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1 . Annual Survey of Industries (ASI) 2024–25

Syllabus Mapping: GS-III: Indian Economy | Manufacturing Sector | Industrial Growth | Employment | National Income Accounting

- **ASI is conducted by the National Statistical Office (NSO), MoSPI** and is the principal source of statistical information on the **organised/registered manufacturing sector**.
- **MoSPI released the ASI 2024–25 results** for the reference period **April 2024–March 2025**; fieldwork was conducted from **October 2025 to June 2026**.
- The number of registered manufacturing establishments increased from **2.60 lakh to 2.67 lakh**, a growth of **2.64%** over ASI 2023–24.
- **Gross Value Added (GVA)** increased from **₹24.58 lakh crore to ₹26.94 lakh crore**, registering **9.59% growth**.
- **Fixed capital** increased by **10.54%**, while **invested capital** — fixed capital plus physical working capital — increased by **11.10%**.
- Employment in the registered manufacturing sector increased from **1.96 crore to 2.10 crore persons**, registering **7.19% growth**; total **emoluments increased by 12.08%**.
- **Industrial output increased by 7.81%**, while **net income increased by 9.68%** and **net profit by 7.73%**.
- The five leading industries — **basic metals, motor vehicles, chemicals & chemical products, pharmaceuticals and food products** — together contributed **more than 45% of total manufacturing GVA**.
- **Maharashtra, Gujarat, Tamil Nadu, Karnataka and Uttar Pradesh** were the top five States in manufacturing GVA, together accounting for **more than 54% of all-India manufacturing GVA**.
- **Tamil Nadu, Maharashtra, Gujarat, Uttar Pradesh and Haryana** were the top five States in manufacturing employment, together accounting for **about 56% of total manufacturing employment**.
- ASI broadly covers **factories registered under Sections 2m(i) and 2m(ii) of the Factories Act, 1948**, along with specified bidi & cigar establishments, certain electricity undertakings and eligible establishments with **100 or more employees** in State Business Registers.
- ASI follows an **establishment approach**, meaning data are collected from individual establishments rather than treating the enterprise as the primary unit for data collection.
- Data are collected through a **dedicated web portal** under the **Collection of Statistics Act, 2008**, as amended in 2017.

2. Green Energy Corridor Phase-III (GEC-III)

Syllabus Mapping: GS-III: Infrastructure | Energy | Renewable Energy | Power Sector Reforms | Energy Security | Climate Change

- The **Union Cabinet approved Green Energy Corridor Phase-III (GEC-III)** to strengthen the **Intra-State Transmission System (InSTS)** for evacuation and grid integration of up to **135 GW of renewable energy** across States/UTs.
- Of this, **₹1,36,378 crore** is allocated for development of **Intra-State Transmission Systems**, while **₹50,000 crore** is allocated for **50 GWh of Battery Energy Storage Systems (BESS)**.
- The scheme provides total **Central Financial Support (CFS) of ₹54,082 crore**, which will help offset intra-state transmission charges and thereby reduce the transmission-related cost of renewable power for end users.
- The **50 GWh BESS** will be deployed at renewable-energy developer/generator ends or other strategically important locations to provide **grid flexibility** and address renewable-energy intermittency, congestion, peak-hour curtailment and non-solar-hour demand.
- For the InSTS component, **greenfield projects** will follow **Tariff Based Competitive Bidding (TBCB)**, while **brownfield upgradation and network strengthening** will be undertaken on a **Cost Plus Basis (CPB)**.
- **State Transmission Utilities (STUs)** will serve as the overall implementing agencies, while Transmission Service Providers selected through TBCB will operate under the **Build-Own-Operate-Maintain (BOOM)** model.
- GEC-III is intended to support India's target of **900 GW installed non-fossil capacity by 2035**, while strengthening long-term energy security and reducing the carbon footprint of the power sector.
- A **Green Energy Corridor** is essentially a transmission infrastructure framework for integrating large-scale renewable-energy generation with the electricity grid and enabling its evacuation to demand centres.
- **Intra-State Transmission System (InSTS)** refers to transmission infrastructure within a State/UT; GEC-III therefore focuses on strengthening transmission **within States/UTs** for renewable-energy integration.

- **Battery Energy Storage Systems (BESS)** store electricity when supply is available and release it when required, helping with **peak demand, renewable intermittency, congestion management and grid balancing**.
- **BOOM (Build-Own-Operate-Maintain)** means the transmission service provider builds, owns, operates and maintains the transmission asset under the applicable transmission arrangement.

3. CHIME Telescope – Hydrogen Mapping & Dark Energy

Syllabus Mapping: GS-III: Science & Technology | Astronomy & Space Science | Radio Astronomy | Cosmology | Dark Energy

- The **Canadian Hydrogen Intensity Mapping Experiment (CHIME)** telescope has, for the first time using **only its own data**, detected the faint radio glow of hydrogen from a period when the universe was about **5 billion years old**.
- The international collaboration includes researchers from India, including scientists from the **Raman Research Institute (RRI)**, an autonomous institute of the **Department of Science & Technology (DST)**.
- CHIME is an **interferometric radio telescope in Canada** designed to map the distribution of hydrogen gas in the universe and use this distribution to study **cosmic expansion and dark energy**.
- The detected signal comes from **neutral atomic hydrogen**, whose faint radio emission acts as a tracer of the distribution and clustering of matter across the universe.
- Earlier, CHIME observations had to be **cross-correlated with galaxy-survey data from other telescopes**; the new result demonstrates that CHIME can detect and analyse the hydrogen signal independently using its own observations.
- The technique can potentially provide a **faster and less expensive method** for studying cosmic expansion and testing competing theories about the nature of **dark energy**.
- The accompanying analysis found that approximately **2% of the hydrogen was in neutral atomic form** at the observed cosmic epoch, broadly consistent with other measurements.
- CHIME has nearly **seven years of observational data**, and researchers plan to extend the analysis to earlier periods when the universe was about **three billion years old**.
- **Hydrogen intensity mapping** measures the combined radio emission from large amounts of hydrogen rather than individually resolving and cataloguing every galaxy, allowing large-scale mapping of the distribution of matter.
- Neutral atomic hydrogen emits the characteristic **21-cm radio signal** due to the hyperfine transition of neutral hydrogen; its redshifted signal can be used to trace hydrogen across different cosmic epochs.
- **Interferometric radio telescopes** combine signals received by multiple antennas to obtain information about astronomical radio sources and improve angular-resolution and measurement capabilities.

4. ASEAN–India Maritime Exercise (AIME-2026)

Syllabus Mapping: GS-II: India–ASEAN Relations | GS-III: Maritime Security | Indian Ocean & Indo-Pacific | Defence Cooperation

- The **Second Edition of ASEAN–India Maritime Exercise (AIME-2026)** commenced at **Subic Bay, Philippines, on 28 September 2026**, with participation from the Indian Navy and maritime forces of ASEAN Member States.
- India is participating with **INS Sahyadri and INS Kulish** under the theme **"Anchored in Trust, United at Sea."**
- The **Harbour Phase** includes **Subject Matter Expert Exchanges, sporting and cultural activities, community engagement and Operational Synchronisation**, followed by a Pre-Sail Brief.
- The exercise will subsequently enter the **Sea Phase**, involving coordinated maritime exercises and operational serials to enhance **professional understanding, operational coordination and interoperability**.
- AIME-2026 is intended to strengthen **mutual understanding, practical cooperation and interoperability** between the Indian Navy and ASEAN maritime forces.
- The exercise advances India's **Act East Policy** and the vision of **MAHASAGAR – Mutual and Holistic Advancement for Security and Growth Across Regions**
- **ASEAN** comprises **11 Southeast Asian member states** and is an important institutional pillar of India's engagement with Southeast Asia and the wider Indo-Pacific. Timor-Leste becoming the latest member.
- India became a **Dialogue Partner of ASEAN in 1992**, a **Summit-level Partner in 2002** and a **Strategic Partner in 2012**, providing the institutional foundation for deeper political, economic and security cooperation.

5. CAG–BHASHINI Anuvaad

Syllabus Mapping: GS-II: E-Governance | Digital Governance | GS-III: Artificial Intelligence | Digital Public Infrastructure |

- **Digital India BHASHINI Division (DIBD)** under **Digital India Corporation (DIC), MeitY**, in collaboration with the **CAG**, launched **"CAG-BHASHINI Anuvaad"** on 30 September 2026.

- The solution is an **AI-enabled document translation system developed by BHASHINI** specifically to support translation of **official CAG documents and audit-related reports**.
- It brings **Language AI into institutional workflows**, with emphasis on **consistent terminology, contextual translation and quality of output**, while retaining **human oversight**.
- The initiative aims to make **audit findings and official information more accessible to citizens in Indian languages**, thereby supporting multilingual and inclusive governance.
- **BHASHINI currently supports 36 Indian text languages, 23 Indian voice languages and 35 international languages.**
- BHASHINI is being used for public-service applications including **multilingual agricultural advisories, voice-enabled grievance registration and processing, and conversational voice/telephone-based services**.
- **BHASHINI** is India's national platform for **AI-powered multilingual language technology**, aimed at reducing language barriers in access to digital public services.

6 . PRAMAAN – Indian Forest and Wood Certification Scheme (IFWCS)

Syllabus Mapping: GS-III: Environment | Forest Conservation | Sustainable Forest Management | Biodiversity | Agroforestry

- **India issued its first PRAMAAN certificates** under the **Indian Forest and Wood Certification Scheme (IFWCS)** in September 2026, marking the transition of the scheme from a policy framework to **field-level implementation**.
- The first certificates were awarded to **Andhra Pradesh Forest Development Corporation (APFDC)** for plantations covering **33,000 hectares**, and to a **bamboo farmer from Odisha** associated with the Odisha Bamboo Development Agency.
- The certified plantations underwent **field and management audits**, with certification based on an independent assessment rather than voluntary self-declaration.
- **IFWCS was launched by MoEFCC in December 2023** to provide a credible national framework for certification of **forests, wood and non-timber forest products (NTFPs)** and connect certified products with domestic and international markets.
- PRAMAAN is intended to help Indian producers and exporters meet emerging global requirements for **responsible and deforestation-free timber sourcing**, where market access increasingly depends on verifiable sustainability credentials.
- Certification is available across **Forest Management, Tree Outside Forest Management and Chain of Custody**, bringing both forest plantations and tree-based farming within the certification system.
- **Forest Management certification** is assessed against the **Indian Forest Management Standard**, which forms part of the **National Working Plan Code (NWPC) 2023**.
- Certification bodies under PRAMAAN are accredited by the **National Accreditation Board for Certification Bodies (NABCB)** under the **Quality Council of India (QCI)**, providing the independent certification architecture.
- The scheme also has a livelihood dimension by bringing **smallholder farmers, rural and tribal communities, forest-dependent communities, women SHGs and marginal landholders** engaged in agroforestry, NTFP collection/processing and tree-based agriculture into certified markets.
- **Chain of Custody (CoC) certification** tracks certified forest products through the supply chain, helping establish that the material reaching the final market can be traced back to its certified source.
- **Tree Outside Forests (TOF)** refers to trees grown outside formally designated forest areas, including trees on **farms, plantations and agroforestry systems**; PRAMAAN therefore extends certification beyond conventional forests.

7. Steel Industry Safety Council (SISC)

Syllabus Mapping: GS-III: Industry | Manufacturing | Industrial Safety | Occupational Health & Safety | Disaster Management

- The **Ministry of Steel** has decided to establish the **Steel Industry Safety Council (SISC)** as an **apex-level industry safety body** under the administrative control of the Ministry of Steel.
- SISC will focus on strengthening **safety standards, accident prevention, safety practices and safety awareness** across the steel industry.
- The Council will be headed by the **Secretary, Ministry of Steel**, and include senior Ministry officials, CEOs of integrated steel producers and representatives of **DGMS, PESO, NDMA and recognised steel technology institutions**.
- SISC will **assess the safety situation**, facilitate studies, approve **industry safety standards and recommended practices**, and review **serious accidents, accidents and near-miss incidents**.
- A **Steel Industry Safety Directorate (SISD)** will be established to provide technical and professional support to SISC, with expertise in **process safety, blast furnaces, steel melting, rolling mills, coke ovens, refractory systems, electrical and mechanical safety, occupational health, fire engineering and disaster management**.

- SISD will oversee implementation of SISC decisions, conduct **periodic safety audits and reviews**, maintain and disseminate accident/near-miss information, investigate serious incidents and review **emergency preparedness and safety training**.
- SISD will also develop and issue **Steel Industry Safety Standards, Recommended Practices and Guidelines** suited to Indian conditions.
- **Near-miss incidents** are events that could have resulted in an accident or injury but did not; systematic recording and analysis of near misses can help identify hazards before they cause major accidents.
- **Occupational safety** covers protection of workers from workplace hazards, while **emergency preparedness** focuses on the ability of an industrial facility to respond effectively to accidents, fires, explosions and other emergencies.

8. International Whaling Commission (IWC-70)

Syllabus Mapping: GS-III: Environment | Marine Biodiversity | Species Conservation | International Environmental Conventions |

- **IWC-70**, the 70th meeting of the **International Whaling Commission (IWC)**, is being held in **Hobart, Australia, from 28 September–2 October 2026**, where India reaffirmed its commitment to cetacean conservation.
- India emphasised **science-based conservation, international cooperation and practical measures** to address threats to whales and other cetaceans.
- India highlighted the need for better scientific information on **population status, distribution, movements, breeding ecology and threats** to support evidence-based conservation decisions.
- India called for greater cooperation among **range countries, scientific institutions, governments, researchers and local communities** to develop practical and locally appropriate conservation measures.
- IWC-70 coincides with the **80th anniversary of the signing of the International Convention for the Regulation of Whaling**, signed in **Washington, D.C., on 2 December 1946**.
- The **IWC was established under this Convention** as the global body responsible for the management of whaling and conservation of whales; it currently has **89 member governments**. India has been an IWC member since **1981**.
- Cetaceans occurring in Indian waters receive the **highest level of legal protection under the Wild Life (Protection) Act, 1972**, while Marine Protected Areas provide additional protection to marine biodiversity.
- **Project Dolphin** adopts a holistic approach to conservation of **dolphins, whales, porpoises and associated aquatic ecosystems**.
- India has also identified the **Arabian Sea humpback whale** among **25 species for focused conservation efforts**.
- **Cetaceans** are marine mammals comprising **whales, dolphins and porpoises**; conservation therefore covers a broader group than whales alone.
- The **International Convention for the Regulation of Whaling (1946)** provides the legal basis for the IWC and its international framework for **whaling management and whale conservation**.

9. People's Plan Campaign 2026–27 – "Sabki Yojana, Sabka Vikas"

Syllabus Mapping: GS-II: Panchayati Raj | Decentralisation | Participatory Governance | Local Planning | Rural Development

- **Special Gram Sabhas** will be held across India on **2 October 2026** to discuss governance reforms, implementation of citizen-centric schemes and local development priorities.
- The occasion also marks the launch of **People's Plan Campaign (PPC) 2026–27 – "Sabki Yojana, Sabka Vikas"**, under which Gram Panchayats will prepare their **GPDPs for FY 2027–28** through participatory and evidence-based planning.
- The **Ministry of Panchayati Raj** is coordinating the campaign with other Ministries/Departments under a **Whole-of-Government approach** to grassroots development.
- Panchayat-focused initiatives include **Finance Commission grants, Rashtriya Gram Swaraj Abhiyan, eGramSwaraj, AuditOnline, Own Source Revenue (OSR), SVAMITVA and Panchayat Advancement Index (PAI)**.
- The **Panchayat Advancement Index** enables Panchayats to identify their **achievements and development gaps**, which can then inform Gram Sabha discussions and priorities for the year ahead.
- The campaign brings schemes from different sectors into Gram Sabha discussions, including **VB-G RAM G, Jal Jeevan Mission, SBM-Grameen, Jal Sanchay Jan Bhagidari, ONORC, PMGKAY, DILRMP and PMKSY**.
- **More than 2.55 lakh Gram Panchayats** prepare and upload their development plans on **eGramSwaraj**, providing a digital platform for Panchayat-level planning.
- Gram Sabha discussions will also cover **new criminal laws, digital transformation, cooperatives, women and child protection initiatives**, and the **Solid Waste Management Rules, 2026**.
- The campaign seeks to strengthen **participatory governance** by allowing citizens to provide feedback on schemes, identify local gaps and participate in determining village-level development priorities.
- **People's Plan Campaign (PPC)** has been implemented across States/UTs since **2018** to facilitate **holistic, inclusive and participatory Panchayat Development Plans**.

- **Gram Panchayat Development Plan (GPDP)** is the local development plan prepared by a Gram Panchayat through a participatory process, reflecting **local needs, available resources and development priorities**.

10. Sādhana Shrinkhla 2026 – Training Institution Transformation

Syllabus Mapping: GS-II: Governance | Civil Services Capacity Building | Institutional Reform | Citizen-Centric Governance p|

- **Capacity Building Commission (CBC)** is organising **Sādhana Shrinkhla 2026** under **Mission Karmayogi** to transform government Training Institutes into strategic, competency-driven **Capacity Building Institutions**.
- **Sādhana** stands for **Strengthening Adaptive Development and Humane Aptitude for National Advancement**.
- The initiative builds on **Sādhana Saptah 2026 (2–8 April)**, consultations through four Regional Task Forces and the **National Departmental Summit (15 May 2026)** on institutionalising capacity building.
- "Four regional workshops are being conducted/planned across Vijayawada, Guwahati, Lucknow and Pune."
- The objective is to move Training Institutes from **standalone training providers to strategic Capacity Building Institutions**, anchored in **Capacity Building Plans (CBPs)** that translate role-based competency requirements into targeted institutional action.
- The workshops will focus on **institutional governance and leadership, operational effectiveness, collaboration, training quality, faculty development and adoption of digital and emerging technologies**.
- Training quality enhancement will be aligned with the **Karmayogi Quality Framework (KQF)**, while the broader objective is to provide the **"Right Capacity Building, for the Right Role, at the Right Time."**
- Implementation will be anchored in the **Unified New-Age National Training Initiative (UNNATI) portal**, which will connect **900+ Training Institutions** on a common platform for institutional visibility, cooperation and data-informed improvement.
- **UNNATI Exchange (UXchange)** will enable Training Institutions to share and access **training courses, faculty and infrastructure**, promoting collaboration and co-sharing.
- The consultations will contribute to finalising the **Training Institution Transformation Framework** and extend Mission Karmayogi's capacity-building approach across government, from **ASHA workers to senior civil servants**.

11 . PM E-DRIVE Scheme

Syllabus Mapping: GS-III: Environment | Electric Mobility | Energy Security | Automobile Industry | Infrastructure | Sustainable Development

- **PM E-DRIVE** — PM Electric Drive Revolution in Innovative Vehicle Enhancement — was launched in **September 2024** and implemented from **October 2024** to accelerate EV adoption and develop supporting infrastructure.
- It is a **Central Sector Scheme** of the Ministry of Heavy Industries (MHI). The scheme has a total outlay of **₹11,900 crore** and has been extended up to **31 March 2028**.
- PM E-DRIVE provides **demand incentives and infrastructure support** for **e-2Ws, e-3Ws, e-ambulances, e-trucks, e-buses, EV charging infrastructure and upgradation of vehicle-testing agencies**.
- For registered e-2Ws, the incentive was ₹2,500/kWh, capped at ₹5,000 per vehicle, for vehicles priced up to ₹1.5 lakh ex-factory; the e-2W demand-incentive component had a terminal date of 31 July 2026.
- The **e-3W L5** target has been achieved and this sub-component was closed on **26 December 2025**, while support for **e-rickshaws and e-carts** continues until March 2028.
- Eligible buyers receive the demand incentive through **e-vouchers as an upfront reduction in purchase price**, with the amount subsequently reimbursed to the OEM by the **Ministry of Heavy Industries (MHI)**.
- The scheme also promotes **domestic EV manufacturing and localisation**; participating OEMs have localised EV models and obtained compliance certificates under the **Phased Manufacturing Programme (PMP)**.
- **Charging infrastructure support** is intended to address the infrastructure gap that can constrain EV adoption and includes establishment of public charging stations.
- The scheme also supports **modernisation and upgradation of vehicle-testing agencies**, strengthening the institutional ecosystem required for testing and certification of advanced and electric vehicles.

12. NABKISAN's WASH Social Bond

Syllabus Mapping: GS-III: Inclusive Growth | Sustainable Finance | Rural Development | Social Infrastructure | Water & Sanitation

- **NABKISAN Finance Limited**, a subsidiary of **NABARD**, listed India's **first Social Bond dedicated exclusively to the Water, Sanitation and Hygiene (WASH) sector** on NSE, Mumbai, on 1 October 2026.
- The **₹180 crore Social Bond** was oversubscribed **1.8 times**, indicating strong investor participation in development-oriented financial instruments.

- The bond has a **five-year tenure**, carries an **8.10% coupon rate** and will mature in **September 2031**.
- It received the highest domestic credit ratings of **CRISIL AAA (Stable)** and **CARE AAA (Stable)**.
- The proceeds will finance expansion of **safe water, sanitation and hygiene solutions** for rural and underserved communities, with expected benefits for health, livelihoods and quality of life.
- **Water.org** supported the transaction as **Technical Advisor and Knowledge Partner**, along with other market institutions, advisors, trustees and arrangers.
- The issuance demonstrates the use of **capital-market financing for development priorities**, enabling development institutions to mobilise private/institutional capital while targeting measurable social outcomes.
- A **Social Bond** is a debt instrument through which funds are raised specifically for projects that generate **positive social outcomes**, distinguishing it from a conventional bond through the use-of-proceeds objective.
- **NABKISAN Finance Limited** is a subsidiary of **NABARD** and focuses on providing financial support to agriculture and rural-sector activities, making it an important institutional link for rural development financing.

13. Great Indian Bustard (GIB) Recovery Programme

Syllabus Mapping: GS-III: Environment & Ecology | Species Conservation | Biodiversity | Protected Areas | Human–Wildlife Interface

- During Wildlife Week 2026, two captive-bred male Great Indian Bustards were released into the wild at Desert National Park, Jaisalmer, marking the transition from conservation breeding towards rewilding.
- The release is part of a **decade-long GIB Recovery Programme** and will help generate scientific learnings to progressively refine protocols for releasing captive-bred birds into their natural habitat.
- The **Bustard Recovery Programme** is a collaborative initiative of **MoEFCC, Rajasthan Forest Department and Wildlife Institute of India (WII)**, with technical collaboration from the **International Fund for Houbara Conservation** and funding support from **National CAMPA**.
- Captive breeding produced **24 live chicks in 2025 and 29 in 2026**, while the innovative **'jumpstart' approach** involved placing captive-laid eggs in wild nests accepted by incubating females, producing six chicks in Rajasthan and two in Gujarat.
- Rajasthan Forest Department has established around **200 sq km of fenced grassland enclosures inside Desert National Park**, identified through long-term WII telemetry studies as important breeding habitats.
- **Great Indian Bustard (*Ardeotis nigriceps*)** is a large, ground-dwelling bird adapted to **open arid and semi-arid landscapes**, including short grasslands, open scrub and rain-fed agricultural areas; it is a specialist of open habitats rather than dense forests.
- It is classified as **Critically Endangered by the IUCN** and receives the highest legal protection as a **Schedule I species under the Wild Life (Protection) Act, 1972**.
- GIB has a **slow life-history**, including delayed maturity and very low reproductive output; this makes population recovery difficult even after threats are reduced and makes every breeding adult particularly valuable for conservation.
- Its major contemporary threats include **habitat conversion and fragmentation, intensive agriculture, infrastructure development and especially collisions with overhead power lines**; its heavy body and flight behaviour make power-line collisions particularly dangerous.
- **Desert National Park (DNP)** is located in **Jaisalmer and Barmer districts of Rajasthan** and represents one of India's important protected landscapes of the **Thar Desert**; its ecological significance extends beyond the GIB to desert and grassland biodiversity.

14. Tiger Reintroduction in Buxa Tiger Reserve

Syllabus Mapping: GS-III: Environment & Ecology | Tiger Conservation | Species Reintroduction | Human–Wildlife Conflict

- **Buxa Tiger Reserve (BTR), West Bengal** has begun a phased Tiger Reintroduction Programme with the release of the **first tigress**, translocated from **Valmiki Tiger Reserve, Bihar**, to restore a viable and self-sustaining tiger population.
- The intervention is designed to **complement natural recovery**, rather than simply introduce animals, and follows assessment of habitat, prey availability, veterinary parameters, protection preparedness and population viability.
- Buxa has historically been an important tiger landscape but suffered from **habitat degradation and fragmentation, land-use changes and reduced prey availability**, resulting in the prolonged absence of a stable resident tiger population.
- Since 2018, the **Tiger Augmentation and Recovery Project**, led by West Bengal with support from **NTCA and WII**, has focused on habitat improvement, prey augmentation, protection, scientific monitoring and capacity building.
- More than **800 chital** have been released to strengthen the prey base, while around **380 hectares of grassland** have been restored or converted over the past eight years; monitoring indicates improvement in prey abundance.
- The released tigress will undergo intensive **post-release monitoring through telemetry, camera trapping and field-based monitoring** to assess movement, adaptation, health and behaviour.

- **Buxa Tiger Reserve was established in 1983** and is located in **Alipurduar district of northern West Bengal**, forming an important forest landscape adjoining **Bhutan to the north and Assam to the east**.
- Buxa forms part of the **Eastern Himalayan–Terai-Duar ecological landscape**, making it important for maintaining connectivity between forests of eastern India and Bhutan.
- The reserve contains a mosaic of **forests, grasslands and riverine habitats**, providing habitat for tigers as well as their prey base and other wildlife.
- The **Buxa–Manas connectivity** is particularly important because natural movement of tigers between landscapes can maintain **gene flow, dispersal and demographic resilience**, reducing the risks associated with isolated populations.

15. RoDTEP Scheme

Syllabus Mapping: GS-III: Indian Economy | Exports | Foreign Trade Policy | Export Competitiveness | WTO

- The **Department of Commerce** has extended the **Remission of Duties and Taxes on Exported Products (RoDTEP)** Scheme up to **31 December 2026.**
- The extension covers exports by **Domestic Tariff Area (DTA) units, Advance Authorisation (AA) holders, Special Economic Zone (SEZ) units and Export Oriented Units (EOUs)**.
- RoDTEP reimburses **embedded and un-rebated Central, State and local duties, taxes and levies** borne on exported products, including **prior-stage cumulative indirect taxes**.
- The **existing RoDTEP rates and value caps** under **Appendix 4R and Appendix 4RE** remain unchanged during the extended period.
- The scheme seeks to improve the **international price competitiveness of Indian exports** by neutralising domestic taxes and levies that are not otherwise refunded or exempted.
- **RoDTEP was introduced from 1 January 2021** as an export-remission mechanism to replace the earlier **MEIS (Merchandise Exports from India Scheme)**, which had come under WTO-related concerns.
- RoDTEP is based on the principle that **taxes and duties that are not meant to be exported should not remain embedded in the price of exported goods**; hence, it seeks to refund such unrebated levies rather than provide an export subsidy linked to export performance.
- The benefit is provided through a **digital transferable e-scrip**, which can be used for payment of specified **Basic Customs Duty (BCD)** liabilities.
- **Rates and value caps are product-specific**, with rates notified under the relevant appendices; therefore, the benefit is not a uniform percentage for all exports.
- The scheme is administered under the **Foreign Trade Policy framework** by the **Department of Commerce/DGFT**, with the remission mechanism operationalised through customs systems.
- RoDTEP is distinct from schemes that directly subsidise exporters: its basic rationale is **remission of embedded unrebated taxes and duties**, helping maintain a level playing field in international markets.

16 . National Household Travel Survey (NHTS) 2025–26

Syllabus Mapping: GS-III: Infrastructure | Urbanisation | Inclusive Growth | Evidence-based Policy | GS-I: Urbanisation & Society

- The **National Statistics Office (NSO), MoSPI** conducted the **first-ever all-India National Household Travel Survey (NHTS)** during **July 2025–June 2026**, covering **14,274 villages, 10,377 urban blocks, 4,92,023 households and 20,34,371 persons**.
- The survey defines a trip as travel covering **more than 1 km**; trips of 1 km or less are excluded from the travel estimates.
- **Two-wheelers are the leading mode of workforce mobility**, used by **42.6% of workers** undertaking within-travel-day trips to fixed/non-fixed workplaces; the share is **37.1% in rural areas and 52.3% in urban areas**.
- **57.6% of workers** undertake within-travel-day trips of more than 1 km to work, with a significant gender gap: **61.9% of male workers compared with 41.9% of female workers**.
- Student mobility is led by **walking (37.0%)**, followed by **buses (29.5%) and bicycles (15.8%)**, showing the continuing importance of low-cost and non-motorised transport for educational access.
- **87.6% of students reach educational institutions within 30 minutes**, while **83.4% of workers reach fixed workplaces within 30 minutes**, indicating relatively short average commute durations at the national level.
- Average monthly expenditure on commuting to a fixed workplace is **₹785 per worker**, but the urban–rural gap is substantial: **₹1,044 in urban areas versus ₹612 in rural areas**.
- For **overnight household journeys**, buses account for **55.8%** and inter-city railways **17.7%**, together accounting for **73.5%** of such journeys; cars account for 15.1% and two-wheelers 8.8%.

- **Social, communication and religious activities account for 70.2% of overnight travel**, while culture, leisure, sports and tourism account for 7.4%, highlighting that household mobility extends substantially beyond employment and education.
- The survey is intended to provide an evidence base for **transport-route optimisation, service frequency and scheduling, accessibility assessment, infrastructure investment and regional transport planning**.
- A key feature of NHTS is its **household-based approach**, allowing travel behaviour to be examined together with household and individual characteristics rather than measuring only traffic volumes on roads.
- The survey distinguishes between **within-travel-day trips and overnight trips**; an overnight trip requires the person to remain away from residence for more than 24 hours and, additionally, trips below **50 km are excluded** from the overnight-trip category even if the person stays away for more than 24 hours.

17. Project Cheetah — Indian-born Cheetah Breeds in Kuno

Syllabus Mapping: GS-III: Environment & Ecology | Species Reintroduction | Wildlife Conservation | Genetic Diversity

- An **Indian-born female cheetah KJP21**, aged 32 months, has given birth to **five healthy cubs at Kuno National Park**, taking India's cheetah population to **60**, including **41 Indian-born cheetahs**.
- KJP21 is the **third Indian-born female cheetah to reproduce**, after **Mukhi and KGP12**, marking the emergence of a new generation born and raised in India.
- The cubs represent the beginning of the **Botswana lineage in India**, as their father is a **Botswanan male cheetah**, thereby adding another genetic lineage to the reintroduced population.
- The development is significant for **Project Cheetah** because successful reproduction of Indian-born individuals indicates progression from merely establishing a founder population towards **natural population growth within India**.
- **Project Cheetah was launched in September 2022** with the objective of establishing a viable **cheetah metapopulation in India**, restoring the species to its former ecological range and promoting ecological restoration of grassland and open-forest ecosystems.
- India's reintroduction programme involves bringing cheetahs from **African countries**, particularly **Namibia and South Africa**, because the Asiatic cheetah population surviving today is restricted to Iran and is not the source population used for India's project.
- **Kuno National Park in Madhya Pradesh** is the principal site for Project Cheetah and was selected because of its relatively large prey base, suitable habitat and potential to support a cheetah population.
- Unlike tigers, cheetahs generally rely on **high-speed pursuit of prey in relatively open terrain**, making maintenance of open habitats and prey availability particularly important for their conservation.
- The Botswana lineage highlighted in the current development is important because maintaining **genetic diversity within a small founder population** can improve long-term population resilience and reduce risks associated with genetic bottlenecks.

18. State Support Mission (SSM) — NITI Aayog

Syllabus Mapping: GS-II: Cooperative Federalism | Institutional Capacity | Decentralised Planning | Evidence-Based Policymaking

- **NITI Aayog**, in collaboration with the **Government of West Bengal** and technical support from **UNDP**, organised a National Workshop on **SDG Budgeting** in Kolkata on 29 September 2026 under the **State Support Mission (SSM)**.
- The workshop focused on **SDG budget tagging**—linking government expenditure with specific SDGs and targets so that financial commitments can be tracked against measurable development outcomes
- **State Support Mission (SSM)** is an **ongoing Central Sector Scheme of NITI Aayog**, launched in **2022**, to strengthen structured and institutionalised engagement with States/UTs and support the vision of **Viksit Bharat@2047**.
- Its central focus is to help States/UTs establish **State Institutions for Transformation (SITs)** or transform existing Planning Departments/Boards/Commissions into multidisciplinary institutions for strategic and evidence-based policymaking.
- SSM is therefore **not a conventional infrastructure or beneficiary-oriented scheme**; it is primarily an **institutional and technical-capacity support mechanism** for State-level planning and governance.
- As of the latest NITI Aayog annual report, **32 SITs had been notified** under SSM, indicating the institutionalisation of the Mission across participating States/UTs.
- Under SSM, NITI Aayog supports States in strengthening **Monitoring & Evaluation (M&E) systems and data-analytics capabilities**, enabling evidence-based decisions, outcome assessment and mid-course corrections.
- The **NITI–State Workshop Series** functions as a platform under SSM for policy dialogue, cross-learning, sharing best practices and collaborative problem-solving; **over 78 workshops** had been conducted across sectors by July 2026.

19. National Supercomputing Mission (NSM)

Syllabus Mapping: GS-III: Science & Technology | ICT | Artificial Intelligence | Indigenous Technology

- India's supercomputing ecosystem has expanded under the **National Supercomputing Mission (NSM)**, with **40 supercomputers having a combined capacity of 68 PF as of September 2026**, including 13 systems above 1 PF.
- NSM was launched in **April 2015** with an outlay of about **₹4,500 crore** and is jointly steered by the **Department of Science and Technology (DST)** and **Ministry of Electronics and Information Technology (MeitY)**.
- **C-DAC, Pune and IISc, Bengaluru** are the implementing institutions; the Mission follows a **"Build" approach** covering assembly, manufacturing, and design/manufacturing support.
- NSM plans to establish **50 supercomputers with cumulative capacity exceeding 123 PF** across academic and research institutions, expanding access to HPC beyond specialised computing centres.
- India's indigenous HPC ecosystem now covers **servers, system software, high-speed interconnects and cooling technologies**, reducing dependence on imported supercomputing infrastructure.
- The **Rudra series of servers**, indigenously designed by C-DAC, forms a major component of **PARAM Rudra** systems; around **6,000 Rudra servers** had been deployed by September 2026, with another 1,500 under manufacturing.
- Indigenous **100 Gbps and 200 Gbps high-speed interconnect networks**, cooling technology and an HPC software stack have been developed to strengthen the domestic supercomputing ecosystem.
- NSM-supported applications include **genomics and drug discovery, weather and climate modelling, flood prediction, forest-fire spread modelling, seismic imaging, computational chemistry and materials science**.
- **National Knowledge Network (NKN)** acts as the high-speed connectivity backbone linking supercomputing facilities across academic and research institutions, enabling access to computational resources and collaboration.
- **PARAM Shavak**, a "supercomputing-in-a-box", has been developed for HPC and AI requirements of students and researchers in engineering colleges and universities.
- **NSM is a joint initiative of DST and MeitY**, combining the scientific-research mandate of DST with the electronics and information-technology capabilities of MeitY.
- The **PARAM series** represents India's indigenous supercomputing journey: **PARAM 8000**, developed by C-DAC and unveiled in **1991**, marked India's entry into indigenous supercomputing at around **1 gigaflop**.

20. Exercise MOUNTAIN GUARDIAN 2026

Syllabus Mapping: GS-II: India–UAE Relations | Defence Cooperation | GS-III: Defence Technology | Military Exercises

- **Exercise MOUNTAIN GUARDIAN 2026**, the India–UAE Joint Military Exercise, commenced at the **Foreign Training Node, Chaubatia, Uttarakhand**, and is being conducted from **5–18 October 2026**.
- The exercise involves **92 personnel with equal representation** from both countries; the Indian contingent comprises troops from a **Bhairav Battalion**, while the UAE contingent comprises troops from a **Mountain Infantry Battalion**.
- Its principal focus is **mountain warfare**, with emphasis on interoperability, tactical proficiency and exchange of operational practices in challenging mountainous terrain.
- Training includes **joint planning, tactical drills, firing practices, surveillance grids, drone operations, rock climbing, obstacle training and integrated field exercises**.
- **Women officers and combatants** from both armies are participating across specialist roles, reflecting greater participation of women in operational military activities.
- The exercise also incorporates **technology-enabled operations and exchange of tactics, techniques and procedures (TTPs)** relevant to mountain operations.
- The exercise seeks to strengthen **military-to-military cooperation, interoperability and mutual understanding** between India and the UAE.

21 . SME Growth Fund (SGF)

Syllabus Mapping: GS-III: Indian Economy | MSMEs | Industrial Growth | Employment | Exports | Alternative Investment Funds

- The Union Cabinet has approved a **₹10,000 crore commitment** towards establishing the **SME Growth Fund (SGF)** as part of the **Union Budget 2026–27** initiatives.
- The Fund will provide **patient equity capital** to high-potential **Small and Medium Enterprises (SMEs)** having demonstrated business viability and scalability, with the objective of helping them emerge as **sectoral champions**.
- The SGF is designed as a **direct equity investment fund** operating as an **Alternative Investment Fund (AIF)** under the SGF framework.

- Its major focus will be **small and medium manufacturing enterprises**, particularly those seeking to expand capacity, adopt advanced technology, improve productivity and strengthen export competitiveness.
- The Fund will also consider SMEs located in **industrial clusters in Tier-II and Tier-III cities**, supporting regional industrial development, local supply chains and quality employment.
- The Fund addresses a financing gap where existing equity funding is relatively concentrated towards **early-stage/micro enterprises**, while growing SMEs require larger amounts of long-term growth capital to cross critical stages of expansion.
- Growth capital can enable SMEs to **scale operations, undertake acquisitions, adopt advanced technologies, foster innovation, integrate into global value chains, expand manufacturing capacity and enter international markets**.
- As of 6 October 2026, **Udyam and Udyam Assist Platform registrations together stood at around 9.78 crore**, with registered MSMEs reporting around **43.28 crore employment opportunities**.
- MSMEs account for **31.1% of GDP, 35.4% of manufacturing output and 48.58% of exports**, according to the Economic Survey 2025–26.
- The wider MSME support ecosystem includes CGTMSE for credit guarantees, PMEGP for employment generation, PM Vishwakarma for end-to-end support, ESDP/ASPIRE for entrepreneurship and skills, RAMP/ZED/Tool Rooms for technology and competitiveness, and MSME SAMBANDH/SC-ST Hub for public procurement.
- The **SME Growth Fund is fundamentally an equity-capital intervention**, unlike credit-guarantee schemes such as **CGTMSE**, which facilitate access to institutional credit by providing credit guarantees.
- **Patient capital** refers to relatively long-term capital that allows an enterprise sufficient time to scale, invest in technology and capacity, undertake strategic expansion and reach commercial maturity without the immediate repayment pressure associated with conventional debt.
- An **Alternative Investment Fund (AIF)** is a privately pooled investment vehicle established in India that raises funds from investors and invests them according to a defined investment policy; the SGF is structured in this form.
- Under the **MSME classification effective from April 2025**, a **small enterprise** has investment up to **₹25 crore** and annual turnover up to **₹100 crore**, while a **medium enterprise** has investment up to **₹125 crore** and turnover up to **₹500 crore**.

22. OJ 287: Binary Supermassive Black Hole System

Syllabus Mapping: GS-III: Science & Technology | Astronomy & Space Technology | Black Holes | Multimessenger Astronomy

- A decade-long international study led by **Aryabhatta Research Institute of Observational Sciences (ARIES), Nainital**, an autonomous institution under DST, has tracked the changing brightness, colour and polarization of the blazar **OJ 287** using observations from 2015–2025.
- OJ 287 is located about **4 billion light years** away and contains **two supermassive black holes (SMBHs)** orbiting each other in a roughly **12-year orbit**, forming a rare binary black-hole system.
- OJ 287 is a **blazar**, a type of active astronomical object that produces powerful plasma jets moving at nearly the speed of light and directed toward Earth, resulting in strong and rapidly variable emission across the electromagnetic spectrum.
- Its characteristic **double-peaked brightness pattern** was identified in 1988 using nearly a century of optical observations dating back to 1880, after which astronomers continued monitoring its approximately 12-year cycle.
- Analysis of eight optical spectra obtained in 2017 from the Steward Observatory estimated the mass of the central black hole to be **at least 3.89 billion times the mass of the Sun**, based on the width of the [O III] emission line.
- The observations also have significance for **multimessenger astronomy**, which combines different signals from cosmic sources, including electromagnetic radiation, gravitational waves, neutrinos and cosmic rays.
- **Supermassive black holes** can have masses ranging from millions to billions of times the mass of the Sun and are generally associated with the centres of galaxies.
- A **binary black hole system** consists of two black holes gravitationally bound and orbiting a common centre of mass; their orbital dynamics can produce observable periodic or quasi-periodic signatures.
- A **blazar** is an active galactic nucleus in which a relativistic jet is oriented close to the line of sight of Earth, making its emission particularly bright and highly variable.
- **Relativistic jets** consist of highly energetic plasma moving at speeds approaching that of light and can produce radiation across multiple electromagnetic wavelengths.
- **Multimessenger astronomy** combines information from different cosmic messengers rather than relying only on electromagnetic observations, enabling complementary information about energetic astrophysical events and objects.

23. SAREX-2026 – National Maritime Search & Rescue Exercise

Syllabus Mapping: GS-III: Internal Security | Maritime Security | Disaster Management | Search & Rescue | International Cooperation

- The **Indian Coast Guard (ICG)** will conduct the **12th National Maritime Search & Rescue Exercise (SAREX-2026)** off the **Paradip coast, Odisha**, with the Raksha Rajya Mantri inaugurating the exercise on 7 October 2026.
- The exercise will witness **32 international observers from 30 countries**, highlighting international cooperation, common SAR protocols and interoperability in maritime emergencies.
- SAREX-2026 will deploy **15 Coast Guard ships, 2 Dornier aircraft, 3 ALHs, 1 Chetak helicopter, IAF C-130J and Mi-17 aircraft, 2 Indian Navy ships**, along with civil/state assets and shore-based support units.
- The exercise will simulate a **Mass Rescue Operation (MRO)** involving simultaneous aeronautical and maritime distress situations, including the ditching of a passenger aircraft carrying **228 persons at sea and its collision with the container vessel MV Zumba**.
- The exercise aims to strengthen **multi-agency coordination, rapid mobilisation of rescue assets and operational interoperability** during complex maritime emergencies.
- The NMSAR Board deliberations will focus on **national SAR preparedness, distress-alert management, technology integration and faster mobilisation of rescue assets** through seamless inter-agency coordination.

24. Fleet Support Ship (FSS) 'Surya'

Syllabus Mapping: GS-III: Defence Technology | Defence Manufacturing | Maritime Security | Indigenisation | Make in India |

- **Raksha Mantri Rajnath Singh** launched **FSS-1 'Surya'**, laid the keel of **FSS-5**, and inaugurated the upgraded **Slipway-4 and 300-tonne Goliath Crane** at Hindustan Shipyard Limited (HSL), Visakhapatnam, on 6 October 2026.
- The **Fleet Support Ships** are designed to strengthen the Indian Navy's **operational reach, endurance and sustained deployment** in distant maritime areas by providing at-sea replenishment and logistical support.
- The indigenous FSS vessels will have **enhanced cargo and fluid capacity, first-line maintenance workshops, a helicopter deck for Multi-Role Helicopter operations and self-defence systems**.
- HSL has upgraded and strengthened **Slipway-4** to enable construction and launching of ships of up to **45,000 DWT**, supporting larger and more complex shipbuilding programmes.
- The **300-tonne Goliath Crane**, spanning Slipways 3 and 4, has been manufactured under **Make in India** and incorporates PLC controls, Variable Frequency Drives, tandem lifting, remote diagnostics and condition monitoring for precise handling of heavy ship blocks.
- HSL attained **Miniratna Category-I status in 2025** after coming under the Ministry of Defence, reflecting its expanded role in India's indigenous maritime and defence manufacturing ecosystem.
- The development aims to strengthen an integrated maritime industrial ecosystem involving the **Indian Navy, HSL, DRDO, academia, MSMEs and startups**, with Visakhapatnam envisioned as a major **Maritime Industrial Hub**.

25. Indo-Swiss Research Framework (ISRF) 2026

Syllabus Mapping: GS-III: Science & Technology | International Cooperation in S&T | Research & Innovation

- The **Indo-Swiss Research Framework (ISRF)** was highlighted at the Indo-Swiss Research Flagship Event 2026 as a new structured platform to deepen long-term **India–Switzerland cooperation in Science, Technology and Innovation**.
- India–Switzerland S&T cooperation was formally established through an **Inter-Governmental Agreement in 2003**, followed by the **Indo-Swiss Joint Research Programme in 2005** to bring together researchers and faculty from both countries.
- The **Indo-Swiss Joint Committee on Science & Technology** reviews and guides bilateral cooperation; its **seventh round** was held in Bern in September 2025.
- Cooperation has expanded across institutions including **DST, DBT, MoES, ICMR and ICSSR** on the Indian side and the **Swiss National Science Foundation (SNSF)** and other Swiss institutions.
- Major areas of cooperation include **mountain and glacier research, geoscientific hazards, systems medicine, One Health and social sciences**, with newer work covering AI ethics, digital governance, inequality, justice, inclusion and economic transformation.
- Under the new framework, cooperation will focus on **research networks, researcher mobility, knowledge exchange, sustained collaboration and stronger academia–industry linkages**, while aligning research with national and globally relevant priorities.

- The **Explore programme**, a co-funded SNSF–DST initiative scheduled to open in November 2026, aims to build new research networks and larger consortia, with **9–12 month support** for travel, networking and small equipment.
- The **Academia-Industry Training (AIT India) programme** will promote science-based innovation, technology transfer and entrepreneurship through cooperation between **DST and Zurich University of Applied Sciences (ZHAW)**.
- A **Letter of Intent between DST and SNSF** will support exploratory scientific collaboration, future joint research and long-term cooperation in mutually agreed priority areas.

26 . Strategy for Environmental Economic Accounts in India: 2026–2030

Syllabus Mapping: GS-III: Environment & Ecology | Environmental Governance | Natural Resource Accounting

- **MoSPI, through the National Statistical Office (NSO), has released the "Strategy for Environmental Economic Accounts in India: 2026–2030"** as a forward-looking roadmap for strengthening environmental-economic accounting in India.
- The strategy builds upon the earlier **Strategy for Environmental-Economic Accounts in India 2022–2026**, under which MoSPI initiated work on areas such as **Material Flow Accounts, Ocean Accounts, Energy Accounts and thematic accounts for biodiversity and urban areas**.
- Since 2018, MoSPI has undertaken environmental-accounting work covering **forests, biodiversity, wetlands, ocean accounts, soil, water quality, croplands, energy, residuals, urban ecosystems and pollination services**.
- The 2026–2030 strategy seeks to address **data gaps, expand the coverage of environmental accounts, identify priority areas and milestones, and establish an action plan for systematic development of environmental-economic accounting**.
- The new roadmap proposes enhanced or new coverage of **forests, minerals, soil resources, land, water, carbon stock, environment-related activities, biodiversity and environment statistics**.
- The priority areas have been selected with reference to the **"Green National Account in India: A Framework"** and the **SEEA Central Framework (SEEA-CF)**.
- The strategy identifies potential **data sources and policy implications** and aims to strengthen the statistical and accounting ecosystem through better coordination and improved availability of environmental data.
- Developments under the **System of National Accounts 2025**, particularly the recognition of natural resource accounting within the national accounting framework, further strengthen the importance of environmental-economic accounting.
- The strategy is also intended as a **guidance framework for States and Union Territories** that wish to initiate or strengthen environmental accounting, while remaining self-evolving according to emerging requirements.
- **SEEA (System of Environmental-Economic Accounting)** is the internationally recognised statistical framework endorsed by the **United Nations Statistical Commission** for integrating environmental information with economic statistics.
- **SEEA-CF** provides a framework for recording the interaction between the economy and the environment, including information on **environmental assets, natural-resource flows and economic activities related to the environment**.
- **Environmental-economic accounting** complements conventional national accounting by bringing **natural resources and environmental dimensions** into statistical analysis, allowing policymakers to examine links between economic activity, resource use and environmental change.
- **Material Flow Accounts (MFA)** track the physical flows of materials entering, circulating within and leaving an economy, thereby helping assess resource use, material productivity and resource efficiency.

27. Chhattisgarh's Cultural Heritage – Dhokra, Tribal Art & Devotional Traditions

Syllabus Mapping: GS-I: Indian Culture | Art Forms | Tribal Culture | Traditional Crafts | Cultural Heritage

- The **8th PM Mementos collection** features **16 mementos from Chhattisgarh**, representing the state's tribal heritage, traditional crafts, devotional traditions and contemporary cultural identity.
- **Dhokra** is the highlight of the collection and represents an ancient **metal-casting tradition based on the lost-wax technique**, with a history of **more than 4,000 years in India**.
- The Dhokra works displayed include **Elephant Head Nandi, Standing Nandi and Madia-Madin Tribal Couple Bust**, demonstrating the use of the craft for religious as well as tribal-cultural representations.
- The collection also showcases **tribal Chhattisgarh** through a traditional ceremonial headgear decorated with **peacock-feather clusters, cowrie shells, metallic discs and brass bells**.
- The **Madia-Madin Tribal Couple Bust** represents the tribal cultural identity of Chhattisgarh through Dhokra metalwork, demonstrating how traditional craft is used to preserve community and cultural memory.
- **Dhokra is a traditional lost-wax metal-casting technique**, in which a wax model forms the basis of the mould and is replaced by molten metal during casting.

- The **cire perdue/lost-wax process** enables artisans to create individually crafted objects rather than relying on identical mass-produced moulds, giving Dhokra its distinctive handcrafted character.
- Dhokra is closely associated with **traditional artisan and tribal communities**, where craft knowledge and techniques are transmitted across generations.
- Dhokra is particularly associated with the **tribal belts of eastern and central India**, including **Chhattisgarh, Odisha, West Bengal, Jharkhand and parts of Madhya Pradesh**, although individual regional traditions differ in design and practice.

28. High-Altitude Platform (HAPS)

Syllabus Mapping: GS-III: Defence Technology | Aerospace Technology | Unmanned Platforms | Indigenous Defence Technology

- **DRDO successfully conducted a flight trial of an indigenously developed High-Altitude Platform (HAPS)**, demonstrating India's progress towards long-endurance stratospheric aerial platforms.
- The experimental flight reached **21 km above mean sea level (AMSL)** and remained at approximately **20 km AMSL for more than 30 minutes** before being commanded to descend.
- The platform was successfully recovered, while **real-time video and vehicle-performance parameters** were transmitted to the Ground Control Station throughout the flight.
- The system carried an **Inertial Measurement Unit (IMU), GPS receiver, onboard cameras and altitude-control mechanism**, along with other instrumentation and control electronics.
- The trial was conducted in coordination with the **Indian Air Force, CEMILAC, DGCA, Airports Authority of India (AAI)** and other civil authorities, reflecting the need for coordination in high-altitude flight operations.
- The HAPS is being designed and developed by **Aerial Delivery Research and Development Establishment (ADRDE), Agra**, under DRDO.
- The platform is described as a **lighter-than-air system** intended to operate as a **long-endurance stratospheric aerial surveillance platform**.
- **HAPS (High-Altitude Platform System)** refers to an aerial platform designed to operate for extended periods at high altitude, generally in the **stratosphere**, providing persistent coverage over a designated area.
- Unlike conventional aircraft that continuously operate through powered flight and satellites operating in space, HAPS occupies an **intermediate operational layer between terrestrial systems and satellites**, making it useful for persistent surveillance and communication applications.

29. Additive Manufacturing (AM) in India

Syllabus Mapping: GS-III: Science & Technology | Emerging Technologies | 3D Printing | Advanced Manufacturing |

- **Additive Manufacturing (AM)** is a 3D-printing technology in which a **digital file controls the layer-by-layer deposition of material** to create a physical object; India is developing AM as a next-generation digital manufacturing capability.
- The **National Strategy for Additive Manufacturing (NSAM)** was released by **MeitY in February 2022** to create an indigenous AM ecosystem covering technology, materials, machines, processes, software, skilling and startups.
- NSAM initially targeted **5% of the global AM market, nearly US$1 billion additional contribution to GDP, 50 India-specific AM technologies, 100 startups, 500 new products and 1 lakh skilled workers**, along with AM capabilities across 10 manufacturing sectors.
- More than **1.54 lakh individuals have been trained**, **56 AM startups supported** and **65 India-specific technologies** developed under the NSAM ecosystem, including materials, machines, Design for Additive Manufacturing (DfAM) and printed products.
- **NSAM 2.0** is being conceptualised to accelerate market development, IPR generation, digital integration, globally competitive technologies, affordable machines and materials, AM-electronics value chains, defence applications and international cooperation on standards and joint research.
- Seven specialised **Development and Deployment Centres** have been established to support AM R&D, skilling and hands-on access to the technology, while **NAMS** provides a national platform connecting government, industry, academia, startups and researchers.
- AM is being applied in **space and aerospace, defence, healthcare, electronics and construction**; examples include an AM-printed semi-cryogenic rocket engine, 3D-printed defence structures, customised medical implants/bone grafts and printed electronic components.
- In construction, 3D printing is being explored for **faster and potentially more resource-efficient construction**, including low-carbon geopolymer-based structures and reduced material and logistics requirements.
- AM is also being linked with **Industry 5.0**, distributed and flexible manufacturing, resource efficiency and localised production, supporting the broader objectives of **Atmanirbhar Bharat and Viksit Bharat**.

- **ESTIC-2026**, organised by CSIR from 27–29 October 2026, identifies Additive Manufacturing among emerging science and technology areas with potential for transformative applications.

30. AI-Enabled Filmmaking – IICT & YouTube 'Create with AI'

Syllabus Mapping: GS-III: Science & Technology | Artificial Intelligence | Generative AI | Emerging Technologies | Creative Economy

- **Indian Institute of Creative Technologies (IICT) and YouTube** have unveiled the first **four AI-enabled short films** under the **'Create with AI' programme**, announced in November 2025 to develop AI-led creative capabilities in India.
- The programme combines **Google and YouTube's AI technologies, IICT's infrastructure and faculty mentorship**, enabling Indian filmmakers and creative studios to experiment with AI-based filmmaking workflows.
- The four films cover diverse themes: **'Chekavar'** draws on the Battle of Colachel (1741), **'CHANAKYA – The Mind of an Empire'** explores Chanakya and the Mauryan Empire, **'DEVI: The Nine Astras'** presents Shakti and cosmic balance, while **'Laika'** explores human–animal bonds against the backdrop of space exploration.
- The initiative seeks to demonstrate that **AI can expand creative possibilities while keeping the filmmaker at the centre of storytelling**, rather than replacing the creative role of filmmakers.
- The programme is part of India's effort to build an **AI filmmaking ecosystem** through technology access, institutional mentorship, experimentation and development of new production workflows.
- A Gen Media India report cited in the PIB release estimates that generative-media tools can provide a **20% productivity boost for creative workers in India**, potentially saving around **390 hours annually**.

31 . PRASHAST Portal – Inclusive Education for Children with Special Needs

Syllabus Mapping: GS-II: Social Justice | Education | Vulnerable Sections | Rights of Persons with Disabilities | Inclusive Governance

- The Department of School Education & Literacy (DoSEL), Ministry of Education, organised a nationwide screening of a 30-minute Sensitization and Orientation Module on Inclusive Education for Children with Special Needs (CwSN) through the **PRASHAST Portal.**
- More than 60,000 schools participated in the nationwide screening, while over 72 lakh teachers had already been sensitised through the module over the preceding three months.
- The module is available in **12 Indian languages** and targets school heads, general teachers, special educators and non-teaching staff, including transport and administrative personnel.
- The initiative promotes a whole-school approach to inclusion, making inclusive education a shared responsibility of everyone interacting with children in classrooms, offices, transport and other school spaces.
- PRASHAST is a school-based digital tool for identifying children with probable disability conditions **covered under the Rights of Persons with Disabilities (RPwD) Act, 2016.**
- Its two-part checklist enables teachers to screen students using observable indicators. Special educators subsequently validate cases and facilitate referrals for medical assessment wherever required.
- The initiative seeks to create a safe, accessible and supportive school environment through practical examples and interactive sensitisation, in alignment with the National Education Policy (NEP), 2020 and the RPwD Act, 2016.

32. World Development Report 2026: The Promise of Artificial Intelligence

Syllabus Mapping: GS-III: Science & Technology | Artificial Intelligence | Inclusive Growth | Human Capital | Economic Development

- The **World Bank Group's World Development Report (WDR) 2026: The Promise of Artificial Intelligence** was launched in New Delhi on 8 October 2026 by Union Minister Ashwini Vaishnaw, with the India launch jointly **hosted by the IndiaAI Mission, MeitY and the World Bank Group.**
- The report examines how AI can help developing economies accelerate development, improve productivity and address persistent challenges in healthcare, education, agriculture and public services.
- The report proposes a three-part framework: **Adopt, Adapt and Advance**—adopt existing AI solutions, adapt them to local languages and development needs, and progressively develop domestic technological capabilities.
- It emphasises that developing countries need not immediately build expensive, large-scale AI models; they can benefit from existing and affordable tools, including "small AI" applications accessible through basic phones, voice calls and text messages.
- The report identifies gaps in electricity, connectivity, digital infrastructure, skills, data and institutional capacity as barriers to AI adoption, while highlighting the need to manage risks and avoid excessive dependence on a single technology provider.

- AI can potentially improve development outcomes by supporting medical screening, helping farmers access better weather forecasts and enabling teachers to prepare improved learning materials.
- The report notes that 4.5% of existing jobs in low- and middle-income countries are at risk from generative AI, compared with 14.2% in high-income countries; meanwhile, AI could meaningfully enhance productivity in 16.2% of jobs in developing economies.
- The India launch included discussions on scaling AI beyond isolated pilot projects, with a focus on evidence-based deployment, inclusive development and sectoral applications.

33. Windergy India 2026 – India's Wind Energy Expansion

Syllabus Mapping: GS-III: Renewable Energy | Energy Security | Climate Change | Green Growth | Manufacturing | Infrastructure

- Windergy India 2026, the **8th edition of the global wind energy conference**, was inaugurated by Union Minister Pralhad Joshi in Chennai on 8 October 2026; the event is being held from 7–9 October.
- **India's installed wind power capacity reached 59.20 GW as of 30 September 2026, with a national ambition to achieve 100 GW by 2030.**
- India **achieved its highest-ever annual wind capacity installation of 6.05 GW in FY2025–26;** annual installations are expected to surpass this record in FY2026–27.
- Windergy India 2026 brought together around 400 exhibitors from more than 20 countries and 500 delegates, with country pavilions from Denmark, Germany and Spain, promoting technology exchange and international partnerships.
- Tamil Nadu highlighted its role in wind energy development, including initiatives such as a state repowering policy to promote more efficient use of existing wind-energy sites.
- The event announced collaborations including the IWTMA–BWE Global MoU, IWTMA–PTB Letter of Intent and IWTMA–OECD collaboration, alongside reports on Energy Transition in Tamil Nadu and Reimagining Contractual Mechanism for Indian Wind Sector.
- The Minister emphasised that achieving 100 GW will require a strong project pipeline, supportive policies, timely clearances, land facilitation, resolution of Right-of-Way (RoW) issues and collaboration among government, industry, academia and research institutions.
- **Wind repowering** involves replacing older, lower-capacity or less-efficient wind turbines with modern, more efficient turbines at existing wind farms, potentially increasing electricity generation from established sites.
- **Right-of-Way (RoW)** refers to the permissions and access required for infrastructure such as transmission lines, which are essential for evacuating electricity from wind-rich regions to demand centres.

34. National SC-ST Hub (NSSH): Inclusive Entrepreneurship

Syllabus Mapping: GS-II: Social Justice | Vulnerable Sections | Social Empowerment | GS-III: MSMEs | Public Procurement |

- The **National SC-ST Hub (NSSH)** was launched on 18 October 2016 and is **implemented through the National Small Industries Corporation (NSIC)** to strengthen SC/ST-owned micro and small enterprises (MSEs) through finance, technology, training, mentoring and market access.
- Since inception, NSSH has assisted 1,90,414 beneficiaries and trained 54,499 candidates as of 31 July 2026. Procurement from SC/ST-owned MSEs increased from ₹99.37 crore in 2015–16 to ₹4,013.42 crore in 2025–26, nearly a 39-fold increase.
- During 2025–26, procurement reached ₹4,013.42 crore from 12,524 MSEs. A total of 10,717 candidates were trained through 47 institutions across 27 States, including 24 Aspirational Districts; 55% of trainees were women.
- Under the Special Credit Linked Capital Subsidy Scheme (SCLCSS), eligible SC/ST-owned MSEs receive a 25% capital subsidy, capped at ₹25 lakh, for plant, machinery and equipment financed through institutional credit. Since inception, 3,160 MSEs received ₹356.10 crore in support by March 2026.
- The **Single Point Registration Scheme (SPRS)** facilitates government procurement access through NSIC registration, including free tender sets and exemption from Earnest Money Deposit (EMD). Under the Public Procurement Policy, 25% of annual procurement by Central Ministries, Departments and CPSEs is earmarked for MSEs, including a 4% sub-target for SC/ST-owned MSEs.
- The Special Marketing Assistance Scheme (SMAS) supports exhibitions, trade fairs and vendor-development programmes. During 2025–26, 141 SC/ST MSEs participated in four domestic exhibitions, 247 Special Vendor Development Programmes were organised, 197 e-tendering workshops conducted and 230 awareness workshops held.
- NSSH also reduces business costs through reimbursements for bank loan processing fees, performance bank guarantee charges and product testing/certification fees. Eligible support generally covers 80% of the relevant charges, subject to prescribed limits.

- The Export Promotion Council Membership Reimbursement Scheme covers 80% of eligible membership charges up to ₹20,000 per financial year, while the Government-promoted e-commerce portal membership component covers 80% of fees up to ₹25,000 per financial year.
- The **Capacity Building Management Fee Reimbursement Scheme** supports training at the top 50 management institutes identified under NIRF. Eligible entrepreneurs and their wards can receive reimbursement of 90% of course fees, capped at ₹1 lakh per financial year.
- The **Business Accelerator Programme (BAP)** provides structured mentorship in business strategy, pricing, cost management, operational efficiency and market positioning. Examples include a West Bengal enterprise securing ₹8.48 lakh in tenders from Power Grid Corporation of India Limited and a Maharashtra enterprise securing a ₹5.10 lakh SAIL tender.

35. NBA Receives ₹9.68 Crore under Access and Benefit Sharing (ABS) Framework

Syllabus Mapping: GS-3: Biodiversity Conservation | Biological Diversity Act, 2002 | Sustainable Use of Biological Resources |

- The **National Biodiversity Authority (NBA)** received ₹9.68 crore under the **Access and Benefit Sharing (ABS) framework** between April and September 2026, **in accordance with the Biological Diversity Act, 2002, as amended in 2023, and the ABS Regulations.**
- The agriculture-seed sector contributed the largest share at ₹7.16 crore, followed by Food and Beverages (₹1.59 crore) and Animal Husbandry (₹62.01 lakh); other contributions came from AYUSH, Red Sanders wood, cosmetics and related sectors.
- **Biological resources covered include agricultural crops, medicinal plants** such as Ashwagandha and Shatavari, soil microorganisms such as Rhizobium and Azotobacter, and livestock genetic resources such as Mithun and Murrah buffalo.
- Since 2008, the NBA has realised approximately ₹278 crore through ABS and disbursed over ₹200 crore towards biodiversity conservation and benefits for communities, farmers, institutions and other benefit claimers.
- ABS funds support biodiversity conservation, preparation and updating of People's Biodiversity Registers (PBRs), strengthening of Biodiversity Management Committees (BMCs), biodiversity research and documentation, and benefits to local communities.
- **Access and Benefit Sharing (ABS)** is based on three objecti ves of the Convention on Biological Diversity (CBD): conservation of biological diversity, sustainable use of its components, and fair and equitable sharing of benefits arising from the utilisation of genetic resources.
- The **Biological Diversity Act, 2002** provides India's legal framework for biodiversity conservation, sustainable use and benefit sharing; the NBA is the national-level statutory authority under this framework.
- ABS links the commercial or other utilisation of biological resources with benefit-sharing obligations, helping ensure that benefits arising from their use are shared with relevant communities and other benefit claimers.
- **People's Biodiversity Registers (PBRs)** document locally available biological resources, associated knowledge and related information, while **Biodiversity Management Committees (BMCs)** operate at the local-body level and support biodiversity documentation and conservation.

36 . Prime Minister Dhan-Dhaanya Krishi Yojana (PMDDKY)

Syllabus Mapping: GS-3: Agriculture | Agricultural Productivity | Crop Diversification | Agricultural Credit | Post-Harvest Infrastructure |

- The Union Cabinet approved PMDDKY on 16 July 2025, and the Prime Minister launched it on 11 October 2025; the six-year scheme began in FY 2025–26 and targets 100 Aspirational Agricultural Districts.
- The districts were identified using three key indicators—low agricultural productivity, low cropping intensity and low agricultural credit disbursement—while also considering each State/UT's share of net cropped area and operational holdings; every State has at least one selected district.
- The scheme converges 36 Central schemes across 11 Ministries and Departments, along with State schemes and private-sector participation, to address district-specific agricultural requirements.
- The six objectives are enhancing agricultural productivity, promoting crop diversification and sustainable practices, augmenting post-harvest storage, improving irrigation infrastructure, expanding short- and long-term agricultural credit, and improving governance and service delivery.
- Implementation follows a three-tier structure: the District Dhan-Dhaanya Krishi Yojana Samiti, headed by the District Collector/DM, prepares District Action Plans; the State-level committee, headed by the Chief Secretary, reviews them; and national-level oversight is provided by the National Executive Committee and National Monitoring Committee.
- District Action Plans (DAPs) use baseline and diagnostic analysis to identify local needs, set outcome-based targets and annual milestones, and converge relevant schemes; all 100 districts have prepared DAPs, which are under implementation.

- Progress is monitored through 121 indicators across 36 schemes—74 output indicators and 47 outcome indicators—with monthly rankings of district performance on output indicators through the PM-DDKY dashboard, operational since October 2025.
- The average score of the 100 districts across six objectives rose from 18.85 in April 2026 to 46.89 in August 2026, an improvement of 28.04 points; governance and service delivery recorded the highest objective-wise average score in August at 12.05.
- The PM-DDKY FPO Sangam, held in December 2025, brought together over 72 FPOs from 15 States and 33 scheme districts to exchange experiences on productivity, market access, income enhancement, natural farming, oilseeds, beekeeping, micro-irrigation, institutional finance and digital agriculture.
- District-level examples demonstrate the scheme's focus on value addition and productivity: an FPO in Gadchiroli, Maharashtra, operates a rice-processing unit with 3-tonne-per-hour capacity and a 900-MT warehouse; an FPO in Tumakuru, Karnataka, supplies ball copra to a French multinational; and an FPO in Jaisalmer, Rajasthan, uses solar-powered sprinkler irrigation across 500 acres.
- Net cropped area refers to land sown at least once during an agricultural year, whereas gross cropped area counts the same land repeatedly when multiple crops are grown; operational holdings refer to land operated by an agricultural operational holder.

37. Mission for Aatmanirbharta in Pulses

Syllabus Mapping: GS-3: Cropping Patterns | Food Security | MSP and Procurement | Agricultural Productivity |

- Launched on 11 October 2025, the Mission for Aatmanirbharta in Pulses has a financial allocation of ₹11,440 crore for 2025–26 to 2030–31, targeting domestic self-sufficiency and reduced import dependence.
- 2. By 2030–31, the Mission targets pulse production of 350 lakh tonnes, productivity of 1,130 kg/ha and expansion of cultivation by 35 lakh hectares to 310 lakh hectares. It prioritises Tur (Arhar), Urad and Masoor.
- 3. Key interventions include distribution of 87.5 lakh seed kits, supply of 126 lakh quintals of certified seeds, cluster-based cultivation across 489 districts and establishment of 1,000 pulse-processing units.
- 4. The Mission provides for assured procurement of Tur, Urad and Masoor through NCCF and NAFED from willing, registered farmers.
- Pulses belong to the legume family (Fabaceae) and include crops such as chickpea, pigeon pea, lentil, mung bean and urad.
- Rice-fallow cultivation involves growing a subsequent crop on land left uncultivated after rice harvest. Suitable short-duration pulses can help utilise residual soil moisture, diversify production and improve land-use efficiency where local conditions permit.
- Digital monitoring is a key implementation feature: Krishi Mapper supports geo-tagging and tracking of demonstrations, SATHI tracks the seed supply chain from production to sale, while AgriStack and Digital Crop Survey support farmer identification and verified crop data.
- The Government of India announces the Minimum Support Price (MSP) for five pulses—Tur (Arhar), Moong, Urad, Gram (Chana) and Masur (Lentil)—as part of its price-support policy for farmers.

38. Next-Generation GST Process Reforms

Syllabus Mapping: GS-3: Indian Economy | GST and Taxation | Ease of Doing Business | Formalisation | Digital Governance

- The 57th GST Council meeting in October 2026 recommended reforms to simplify registration, returns, refunds, dispute resolution and enforcement, building on the revised GST rate structure recommended by the 56th Council.
- The proposed reforms seek to make GST administration more predictable through automation, reduced manual intervention, risk-based verification and clearer compliance procedures. The taxpayer base grew from around 60 lakh in 2017 to approximately 1.70 crore in September 2026.
- Registration reforms include simpler application forms, clearer documentation and automatic acceptance of specified amendments. Proposed cancellation reforms link automatic cancellation to filing pending returns and payment of dues, with phased implementation and specified conditions.
- Return reforms seek to reconcile outward-supply declarations in GSTR-1/GSTR-1A/IFF with tax liability in GSTR-3B and eligible ITC reflected in GSTR-2B. The Invoice Management System allows recipients to accept, reject or keep documents pending for ITC reporting.

- Refund reforms propose automated processing of excess cash-ledger balances, reducing the acknowledgement period from 15 to 10 days, and risk-based sanctioning of eligible refunds. The proposals also expand refund eligibility for specified accumulated ITC on input services and capital goods.
- Dispute-resolution reforms include streamlined demand and adjudication procedures, revised penalty provisions, a proposed ₹10,000 threshold for show-cause notices and reduced penalties where tax and interest are paid within specified periods.
- Proposed taxpayer safeguards include an opportunity to object and receive a personal hearing before a decision on blocked ITC under Rule 86A, alongside late-fee relief for eligible small taxpayers under specified conditions.
- Enforcement reforms propose raising the prosecution threshold from ₹1 crore to ₹5 crore and restricting interception of goods in transit to specified circumstances involving intelligence and authorisation, subject to exceptions for missing transit documents.
- GST is a destination-based indirect tax: tax revenue generally accrues to the jurisdiction where goods or services are consumed. The framework comprises CGST, SGST/UTGST and IGST, supporting taxation across intra-State and inter-State supplies.
- Input Tax Credit (ITC) reduces the cascading effect of taxation by allowing eligible businesses to offset tax paid on inputs against tax liability on outputs. Invoice reconciliation helps prevent duplicate, unsupported or incorrectly claimed credits.

39. Exercise KONKAN-26

Syllabus Mapping: GS-2: India–UK Relations | Bilateral Strategic Partnership | GS-3: Defence Cooperation | Maritime Security |

- Indian Navy's guided-missile stealth frigate INS Trishul arrived at Plymouth, United Kingdom, to participate in the annual bilateral maritime exercise KONKAN-26, being conducted from 8–15 October 2026.
- The exercise is conducted in two phases: the Harbour Phase involves professional interactions, cross-deck visits and cultural engagements, while the Sea Phase focuses on operational drills across air, surface and sub-surface domains.
- The sea phase includes cross-deck helicopter landings, firing serials, air-defence exercises, complex seamanship evolutions and anti-submarine warfare exercises to improve interoperability between the two navies.
- KONKAN has evolved over more than two decades into an important component of India–UK maritime cooperation, facilitating the exchange of operational practices and strengthening mutual understanding in maritime operations.
- The exercise reinforces the shared commitment to secure, open and free seas and supports the India–UK Comprehensive Strategic Partnership under Vision 2035.

40. Exercise INDRA-2026

Syllabus Mapping: GS-2: India–Russia Relations | Strategic Partnership | GS-3: Defence Cooperation | Maritime Security |

- INS Sahyadri arrived at Vladivostok, Russia, on 10 October 2026 to participate in Exercise INDRA-2026, a bilateral naval exercise between the Indian Navy and the Russian Federation Navy scheduled for 13–18 October 2026.
- The exercise comprises a Harbour Phase followed by a Sea Phase, involving professional interactions and coordinated maritime operations to improve mutual understanding, operational coordination and interoperability.
- The deployment aligns with India's MAHASAGAR vision — Mutual and Holistic Advancement for Security and Growth Across Regions — and builds on the longstanding India–Russia defence and maritime partnership.
- The exercise also carries forward the momentum of the 23rd India–Russia Annual Summit, held on 4–5 December 2025. Social and cultural engagements complement operational activities by strengthening personnel-level interaction and professional camaraderie.

41 . Molecular Geometry Tweak Opens New Possibilities for Smart Biomaterials

Syllabus Mapping: GS-3: Science and Technology | Biotechnology | Nanotechnology | Advanced Materials

- Researchers at the Centre for Nano and Soft Matter Sciences (CeNS), Bengaluru, an autonomous institute of the Department of Science and Technology (DST), demonstrated that adding a single methylene (–CH_2–) spacer between a peptide and a fluorescent pyrene unit can alter molecular self-assembly and material properties.
- The addition of one carbon atom changed the relative orientation of molecular components, resulting in differences in molecular packing, supramolecular chirality, fluorescence lifetime and nanoscale organisation, without changing the fundamental peptide framework.

- The research demonstrates a molecular-design strategy in which functional properties can be tuned through controlled molecular organisation rather than extensive chemical modification. Potential applications include biosensing, bioimaging, smart photonic materials, optoelectronics and molecular electronics.
- Supramolecular self-assembly: Molecules spontaneously organise into ordered structures through non-covalent interactions, including hydrogen bonding, electrostatic interactions and hydrophobic interactions. Molecular geometry influences how molecules interact and pack together.
- Supramolecular chirality: Chirality refers to handedness, commonly illustrated by the relationship between an object and its mirror image. In supramolecular systems, the arrangement of molecules can generate chiral assemblies, influencing how the material interacts with light.
- Applications of functional nanomaterials: Biosensors detect biological molecules or processes, bioimaging helps visualise biological structures, photonic materials manipulate light, and optoelectronic materials couple optical and electronic functions.

42. Solar Microwave Polar Brightening

Syllabus Mapping: GS-3: Science and Technology | Space Science | Solar Physics | Solar Magnetic Field | Solar Wind

- Researchers from ARIES, Nainital; Udaipur Solar Observatory (USO)/Physical Research Laboratory (PRL); IIT Delhi; and IIT Roorkee investigated why the Sun's polar regions appear brighter than the rest of the solar disk at certain microwave and radio frequencies.
- The study used nearly three decades of observations from the Nobeyama Radioheliograph (NoRH) at 17 GHz, combined with extreme-ultraviolet (EUV) observations from NASA's Solar Dynamics Observatory and magnetic-field measurements from the Wilcox Solar Observatory.
- The researchers found a strong relationship between microwave polar brightening and the area of polar coronal holes, with an even stronger relationship between polar brightening and the strength of the Sun's polar magnetic field. The study also identified north–south asymmetry and variations associated with the solar cycle.
- Analysis of individual bright patches showed that many coincide with coronal bright points, formed by small-scale magnetic loops within polar coronal holes; some were also associated with coronal jets. This indicates that both large-scale magnetic structures and localised magnetic activity contribute to the phenomenon.
- Published in The Astrophysical Journal, the study provides observational evidence linking microwave polar brightening to the evolving magnetic environment of the Sun's polar atmosphere, improving understanding of solar polar activity and the origin of the solar wind.
- Microwave polar brightening is the enhanced radio brightness observed near the Sun's poles at specific frequencies. Radio brightness reflects emission from solar atmospheric plasma and is influenced by local physical conditions, including temperature, density and magnetic environment.
- Coronal holes are regions that appear dark in extreme-ultraviolet and X-ray observations because their plasma is relatively less dense and cooler than surrounding regions. Their magnetic field lines are predominantly open, allowing high-speed solar wind to escape into interplanetary space.

43. ICMR Centre for High Altitude Medicine and Public Health Research

Syllabus Mapping: GS-2: Health | Public Health Infrastructure | Tribal Health | GS-3: Science and Technology | Biomedical Research | Climate Change and Human Health

- Union Health Minister Jagat Prakash Nadda laid the foundation stone of the ICMR Centre for High Altitude Medicine and Public Health Research at Keylong, Himachal Pradesh, to strengthen scientific research and preventive healthcare for Himalayan communities and Armed Forces personnel.
- The initiative brings together the Indian Council of Medical Research (ICMR), Armed Forces Medical Services (AFMS) and AIIMS Bilaspur, combining biomedical research, public health expertise, clinical experience and military knowledge of high-altitude environments.
- Research will examine the health effects of low oxygen levels, extreme cold and changing climatic conditions, with focus areas including acclimatisation, altitude-related health risks, maternal and newborn health, child growth and nutrition, and disease patterns in Himalayan communities.
- The Centre will explore drone-enabled medicine delivery, digital health and artificial intelligence to improve healthcare access in remote and difficult-to-reach regions, including Himachal Pradesh, Ladakh, Jammu and Kashmir, Uttarakhand, Sikkim and Arunachal Pradesh.
- High-altitude hypoxia: Atmospheric pressure decreases with increasing altitude, reducing the partial pressure of oxygen available for breathing. This can cause hypoxia, in which body tissues receive insufficient oxygen, particularly before acclimatisation.

- Acclimatisation refers to physiological adjustments that help the body adapt to high-altitude conditions. Responses include increased ventilation and changes in red blood cell production; the process takes time and varies with altitude and individual physiology.
- Altitude-related illnesses: Acute mountain sickness (AMS) may cause headache, nausea, dizziness and fatigue. Severe complications include high-altitude pulmonary oedema (HAPE), involving fluid accumulation in the lungs, and high-altitude cerebral oedema (HACE), involving brain swelling. Early recognition and appropriate management are important.

44. PM GatiShakti National Master Plan

Syllabus Mapping: GS-3: Infrastructure | Investment Models | Logistics | Digital Infrastructure | Energy Security |

- Launched on 13 October 2021, PM GatiShakti National Master Plan (PMGS-NMP) uses a GIS-based platform to integrate infrastructure and geospatial data for coordinated planning across 58 Central Ministries and Departments and all 36 States and Union Territories.
- Nodal ministry: Ministry of Commerce and Industry, through the Department for Promotion of Industry and Internal Trade (DPIIT).
- Six pillars of PM GatiShakti: Comprehensiveness, Prioritisation, Optimisation, Synchronisation, Analytical decision-making and Dynamic monitoring.
- Its seven infrastructure engines are roads, railways, ports, waterways, airports, mass transport and logistics infrastructure. The plan seeks to improve multimodal connectivity, last-mile access, coordination, project efficiency and environmental planning.
- The platform incorporates over 23,493 data layers as of 12 October 2026, while its public interface provides access to 230 approved datasets for site-suitability analysis, connectivity mapping, alignment planning and compliance checks.
- The institutional framework comprises the Empowered Group of Secretaries (EGoS), chaired by the Cabinet Secretary; the Network Planning Group (NPG), which examines infrastructure proposals for integration and optimisation; and the Technical Support Unit (TSU), which provides technical expertise.
- Integrated Transport and Logistics Authority (ITLA): The Union Cabinet has approved the establishment of ITLA. It will prepare a National Transport Master Plan with a planning horizon of ten years or more, technically appraise projects costing ₹500 crore or more, monitor implementation and develop a National Transport Data Repository integrating sources such as FASTag, Vahan and GSTN e-way bills.
- Digital logistics integration complements spatial planning: the Unified Logistics Interface Platform (ULIP) connects government logistics systems through APIs, while the Logistics Data Bank (LDB) tracks EXIM container movement. By July 2026, ULIP connected 46 government systems across 12 Central Ministries through 142 APIs.
- The Pune–Bengaluru Expressway alignment was revised using PM GatiShakti to reduce forest-land overlap by 19%. Other applications include the Jogighopa Multimodal Logistics Park in Assam and the Ladakh–Haryana Green Energy Corridor, which is intended to facilitate renewable-energy evacuation and grid integration.
- BISAG-N (Bhaskaracharya National Institute for Space Applications and Geo-informatics) developed the GIS-based digital platform, using geospatial technology and satellite imagery to support integrated planning.
- Gati Shakti Vishwavidyalaya (GSV) is a specialised university focused on transport and logistics education, training and research, supporting the development of expertise for integrated infrastructure planning.

45. INS Tarkash to Participate in IBSAMAR IX 2026

Syllabus Mapping: GS Paper II – Bilateral, Regional and Global Groupings; India's Relations with Brazil and South Africa. GS Paper III – Various Security Forces and Agencies; Maritime Security.

- **IBSAMAR IX:** The ninth edition of the India-Brazil-South Africa Maritime Exercise is being conducted in South Africa in 2026, involving the navies of all three countries.
- **Indian Participation:** INS Tarkash, a frontline guided-missile stealth frigate, is deployed with an integral Chetak helicopter.
- **Objectives:** Enhance interoperability, strengthen maritime cooperation, exchange operational best practices and improve collective preparedness against maritime challenges.
- **Operational Areas:** Surface warfare, anti-air warfare, anti-submarine warfare, naval air operations, maritime interdiction, anti-piracy operations, Visit, Board, Search and Seizure (VBSS), search and rescue, damage control and firefighting.
- **Theme:** *Stronger Together Towards a Shared Future in the Maritime Domain.*
- **Background:** IBSAMAR has been conducted biennially since 2008 under the India-Brazil-South Africa (IBSA) framework.

46 . Seaweed Cultivation

Syllabus Mapping: GS-III: Fisheries • Blue Economy • Sustainable Development • Agricultural and Allied Sectors

- The Department of Fisheries is promoting seaweed cultivation to strengthen coastal livelihoods and develop India's marine bioeconomy. Dr. Abhilaksh Likhi, Secretary, Department of Fisheries, visited Munnaikadu, Mandapam, Tamil Nadu, and interacted with seaweed farmers and women-led Self-Help Groups (SHGs).
- Farmers demonstrated monoline and raft-based cultivation methods, along with farming, maintenance and harvesting operations. The Secretary emphasised technology adoption, increased production, value addition and organised cultivation.
- India's coastline of 11,099 km offers significant potential for seaweed farming. Research institutions have identified 384 suitable sites covering 24,707 hectares across coastal States and Union Territories.
- Seaweed production increased from 18,890 tonnes in 2015 to 74,083 tonnes in 2024 and 82,728 tonnes in 2025, highlighting the sector's growing potential for employment and coastal income generation.
- Under the Pradhan Mantri Matsya Sampada Yojana (PMMSY), projects worth ₹181.11 crore were approved for seaweed development during 2020–27. These include the establishment of a Seaweed Park in Tamil Nadu.
- Financial assistance has supported 37,255 seaweed culture rafts and 44,080 monoline units. Other interventions include seed banks, awareness campaigns, training and capacity building.
- The Department of Fisheries has notified 34 fisheries production and processing clusters to strengthen value chains, improve competitiveness and enhance export potential.
- Lakshadweep has been notified as a Seaweed Cluster, while the ICAR-CMFRI Regional Centre, Mandapam, has been designated as a Centre of Excellence for seaweed development and research. An Inter-Ministerial Committee (IMC) and a Technical Advisory Committee (TAC) have been established for coordinated sectoral development.
- Seaweeds are macroscopic algae, broadly classified into green, brown and red algae. They lack true roots, stems and leaves. Red algae are important sources of agar and carrageenan, while brown algae provide alginates used in food processing, pharmaceuticals and other industries.

47. Agrivision–2026

Syllabus Mapping: GS-III: Agriculture | Agricultural Marketing | Food Processing | Farmers' Income | Agricultural Education |

- The 10th National Convention of Agrivision–2026 is being held on 13–14 October at the ICAR–NASC Complex, Pusa, New Delhi. Organised under the aegis of Agrivision and the ICAR Agricultural Education Division, it brings together around 450 students from agricultural and allied sciences representing 25 States, alongside scientists, entrepreneurs, farmers and senior officials.
- Dr. M. L. Jat, Secretary, Department of Agricultural Research and Education (DARE) and Director General, ICAR, emphasised the need to shift Indian agriculture from a production-centric approach to an agri-food system and value-chain approach.
- The shift involves market research, market intelligence and aligning agricultural production with market demand, rather than focusing solely on increasing crop output.
- Agri-food value chains connect agricultural production with processing, marketing and value addition. The objective is to improve farmer profitability by linking production decisions with market opportunities.
- The convention emphasised agricultural education, technological transformation, research and entrepreneurship, alongside opportunities in teaching, research and agricultural extension.
- ICAR (Indian Council of Agricultural Research) is an autonomous organisation under the Department of Agricultural Research and Education (DARE), Ministry of Agriculture and Farmers Welfare. It coordinates agricultural research and education in India.
- Agricultural extension refers to the transfer of scientific knowledge, improved technologies and farming practices from research institutions to farmers.
- Market intelligence in agriculture involves information on demand, prices and market trends. It helps farmers make informed production and marketing decisions.

48. Towards a TB-Free India

Syllabus Mapping: GS-II: Health | Government Policies and Interventions | GS-III: Science and Technology | AI in Healthcare

- India's annual emergence of new TB cases declined by 21% between 2015 and 2024, compared with a global decline of 12%. TB deaths in India declined by 28% during the same period. Treatment coverage reached 92%, against the global average of 78%, according to the WHO Global Tuberculosis Report 2025.
- Tuberculosis (TB) is an infectious disease caused by Mycobacterium tuberculosis. It primarily affects the lungs but can also affect the brain, kidneys and spine. It spreads through the air when people with infectious TB cough, sneeze or speak.
- The JOSH (Joint Squad for Health) campaign was launched on 13 October 2026 on a pilot basis across 11 States and 55 districts. Teams include MY Bharat volunteers, National Cadet Corps (NCC) cadets and a designated Class-I officer. The campaign promotes awareness, early detection, treatment adherence and stigma-free communities.
- Latent TB infection refers to infection without active TB disease. Such individuals generally do not transmit TB but may develop active disease later. TB Preventive Treatment (TPT) helps eligible individuals reduce the risk of progression to active disease.
- The intensified TB Mukt Bharat Abhiyaan has crossed 28.1 crore screenings, provided TPT to over 20 lakh individuals and added 5.7 lakh new Ni-kshay Mitras. A total of 46,118 Gram Panchayats have received TB-free certification.
- The Pradhan Mantri TB Mukt Bharat Abhiyaan, launched on 9 September 2022, promotes community participation as a Jan Andolan. The Ni-kshay Mitra initiative enables individuals and organisations to support TB patients through nutritional assistance and psychosocial support.
- CBNAAT and Truenat are molecular diagnostic technologies used for TB detection. Culture and drug-susceptibility testing help identify the organism and assess resistance to anti-TB medicines. Early diagnosis is essential for timely treatment and reducing transmission.
- The government has introduced the BPaLM regimen for drug-resistant TB. It combines Bedaquiline, Pretomanid, Linezolid and Moxifloxacin and can reduce treatment duration to six months for eligible patients. More than 15,000 patients with multidrug-resistant or rifampicin-resistant TB have started this regimen, according to the PIB release.
- Drug-resistant TB occurs when TB bacteria do not respond to one or more medicines. Multidrug-resistant TB (MDR-TB) is resistant to at least isoniazid and rifampicin, two key first-line drugs. Appropriate drug regimens and adherence are essential to prevent further resistance.
- The National TB Elimination Programme (NTEP) replaced the Revised National Tuberculosis Control Programme in 2020. Its approach covers early detection, prompt treatment, prevention, patient support and community outreach. The National Strategic Plan to End TB 2020–25 was structured around four pillars: Detect, Treat, Prevent and Build.

49. Machine Learning-Enabled PLA–ZnO Nanofiber Filter for Wastewater Treatment

Syllabus Mapping: GS-III: Science & Technology | Environmental Pollution | Wastewater Treatment | Nanotechnology |

- Researchers at the Institute of Nano Science and Technology (INST), Mohali, an autonomous institute under the Department of Science and Technology (DST), developed a multifunctional filter for treating dye-contaminated wastewater. The technology combines zinc oxide (ZnO) nanoparticles, biodegradable polylactic acid (PLA) nanofibers, light and mechanical vibrations.
- Industrial dyes, particularly from the textile industry, can be persistent, toxic and resistant to natural degradation. Conventional treatments such as adsorption, sedimentation and flocculation may separate pollutants without destroying them.
- The filter integrates photocatalysis and piezocatalysis. Light activates ZnO, while mechanical vibrations generate piezoelectric polarisation. This helps suppress electron–hole recombination and improves the formation of reactive species that degrade pollutants.
- In photocatalysis, light generates electrons and holes in a semiconductor. Their recombination reduces treatment efficiency. Separating these charge carriers helps generate reactive species that break down pollutants.
- ZnO nanoparticles were synthesised using turmeric extract. Compounds such as curcumin, flavonoids and phenolics acted as reducing and stabilising agents. This green synthesis approach reduces dependence on conventional synthesis involving harmful reagents.
- Green synthesis of nanoparticles uses biological materials such as plant extracts or microorganisms. These can act as reducing and stabilising agents during nanoparticle formation.
- The ZnO nanoparticles were immobilised within porous PLA nanofibers through electrospinning. This creates a mechanically stable, high-surface-area membrane and reduces the difficulty of recovering dispersed nanoparticle catalysts from treated water.
- PLA (polylactic acid) is a polymer that can be produced from renewable feedstocks and is biodegradable under suitable conditions. Electrospinning uses an electric field to produce fine fibres from a polymer solution or melt.

- Under combined light and ultrasonic excitation, the filter achieved 98.6% decolorisation of methylene blue (MB) and 96.7% decolorisation of Congo red (CR) within 120 minutes. It also inactivated approximately 75% of E. coli and 71% of S. aureus after six hours.

50. First BIMSTEC Home Ministers' Meeting

Syllabus Mapping: GS-II: India and its Neighbourhood | Regional Groupings | International Relations | Security Cooperation |

- The First BIMSTEC Home Ministers' Meeting (HMM) concluded in New Delhi on 13 October 2026 with the adoption of the Delhi Declaration, marking a milestone in institutionalising regional security cooperation under BIMSTEC.
- BIMSTEC comprises seven countries: Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka and Thailand.
- Key security threats identified include terrorism, drug trafficking, human trafficking, cybercrime, money laundering and organised crime.
- Members stressed cooperation against cross-border terrorism, radicalisation and terrorist financing, in accordance with the UN Charter and international law.
- The Declaration calls for effective implementation of the BIMSTEC Convention on Combating International Terrorism, Transnational Organised Crime and Illicit Drug Trafficking, in force since March 2021.
- Members also called for finalising conventions on extradition, transfer of sentenced persons and trafficking in persons.
- Priorities include implementing action plans on human trafficking, narcotic drugs and anti-money laundering, and developing a BIMSTEC Drug Offences Monitoring Desk (BDOMD).
- Cooperation with UNODC, INTERPOL and FATF, along with regional information-sharing and capacity-building, was encouraged.

51 . India's Coir Sector

Syllabus Mapping: GS-III: MSMEs | Rural Employment | Sustainable Development | Export Promotion | Women Empowerment

- India is the **world's largest producer and exporter of coir**, accounting for about two-thirds of global production. Coir is a natural fibre extracted from the outer husk of coconuts. The sector has a turnover of approximately ₹16,000 crore and contributes close to 1% to India's GDP.
- India has over **21,000 coir units** and provides direct and indirect employment to more than 7 lakh workers, around 80% of whom are women from rural households.
- Coir exports increased from ₹1,630.33 crore in FY 2014–15 to ₹6,614.40 crore in FY 2025–26, registering **305.7% growth**.
- Major export destinations include the US, China, the Netherlands, Spain and the UK. Major exports include coir pith, fibre, yarn and tufted mats.
- The Ministry of MSME implements the **Coir Vikas Yojana (CVY)** to promote sustainable sectoral growth through technological development, new machinery, product innovation, skill training and promotional programmes.
- CVY also supports domestic and international sales, publicity, trade fairs, exporter participation in international exhibitions, financial assistance for sales promotion and publication of sectoral statistics.
- Since 2014–15, over **68,000 people have received training**, with women accounting for more than 80% of trainees. Over 150 innovative machines, technologies and value-added products have been developed.
- Over **21,000 coir units registered on the Udyam portal** employ approximately 2.3 lakh people, bringing them into the formal MSME policy ecosystem.
- The **Coir Board** supports training, technical guidance, research, product development and export promotion. The Central Coir Research Institute (CCRI), Kalavoor, provides technical support, including for coir pith biofertiliser production.
- The **Prime Minister's Employment Generation Programme (PMEGP)** has enabled entrepreneurs to establish coir-based enterprises, generating local employment and promoting women-led businesses.
- Coir pith, a by-product of coir processing, can be converted into **biofertiliser**, creating additional income opportunities and improving resource utilisation.

52. National Social Assistance Programme (NSAP)

Syllabus Mapping: GS-II: Social Justice | Welfare Schemes for Vulnerable Sections | Inclusive Growth | Rights of PwD

- The Union Cabinet approved the continuation of the **National Social Assistance Programme (NSAP)** for five years, from 2026–27 to 2030–31, with a total outlay of **₹53,428 crore**.

- The approval covers renaming the programme and its sub-schemes, revising disability pension eligibility and assistance, and continuing old-age, widow and family benefit schemes in their existing form. The programme will benefit **3.20 crore beneficiaries** across all 36 States and Union Territories.
- NSAP is a **Centrally Sponsored Programme** implemented by the **Ministry of Rural Development,** providing social assistance to vulnerable households, particularly those living below the poverty line.
- Launched on **15 August 1995**, NSAP aims to provide assistance to poor households and fulfil the State's responsibility under **Article 41 of the Constitution**.
- Article 41, under the Directive Principles of State Policy, directs the State to provide public assistance in cases of unemployment, old age, sickness, disability and undeserved want, within the limits of its economic capacity.
- NSAP will be renamed **Pradhan Mantri Samajik Sahayata Yojana**. Its four sub-schemes and their approved names are: **IGNOAPS:** Pradhan Mantri Vridhavastha Pension Yojana; **IGNWPS:** Pradhan Mantri Vidhawa Pension Yojana; **IGNDPS:** Pradhan Mantri Divyangjan Pension Yojana; **National Family Benefit Scheme:** Pradhan Mantri Parivar Labh Yojana.
- Under the revised **Divyangjan Pension Yojana**, monthly assistance will be ₹375 for beneficiaries aged 0–79 years and ₹625 for those aged 80 years and above.
- The benchmark disability threshold will be reduced from **80% to 40%**, while the minimum age criterion will be removed, allowing eligibility from birth.
- These changes align with the **Rights of Persons with Disabilities Act, 2016**, which recognises benchmark disability at 40% and provides for disability-related assistance to be 25% higher than comparable schemes for other categories.
- The old-age and widow pension schemes, along with the National Family Benefit Scheme, will continue in their existing form.
- The National Family Benefit Scheme provides financial assistance to an eligible household following the death of its primary breadwinner, helping address immediate economic vulnerability.
- Revised guidelines covering disability pension eligibility, beneficiary numbers and assistance rates will be issued and implemented within **three months**.
- NSAP provides **100% Central assistance** under the programme, seeking to ensure uniform availability of social assistance across the country. It complements State-level welfare measures and helps strengthen social protection for vulnerable groups.

53 . India's Accession to the Southern Indian Ocean Fisheries Agreement (SIOFA)

Syllabus Mapping: GS-II: International Organisations | International Relations | GS-III: Fisheries | Blue Economy | Marine Resources

- The Union Government approved India's accession to the **Southern Indian Ocean Fisheries Agreement (SIOFA)** to strengthen its participation in high-seas fisheries and global fisheries governance.
- India has been a **Cooperating Non-Contracting Party (CNCP)** to SIOFA since 2022. Accession as a Contracting Party will enable fuller participation in decision-making and scientific and compliance bodies.
- SIOFA provides a regional framework for the **conservation and sustainable management of fishery resources** in the southern Indian Ocean beyond national jurisdictions.
- Its coverage includes fish, molluscs, crustaceans and certain sedentary species, but excludes highly migratory species covered under Annex I of UNCLOS and sedentary species under coastal-state jurisdiction.
- Accession will allow authorised Indian-flagged vessels and enterprises to fish for **squid, toothfish, alfonsino and other non-migratory stocks** within SIOFA's area of competence.
- SIOFA cooperation also aims to prevent **Illegal, Unreported and Unregulated (IUU) fishing**, which threatens marine ecosystems, fish stocks and legitimate fishing livelihoods.
- India's accession will enable participation in the **High Seas Boarding and Inspection (HSBI) Scheme**, strengthening compliance monitoring and supporting maritime security.
- The high seas are marine areas beyond national jurisdiction. Under **UNCLOS**, coastal States exercise sovereign rights over resources in their Exclusive Economic Zones (EEZs), extending up to 200 nautical miles from their baselines, subject to the Convention.
- The high seas constitute approximately **65% of the global ocean** and identifies China, Taiwan, Japan, South Korea and Spain as major participants in high-seas fisheries.
- Two important regional fisheries bodies in the Indian Ocean are **SIOFA** and the **Indian Ocean Tuna Commission (IOTC)**. India has been a Contracting Party to IOTC since 1996. The **IOTC** regulates tuna and tuna-like species, whereas SIOFA covers specified non-tuna fishery resources within its geographical and legal scope.
- Indian fishing vessels currently operate largely within **60–80 nautical miles (NM)** of the EEZ. Expanding high-seas fishing capacity could create opportunities for fishers, entrepreneurs, exports and the wider Blue Economy.

54. Advanced Chemicals, Petrochemicals and Material Technologies under RDI Scheme

Syllabus Mapping: GS-III: Science & Technology | Research and Development | Industrial Growth | Manufacturing |

- The Government of India included **Advanced Chemicals, Petrochemicals and Material Technologies** as an eligible technology area under the Research, Development and Innovation (RDI) Scheme, effective **8 October 2026**.
- The decision was taken by the **Department of Science and Technology (DST)** following a proposal by the Department of Chemicals and Petrochemicals (DCPC), Ministry of Chemicals and Fertilizers.
- The **RDI Scheme**, launched in November 2025, has a corpus of **₹1 lakh crore** to catalyse private-sector investment in research, development and innovation. It provides for long-term financing and refinancing on favourable terms for transformative projects, supporting advanced technology adoption and industrial competitiveness.
- The inclusion aims to promote **indigenous technologies** for advanced industrial applications and strengthen domestic manufacturing of chemicals, petrochemicals, polymers and their derivatives.
- Petrochemicals are chemicals derived primarily from petroleum and natural gas. They serve as inputs for plastics, synthetic fibres, synthetic rubber, fertilisers and several other industrial products.
- The initiative seeks to reduce dependence on **imported technologies and high-value materials**, while encouraging technology-led industrial growth and self-reliance.

55. BHARAT TULIP

Syllabus Mapping: GS-II: Welfare Schemes for Vulnerable Sections | GS-III: MSMEs | Inclusive Growth | Traditional Industries

- The **Ministry of Social Justice and Empowerment**, through the National Backward Classes Finance and Development Corporation (NBCFDC), implements **BHARAT TULIP (Traditional Artisans' Upliftment Livelihood Programme)**.
- Launched on **5 November 2024**, the initiative aims to improve market access, product visibility and livelihood opportunities for traditional artisans.
- BHARAT TULIP promotes traditional products under a **common brand**, connecting artisans with customers through digital platforms, e-commerce channels and other marketing avenues. The programme seeks to overcome limited market access and dependence on local buyers by connecting artisans with wider domestic and international markets.
- Its support includes **digital marketing, product promotion, quality assurance, skill development, logistics and delivery assistance**.
- Artisans are also encouraged to participate in exhibitions, trade fairs and buyer–seller interactions to establish business linkages and explore new markets. Products showcased include **home decor, lifestyle products, handcrafted jewellery, handwoven textiles, fabrics and traditional leather products**.
- The initiative combines traditional craftsmanship with contemporary market demand, supporting entrepreneurship and the preservation of India's cultural heritage.
- **NBCFDC** facilitates market linkages and artisan empowerment through the programme, targeting eligible artisan groups under its mandate.

56 . India's Ramsar Sites Reach 103

Syllabus Mapping: GS-III: Environment & Ecology | Wetland Conservation | Biodiversity | Climate Change

- India's Ramsar site tally reached **103** with the addition of **Sukhna Wetland (Chandigarh)** and **Sauj Jheel (Uttar Pradesh)**, announced by Union Environment Minister Bhupender Yadav on 15 October 2026.
- The additions strengthen India's wetland conservation efforts, particularly in biodiversity protection, water security, climate resilience and livelihood support.
- The **Ramsar Convention on Wetlands** is an international treaty adopted in **1971 at Ramsar, Iran**, which entered into force in 1975. India became a Contracting Party in 1982.
- Ramsar designation recognises wetlands of international importance based on ecological criteria. It does not automatically confer national park or wildlife sanctuary status.
- The **Ministry of Environment, Forest and Climate Change (MoEFCC)** coordinates national wetland conservation policy, while State and Union Territory authorities play important roles in site management and implementation.
- The **Wetlands (Conservation and Management) Rules, 2017**, framed under the Environment (Protection) Act, 1986, provide the regulatory framework for identified wetlands and restrict specified activities that can damage them.
- The **National Plan for Conservation of Aquatic Ecosystems (NPCA)** supports wetland and lake conservation through measures such as wastewater treatment, shoreline protection, catchment treatment and biodiversity conservation.
- **Amrit Dharohar**, launched in 2023, promotes Ramsar-site conservation through biodiversity enhancement, nature tourism and livelihood opportunities for local communities.

57. Seva Sankalp Abhiyan: Rehabilitation of Naxal Violence Victims

Syllabus Mapping: GS-II: Welfare Schemes for Vulnerable Sections | GS-III: Internal Security | Left-Wing Extremism

- Union Home Minister Amit Shah addressed an assistive-device distribution programme under **Seva Sankalp Abhiyan** on 15 October 2026, marking 25 years of Prime Minister Narendra Modi's public service.
- The second phase of the Divyang Seva Camp aims to rehabilitate persons with disabilities, including tribal victims of Naxal violence, through assistive devices and support for dignified living.
- The camp held in **Jagdalpur from 5–7 October 2026** benefited over 3,600 persons with disabilities, including more than **1,570 beneficiaries from Bastar**.
- The initiative seeks to address the long-term humanitarian consequences of **Left-Wing Extremism (LWE)**, particularly among tribal communities affected by violence and IED blasts.
- Rehabilitation involves restoring mobility, improving access to education and employment, and enabling independent living. The **Rights of Persons with Disabilities Act, 2016** provides the broader legal framework for disability rights and inclusion.
- The government emphasised that eliminating Naxalism must be followed by rehabilitation, restoration of essential services and dignified livelihoods for affected communities.
- Around **8,526 Naxalites have surrendered**. Among them, 7,328 have received bank accounts, 1,620 have received reward money, 7,882 incentives, 455 jobs and 129 land allotments.
- Welfare measures for surrendered Naxalites and affected communities include **4,014 houses under Pradhan Mantri Awas Yojana**, skill training for over 2,308 tribal people and 6,763 new ration cards.
- Infrastructure expansion includes 2808 families receiving free electricity, 372 new road projects, 670 small bridges and Aadhaar enrolment for 48,526 people. Forty-four Gram Panchayats have received recognition under the **Ilwad Panchayat Awards**.
- The Chhattisgarh government is promoting regional recovery through the **Bastar Olympics, Bastar Pandum, Niyad Nellanar and Chief Minister's Samuhik Bus Yojana**.
- **Niyad Nellanar** focuses on extending basic infrastructure and essential services to remote, violence-affected villages. Bastar Pandum promotes tribal art, cultural traditions and community participation, while the Bastar Olympics encourages youth participation in sports.
- More than **500 security camps** have been established, with over 200 proposed for conversion into **Shaheed Veer Gundadhur Seva Dera**.

58. KAUMARACON-2026 and Digital Initiatives of All India Institute of Ayurveda (AIIA)

Syllabus Mapping: GS-II: Health | Government Policies and Interventions | GS-III: Science & Technology | Research and Development |

- Vice-President **C. P. Radhakrishnan** inaugurated KAUMARACON-2026, the third international conference on **Kaumarabhritya**, and launched digital initiatives of the All India Institute of Ayurveda (AIIA) on 15 October 2026.
- **Kaumarabhritya** is the branch of Ayurveda concerned with paediatric healthcare, including child nutrition, growth, development and disease management.
- The Vice-President called for **scientific research and clinical validation of Ayurveda** to establish the efficacy of traditional healthcare practices and strengthen their global acceptance.
- AIIA celebrated its **10th Foundation Day**. The government aims to develop the institute on a level comparable with AIIMS through research, innovation and academic excellence.
- The Ministry of AYUSH was established as a separate ministry in **2014** to promote Ayurveda, Yoga, Naturopathy, Unani, Siddha, Sowa-Rigpa and Homoeopathy.
- The Vice-President highlighted interdisciplinary collaboration between the Ministry of AYUSH and institutions such as **ICMR, CSIR, DBT, DST and AIIMS** to strengthen research and integration between traditional and modern healthcare.
- The **WHO Global Centre for Traditional Medicine**, established in Jamnagar, Gujarat, supports global research, evidence generation and international cooperation on traditional medicine.
- Digital initiatives launched at the event included the **AYUSH Start-up Portal, AIIA–iCAINE website and Ayurveda Digital Innovation and Venture Acceleration Facility (AyuDIVA)**.
- These initiatives aim to support innovation, entrepreneurship and technology adoption in the traditional healthcare ecosystem.
- The **Vamana App** and **Panchakarma Assessment App** were also launched to support digital applications in Ayurvedic clinical practice and assessment.
- **Vamana** and **Panchakarma** are Ayurvedic therapeutic procedures. Their clinical use requires appropriate assessment, trained practitioners and attention to patient safety.

- An international MoU was exchanged between **Maharishi International University (MIU), USA, and AIIA, New Delhi**, promoting institutional collaboration.

59. TAKSHANAM: Exhibition of Indian Sculpture at NGMA

Syllabus Mapping: GS-I: Indian Art and Culture | Sculpture | Cultural Heritage | GS-III: Creative Industries | Entrepreneurship

- Union Minister of Culture and Tourism **Gajendra Singh Shekhawat** inaugurated *TAKSHANAM* at the **National Gallery of Modern Art (NGMA), New Delhi**, on 15 October 2026.
- The exhibition brings together **over 250 sculptures by 150 artists**, showcasing traditional heritage, contemporary practices and changing forms of Indian sculpture.
- Inspired by the Sanskrit root **takṣ** , meaning to carve, shape or fashion, the exhibition explores the relationship between material, form, artistic thought and experience.
- It features two sections: **Eminent Artists**, showcasing veteran practitioners, and **Open Call Artists**, featuring around 80–90 jury-selected artists. Works from NGMA's collection are also displayed.
- For the first time, NGMA has introduced the **sale of artworks** at the exhibition to connect artists with collectors and art enthusiasts and provide financial opportunities. The initiative addresses challenges faced by sculptors, including high material costs, specialised skills and long production timelines.
- The exhibition traces India's sculptural heritage from the **Harappan civilisation** to temple sculpture and contemporary art.
- Important examples include the Harappan **Dancing Girl** (bronze) and **Priest-King** (steatite), along with sculptural traditions associated with Ajanta, Ellora and Khajuraho.
- Contemporary Indian sculptors, including **Anish Kapoor and Subodh Gupta**, reflect the continuing evolution and international reach of Indian sculpture.
- Sculpture uses materials such as stone, metal, terracotta, wood and contemporary industrial materials, reflecting changing artistic techniques and cultural contexts.
- The **National Gallery of Modern Art (NGMA)** functions under the Ministry of Culture and works to preserve, promote and exhibit modern and contemporary Indian art.

60. National Means-cum-Merit Scholarship Scheme (NMMSS)

Syllabus Mapping: GS-II: Education | Government Schemes and Interventions | Human Resource Development | Inclusive Growth

- The Ministry of Education organised an **Orientation-cum-Review Workshop** on NMMSS in Bhopal on 14 October 2026 to review implementation and strengthen scholarship registration and verification.
- The workshop focused on the National Scholarship Portal (NSP), application verification and coordination among State, District and Institute Nodal Officers.
- **NMMSS is a Central Sector Scheme** aimed at reducing school dropouts after Class VIII and encouraging meritorious students from economically weaker sections to continue education up to Class XII.
- Eligible students receive an annual scholarship of **₹12,000**, supporting educational continuity and reducing financial barriers.
- The selection examination is conducted by the respective **States/Union Territories**, while registration, authentication and scholarship disbursement take place through the NSP.
- The scheme seeks to improve access to secondary and higher secondary education by supporting students at risk of discontinuing their studies for financial reasons.
- For academic year **2026–27**, the application registration deadline is **31 October 2026**. The stated objectives are **100% scholarship saturation and zero dropouts** among eligible beneficiaries.
- Verification deadlines are **15 November 2026** for Institute Nodal Officers (INOs) and **30 November 2026** for District Nodal Officers (DNOs).
- The Ministry emphasised timely verification, clear responsibilities and coordination among State Nodal Officers (SNOs), DNOs and INOs to improve scholarship delivery.

61 . Pulsing Signals Reveal Hidden Structure Around Centaurus X-3

Syllabus Mapping: GS-III: Science & Technology | Space Research | Scientific Discoveries

- Scientists from the **Raman Research Institute (RRI)**, an autonomous institution under the Department of Science and Technology (DST), identified evidence of an **accretion stream associated with an accretion disk** in Centaurus X-3, a prominent high-mass X-ray binary.
- **Centaurus X-3 (Cen X-3)** is located in the constellation Centaurus, approximately **24,000 light-years away**, and was among the first X-ray pulsars discovered. It was identified using observations by the **Uhuru X-ray satellite** in the early 1970s.

- Cen X-3 contains a highly magnetised neutron star orbiting a massive **O-type supergiant companion, V779 Centauri**. The companion has approximately 20 times the Sun's mass, while the neutron star has about 1.34 solar masses.
- The system is an **eclipsing high-mass X-ray binary (HMXB)**: the companion periodically passes in front of the X-ray source, allowing scientists to study its orbital geometry and surrounding material.
- The neutron star has a spin period of approximately **4.8 seconds**, while the binary system completes one orbit in about **2.1 days**.
- A **pulsar** is a rotating, highly magnetised neutron star that emits radiation from its magnetic poles. The observed pulses occur as its radiation beams sweep across the observer's line of sight.
- **XMM-Newton** observes the Universe in X-rays and helps scientists investigate energetic phenomena such as neutron stars, black holes and accreting binary systems.
- The researchers identified the **accretion stream** as the likely source of the changing emission lines. It transports matter from the accretion disk towards the neutron star, where magnetic field lines channel the material towards its poles.
- **Primary emission** originates from the pulsar, whereas **secondary emission** arises when surrounding matter absorbs and re-emits radiation. Its study can help determine the geometry and physical conditions of distant binary systems.
- The finding is important because **HMXBs commonly accrete matter through direct capture of stellar wind**, whereas Cen X-3 shows evidence of disk-mediated accretion.

62. Agrivoltaics World Conference 2026

Syllabus Mapping: GS-III: Agriculture | Renewable Energy | Sustainable Development | Farmers' Income

- India hosted the **AgriVoltaics World Conference 2026** for the first time in the Global South. It was inaugurated by Agriculture Minister **Shivraj Singh Chouhan** and New and Renewable Energy Minister **Pralhad Joshi** on 21 October 2026.
- **Agrivoltaics (AgriPV)** combines solar electricity generation with continued agricultural cultivation on the same land, following the principle of *"one land, two harvests."*
- A **TERI study** estimated that 47.5 million hectares of Indian cropland were technically suitable for agrivoltaics. Six states—Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh, Karnataka and Uttar Pradesh—account for nearly **50% of the estimated potential**.
- AgriPV can reduce competition between food and energy production for land. Partial shading may also reduce evaporation and heat stress for suitable crops, although outcomes vary by crop and panel configuration.
- Field studies cited at the conference indicated **10–20% potential yield improvement for certain crops** and approximately **30% lower water consumption** under suitable systems.
- The next phase of **PM-KUSUM** is expected to expand solar energy in agriculture through an ambitious agrivoltaic programme. Under PM-KUSUM, approximately **30 lakh agricultural pumps** had been connected to solar energy.
- **PM-KUSUM components:** Component A—decentralised grid-connected renewable power plants; Component B—standalone solar agricultural pumps; Component C—solarisation of existing grid-connected pumps, including feeder-level solarisation.
- Elevated AgriPV structures may cost **25–30% more** than conventional ground-mounted solar. Some assessments estimate AgriPV generation costs at ₹3.20–₹3.30 per unit; comparisons should account for differences between project-generation costs and electricity supply costs.
- India's installed non-fossil electricity capacity reached **308.03 GW**, exceeding 55% of total installed capacity of approximately 560 GW. The conference also highlighted the potential to connect AgriPV planning with mandis, warehouses and cold-chain infrastructure.
- According to the **CSTEP AgriPV Manual**, agrivoltaics could generate an estimated **1.10 lakh–3.32 lakh full-time-equivalent jobs**. The conference also highlighted Italy's funding programme, Japan's farmland support and Germany's crop-yield-linked requirements.
- The **Global Agrivoltaics Climate-Zone Technical Framework** aims to support context-specific planning. India's priority is to adapt international practices to smallholder farming, water stress and local agricultural conditions.

63. Pradhan Mantri Samajik Sahayata Yojana

Syllabus Mapping: GS-II: Social Justice | Welfare Schemes for Vulnerable Sections | Government Policies and Interventions

- The Union Cabinet approved the continuation of the **National Social Assistance Programme (NSAP)** for **2026–27 to 2030–31**, with an outlay of **₹53,428 crore**. It has been renamed the Pradhan Mantri Samajik Sahayata Yojana.
- **NSAP** was launched on **15 August 1995** and provides 100% central assistance for social assistance to eligible households below the poverty line in rural and urban areas.

- The four renamed schemes cover old-age pensions, widow pensions, disability pensions and family benefits. The first, second and fourth continue in their existing forms; the major revision concerns the disability pension.
- **Article 41 (DPSP)** provides for public assistance in cases of unemployment, old age, sickness and disablement, subject to the State's economic capacity and development.
- Under the **Pradhan Mantri Divyangjan Pension Yojana**, the benchmark disability threshold has been reduced from **80% to 40%**, and the minimum age of 18 years has been removed, extending eligibility from birth.
- **Rights of Persons with Disabilities Act, 2016:** Section 2(r) defines benchmark disability as at least **40% of a specified disability**, certified by the competent authority.
- Central assistance has increased from ₹300 to **₹375 per month for beneficiaries aged 0–79 years**, and from ₹500 to **₹625 for those aged 80 years and above**. The disability pension's beneficiary coverage has expanded from **8.33 lakh to 27.48 lakh**.
- The reform extends potential coverage to children with benchmark disabilities and persons previously excluded by the higher disability threshold. **Disability certification and the below-poverty-line household criterion remain applicable.**
- NSAP covers approximately **3.20 crore beneficiaries** across all 36 States and Union Territories. States and UTs may supplement central assistance through their own pension top-ups.
- **Implementation:** State welfare departments, Gram Panchayats and municipalities participate in beneficiary identification, with payments largely made through **Direct Benefit Transfer (DBT)**. Revised guidelines are to be issued within three months.

64. Modified UDAN Scheme – Viksit UDAN

Syllabus Mapping: GS-III: Infrastructure | Civil Aviation | Inclusive Growth | Regional Connectivity

- The Prime Minister launched the next phase of **UDAN (Ude Desh ka Aam Nagrik)** on 4 July 2026. The Union Cabinet approved the Modified UDAN Scheme on **25 March 2026**, with an outlay of approximately **₹29,000 crore over 10 years**, aligned with the vision of Viksit Bharat 2047.
- **UDAN**, launched in October 2016, aims to make air travel affordable and improve connectivity to underserved and unserved regions. The scheme has operationalised **687 regional routes** across **95 aerodromes**, including heliports and water aerodromes, and facilitated air travel for **1.72 crore passengers**.
- The Modified UDAN Scheme provides **₹12,159 crore for developing 100 aerodromes**, ₹2,577 crore for regional airport operations and maintenance, and ₹3,661 crore for developing **200 modern helipads**.
- **Viability Gap Funding (VGF)** of ₹10,043 crore will support regional airline operations, helping sustain routes that may not initially be commercially viable.
- The scheme promotes indigenous aircraft and helicopters, including **HAL Dhruv and Dornier platforms**, to strengthen connectivity in remote and underserved regions.
- Regional air connectivity can support tourism, trade, emergency services and access to markets, while generating employment and improving economic integration of smaller cities and remote areas.
- The Prime Minister also inaugurated the **New Terminal Building at Jodhpur Airport**, developed by the Airports Authority of India at a cost of **₹480 crore**. Spread across **23,342 sq. metres**, it can handle **1,500 passengers during peak hours** and **20 lakh passengers annually**.
- The terminal includes **20 check-in counters, six aerobridges** and parking for approximately 320 cars. Its capacity addresses rising passenger demand, as the previous terminal could handle around four lakh passengers annually.
- The new terminal incorporates energy-efficient systems, water conservation measures and green-building practices, with a target of achieving a **5-Star GRIHA rating**. Its architecture combines modern infrastructure with traditional elements reflecting Rajasthan's heritage.

65. Exercise AUSTRAHIND 2026

Syllabus Mapping: GS-II: India–Australia Relations | GS-III: Defence and Security

- The **5th edition of Exercise AUSTRAHIND** commenced on **19 October 2026** at Thiruvananthapuram, Kerala, and will continue until **1 November 2026**. Approximately **120 personnel each** from the Indian and Australian armies are participating.
- The Indian contingent includes troops from the **Garhwal Rifles**, while the Australian contingent includes troops from **13 Brigade**. The 2025 edition was held in Perth, Australia.
- **Theme:** Joint sub-conventional operations in island and coastal environments under **Chapter VII of the UN Charter**.
- **Chapter VII of the UN Charter** concerns action in response to threats to peace, breaches of peace and acts of aggression.

- Training includes joint planning, surveillance and reconnaissance, protection of vital installations, coastal and island operations, and **Humanitarian Assistance and Disaster Relief (HADR)**.
- **First-time feature:** An observer delegation from **New Zealand** is participating in the exercise.
- The exercise aims to enhance interoperability and defence cooperation between India and Australia, supporting regional peace and security in the **Indo-Pacific**.

66 . Pradhan Mantri Dakshata Aur Kushalta Sampann Hitgrahi (PM-DAKSH)

Syllabus Mapping: GS-II: Welfare Schemes for Vulnerable Sections | GS-III: Skill Development | Inclusive Growth

- **PM-DAKSH**, a Central Sector Scheme launched in **2020–21**, provides skill training to SCs, OBCs, EWS, De-notified Tribes (DNTs), Safai Karamcharis and waste pickers to promote wage employment and self-employment.
- The scheme is implemented by three corporations under the **Department of Social Justice and Empowerment (DoSJE)**: National Scheduled Castes Finance and Development Corporation (NSFDC), National Backward Classes Finance and Development Corporation (NBCFDC) and National Safai Karamcharis Finance & Development Corporation (NSKFDC).
- DoSJE releases funds to these corporations, which reimburse training costs to institutes empanelled under **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)**. Training institutes must collaborate with relevant industries and provide wage and/or self-employment to at least **70% of trained candidates**; failure results in forfeiture of the third instalment, amounting to **30% of the training cost**.
- The three implementing corporations also provide eligible beneficiaries with loans and handholding support to establish their own projects, facilitating self-employment alongside skill-based wage employment.
- During **2020–21 to 2023–24**, the scheme trained **1,87,305 candidates**, of whom **96,162 were placed**.
- The scheme's evaluation found that over **90% of beneficiaries** reported alignment of training with their career goals, local labour-market needs and intended learning outcomes. Other reported gains included improved confidence, self-esteem and social recognition, particularly among women and marginalised groups.
- From **2024–25**, PM-DAKSH was subsumed under **PMKVY** to avoid duplication, as the job roles offered under PM-DAKSH were also covered under PMKVY and available through the **Skill India Digital Hub (SIDH)**.

67. Kashi Tamil Sangamam 5.0

Syllabus Mapping: GS-I: Indian Culture | Indian Literature | GS-II: Education | Government Initiatives

- The fifth edition of **Kashi Tamil Sangamam (KTS 5.0)** will be held from **28 November to 12 December 2026** under the theme **"Thirukkural Payilvom – Thirukkural Abhyas Karen"** to strengthen civilisational ties between Tamil Nadu and Kashi.
- Launched in **2022**, Kashi Tamil Sangamam is associated with **Ek Bharat Shreshtha Bharat**, which promotes cultural exchange and mutual understanding among different regions of India.
- The programme is organised by the **Department of Higher Education, Ministry of Education**, in collaboration with **IIT Madras, Banaras Hindu University (BHU)** and the **Central Institute of Classical Tamil (CICT), Chennai**, among other institutions.
- **Thirukkural**, traditionally attributed to the Tamil poet-philosopher **Thiruvalluvar**, comprises **1,330 couplets in 133 chapters**, organised into three sections: *Aram* (virtue), *Porul* (wealth) and *Inbam* (love).
- The 2026 theme aims to familiarise youth with the ethical teachings of Thirukkural. The text is being promoted through multilingual learning resources in **22 languages**, corresponding to the languages in the Eighth Schedule of the Constitution.
- Tamil was the first Indian language to receive Classical Language status, in **2004**. India currently recognises **11 Classical Languages**.
- Around **1,400 participants from Tamil Nadu**, divided into seven groups, will participate in an eight-day programme involving cultural, academic and spiritual engagements in **Varanasi, Prayagraj and Ayodhya**.
- A nationwide student engagement initiative will involve **1,000 higher educational institutions**, with one student selected from each participating institution. The programme includes learning activities, a one-month internship and campus-level dissemination of Thirukkural's teachings; selected students are offered a **₹10,000 stipend**.
- The initiative also includes school and college outreach, interactive sessions and technology-enabled dissemination of Thirukkural.

68. Nuakhai Festival and Seva Samman Parv

Syllabus Mapping: GS-I: Indian Culture | Regional Festivals | GS-II: Women Empowerment | Inclusive Development

- President **Droupadi Murmu** attended *Seva Samman Parv* and *Yuva Prabodhan* during the Nuakhai Milan Samaroh in **Raipur, Chhattisgarh, on 22 October 2026**, highlighting agricultural traditions, social harmony, youth development and women's participation in nation-building.
- **Seva Samman Parv** highlights the values of social service, public contribution and recognition of those working for society, while **Yuva Prabodhan** focuses on youth awareness, ethical conduct, innovation and their role in nation-building. Both programmes were held in the context of the Nuakhai celebrations.
- **Nuakhai** is a major harvest festival of **Western Odisha**. The name combines *Nua* (new) and *Khai* (eating), symbolising the consumption of the newly harvested crop after offering it to the presiding deity.
- The festival is associated with **Nabanna** (newly harvested rice offered as the first harvest) and community celebrations expressing gratitude to nature, respect for farmers and the importance of food.
- **Maa Samaleswari**, the presiding deity of Sambalpur, is closely associated with Nuakhai. The traditional greeting **"Nuakhai Juhar"** involves paying respect to elders and seeking their blessings.
- Nuakhai reflects the relationship between agriculture, local religious traditions and community identity. The President emphasised responsible food consumption, recognition of farmers' contributions and conservation of natural resources.
- Harvest festivals across India reflect regional agricultural cycles—**Baisakhi** in Punjab, **Pongal** in Tamil Nadu, **Bihu** in Assam and **Onam** in Kerala.
- The President stressed that achieving **Viksit Bharat 2047** requires equal participation of women and opportunities for them to contribute to social and national development.

69. SARAS Mela 2026 – Promoting Rural Women's Enterprises

Syllabus Mapping: GS-II: Welfare Schemes for Vulnerable Sections | GS-III: Inclusive Growth | Women's Empowerment

- The National SARAS Mela 2026 is being held at **Punnami Ghat, Vijayawada, Andhra Pradesh, from 13–31 October 2026**. It is the **first National SARAS Mela outside Delhi-NCR**, bringing together around **1,500 women SHG entrepreneurs from 34 States and UTs** across more than **650 stalls**.
- Organised under the **Deendayal Antyodaya Yojana–National Rural Livelihoods Mission (DAY-NRLM)**, SARAS Melas connect women-led Self-Help Group (SHG) enterprises with consumers, institutional buyers and wider markets through direct sales, branding and business linkages.
- The initiative began in **1999** with the first National SARAS Mela in Delhi, involving around 65 beneficiaries. **117 National SARAS Melas** have been organised, with annual sales exceeding **₹200 crore**. States and UTs organise at least two State-level SARAS Melas annually, contributing to around **50 SARAS events per year** nationally across different levels.
- **DAY-NRLM**, under the Ministry of Rural Development, mobilises rural women into SHGs and their federations, facilitating financial inclusion, access to credit, skills and sustainable livelihood opportunities.
- The **Lakhpati Didi initiative** aims to help SHG members achieve sustainable annual household income of at least **₹1 lakh**, assessed over at least four agricultural seasons and/or business cycles. The Lakhpati Didi target rose from 2 crore to 3 crore in the Interim Budget 2024–25 and was subsequently doubled to **6 crore in 2026**.
- The **Lakhpati Didi Pavilion** showcases successful entrepreneurs, including women earning over ₹10 lakh annually and some earning more than ₹1 crore, encouraging peer learning and the exchange of business models.
- Dedicated **Learning and Knowledge, Convergence and Demonstration Pavilions** facilitate business training, institutional linkages and live demonstrations of traditional and contemporary production techniques, including pottery, needlework and mirror-work embroidery.
- The Convergence Pavilion connects SHG entrepreneurs with government departments and market institutions, including **NABARD, NIRDPR, GeM, ONDC and TRIFED**, supporting access to finance, procurement, digital commerce and enterprise-related assistance.
- The **India Food Court** features **50 food stalls** and over **200 first-generation women food-service entrepreneurs** from more than 28 States and UTs, providing a national marketplace for regional cuisines and women-led food enterprises.
- Digital integration includes **eSARAS**, an online platform for discovering and purchasing SHG products, and the **SARAS Mela Digital App**, introduced in 2025 for nominations, attendance management and event information. UPI payments support cashless transactions, while coupon-based cash payment facilities accommodate visitors who prefer cash.
- A **16-foot installation titled "SHAKTI – The Spirit of Lakhpati Didi"** symbolises the collective strength of women entrepreneurs. The Mela also showcases traditional textiles, handicrafts and processed foods, promoting **Vocal for Local** and **Atmanirbhar Bharat** by linking rural producers with wider markets.

70. India–Brazil–South Africa Maritime Exercise (IBSAMAR IX 2026)

Syllabus Mapping: GS-II: Bilateral and Multilateral Relations | GS-III: Security | Maritime Cooperation

- The **9th edition of IBSAMAR (IBSAMAR IX 2026)** concluded on **20 October 2026 at Simon's Town, South Africa**, following ten days of joint activities involving the Indian, Brazilian and South African Navies.
- **IBSAMAR** is a trilateral maritime exercise that strengthens naval interoperability, operational coordination and professional exchanges among the three participating countries.
- The exercise comprised **harbour and sea phases**, including joint training, professional interactions and maritime evolutions to familiarise participating personnel with each other's procedures and operational capabilities.
- India, Brazil and South Africa are also members of **IBSA (India-Brazil-South Africa) Dialogue Forum**, a trilateral cooperation initiative established in 2003 among three major democracies from Asia, South America and Africa.
- The exercise supports cooperation on shared maritime challenges and the objective of maintaining **safe, secure and open seas**, strengthening naval relationships across the Indian, Atlantic and Southern Ocean regions.

71 . Ramsar Sites in India – Safeguarding Wetlands of International Importance

Syllabus Mapping: GS-III: Environment and Biodiversity | Conservation | Environmental Pollution and Degradation

- As of October 2026, India has **103 Ramsar Sites**, covering over **13.87 lakh hectares** across 28 States and UTs. India ranks **first in Asia and third globally** by the number of Ramsar Sites, rising from 26 sites in 2014.
- The **Ramsar Convention on Wetlands** was adopted on **2 February 1971** at Ramsar, Iran, and came into force in 1975. India became a party on **1 February 1982**. World Wetlands Day is observed annually on 2 February.
- The latest additions, announced on **15 October 2026**, are **Sukhna Wetland (Chandigarh)** and **Sauj Jheel (Uttar Pradesh)**, taking India's total to 103. **Jai Prakash Narayan Bird Sanctuary (Surha Tal)** in Uttar Pradesh became India's 100th Ramsar Site in June 2026.
- A wetland includes natural or artificial areas of marsh, fen, peatland or water that may be permanent or temporary, static or flowing, and fresh, brackish or saline. The Convention's definition also includes marine waters up to **six metres deep at low tide**.
- A wetland qualifies for Ramsar designation if it meets at least one of the **nine criteria**, covering representative or rare wetland types, threatened species, biodiversity, waterbird populations, fish diversity and wetland-dependent animal populations. For example, a site may qualify by regularly supporting **20,000 or more waterbirds** or at least **1% of a waterbird species' population**.
- The Convention rests on three pillars: **wise use of all wetlands, designation and effective management of Ramsar Sites, and international cooperation**. Ramsar recognition promotes conservation, scientific management and international collaboration.
- **Tamil Nadu has the highest number of Ramsar Sites (20), followed by Uttar Pradesh (14)**. India's first Ramsar Sites were **Chilika Lake (Odisha)** and **Keoladeo National Park (Rajasthan)**, designated on 1 October 1981.
- The **Montreux Record** identifies Ramsar Sites where changes in ecological character have occurred, are occurring or are likely to occur due to technological developments, pollution or other human interference. Sites may be removed from the Record after effective remedial action; **Chilika Lake was removed in 2002 following restoration measures**.
- The **Wetlands (Conservation and Management) Rules, 2017**, notified under the Environment (Protection) Act, 1986, provide the regulatory framework for wetland conservation and establish State and UT Wetlands Authorities. The Rules restrict activities such as encroachment, waste dumping and discharge of untreated effluents in notified wetlands.
- The **National Plan for Conservation of Aquatic Ecosystems (NPCA)** supports the integrated conservation and management of lakes and wetlands. Updated guidelines issued in 2024 emphasise scientific and integrated management.
- **Amrit Dharohar** promotes the conservation of Ramsar Sites through biodiversity protection, nature-based tourism, local livelihoods and wetland carbon assessment. **Mission Sahbhagita,** launched in 2022, promotes participatory wetland conservation, while the Save Wetlands Campaign was launched in February 2023 to encourage community participation in wetland conservation.

- **MISHTI** (Mangrove Initiative for Shoreline Habitats and Tangible Incomes) promotes mangrove restoration and conservation.

72. Operation Trident – Disrupting Transnational Drug Cartels

Syllabus Mapping: GS-III: Internal Security | Drug Trafficking | Money Laundering | Organised Crime | Border Management

- The **Narcotics Control Bureau (NCB)** spearheaded **Operation Trident** on **23 October 2026**, deploying 38 multi-agency teams simultaneously across 38 locations in **Assam, Mizoram and Manipur** to dismantle a transnational drug-trafficking network.
- The operation involved coordination among the NCB, Mizoram Police, the **Enforcement Directorate (ED)** and other central and state enforcement agencies, combining narcotics investigations with financial probes.
- The crackdown resulted in the freezing of **1,424 bank accounts**, the attachment of properties worth **₹17.82 crore**, seizure of **500 detonators and ₹12 lakh in cash**, and the arrest of **18 people**. Investigations also revealed hawala transactions worth approximately **₹100 crore** linked to the network.
- The cartel allegedly routed **methamphetamine and heroin** from Myanmar through Mizoram, Manipur and Assam towards mainland India and Bangladesh, exploiting cross-border routes and regional transit corridors.
- The **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985** provides the principal legal framework for controlling narcotic drugs and psychotropic substances in India. The **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances (PITNDPS) Act, 1988** provides for preventive detention in specified cases involving illicit drug trafficking.
- Operation Trident reflects a shift from a **seizure-centric to a network-centric approach**, targeting not only drug consignments but also financial channels, illicit assets, logistics networks and the individuals coordinating trafficking operations.
- The operation aligns with the **Vision Document on Narcotics Control (2026–2029)** and the government's stated objective of eliminating drug networks by **31 December 2029**.

73. Viksit Bharat – G RAM G: Rural Employment and Development Framework

Syllabus Mapping: GS-II: Government Policies & Interventions GS-III: Inclusive Growth | Rural Development | Employment Generation

- The **Viksit Bharat – Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB-G RAM G) Act, 2025** came into force on **1 July 2026**, replacing MGNREGA. It guarantees **125 days of wage employment per financial year** to every rural household whose adult members volunteer for unskilled manual work.
- The framework focuses on four thematic areas: **water security, core rural infrastructure, livelihood-related infrastructure and mitigation of extreme weather events**, linking employment generation with durable asset creation and climate resilience.
- **Viksit Gram Panchayat Plans (VGPPs)** form the core of decentralised planning. Prepared with the participation of Gram Panchayats and Gram Sabhas, they identify local needs, map existing assets, assess development gaps and prioritise works.
- VGPPs integrate **GIS, Yuktdhara and PM Gati Shakti** for geospatial planning, asset mapping and avoidance of duplication. Plans are consolidated at Block, District, State and National levels to contribute to the **Viksit Bharat National Rural Infrastructure Stack**. The framework identifies **318 types of permissible works** across its four thematic areas.
- States may notify an aggregate pause period of up to 60 days in a financial year during peak agricultural seasons, when scheme works will not be undertaken to ensure labour availability for sowing and harvesting. The annual guarantee of 125 days of wage employment remains applicable during the remaining period of the financial year.
- The scheme is Centrally Sponsored, with a **90:10 funding ratio** for Northeastern and Himalayan States and specified UTs, and **60:40** for other States and UTs with legislatures. UTs without legislatures receive full Central funding. The Centre determines State-wise normative allocations using prescribed objective parameters.
- The Act provides for **unemployment allowance** when employment is not provided within the prescribed period and compensation for delayed wage payments. These provisions reinforce the statutory nature of the employment guarantee.

- **Accountability mechanisms** include social audits by the Gram Sabha, inspections, digital disclosures and grievance redressal. Worksite facilities include drinking water, shade, rest periods and first aid. Employment is ordinarily to be provided within **5 km of the applicant's village**; work beyond this distance but within the Block attracts an additional **10% of the wage rate** towards transport and living expenses.
- Digital governance measures include **e-KYC, face and biometric authentication, digital attendance, geo-tagging, electronic Measurement Books (e-MB), Direct Benefit Transfer (DBT) and AI-enabled monitoring**, intended to improve transparency, verification and accountability.

74. Exercise INDRA 2026 – India–Russia Naval Cooperation

Syllabus Mapping: GS-II: Bilateral Relations | GS-III: Security Challenges | Maritime Security

- **Exercise INDRA 2026**, a bilateral naval exercise between the **Indian Navy and the Russian Federation Navy (RuFN)**, concluded in October 2026. Indian Naval Ship **Sahyadri** departed Vladivostok, Russia, on **20 October 2026** following the exercise.
- The exercise comprised two phases: **Harbour Phase** and **Sea Phase**, combining professional exchanges, operational coordination and practical maritime drills.
- The Harbour Phase included cross-deck visits, Subject Matter Expert Exchanges, operational synchronisation activities, leadership interactions and cultural engagements to facilitate the exchange of professional knowledge and operational practices.
- The Sea Phase involved **coordinated manoeuvring, integrated communications, helicopter operations and medical evacuation drills**, strengthening coordination and interoperability between the participating navies.

75. Domestic Demand Drives India's Steel Sector – H1 FY 2026–27

Syllabus Mapping: GS-III: Indian Economy | Industrial Growth | Investment Models | Environmental Pollution and Green Technology

- India's finished steel consumption rose **7.6% to 85 MT** during April–September 2026. Crude steel production increased **2.9% to 85.1 MT**, while finished steel production grew **4.1% to 82 MT**.
- Steel is a **core industry**, supplying essential inputs to construction, railways, automobiles, defence and capital goods. Demand reflects infrastructure investment and broader industrial activity.
- India remained a **net importer of finished steel by volume** in H1 FY 2026–27, importing **4.14 MT** and exporting **3.55 MT**. China and South Korea accounted for 31.8% and 31.1% of imports, respectively.
- India's steel industry faces challenges from **import dependence, coking coal requirements, raw-material price volatility and competition in high-grade specialty steel**.
- The draft **National Steel Policy – Vision 2047** targets **604 MT of crude steel capacity**, per capita steel consumption of **302 kg** and exports of **45 MT** by 2047.
- The **PLI Scheme for Specialty Steel** promotes domestic production of high-value steel, while the **DMI&SP Policy** encourages domestically manufactured iron and steel in government procurement.
- Under the **Green Steel Initiative**, 104 distinct steel producers had received Green Steel Certificates by October 2026. The draft policy also targets reducing steel-sector emission intensity from **2.54 to approximately 1.54 tonnes of CO_2 per tonne of crude steel** by 2047.
- Green steel production can be promoted through **energy efficiency, renewable energy, green hydrogen, scrap recycling and cleaner steelmaking technologies**. The Green Steel Taxonomy uses emission-intensity-based star ratings to identify lower-emission steel products.
- **Raw-material security:** Iron ore, coking coal, manganese and scrap are important steelmaking inputs. MOIL recorded its highest-ever first-half manganese ore production of **0.96 MT** in April–September 2026.
- Under **PM-SETU**, SAIL signed MoUs with Odisha, Chhattisgarh and West Bengal to upgrade ITI clusters and strengthen industry-oriented skills.

76 . Agrivoltaics – Integrating Agriculture with Solar Energy

Syllabus Mapping: GS-III: Agriculture | Renewable Energy | Environmental Sustainability | Inclusive Growth

- **Agrivoltaics (AgriPV)** refers to the dual use of land for agricultural production and solar electricity generation, with panels installed above or between crop rows. It improves land-use efficiency while creating opportunities to diversify farmers' incomes.
- India has significant potential for AgriPV. In 2023–24, its net sown area was **138.99 million hectares**, while gross cropped area stood at **217.88 million hectares**. A GIS-based assessment identified **47.35 million hectares of restricted cropland** as potentially suitable for AgriPV after environmental, agronomic and technical screening.
- As of August 2025, India had **36 operational agrivoltaics projects with 37.54 MW installed capacity**, alongside 10 pilot projects under development. Estimated national potential ranges from **3,000 GW to nearly 14,000 GW**; this is potential capacity, not installed capacity.
- Elevated solar panels can provide partial shade, reduce soil-moisture loss and protect suitable crops from excessive heat. Fruits, vegetables, spices and medicinal plants are among the promising crops, depending on sunlight requirements and local agroclimatic conditions.
- Agrivoltaics can diversify farm incomes through crop cultivation, electricity for irrigation and the potential sale of surplus electricity to the grid. It can also reduce dependence on diesel-powered pumps and support agricultural resilience.
- Maharashtra, Rajasthan, Andhra Pradesh, Madhya Pradesh, Karnataka and Uttar Pradesh collectively account for nearly **50% of India's estimated AgriPV power-generation potential**. Odisha, Tamil Nadu, Kerala, Telangana, Bihar and West Bengal have moderate potential.
- **PM-KUSUM**, launched in 2019, promotes decentralised solar power generation, solarisation of agricultural pumps and opportunities for farmers to earn from surplus electricity, supporting the integration of solar energy with agriculture.
- The **National Institute of Solar Energy (NISE)**, in collaboration with the **Indian Agricultural Research Institute (IARI)**, has established a Centre of Excellence on Agrivoltaics for research, demonstration and capacity building, including a 100-kW pilot project at IARI.
- The **India Agrivoltaics Alliance**, launched in 2023 and anchored by the National Solar Energy Federation of India, promotes research, policy advocacy, pilot projects and scalable implementation models.
- State initiatives include **Mukhyamantri Saur Krushi Vahini Yojana 2.0 (Maharashtra)**, **Kisan Suryoday Yojana (Gujarat)** and **Surya Raitha Scheme (Karnataka)**, which support solar power generation or solar-powered irrigation for agricultural use.
- The **7th AgriVoltaics World Conference 2026** was held in New Delhi from **21–23 October 2026** under the theme "Powering the Global South", bringing together stakeholders to advance the integration of agriculture and solar energy.

77. TDB–Manastu Space Partnership: Indigenous Green Propulsion Technology

Syllabus Mapping: GS-III: Science and Technology | Space Technology | Indigenous Technology Development

- The **Technology Development Board (TDB), Department of Science and Technology (DST)**, has extended **₹116 crore** support to Manastu Space Technologies Pvt. Ltd. under the **Research Development and Innovation (RDI) Fund** for developing indigenous green propulsion systems. The total project cost is ₹277.63 crore.
- The technology uses a **hydrogen peroxide-based green propellant with additives**, integrated with a propulsion engine, propellant-feed system and specialised catalyst, as an alternative to conventional satellite propellants.
- **Catalyst-based propulsion:** The catalyst facilitates the decomposition of hydrogen peroxide, generating hot gases that produce thrust. An ultra-high-temperature ceramic catalyst is being developed for reliable operation under demanding conditions.
- The system is designed for a **5 mN to 300 N thrust range**, enabling applications from small satellite manoeuvres to higher-thrust propulsion requirements.
- Green propulsion aims to reduce propellant toxicity, handling risks and operational costs associated with conventional systems, including hydrazine-based propulsion. However, concentrated hydrogen peroxide remains a hazardous oxidising agent requiring specialised handling.
- Applications include **orbit raising, station-keeping, attitude control, collision avoidance and controlled de-orbiting**, supporting satellite manoeuvrability and space-debris management.
- The project aims to advance the technology from **Technology Readiness Level (TRL)-6 to TRL-9** through further engineering, integration, testing and validation. TRL-6 indicates demonstration in a relevant environment, while TRL-9 signifies successful operation in the actual operational environment.

78. Immersive Technologies – Blending Physical and Virtual Worlds

Syllabus Mapping: GS-III: Science and Technology | IT and Computers | Applications of AI | Creative Economy

- **Extended Reality (XR)** is an umbrella term covering **Virtual Reality (VR), Augmented Reality (AR) and Mixed Reality (MR)**. These technologies enable interactive experiences by combining digital content with real or simulated environments.
- **VR** creates a completely simulated environment; **AR** overlays digital information on the physical world; **MR** enables digital objects to interact with the user's physical surroundings. **Haptic technology** adds touch-based feedback, while 360-degree video enables viewing in every direction.
- Immersive technologies have applications in **education, healthcare, heritage tourism, gaming, entertainment and infrastructure planning**. VR simulations support experiential learning and medical training, while AR can display digital information over real-world objects.
- **Digital Twin** is a virtual representation of a real-world object, system or place, updated using real-world data to monitor performance, simulate scenarios and support decision-making. The Department of Telecommunications' **Sangam: Digital Twin** initiative combines digital twins with 5G, IoT and AI for infrastructure planning. A National Digital Twin for major urban centres is envisaged by 2035.
- In heritage preservation, **JATAN software** supports digitisation of museum artefacts and their records. The Museums of India digital repository enables online access to collections, while AR tools and virtual tours improve visitor engagement.
- The Ministry of Information and Broadcasting is promoting the **Animation, Visual Effects, Gaming, Comics and Extended Reality (AVGC-XR)** ecosystem through the **Indian Institute of Creative Technologies (IICT), Mumbai**, established in 2025 as a National Centre of Excellence.
- The **Union Budget 2026–27 allocated ₹250 crore** for AVGC Content Creator Labs in **15,000 secondary schools and 500 colleges**, with IICT as the nodal agency. The initiative aims to develop practical skills in animation, gaming, visual effects and digital content creation.
- **GENESIS**, launched by the Ministry of Electronics and Information Technology (MeitY) in 2022, supports technology startups, including those working in AR/VR and spatial computing. **WaveX**, an initiative of the Ministry of Information and Broadcasting, supports media-tech startups through incubation and acceleration.
- India's immersive technology market generated an estimated **US$1,259.5 million in 2023** and is projected to reach **US$7,818.7 million by 2030.**

79. GeM's AABHAR Collection – Promoting Local Artisans through Public Procurement

Syllabus Mapping: GS-III: E-Commerce | MSMEs | Rural Development | GS-II: Government Policies and Interventions

- The **Government e-Marketplace (GeM)** is promoting the **AABHAR Collection**, a dedicated digital storefront for culturally distinctive Indian gifts and hampers. Launched in July 2024, the initiative features **294 product listings from 10 State and Central handloom and handicraft emporiums** as of October 2026.
- The collection includes handicrafts, handlooms, artisanal foods, pantry products and personal care items, offering government buyers products for official events, conferences, festivals and gifting.
- Products associated with **One District One Product (ODOP)** and **Geographical Indication (GI) tags** feature in the collection, improving the visibility of regional products and providing market access to artisans, weavers, rural entrepreneurs and women-led enterprises.
- Participating emporiums include **COTTAGE, Khadi India, Garvi Gurjari, Jharcraft, Cauvery, Mrignayani, Marhati, Purbashree and Poompuhar**, among others.
- The initiative integrates indigenous enterprises into the public procurement ecosystem through a dedicated digital marketplace, supporting the government's **Vocal for Local** approach.
- **GeM**, launched in 2016, is an online public procurement platform that enables government ministries, departments, public sector undertakings and other eligible buyers to procure goods and services transparently.
- The AABHAR Collection can strengthen **market linkages, artisan livelihoods, regional product branding and women's economic participation**.

80. Atal Vayo Abhyuday Yojana (AVYAY) – Welfare of Senior Citizens

Syllabus Mapping: GS-II: Government Policies and Interventions | Welfare Schemes for Vulnerable Sections | Health and Social Justice

- The **Atal Vayo Abhyuday Yojana (AVYAY)**, implemented by the **Ministry of Social Justice and Empowerment**, provides an integrated framework for senior citizens' welfare through institutional care, healthcare support, state-level interventions and capacity building.

- Its key components include the Integrated Programme for Senior Citizens (IPSrC), State Action Plan for Senior Citizens (SAPSrC), Rashtriya Vayoshri Yojana (RVY), Senior Citizen Opportunities for Productive Engagement (SCOPE) and Seniorcare Ageing Growth Engine (SAGE). Regional Resource and Training Centres (RRTCs) provide institutional support through training, research, capacity building and coordination.
- Under **IPSrC**, financial assistance is provided through grants-in-aid to eligible NGOs, State Governments, Panchayati Raj Institutions and local bodies to establish and maintain facilities for senior citizens, particularly indigent elderly persons.
- **Regional Resource and Training Centres (RRTCs)** provide institutional support through training, capacity building, research, documentation, awareness generation and advocacy on ageing and elderly welfare. Each RRTC receives annual financial support of **₹19.58 lakh** under the scheme.
- RRTCs also assist with database development, monitoring and evaluation, project inspections and coordination among State Governments, UTs and implementing organisations.
- Under **SAPSrC**, financial assistance is provided to States and UTs for locally relevant elderly-welfare interventions, including training geriatric caregivers and organising special cataract surgery drives.
- States and UTs may utilise up to **20% of their allocated funds** for state-specific programmes, subject to scheme guidelines and approval of eligible components. They are also expected to supplement Central assistance with their own resources.

81 . Carbon Capture, Utilisation and Storage (CCUS)

Syllabus Mapping: GS-III: Environmental Pollution | Climate Change | Energy Security | Science and Technology

- Carbon Capture, Utilisation and Storage (CCUS) involves capturing carbon dioxide (CO_2) from industrial sources for productive utilisation or permanent geological storage. It can complement renewable energy in achieving India's **Net Zero target by 2070**.
- NITI Aayog identifies steel, cement, oil and gas, petrochemicals, chemicals and fertilisers as key hard-to-abate sectors. Emissions from these sectors and thermal power generation are projected to reach nearly **2,300 million tonnes per annum by 2030**.
- The CCUS process involves capturing CO_2 at the source, purifying and compressing it, transporting it through pipelines or ships, and directing it towards utilisation or geological storage.
- Captured CO_2 can be used in concrete, aggregates, urea, green methanol, chemicals, polymers, food and beverages, and algae-based products. Geological storage involves injecting CO_2 into depleted oil and gas reservoirs, deep saline aquifers or basalt formations.
- The **hub-and-cluster model** connects multiple industrial emitters with shared CO_2 transport, utilisation and storage infrastructure. The DST CCUS Roadmap 2025 identifies the Gujarat coast, Odisha–Jharkhand belt and Northeast India as potential cluster regions.
- CCUS can support **blue hydrogen** production from fossil fuels, including coal gasification. Green hydrogen, in contrast, is produced through electrolysis of water using renewable electricity. Coal gasification converts coal into synthesis gas (syngas) using controlled heat, oxygen and steam at approximately 800°C–1,600°C.
- As of August 2026, fossil-fuel-based sources accounted for **45.12% of India's installed power capacity**. CCUS can help reduce emissions from existing thermal power plants and industrial facilities during the transition to cleaner energy.
- India's first integrated CCUS Field Laboratory at **IIT Bombay**, inaugurated in May 2026, can capture up to **3 tonnes of CO_2 per day** from industrial emissions and ambient air. It converts CO_2 into carbonate and bicarbonate products and studies permanent storage in Deccan Traps basalt formations.
- DST has supported two coal-gasification technology testbeds involving **IIT Delhi–Thermax Ltd** and **CSIR-IICT Hyderabad–BHEL** for methanol and dimethyl ether (DME) production. India also launched its first cluster of five CCU testbeds for the cement industry on 11 May 2025.
- The Union Budget 2026–27 announced **₹20,000 crore over five years** for CCUS in power, steel, cement, refineries and chemicals. The DST CCUS R&D Roadmap (2025) and NITI Aayog CCUS Policy Framework (2022) provide direction for research, technology development and sector-specific policy interventions.

82. PM Vishwakarma Artisans Showcase Traditional Crafts at BRICS Cultural Bazar

Syllabus Mapping: GS-I: Indian Culture | Traditional Crafts | GS-II: Government Schemes | GS-III: MSMEs | Inclusive Growth

- Artisans under the **PM Vishwakarma Scheme**, implemented by the Ministry of Micro, Small and Medium Enterprises (MSME), showcased traditional crafts at the **12th BRICS Parliamentary Forum Cultural Bazar** held at Parliament House Complex, New Delhi, on 26–27 October 2026.

- Eight artisans from Rajasthan, Jammu and Kashmir, Bihar, Madhya Pradesh, Jharkhand, Nagaland, Karnataka and Maharashtra represented traditional trades, including tailoring, goldsmithing, stone sculpting, toy-making and cobbling. Live demonstrations highlighted indigenous craftsmanship.
- **PM Vishwakarma Scheme:** Launched in 2023, it supports traditional artisans and craftspeople through recognition, skill training, toolkit incentives, concessional credit, digital transaction incentives and marketing support.
- The scheme covers **18 traditional trades**, including carpenter, boat maker, blacksmith, goldsmith, potter, sculptor, cobbler, tailor and doll and toy maker.
- **Market access:** Artisans have benefited from exhibitions and e-commerce onboarding on platforms such as Amazon, Flipkart and Meesho, enabling wider customer reach and improved product branding.
- **Traditional crafts showcased:** Jharkhand's Dokra metal craft uses the ancient **lost-wax casting technique**; Jabalpur Stone Craft is associated with GI-tagged marble craftsmanship; Kolhapuri chappals represent Maharashtra's traditional leatherwork; and Channapatna and Kinhal toys reflect Karnataka's toy-making heritage.
- Other crafts included Rajasthan's lac bangles, Kashmiri shawls and pherans, and crochet dolls inspired by Naga attire and cultural motifs. The artisans also received support through toolkits, training, credit assistance and market linkages under the scheme.

83. India Expands Maritime Partnerships with South Korea and Cyprus

Syllabus Mapping: GS-II: Bilateral Relations | International Cooperation | GS-III: Infrastructure | Industrial Development | Environmental Sustainability | Security

- Union Minister for Ports, Shipping and Waterways **Sarbananda Sonowal** held meetings with South Korean maritime institutions, shipbuilders and shipping companies, along with Cyprus' Shipping Deputy Minister, in Busan, South Korea, to strengthen cooperation in shipbuilding, maritime finance, port infrastructure and green shipping.
- **Shipbuilding and Make in India:** Discussions with Sejin Heavy Industries explored manufacturing partnerships for large shipbuilding blocks, LPG/LNG cargo tanks, cryogenic structures and specialised marine equipment. Cochin Shipyard Ltd. also explored the possibility of collaboration in block fabrication with Sejin.
- **Marine Technology:** Cooperation with the Korea Marine Equipment Research Institute (KOMERI) was discussed in marine equipment manufacturing, R&D, testing, certification, green propulsion and smart maritime technologies. Collaboration between KOMERI and the proposed **India Ship Technology Center (ISTC)** could strengthen indigenous ship design, testing, training and certification capabilities.
- **Maritime Finance:** India invited Korean maritime financing institutions to invest in its expanding maritime sector. The proposed opportunities include the **Maritime Development Fund (MDF)** and **Sagarmala Finance Corporation (SMFC)**, alongside shipbuilding and port infrastructure projects.
- **Investment Potential:** India has approved a shipbuilding support package of approximately **US$7.8 billion**. Mega shipbuilding clusters are under development, with a pipeline of over **400 vessels worth an estimated US$23 billion**, creating opportunities for international investment and technology partnerships.
- **Shipping and Fleet Expansion:** Discussions with South Korea's shipping company HMM covered registering its vessels under the Indian flag, recruiting Indian seafarers, using Indian ship-recycling facilities compliant with the Hong Kong Convention, and expanding services to additional Indian ports.
- **Port Infrastructure:** The Korea Ocean Business Corporation (KOBC) explored investment and business opportunities in India's growing maritime sector, particularly port infrastructure and shipping. HMM also expressed interest in Indian-flagged vessels, Make in India containers and the upcoming **Vadhvan Port**.
- **Sustainable Ship Recycling:** Cyprus reaffirmed support for India's efforts to secure **European Union (EU) recognition for eligible Indian ship-recycling facilities**. The discussions also covered shipbuilding, maritime investment, seafarer welfare and maritime services. Around 25 leading Cypriot companies were expected to visit India in November 2026 to explore partnerships.
- **Hong Kong Convention (HKC):** The International Convention for the Safe and Environmentally Sound Recycling of Ships establishes international standards for safer ship recycling, including requirements concerning hazardous materials, ship recycling facilities and worker safety.
- **Green Shipping:** Indigenous manufacturing of cryogenic tanks, specialised marine equipment and large ship blocks can strengthen domestic shipbuilding capabilities and support the development of a modern, energy-efficient fleet.

84. National Startup Awards 6.0 – Promoting Innovation and Entrepreneurship

Syllabus Mapping: GS-III: Indian Economy | Startups | Innovation | Science and Technology | Inclusive Growth

- The Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, launched the **6th National Startup Awards (NSA 6.0)** under Startup India to recognise innovative startups and promote entrepreneurship.
- Launched in **January 2016**, Startup India completed ten years in 2026. The National Startup Awards, introduced in 2019, recognise startups demonstrating innovation, scalability, sustainability and socio-economic impact.
- NSA 6.0 covers **20 sectoral categories and 3 special categories**, with 12 new sectors reflecting emerging technologies and national development priorities, including semiconductors, biomanufacturing, defence, rural industries, space-tech, blue economy and future mobility.
- The special categories recognise **women-led startups, startups from the North-Eastern region and student innovators**. The student category has been introduced for the first time to encourage innovation among school and college students across all 36 States and Union Territories.
- Winners in the 20 sectoral categories and two startup-focused special categories are eligible for **₹25 lakh per category**. The student award carries a total prize pool of ₹25 lakh across four sub-categories.
- Beyond cash prizes, the awards facilitate mentorship, investor engagement, market access, industry partnerships and national-level visibility for startups.
- DPIIT is encouraging participation from **Tier-2 and Tier-3 cities** through collaboration with State Governments, incubators, academic institutions, banks, Alternative Investment Funds (AIFs) and industry associations.

85. Singapore–India Maritime Bilateral Exercise (SIMBEX-2026)

Syllabus Mapping: GS-II: India–Singapore Relations | GS-III: Defence and Security | Maritime Security

- The **33rd edition of SIMBEX-2026** concluded on 26 October 2026 at Visakhapatnam, strengthening maritime cooperation and operational coordination between the Indian Navy and the Republic of Singapore Navy (RSN).
- The exercise was conducted in two phases. The **Harbour Phase** included professional interactions, Subject Matter Expert Exchanges (SMEEs), cross-deck visits and joint planning, while the **Sea Phase** in the Bay of Bengal focused on operational drills.
- The sea phase involved **Anti-Submarine Warfare (ASW), Anti-Air Warfare, Anti-Surface Warfare, Maritime Interdiction Operations**, seamanship evolutions and cross-deck flying operations to improve interoperability between the two navies.
- The exercise reinforces cooperation in maintaining maritime security and stability in the **Indian Ocean Region (IOR)**, amid the importance of a secure and open maritime domain for regional trade and connectivity.

86 . Green Hydrogen – Emerging Pillar of India's Clean Energy Transition

Syllabus Mapping: GS-III: Energy | Infrastructure | Environmental Pollution | Science and Technology | Industrial Development

- Green hydrogen is produced by splitting water through electrolysis using renewable electricity. It can decarbonise sectors where direct electrification is difficult, reduce fossil fuel imports and support India's **Net Zero target by 2070**.
- The **National Green Hydrogen Mission (NGHM)** was approved in January 2023 with an outlay of **₹19,744 crore**. It targets at least **5 million metric tonnes (MMT) of annual green hydrogen production by 2030**, potentially rising to 10 MMT with export demand.
- India's Green Hydrogen Standard, notified by the Ministry of New and Renewable Energy (MNRE) in August 2023, sets an emissions ceiling of **2 kg CO_2-equivalent per kg of hydrogen**, measured on a well-to-gate basis as a 12-month average.
- An electrolyser uses renewable electricity to split water into hydrogen at the cathode and oxygen at the anode. Around **9 litres of demineralised water are required per kg of hydrogen**, according to MNRE. The hydrogen is subsequently dried, purified and compressed.
- Green hydrogen can replace fossil-fuel-based hydrogen already used in **fertiliser production and petroleum refining**, while supporting hydrogen-based direct reduction of iron ore in steelmaking. Other applications include heavy-duty transport, railways, shipping, limited blending in city gas networks and energy storage.
- **Green ammonia and green methanol** can serve as lower-emission fuels and industrial feedstocks. Their use in shipping and exports depends on production costs, safety requirements, engine compatibility and supporting infrastructure.
- India's first indigenous hydrogen-powered train was inaugurated on **17 July 2026** on the Jind–Sonipat section. The 10-car trainset can carry around 2,600 passengers, supported by a hydrogen storage facility at Jind with a capacity of nearly 3,000 kg.

- The **Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme**, with an outlay of **₹17,490 crore up to 2029–30**, supports domestic electrolyser manufacturing and green hydrogen production.
- Deendayal Port (Kandla), V.O. Chidambaranar Port (Tuticorin) and Paradip Port have been recognised as hubs. An indigenous **1 MW green hydrogen plant** was commissioned at Kandla Port in July 2025. Four Hydrogen Valley Innovation Clusters have been awarded at Jodhpur, Odisha, Pune and Kerala.
- Eligible green hydrogen and green ammonia plants commissioned by 31 December 2030 receive a waiver of inter-state transmission charges for 25 years. The policy framework also provides for renewable electricity banking for up to 30 days and Open Access within 15 days, subject to applicable provisions.
- India's **Green Hydrogen Certification Scheme**, launched in April 2025, provides a framework for monitoring, verification and certification, with the Bureau of Energy Efficiency accrediting agencies. Green ammonia and green methanol standards have also been notified.
- The Strategic Hydrogen Innovation Partnership supports public–private R&D. Nine startups had been approved for total funding of ₹22 crore.
- By 2030, the Mission aims to mobilise over **₹8 lakh crore in investment**, reduce cumulative fossil-fuel imports by approximately **₹1 lakh crore**, create over 6 lakh jobs and help avoid nearly **50 million tonnes of CO_2 emissions annually**. These are projected outcomes, alongside the target of 5 MMT annual production capacity.

87. Cabinet Approves Container Manufacturing Promotion Scheme (CMPS)

Syllabus Mapping: GS-III: Industrial Policy | Infrastructure | Logistics and Supply Chain Management | Employment Generation

- The Union Cabinet has approved the **Container Manufacturing Promotion Scheme (CMPS)** with a budgetary outlay of **₹10,000 crore up to FY 2039–40 under the Ministry of Ports, Shipping and Waterways.** Announced in the **Union Budget 2026–27**, the scheme aims to establish a globally competitive container manufacturing ecosystem in India, reduce import dependence and strengthen supply-chain resilience.
- The scheme supports both **greenfield facilities** and the **brownfield expansion** of existing container manufacturing units, encouraging domestic production and improving India's capacity to meet shipping and logistics requirements.
- **Interest Subvention Assistance** has an allocation of **₹859 crore** and provides interest subvention of **3% per annum** on eligible term loans for setting up new manufacturing facilities and expanding existing capacities.
- **Operational Expenditure Assistance**, with the largest allocation of **₹8,891 crore**, provides financial assistance for containers manufactured to **global shipping standards** and sold by eligible manufacturers. It seeks to bridge the cost gap and improve the price competitiveness of domestically manufactured containers.
- **Testing and Certification Assistance**, allocated **₹150 crore**, will support common testing facilities, including **dynamic longitudinal impact testing**, to strengthen quality assurance and compliance with international requirements.
- The scheme aims to increase India's annual domestic container manufacturing capacity by around **ten-fold to 7.5 lakh TEUs (Twenty-foot Equivalent Units)**, creating the potential to develop India into a global export hub for quality shipping containers.
- By strengthening domestic manufacturing, CMPS is expected to improve the **resilience of maritime and logistics supply chains** and support ancillary industries such as corner castings, specialised steel, wooden frames and paints.
- The scheme envisages approximately **3,000 direct jobs and over 50,000 indirect jobs**, linking industrial expansion with employment generation and the development of domestic manufacturing capabilities.

88. Cabinet Approves Pradhan Mantri Viksit Gram Swaraj Yojana (PM VGSY)

Syllabus Mapping: GS-II: Panchayati Raj | Decentralisation | E-Governance | Accountability and Transparency | GS-III: Inclusive Growth and Rural Development

- The Union Cabinet has approved **Pradhan Mantri Viksit Gram Swaraj Yojana (PM VGSY)** as a **Centrally Sponsored Scheme (CSS)** for **2026–27 to 2030–31**, aligned with the vision of **Viksit Bharat** and co-terminus with the **Sixteenth Finance Commission period**.
- The scheme has an outlay of **₹7,395.55 crore**, It will cover all States and Union Territories, including traditional rural local government institutions in areas where Panchayats do not exist.
- Around **32 lakh elected representatives**, Panchayat functionaries and other stakeholders across more than **2.55 lakh Panchayats and Traditional Local Bodies** are expected to benefit directly. Each coordinated awareness-generation exercise will reach at least **1 crore citizens**.

- The scheme places **Gram Panchayats at the centre of local development planning**, seeking to integrate village priorities, Central and State Government interventions, and available financial resources. It aims to connect national development priorities with local needs through participatory and evidence-based planning.
- PM VGSY will support the preparation of **2.55 lakh holistic Gram Panchayat Development Plans (GPDPs) annually** through the **eGramSwaraj Portal**. .
- The scheme will use existing digital, training and outreach platforms, including **PANCHAM**, an AI-enabled, multilingual, two-way communication platform available in **17 Indian languages**. Gram Sabhas and other Panchayat forums will facilitate informed discussions on Government schemes and national initiatives in the context of local development needs.
- Capacity building and digital handholding will strengthen the ability of elected representatives and Panchayat functionaries to undertake holistic planning, communicate with citizens, manage resources and make progress towards **locally relevant Sustainable Development Goals (SDGs)**.
- PM VGSY will support at least **2.55 lakh online audit plans annually** and timely completion of the corresponding audits through **AuditOnline**. Improved accounting, public disclosure and mobilisation of **Own Source Revenue (OSR)** are intended to strengthen financial accountability and promote more self-reliant Panchayats.
- The scheme is aligned with the **Sixteenth Finance Commission's recommendation of around ₹4.35 lakh crore in grants for Rural Local Bodies** during 2026–27 to 2030–31. Strengthening Panchayat capacity is intended to help translate these financial resources and national initiatives into locally relevant development outcomes.
- Implementation will be undertaken through **State Governments and Union Territory Administrations**, which will submit Annual Action Plans for appraisal and approval by the designated Central Empowered Committee. Existing institutional, digital and capacity-building systems will support implementation; **no permanent posts will be created**, although need-based contractual personnel may be engaged at State, District and Block levels.

89. Punah Bharan Mobile Application for Scientific Groundwater Recharge Planning

Syllabus Mapping: GS-I: Geographical Features and Water Resources | GS-III: Conservation of Resources | Environmental Pollution

- The Union Minister of Jal Shakti launched the **Punah Bharan Mobile Application**, developed by **BISAG-N** in collaboration with the **National Water Mission (NWM)** under the Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti. It aims to support scientific planning for groundwater recharge.
- The mobile application enables users to identify **potential artificial groundwater recharge zones within a radius of up to 3 km** and explore suitable recharge structures according to local conditions.
- The associated web portal provides **village-level Artificial Recharge Structure (ARS) zonation maps**, Geographic Information System (GIS) tools and thematic layers to support informed decisions on groundwater recharge interventions.
- The platform uses geospatial datasets covering **rainfall, groundwater levels, groundwater yield, slope and drainage** to identify potential recharge areas and guide the selection of appropriate structures.
- The initiative promotes **evidence-based groundwater management** by integrating geospatial information into local recharge planning. It can help identify suitable intervention sites and support more systematic planning for sustainable groundwater resources.

90. INS Sahyadri Arrives at Busan for India–Republic of Korea Bilateral Naval Exercise

Syllabus Mapping: GS-II: India and its Neighbourhood | Bilateral Relations | GS-III: Security Challenges | Maritime Security

- **INS Sahyadri**, an indigenously designed and built guided-missile stealth frigate of the Indian Navy, arrived at **Busan Naval Harbour, Republic of Korea, on 26 October 2026** to participate in the **India–Republic of Korea Navy (IN–RoKN)** Bilateral Exercise.
- During the harbour phase, personnel from both navies will engage in **professional interactions, cross-deck visits, cross-training activities and sporting events**. These activities will facilitate the exchange of operational experience and best practices while fostering mutual understanding and professional ties.
- The harbour phase will be followed by coordinated maritime activities at sea involving **INS Sahyadri and ROKS Munmu the Great**, providing opportunities to improve operational coordination and interoperability between the two navies.

91 . India Releases Four Key Publications at CBD COP-17

Syllabus Mapping: GS-III: Biodiversity Conservation | Environmental Governance | International Environmental Conventions

- At the **17th Conference of the Parties (COP-17) to the Convention on Biological Diversity (CBD)** in Yerevan, Armenia, India released four publications focusing on biodiversity conservation, biosafety, institutional capacity and Access and Benefit Sharing (ABS). The side event was organised by the Ministry of Environment, Forest and Climate Change in partnership with the **National Biodiversity Authority (NBA)** and **UNDP**.
- The four publications address interconnected aspects of India's biodiversity commitments:
  - **Guidelines for the Designation of India's Other Effective Area-Based Conservation Measures (I-OECMs), 2026:** Provide criteria and guidance for recognising conservation outcomes beyond conventional protected areas. Under the CBD framework, **OECMs** refer to geographically defined areas outside protected areas that are governed and managed to achieve positive and sustained long-term in-situ conservation outcomes. They recognise the contribution of diverse landscapes and management systems to biodiversity conservation.
  - **5th National Report on the Cartagena Protocol on Biosafety:** Reflects India's reporting on biosafety governance. The **Cartagena Protocol on Biosafety (2000; in force since 2003)** is a supplementary agreement to the CBD that seeks to ensure the safe handling, transport and use of **Living Modified Organisms (LMOs)** resulting from modern biotechnology, particularly in relation to transboundary movements.
  - **The Convention on Biological Diversity Handbook: Reference Guide and Indian Perspective:** Seeks to improve understanding of the CBD process and strengthen informed participation and continuity in implementation.
  - **India's ABS Success Story:** Documents India's experience in **Access and Benefit Sharing**, highlighting its position as a globally acknowledged leader in this area.
- The **Kunming–Montreal Global Biodiversity Framework (KMGBF)**, adopted at CBD COP-15 in 2022, provides the broader international roadmap for biodiversity action up to 2030 and beyond. It comprises **4 long-term goals for 2050 and 23 action-oriented targets for 2030**. Its prominent commitments include the **30×30 target**, which seeks to conserve at least 30% of terrestrial, inland water, coastal and marine areas by 2030, alongside restoration, sustainable use and biodiversity finance.

92. Khelo India Sports Goods Manufacturing Scheme

Syllabus Mapping: GS-III: Manufacturing | Industrial Policy | MSMEs | Employment Generation | Export Promotion

- The Union Cabinet approved the **Khelo India Sports Goods Manufacturing Scheme** with an outlay of **₹1,856.67 crore for FY 2026–27 to FY 2033–34**. Announced in Union Budget 2026–27, it aims to develop India into a globally competitive hub for sports goods manufacturing, reduce import dependence and promote exports.
- Around four integrated zones, each potentially covering more than **300 acres**, will bring manufacturers, suppliers, testing facilities, design and prototyping centres together. They will be developed through convergence with the **BHAVYA Scheme and NICDC Industrial Parks**.
- A combined allocation of **₹1,130 crore** will support manufacturing expansion through:
  - **Anchor Investment Support:** 20% capital expenditure assistance for investors committing at least ₹100 crore.
  - **Turnover Linked Support:** Incentives of up to 15% for manufacturers investing at least ₹10 crore.
- Existing sports goods clusters will receive support for upgrading common facilities and shared infrastructure. This is significant because nearly **90% of India's sports goods production is undertaken by small and micro enterprises**.
- An allocation of **₹105 crore** will support certification from International Sports Federations, covering 70% of first-time certification costs and 50% of renewal costs. This will improve product quality and facilitate access to international markets.
- Centres of Excellence will promote R&D in sports equipment, material sciences, protective gear and advanced manufacturing. DPIIT-registered sports start-ups will be eligible for grants of up to **₹20 lakh**, with research support encouraged through convergence with the **Anusandhan National Research Foundation (ANRF)**.
- India's major sports goods manufacturing clusters are **Jalandhar (Punjab) and Meerut (Uttar Pradesh)**. India has an established presence in cricket bats and protective equipment, but its sports equipment exports remain relatively limited compared with the global market.

93. NAMASTE Scheme – Promoting Safety and Dignity of Sanitation Workers

Syllabus Mapping: GS-II: Government Welfare Schemes | Vulnerable Sections | Social Justice | GS-III: Occupational Safety |

- **National Action for Mechanised Sanitation Ecosystem (NAMASTE)** is a **Central Sector Scheme**, launched in **July 2023**, jointly implemented by the **Ministry of Social Justice and Empowerment (MoSJE)** and the **Ministry of Housing and Urban Affairs (MoHUA)**.
- **Target beneficiaries:** The scheme initially focused on **Sewer and Septic Tank Workers (SSWs)**. In **June 2024, waste pickers** engaged in solid waste management were also included, extending its coverage.
- Sanitation workers are identified and digitally profiled through Urban Local Bodies (ULBs), facilitating access to welfare benefits, occupational safety measures and livelihood support.
- Workers receive **Personal Protective Equipment (PPE) kits**, safety training and access to mechanised cleaning equipment. The scheme also strengthens **Emergency Response Sanitation Units (ERSUs)** with modern safety devices for hazardous cleaning operations.
- Identified sewer and septic tank workers and their families are linked with **Ayushman Bharat–Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)** and other applicable health insurance schemes.
- Through the **Swachhata Udyami Yojana (SUY)** and support from the National Safai Karamcharis Finance and Development Corporation (NSKFDC), workers can access financial assistance and capital subsidies to procure sanitation-related machines and vehicles. The scheme also promotes Self-Help Groups (SHGs) and alternative livelihood opportunities.
- **Institutional Mechanism: NSKFDC:** Implementing agency of the scheme + **Urban Local Bodies:** Responsible for worker identification, profiling and facilitating scheme benefits + **Responsible Sanitation Authority (RSA):** Oversees safe sanitation operations + **Emergency Response Sanitation Units (ERSUs):** Provide trained personnel and safety equipment for emergency sanitation operations.
- The scheme seeks to achieve **zero fatalities in sanitation work**, eliminate direct human contact with hazardous waste, ensure mechanised sanitation operations, develop a skilled workforce and promote entrepreneurship among sanitation workers.
- The **Prohibition of Employment as Manual Scavengers and their Rehabilitation Act, 2013** prohibits employment as manual scavengers and hazardous manual cleaning of sewers and septic tanks. It provides for rehabilitation of manual scavengers and reinforces the need for safe sanitation practices.

94. National Cooperative Development Corporation (NCDC)

Syllabus Mapping: GS-III: Agriculture | Agricultural Credit | Rural Economy | Inclusive Growth | GS-II: Cooperative Societies

- The **93rd General Council Meeting of NCDC** was held under the chairmanship of the Union Minister of Cooperation to review cooperative financing, institutional reforms and its future roadmap under the vision of **Sahkar se Samriddhi**.
- Established under the **National Cooperative Development Corporation Act, 1962**, NCDC is a statutory corporation under the **Ministry of Cooperation**, providing financial assistance to cooperatives in agriculture, dairy, fisheries, processing, storage and marketing.
- NCDC has disbursed over **₹4.14 lakh crore** since the establishment of the Ministry of Cooperation. During FY 2025–26, its disbursements stood at **₹1,27,596 crore**, with a net profit of ₹1,475 crore and zero net NPAs.
- The **NCDC Amendment Act, 2026** expands avenues for financial assistance, equity participation and resource mobilisation. The Central Government has approved a ₹2,000 crore grant to enable NCDC to mobilise ₹20,000 crore from the market over four years.
- **Sahakar Navachar Yojana** promotes innovation and entrepreneurship in cooperatives through **100% grant assistance of up to ₹25 lakh**. Its initial corpus is ₹10 crore, with 20% earmarked for the North-Eastern Region, hilly areas and disadvantaged sections.
- NCDC has been directed to develop projects to make the **North-Eastern Region self-reliant in milk, eggs, fish and meat production by 2030**, strengthening dairy, fisheries and animal husbandry.
- The meeting emphasised developing **consortium and co-financing models with NABARD, State Cooperative Banks and commercial banks** to improve credit availability to cooperative institutions.
- Article 43B, inserted by the 97th Constitutional Amendment Act, 2011, directs the State to promote voluntary formation, autonomous functioning, democratic control and professional management of cooperative societies. Part IX-B (Articles 243ZH–243ZT) contains constitutional provisions relating to cooperative societies, subject to the Supreme Court's 2021 judgment on its application to State cooperative societies.

95. PM-KISAN – Release of 24th Instalment

Syllabus Mapping: GS-III: Agriculture | Direct Benefit Transfer | Farmers' Welfare | Agricultural Infrastructure | Crop Diversification

- The Prime Minister is scheduled to release the **24th instalment of Pradhan Mantri Kisan Samman Nidhi (PM-KISAN)** on 30 October 2026 from Banaskantha, Gujarat.
- **PM-KISAN**, launched in February 2019, is a **Central Sector Scheme** providing income support of **₹6,000 annually** to eligible landholding farmer families in three equal instalments of ₹2,000, subject to prescribed exclusion criteria. The amount is transferred directly into beneficiaries' bank accounts.
- Alongside the instalment release, **521 units established under the Agriculture Infrastructure Fund (AIF)** will be dedicated to the nation, and **12 horticulture clusters** will be inaugurated to promote high-value crops and improve farmers' income opportunities.
- The **Agriculture Infrastructure Fund (AIF)** is a financing facility of ₹1 lakh crore launched in 2020 to support post-harvest management infrastructure and community farming assets through medium- and long-term debt financing with interest subvention and credit guarantee support. It supports projects such as warehouses, cold storage facilities and primary processing centres.
- Under AIF, investments of approximately **₹1.75 lakh crore across more than 2.28 lakh projects** have been reported. Strengthening storage, processing and market infrastructure can reduce post-harvest losses and improve farmers' access to markets.
- **Horticulture clusters** promote geographical concentration of production, processing, storage and marketing facilities for high-value crops. They support crop diversification and stronger value chains, potentially improving farmers' returns.

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