

WEEKLY UPDATES

DATE : 26 Aug- 01 Sept

POLITY & GOVERNANCE

Himachal Pradesh Assembly Passes Bill to Raise Marriage Age for Women to 21 Years

Overview

- **Prohibition of Child Marriage (Himachal Pradesh Amendment Bill, 2024):**
 - Proposes to amend the **Prohibition of Child Marriage Act, 2006** and related state laws to raise the minimum marriage age for women from **18 to 21 years**.
 - Follows the lapse of a similar **Central Bill** — the **Prohibition of Child Marriage (Amendment) Bill, 2021**— in the Lok Sabha, which aimed to create uniformity in the legal marriage age for men and women.
 - The 2021 Bill was based on the recommendations of the **Jaya Jaitley Committee**.

Benefits of Raising the Marriage Age for Women

1. **Ensuring Gender Equality:** Aligns with the **Constitutional mandate** of gender equality by matching the marriage age of **21 years for both men and women**.
2. **Reproductive Health:** Improves the **physical and psychological health** of women, reduces **maternal mortality rates**, and decreases **teenage pregnancies**.
3. **Women Empowerment:** Leads to better outcomes in **education** and **employment** for women.
4. **Supporting Sustainable Development Goals (SDGs):** Contributes to achieving **SDG 5 (Gender Equality)** and **SDG 10 (Reduced Inequalities)**.

Concerns Regarding the Amendment

1. **Illegal Marriages:** Potential increase in **non-institutional marriages** among certain segments of the population.
2. **Impact on Marginalized Communities:** May adversely affect communities where **marriage at a lower age** is more prevalent.
3. **Misuse by Parents:** Could be used by parents to **control daughters' choices**, leading to increased **meta-son preference** and potential rise in **female foeticide**.
4. **Social and Cultural Issues:** Does not address the **underlying patriarchal norms** and cultural practices that contribute to early marriage.

Additional Steps for Addressing Early Marriage

- **Formalize Sex Education:** Incorporate **sex education** into the school curriculum to promote awareness.

- **Specific Programs for Girls' Health:** Develop targeted programs to improve **health and nutrition** for girls.

Historical Perspectives on Age of Marriage in India

1. **Child Marriage Restraint Act, 1929 (Sarda Act):** Set the minimum marriage age at **14 years for girls and 18 years for boys**.
2. **Prohibition of Child Marriage Act, 2006:** Replaced the **1929 Act**, raising the marriage age to **18 years for brides and 21 years for grooms**, and prohibiting child marriages.

Sanction for Prosecuting a Public Servant: Legal Framework and Recent Developments

- Recently, the **Governor of Karnataka** granted approval to investigate the **Chief Minister** for prosecution.

Sanction for Prosecution

- **Purpose:** A sanction is required before prosecuting a public servant to protect them from **malicious or frivolous prosecution**.
- **Competent Authority for Granting Sanction:**
 - **State or Central Government** as per the **Criminal Procedure Code (CrPC)**.
 - The authority empowered to **remove the public servant** as per the **Prevention of Corruption Act (PCA), 1988**.

Legal Framework

1. **Section 218 of the Bharatiya Nagarik Suraksha Sanhita (BNSS):**
 - Replaces the earlier provisions under **Section 197 of the CrPC** for sanctioning the prosecution of public servants.
2. **Section 17A (2018 Amendment) and Section 19 of the Prevention of Corruption Act, 1988:**
 - **Section 17A:** Introduced in the 2018 amendment, mandates prior sanction for investigation into offences committed by public servants in the discharge of official duties.
 - **Section 19:** Details the procedure for granting sanction for prosecuting public servants under the PCA, 1988.

Australia Grants Workers 'Right to Disconnect' Outside Work Hours

- **Australia** has introduced a new law granting millions of workers the legal **right to disconnect** from their jobs outside of work hours unless contact is deemed "unreasonable." This legislation aims to promote **work-life balance** and is similar to laws enacted in **Europe** and **Latin America**, allowing workers to ignore after-hours communications from employers.

Advantages of the 'Right to Disconnect'

1. **Promotes Work-Life Balance:** Ensures employees have personal time without work interruptions.
2. **Reduces Employee Burnout and Stress:**
 - Minimizes constant work-related stress and helps prevent burnout.
3. **Enhances Mental Well-being:** Protects employees' mental health by providing a clear separation between work and personal life.
4. **Increases Productivity:** Encourages greater productivity during work hours by ensuring employees are well-rested and less stressed.

5. **Fosters Fairness and Respect for Personal Time:** Cultivates a culture of respect for employees' personal time and boundaries.

Issues Concerning the 'Right to Disconnect'

1. **Ambiguity Over "Reasonable" Contact:**
 - Lack of clarity on what qualifies as “reasonable” contact outside work hours.
2. **Challenges for Industries Requiring Urgent Communication:**
 - Certain sectors, such as healthcare or emergency services, may face difficulties where urgent after-hours contact is necessary.
3. **Uncertainty in Employer-Employee Interactions:**
 - Potential confusion over appropriate communication expectations outside regular work hours.
4. **Difficulties in Enforcement and Regulation:**
 - Challenges in enforcing and regulating the policy across varied job roles and industries.
5. **Free Market Concerns:**
 - Some believe work demands should be regulated by market forces, not government intervention.
6. **Challenges for Startups:**
 - Startups often rely on flexible, long working hours, and such laws could limit their growth by restricting flexibility.

SC/ST Act: No Bar on Anticipatory Bail Unless Prima Facie Offence Established

Key Highlights of the Supreme Court Judgment (August 2024)

- A 2-Judge Bench of the Supreme Court held that **Section 18 of the SC/ST (Prevention of Atrocities) Act, 1989**, which bars anticipatory bail, does not apply unless a **prima facie case** under the Act is established against the accused.
- **Section 18** specifies that the provisions of **Section 438** of the CrPC (related to anticipatory bail) shall not apply to offences under this Act.

Observations of the Court

- **Mere insult** of an SC/ST member does not constitute an offence under the SC/ST Act unless the insult is **intentional and aimed at humiliation** based on **caste identity**.
- Only insults or intimidations caused by entrenched social norms, such as **untouchability or caste superiority**, qualify as offences envisioned by the Act.

Anticipatory Bail

- It is a direction by the **High Court** or the **Court of Session** to release a person on bail when there is apprehension of arrest for a **non-bailable offence**.
- **Section 438** of the Code of Criminal Procedure (CrPC) contains provisions for anticipatory bail.
- Under the reformed criminal laws, **Section 482 of the Bhartiya Nagarik Suraksha Sanhita (2023)** provides relevant provisions for anticipatory bail.

SC and ST (Prevention of Atrocities) Act, 1989

- **Objective:** To prevent offences against members of SCs/STs, establish Special Courts for trial, and provide relief and rehabilitation for victims.

Salient Features of the Act

- The accused **must not be a member** of the SC/ST community.
- **Offences include:**
 - Employing members of SC/ST for **manual scavenging**.
 - Dedicating SC/ST women to a deity, temple, etc., as **Devadasis**.
 - Denying customary **rite of passage** to places of public resort.
- Provides for **punishment** of public servants (not belonging to SC/ST) who neglect duties under the Act.

NGT Imposes ₹1,000 Crore Fine on Punjab Government for Poor Waste Management

Context

- The **National Green Tribunal (NGT)** has imposed a **fine of ₹1,000 crore** on the **Punjab Government** due to its failure to manage **legacy waste** and untreated sewage. The fine is to be deposited with the **Central Pollution Control Board (CPCB)**.

Present Framework for Municipal Solid Waste (MSW) Management

1. **Legislative Framework:**
 - The **Environment (Protection) Act, 1986** empowers the **Central Government** to establish authorities to prevent environmental pollution in all its forms.
 - **Municipal Solid Waste (MSW) management** is primarily the responsibility of **Urban Local Bodies (ULBs)**.
2. **Solid Waste Management (SWM) Rules, 2016:**
 - Requires ULBs to establish systems for **waste collection, transportation, processing, and disposal**.

Challenges in Waste Management

1. **Public Attitudes:**
 - Poor public awareness and attitudes toward waste management.
 - Lack of proper **segregation of waste at the source**.
2. **Planning and Professional Capacity:**
 - Absence of strategic MSW plans.
 - Limited availability of **qualified waste management professionals**.
3. **Financial Constraints:**
 - Insufficient budget allocation with **Municipal Authorities**.
4. **Data Deficiency:**
 - Lack of comprehensive data on **waste generation**, including composition and quantities in cities.

Way Forward

1. **Circular Economy:** Utilize waste as resources through **increased value extraction**, recycling, recovery, and reuse.
2. **Regulatory Authority:** Establish a **strong and independent authority** to regulate waste management.
3. **Long-Term Planning:** Develop **long-term waste management plans** involving the **private sector and NGOs** as key stakeholders.

About the National Green Tribunal (NGT)

1. **Genesis:** A statutory body established under the **NGT Act, 2010**.
2. **Mandate:** A specialized judicial body with expertise for adjudicating **environmental cases** in India.
3. **Functions:**
 - Provides **effective and expeditious remedies** for cases related to environmental protection, conservation of forests, natural resources, and enforcement of environmental rights.
 - Operates based on the **principles of natural justice**, with decisions being legally binding.

Justice Hema Committee Report on Sexual Harassment of Women in Malayalam Cinema

- The **Justice Hema Committee Report** was formulated under the direction of the **Kerala Government** to address issues related to sexual harassment of women in the **Malayalam cinema industry**.
- The report highlighted the existence of **‘power groups,’ couch casting**, and a lack of essential facilities such as **toilets, changing rooms, and safe transportation**.
- The findings of the committee have rekindled the **#MeToo Movement** and brought attention to the issue of **sexual harassment of women at the workplace**.

Reasons for Sexual Harassment at the Workplace

1. **Male Domination:**
 - Sexual demands made for career advancement into higher positions.
2. **Online Harassment or Cyberattacks:**
 - Trolling and threats with **vulgar pictures, videos, and abusive content**.
3. **Legal Non-compliance:**
 - Absence or inefficiency of the **Internal Complaint Committee (ICC)**, which is mandated under the **POSH Act, 2013**.
 - **ICC** is mandatory for all establishments employing **10 or more persons**, with a majority of women members.

Major Recommendations by the Justice Hema Committee

1. **Characterization of Women in Cinema:** Portraying women in **powerful roles** such as **Civil Servants, Ambassadors, and Leaders**.
2. **Gender Awareness Training Programs:** To challenge the **monopoly of power** held by men and to promote the projection of women as **equal to men**.
3. **Redefining Masculinity and Femininity:**
 - Masculinity should be equated with **justice, equality, and compassion** rather than violence and aggression.
 - Femininity should be separated from notions of **passiveness and silent suffering**.
4. **Creation of a Welfare Fund:** To support women during job breaks due to **childbearing, health issues, or other responsibilities**.

Other Measures to Address Sexual Harassment at Workplace

1. **Indecent Representation of Women Act, 1987:** Law aimed at prohibiting the indecent representation of women in media.

2. **Vishakha and Others vs. State of Rajasthan (1997)**: The Supreme Court established the duty of employers to **prevent acts of sexual harassment**.
3. **Bharatiya Nyaya Sanhita, 2023**: Chapter V addresses **sexual offenses against women and children**.
4. **Government Initiatives**: Introduction of schemes such as **SHe-Box** (online complaint management), **Working Women Hostels**, and other support systems.

Supreme Court Halts Ayush Ministry's Notification Citing Misleading Advertisement Concerns

Background

- The **Supreme Court** has temporarily suspended a notification from the **Ayush Ministry** that omitted **Rule 170 of the Drugs and Cosmetics Rules, 1945**. This rule prevents misleading advertisements of **Ayurvedic, Siddha, and Unani medicines**.
- The stay is part of the case **Indian Medical Association & Anr v. Union of India and Ors (2022)**.
- In **May 2024**, the Supreme Court issued directives to curb misleading advertisements, including requirements for **self-declaration by advertisers**.

What is Misleading Advertising?

- **Definition**: Refers to advertisements that give consumers a **false or inaccurate understanding** of a product or service.

Key Issues with Misleading Advertisements

- **Violation of Consumer Rights**:
 - Undermines the consumer's right to **accurate information** and **informed choice**.
- **Health Risks**:
 - Poses potential health dangers, especially with misleading claims about **medicines**.
- **Ethical Concerns**:
 - **Profit vs. Effectiveness**: Advertisements often prioritize profits over **ethical standards** or actual effectiveness.
 - **Lack of Honesty**: Involves exaggerating benefits, minimizing risks, and presenting **unsupported claims**.
 - **Influence on Society**: Impacts public perception negatively over time.
 - **Trust Issues**: Misleads consumers, impacting their ability to make **informed decisions**.

Suggested Solutions

- **Promote Full Disclosures**: Encourage transparency through **self-declaration** by advertisers.
- **Strengthen Regulatory Measures**: Enhance **regulatory oversight** and enforce stricter laws against misleading advertisements.

Government Initiatives Against Misleading Ads

- **CCPA Guidelines, 2022**: Issued by the **Central Consumer Protection Authority (CCPA)** to prevent misleading advertisements and endorsements.
- **GAMA Portal**: **Grievances Against Misleading Advertisements (GAMA)** portal by the **Department of Consumer Affairs** for online complaints.

- **Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954:** Prohibits ads for remedies with alleged **magical properties**.

CBDT Notifies Dispute Resolution Scheme (e-DRS) to Reduce Litigation

Overview of e-Dispute Resolution Scheme (e-DRS)

- The **Central Board of Direct Taxes (CBDT)** notified the **e-Dispute Resolution Scheme (e-DRS), 2022** to reduce litigation and provide relief to eligible taxpayers.
- **Application Deadline:**
 - The e-DRS application must be filed within **one month** from the date of receipt of the specified order.

Eligibility Criteria for e-DRS

- Taxpayers can opt for e-Dispute Resolution under the following conditions:
 - The aggregate sum of **variations proposed or made** does not exceed **Rs. 10 lakh**.
 - The **returned income** for the relevant assessment year does not exceed **Rs. 50 lakh**.
- The scheme also provides for the constitution of **Dispute Resolution Committees (DRC)** to handle cases.



IQRA

Wisdom leads to success

INTERNATIONAL RELATIONS

Pacific Islands Forum Endorses Australia-Funded Pacific Policing Initiative (PPI)

Overview of the Pacific Policing Initiative (PPI)

- The **Pacific Policing Initiative (PPI)**, funded by Australia, is designed to enhance the **law enforcement capabilities** of Pacific nations.
- Aims to ensure that these nations are better equipped to address **law and order challenges** and internal security threats.
- **Alignment:** PPI aligns with the **Pacific Islands Forum's 2050 Strategy for the Blue Pacific Continent**.
- **Strategic Perspective:** Analysts view this initiative as a move to **limit China's influence** over Pacific security.

About the Pacific Islands Forum (PIF)

- **Definition:** The region's premier **political and economic policy organization** that promotes a vision of **peace, harmony, and prosperity** for the Pacific.
- **Founded:** In **1971**.
- **Members:** Consists of **18 member countries** across the Pacific Ocean.

Issues Faced by Pacific Countries

1. **Climate Change:**
 - PIF members are among the worst affected by **sea level rise, ocean warming, and ocean acidification**.
2. **Geopolitical Power Struggle:**
 - Ongoing competition for influence over the region between **China and the US**.
3. **International Drug Trafficking:**
 - The Pacific Islands are used as transit points on **transnational narcotics smuggling routes** from Asia and the Americas.

India's Engagement with the Pacific Region

- **Significance:**
 - The **Pacific Islands** are crucial for India's **energy security** and **maritime interests**. They align with India's strategy to ensure a **free, open, and inclusive Indo-Pacific region**.
- **Initiatives:**
 - **Indo-Pacific Oceans Initiative (2019)**.
 - **Forum for India-Pacific Islands Cooperation (2014)**.

Axis of Resistance: Iran's Coalition Against Israel

Overview

- The **Axis of Resistance** is a coalition of **autonomous militant Islamist groups** led by **Iran**. This network traces its roots back to the **Iranian Revolution of 1979**.

Members of the Axis of Resistance

1. Hezbollah:

- A **Lebanese Shia militant organization** founded in the early 1980s in Lebanon.
- The largest and most capable member of the "Axis of Resistance."
- Name translates to **"Party of God."**

2. Hamas:

- A **Palestinian Sunni militant group** operating primarily in the Gaza Strip.

3. Palestinian Islamic Jihad:

- Another **Palestinian militant group** committed to armed struggle against Israel.

4. Houthis:

- A **militant group** based in Yemen.

Colombo Security Conclave (CSC) Signs Charter and Establishes Secretariat

About Colombo Security Conclave (CSC) : CSC is a **regional security grouping** focused on enhancing security cooperation in the **Indian Ocean Region (IOR)**.

Aim: To prioritize **maritime security, marine pollution response, and maritime search and rescue operations** in the Indian Ocean Region.

Members: The member states of the CSC are **India, Sri Lanka, Mauritius, Maldives, and** recently, **Bangladesh**.

Five Pillars of Cooperation

1. **Maritime Security**
2. **Countering Terrorism**
3. **Combating Transnational Organized Crime**
4. **Cyber Security**
5. **Humanitarian Assistance**

India and Malaysia Sign MoU to Strengthen Tourism Cooperation

Overview

- **India and Malaysia** have signed a **Memorandum of Understanding (MoU)** to enhance cooperation in the field of **tourism**.
- The MoU focuses on the **promotion and marketing of tourism**, with a special emphasis on **medical tourism, business tourism, and ecotourism**.
- It also aims at expanding **tourism research and training** to foster mutual growth in the sector.

Significance

- **Malaysia** is a key inbound tourist source market for India.
- In **2022**, over **2.5 lakh Malaysian tourists** visited India.
- This agreement follows the recent elevation of ties between India and Malaysia to a **Comprehensive Strategic Partnership**.

ART & CULTURE

Autonomy Sought by Centres Promoting Four Classical Indian Languages

Background

- **India's Six Classical Languages:**
 - **Tamil** (2004), **Sanskrit** (2005), **Kannada** (2008), **Telugu** (2008), **Malayalam** (2013), and **Odia** (2014).
- **Current Promotion Structure:**
 - **Tamil:** Promoted through an **autonomous institute** — the **Central Institute of Classical Tamil (CICT)**.
 - **Sanskrit:** Promoted through **three Central Universities**.
 - **Telugu, Kannada, Malayalam, and Odia:** Promoted through special centres under the **Central Institute of Indian Languages (CIIL), Mysuru**.

Demand for Autonomy

- **Financial Dependency:**
 - Centres for Telugu, Kannada, Malayalam, and Odia need to get **financial sanctions** from the CIIL for any planned events or activities.
- **High Vacancy Rates:**
 - Example: **Centre of Excellence for Studies in Classical Telugu** (Andhra Pradesh) has only **12 staff out of 36 approved positions**.
- **Unequal Funding:**
 - Discrepancy in government spending between 2017-18 and 2019-20:
 - **Sanskrit:** ₹643.84 crore.
 - Other five classical languages: Only **₹29 crore** collectively.

Benefits of Classical Language Status

- **Recognition and Awards:**
 - Two major **annual international awards** for scholars of eminence in classical Indian languages.
- **Establishment of Centres of Excellence:**
 - Centres dedicated to the study of classical languages are established.
- **Academic Promotion:**
 - **University Grants Commission (UGC)** is requested to create professional chairs in **Central Universities** for classical languages.

Criteria for Declaring a Language as Classical

1. **Antiquity:**
 - Must have **high antiquity** of early texts or recorded history spanning **1500-2000 years**.
2. **Ancient Literature:**
 - A body of **ancient literature or texts** regarded as a valuable heritage.
3. **Original Literary Tradition:**
 - Literary traditions must be **original** and not borrowed from another speech community.
4. **Distinct from Modern Form:**
 - The classical language and literature should be distinct from its modern forms, with possible **discontinuity** in its later forms or offshoots.

ECONOMY

India's First Additional Tier I (AT-1) Perpetual Bond Issued After Rule Changes

Overview of Perpetual Bonds

- **Definition:** Perpetual bonds are fund-raising instruments that do not have a **maturity date**, unlike typical bonds.
- **Features:**
 - Offer to pay a **coupon or interest** at a fixed rate indefinitely (in perpetuity).
 - The **principal** amount is not repaid automatically. Instead, investors can:
 - Sell the bond in the **secondary market**.
 - Wait for the issuer to decide to **redeem the bond**.
- **Obligations of the Issuer:** The issuer is only obligated to pay the **interest** and is **not required to repay** the principal debt amount.

Recent Development

- India's first **Additional Tier I (AT-1) perpetual bond** was issued following recent rule changes designed to make these instruments more **attractive to investors**.

India's Rural Economy as Green Shoots in the FMCG Sector: RBI Analysis

Context

- The **Reserve Bank of India (RBI)** has recognized India's **rural economy** as the "green shoots" driving growth in the **Fast-Moving Consumer Goods (FMCG)** sector.

What Are Green Shoots?

- **Definition:** "Green Shoots" refer to **early signs of economic recovery** or growth in a sector following an economic downturn.
- **Origin:** The term was first used by UK Chancellor **Norman Lamont** in **1991** to describe signs of economic improvement.

Understanding the FMCG Sector

- **Characteristics:** The FMCG sector deals with **high turnover consumer packaged goods** that are produced, distributed, marketed, and consumed quickly.
- **Examples of FMCG Products:** Everyday items such as **detergents, toiletries, tooth cleaning products, and cosmetics**.

12 New Industrial Nodes Under National Industrial Corridor Development Programme (NICDP)

Overview

- The **Cabinet Committee on Economic Affairs** recently approved **12 new project proposals** under the **National Industrial Corridor Development Programme (NICDP)**.
- These projects span across **10 states** and are planned along **6 major industrial corridors**.

Key Highlights of the Approved Projects

1. Smart Cities and Modern Infrastructure:

- New industrial cities will be developed as **Greenfield Smart Cities** meeting **global standards**.
- Built "ahead of demand" based on '**plug-n-play**' and '**walk-to-work**' concepts.

2. Area Approach on PM GatiShakti:

- Projects will incorporate **multi-modal connectivity infrastructure** to ensure the smooth movement of people, goods, and services.
- Aligned with the **PM GatiShakti National Master Plan** for integrated infrastructure development.

About the National Industrial Corridor Development Programme (NICDP)

- **Objective:** To develop **futuristic industrial cities** in India, designed as “**Smart Cities**” capable of competing with top global manufacturing and investment destinations.
- **Implementing Agency:** Managed by the **National Industrial Corridor Development and Implementation Trust (NICDIT)**.
- **Current Status:** A total of **11 Industrial Corridors** have been approved for implementation by the Union Government.

State Borrowing Limits

Overview

- The **Supreme Court (SC)** will set up a **five-judge Constitution Bench** to examine whether states have an **enforceable right** to raise their borrowing limit beyond the cap set by the **Centre**.
- The bench will also investigate whether such restrictions conflict with the **Reserve Bank of India's (RBI)** role as the **public debt manager**.
- This reference to the Constitution Bench was initiated earlier this year based on an original suit filed by the **Kerala government**.

Impact of Net Borrowing Ceiling (NBC) on States

1. **Violation of Federal Principles: Fiscal decentralization** is a key aspect of federalism, which involves devolving financial powers to regional and local governments to achieve good governance.
2. **Impact on Developmental Expenditure:** Limits on borrowing affect state spending on **developmental expenditures**, particularly **social and economic services**, which have seen an increase in recent years (RBI data).
3. **Limited Revenue Sources:**
 - The power to **levy taxes** largely rests with the **Union Government**.
 - Additionally, the proceeds from **cesses and surcharges** are not shared with the states, further limiting their revenue.

Provisions Related to State Borrowing

1. Constitutional Provisions (Article 293):

- States have the power to **borrow within India** (not abroad) on the security of the **Consolidated Fund of the State**.
- The Centre may extend loans to the state or provide a guarantee on loans raised by it.

- States cannot raise any loan without the consent of the **Centre** if they have any **outstanding debt**.
2. **Net Borrowing Ceiling (NBC):**
- The NBC for states is fixed at **3% of Gross State Domestic Product (GSDP)** for **FY 2023-24** based on the recommendations of the **15th Finance Commission**.

MoRTH Launches Voluntary Vehicle Modernization Program (Vehicle Scrapping Policy)

Overview

- The **Ministry of Road Transport and Highways (MoRTH)** launched the **Voluntary Vehicle Modernization Program**, also known as the **Vehicle Scrapping Policy**.
- The policy focuses on the voluntary scrapping of **unfit commercial and passenger vehicles** based on their **fitness**, irrespective of their age.
- The program aims to phase out unfit, polluting vehicles through **Registered Vehicle Scrapping Facilities (RVSFs)** and **Automated Testing Stations (ATs)**.
- Vehicle manufacturers will offer discounts for a period of **two years** for commercial vehicles and **one year** for passenger vehicles against a **Scrappage Certificate**.

Significance of the Vehicle Scrappage Policy

1. **Reduction in Pollution:**
 - Scrapping end-of-life vehicles (ELVs) is expected to reduce vehicular emissions by **15-20%**.
 - One old car emits gases equivalent to **11 new cars**, and one old truck emits gases equivalent to **14 new trucks** (as per MoRTH).
2. **Improved Fuel Efficiency:**
 - Enhanced fuel efficiency will result in **lower maintenance costs** for vehicle owners.
3. **Formalization of the Scrappage Ecosystem:**
 - Transforms the existing **informal vehicle scrappage ecosystem** into a regulated sector.
4. **Availability of Low-Cost Raw Materials:**
 - Provides a steady supply of affordable raw materials for the **automotive, steel, and electronics industries**.
5. **Additional Benefits:**
 - Boosts vehicle sales, generates employment opportunities, and promotes sustainable practices.

Challenges in Vehicle Scrappage in India

1. **Inadequate Number of Registered Scrapping Facilities:** Currently, only **60+ RVSFs** across 17 States/UTs and **75+ ATs** across 12 States/UTs are operational.
2. **Dismantling and Disposal of Hazardous Wastes:** Predominantly handled by the **informal sector** without modern equipment, posing significant **environmental and health risks**.

Union Cabinet Approves Expansion of Agriculture Infrastructure Fund (AIF)

Overview

- The **Union Cabinet** has approved the expansion of the **Agriculture Infrastructure Fund (AIF)** to make it more **attractive, impactful, and inclusive** as a part of the **Central Sector Scheme**.

Key Highlights of the Expansion

1. **Viable Farming Assets:** The expansion allows all eligible beneficiaries under the scheme to create infrastructure covered under **viable projects for building community farming assets**.
2. **Integrated Processing Projects:** Includes **integrated primary and secondary processing projects** in the list of eligible activities under AIF.
3. **PM KUSUM Component-A Convergence:** Allows the convergence of **Component-A of PM-KUSUM** with AIF for farmers, groups of farmers, Farmer Producer Organizations (FPOs), Cooperatives, and Panchayats.

Issues with Agriculture Infrastructure in India

1. **Upstream Challenges (Production and Initial Processing):**
 - **Inadequate irrigation infrastructure:** Around **51%** of the net sown area remains rainfed.
 - **Low farm mechanization:** Only **47%** mechanization in 2022.
 - **Inadequate soil testing facilities.**
 - **Limited cold-storage infrastructure** for preserving produce.
2. **Downstream Challenges (Post-harvest, Processing, and Distribution):**
 - **Limited food processing facilities.**
 - **Inefficient supply chain management.**
 - **Poor market intelligence** causing fluctuations in supply and prices, known as the ‘**cobweb phenomenon**’.
3. **Credit Guarantee Support:**
 - In addition to the **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE)**, **NABSanrakshan** (a wholly-owned subsidiary of **NABARD**) will now extend **AIF credit guarantee coverage** to FPOs.

About Agriculture Infrastructure Fund (AIF)

- **Definition:** A medium- to long-term debt financing facility designed to invest in **viable projects** for post-harvest management infrastructure and community farming assets. It provides support through **interest subvention and credit guarantee**.
- **Financial Structure:**
 - **₹1 Lakh Crore** will be provided by banks and financial institutions as loans.
 - **Interest Subvention:** 3% per annum.
 - **Credit Guarantee Coverage:** Under CGTMSE for loans up to **₹2 Crores**.

Cabinet Approves Central Financial Assistance for Hydro Electric Projects in North Eastern Region

Overview

- The Cabinet has approved the **Ministry of Power's** proposal for **Central Financial Assistance (CFA)** to support **Equity Participation** by State Governments of the **North Eastern Region (NER)** for **Hydro Electric Projects (HEP)**.

Key Provisions of the CFA

1. **Duration:** The scheme will be implemented from **FY 2024-25 to FY 2031-32**.

2. **Funding:** Provides **10% Gross Budgetary Support (GBS)** for the **NER** from the **Power Ministry's** outlay.
3. **Objective:** To support the development of a **hydro capacity** of approximately **15,000 MW**.
4. **Implementation Structure:** Formation of a **Joint Venture (JV) Company** for all the projects between a **Central Public Sector Undertaking (PSU)** and the respective **State Government**.
5. **Eligibility:** The scheme is applicable only for **viable Hydro Electric Projects (HEPs)**.

Significance

- **Promotes Investment and Entrepreneurship:** Encourages investment and entrepreneurship in the **North Eastern Region**.
- **Contribution to India's NDC:** Supports India's **Nationally Determined Contributions (NDCs)** towards climate action and sustainable energy development.

Government Allows Sale of Rice from FCI for Ethanol Production

Overview

- The **Food Ministry** has permitted **ethanol producers** to participate in the **Open Market Sale Scheme (OMSS)** of rice from **August to October 2024**.
- The Ministry also reversed last year's ban and allowed the use of **sugarcane juice, sugar syrup, B heavy molasses, and C heavy molasses** for ethanol production in **2024-2025**.

Rationale Behind Latest Orders

1. **Manage Excess Stock:** India currently has surplus rice stocks, exceeding **540 lakh tonnes**.
2. **Contribute to India's Energy Security and Self-Reliance:** Boosts renewable energy use through **ethanol blending**, enhancing energy security.

Ethanol Blending Program

- **Objective:** To blend ethanol in petrol, aiming to **reduce import dependence**, save foreign exchange, and promote renewable energy.
- **Target:** Achieve **20% ethanol blending by 2025-2026**.
- **Current Status:** The amount of ethanol blended with petrol has exceeded **500 crore liters** in 2022-23, with a current blending rate of over **15%**.

Challenges Faced in Ethanol Blending

1. **Producers:** Issues related to the **availability of feedstock** and weather-related challenges.
2. **Oil Marketing Companies:** Need for **additional storage tanks**, increased **logistics costs**, and managing emissions.
3. **Vehicle Manufacturers:** **Engine optimization** for higher blends, conducting **durability studies** on engines, and carrying out **field trials**.

Way Forward for Ethanol Blending

1. **Encourage Use of Water-Saving Crops:** Promote crops like **maize** for ethanol production to conserve water.
2. **Production from Non-Food Feedstock:** Focus on non-food sources to prevent conflicts with **food security**.

3. **Clustering of Ethanol Distilleries:** Distribute ethanol production facilities strategically, supplying from surplus to deficit states.

Initiatives Taken

1. **National Policy on Biofuels (2018):** Framework for promoting biofuels in India.
2. **Reduced GST on Ethanol:** Lowered from **18% to 5%** to support the **Ethanol Blending Program**.
3. **Amendment to the Industries (Development & Regulation) Act, 1951:** Facilitates the smooth movement of ethanol across the country.

Mastercard Launches Payment Passkey Service in India

- **Mastercard** has chosen India as the launch market for its innovative **Payment Passkey Service**.

About Payment Passkey Service

- **Description:** A non-OTP-based solution for conducting secure transactions without the need for traditional OTPs (One-Time Passwords).
- **Working Mechanism:**
 - Utilizes **passkeys** and **tokenization** to secure consumers' online checkout interactions.
 - To confirm payment, it employs **biometric authentication** (such as fingerprint, face scan, or PIN) based on the device's capabilities.

Benefits

1. **Enhanced Convenience:** Eliminates the hassle of remembering or unintentionally sharing passwords or OTPs, simplifying the **online shopping** experience.
2. **Faster and More Secure Transactions:** Improves transaction speed and security since **financial account data** is not shared with third parties.

Prime Minister Highlights India's Fintech Prowess at Global Fintech Fest 2024 in Mumbai

Overview

- The **Global Fintech Fest (GFF) 2024** was jointly organized by the **Payments Council of India**, **National Payments Corporation of India**, and the **Fintech Convergence Council**.
- **Fintech (Financial Technology)** refers to companies that primarily rely on technology and cloud services to provide financial services, such as **Paytm and PhonePe**.

Fintech in India

- **Adoption Rate:** India's fintech adoption rate is **87%**, significantly higher than the global average of **67%**.
- **JAM Trinity:** Due to the **JAM trinity (Jan Dhan, Aadhaar, and Mobile)**, India accounts for approximately **50%** of the world's digital transactions.
- **Investment and Growth:** The industry has attracted over **\$31 billion** in investments and has seen a **500% growth** in startups over the last 10 years.

Key Roles of India's Fintech Sector

1. Democratizing Financial Services:

- UPI has enabled **24x7 banking services**, bridging the rural-urban divide.
- Fintech platforms have facilitated **easy loans** for street vendors under the **PM SVANIDHI Scheme**.

2. Women Empowerment:

- Over **29 crore Jan Dhan accounts** have been opened for women, linking self-help groups to banks.
- **70%** of **Mudra Yojana** beneficiaries are women.

3. Tackling Parallel Economy:

- **Digital financial transactions** have improved transparency, reducing black money.
- **Direct Benefit Transfer (DBT)** has prevented leakages in government welfare schemes.

4. Business Opportunities for Small Entrepreneurs:

- The **Open Network for Digital Commerce** connects small businesses to larger markets.
- Small institutions benefit from improved liquidity and cash flow through trade platforms and digital vouchers like **e-RUPI**.

5. Dignity and Quality of Life:

- Fintech has played a crucial role in **Digital India** by supporting remote healthcare services, digital education, and skill learning.

Key Initiatives Facilitating Fintech Growth in India

1. **Bank Sakhi Programme:** Launched under **PM Jan Dhan Yojana** to assist first-time women customers in banking through female Banking Correspondents.
2. **Removal of Angel Tax:** Eliminates the tax on angel investors, encouraging more investment in startups.
3. **Funding for Innovation:** Allocation of **Rs 1 lakh crore** to promote research and innovation.
4. **Implementation of the Digital Personal Data Protection Act 2023:** Aims to protect users' personal data and provide a secure digital ecosystem for fintech growth.

'Navratna' Status for Four CPSEs

Overview

- The government has accorded '**Navratna**' status to four **Central Public Sector Undertakings (CPSEs)**:
 - **Railtel Corporation of India**
 - **Solar Energy Corporation of India**
 - **Satluj Jal Vidyut Nigam**
 - **National Hydroelectric Power Corporation**

About Navratna Status

- **Criteria:** To qualify, a public sector undertaking must:
 - Have **Miniratna I, Schedule 'A'** status.
 - Obtain '**excellent**' or '**very good**' MoU ratings in **3 of the last 5 years**.
- **Privileges:**
 - Navratna companies can invest up to **30% of their net worth** in a year, subject to a cap of **₹1,000 crore**.

She-Box Portal: A Step Towards Safer Workplaces for Women

Overview

- The **Ministry of Women and Child Development** has launched the **She-Box Portal** to enhance safety for women at workplaces.

About the She-Box Portal

- **Centralized Platform:** Provides a unified platform for **registering and monitoring complaints** of sexual harassment of women at the workplace.
- **Objective:** To offer **single window access** to all women, whether in the **organized or unorganized sector**, for lodging complaints related to sexual harassment.
- **Additional Features:** Acts as a repository of resources related to the **Sexual Harassment of Women at Workplace (Prevention, Prohibition, and Redressal) Act, 2013**.

Clarification on Joint Bank Accounts for Queer Community

- Both the **Finance Ministry** and the **Reserve Bank of India (RBI)** have issued a clarification allowing individuals from the **Queer community** to open **joint bank accounts** and designate their partners as **nominees**.
- This follows a directive from the **Supreme Court (SC)** instructing the government to provide such a provision.

About the Queer/LGBTQ+ Community

- **Navtej Singh Johar Case (2018):** The Supreme Court decriminalized **same-sex relations**.
- **Current Status:** **Same-sex marriages** are not yet recognized in India.
- **Transgender Persons (Protection of Rights) Act, 2019:** Provides for the **welfare and protection** of transgender persons.

GOVERNMENT POLICIES AND INTERVENTION

Celebrating 9 Years of Pradhan Mantri Jan-Dhan Yojana (PMJDY): Revolutionizing Financial Inclusion in India

Financial Inclusion

- **Definition:** Ensuring access to financial services and credit for vulnerable groups at an **affordable cost**.
- **Importance in India:** Essential for development and progress, providing access to transaction accounts that act as gateways to broader financial services such as storage, payments, and transfers.

Pradhan Mantri Jan-Dhan Yojana (PMJDY)

- **Overview:** The PMJDY is the world's **largest financial inclusion mission**, reaching a significant milestone of **over 500 million accounts** after nine years since its launch.

Key Successes of PMJDY

1. **Achievements:**
 - **Accounts Opened:** By July 2024, over **52 crore Jan Dhan accounts** were opened.
 - **Banking Accessibility:** Nearly **100% of villages** have banking outlets within 5 km, as per the Jan Dhan Darshak App.
 - **Financial Growth:** Average deposit in PMJDY accounts grew **4.12 times** from 2015 to 2024.
 - **Reduction in Zero-Balance Accounts:** Declined to **4.26 crores** from **8.52 crores** in March 2015.
2. **Women Empowerment:** Enhanced financial inclusion for women, with over **55% of accounts** belonging to women.
3. **Rural & Semi-Urban Focus:** Extended banking facilities to underserved regions, with **67% of accounts** opened in rural and semi-urban areas.
4. **RuPay Cards:** Issued around **340 million RuPay cards** offering ₹2 lakh accident insurance cover to account holders.
5. **Inclusion of Marginalized Sections:** Empowered financially vulnerable sections, bringing them into the **formal banking system**.
6. **Financial Benefits:** Enabled secure savings and fund transfers, providing **remittance opportunities** and freeing individuals from usurious money lenders.
7. **Role in Welfare:** Facilitated **Direct Benefit Transfers (DBT)**, ensuring the distribution of welfare packages without pilferage, including COVID-19 assistance, **PM-Kisan**, **MGNREGA**, and various insurance covers.
8. **Digital Platform:** Provided easy access to banking services through the **Jan Dhan Darshak app** for locating banking touchpoints.
9. **JAM Architecture:** Part of the **JAM (Jan-Dhan, Aadhaar, Mobile)** system for direct government benefits transfers.
10. **Formalisation of the Financial System:** Enabled the poor to bring their savings into the **formal financial system** and facilitated safe remittances.

Pradhan Mantri Janjati Adivasi Nyaya Maha AbhiyaN (PM-JANMAN): Empowering Particularly Vulnerable Tribal Groups (PVTGs)

Context

- The **Union Ministry of Tribal Affairs** launched the **Pradhan Mantri Janjati Adivasi Nyaya Maha AbhiyaN (PM-JANMAN)**, an **IEC campaign** aimed at achieving 100% saturation of government schemes in **Particularly Vulnerable Tribal Group (PVTG)** areas.
- The campaign covers over **44 lakh individuals** across **194 districts** in the country through activities such as entitlement distribution, health camps, and awareness initiatives in tribal languages, with close supervision by officials for effective implementation.

Key Points of PM-JANMAN

1. **Initiative Name:** Pradhan Mantri Janjati Adivasi Nyaya Maha Abhiyan (PM-JANMAN)
2. **Objective:**
 - To address the **socio-economic challenges** faced by PVTGs in India.
3. **Ministries Involved:**
 - A collaborative effort by **9 ministries**, including the **Ministry of Tribal Affairs**.
4. **Focus Areas:**
 - Targeting **11 critical interventions** across various sectors:
 - **Housing:** Provision of pucca houses.
 - **Infrastructure:** Connecting roads, electrification, and installation of mobile towers.
 - **Healthcare:** Mobile medical units and wellness centers by the Ministry of Ayush.
 - **Education:** Establishment of hostels, vocational education centers, and Village Development Knowledge Centers (VDKCs).
 - **Water Supply:** Projects to ensure clean water access.
 - **Connectivity:** Solar off-grid systems and lighting.
 - **Social Support:** Anganwadi Centers and multipurpose centers.
5. **Target Duration:** The mission is planned to be implemented over the next **three years**.
6. **Beneficiary Scope:** Focuses on **75 PVTG communities** in **18 states** and the **Union Territory of Andaman and Nicobar Islands**.
7. **Overall Goal:** To enhance the overall well-being of **PVTG households** by ensuring access to **basic facilities** like housing, water, sanitation, education, healthcare, connectivity, and livelihood opportunities.
8. **Contribution of Other Ministries:**
 - **Ministry of Ayush:** Establishes wellness centers and provides Ayush facilities through **mobile medical units**.
 - **Skill Development Ministry:** Offers skill and vocational training in PVTG habitations.

GEOGRAPHY

Cyclone Asna Forms Over Kutch, Bringing Continued Rain to Gujarat

Overview

- **Cyclone Asna** is an unusual weather phenomenon that originated as a **deep depression over land in Gujarat** and is expected to intensify into a **tropical cyclone** over the **Arabian Sea**.
- According to the **India Meteorological Department (IMD)**, this is a rare event; only three times in history (1976, 1964, and 1944) have cyclones originated over mainland India in August and gained strength over the Arabian Sea.

Possible Reasons for Cyclone Formation

- **Unusual Monsoon Wind System:** An atypical pattern of monsoon winds may have contributed to the cyclone's formation.
- **Moisture from the Arabian Sea:** Moist air from the Arabian Sea might have fueled the depression's intensification.
- **Soil Moisture:** High soil moisture levels from recent rains could have played a role.
- **Warming of the Indian Ocean:** Elevated ocean temperatures due to climate change have provided favorable conditions for cyclone development.

About Tropical Cyclones

- **Definition:** Tropical cyclones are rapidly rotating storms that originate over **tropical oceans**.
- **Classification:** Cyclones are classified into two types: **Extratropical Cyclones** (temperate cyclones) and **Tropical Cyclones**.
- **Regional Names:** Known as **typhoons** in the **China Sea & Pacific Ocean**; **hurricanes** in the **Caribbean Sea & Atlantic Ocean**; **tornadoes** in **West Africa & Southern USA**; and **willy-willies** in **Australia**.

Tropical Cyclones in India

- **Vulnerability:** India is exposed to nearly **10%** of the world's tropical cyclones, predominantly occurring in **May-June** and **October-November**.
- **Frequency:**
 - More cyclones occur in the **Bay of Bengal** than in the **Arabian Sea**, with a ratio of approximately **4:1**.
 - However, due to the **climate crisis** and the warming of the **Arabian Sea**, cyclones are becoming more frequent on India's **western coast**

ENVIRONMENT & ECOLOGY

Northern Bald Ibis: A Return to Europe After Extinction

About Northern Bald Ibis (*Geronticus eremita*)

- **Geographical Range:** Historically found in the **European Alps, Northern Africa,** and the **Middle East.**
- **Habitat:**
 - Prefers **semi-arid desert** and **steppe regions.**
 - Feeds in **rocky areas** or **cliffs** located near **streams or rivers.**
- **Reproduction:**
 - **Monogamous** species, maintaining a single mate throughout their lifetime.
 - Mates are found through a distinctive **croop call.**
- **Behavior:**
 - A **colonial bird** that migrates **seasonally.**
 - Lives in groups and flocks together during migration.
 - **Lacks innate navigation skills** for migration and relies on the guidance of **wild-born elders.**
- **IUCN Conservation Status:** Classified as **Endangered.**



Discovery of Two New Spider Species: *Mimetus Spinatus* and *Mimetus Parvulus*

Overview

- The **Zoological Survey of India (ZSI)** has discovered two new spider species, ***Mimetus spinatus*** and ***Mimetus parvulus***, from the **Mookambika Wildlife Sanctuary** in Karnataka and **Ernakulam** in Kerala, respectively.

About *Mimetus Spinatus* and *Mimetus Parvulus*

- **Family:** Both species belong to the **Mimetidae** family, commonly referred to as **pirate or cannibal spiders** due to their unique predatory behavior, where they prey on other spiders.
- **Total *Mimetus* Species in India:** Including these two, there are now **three *Mimetus* species** known in India.
- ***Mimetus Spinatus*:**
 - **Characteristics:**
 - Medium-sized with a **pale yellow head.**
 - **Dull grey-white abdomen** with scattered **light green mottling.**
- ***Mimetus Parvulus*:**
 - **Characteristics:**
 - **Pale creamy-rose head** with dense **grey-black mottling.**
 - A **triangular-shaped, dull grey-white abdomen.**

Rajasthan Records Highest Fluorine Contamination in Groundwater

Overview

- **Fluoride** is a naturally occurring element in groundwater, with a national drinking water limit set at **1.50 milligrams per litre**.
- Excessive fluoride levels can cause **skeletal fluorosis**, accelerate **dental decay**, and pose significant **health risks**, particularly to children.

Key Findings on Fluoride Contamination

1. **States with Above-Permissible Levels:** **Rajasthan** has the highest contamination levels, followed by **Telangana**, **western Andhra Pradesh**, **eastern Karnataka**, and other regions.
2. **Seasonal Variation:** Fluoride contamination is highest during the **dry, summer pre-monsoon months**.
3. **Geographical Trends:** Higher contamination is observed in **arid regions**, particularly in **western India**, compared to more **humid areas**.

Status of Other Groundwater Contaminants in India

1. **Arsenic Contamination:** Predominantly affects **West Bengal**, **Bihar**, **Jharkhand**, and **Uttar Pradesh**, accounting for 90% of arsenic contamination in India.
2. **Uranium Contamination:** Detected in about **12 states**, including **Punjab**.
3. **Iron Contamination:** Found in states such as **Rajasthan**, **Jharkhand**, and **Assam**.
4. **Other Contaminants:** Includes **antimony**, **cadmium**, **copper**, **barium**, etc., which can lead to health issues such as **toxicity**, **hypertension**, **liver and kidney damage**.

Steps Taken to Address Contamination

1. **Legislative Provisions:**
 - **Water (Prevention and Control of Pollution) Act, 1974.**
 - **Environment Protection Act, 1986.**
 - **The Water Cess Act, 1977.**
2. **Groundwater Recharge Initiatives:**
 - Efforts to recharge groundwater through **rainwater harvesting**.
 - Initiatives like **Prime Minister Krishi Sinchayee Yojana-Watershed Development** and **Atal Bhujal Yojana**.

BIOTECHNOLOGY

Codon De-optimisation Technology (CDT): A Breakthrough in Vaccine Development

Overview

- **Indian Immunologicals Limited**, in partnership with **Griffith University**, has developed a **needle-free intra-nasal booster vaccine** against **SARS-CoV-2** using **Codon De-optimisation Technology (CDT)**.

About Codon De-optimisation Technology (CDT)

- **Definition:** CDT involves reducing the frequency of **underrepresented codon pairs** (the genetic determinants for amino acids) without altering the actual **amino acid sequences** of the virus.

Benefits of CDT

- **Efficient Virus Attenuation:** Provides a strategy to weaken or attenuate the virus effectively, allowing the degree of attenuation to be regulated as needed.
- **Use of Attenuated Virus Strains in Vaccines:** Attenuated strains stimulate a **protective immune response** while causing **no or only mild disease**, making them effective as vaccines.
- **Safety and Speed:** Offers a method that is **extremely safe** and reduces the time needed for vaccine development.

WHO Warns of Largest Chandipura Virus Outbreak in India in 20 Years

Overview

- The **World Health Organization (WHO)** has issued a warning regarding the current **Chandipura virus (CHPV)** outbreak in India, stating that it is the largest in the last 20 years.

About Chandipura Virus (CHPV)

- **Family:** CHPV belongs to the **Rhabdoviridae family**, which also includes the rabies virus.
- **Impact:** Known to cause outbreaks of **Acute Encephalitis Syndrome (AES)** in the **western, central, and southern parts** of India, particularly during the **monsoon season**.
- **Transmission:** Transmitted through vectors such as **sandflies, mosquitoes, and ticks**.
- **Treatment:** Currently, there is **no antiretroviral treatment or vaccine** available for CHPV.
- **First Identification:** The virus was first identified in **1965** in **Chandipura**, a village in **Maharashtra**.

India Bans 156 Fixed-Dose Combination (FDC) Drugs Due to Lack of Therapeutic Benefit

Context

- The **Indian government** has banned **156 fixed-dose combination (FDC) drugs**, labeling them as "irrational" with **no therapeutic benefit**, according to the **Indian Express (IE)**.

About Fixed-Dose Combinations (FDCs)

- **Definition:** FDCs are combinations of **two or more drugs** in a single dose, often used to simplify treatment regimens and improve patient compliance.
- **Concerns:**
 - The use of FDCs can lead to **unnecessary drug use**.
 - They can contribute to significant issues, such as **antibiotic resistance**, by exposing patients to drugs that may not be needed.

Bharat Biotech Launches Hillchol: A New Oral Cholera Vaccine

Context

- **Bharat Biotech** has launched **Hillchol (BBV131)**, an oral cholera vaccine developed in collaboration with **Hilleman Labs**, as reported by **The Hindu (TH)**.

About Hillchol (BBV131)

- **Global Need:** The vaccine addresses the **global shortage** of Oral Cholera Vaccines (OCVs), with current demand exceeding **100 million doses annually**.
- **Dosage and Efficacy:** Hillchol is a **two-dose oral vaccine** designed to combat cholera worldwide.
- **Clinical Trials:** **Phase I and II trials** were conducted in **Bangladesh**, and **Phase III trials** were completed in **India**.

Indian Immunologicals Ltd Develops Intranasal COVID-19 Booster Using Codon Deoptimization Technology

Context

- **Indian Immunologicals Ltd (IIL)**, in collaboration with **Griffith University, Australia**, has developed a **needle-free intranasal COVID-19 booster vaccine** using **codon deoptimization technology**, as reported by **The Hindu (TH)**.

About Codon Deoptimization Technology

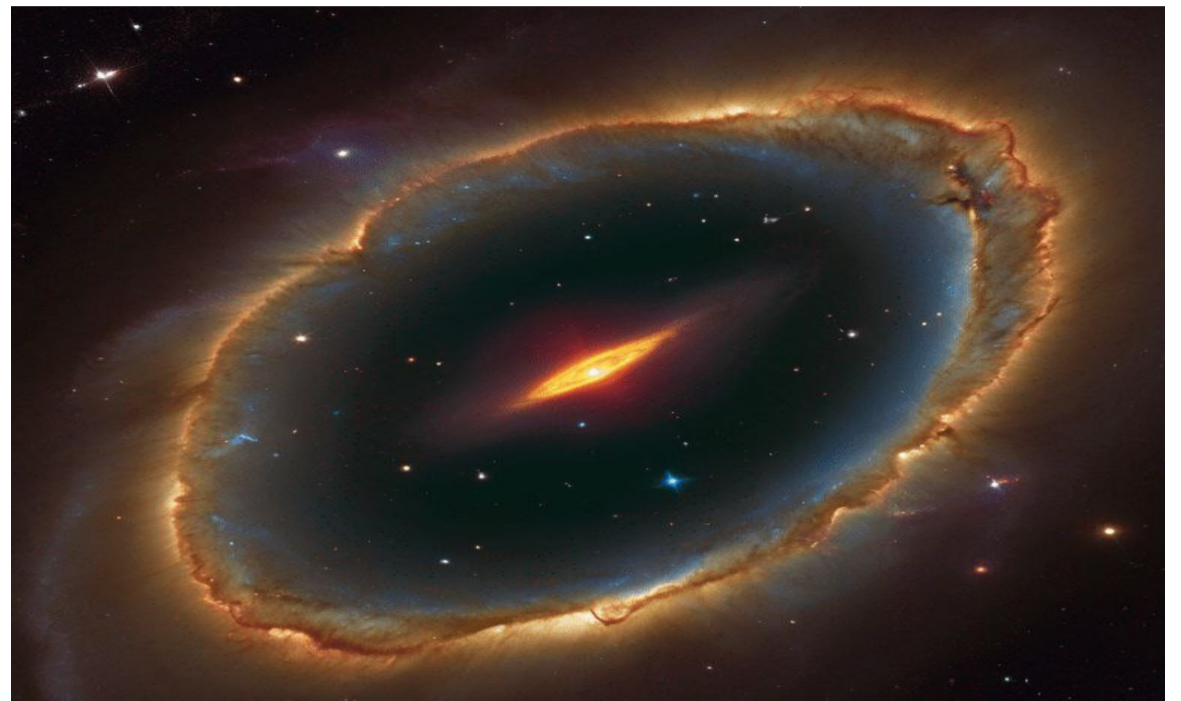
- **Description:** This technology is used to create a **live-attenuated vaccine** by adjusting genetic codons to modulate viral attenuation, ensuring the vaccine is **safe and quick to produce**.
- **Codon-Pair Deoptimization:**
 - Involves **increasing the frequency of underrepresented codon pairs** without altering codon usage or amino acid sequences.
 - This method is a **highly efficient virus attenuation strategy**, utilizing **suboptimal codon pairs** to weaken the virus, achieving the desired level of attenuation.

SCIENCE & TECHNOLOGY

Discovery of the Brightest Quasar Ever Observed: J0529-4351

Context

- Astronomers have discovered the **brightest object** ever observed in the universe, a **quasar** named **J0529-4351**, using the **European Southern Observatory's Very Large Telescope (VLT)**, as reported by NDTV.



About Quasar J0529-4351

- **Description:**
 - This quasar, although visible since **1980**, was only recently identified as a quasar.
 - It is over **500 trillion times brighter** than the Sun and expands by consuming the equivalent of **one sun per day**.
- **Location and Power Source:**
 - Located over **12 billion light-years** from Earth.
 - Powered by a **supermassive black hole** with a mass equivalent to **17 billion suns**.
- **Accretion Disc:**
 - Features the **largest known accretion disc** in the universe, measuring **seven light-years in diameter**.

About Quasars

- **Definition:**
 - **Quasars** (short for “**quasi-stellar objects**”) are among the **brightest** and most **energetic objects** in the universe.
 - They are the extremely luminous cores of distant galaxies, powered by **supermassive black holes** at their centers.

Solar Paraboloids: A Frontier Technology for Enhancing Solar Energy Efficiency

About Solar Paraboloids

- **Definition:** A form of **Concentrating Solar Power (CSP)** technology that uses a **Parabolic Trough Collector (PTC)**.
- **How It Works:**
 - Comprises **parabolic mirrors** that focus sunlight onto a **receiver tube** located at the focal line of the paraboloid.
 - The concentrated sunlight heats the fluid in the tube, which can then be used for generating electricity or other thermal applications.

Advantages Over Traditional Photovoltaic (PV) Systems

- **Higher Operating Temperatures:** Can function at **higher temperatures**, enhancing energy conversion efficiency.
- **Improved Thermal Efficiency:** Provides **higher thermal efficiency** compared to traditional PV systems due to better concentration and utilization of solar energy.
- **Reduced Heat Losses:** Lower **heat losses** as the system focuses sunlight more precisely on the receiver.

Challenges

- **High Upfront Costs:** Initial investment for installation and setup is significantly higher compared to traditional PV systems.
- **Infrastructure Requirements:** Requires substantial **infrastructure** for installation and operation, including space and material needs.

Piezoelectric Polymer-Based Security Alert System Developed by CeNS

Overview

- **Researchers from the Centre for Nano and Soft Matter Sciences (CeNS)**, an autonomous institute under the **Department of Science and Technology**, have developed a **security alert system** based on **Piezoelectric Polymer nanocomposite**.

About Piezoelectric Polymers

- **Definition:** **Piezoelectric Polymers** are materials that generate **electric charges** on their surface when subjected to **pressure or strain**, converting **mechanical energy into electrical energy** (energy harvesting).
- **Advantages:**
 - **Flexibility:** Can be shaped into large areas and curved surfaces.
 - **Lightweight** and easily **processable**.
 - Widely used for their adaptability to various forms and surfaces.
- **Applications:**
 - **Sensors:** Used in pressure and impact sensors.
 - **Wearables:** Integrated into smart clothing and accessories.
 - **Medical Implants:** Applied in flexible electronic devices for medical applications.
 - **Consumer Electronics:** Used in various electronic gadgets and devices.

REPORTS & RANKINGS

NITI Aayog Releases Report on Strategies for Self-Sufficiency in Edible Oils

Overview

- NITI Aayog released the report titled ‘**Pathways and Strategies for Accelerating Growth in Edible Oils Towards Atmanirbharta**’, focusing on strategies to bridge the **demand-supply gap** and achieve self-sufficiency in edible oils such as **olive oil, palm oil, soybean oil, and canola oil**.

Need for Self-Sufficiency in Edible Oils

1. **Minimizing Import Dependency:**
 - India imports approximately **57%** of its edible oil, making it vulnerable to **global price fluctuations** and **supply disruptions**.
 - Current domestic supply stands at around **12.4 million tonnes (MT)**, while imports are about **16.5 MT**.
2. **Achieving Nutritional Security:** Edible oils contribute to the **absorption of fat-soluble vitamins**, crucial for nutritional security.
3. **Enhancing Economic Development:** Reducing imports positively impacts the **balance of payments** and fosters the growth of the **domestic processing industry**.

Strategies for Self-Sufficiency

1. **Area Retention and Diversification:**
 - Development of **customized cluster technology** to improve yield.
 - **Oilseed Development** in regions like **Bundelkhand** and the **Indo-Gangetic Plain**.
 - Prioritizing the utilization of **wasteland and fallow land**.
2. **Seed Traceability and Quality Assurance:**
 - Establishment of “**One Block-One Seed Village**” to enhance the **seed replacement rate**.
 - Promotion of **bio-fortified** and **genetic varieties** of oilseeds.
3. **Improved and Advanced Production Technologies:**
 - Application of **heterosis breeding** for crops such as **sunflower, castor, mustard, and sesame**.
 - **Heterosis** refers to the process wherein hybrids are more robust and productive than their parents, increasing **crop yield**.

Key Initiatives

1. **National Mission on Edible Oil-Oil Palm:** Focuses on increasing oil palm cultivation to reduce import dependency.
2. **Integrated Scheme on Oilseeds, Pulses, Oil Palm, and Maize:** Aims to promote the growth of these crops to enhance self-sufficiency in edible oils.

PLACES IN NEWS

Vadhvan Port under Sagarmala Program

- The **Memorandum of Understanding (MOU)** for setting up **Vadhvan Port** as a major port was signed in **2015**.
- This will be Maharashtra's **third major port**.
- The **Jawaharlal Nehru Port Authority (JNPA)** and the **Maharashtra Maritime Board** will jointly implement the project, with a shareholding of **74% and 26%** respectively.

Key Features of Vadhvan Port

1. **Development Model:**
 - The port will be developed on the **landlord port model**.
 - In this model, **private players** manage operational aspects, while the **port authority** acts as a regulator and landlord.
2. **Port Capacity and Infrastructure:**
 - Expected to be the **country's largest container port**, with a handling capacity of **23.2 million twenty-foot equivalent units (TEUs)**.
 - It will be one of India's **largest deep-water ports**, featuring **deep berths**, efficient cargo handling facilities, and modern port management systems.



Significance of Vadhvan Port

1. **Direct Connectivity to International Shipping Routes:**
 - Will reduce **transit times and costs** for international trade.
 - A **natural draft of about 20 meters** will accommodate large container ships.
2. **Economic Growth:** Expected to create significant **employment opportunities** and bolster India's position as a **global trade hub**.
3. **Business and Warehousing Opportunities:** Enhanced by connectivity to the **dedicated Western Freight Corridor** and proximity to the **Delhi-Mumbai Expressway**.

India's Port Sector

- **Overview:** India has **12 major** and **200 non-major (minor)** ports.
- **Major Ports:**
 - Governed under the **Major Port Trusts Act, 1963**.
 - Under the administrative control of the **Ministry of Shipping**.
- **Minor Ports:**
 - Governed under the **Indian Port Act, 1908**.
 - Managed by respective **State Maritime Boards/State Governments**.
- **Trade Statistics:** About **95%** of India's trade by volume and **70%** by value is conducted through **maritime transport**.