (ONOS)

- **Ministry Involved:** *Department of Higher Education, Ministry of Education.*
- **Scheme Type:** *Central Sector Scheme with a funding allocation of ₹6,000 crore for the period 2025–2027.*
- **Aim:** *To provide access to* **high-quality international research journals** *for* **government higher education institutions (HEIs)** *and* **central government R&D institutions**.

Key Features

1. **Wide Coverage**
    - Includes **30 major international publishers** and nearly **13,000 e-journals**.
    - Offers access to **6,300 government HEIs and R&D institutions**, benefiting **8 crore students, faculty, and researchers**.
2. **Digital Access:** Entire process managed digitally through **INFLIBNET** (Information and Library Network Centre) under the **UGC**.
3. **Inclusive Research Support:** Promotes **interdisciplinary** and **core research**, particularly in **tier-2 and tier-3 cities**.
4. **Policy Alignment:** Supports the goals of **NEP 2020** and is backed by the **Anusandhan National Research Foundation (ANRF)** to strengthen research infrastructure.

Significance of ONOS

- **Boosting Research Capabilities:** Encourages **accessibility** to global research resources for students, educators, and researchers, fostering innovation.
- **Reducing Disparities:** Brings **equal opportunities** for researchers in rural and remote areas, bridging the gap between tier-1 and tier-2/3 institutions.
- **Enhanced Knowledge Ecosystem:** Builds a **robust research and development culture**, essential for achieving the goals of **Viksit Bharat@2047**.
- **Global Competitiveness:** Positions India as a **knowledge superpower**, empowering institutions to compete globally.
- **Cost Efficiency:** Eliminates *duplication of subscriptions by individual institutions, optimizing public spending on research.*

Challenges and Limitations

1. **Implementation Gaps:** Ensuring **timely digital access** and seamless integration for all institutions.
2. **Technological Readiness:** Many tier-2 and tier-3 institutions lack **adequate infrastructure** to utilize digital resources fully.
3. **Monitoring and Evaluation:** Need for robust **monitoring mechanisms** to assess the scheme's impact on research output.
4. **Overdependence on External Sources:** Limited domestic repositories of research content may lead to continued reliance on international sources.

Way Forward

1. **Capacity Building:** Strengthen digital infrastructure, particularly in **rural and remote institutions**.
2. **Encouraging Indigenous Research:** Develop a parallel system to promote **Indian research publications** and **open-access platforms**.
3. **Periodic Review:** Regular assessment of **usage, efficiency, and impact** to ensure optimization of resources.
4. **Awareness and Training:** Conduct workshops *for researchers and students to maximize the benefits of ONOS.*

PM E-DRIVE Scheme (Second Phase): Accelerating India's EV Transition

Relevant Syllabus Section

- **GS Paper III**: Infrastructure – Energy, Ports, Roads, Airports, Railways, etc.
- **GS Paper II**: Government Policies and Interventions

IQRA
Wisdom leads to success

Context

The Union Ministry of Heavy Industries has notified modifications in the **PM Electric Drive Revolution in Innovative Vehicle Enhancement (PM EDRIVE) Scheme**, introducing **subsidy benefits for L5 category electric three-wheelers**as part of its second phase.

Key Highlights of the Notification

1. Incentive Per Vehicle

- **April 1, 2024 – November 7, 2024**: **₹5,000/kWh** (capped at ₹50,000 per vehicle).
- **November 8, 2024 – March 31, 2026**: **₹2,500/kWh** (capped at ₹25,000 per vehicle).
- **Maximum ex-factory price** to avail the incentive: **₹5 lakh**.

2. Fund Allocation

- Total fund allocated: **₹715 crore**.

About PM E-DRIVE Scheme

- **Objective:** Expedite the adoption of **Electric Vehicles (EVs)** by:
    - Providing **upfront incentives** for purchase.
    - Facilitating the establishment of **charging infrastructure**.

- **Time Period- 2024-26**.
- **Nodal Ministry- Union Ministry of Heavy Industries (MHI)**.

Targets Under PM E-DRIVE Scheme

1. **Support for EV Categories**: Electric **2-wheelers (e-2Ws)**, **3-wheelers (e-3Ws)**, and **buses (e-buses)**.
2. **Infrastructure Development**: Installation of **fast chargers** for electric **4-wheelers (e-4Ws)**, **buses**, and **e-2W/3Ws**.

Components of PM E-DRIVE Scheme

1. Subsidies: Demand incentives for: **e-2Ws**, **e-3Ws**, **e-ambulances**, **e-trucks**, and **other emerging EV categories**.

2. Grants

- For creating **capital assets**, including:
    - **E-buses**.
    - **Charging stations** network.
    - Upgrading **testing agencies** under MHI.

3. Scheme Administration

- Activities include:
    - **Information, Education & Communication (IEC)** campaigns.
    - **Project Management Agency (PMA)** fees.

Significance of the Second Phase

1. **Boosts EV Adoption:** Incentivizes **affordable electric three-wheelers**, enhancing penetration in **last-mile connectivity** and commercial use.
2. **Enhances Infrastructure:** Expands the **charging network**, addressing one of the critical barriers to EV adoption.
3. **Supports Sustainable Mobility:** Aligns with India's commitments under the **Paris Agreement** and promotes a **green energy economy**.
4. **Economic Impact:** Encourages **local manufacturing**, contributing to the **Make in India initiative** and **job creation**.

Challenges

1. **Charging Infrastructure**: Need for rapid deployment to meet increasing demand.
2. **Awareness and Accessibility**: Ensuring that incentives reach **small businesses** and **rural areas**.
3. **Cost of Batteries**: Addressing the **high cost of EV batteries**, which limits affordability.

Nationwide Implementation of E-Daakhil Portal

About E-Daakhil Portal

- Launched by the **National Consumer Dispute Redressal Commission (NCDRC)** in 2020.
- NCDRC is a quasi-judicial commission established under the **Consumer Protection Act of 1986**.
- An **online platform** to simplify the consumer grievance process by enabling complaints and case tracking without physical presence.
- Promotes **consumer rights** and ensures **timely justice**.

Key Features

1. **Ease of Use**:
    - Registration via **OTP-based authentication** using mobile or email.
    - User-friendly platform accessible across the country.
2. **Paperless Process**:
    - Online submission of complaints and fees.
    - Case progress tracking without the need to visit consumer forums physically.

3. **Wide Accessibility**:
   - Operational in all **states and union territories**, ensuring outreach to urban and rural areas.

Impact

- **User Base**: Over **2.8 lakh users** registered.
- **Cases Filed**: More than **1.98 lakh cases** filed.
- **Disposals**: Approximately **38,453 cases** resolved efficiently.

Future Developments

- **e-Jagriti Initiative**:
  - A new platform in development to streamline case filing, tracking, and communication among stakeholders.
  - Aims to reduce delays and ensure **faster dispute resolution**.

Significance

- Empowers consumers with **digital tools** for grievance redressal.
- Ensures **efficient and timely justice**, strengthening the consumer protection framework.
- Facilitates **transparent and accountable dispute resolution**, improving trust in consumer forums.

Centre Approves ₹3,296 Crore Under SASCI Scheme to Boost Tourist Infrastructure

Relevant Syllabus Section

- **GS Paper II**: Government Policies and Interventions for Growth and Development
- **GS Paper III**: Economic Development – Tourism, Infrastructure, and Employment

About the SASCI Scheme

1. **Objective**: The **Special Assistance to States/Union Territories for Capital Investment (SASCI)** scheme aims to provide **long-term interest-free loans** to States for the development of **iconic tourist centers** to meet **global standards**.
2. **Loan Details**:
   - The loans will be provided for a **50-year period** to help in the **branding** and **marketing** of tourism centers on a global scale.
   - The initiative also focuses on the **local economy growth** and **employment generation** through **sustainable tourism**.
3. **Selected Projects**: **40 projects** across **23 States** have been identified for development under the SASCI scheme.

India's Tourism Sector

1. **Global Ranking**: India ranks **39th** among **119 countries** in the **Travel and Tourism Development Index (TTDI)**, according to the **2024 report** by the **World Economic Forum (WEF)**.
2. **Foreign Tourist Arrivals**: India recorded **9.52 million** Foreign Tourist Arrivals in **2023**, a **47.9% increase** from 2022.
3. **Economic Contribution**:
   - Tourism contributed **5%** to India's **Gross Domestic Product (GDP)** in **2022-23**.
   - **76.17 million** direct and indirect jobs were created due to tourism in the same period.
4. **Foreign Exchange Earnings**: India earned over **₹2.3 lakh crore** through tourism in **2023**.
5. **Future Outlook**: By **2028**, India's **tourism and hospitality** industry is projected to generate **over $59 billion** in revenue.

Initiatives to Promote Tourism in India

1. **National Heritage City Development and Augmentation Yojana (HRIDAY)**: Launched in **2015**, HRIDAY aims to **preserve and rejuvenate** India's **cultural heritage** in various cities.
2. **National Mission on Pilgrimage Rejuvenation and Spiritual, Heritage Augmentation Drive (PRASHAD)**: This initiative focuses on integrating **pilgrimage destinations** in a **planned and sustainable manner** to enhance the **religious tourism experience**.
3. **Dekho Apna Desh Initiative (2020)**: Aimed at **promoting domestic tourism**, the initiative encourages **Indian citizens** to explore their own country.