NEXT IAS

DAILY CURRENT AFFAIRS (DCA)

Time: 45 Min

Date: 30-09-2025

Table of Content

WASSENAAR ARRANGEMENT: NEED TO REFORM EXPORT CONTROL REGIMES

Context

- Modern internet infrastructure is dominated by a few companies, increasingly indispensable to governments.
  - Misuse of their infrastructure highlights **gaps in export control regimes,** originally designed for physical goods.

What are export control regimes?

- These are international agreements where **countries control the export of sensitive goods and technologies.**
- **Aim:** To stop misuse like for weapons of mass destruction.

Multilateral Export Control Regimes

- **Nuclear Suppliers Group:** Formed in **1974,** this regime seeks to prevent nuclear proliferation by controlling the export of materials, equipment, and technology that can be used to manufacture nuclear weapons.

- **Australia Group:** It was established in **1985** prompted by Iraq's use of chemical weapons during the Iran-Iraq War (1980-1988).
  - Australia, concerned with Iraq's development of chemical weapons, recommended harmonization of international export controls on chemical weapons precursor chemicals.

- **Missile Technology Control Regime:** Founded in **1987**, this regime aims to limit the proliferation of missiles and unmanned aerial vehicles capable of delivering weapons of mass destruction.
  - India joined the **MTCR in 2016.**

The Wassenaar Arrangement

- The WA, formally established in **1996**, aims to promote **"transparency and greater responsibility** in transfers of conventional arms and dual-use goods and technologies.
- **Nature:** Multilateral voluntary export control regime for conventional arms and dual-use technologies.
- **Mechanism:** Participating states commit to control lists and information exchange, while retaining national discretion.
- **2013 Expansion:** Added controls on intrusion software and cyber-surveillance systems.

- **Limitation:** It was designed for physical items (chips, devices) and not for cloud and online services.
- India joined Wassenaar Arrangement in **2017**.

Problems in the Cloud Era

- **The definition of export is old:** It was earlier meant for shipping goods or downloading software.
  - Now the services run on the cloud and users only access functions remotely; these are not covered under the WA.
- **Voluntary rules:** Any country can block changes.
  - National laws differ which leads to patchy rules and loopholes.
- **Focus Area:** Focus has been on weapons, not on misuse of tech for surveillance and repression.

Needed Reforms

- **Expand scope:** To make the Wassenaar Arrangement more useful today, it needs to cover more technologies like regional biometric systems or cross-border policing data.
  - To control these properly, rules should set limits on how powerful the technology can be and allow safe, legitimate uses under strict licenses and safeguards.
- **Update export definition:** The Arrangement should treat remote access and admin rights as exports if they allow use of controlled technology.
  - Unlike traditional controls (which focus on weapons), cloud and surveillance tech can be misused for human rights violations.
  - So, a license to use a technology should consider: what the tech can do, who is using it, where, under what rules, and how risky it is.
- **Make regime binding:** The Arrangement's voluntary nature is a weakness in high-risk settings.
  - States should instead adopt a binding treaty or framework with obligations that include mandatory minimum standards for licensing, mandatory export denial in atrocity-prone jurisdictions, and supervision by peer review.
- **Enhance cooperation:** National authorities shall share information, align licensing, maintain shared watchlists, real-time red alerts.
- **Agility and Domain-specific Regimes:** Cloud and AI technologies change very fast, so the Wassenaar Arrangement also needs to adapt quickly.
  - This could be done by creating a special technical committee that can suggest urgent updates, speed up important controls, and get advice from experts.

- ◆ Possibly establish separate regimes for AI, digital surveillance, cyber weapons.

Way Ahead

- Some powerful countries may oppose stricter cloud export rules, saying they hurt innovation, sovereignty, or private business.
- It's also complicated to classify cloud systems, set thresholds, separate safe vs risky uses, and manage cross-border licensing.
- **Still, progress is possible**. Some EU countries are already adding national export rules for advanced technologies that the Arrangement doesn't fully cover.
  - ◆ For example, the EU now treats cloud services like dual-use technology in its rules.
- The Wassenaar Arrangement is still important but outdated. Unless updated for cloud, SaaS, and AI, it cannot stop misuse of modern technologies for surveillance and human rights violations.
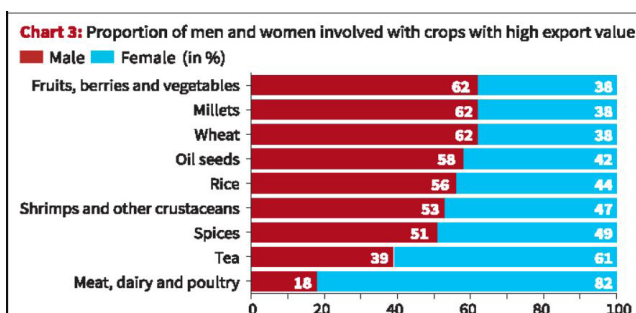
Source: TH

WOMEN POTENTIAL REMAINS UNDER-LEVERAGED IN AGRICULTURE

Context

- Women-led development has been **recognised as a structural game-changer for advancing India's economic ambitions,** yet its full potential remains under-leveraged.

Current Scenario

- **Agriculture:** It is a backbone of India's economy & largest employer of women.
- **Workforce shift:** Rural men are moving to non-farm jobs leading to women replacing them in agriculture.
- **Rise in women's participation:**
  - ◆ Employment in agriculture surged by 135% in a decade.
  - ◆ Women now account for 42% of the agricultural workforce.
  - ◆ 2 in 3 working women are engaged in agriculture.

Chart 3: Proportion of men and women involved with crops with high export value
Male ■ Female ■ (in %)

	Male	Female
Fruits, berries and vegetables	62	38
Millets	62	38
Wheat	62	38
Oil seeds	58	42
Rice	56	44
Shrimps and other crustaceans	53	47
Spices	51	49
Tea	39	61
Meat, dairy and poultry	18	82

- **Economic Impact:** Women's greater participation has not translated into higher income for the economy, as agriculture's share of the national GVA fell from 15.3% in 2017-18 to 14.4% in 2024-25.

Challenges Faced by Women in Agriculture

- **Unpaid Labour:** Nearly half of the women in agriculture are unpaid family workers, with their numbers jumping 2.5 times from 23.6 million to 59.1 million in just eight years.
  - ◆ In States such as Bihar and Uttar Pradesh, more than 80% of women workers are in agriculture, and over half of them receive no wages.
- **Systemic Inequities:** Women as farmers, own only 13-14% of land holdings, and earn 20-30% less than men for equivalent work.
  - ◆ Asset ownership, decision-making power, and access to credit and government support remain male-dominated, trapping women in low-value activities.
- **Digital Divide:** Barriers in digital literacy, language, affordability of devices limits the participation in modern agri-markets.

Emerging Opportunities

- **Global Trade:** The India-U.K. Free Trade Agreement (FTA) is projected to boost Indian agricultural exports by **20% within three years,** granting duty-free access to over **95% of agricultural** and processed food products.
  - ◆ Many of these export-oriented value chains employ a significant share of women.
  - ◆ If FTA-embedded provisions for women, such as training, credit access, and market linkages, are catalysed, it could **enable women's transition from farm labourers to income-generating entrepreneurs.**
- **High-Value Segments:** With global demand rising for organic products and superfoods, India's value chains for tea, spices, millets and certified organic produce are poised for expansion — sectors where women are already strongly represented.
  - ◆ Geographical Indications, branding initiatives, and support for meeting export standards can help women producers shift from subsistence farming toward premium, value-added product markets.

Government Initiatives for Women in Agriculture

- **Mahila Kisan Sashaktikaran Pariyojana (MKSP):** Under National Rural Livelihood Mission (NRLM), supports women farmers in sustainable agriculture, livestock, and NTFP (non-timber forest produce).

- **Joint Land Titles:** States encouraged to issue land pattas in joint names of husband and wife.
- **Priority Sector Lending (PSL):** Mandates credit flow to women farmers.
- **Rural women SHGs & FPOs:** Supported through NABARD and DAY-NRLM.
- **Agri-Clinics & Agri-Business Centres (ACABC):** Special provisions for women agri-entrepreneurs.
- **Maternity Benefits & Health Schemes:** Support women farmers' welfare indirectly.
- **Support for Women FPOs:** Encouraged under the 10,000 FPOs Scheme (2020) with special provision for women-led groups.
- **GI Tags, Branding, and Export Facilitation:** Helps women producers in spices, tea, millets, organic produce.

Way Ahead

- Without targeted measures, women risk being excluded from the export-led opportunities emerging in Indian agriculture.
- To transform women's role in agriculture**, land and labour reforms are equally vital.**
- Policies **must recognise women as independent farmers** by promoting joint or individual land ownership, which in turn strengthens their eligibility for credit, insurance, and institutional support.

Source: TH

SPORTS AS A UNIFYING FORCE, NOT A PRIVILEGE: SUPREME COURT

Context

- The Supreme Court, in the **All India Football Federation (AIFF)** case, recently emphasised that sports are not merely recreational activities but vital institutions of "national life."

Key Observations by Supreme Court of India

- **Fraternity Through Sport:** Team sports compel individuals to set aside caste, class, gender, or linguistic distinctions and work collectively towards shared goals.
- **Sports as Community Resources:** Sporting facilities and opportunities should be recognised as **'material resources'** of the community, essential for fostering social cohesion.
- **Avoiding Elitism:** Sporting infrastructure must not remain in the exclusive hands of the **urban**

economic elite; revenues from sporting events and media rights should promote inclusivity.
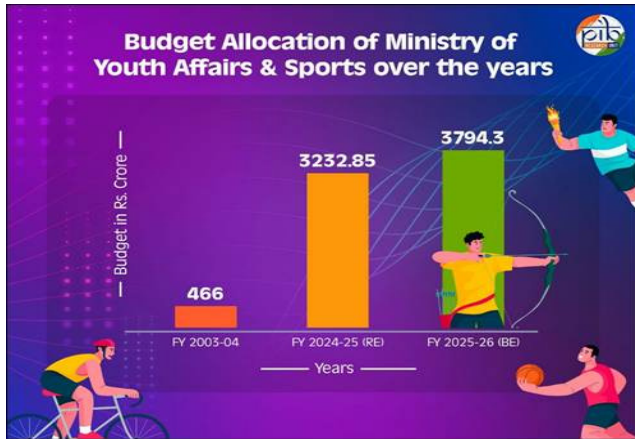
- **Institutions of National Life:** Sporting bodies are **institutions of national life,** deserving of integrity, professionalism, and regulation in the public interest.

Key Issues in India's Sports Ecosystem

- **Rural-Urban Divide:** According to NITI Aayog, rural athletes often lack access to basic training facilities, qualified coaches, competitive platforms, and nutritional and psychological support.
  - ◆ Urban centers, on the other hand, benefit from private investment, media attention, and proximity to national federations.
- **Infrastructure and Policy Gaps: Over 3.4 lakh** schools in India lack playgrounds, despite legal mandates under the **Right to Education Act.**
  - ◆ It limits early exposure to sports and physical activity.
- **Lack of Sporting Culture:** There's limited integration of sports into school curricula, despite the National Education Policy 2020 advocating for it.
- **Gender and Social Inclusion:** Women, differently-abled athletes, and marginalized communities face additional barriers to participation and recognition.
  - ◆ Inclusive policies exist but require stronger enforcement and cultural shifts.

Schemes and Programmes to Support Sports in India

- **Khelo India:** Launched in **2016-17** by the **Ministry of Youth Affairs and Sports,** the Khelo India programme aims to revive the sports culture in India at the grassroot level by building a strong framework for all sports played in our country.
- **The Retired Sportsperson Empowerment Training (RESET) Programme,** launched in 2024, empowers retired athletes to reinvent themselves.
- **The Pandit Deendayal Upadhyay National Welfare Fund** for Sportspersons offers one-time ex-gratia aid of up to ₹**5 lakh**, a monthly pension of ₹**5,000**, medical assistance up to ₹10 lakh, and support up to ₹10 lakh for injuries sustained during training or competitions.
- **National Sports Development Fund (NSDF):** These funds supplement public investment and are used to develop infrastructure, support high-potential athletes, and fund innovative programmes, creating a collaborative model for sports development.

Way Ahead

- **Grassroots Investment:** Expand playgrounds in schools and strengthen rural sports infrastructure to democratise opportunities.

- **Public–Private Collaboration:** Encourage private sector partnerships to supplement state investment in infrastructure and training.

- **Cultural Shift:** Promote sports as a way of life, not just a path to medals, by integrating physical education systematically into schools and communities.

Concluding remarks

- The Supreme Court's philosophy provides a vital bridge between constitutional values of fraternity and equality and their realisation through practical institutions like sports.

- By ensuring that opportunities are open to all irrespective of caste, class, gender, or economic background, the Court highlighted how the unifying power of sports is amplified, **transforming it from a privilege of the few** into a shared national resource for cohesion and collective progress.
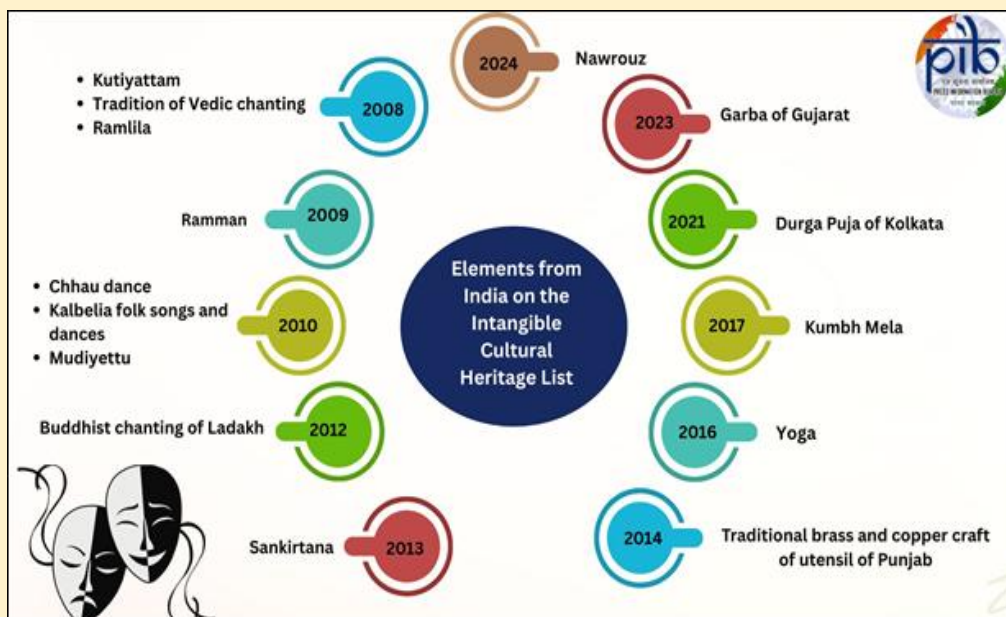
Source: TH

TRADITIONAL RITUAL THEATRES OF INDIA

In Context

- India's ritual theatres are living cultural traditions that connect the divine and daily life through myth, music, and community participation.

Ritual theatre

- It is a traditional form of performance that blends sacred rituals with dramatic elements like acting, music, dance, and narration, often rooted in religious festivals and collective memory.

- These performances go beyond entertainment, serving as vital expressions of cultural identity, social cohesion, and continuity.

- UNESCO designates such practices as **Intangible Cultural Heritage (ICH), promoting their preservation.**

  - ICH includes both traditional and evolving practices, shared across generations and communities.

- **UNESCO defines ICH across five domains**: Oral Traditions and Language, Performing Arts, Social Practices and Rituals, Knowledge of Nature and the Universe, and Traditional Craftsmanship.

Presently, 15 elements of **Intangible Cultural Heritage (ICH)** have been inscribed on **UNESCO's Representative List**, granting them international recognition and a global platform.

Indian Ritual Theatres in the ICH list

- UNESCO has inscribed **Kutiyattam, Mudiyettu, Ramman and Ramlila ritual** theatre forms on its **Representative List of the Intangible Cultural Heritage**.

- **Kutiyattam** : It is one of India's oldest surviving theatrical traditions, dating back over 2,000 years.

    - It is Kerala's ancient Sanskrit theatre tradition, blends classical drama with local rituals, using intricate eye and hand gestures to convey deep emotion.

    - Performed in temple theatres **(kuttampalams),** it retains a sacred character and involves intense training over 10–15 years.

    - **Kutiyattam** fuses drama, music, and stylized acting, preserving ethical and aesthetic values across generations.

- **Mudiyettu** :It is a ritual dance-drama from **Kerala** that enacts the mythological battle between **Goddess Kali and the demon Darika,** performed annually in temple precincts (Bhagavati Kavus) after the harvest.

    - Rooted in sacred rituals like kalamezhuthu (ritual drawing) and invocations, it involves collective village participation across castes—mask makers, performers, and artisans—fostering social cohesion.

    - Blending dance, music, visual art, and drama, Mudiyettu is a vibrant, community-driven sacred performance.

- **Ramman :** Ramman is an annual religious festival celebrated in late April in the twin villages of Saloor-Dungra, Uttarakhand, in honour of the local deity Bhumiyal Devta.

    - It features complex rituals, recitations of the Ramayana, songs, and masked dances, with each caste and group playing distinct roles.

    - Some of the instruments documented include: Dhol (a type of drum), Damau (smaller percussion drum), Manjira (small hand cymbals), Jhanjhar (larger cymbals) and Bhankora (a kind of trumpet).

- **Ramlila**, literally meaning "Rama's play," is a dramatic re-enactment of the Ramayana epic, performed through a sequence of scenes that combine song, narration, recitation, and dialogue.

    - Traditionally staged across northern India during the autumn festival of Dussehra, Ramlila follows the ritual calendar and varies in scale and duration. Some of the most renowned Ramlilas are staged in **Ayodhya (birthplace of Lord Ram), Ramnagar, Varanasi, Vrindavan, Almora, Satna, and Madhubani.**

Role of Sangeet Natak Akademi

- Sangeet Natak Akademi, the apex body in the field of performing arts in the country, was set up in 1953 for the preservation and promotion of the vast intangible heritage of India's diverse culture expressed in forms of music, dance and drama.

    - This institution acts as a guardian of India's living heritage, blending tradition with modern preservation techniques to keep the ritual theatres vibrant

Source :PIB

NATIONAL CRIME RECORDS BUREAU (NCRB) RELEASED CRIME IN INDIA 2023

In News

- Recently, the Crime in India 2023 report was published by the **National Crime Records Bureau (NCRB).**

Key Findings

- **Overall Crime Trends**: India recorded **62.4 lakh cognizable crimes,** a 7.2% increase from 2022.

    - Of these, 37.6 lakh were under the IPC and 24.8 lakh under Special and Local Laws (SLL).

    - The **national crime rate** increased from 422.2 to 448.3 per lakh population.

    - In metropolitan cities, crime rose by 10.6% to 9.44 lakh cases, with theft accounting for 44.8%, followed by rash driving (9.2%) and obstruction on public ways (8.1%).

- **Changing Pattern of Crime:** Decline in traditional violent crimes such as rape and dowry deaths.

    - Surge in cybercrimes and urban-related offenses, reflecting social, technological, and lifestyle shifts.

    - **Cybercrimes** rose **sharply by 31.2% to 86,420 cases**, with nearly 69% involving online fraud.

    - Karnataka reported the highest number of cybercrime cases (21,889), followed by Telangana (18,236) and Uttar Pradesh (10,794).

- **Crimes against STs: Crimes against Scheduled Tribes** surged by 28.8%, from 10,064 in 2022 to 12,960 in 2023.

- **Crimes against Women: Crimes against women** saw a marginal rise of 0.4%, with most cases involving cruelty by husbands or relatives (29.8%), kidnapping (19.8%), and assault (18.7%).

Suggestions

- The Crime in India 2023 report highlights the urgent need for reforms in response to the evolving nature of crime, particularly in the digital space.

- Key policy recommendations include strengthening cybercrime infrastructure through investments in digital forensic labs and public awareness campaigns, improving reporting mechanisms with anonymous channels and victim support, and training police in gender-sensitive and child-friendly protocols.

- It also calls for standardising crime classifications, enhancing inter-state coordination via a national crime analytics dashboard, and accelerating judicial processes with fast-track courts for cyber and gender-based cases.

About NCRB

- **Establishment:** 1986 on recommendations of the Tandon Committee, National Police Commission (1977-81), and MHA Task Force (1985).

- **Parent Ministry:** Ministry of Home Affairs (MHA).

- **Functions:** Acts as the national repository of crime and criminal data.

  - Manages the Crime and Criminal Tracking Network & Systems (CCTNS).

- **Publishes three major reports:** Crime in India, Accidental Deaths & Suicides, and Prison Statistics.
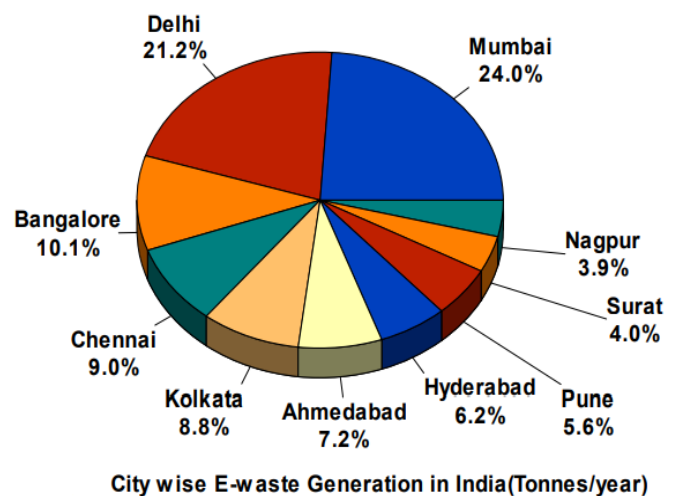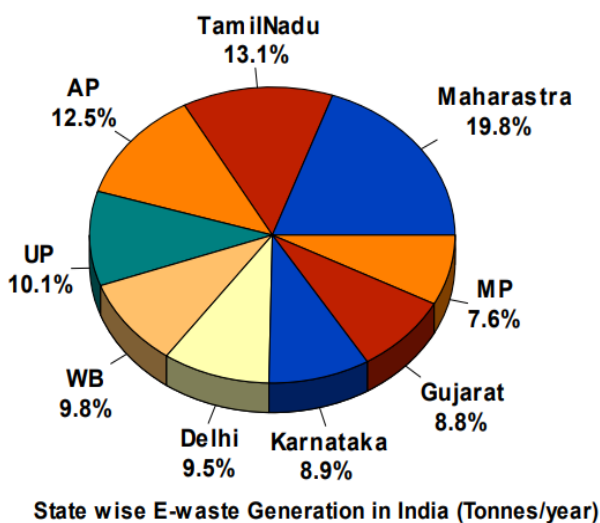

Source :HT

E-WASTE COLLECTION FACES GAPS AS GOVERNMENT SETS SIGHTS ON RECYCLING FOR PRECIOUS METALS

Context

- As India pushes itself forward for local electronics manufacturing, from semiconductor fabs to the **Electronics Component Manufacturing Scheme (ECMS),** e-waste recycling threatens to undercut the progress.

About e-Waste in India

- E-waste — discarded electronic and electrical equipment — contains valuable materials such as copper, aluminum, nickel, cobalt, lithium, gold, and rare earth elements (REEs).

- India generated an estimated **4.17 million metric tonnes of e-waste in 2022**, but only about **one-third** of this was processed through formal channels.

  - It is driven by increased use of electronics, rapid obsolescence, and consumer upgrades.

- According to TRAI, India has over **93.9 crore mobile broadband connections, but** accounts for only about **4% of global electronics consumption.**

State wise E-waste Generation in India (Tonnes/year)

City wise E-waste Generation in India(Tonnes/year)

Gaps in Collection and Recycling

- A 2023 report by the **Indian Cellular and Electronics Association** highlights that e-waste recycling is **largely dominated by the informal sector**, which **handles up to 90–95% of e-waste** using unsafe methods such as open burning and acid leaching.

- **Key Challenges:**
  - Low formal collection (less than 10%) and recycling rates;
  - Health hazards for informal workers exposed to toxic substances;
  - Traceability issues in recovered materials, leading to leakage back into informal streams;
  - **Fake reporting and malpractices** in the EPR system — such as **'paper trading'** of recycling credits — have raised concerns over credibility.
  - Lack of standardized inventory systems and third-party audits.

Policy and Industry Response

- **E-Waste (Management) Rules, 2022:** These rules aim to ensure environmentally sound management of e-waste, and strengthen the **Extended Producer Responsibility (EPR) regime**, requiring manufacturers, producers, refurbishers, and recyclers to register on the **CPCB portal.** Key provisions include:
  - Environmental compensation for violations;
  - Verification and audit mechanisms;
  - Circular economy promotion through scientific recycling.
- **Formal Recycling Infrastructure (February 2025):** India has 322 registered recyclers with a processing capacity of over 22 lakh metric tonnes per year.
  - 72 registered refurbishers with a capacity of 92,000 metric tonnes per year.
- **Public Awareness and Education:** MeitY, in collaboration with industry bodies like **MAIT and NASSCOM**, has launched awareness campaigns across 31 states/UTs.
- Innovative models like **'mandi-style' aggregation systems** are being piloted to link informal collectors with formal recyclers.

Road Ahead

- Scaling up formal operations;
- Curbing malpractices in the EPR system;
- Enhancing product life cycles through repair;
- Creating robust inventory systems;

Source: TH

═══ NEWS IN SHORT ═══

SWACHH SHEHAR JODI (SSJ) INITIATIVE

Context

- The Ministry of Housing and Urban Affairs (MoHUA) launched the **Swachh Shehar Jodi (SSJ) initiative.**

Swachh Shehar Jodi (SSJ)

- It is a structured mentorship and collaborative action program under the **Ministry of Housing and Urban Affairs (MoHUA).**
- **Involves 72 mentor cities** paired with around **200 mentee cities** based on their performance in **Swachh Survekshan rankings.**
- **Aim:** To promote knowledge sharing, peer learning, and replication of best practices in urban sanitation and waste management.

Key Features:

- **Mentorship Model:** Top-performing cities (mentors) guide low-performing cities (mentees). Focus on experience sharing, action planning, and handholding.
- **Time-bound Program:** 100-day program to demonstrate the impact of city-to-city mentorship. Each mentor–mentee pair develops action plans with defined milestones.
- **Nationwide Engagement: Nearly 300 MoUs** signed across participating cities in the presence of city officials and political leaders.
  - The initiative creates a dynamic platform for collaboration, which will be evaluated in **Swachh Survekshan 2026.**

Significance

- One of the largest structured mentorship frameworks in India's urban waste management sector.
- Facilitates replication of successful sanitation practices across urban India, fostering sustainable urban transformation.

Source: IE

SAHYOG PORTAL

In News

- The Karnataka High Court dismissed X Corp's challenge to the Union government's Sahyog portal, affirming its legality under **Section 79(3)(b) of the IT Act, 2000**.

Sahyog portal

- It was launched by the **Ministry of Home Affairs in October 2024** and operated by the **Indian Cybercrime Coordination Centre (I4C)**.
- It serves as a centralized system for issuing takedown orders to internet intermediaries under **Section 79 of the IT Act**.
  - The Act provides "safe harbour" protection to platforms for user-generated content, this immunity i**s conditional—intermediaries**

must remove unlawful content upon receiving official notice under Section 79(3)(b).

- Sahyog automates this process and was first revealed during a Delhi High Court case involving a missing person.

Source :TH

THE UPDATED RANGARAJAN POVERTY LINE ESTIMATION

Context

- Economists from the RBI have updated the poverty line established by the Rangarajan Committee in 2014, for 20 major states of India using the latest Household Consumption Expenditure Survey (HCES) 2022-23.

What is a Poverty Line?

- A poverty line is a **threshold level of income or consumption** used to determine whether an individual or household is poor.

- Anyone living below this threshold is considered unable to afford basic necessities such as **food, shelter, clothing, education, and healthcare.**

- It helps the government;
    - ◆ to gauge the extent of poverty and **shape welfare policies** for the poor.
    - ◆ to **understand whether a set of policies has actually worked** over time to reduce poverty and improve wellbeing.

Rangarajan Committee (2014)

- It was constituted in **2012** and submitted its report in **2014**.

- The Committee recommended separate consumption baskets for rural and urban areas.
    - ◆ The Rangarajan Committee set the rural poverty line at ₹972 per month (₹32 per day).
    - ◆ The urban poverty line was set at ₹1,407 per month (₹47 per day).

- These estimates pegged **29.5 percent** of the Indian population as poor in 2011-12.

- The government did not take a call on the report of the Rangarajan Committee, therefore, poverty is measured using the Tendulkar poverty line.

Key findings of latest update

- Odisha and Bihar have made the biggest improvement over the last decade.
    - ◆ **Odisha:** Rural poverty fell from 47.8% to 8.6%.
    - ◆ **Bihar:** Urban poverty fell from 50.8% to 9.1%.

- **Lowest Rural Poverty (2022-23):** Himachal Pradesh (0.4%).

- **Lowest Urban Poverty (2022-23):** Tamil Nadu (1.9%).

- **Highest Poverty:** Chhattisgarh (Rural 25.1%, Urban 13.3%).

Source: IE

WAYS AND MEANS ADVANCES (WMA)

In News

- The RBI has set the **Ways and Means Advances (WMA)** limit for the central government at 50,000 crore for the second half of FY 2025-26.

Ways and Means Advances (WMA)

- The WMA is a temporary advance given by the RBI to the central, state governments and Union Territories to tide over any mismatch in receipts and payments.

- The WMA has been decided in consultation with the Central government.

Source :Air

SODAR SYSTEM

Context

- On the occasion of CSIR's Foundation Day, (26th September), **SODAR (Sound Detection and Ranging) system facility** was inaugurated at India Meteorological Department, (IMD).

About

- It is designed & developed by **CSIR–Advanced Materials and Processes Research Institute (AMPRI), Bhopal.**

- **The MoU facilitates the sharing of SODAR system** data across various locations **for forecasting, validation, and research initiatives.**

- Expected to advance meteorology, climate science, environmental studies, and benefit research communities and national preparedness.

Sound Detection and Ranging (SODAR)

- **Purpose:** Probes the lower atmosphere (up to 1 km) to study **thermal structure, turbulence, inversion layers, fog, and plumes.**
    - ◆ Useful in air quality modeling, forecasting, and interpretation of meteorological data.

- **Working Principle:** Acoustic pulses transmitted vertically through an antenna.
    - ◆ Pulses interact with thermal inhomogeneities and wind, and get scattered.
    - ◆ Backscattered pulses received by the same antenna in a monostatic system.

- ◆ Signals are amplified, processed, and displayed as an echogram.
- **Applications:**
  - ◆ **Meteorology:** Measuring vertical profiles of wind, temperature, and turbulence.
  - ◆ **Air Pollution Monitoring:** Studying how pollutants disperse in the atmosphere.
  - ◆ **Renewable Energy:** Assessing wind profiles for wind turbine siting.
  - ◆ **Climate Research:** Studying boundary layer dynamics.

Source: IE

RED SANDERS (PTEROCARPUS SANTALINUS)

Context

- The National Biodiversity Authority (NBA) has sanctioned an amount of 82 lakh to the Andhra Pradesh Biodiversity Board for the **conservation of Red Sanders (Pterocarpus santalinus).**
  - ◆ The **National Biodiversity Authority** is a **statutory authority** set up under India's Biological Diversity Act (2002).

About

- Red sanders are native to **Southern Eastern Ghats,** primarily found in the Indian states of Andhra Pradesh and Tamil Nadu.
- They are high in demand across Asia, particularly in **China and Japan**, for use in **cosmetics and medicinal products** as well as for making furniture, woodcraft and musical instruments.
- It is a slow-growing tree species, taking **25-40 years** to mature, which makes recovery from over-harvesting difficult.
- **Conservation Status:**
  - ◆ It is under **'endangered list'** in the International Union for Conservation of Nature (IUCN) Red List.
  - ◆ It is listed in **Appendix-II** of the **Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES).**
  - ◆ Listed under **Schedule IV** of The **Wildlife Protection Act, 1972.**

Source: PIB

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