



**Smart Leaders IAS**  
Since 2011

the

# CATALYST

A Monthly Publication for Current Affairs

JULY 2026



**COKING COAL**  
as a  
**CRITICAL & STRATEGIC**  
**MINERAL**

**JULY 2026**

# The CATALYST

**DIRECTORS:**

S. Sivarajavel, M.A.Sadik

**EDITOR:**

P. Mohan

**EDITORIAL TEAM:**

Kamesh Mani, Dr. Poornima Devi,  
R. Anand raja, R. Prathiba

**DESIGNER:**

Thomas Kalaivanan

**COVER DESIGN:**

Thomas Kalaivanan



**Smart Leaders IAS**

The CATALYST is a monthly magazine for current affairs which tries to give aspirants an in-depth comprehension of certain topics which appeared in different sources over the month. The Magazine has been designed in such a way that the reading experience is enriching and insightful for the readers.

The contents have been grouped into a thematic structure to help aspirants focus on the overall GS syllabus.

**HEAD OFFICE**

RBN Tower, No.Ak-2, 4th Ave, 3rd Floor  
Shanthi Colony, Anna Nagar,  
Chennai - 600040.(Near Petrol Bunk)

**Ph: 9626364444**

**TIRUNELVELI**

No.106B, 3rd floor, Gilgal Complex, VOC ground opposite,  
Palayamkottai - 627 002.

**Ph: 9626252500**

**TRICHY**

No.143, 4th Floor,Lakshmi Complex, Salai Road,  
Thillai Nagar, Trichy - 620 018.

**Ph: 9751500300 / 9786500300**

**KRISHNAGIRI**

No:7 D, Anna Salai, near New Bus Stand,  
next to Anna Arch, Londenpet, Krishnagiri

**Ph : 95144 23450 / 95144 23451**

*\*New sections will be added or removed based on the new updates we include in the forthcoming issues.*

*Information contained in this work has been obtained by sources believed to be reliable. We do not guarantee the accuracy or completeness of any information published herein, and neither Smart Leaders IAS nor its authors shall be responsible for any errors, omissions, or damages arising out of use of this information.*

# CONTENTS

## POLITY AND GOVERNANCE

|                                                                                |    |
|--------------------------------------------------------------------------------|----|
| DIGITALIZATION OF INDIAN CRIMINAL JUSTICE SYSTEM                               | 7  |
| USE OF AI IN JUDICIARY                                                         | 8  |
| SAMARTH PANCHAYAT PORTAL                                                       | 8  |
| PLACES OF WORSHIP (SPECIAL PROVISIONS)                                         |    |
| ACT, 1991 & KASHI VISHWANATH CORRIDOR                                          | 9  |
| 5 YEARS OF THE MINISTRY OF COOPERATION                                         | 11 |
| VOTING RIGHT CANNOT REMAIN MERELY A STATUTORY RIGHT                            | 12 |
| RIGHT TO WALK: INTEGRAL TO MODERN URBAN LIFE                                   | 13 |
| UNIFORM AGE OF MARRIAGE FOR ALL SECTIONS                                       | 14 |
| ATMANIRBHAR PANCHAYAT PROGRAMME – KOCHI                                        | 14 |
| SAMRIDDH GRAM: INTEGRATED PHYGITAL SERVICE DELIVERY MODEL ENABLED BY BHARATNET | 15 |
| VBSA BILL, 2026 – REFORMING HIGHER EDUCATION REGULATION                        | 17 |
| DIGITAL BHARAT NIDHI (DBN)                                                     | 18 |
| SANKALP: 7 PRINCIPLES OF CITIZEN-CENTRIC GOVERNANCE                            | 19 |
| DUTY OF CARE TO PRESERVE LIFE OF A PERSON ON HUNGER STRIKE                     | 20 |
| NO FIXED CRITERIA FOR INCLUSION OF LANGUAGES IN THE EIGHTH SCHEDULE.           | 21 |
| URBAN CHALLENGE FUND – GUIDELINES                                              | 21 |
| REVAMPED PM FASAL BIMA YOJANA (PMFBY)                                          | 22 |
| JUSTICE-CENTRIC SYSTEM                                                         | 23 |
| CFCFRMS 2.0 PLATFORM                                                           | 24 |
| CORPORATE MITRA SCHEME                                                         | 25 |
| NATIONAL HONOUR (AMENDMENT) BILL, 2026                                         | 26 |
| NIPUN BHARAT                                                                   | 27 |
| PM-KISAN SCHEME – CONTINUATION TILL 2030-31                                    | 28 |
| AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)                         | 29 |
| AYUSH-INSURANCE NETWORK                                                        | 30 |

|                 |    |
|-----------------|----|
| PANKHUDI PORTAL | 31 |
|-----------------|----|

## INTERNATIONAL RELATIONS

|                                                                                |    |
|--------------------------------------------------------------------------------|----|
| 16TH INDIA – JAPAN ANNUAL SUMMIT                                               | 34 |
| INDO-PACIFIC PUSH: PM'S 3-NATION VISIT                                         | 35 |
| AI GOVERNANCE AND VOICE OF GLOBAL SOUTH                                        | 36 |
| GUWAHATI DECLARATION OF BRICS                                                  | 37 |
| INDIA-UK COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT                            | 38 |
| 3RD BRICS MINISTERIAL MEETING ON DISASTER RISK REDUCTION                       | 39 |
| INDIA SECURES LOWER US TARIFFS UNDER SECTION 301 AMID FORCED LABOUR COMPLIANCE | 40 |
| FAVARA UPI CROSS-BORDER PAYMENT CORRIDOR                                       | 41 |
| SAMUDRA MANTHAN SCHEME                                                         | 41 |
| 3RD INDIA-AUSTRALIA ANNUAL LEADER'S SUMMIT                                     | 42 |

## SOCIETY AND SOCIAL JUSTICE

|                                                       |    |
|-------------------------------------------------------|----|
| SHE LEAPS                                             | 45 |
| VEPDEGESTRANT                                         | 45 |
| NATIONAL LIST OF ESSENTIAL MEDICINES                  | 46 |
| INTEGRATED HEALTH INFORMATION PLATFORM 2.0 (IHIP 2.0) | 46 |
| AYUSHMAN BHARAT DIGITAL MISSION (ABDM)                | 47 |
| TRIBEX: A DIGITAL LEARNING PLATFORM                   | 47 |
| NATIONAL ACADEMIC DEPOSITORY (NAD)                    | 47 |
| AISHE SURVEY 2022-23 AND 2023-24                      | 48 |
| SCHEME FOR ECONOMIC EMPOWERMENT OF DNTS (SEED)        | 48 |
| DRUGS RULES 1945: HIGH ALCOHOL-CONTAINING DRUGS       | 49 |
| JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0                  | 49 |
| NATIONAL HEALTH INTERVENTION CODES (NHIC)             | 50 |
| I-DRONE INITIATIVE                                    | 50 |
| LAKHPATI DIDI SCHEME                                  | 51 |
| SKILL INDIA MISSION                                   | 52 |
| PRAGYATA GUIDELINES                                   | 52 |

|                                    |    |                                    |    |
|------------------------------------|----|------------------------------------|----|
| PM-YASASVI UMBRELLA SCHEME         | 53 | NATIONAL INVESTMENT POLICY         |    |
| NATIONAL SICKLE CELL ANAEMIA       |    | FOR UREA-2026 (NIPU-2026)          | 72 |
| ELIMINATION MISSION (NSCAEM)       | 53 | COAL EXCHANGE RULES, 2026 & COAL   |    |
| VATSALYA PORTAL                    | 54 | CONTROLLER ORGANIZATION (CCO)      | 73 |
| STARTUP VILLAGE ENTREPRENEURSHIP   |    | UDAN 2.0 (REGIONAL CONNECTIVITY    |    |
| PROGRAMME (SVEP)                   | 54 | SCHEME EXPANSION)                  | 73 |
| PARAKH RASHTRIYA SARVEKSHAN        | 55 | CODEX STANDARDS FOR LARGE          |    |
| TB ELIMINATION MISSION             | 55 | CARDAMOM, CORIANDER, AND VANILLA   | 74 |
| <b>ECONOMIC DEVELOPMENT AND</b>    |    | OPERATION PARIVARTAN               | 74 |
| <b>AGRICULTURE</b>                 |    | HYDROGEN FUEL CELL TRAIN (INDIAN   |    |
| INDIAN SEMICONDUCTOR MISSION 2.0   | 57 | RAILWAYS)                          | 75 |
| INSURANCE SURETY BONDS FOR MMDR    |    | WHITE REVOLUTION 2.0 & SAHKAR SE   |    |
| COAL BLOCKS                        | 59 | SAMRIDDHI                          | 76 |
| VB-GRAM G: FLOOR WAGE OF ₹300      |    | COKING COAL DESIGNATION AS A       |    |
| PER DAY                            | 59 | CRITICAL MINERAL                   | 76 |
| BHARAT AUDYOGIK VIKAS YOJANA       |    | NATIONAL COAL GASIFICATION MISSION |    |
| (BHAVYA)                           | 60 | (TARGET 100 MMT BY 2030)           | 77 |
| MATCHA TEA INDIGENISATION IN INDIA | 61 | WTO AGREEMENT ON FISHERIES         |    |
| FERTILIZER CRISIS & THE STRAIT OF  |    | SUBSIDIES: INDIA'S ACCEPTANCE      | 77 |
| HORMUZ                             | 61 | LITHIUM DEPOSITS: "INDIA'S WHITE   |    |
| E20 ETHANOL BLENDING PROGRAMME     | 62 | GOLD"                              | 78 |
| INDIA'S ECONOMIC PROSPECTS         |    | NATIONAL NUCLEAR ENERGY MISSION    |    |
| POST-WEST ASIAN CRISIS             | 63 | (SMR FOCUS)                        | 79 |
| INTERNATIONALISATION OF HIGHER     |    | AAROH REPORT (SUSTAINABLE RURAL    |    |
| EDUCATION: IIM-B IN INDONESIA      | 64 | LIVELIHOODS)                       | 79 |
| UDISE+ 2025-26 REPORT              | 65 | PRADHAN MANTRI MATSYA SAMPADA      |    |
| PERFORMANCE GRADING INDEX (PGI)    |    | YOJANA (PMMSY) & BLUE REVOLUTION   | 80 |
| 2.0 FOR STATES AND UTS             | 65 | ONE DISTRICT ONE PRODUCT (ODOP),   |    |
| MISSION FOR COTTON PRODUCTIVITY    |    | DISTRICTS AS EXPORT HUBS & PM EKTA |    |
| (KAPAS KRANTI)                     | 66 | MALLS                              | 81 |
| PM-SETU ROLLOUT                    | 66 | PM FORMALISATION OF MICRO FOOD     |    |
| INTEGRATION OF ZED CERTIFICATION,  |    | PROCESSING ENTERPRISES (PMFME)     |    |
| DIGITAL MARKET ACCESS, AND MSME    |    | SCHEME                             | 81 |
| INITIATIVES                        | 67 | REVAMPED PRADHAN MANTRI FASAL      |    |
| TRANSFORMATION OF POWERLOOM        |    | BIMA YOJANA (PMFBI)                | 82 |
| SERVICE CENTRES INTO ITADCS        | 68 | MISSION FOR INTEGRATED             |    |
| SUB-MISSION ON AGRICULTURAL        |    | DEVELOPMENT OF HORTICULTURE        |    |
| MECHANIZATION (SMAM)               | 68 | (MIDH): OPERATIONAL GUIDELINES     | 82 |
| PM-SETU (PRADHAN MANTRI SKILLING & |    | BHARAT PASHUDHAN DATABASE &        |    |
| EMPLOYABILITY TRANSFORMATION       |    | NATIONAL LIVESTOCK MISSION         | 83 |
| THROUGH UPGRADED ITIS)             | 70 | INDIGENOUS POTASH PRODUCTION       |    |
| CIRCULAR ECONOMY ACROSS INDIA'S    |    | UNDER NUTRIENT BASED               |    |
| TEXTILE VALUE CHAIN & WEAVE THE    |    | SUBSIDY (NBS)                      | 83 |
| FUTURE 4.0                         | 70 | PRADHAN MANTRI KISAN SAMMAN        |    |
| OVERSEAS FOREIGN CURRENCY          |    | NIDHI (PM-KISAN)                   | 84 |
| BORROWINGS (OFCBS)                 | 71 | APEDA'S VALUE-CHAIN PROMOTION &    |    |
| MOBILE PHONE MANUFACTURING         |    | FIRST MANGO SHIPMENTS              | 84 |
| SCHEME (MPMS)                      | 72 | FOUR-PILLAR STRATEGY TO REVITALISE |    |
|                                    |    | INDIA'S SHIPBUILDING SECTOR        | 85 |

|                                                                                        |     |                                                                          |     |
|----------------------------------------------------------------------------------------|-----|--------------------------------------------------------------------------|-----|
| INDIA'S TOY EXPORTS SURGE & DOMESTIC MANUFACTURING REBOUND                             | 86  | EXHAUSTED MINES TO NEW WEALTH                                            | 105 |
| NATIONAL TECHNICAL TEXTILES MISSION (NTTM)                                             | 86  | INDIA LEADS THE WILDERNESS IN TIGER CONSERVATION                         | 106 |
| PM E-DRIVE SCHEME (PM ELECTRIC DRIVE REVOLUTION IN INNOVATIVE VEHICLE ENHANCEMENT)     | 87  | IMPACT OF CLIMATE CHANGE ON CHANGPA TRIBES                               | 107 |
| STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP)                                      | 87  | XTREME WEATHER GRADE (XWG) DIESEL                                        | 108 |
|                                                                                        |     | PM SURYA SAROVAR YOJANA                                                  | 109 |
|                                                                                        |     | PM E-DRIVE SCHEME                                                        | 110 |
|                                                                                        |     | TECHNOLOGY-DRIVEN CROP INSURANCE: WINDS AND YES-TECH                     | 110 |
| <b>GEOGRAPHY, ENVIRONMENT, BIO-DIVERSITY AND DISASTER MANAGEMENT</b>                   |     | <b>SCIENCE AND TECHNOLOGY</b>                                            |     |
| GLOBAL PLASTICS TREATY                                                                 | 90  | VIKRAM-1: INDIA'S GROWING PRIVATE SPACE ECOSYSTEM                        | 113 |
| INDIA NEEDS A SECOND HOME FOR ASIATIC LIONS                                            | 90  | FUTURE CIRCULAR COLLIDER (FCC)                                           | 114 |
| STANDARD OPERATING PROCEDURES FOR MANAGING EL NIÑO RISKS IN INDIAN AGRICULTURE         | 91  | WD 1856B – PLANET AROUND A WHITE DWARF                                   | 115 |
| INDIA'S NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (2024–2030)                     | 92  | GAGANYAAN MISSION: FIRST SOLVE GROUND TEST                               | 115 |
| NMCG'S FOCUS ON NATURE-BASED SOLUTIONS                                                 | 93  | EV RETROFITMENT: A MISSING LINK IN INDIA'S CIRCULAR MOBILITY TRANSITION  | 117 |
| CAMPA                                                                                  | 94  | KAVACH 4.0                                                               | 117 |
| ALL INDIA WATER SECRETARIES' CONFERENCE 2026                                           | 94  | NIDAR 2.0                                                                | 118 |
| EK PED MAA KE NAAM CAMPAIGN                                                            | 95  | KEWDA: ANCIENT PLANT LINEAGE SURVIVING IN INDIA                          | 119 |
| JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0                                                   | 96  | WHITE RABBIT TECHNOLOGY-BASED INDIAN STANDARD TIME DISSEMINATION NETWORK | 120 |
| REWARD PROGRAMME OF KARNATAKA MITIGATING THE URBAN HEAT ISLAND EFFECT IN INDIAN CITIES | 97  | PAIMANA: DATA-DRIVEN INFRASTRUCTURE GOVERNANCE                           | 120 |
| MISSION MAUSAM AND BHARAT FORECAST SYSTEM                                              | 98  | PUMPED STORAGE PROJECTS                                                  | 121 |
| ACCESS AND BENEFIT SHARING (ABS)                                                       | 99  | NUCLEAR ENERGY MISSION & INDIGENOUS SMRS                                 | 122 |
| INDIA DISASTER RESOURCE NETWORK (IDRN)                                                 | 99  | BHARAT 6G ALLIANCE (B6GA)                                                | 123 |
| MISSION LIFE                                                                           | 100 | MEPHEDRONE                                                               | 124 |
| IMPACT OF NATIONAL CLEAN AIR PROGRAMME ON PM2.5 LEVELS                                 | 101 | ANDROMEDA GALAXY (M31)                                                   | 125 |
| BRICS DISASTER RISK REDUCTION WORK PLAN (2025–2028)                                    | 102 | ZINC-AIR BATTERIES                                                       | 125 |
| BRAHMAPUTRA FLOOD FORECASTING AND CLIMATE RESILIENCE                                   | 103 | NATIONAL QUANTUM MISSION (NQM)                                           | 126 |
| BIOE3 POLICY                                                                           | 103 | INDIA'S PUSH FOR 6G TECHNOLOGY                                           | 127 |
| X-BAND DOPPLER WEATHER RADAR                                                           | 104 | INDIA MOBILE CONGRESS (IMC) 2026                                         | 128 |
| SCIENTIFIC MINE CLOSURE: FROM                                                          |     | INDIAAI MISSION: AI-DRIVEN GOVERNANCE                                    | 129 |
|                                                                                        |     | AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)                   | 130 |

| SECURITY                                        |     | HISTORY ART & CULTURE           |     |
|-------------------------------------------------|-----|---------------------------------|-----|
| ROADMAP VIJAY OF INDIAN ARMY                    | 133 | PANDAVANI FOLK ART              | 137 |
| PROJECT 17 A STEALTH FRIGATE                    | 133 | TRIPURA CHONGPRENG              | 137 |
| PINAKA LONG RANGE GUIDED ROCKET                 | 134 | SARNATH INSCRIBED ON THE UNESCO |     |
| OPERATION VAJRA                                 | 134 | WORLD HERITAGE LIST             | 137 |
| THE VISION DOCUMENT ON DRUG CONTROL (2026-2029) | 135 |                                 |     |

# POLITY & GOVERNANCE

What's Inside?



सत्यमेव जयते

1. DIGITALIZATION OF INDIAN CRIMINAL JUSTICE SYSTEM
2. USE OF AI IN JUDICIARY
3. SAMARTH PANCHAYAT PORTAL
4. PLACES OF WORSHIP (SPECIAL PROVISIONS) ACT, 1991 & KASHI VISHWANATH CORRIDOR
5. 5 YEARS OF THE MINISTRY OF COOPERATION
6. VOTING RIGHT CANNOT REMAIN MERELY A STATUTORY RIGHT
7. RIGHT TO WALK: INTEGRAL TO MODERN URBAN LIFE
8. UNIFORM AGE OF MARRIAGE FOR ALL SECTIONS
9. ATMANIRBHAR PANCHAYAT PROGRAMME – KOCHI
10. SAMRIDDH GRAM: INTEGRATED PHYGITAL SERVICE DELIVERY MODEL ENABLED BY BHARATNET
11. VBSA BILL, 2026 – REFORMING HIGHER EDUCATION REGULATION
12. DIGITAL BHARAT NIDHI (DBN)
13. SANKALP: 7 PRINCIPLES OF CITIZEN-CENTRIC GOVERNANCE
14. DUTY OF CARE TO PRESERVE LIFE OF A PERSON ON HUNGER STRIKE
15. NO FIXED CRITERIA FOR INCLUSION OF LANGUAGES IN THE EIGHTH SCHEDULE.
16. URBAN CHALLENGE FUND – GUIDELINES
17. REVAMPED PM FASAL BIMA YOJANA (PMFBY)
18. JUSTICE-CENTRIC SYSTEM
19. CFCFRMS 2.0 PLATFORM
20. CORPORATE MITRA SCHEME
21. NATIONAL HONOUR (AMENDMENT) BILL, 2026
22. NIPUN BHARAT
23. PM-KISAN SCHEME – CONTINUATION TILL 2030-31
24. AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)
25. AYUSH-INSURANCE NETWORK
26. PANKHUDI PORTAL

# DIGITALIZATION OF INDIAN CRIMINAL JUSTICE SYSTEM

## Why in News?

The Inter-Operable Criminal Justice System (ICJS) is integrating police, courts, prosecution, prisons and forensic institutions through digital platforms.

e-Courts Phase III seeks to make the justice system more accessible, efficient and technology-driven.

## What does it mean?

Digitalisation involves using ICT, databases, AI and digital platforms across the criminal justice chain—from FIR registration and investigation to prosecution, trial and imprisonment.

## Key Initiatives:

**CCTNS:** Digitises police processes and connects police stations.

**ICJS:** Integrates CCTNS, e-Courts, e-Prisons, e-Forensics and e-Prosecution for seamless information exchange.

**e-Courts:** Enables e-filing, virtual hearings, digital records and online case tracking.

**NAFIS:** Facilitates criminal identification through a centralised fingerprint database.

**e-Prisons:** Digitises prison and prisoner management.

## Significance:

**Speedy Justice:** Digital records and online processes reduce procedural delays, supporting Article 21's right to speedy justice.

**Better Investigation:** Integrated databases enable data-driven policing and quicker access to criminal records and forensic information.

**Access to Justice:** Virtual hearings and e-filing reduce geographical and financial barriers.

**Transparency:** Digital case tracking strengthens institutional accountability and

reduces scope for procedural manipulation.

**Inter-agency Coordination:** ICJS enables seamless information flow across the criminal justice chain.

## Challenges:

**Digital Divide:** Uneven infrastructure can exclude citizens and smaller courts/police stations.

**Privacy & Data Security:** Criminal databases contain highly sensitive personal information.

**Cybersecurity Risks:** Hacking or manipulation can compromise investigations and evidence.

**Human Capacity:** Police, prosecutors and judicial personnel require continuous digital training.

**Data Quality:** Inaccurate or incomplete databases can lead to wrongful identification or flawed investigation.

## Way Forward:

Adopt privacy-by-design and robust cybersecurity standards.

Strengthen digital infrastructure at the district and grassroots levels.

Ensure human oversight over AI and automated decision-making.

Establish clear protocols for data accuracy, sharing, retention and accountability.

Preserve offline alternatives so digitalisation does not become a barrier to justice.

## Mains Value Addition

Digitalisation should not merely digitise existing procedures; it should make criminal justice faster, more transparent, accessible and accountable while preserving due process and individual rights.

## USE OF AI IN JUDICIARY

### Why in News?

The Supreme Court recently flagged AI-generated “hallucinated” case laws relied upon in an NCLT/NCLAT matter, highlighting risks of unverified AI use in adjudication.

The case underlines the principle that technology must assist, not substitute, judicial application of mind.

### What is AI in Judiciary?

AI can support legal research, precedent identification, translation, transcription, case management and analysis of large volumes of documents.

### Significance:

**Speedy Justice:** Automates routine tasks and enables faster legal research, contributing to Article 21’s guarantee of speedy trial.

**Access to Justice:** AI-enabled translation and simplified legal information can reduce linguistic and informational barriers.

**Judicial Efficiency:** Helps judges manage large caseloads through case classification, document summarisation and precedent retrieval.

**Consistency:** Identification of relevant precedents can promote greater coherence in judicial reasoning.

**Inclusive Justice:** Technology can assist persons with disabilities through speech-to-text and accessibility tools.

### Concerns:

**AI Hallucination → Rule of Law:** Fabricated precedents can directly undermine the integrity and credibility of adjudication.

**Algorithmic Bias → Equality:** Biased datasets may reproduce discriminatory outcomes, raising concerns under Article 14.

**Black-Box Problem → Natural Justice:** Lack of explainability can conflict with the requirement of reasoned and transparent decisions.

**Privacy → Constitutional Rights:** Judicial records contain sensitive personal information; careless AI deployment can threaten the right to privacy under Article 21.

**Human Agency:** Judicial decision-making involves constitutional morality, empathy, discretion and contextual reasoning, which cannot be reduced to algorithmic outputs.

### Way Forward:

**Human-in-the-loop:** AI should remain an assistive tool, with judges retaining final decision-making authority.

**Mandatory verification:** Every AI-generated judgment, citation or legal proposition must be independently verified against authentic sources.

**Court-specific AI:** Develop AI systems trained on verified Indian legal databases rather than relying on generic models.

**Algorithmic accountability:** Introduce audits, explainability standards and clear responsibility mechanisms.

**Privacy by Design:** Ensure data minimisation, anonymisation and strong cybersecurity in judicial AI systems.

### Mains Value Addition

“AI can augment judicial capacity, but judicial accountability must remain human.”

## SAMARTH PANCHAYAT PORTAL

### Why in News?

The Ministry of Panchayati Raj launched the SAMARTH Panchayat Portal in July 2026 to strengthen the financial capacity of Panchayati Raj Institutions (PRIs).

It focuses on Own Source Revenue (OSR)—tax and non-tax revenues generated by Panchayats—to promote financially stronger and more self-reliant local governments.

## What is SAMARTH?

SAMARTH Panchayat Portal is a unified digital platform that enables Panchayats to manage the entire OSR lifecycle—from taxpayer/property registration and demand generation to online payment, collection and real-time monitoring.

### Key Features:

**Digitalisation of OSR:** Tax/non-tax assessment, demand notices and receipts.

**Online revenue collection:** Citizens can view dues and make payments digitally.

**Real-time dashboard:** Enables monitoring of Panchayat-wise revenue performance.

**National OSR database:** Facilitates comparison and evidence-based fiscal planning.

**Transparency:** Creates a digital trail of demands, collections and pending dues.

### Significance:

**Fiscal Empowerment:** Strengthens Panchayats' own-source revenue, reducing excessive dependence on grants.

**Grassroots Governance:** Gives practical effect to Articles 243G and 243H relating to Panchayat functions and taxation.

**Financial Accountability:** Digital records and real-time monitoring can reduce revenue leakage and improve transparency.

**Cooperative Federalism:** Provides States and Panchayats a common platform for OSR management and benchmarking.

**Citizen-Centric Governance:** Online tax payment reduces transaction costs and improves

ease of access to local services.

**Self-Reliant Panchayats:** Stronger local finances can improve the capacity of PRIs to undertake locally relevant development works.

### Challenges:

Uneven digital capacity among Panchayats.

Low awareness and compliance among taxpayers.

Under-utilisation of OSR powers by local bodies.

Weak property-tax assessment and updating of local databases.

Need for cybersecurity and protection of citizens' financial data.

### Way Forward:

Build capacity of Panchayat officials in digital revenue administration.

Improve property mapping and GIS-based assessment.

Promote citizen awareness and simplified payment mechanisms.

Strengthen cybersecurity and data-protection safeguards.

Link improved OSR mobilisation with better delivery of local public services.

### Mains Value Addition

True decentralisation requires not merely transferring functions to Panchayats, but also empowering them with the financial autonomy and digital capacity to discharge those functions effectively."

## PLACES OF WORSHIP (SPECIAL PROVISIONS) ACT, 1991 & KASHI VISHWANATH CORRIDOR

### Why in News?

The Places of Worship (Special Provisions) Act, 1991 continues to remain significant amid petitions and disputes concerning the religious

character of certain places of worship.

The Kashi Vishwanath Corridor has also brought attention to the balance between heritage conservation, pilgrimage infrastructure and protection of religious sites.

## Places of Worship Act, 1991 – Key Provisions

**Religious character frozen:** The Act requires the religious character of a place of worship to be maintained as it existed on 15 August 1947.

**Exception:** The Ram Janmabhoomi-Babri Masjid dispute was specifically excluded from the Act.

**Bar on suits:** It generally prohibits filing or continuing legal proceedings seeking to alter the religious character of a place of worship.

**Historical continuity:** It seeks to prevent reopening disputes relating to places of worship that existed at Independence.

### Why is the Act Significant?

**Secularism:** Prevents the use of historical religious disputes to disturb the contemporary social order.

**Constitutional morality:** Promotes peace, fraternity and religious harmony, linked to the constitutional vision in the Preamble.

**Finality of historical status:** Provides legal certainty by fixing the reference date at 15 August 1947.

**Protection against majoritarian claims:** Prevents contemporary political or social pressures from determining the status of religious places.

## Kashi Vishwanath Corridor

The Shri Kashi Vishwanath Dham Corridor connects the Kashi Vishwanath Temple with the Ganga, while providing improved pilgrim amenities and redeveloping the surrounding area.

### Significance:

**Pilgrimage infrastructure:** Improves accessibility and facilities for devotees.

**Heritage conservation:** Seeks to preserve and showcase the cultural heritage of Varanasi.

**Urban transformation:** Demonstrates how

heritage-linked infrastructure can contribute to urban redevelopment and tourism.

**Cultural economy:** Strengthens religious tourism and associated livelihoods.

### Concerns:

**Heritage vs Development:** Redevelopment must protect the historical character of the surrounding cultural landscape.

**Livelihood concerns:** Displacement or loss of traditional occupations can affect local communities.

**Pluralism:** Heritage development should remain sensitive to the multi-religious character of historic cities.

**Legal sensitivity:** Development around religious sites must operate within the constitutional and statutory framework.

### Way Forward:

Follow a heritage-sensitive and participatory approach to redevelopment.

Balance pilgrim convenience, conservation and livelihoods.

Ensure that development around religious sites respects constitutional secularism and rule of law.

Strengthen documentation and conservation of both tangible and intangible cultural heritage.

## Mains Value Addition

The challenge is not to choose between heritage and development, but to pursue heritage-sensitive development that preserves constitutional values, cultural pluralism and social harmony.”

# 5 YEARS OF THE MINISTRY OF COOPERATION

## Why in News?

The Ministry of Cooperation completed five years on 6 July 2026, marking five years since its establishment in 2021. Its core vision is “Sahkar se Samriddhi”.

The Ministry has focused on modernisation, digitisation, diversification and financial strengthening of cooperatives.

## Why was a Separate Ministry Needed?

Cooperatives are important instruments of collective economic action, rural livelihoods and inclusive growth. A dedicated Ministry seeks to address issues of fragmented regulation, weak institutional capacity, limited access to technology and inadequate diversification.

## Major Initiatives:

**PACS Computerisation:** Functional PACS are being brought onto a common ERP-based national software, improving transparency, accounting, audit and service delivery.

**Multipurpose PACS:** Model bye-laws allow PACS to undertake 25+ activities, including dairy, fisheries, warehousing, CSCs and other services.

**2 Lakh New Cooperatives:** Expansion of PACS, dairy and fisheries cooperatives in uncovered Panchayats/villages.

**National Cooperative Database:** Provides a consolidated database for evidence-based policy and planning. As of July 2026, India had 8.53 lakh cooperative societies.

**White Revolution 2.0:** Seeks to expand dairy cooperatives, increase milk procurement and strengthen women's economic participation.

**National Cooperation Policy, 2025:** Provides a 10-year roadmap with 6 strategic pillars, 16 objectives and 83 recommendations.

## Significance:

Democratising economic development:

Cooperatives enable collective ownership and participatory economic decision-making.

**Rural transformation:** Stronger PACS can become multi-service rural economic hubs, improving farmers' access to credit, storage, inputs and markets.

**Financial inclusion:** Cooperative institutions can extend formal financial services to underserved rural populations.

**Women-led development:** Dairy and other cooperatives can convert women from beneficiaries into economic stakeholders.

**Decentralised development:** Strengthening local cooperatives complements grassroots economic decentralisation.

**Atmanirbhar Bharat:** Cooperatives can aggregate small producers, improve bargaining power and market access.

## Challenges:

**State–Centre federal dynamics:** Cooperatives largely fall within the State List, while multi-State cooperatives are under the Union.

**Governance deficits:** Political interference, weak professional management and lack of accountability can undermine autonomy.

**Regional disparities:** Cooperative success remains uneven across States and sectors.

**Financial viability:** A significant number of cooperatives remain loss-making; as of July 2026, only 3.56 lakh of 6.63 lakh functional societies were profit-making.

**Digital and managerial capacity:** Smaller cooperatives may struggle with technology adoption and professionalisation.

## Way Forward:

Preserve the principle of “autonomous, member-driven cooperatives” while ensuring accountability.

Strengthen professional management, audit and democratic elections.

Promote technology, branding, value addition and market linkages.

Ensure cooperative reforms respect cooperative federalism and State-level diversity.

Shift from merely creating cooperatives to ensuring their financial sustainability and member

welfare.

## Mains Value Addition

“The success of the cooperative movement should ultimately be measured not by the number of societies created, but by their autonomy, democratic functioning, financial viability and ability to improve members’ livelihoods.”

# VOTING RIGHT CANNOT REMAIN MERELY A STATUTORY RIGHT

## Why in News?

The Supreme Court’s observations on the nature of the right to vote have revived the debate over whether voting should be treated merely as a statutory entitlement or as a stronger constitutional right.

The issue is important in the context of electoral reforms, universal adult suffrage and democratic participation.

## Constitutional Position:

Article 326 provides for elections to the Lok Sabha and State Legislative Assemblies on the basis of adult suffrage.

The Representation of the People Act, 1950 and 1951 provide the statutory framework governing electoral rolls, qualifications and disqualifications.

Section 62 of the RPA, 1951 governs the right to vote in elections.

## Why Should Voting Have Stronger Constitutional Status?

**Foundation of democracy:** Voting enables citizens to exercise their ultimate democratic power—choosing their representatives.

**Political equality:** Universal adult suffrage operationalises the constitutional principle of political equality.

**Popular sovereignty:** Democratic legitimacy ultimately flows from the consent of the governed.

**Constitutional vision:** The Preamble’s

commitment to “democratic” government is meaningfully realised through free and fair elections.

**Fundamental rights linkage:** Restrictions on electoral participation can affect citizens’ ability to meaningfully participate in democratic governance.

## Why is it Currently Treated as a Statutory Right?

The Supreme Court has repeatedly held that the right to vote is not a fundamental right; it is primarily a statutory right, subject to conditions prescribed by electoral law.

However, freedom of voting choice has constitutional dimensions. The Court has recognised the importance of a voter’s right to know and electoral expression.

## Concerns:

Parliament can significantly determine the conditions and limitations governing electoral participation.

Excessive statutory restrictions could potentially weaken political participation and democratic accountability.

Treating voting merely as an ordinary statutory entitlement may understate its importance to representative democracy.

## Way Forward:

Strengthen the constitutional protection of electoral participation while retaining reasonable

qualifications and safeguards.

Ensure that restrictions on voting are objective, proportionate and non-discriminatory.

Strengthen electoral accessibility, particularly for vulnerable groups.

Maintain the independence of the Election Commission of India and ensure transparent electoral processes.

## Mains Value Addition

“While the mechanics of voting may be regulated by statute, the democratic value underlying the vote derives from the Constitution itself; therefore, electoral law must strengthen rather than dilute citizens’ meaningful participation in representative government.”

# RIGHT TO WALK: INTEGRAL TO MODERN URBAN LIFE

## Why in News?

The right to walk safely and freely is increasingly recognised as an essential component of liveable, inclusive and sustainable cities.

Growing concerns over encroachment of footpaths, unsafe roads and pedestrian deaths have highlighted the need to place pedestrians at the centre of urban planning.

## Why is the Right to Walk Important?

**Life & Dignity:** Safe mobility is closely linked to Article 21, as unsafe streets can directly threaten life and personal dignity.

**Inclusive Mobility:** Walking is the most accessible form of transport for children, elderly persons, persons with disabilities and low-income groups.

**Urban Equality:** Good footpaths reduce the mobility gap between those who own private vehicles and those who do not.

**Sustainable Development:** Walking reduces congestion, air pollution and carbon emissions, supporting sustainable urbanisation.

**Economic Access:** Walkable streets improve access to workplaces, schools, markets and public transport.

**Public Space & Democracy:** Streets are not merely transport corridors; they are important shared public spaces enabling social interaction

and community life.

## Challenges:

Car-centric urban planning prioritises vehicular movement over pedestrian safety.

Encroachment and poorly designed footpaths force pedestrians onto roads.

Lack of universal accessibility for persons with disabilities.

Poor street lighting, unsafe crossings and inadequate pedestrian infrastructure.

Fragmented responsibility among urban local bodies and transport agencies.

## Way Forward:

Adopt “Complete Streets” with priority for pedestrians, cyclists and public transport.

Make footpaths continuous, obstruction-free and universally accessible.

Integrate walking with metro, buses and other public transport through last-mile connectivity.

Use traffic calming, safe crossings and pedestrian zones around schools, markets and transit hubs.

Make pedestrian safety a measurable component of urban governance and municipal planning.

## Mains Value Addition

“A modern city should be designed not merely for faster movement of vehicles, but for safer movement of people. A genuinely modern urban

policy therefore makes the pedestrian—not the automobile—the unit of planning.”

## UNIFORM AGE OF MARRIAGE FOR ALL SECTIONS

### Why in News?

A High Court ruling has highlighted the issue of uniform minimum age of marriage across communities and the relationship between personal laws and statutory law.

### Key Legal Position:

Under the Prohibition of Child Marriage Act, 2006 (PCMA), a “child” means a male below 21 years and a female below 18 years.

The law applies irrespective of religion or personal law, making the statutory age requirement an important instrument against child marriage.

Personal laws cannot be used to defeat a statutory prohibition enacted to protect children.

### Why is Uniformity Significant?

**Gender Justice:** Prevents early marriage from reinforcing gender-based disadvantages in education, health and economic participation.

**Child Rights:** Protects childhood, education, health and bodily autonomy.

**Rule of Law:** Ensures that statutory protections apply uniformly, rather than varying with community.

**Constitutional Equality:** Advances Articles 14 and 15, particularly non-discrimination on grounds of sex.

**Social Reform:** Demonstrates that personal freedoms are subject to constitutional safeguards

and public welfare legislation.

### Key Constitutional Tension:

Personal Law vs Fundamental Rights

**Article 25:** Protects freedom of conscience and religion, but is subject to public order, morality, health and other fundamental rights.

The issue raises the broader question of balancing religious autonomy with individual rights and social reform.

### Way Forward:

Ensure uniform enforcement of child-protection laws while respecting legitimate religious freedoms.

Focus on girls’ education, economic opportunities and social security to address root causes.

Strengthen local institutions, child-protection mechanisms and awareness.

Pursue reforms through constitutional morality, gender justice and stakeholder consultation.

### Mains Value Addition

“Uniformity in the minimum age of marriage reflects the principle that personal laws cannot become instruments for diluting constitutionally protected rights, particularly the dignity and equality of children and women.”

## ATMANIRBHAR PANCHAYAT PROGRAMME – KOCHI

### Why in News?

The Ministry of Panchayati Raj held its third outreach workshop on the programme in Kochi, Kerala, on 7 July 2026, focusing on strengthening Panchayats’ Own Source Revenue (OSR).

The programme was formally launched in July 2026 to make Panchayats financially self-reliant by converting underutilised local assets and opportunities into revenue-generating projects.

## What is the Programme?

Implemented under Rashtriya Gram Swaraj Abhiyan (RGSA).

Provides technical assistance, rather than direct financial assistance, to develop bankable revenue-generating projects.

Financing can be mobilised through PPP, CSR, bank finance and convergence with government schemes.

Targets 350 projects over four years.

## Significance:

**Fiscal Decentralisation:** Strengthens Own Source Revenue, reducing excessive dependence on government grants.

**Realisation of 3Fs:** Addresses the often-neglected “Funds” dimension of Functions, Funds and Functionaries under the 73rd Amendment.

**Local Economic Development:** Converts idle public assets and local economic potential into productive revenue streams.

**Accountable Governance:** Panchayats raising their own revenue have greater incentive for responsive service delivery and fiscal accountability.

**Participatory Development:** Gram Sabha approval links revenue-generating projects with local priorities.

**Cooperative Federalism:** Complements State and Union efforts to strengthen grassroots fiscal

capacity.

## Key Challenges:

Limited revenue base and weak tax-collection capacity of many Panchayats.

Risk of commercialisation of common/public assets without adequate social safeguards.

Lack of technical expertise to prepare bankable projects.

Unequal capacity may allow financially stronger Panchayats to benefit disproportionately.

## Way Forward:

Strengthen professional financial and project-management capacity of PRIs.

Expand GIS-based asset mapping and digital revenue administration.

Ensure Gram Sabha oversight and social accountability.

Link increased OSR with better local public services, creating a virtuous cycle of taxation and accountability.

## Mains Value Addition:

Political decentralisation without fiscal autonomy risks reducing Panchayats to implementing agencies; strengthening OSR is therefore central to transforming them into genuine institutions of local self-government.”

# SAMRIDDH GRAM: INTEGRATED PHYGITAL SERVICE DELIVERY MODEL ENABLED BY BHARATNET

## Why in News?

Samriddh Gram, a Department of Telecommunications initiative built on BharatNet, won the WSIS Prize 2026 for its innovative approach to rural digital service delivery.

It seeks to convert rural broadband connectivity into actual last-mile delivery of essential services.

## What is Samriddh Gram?

A phygital (physical + digital) model

integrating digital platforms with assisted physical service delivery.

Samriddhi Kendras function as village-level one-stop centres for multiple services.

## Key Services:

**Healthcare:** Telemedicine and digital health services.

**Education:** Smart classrooms and technology-enabled skilling.

**Agriculture:** Soil testing, IoT-based solutions and drone-enabled services.

**Finance:** Banking Correspondent services.

**Governance:** CSC and e-governance services.

**Livelihoods:** E-commerce and market access for local products.

## Significance:

**Bridging Digital Divide:** Converts broadband connectivity into meaningful access to services and opportunities.

**Inclusive E-Governance:** Assisted access prevents low digital literacy from becoming a barrier to welfare delivery.

**Last-Mile Governance:** Brings government services closer to rural citizens, reducing transaction costs and geographical exclusion.

**Rural Economic Transformation:** Digital market access can strengthen rural entrepreneurship and local value chains.

**Convergence:** Integrates health, education, agriculture, finance and governance through a common delivery ecosystem.

**Women & Vulnerable Groups:** Local assisted services can improve access for citizens facing mobility, literacy and connectivity constraints.

## Challenges:

**Last-mile connectivity:** Network reliability

and affordability remain critical.

**Digital literacy gap:** Technology without user capability can create a new form of exclusion.

**Local capacity:** Shortage of trained personnel may affect service quality and continuity.

**Financial sustainability:** Village-level centres require viable revenue and maintenance models.

**Data risks:** Integration of health, financial and citizen data increases privacy and cybersecurity concerns.

**Uneven adoption:** Regional differences in infrastructure and digital readiness can widen disparities.

## Way Forward:

**Strengthen last-mile infrastructure:** Ensure reliable, affordable and high-quality broadband beyond mere optical-fibre availability.

**Adopt assisted digital governance:** Retain physical facilitation for elderly, digitally excluded and vulnerable citizens.

**Build local capacity:** Train village-level operators in digital services, cybersecurity and grievance handling.

**Ensure sustainability:** Develop viable PPP/CSR/community-based models for operation and maintenance.

**Privacy by design:** Apply data minimisation, consent and cybersecurity safeguards for integrated services.

**Outcome-based monitoring:** Measure success through service uptake, accessibility and citizen outcomes, not merely number of connections or centres.

## Mains Value Addition:

“The real measure of digital inclusion is not the availability of connectivity, but the conversion of connectivity into accessible and meaningful

socio-economic opportunities.”

## VBSA BILL, 2026 – REFORMING HIGHER EDUCATION REGULATION

### Why in News?

The VBSA Bill seeks to replace UGC, AICTE and NCTE with a single umbrella regulatory framework for higher education.

The Bill is significant for higher-education reform, institutional autonomy and Centre–State relations.

### Key Provisions:

Establishes Viksit Bharat Shiksha Adhishtan (VBSA) as the apex higher-education regulator.

Three Councils under it:

**Regulatory Council** – regulation and compliance.

**Standards Council** – academic standards and learning outcomes.

**Accreditation Council** – accreditation framework.

Replaces the existing UGC, AICTE and NCTE regulatory structures.

Medical and legal education remain outside its scope.

Provides for graded penalties for violations; establishing a university without required approval can attract a penalty of at least ₹2 crore.

### Significance:

**Regulatory convergence:** Brings fragmented higher-education regulation under an integrated framework.

**Quality assurance:** Common standards and accreditation can improve quality and global competitiveness.

**Institutional autonomy:** Seeks greater academic and administrative autonomy with accountability.

**Multidisciplinary education:** Supports NEP 2020 vision of holistic and multidisciplinary HEIs.

**Ease of governance:** Simplifies the regulatory architecture and reduces overlapping jurisdictions.

### Federalism Dimension:

Education is in the Concurrent List, making Centre–State consultation essential.

States have an important role in establishing and regulating universities.

The proposed structure has limited State representation, with State nominees in some Councils on a rotational basis.

Excessive centralisation could weaken cooperative federalism and institutional diversity.

### Concerns:

**Regulatory centralisation:** Replacing three regulators with one umbrella body may concentrate excessive powers.

**Funding gap:** Unlike UGC, the proposed VBSA does not retain the power to allocate and disburse grants to HEIs.

**Autonomy vs control:** Greater central powers may potentially constrain institutional autonomy.

**Appeal mechanism:** Appeals against Council decisions lie with the Central Government, raising concerns about regulatory independence.

**Uneven regulation:** Different treatment of professional education may create regulatory inconsistencies.

**Excessive delegation:** Certain matters, including removal of part-time members, are left to rules framed by the government.

### Way Forward:

Ensure cooperative federalism through meaningful State participation in regulation.

Protect academic freedom and institutional autonomy while maintaining accountability.

Create an independent appellate mechanism

rather than concentrating appeals within the executive.

Separate regulation, accreditation, standard-setting and funding to avoid excessive concentration of powers.

Ensure transparent, merit-based appointments to regulatory bodies.

Adopt outcome-based regulation focused on

learning, research, employability and innovation rather than excessive compliance.

### Mains Value Addition:

“India needs not merely a single regulator, but an independent, accountable and cooperative regulatory architecture that combines national standards with institutional autonomy and federal diversity.”

## DIGITAL BHARAT NIDHI (DBN)

### Why in News?

Digital Bharat Nidhi (DBN), earlier the Universal Service Obligation Fund (USOF), is being used to expand telecom connectivity in rural, remote, border, island and other underserved areas.

As of June 2026, 24,784 mobile towers had been commissioned under DBN-funded mobile schemes.

### What is Digital Bharat Nidhi?

Established under the Telecommunications Act, 2023 as the successor to USOF.

Aims to ensure universal access to telecommunication services, particularly where commercial deployment is not viable.

It supports BharatNet, 4G Saturation, and connectivity projects in LWE, aspirational, Himalayan, border, island and North-Eastern areas.

### Significance:

**Digital Inclusion:** Extends connectivity to underserved populations, reducing the digital divide.

**Inclusive Growth:** Enables access to e-health, e-education, digital payments, e-commerce and government services.

**Rural Transformation:** BharatNet and mobile connectivity strengthen digital agriculture, rural entrepreneurship and local markets.

**Strategic Connectivity:** Improves communication infrastructure in border, LWE and geographically difficult regions.

**Social Equity:** Targeted access for women,

persons with disabilities and weaker sections promotes inclusive digitalisation.

### Challenges:

**Last-mile gap:** Fibre/mobile coverage does not always translate into reliable household-level access.

**Commercial viability:** High O&M costs make remote connectivity financially challenging.

**Digital divide:** Connectivity must be accompanied by affordability and digital literacy.

**Infrastructure challenges:** Difficult terrain, Right-of-Way issues and power availability can delay deployment.

**Service quality:** Focus must shift from merely creating infrastructure to ensuring reliable and affordable connectivity.

### Way Forward:

Adopt an outcome-based approach—measure actual usage, affordability and service quality, not just towers/fibre laid.

Strengthen last-mile connectivity through BharatNet, satellite and other suitable technologies.

Ensure sustainable Operations & Maintenance through clear service-level standards.

Integrate DBN with Digital Public Infrastructure and digital-literacy programmes.

Prioritise women, persons with disabilities and socio-economically vulnerable groups in universal-access planning.

### Mains Value Addition:

“Universal connectivity is no longer merely a telecom objective; it is an essential foundation for equitable access to education, healthcare, markets

and digital governance.”

## SANKALP: 7 PRINCIPLES OF CITIZEN-CENTRIC GOVERNANCE

### Why in News?

SANKALP highlights seven core principles intended to promote responsive, ethical and citizen-centric governance.

The framework emphasises that effective governance requires not only speed and technology, but also integrity, duty and public interest.

### SANKALP – 7 Principles

**Speed** – Timely and efficient delivery of public services.

**Accessibility** – Easy and equitable access to government services.

**Nekneeyat** – Integrity and good intent in public service.

**Kartavyanishtha** – Commitment and dedication towards duty.

**Adoption of Technology** – Use of technology for efficient and citizen-centric governance.

**Lokhit** – Public interest as the primary focus of administration.

**Pardarshita** – Transparency and accountability in governance.

### Significance:

**Citizen-centric governance:** Shifts administration from a department-centric to citizen-centric approach.

**Ethical governance:** Nekneeyat + Kartavyanishtha reinforce integrity, probity and commitment to public service.

**Efficient delivery:** Speed + Technology can reduce transaction costs and bureaucratic delays.

**Inclusive governance:** Accessibility ensures

that governance reaches marginalised and digitally excluded citizens.

**Public trust:** Lokhit + Pardarshita strengthen accountability and trust in institutions.

### Challenges:

**Last-mile implementation:** Good principles may not translate into outcomes without administrative capacity.

**Digital exclusion:** Technology-led governance can exclude citizens with limited digital access or literacy.

**Accountability gap:** Transparency is meaningful only when accompanied by answerability and corrective action.

**Ethical dilemmas:** Public officials often face conflicts between rules, discretion and competing public interests.

### Way Forward:

Link these principles with measurable service-delivery outcomes.

Strengthen citizen charters, grievance redressal and social audits.

Promote technology with human interface and assisted access.

Institutionalise ethics training and performance accountability.

Use feedback-based governance to continuously improve public services.

### Mains Value Addition:

SANKALP represents a shift from rule-bound administration towards fast, accessible, ethical, technology-enabled and citizen-centric governance.

# DUTY OF CARE TO PRESERVE LIFE OF A PERSON ON HUNGER STRIKE

## Why in News?

The issue highlights the ethical and legal dilemma between an individual's right to protest through a hunger strike and the State's duty to protect life.

## Core Issue:

Hunger strike is a form of peaceful protest, but prolonged fasting can create a conflict between individual autonomy and the State's duty of care.

## Significance:

**Right to Life:** Article 21 places a positive obligation on the State to protect life and human dignity.

**Individual Autonomy:** A competent adult has a legitimate interest in making decisions concerning bodily integrity and personal liberty.

**Right to Protest:** Peaceful protest is protected under Articles 19(1)(a) and 19(1)(b), subject to reasonable restrictions.

**State's Duty of Care:** Authorities must prevent avoidable loss of life while ensuring that intervention does not become coercion or punishment for dissent.

**Ethical Balance:** Requires balancing beneficence (preserving life) with autonomy (respecting informed choice).

## Key Concerns:

Forced medical intervention may violate autonomy and dignity if undertaken without adequate justification.

Non-intervention may raise questions regarding the State's duty to preserve life.

Risk of using medical intervention as a tool to suppress legitimate political dissent.

Questions of mental capacity and informed consent become crucial when prolonged fasting impairs decision-making capacity.

## Way Forward:

Adopt a rights-based, least-restrictive approach.

Ensure independent medical assessment of capacity, voluntariness and health condition.

Prioritise dialogue and negotiation before coercive intervention.

Use compulsory intervention only when legally justified and necessary to prevent imminent serious harm.

Establish clear protocols balancing life, autonomy, dignity and democratic dissent.

## Mains Value Addition:

"The State's duty to preserve life must coexist with respect for individual autonomy; the ethical response is therefore protection without unnecessary coercion."

## NO FIXED CRITERIA FOR INCLUSION OF LANGUAGES IN THE EIGHTH SCHEDULE.

### Why in News?

The demand for inclusion of Gor Boli in the Eighth Schedule of the Constitution has renewed debate over the absence of fixed constitutional criteria for recognising a language.

### Key Constitutional Position:

**Eighth Schedule:** Currently recognises 22 languages.

**Articles 344(1) & 351:** Provide the constitutional framework related to scheduled languages.

The Constitution does not prescribe specific criteria such as number of speakers, antiquity or literary tradition for inclusion.

The Government has stated that no fixed criteria have been prescribed for addition of languages to the Eighth Schedule.

### Significance:

**Linguistic Diversity:** Recognition can preserve India's plural linguistic and cultural heritage.

**Cultural Identity:** Gives institutional recognition to communities seeking preservation of their linguistic identity.

**Literary Promotion:** Inclusion can encourage development of literature, education and linguistic resources.

**Political Representation:** Responds to aspirations for greater recognition of regional and community identities.

### Concerns:

**No objective criteria:** Absence of clear parameters may lead to subjective or politically influenced decisions.

**Growing Demands:** Inclusion of one language can trigger competing demands from other linguistic communities.

**Administrative Burden:** Expansion may increase demands for translation, examination and official-language resources.

**Recognition vs Protection:** Eighth Schedule status does not automatically ensure language survival or official status across India.

### Way Forward:

Develop transparent, objective and measurable criteria for inclusion.

Consider indicators such as speaker population, historical continuity, literary corpus and educational use, while avoiding a purely numerical test.

Establish an expert linguistic body/committee to periodically evaluate claims.

Strengthen preservation of all endangered and non-scheduled languages, irrespective of Eighth Schedule status.

### Mains Value Addition:

“The absence of fixed criteria provides flexibility, but transparent and objective benchmarks are necessary to balance linguistic aspirations with constitutional manageability and administrative feasibility.”

## URBAN CHALLENGE FUND – GUIDELINES

### Why in News?

The Union Cabinet approved the Urban Challenge Fund (UCF) to support market-oriented, demand-driven urban infrastructure projects.

The Fund seeks to shift urban development

from grant-dependent projects to reform-linked, investment-oriented urban financing.

### Key Features:

**Central Assistance:** Provides central financial support to selected urban projects.

Reform & Performance Linked: Funding is linked to reforms, project quality and financial mobilisation.

**Competitive Selection:** Cities compete by submitting proposals based on innovation, impact and viability.

**Market-based Financing:** Encourages municipal bonds, private investment and other sources of finance.

Focus on water supply, sanitation, mobility, urban planning and climate-resilient infrastructure.

### Significance:

**Urban Infrastructure:** Mobilises additional capital for India's rapidly growing urban infrastructure needs.

**Fiscal Innovation:** Promotes leveraging of central support to attract larger non-government investments.

**Municipal Capacity:** Encourages cities to improve project preparation, financial management and revenue mobilisation.

**Competitive Federalism:** Competitive selection can incentivise cities to undertake governance and institutional reforms.

**Sustainable Urbanisation:** Can accelerate investment in climate-resilient and resource-efficient urban infrastructure.

### Challenges:

**Capacity gap:** Smaller ULBs may struggle

to prepare technically sound, bankable projects.

**Uneven access:** Competitive funding may favour financially and institutionally stronger cities.

**Municipal finances:** Weak own-source revenue can limit the ability to raise matching funds.

**Private investment risk:** Commercial viability may lead to preference for profitable projects over socially essential but financially weak services.

**Implementation:** Land, regulatory and inter-agency coordination issues can delay projects.

### Way Forward:

Provide technical assistance and project-development support to weaker ULBs.

Strengthen municipal revenue, accounting and creditworthiness.

Ensure competitive funding does not undermine equity and basic-service delivery.

Integrate projects with climate resilience, inclusive planning and local needs.

Establish transparent outcome-based monitoring of funded projects.

### Mains Value Addition:

"India's urban challenge is not merely a financing gap but a capacity gap; therefore, urban funds must simultaneously strengthen infrastructure and the financial and institutional capability of cities."

## REVAMPED PM FASAL BIMA YOJANA (PMFBY)

### Why in News?

The Union Government has continued PMFBY till 2025-26, with emphasis on technology-driven crop-loss assessment and faster claim settlement.

The revamped framework seeks to make crop insurance more transparent, farmer-centric and climate-resilient.

### Key Features:

**Farmer premium:** 2% of sum insured for Kharif, 1.5% for Rabi and 5% for commercial/

horticultural crops.

**Risk coverage:** Crop losses due to notified natural calamities and adverse weather events.

**Technology:** Use of satellite imagery, drones, smartphones and AI for crop assessment.

**Digital platform:** National Crop Insurance Portal for enrolment, monitoring and claims.

### Significance:

**Income Security:** Protects farmers from severe

income shocks caused by crop failure.

**Climate Resilience:** Provides an institutional mechanism to manage increasing climate-related agricultural risks.

**Credit Protection:** Insurance reduces lending risk and supports continued institutional farm credit.

**Technology-led Governance:** Remote sensing and digital assessment can improve accuracy, transparency and speed of claims.

**Agricultural Investment:** Risk mitigation encourages farmers to adopt better inputs and technologies.

### Key Challenges:

**Low/uneven coverage:** Tenant farmers and sharecroppers remain difficult to cover.

**Delayed Claims:** Yield estimation and administrative delays can reduce the scheme's effectiveness.

**Basis Risk:** Area-level yield assessment may not reflect actual individual farm losses.

**Awareness Gap:** Limited farmer awareness regarding coverage, exclusions and claim procedures.

**State participation:** Variation in State participation can affect coverage and implementation.

### Way Forward:

- Ensure universal and portable coverage for smallholders, tenants and sharecroppers.
- Make claims time-bound, transparent and digitally trackable.
- Scale up satellite, drone and AI-based assessment, with independent validation.
- Improve farmer awareness and grievance redressal.
- Integrate PMFBY with weather advisories, irrigation, resilient seeds and climate-smart agriculture.

### Mains Value Addition:

Crop insurance should evolve from a compensation mechanism into a comprehensive climate-risk management instrument that protects farm incomes and sustains agricultural investment.”

## JUSTICE-CENTRIC SYSTEM

### Why in News?

The idea of a justice-centric system has gained importance amid reforms aimed at making the criminal justice system more victim-centric, accessible, speedy and rights-based.

It marks a shift from merely processing cases to ensuring fair and meaningful justice outcomes.

### What is a Justice-Centric System?

A system that places justice, rights, dignity and outcomes for citizens at the centre of judicial and administrative processes rather than focusing only on procedural compliance.

### Key Dimensions:

**Victim-Centric Justice:** Greater focus on

victims' dignity, compensation, participation and rehabilitation.

**Speedy Justice:** Reducing pendency and procedural delays to give meaningful effect to Article 21.

**Access to Justice:** Affordable legal aid, simplified procedures and technology-enabled access.

**Due Process:** Balances effective crime control with rights of the accused and principles of natural justice.

**Evidence-Based Justice:** Strengthening investigation, forensic capacity and prosecution to reduce wrongful convictions and acquittals.

**Restorative Justice:** Where appropriate,

emphasises rehabilitation, restitution and reintegration, alongside punishment.

**Accountability:** Transparent institutions, reasoned decisions and effective grievance mechanisms strengthen public trust.

### Significance:

**Rule of Law:** Ensures that justice is based on law rather than discretion or influence.

**Constitutional Governance:** Advances equality, dignity, liberty and fair procedure.

**Public Trust:** Timely and impartial justice strengthens citizens' confidence in institutions.

**Social Justice:** Makes justice accessible to poor and vulnerable sections.

**Good Governance:** Shifts administration from procedure-oriented to outcome-oriented governance.

### Challenges:

**Judicial Pendency:** Large case backlogs and repeated adjournments undermine the principle of speedy justice under Article 21.

**Access Inequality:** High litigation costs, geographical barriers and limited legal awareness disproportionately affect poor and vulnerable sections.

**Undertrial Crisis:** Prolonged detention of undertrials can result in "process becoming punishment", raising concerns of liberty and fair procedure.

**Investigation Deficits:** Inadequate forensic capacity, shortage of trained investigators and poor evidence collection can weaken prosecution and lead to wrongful acquittals or convictions.

**Victim Marginalisation:** Victims may face inadequate compensation, weak witness protection

and limited participation, making justice punishment-centric rather than victim-centric.

**Technology Risks:** Digital justice can improve efficiency but digital exclusion, privacy breaches and unreliable technological tools may create new forms of injustice.

**Institutional Capacity:** Shortages of judges, prosecutors, legal-aid personnel and court infrastructure constrain the quality as well as speed of justice delivery.

### Way Forward:

**Reduce pendency:** Fill judicial vacancies, strengthen court infrastructure and promote case-flow management.

**Strengthen investigation:** Invest in forensics, training and modern investigative techniques.

**Victim-centric approach:** Ensure timely compensation, counselling and effective witness protection.

**Expand legal aid:** Make Article 39A meaningful through accessible and quality legal services.

**Responsible digitalisation:** Combine technology with human oversight, data protection and assisted access.

**Outcome-based justice:** Evaluate institutions not merely by case disposal rates, but by timeliness, fairness, accessibility and quality of justice.

### Mains Value Addition:

"A justice-centric system must judge its success not by how many cases it processes, but by whether citizens receive timely, fair, accessible and dignified justice."

## CFCFRMS 2.0 PLATFORM

### Why in News?

CFCFRMS 2.0 (Citizen Financial Cyber Fraud Reporting and Management System 2.0) has

been strengthened to enable faster reporting and coordinated response to financial cyber frauds.

It reflects India's shift towards real-time, technology-enabled cybercrime prevention and

financial-fraud management.

### What is CFCFRMS 2.0?

A platform under the Indian Cyber Crime Coordination Centre (I4C), Ministry of Home Affairs.

Integrates citizens, banks, payment intermediaries, police and other stakeholders to detect and act against cyber-enabled financial fraud.

Linked with the 1930 National Cybercrime Helpline for rapid reporting of financial fraud.

### Key Features:

**Real-time reporting:** Enables victims to report financial cyber fraud quickly.

**Inter-agency coordination:** Connects police and financial institutions for faster action.

**Fund-tracing:** Facilitates identification and freezing of suspected fraudulent transactions.

**Digital investigation:** Supports information sharing and investigation across jurisdictions.

**Citizen-centric response:** Reduces the time between fraud, reporting and intervention.

### Significance:

**Rapid Response:** Early reporting improves the possibility of blocking or recovering fraudulent funds.

**Coordinated Enforcement:** Bridges the gap between cybercrime investigation and financial-sector response.

**Inter-State Capability:** Helps tackle cyber fraud that operates across multiple jurisdictions.

**Preventive Policing:** Moves cybercrime response from post-fraud investigation towards real-time disruption.

**Digital Trust:** Stronger safeguards can increase citizen confidence in digital payments and India's digital economy.

### Challenges:

**Speed of fraud:** Cybercriminals can transfer money through multiple accounts and jurisdictions within minutes, making fund recovery difficult.

**Coordination gaps:** Delays in communication between banks, payment platforms and police can reduce the effectiveness of real-time intervention.

**Jurisdictional complexity:** Cyber fraud often crosses State and national boundaries, creating challenges in investigation and prosecution.

**Digital literacy:** Victims may report fraud late due to lack of awareness, reducing the window for freezing funds.

**Privacy & security:** Large-scale sharing of financial and personal data creates risks of data breaches and misuse.

**Mule accounts:** Criminal networks exploit bank accounts of individuals to layer and move illicit funds, complicating tracing and attribution.

### Way Forward:

Ensure 24×7 automated coordination between banks, payment systems and law-enforcement agencies.

Strengthen AI-based transaction monitoring to identify suspicious fund flows early.

Establish faster inter-State investigation and information-sharing mechanisms.

Increase public awareness about 1930 and immediate reporting of cyber fraud.

Strengthen safeguards for privacy, data security and due process.

Develop specialised cybercrime capacity at the district and police-station levels.

### Mains Value Addition:

In cyber financial fraud, speed is a critical determinant of justice; therefore, effective cyber governance must connect real-time reporting with real-time financial intervention."

## CORPORATE MITRA SCHEME

### Why in News?

Corporate Mitra Scheme was announced in the

Union Budget 2026–27 to strengthen the MSME ecosystem, particularly in Tier-2 and Tier-3 cities.

It seeks to create a cadre of trained, accredited and trusted para-professionals to provide affordable compliance and business-support services to MSMEs.

### What is the Scheme?

Corporate Mitras will assist MSMEs in regulatory compliance, taxation, accounting, finance and governance.

It also aims to equip young graduates with industry-relevant skills and practical experience, creating new employment pathways.

**Initial target:** 2,000 participants, including 200 exclusively from the North-East, with a 50% fee concession for NER candidates.

### Significance:

**Ease of Doing Business:** Reduces the compliance burden that disproportionately affects smaller enterprises.

**MSME Formalisation:** Encourages MSMEs to adopt proper accounting, taxation and regulatory practices.

**Employment Generation:** Creates a new cadre of locally available skilled para-professionals.

**Balanced Regional Development:** Focus on Tier-2/3 cities and the NER strengthens entrepreneurship beyond major urban centres.

**Productivity:** Allows entrepreneurs to focus on innovation, investment and expansion rather than non-core compliance work.

### Challenges:

**Quality Assurance:** Inadequately trained para-

professionals could result in incorrect compliance advice and financial risks for MSMEs.

**Awareness Gap:** Smaller enterprises in remote areas may remain unaware of or unable to access the scheme.

**Affordability:** Even subsidised professional services may remain difficult for micro-enterprises with limited cash flows.

**Trust & Accountability:** Misuse of sensitive financial and corporate information can create privacy and fiduciary risks.

**Uneven Capacity:** Better-connected urban areas may benefit more unless adequate attention is given to underserved regions.

### Way Forward:

Establish strong accreditation, periodic certification and professional-ethics standards.

Create a transparent grievance and accountability mechanism for MSMEs.

Integrate Corporate Mitras with district industries centres, Udyam registration and MSME support networks.

Prioritise aspirational districts, NER and underserved Tier-2/3 regions.

Measure success through outcomes such as formalisation, compliance improvement, business survival and employment generation.

### Mains Value Addition:

“For MSMEs, ease of doing business must mean not merely fewer regulations, but affordable access to the capability required to comply with them.”

## NATIONAL HONOUR (AMENDMENT) BILL, 2026

### Why in News?

Parliament passed the Prevention of Insults to National Honour (Amendment) Bill, 2026, amending the 1971 Act.

The amendment extends statutory protection to Vande Mataram, alongside the National Anthem.

### Key Provisions:

**Section 3 amended:** Covers both Jana Gana Mana and Vande Mataram.

### Criminalises intentionally:

Preventing the singing of either;

Disturbing an assembly engaged in singing either.

**Punishment:** Imprisonment up to 3 years, or fine, or both.

The broader 1971 Act also protects the National Flag and Constitution against specified forms of insult.

### Significance:

**National Integration:** Reinforces respect for symbols associated with India's national identity and freedom struggle.

**Constitutional Patriotism:** Encourages respect for national symbols while locating patriotism within the constitutional framework.

**Legal Uniformity:** Brings the National Song under the same statutory protection as the National Anthem.

**Cultural Heritage:** Recognises the historical role of Vande Mataram in India's freedom movement.

### Constitutional Dimension:

**Article 51A(a):** Fundamental Duty to respect the National Flag and National Anthem.

**Articles 19 & 25:** Regulation must be balanced with freedom of speech, expression and freedom of conscience/religion.

The key constitutional principle is that patriotism cannot be imposed in a manner that unreasonably restricts fundamental freedoms.

### Concerns:

**Freedom of Expression:** Broad interpretation of "disturbance" could potentially affect legitimate expression or dissent.

**Individual Autonomy:** Compulsory participation in patriotic practices may raise concerns regarding freedom of conscience.

**Selective Enforcement:** Criminal provisions can become problematic if applied arbitrarily or discriminatorily.

**Symbolism vs Substance:** Legal protection of national symbols should complement, not substitute, constitutional patriotism based on democratic values.

### Way Forward:

Apply the law strictly to intentional and demonstrable acts of obstruction or disturbance.

Ensure proportionate and non-discriminatory enforcement.

Protect legitimate criticism, dissent and freedom of conscience within constitutional limits.

Promote national symbols through civic education and voluntary respect, alongside legal safeguards.

### Mains Value Addition:

"Respect for national symbols is an important constitutional value, but democratic patriotism is strongest when reverence is harmonised with liberty, pluralism and freedom of conscience."

## NIPUN BHARAT

### Why in News?

NIPUN Bharat is the National Mission for Foundational Literacy and Numeracy (FLN), launched by the Ministry of Education in 2021 under Samagra Shiksha.

Its core objective is that every child attains foundational literacy and numeracy by the end

of Grade 3, with the mission target extending to 2026-27.

### Key Features:

FLN by Grade 3: Reading with understanding, writing and basic numeracy.

**Mission-mode approach:** Measurable Lakshyas/learning outcomes with periodic monitoring.

**Teacher capacity:** NISHTHA-FLN training, mentoring and strengthening of DIETs/SCERTs.

**Child-centric pedagogy:** Play-, activity- and discovery-based learning.

**Digital support:** DIKSHA-based FLN resources and technology-enabled monitoring.

**Vidya Pravesh:** Three-month play-based school preparation module for Grade I.

### Significance:

**Learning Foundation:** FLN is the prerequisite for acquiring higher-order skills and lifelong learning.

**Human Capital:** Early learning improvement enhances productivity, employability and human-capital formation.

**Equity:** Early intervention can reduce learning gaps faced by disadvantaged children.

**NEP 2020:** Operationalises NEP's emphasis on foundational learning as the highest priority.

**SDG Link:** Supports SDG 4 – Quality Education.

### Challenges:

**Learning Deficits:** Many children progress through grades without acquiring grade-appropriate foundational skills, making later learning difficult.

**Teacher Capacity:** Variation in teacher training and pedagogical capability can affect quality of FLN delivery.

**Infrastructure Gaps:** Lack of libraries,

learning materials and basic facilities constrains effective foundational learning, particularly in disadvantaged areas.

**Language Diversity:** Children learning in a language different from their home language may face additional comprehension barriers.

**Assessment Quality:** Measuring actual learning outcomes consistently across diverse States and schools remains challenging.

**Digital Divide:** Technology-enabled resources cannot substitute for teacher support and equitable digital access.

### Way Forward:

Prioritise early-grade teachers and continuous professional development.

Strengthen mother-tongue/multilingual pedagogy and locally contextualised learning materials.

Use regular competency-based assessments for early identification and remediation.

Strengthen SCERTs, DIETs, mentors and school-level academic support.

Ensure libraries, TLMs and basic school infrastructure in every primary school.

Focus on learning outcomes rather than enrolment or attendance alone.

### Mains Value Addition:

“Foundational literacy and numeracy is not merely an educational outcome; it is the foundation for reducing learning inequality and building India's future human capital.”

## PM-KISAN SCHEME – CONTINUATION TILL 2030-31

### Why in News?

Union Cabinet approved continuation of PM-KISAN from 2026-27 to 2030-31 with an outlay of ₹3.15 lakh crore.

The 23rd instalment provided over ₹18,880 crore to 9.44 crore farmers in June 2026.

### Key Features:

₹6,000 annually to eligible landholding farmer families in 3 instalments of ₹2,000.

DBT-based delivery into Aadhaar-seeded bank accounts.

Beneficiary verification uses digitised land records and Aadhaar authentication.

A Central Sector Scheme, launched in 2019.

### Significance:

**Income Support:** Provides predictable cash support for farm and household needs, especially during income stress.

**Financial Inclusion:** DBT reduces intermediaries and improves transparency and payment efficiency.

**Credit Resilience:** Timely support can reduce dependence on informal credit.

**Agricultural Investment:** Helps farmers meet recurring input expenses and sustain farm operations.

**Women's Inclusion:** Over 2.18 crore women benefited from the 23rd instalment, strengthening the financial inclusion of rural women.

### Challenges:

**Landholding-based exclusion:** Linking eligibility primarily to land records can exclude tenant farmers, sharecroppers and cultivators without formal titles.

**Benefit Adequacy:** The fixed ₹6,000 annual support may have limited purchasing power against rising input and household costs.

**Land-record errors:** Outdated or incomplete

records can cause wrongful exclusion or delayed payments.

**Regional disparities:** States with weaker land-record digitisation may face greater implementation and coverage gaps.

**Income vs productivity:** Cash support provides short-term relief but cannot by itself address low productivity, price risks, irrigation and climate vulnerability.

### Way Forward:

Improve digitisation and updating of land records with effective grievance redressal.

Develop mechanisms to cover eligible tenants and sharecroppers, without compromising fraud prevention.

Periodically assess the adequacy and real value of income support.

Converge PM-KISAN with crop insurance, KCC, irrigation, FPOs and climate-resilient agriculture.

Use DBT + data analytics to identify exclusion errors while protecting farmer privacy.

### Mains Value Addition:

“PM-KISAN marks a shift towards direct income support in agriculture; its next stage should focus on closing the gap between formal land ownership and actual cultivation.”

## AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)

### Why in News?

Policy discussions in 2026 have proposed treating AI as a public digital utility, similar to how Aadhaar, UPI and data-sharing infrastructure created accessible digital rails.

The idea is to make AI compute, models and inference affordable, interoperable and widely accessible, rather than leaving advanced AI capability concentrated among large firms.

### Core Idea:

AI as DPI = Affordable AI access + Shared compute + Open/interoperable models + Trusted data + Responsible governance

### Why AI as DPI?

**Democratises AI:** Reduces the cost barrier for start-ups, MSMEs, students and public institutions.

**Builds on India Stack:** Extends the DPI philosophy of low-cost, interoperable and

population-scale digital services.

**Public-service delivery:** AI can improve healthcare, agriculture, education, justice and welfare targeting.

**Indic AI ecosystem:** Shared infrastructure can accelerate development of Indian-language and India-specific AI solutions.

**Innovation multiplier:** Affordable compute and open models can enable smaller innovators to build applications without owning expensive infrastructure.

### Challenges:

**High compute costs:** AI inference and training require substantial GPU, energy and data-centre capacity, unlike relatively low-cost digital transactions.

**Concentration risk:** Dependence on a few global firms for GPUs, cloud infrastructure and foundation models can undermine technological sovereignty.

**Bias & exclusion:** AI trained on inadequate Indian-language and socio-cultural datasets may produce biased or inaccurate outcomes.

**Privacy & security:** Large-scale AI requires access to data, creating risks of surveillance, misuse and data breaches.

**Accountability:** AI-assisted decisions in welfare, healthcare or justice raise questions of explainability, liability and human oversight.

**Digital divide:** Making AI available digitally does not guarantee access for citizens lacking connectivity, devices or digital literacy.

### Way Forward:

**Public compute infrastructure:** Expand affordable, shared GPU/compute capacity through the IndiaAI ecosystem.

**Open & interoperable AI:** Promote open-weight models, common standards and interoperable APIs.

**Indic AI:** Prioritise high-quality datasets and models for Indian languages and local contexts.

**Responsible AI:** Establish strong safeguards for privacy, transparency, bias mitigation and human oversight.

**Targeted access:** Provide subsidised compute/API access to start-ups, academia, MSMEs and public institutions.

**Outcome-based approach:** Evaluate AI-DPI by its impact on productivity, inclusion and public-service delivery, not merely compute capacity.

### Mains Value Addition:

“If DPI made digital transactions universally accessible, AI-as-DPI can seek to make intelligence itself an affordable public capability—provided access is combined with accountability, privacy and technological sovereignty.”

## AYUSH–INSURANCE NETWORK

### Why in News?

The AYUSH–Insurance Network seeks to strengthen the integration of AYUSH systems with health-insurance coverage, improving access to Ayurveda, Yoga, Unani, Siddha and Homoeopathy services.

It reflects the shift towards integrated and affordable healthcare and greater recognition of traditional systems within the health-financing ecosystem.

### What is it?

A framework to improve the insurance coverage, empanelment and reimbursement of eligible AYUSH treatments.

Seeks greater integration of AYUSH facilities with insurance providers and health-service networks.

Supports the broader goal of mainstreaming AYUSH within India’s healthcare system.

## Significance:

**Healthcare Access:** Expands affordable access to AYUSH services, particularly for underserved populations.

**Financial Protection:** Insurance coverage can reduce out-of-pocket expenditure on eligible treatments.

**Choice & Pluralism:** Gives patients greater choice within a pluralistic healthcare system.

**Preventive Healthcare:** AYUSH's emphasis on wellness and preventive care can complement modern healthcare.

**Evidence-based Integration:** Insurance-linked standardisation can encourage quality, documentation and evidence generation in AYUSH.

## Challenges:

**Evidence Gap:** Variation in clinical evidence and standardisation can complicate insurance coverage and outcome-based reimbursement.

**Quality Assurance:** Differences in practitioner training and facility standards may affect patient safety and treatment quality.

**Fraud & Overbilling:** Weak documentation or monitoring can create risks of unnecessary procedures and insurance fraud.

**Integration Gap:** Limited interoperability

between AYUSH and modern healthcare systems can hinder continuity of care.

**Regulatory Complexity:** Different standards for treatment, accreditation and reimbursement may make uniform insurance protocols difficult.

## Way Forward:

- Develop evidence-based treatment protocols and standardised clinical documentation.
- Strengthen accreditation and quality standards for AYUSH facilities.
- Adopt outcome-based and transparent reimbursement mechanisms.
- Build interoperable digital health records while protecting patient privacy.
- Promote integrated care pathways with appropriate referral between AYUSH and modern medicine.
- Strengthen research through clinical trials and real-world evidence.

## Mains Value Addition:

“Mainstreaming AYUSH through insurance should move beyond mere coverage towards evidence-based, quality-assured and patient-centric integrative healthcare.”

# PANKHUDI PORTAL

## Why in News?

The Pankhudi Portal is an initiative aimed at strengthening access to information, schemes and support services for children and families, particularly through a unified digital platform.

It reflects the broader move towards technology-enabled, child-centric governance.

## What is Pankhudi Portal?

A digital platform intended to improve information access, service delivery and coordination related to child welfare.

Seeks to bring relevant government services

and information closer to children, parents and stakeholders.

## Significance:

**Child-centric Governance:** Places children's welfare and rights at the centre of service delivery.

**Last-mile Access:** Reduces information gaps regarding government schemes and entitlements.

**Convergence:** Facilitates coordination among departments dealing with education, health, nutrition and child protection.

**Transparency:** Digital tracking can improve accountability and monitoring of service delivery.

**Inclusion:** Can improve access for vulnerable children by reducing institutional and informational barriers.

### Challenges:

**Digital Divide:** Children and families without devices, connectivity or digital literacy may remain excluded.

**Data Privacy:** Child-related data is highly sensitive; weak safeguards can expose children to privacy and security risks.

**Inter-departmental Coordination:** Fragmented databases and departmental silos can limit effective convergence of services.

**Awareness Gap:** A portal has limited impact if beneficiaries and frontline workers are unaware of its services.

**Last-mile Implementation:** Digital platforms cannot substitute for adequate frontline workers and physical services.

### Way Forward:

Ensure privacy-by-design and child-sensitive data protection.

Provide assisted access through Anganwadi workers, schools and local bodies.

Integrate relevant databases using interoperable and secure systems.

Strengthen awareness and digital-literacy initiatives among parents and frontline workers.

Evaluate the portal through actual improvements in child outcomes, rather than registrations or downloads alone.

### Mains Value Addition:

“Technology can strengthen child welfare only when digital access is complemented by strong frontline institutions, inter-departmental convergence and robust protection of children’s data.”



# INTERNATIONAL RELATIONS



What's Inside?

1. 16TH INDIA – JAPAN ANNUAL SUMMIT
2. INDO-PACIFIC PUSH: PM'S 3-NATION VISIT
3. AI GOVERNANCE AND VOICE OF GLOBAL SOUTH
4. GUWAHATI DECLARATION OF BRICS
5. INDIA-UK COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT
6. 3RD BRICS MINISTERIAL MEETING ON DISASTER RISK REDUCTION
7. INDIA SECURES LOWER US TARIFFS UNDER SECTION 301 AMID FORCED LABOUR COMPLIANCE
8. FAVARA UPI CROSS-BORDER PAYMENT CORRIDOR
9. SAMUDRA MANTHAN SCHEME
10. 3RD INDIA-AUSTRALIA ANNUAL LEADER'S SUMMIT

# 16TH INDIA – JAPAN ANNUAL SUMMIT

## Why in news?

Recently, Japanese Prime Minister Sanae Takaichi is on her maiden visit to India for the 16th India-Japan Annual Summit.

## Key Outcomes of the 16th India-Japan Annual Summit:

**Economic Security:** Joint Declaration on semiconductors, critical minerals, ICT, clean energy and pharmaceuticals; focus on diversified and resilient supply chains.

**Energy Security:** Cooperation on strategic petroleum reserves, energy transport, CBG, green hydrogen, clean ammonia, solar PV and nuclear energy; Japan backed India's IEA membership.

**AI & Emerging Tech:** Launched the India-Japan AI Strategic Dialogue; cooperation on trusted AI, digital infrastructure, AI supply chains and responsible AI governance.

**Trade & Investment:** Accelerated CEPA review and Japanese investment target of ¥10 trillion; USD 10 billion investment package and greater banking-sector cooperation.

**Industrial Cooperation:** Expanded IJICP cooperation in logistics, agriculture, healthcare, textiles, manufacturing, MSMEs, startups and digital payments.

**Indo-Pacific:** Reaffirmed FOIP, IPOI and MAHASAGAR, with stronger Quad, ASEAN and BIMSTEC cooperation; backed UNCLOS, FONOPs, UNSC reforms and counter-terrorism.

**Maritime Security:** Opposed unilateral changes to the status quo in the East and South China Seas and supported peaceful dispute resolution.

**Disaster Management:** Japan to support India's hosting of the 4th UN World Conference on Disaster Risk Reduction in 2030.

**Africa Cooperation:** Agreed to deepen India-Japan cooperation in Africa through IAFS and sustainable development initiatives.

## Key Dimensions of India – Japan Relationship:

**Evolution:** Civilizational links through Buddhism; diplomatic ties (1952) → Global Partnership (2000) → Annual Summit (2006) → CEPA (2011) → Special Strategic and Global Partnership (2014) → Japan-India Vision 2025. Act East Forum (2017) and Quad revival expanded ties into security and strategic domains.

**Defence & Security:** Institutionalised through 2+2 Dialogue, Security Cooperation Declaration and RPSS Agreement (2020). Exercises include JIMEX, Dharma Guardian, Malabar and Veer Guardian. Defence technology cooperation includes Transfer of Defence Equipment and Technology Agreement (2015) and UNICORN naval mast co-development.

**Trade & Investment:** Bilateral trade reached \$27.48 billion (FY 2025–26); Japan is India's 5th-largest FDI source. Japan remains India's largest bilateral ODA partner, supporting MAHSR, Delhi Metro and other infrastructure.

**Economic Security:** Focus on semiconductors, critical minerals, clean energy and pharmaceuticals to build resilient supply chains and reduce excessive dependence on China.

**North-East Connectivity:** Act East Forum links India's Act East Policy with Japan's FOIP, with JICA-backed projects such as the 750-km North East Road Network Connectivity Project.

**Technology & Space:** ISRO-JAXA LUPEX lunar mission; cooperation in AI, IoT and semiconductors, supported by Sakura and LOTUS programmes.

**Human Capital:** TITP and SSW facilitate Indian workforce mobility to Japan; around 59,000 Indians reside there.

**Strategic Convergence:** Cooperation in Indo-Pacific security, critical technologies, clean energy and supply-chain resilience is deepening amid China-related risks and uncertainty over US commitments.

### Challenges in India–Japan Relations:

**Underperforming Trade:** Bilateral trade (~\$27 billion) remains below potential and heavily skewed towards Japan; CEPA has not substantially diversified trade.

**Project Execution Delays:** MAHSR faces land acquisition, regulatory and state-level implementation challenges.

**Weak Third-Country Cooperation:** AAGC has progressed slowly due to the absence of a strong joint financing mechanism.

**Business Environment:** Bureaucratic delays,

complex labour regulations and regulatory uncertainty discourage Japanese investment.

**Non-Tariff Barriers:** Indian pharmaceuticals and agricultural exports face stringent SPS standards and regulatory hurdles in Japan.

**Skill & Language Gap:** Language barriers and Japan's restrictive work culture limit India's ability to leverage its workforce through SSW/TITP.

**Strategic Divergence:** Different approaches to Russia and Eurasian security—Japan follows G7 sanctions, while India maintains strategic autonomy.

**Defence Technology Constraints:** Japan's earlier restrictions on defence exports slowed technology transfer and projects such as the US-2 aircraft; recent relaxation of lethal-weapons export rules could improve cooperation.

## INDO-PACIFIC PUSH: PM'S 3-NATION VISIT

### Why in news?

PM Narendra Modi's recently visited Indonesia, Australia, and New Zealand to reinforce India's geostrategic interests in the Indo-Pacific region. This move serves as a strategic counterbalance to the United States' fluctuating interest in the Quadrilateral Security Dialogue.

### Key Outcomes of the Visit:

#### Indonesia:

- Emphasized on Indonesia's strategic geographic position, particularly the Lombok Strait, a crucial trade waterway.
- Strengthened the 2018 Comprehensive Strategic Partnership with Indonesia.
- Signed a \$630 million BrahMos contract with Indonesia, making it the third overseas customer for this missile system after the Philippines and Vietnam.

- Introduced the Astra Mk 1 missile to Indonesia's military, marking the first international sale of this technology.
- Initiated the "Local Currency Transaction Framework" to facilitate de-dollarized trade directly in rupees and rupiah.

#### Australia:

- Advanced the 2014 Indo-Australia Civil Nuclear Cooperation Agreement.
- Agreed on Australia supplying uranium to India, aiding India's clean energy goals with small nuclear-reactor technology.
- Enhanced defence cooperation with expanded military exercises and information sharing.

#### New Zealand:

- Marked the first visit by an Indian Prime Minister in 40 years.

- Focused on building relations following a free-trade agreement signed earlier this year.

### **MAHASAGAR(Mutual and Holistic Advancement for Security and Growth Across Regions) Doctrine:**

It expands the original SAGAR (Security

and Growth for All in the Region) initiative to encompass the broader Indian Ocean geography, bordering Africa to the Indo-Pacific.

The doctrine promotes collaborative capacity-building and a security agenda distinct from the Quad.

## **AI GOVERNANCE AND VOICE OF GLOBAL SOUTH**

### **Why in news?**

India's AI Impact Summit 2026 championed Global South priorities in equitable AI governance, while shifting towards investment, domestic adoption and strategic partnerships—highlighting the tension between Global South leadership and national strategic interests.

### **India's AI Governance Vision:**

**Global South at the Centre:** The summit placed the needs and challenges of the Global South at the centre of AI discussions instead of treating them as secondary concerns.

**Focus on Present-Day Harms:** India's approach gave priority to real-world harms, equity and inclusion, unlike earlier AI summits that mainly focused on catastrophic and existential AI risks.

**Different Policy Direction:** This marked a clear shift from the approaches followed at Bletchley Park (2023), Seoul (2024) and Paris (2025) by addressing immediate concerns faced by developing countries.

**Context-Based AI Governance:** India's vision recognised that AI policies should reflect the social and economic realities of the Global South rather than applying one common approach for every country.

### **Shift in India's AI Strategy:**

**Move Towards AI Investment:** The policy focus gradually shifted from AI governance to raising capital for AI development and

promoting AI adoption through domestic use cases.

**Middle Power Positioning:** India increasingly projected itself as a middle power, reducing the emphasis on Global South solidarity that had shaped the summit's original vision.

**Strategic Alignment with the U.S.:** India joined Pax Silica, signalling closer alignment with the U.S.-led semiconductor supply chain and adopting a pro-innovation regulatory approach.

**Concerns for Strategic Autonomy:** This shift raised concerns that India's growing strategic partnership could weaken its pursuit of strategic autonomy in AI governance.

**Mismatch with Ground Reality:** India's ambition to stand with countries such as Japan does not fully match its technological capacity, economic development, colonial history and low per capita realities, which continue to place it within the Global South

### **Challenges India Faces in Emerging as a Global Leader in AI:**

**Middle power dilemma:** India is inclined towards becoming a middle power i.e. a country that is important and influential in world affairs. But it is challenged by the U.S., Japan, and many European countries as they are much more advanced in AI technology.

India is still a developing country and also wants to represent the interests of the Global South.

**U.S. Foreign Policy:** The U.S. has declared its disinterest in AI governance, especially global multilateral or multistakeholder governance.

This raises fundamental questions for India and the Global South on concentration of infrastructure, and economic power in the U.S..

**Other Concerns:** India's dependence for AI on western countries raises the questions about data security, land acquisition for creating data centres and western countries taking all the profits from the partnership.

### Opportunities for India:

The first of a two-part UN Global Dialogue on AI is underway in Geneva.

Stakeholders will convene to discuss how the multilateral and multistakeholder ecosystem can come together to collectively define the rules for the governance of AI.

India can use the opportunity to stitch together a fractured AI policy agenda that currently lacks a leader.

India remains one of the few countries with the political heft, the technical capacity, and a diverse market to play this role.

Rather than positioning itself merely as a destination for investment or a market for AI, India could reassert a vision of technological development rooted in public purpose, user safety, strategic autonomy, and international cooperation.

### Way Ahead

India should reiterate the need for international norms that empower Global South countries to focus on building local AI ecosystems and fostering innovation, safeguarding users, and enhancing regulatory capacity.

It should also advance critical debates on competition and consumer protection and ensure economic value accrues within national markets.

India must create pathways for international cooperation on AI within the Global South.

## GUWAHATI DECLARATION OF BRICS

### Why in news?

The BRICS nations recently adopted the Guwahati Declaration, reaffirming their commitment to strengthen cooperation to prevent and combat illicit drug trafficking and related organised transnational crime.

### About Guwahati Declaration:

It was adopted by the BRICS nations to strengthen cooperation against illicit drug trafficking and related transnational organized crime.

The declaration was adopted at the conclusion of the two-day BRICS Heads of Anti-Drug Agencies Meeting held in Guwahati, Assam.

It was held under India's 2026 BRICS chairship, themed "Building for Resilience, Innovation, Cooperation and Sustainability."

The meeting brought together representatives

from Brazil, China, Ethiopia, India, Indonesia, Iran, Russia and the United Arab Emirates to discuss coordinated strategies against global drug trafficking.

The joint declaration calls for greater cooperation through the timely exchange of information, intelligence and best practices, in line with national laws and international obligations.

It also highlights the importance of using innovative technologies, digital tools and data-driven approaches to improve law enforcement and regulatory measures against drug trafficking.

The declaration also stresses the need to strengthen efforts to reduce drug demand, promote healthy lifestyles and protect vulnerable groups, especially children and young people, through evidence-based and people-centred strategies.

## BRICS – Key Facts

**Nature:** BRICS is a grouping of major emerging economies aimed at promoting economic cooperation, political coordination and greater representation of the Global South in global governance.

**Origin:** The term “BRIC” was coined by Goldman Sachs economist Jim O’Neill in 2001, referring to Brazil, Russia, India and China. The first BRIC summit was held in 2009.

**Expansion:** South Africa joined in 2010, transforming BRIC into BRICS. In 2024, Egypt, Ethiopia, Iran, Saudi Arabia and the UAE joined, while Indonesia became a full member in 2025.

**Current membership:** BRICS now comprises 11 member countries: Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, Saudi Arabia, UAE and Indonesia.

**Global significance:** The 11 members collectively represent roughly half of the world’s population, around 40% of global GDP (PPP) and a substantial share of global trade, giving the grouping considerable economic and geopolitical weight.

**Partner countries:** In 2025, 10 countries were added as BRICS partner countries: Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Nigeria, Thailand, Uganda, Uzbekistan and Vietnam.

**Core objective:** BRICS seeks to strengthen South-South cooperation, reform global institutions such as the UN, IMF and World Bank, and promote a more multipolar international order.

**Key institutions:** The New Development Bank (NDB) and the Contingent Reserve Arrangement (CRA) are major institutional initiatives of BRICS.

# INDIA-UK COMPREHENSIVE ECONOMIC AND TRADE AGREEMENT

## Why in news?

The India-UK Comprehensive Economic and Trade Agreement (CETA), along with its companion social security pact known as the Double Contribution Convention (DCC), formally came into effect recently.

## Key Highlights of CETA:

**UK Market Access:** Zero-duty access for nearly 99% of Indian exports, covering almost 100% of bilateral trade value.

**India’s Tariff Commitments:** Concessions on 89.5% of tariff lines, covering 91% of UK exports; only 24.5% get immediate duty-free access.

**Sensitive Sectors Protected:** No concessions for dairy, agriculture, millets, apples, edible oils and gold.

**Services:** UK opens 12 major sectors and 137 sub-sectors, benefiting Indian IT, healthcare, finance and engineering services.

**Professional Mobility:** Temporary movement of professionals without hidden quotas or economic-needs tests.

**Strategic Industries:** Tariff concessions for Make in India/PLI sectors phased over 5–10 years.

**Automobiles:** Quota-based, phased liberalisation; affordable EV concessions begin only from Year 6.

**Steel:** Measures agreed to minimise disruption from forthcoming UK steel trade measures and protect Indian exporters.

## Current Status of India-UK Bilateral Trade:

**Economic Scale (2025):** India’s GDP — \$3.96 trillion; UK — \$3.84 trillion.

**Merchandise Trade (2025–26):** \$25.12 bn — exports: \$13.44 bn; imports: \$11.68 bn; India’s surplus: \$1.76 bn.

**Services Trade (2024):** \$35.44 bn — India's exports: \$21.66 bn; imports: \$13.78 bn; surplus: \$7.88 bn.

**Investment:** UK is India's 6th-largest FDI source, with \$35 bn cumulative equity investment (Sept 2024); India's investment in UK: \$19 bn (March 2024).

**Corporate Footprint:** 971+ Indian companies operate in the UK, employing 1 lakh+ people.

## Double Contribution Convention (DCC)

**Purpose:** Eliminates dual social-security contributions for eligible temporary workers moving between India and the UK.

**Extended Exemption:** UK National Insurance exemption for detached workers extended from 12 months to 60 months (5 years).

**Non-Retroactive:** Applies only to workers entering under the new regime; Indian professionals already in the UK before 15 July 2026 remain subject to UK social-security rules.

**Certificate of Coverage (CoC):** Workers must obtain a CoC from EPFO to prove coverage under India's social-security system.

**Impact:** Expected to benefit 75,000+ professionals and 900 companies, with estimated annual savings of \$600 million+.

**Strategic Significance:** Reduces mobility costs and encourages UK firms to develop Indian Global Capability Centres (GCCs) focused on R&D, analytics and cybersecurity.

# 3RD BRICS MINISTERIAL MEETING ON DISASTER RISK REDUCTION

## Why in news?

Recently, India Successfully Hosts 3rd BRICS Ministerial Meeting on Disaster Risk Reduction. The meeting adapted a joint statement to accelerate the 2025-2028 Work Plan for global resilience.

accelerate the BRICS Disaster Risk Reduction Work Plan (2025–2028).

Recently, the first in-person technical meeting of the BRICS Disaster Risk Reduction (DRR) Working Group under India's BRICS Presidency commenced in Puri, Odisha.

## Highlights:

India, under its BRICS Chairship 2026, hosted the 3rd BRICS Ministerial Meeting on Disaster Risk Reduction (DRR) in New Delhi on July 24, 2026.

India's Chairship theme was "Building for Resilience, Innovation, Cooperation and Sustainability." The meeting was chaired by Shri Nityanand Rai, Minister of State for Home Affairs.

The BRICS Joint Statement on Disaster Risk Reduction was unanimously adopted. Member countries reaffirmed commitment to

## About BRICS:

BRICS is a collaborative intergovernmental organization of major emerging economies, established to enhance economic cooperation and amplify the global political and economic influence of its members.

The acronym originally stood for Brazil, Russia, India, and China, with South Africa joining later in 2010.

**Key Purpose:** Its core objectives include promoting trade and investment among members, reforming global governance institutions like the UN and IMF, and

establishing alternative financial systems to reduce dollar dependency.

It aims to counterbalance Western influence and advocate for a more multipolar world order.

**Foundation and Evolution:** The term BRIC was first coined by economist Jim O'Neill in 2001. The group began formal cooperation at the 2006 G-8 Outreach Summit and held its first official summit in Russia in 2009.

**Expansion of Membership:** The group expanded in 2024 with the addition of Egypt,

Ethiopia, Iran, and the UAE. Indonesia joined in 2025.

Saudi Arabia has accepted membership but has not yet formalized it, while Argentina opted out after initial consideration.

In 2024, BRICS introduced a partner countries status, initially granted to Belarus, Bolivia, Cuba, Kazakhstan, Malaysia, Nigeria, Thailand, Uganda, and Uzbekistan. This allows them to attend summits without being full members.

## INDIA SECURES LOWER US TARIFFS UNDER SECTION 301 AMID FORCED LABOUR COMPLIANCE

### Why in news?

Recently, the United States has imposed 10% additional tariffs on imports from India under Section 301 of the US Trade Act, lower than the 12.5% initially proposed. The reduction follows India's decision to prohibit imports of goods produced using forced labour, aligning with US concerns.

### Section 301 of the US Trade Act:

It authorises the US to investigate and respond to unfair foreign trade practices. Remedies include additional tariffs, import restrictions or negotiated settlements. Unlike Section 122, Section 301 measures remain effective until modified or withdrawn.

Earlier, the US Trade Representative (USTR) initiated an investigation against 60 trading partners, alleging inadequate measures to prevent imports of goods produced through forced labour.

The tariffs replace temporary Section 122 tariffs, which could remain in force only for 150 days, whereas Section 301 tariffs

are permanent unless reviewed by the US administration.

The measure seeks to protect American industries from unfair trade practices linked to forced labour.

### Impact on India's Export Competitiveness

#### Positive outcomes:

Indian exporters retain competitiveness in labour-intensive sectors such as textiles, garments, leather, and footwear.

India's tariff burden is lower than that of China and Vietnam, improving export prospects.

#### Limitations:

Around 70% of India's exports to the US will now attract existing MFN tariff, plus 10% Section 301 tariff.

Products already covered under Section 232 (steel, aluminium, copper, automobiles and auto components) continue to face 25–50% tariffs.

## FAVARA UPI CROSS-BORDER PAYMENT CORRIDOR

### Why in news?

The Maldives Monetary Authority (MMA) launched the Favara, UPI Cross-Border Payment Corridor, enabling real-time remittances from the Maldives to India.

### About The Favara–UPI Cross-Border Payment Corridor:

A real-time cross-border payment corridor integrating the Maldives' Favara Instant Payment System with India's Unified Payments Interface (UPI), enabling seamless person-to-person (P2P) fund transfers.

**Aim:** To facilitate secure, instant, and low-cost cross-border digital payments, strengthen bilateral financial connectivity, and deepen economic cooperation.

### Key Features:

**Real-Time P2P Transfers:** Enables individuals in the Maldives to send funds instantly from MVR to UPI-enabled INR bank accounts in

India.

**Initial Banking Partners:** Launched with Bank of Maldives Plc and Maldives Islamic Bank Plc through their mobile banking applications.

**Permitted Remittance Categories:** Supports family-maintenance and gift-related remittances under the Maldives' foreign remittance framework.

**Institutional Collaboration:** Implemented through cooperation among the MMA, RBI, NPCI International Payments Limited (NIPL), and participating financial institutions.

**Future Expansion:** Upcoming phases will introduce QR-based merchant payments and additional cross-border digital payment services.

**UPI Accepted Countries (9):** Cambodia, Singapore, United Arab Emirates, France, Mauritius, Nepal, Bhutan, Qatar and Sri Lanka – enabling Indian travellers to make seamless payments abroad through UPI

## SAMUDRA MANTHAN SCHEME

### Why in news?

Recently, the Union Cabinet approved 'Samudra Manthan', the National Offshore Exploration Scheme, translating the Prime Minister's Independence Day 2025 vision of unlocking India's offshore energy potential.

### About Samudra Manthan Scheme

It is a Central Sector Scheme of the Ministry of Petroleum and Natural Gas with an approved outlay of ₹84,084 crore for implementation up to FY 2030–31, focusing on deepwater, ultra-deepwater and frontier offshore hydrocarbon exploration.

**Need:** Offshore exploration is highly risky, capital-intensive and technologically complex, with a gestation period of five to ten years. A single deepwater exploratory well may cost \$125–150 million, while existing oil and

gas fields are witnessing an annual natural production decline of about 6–7%.

**Objective:** The scheme aims to de-risk offshore exploration, attract private investment, accelerate domestic oil and gas production, reduce import dependence, strengthen energy security and advance the goals of Viksit Bharat, Make in India and Atmanirbhar Bharat.

**Features:** It provides for the acquisition, processing and interpretation of seismic data, along with accelerated deepwater, ultra-deepwater and scientific drilling in frontier offshore basins.

**Infrastructure:** It includes common offshore production and evacuation infrastructure, an integrated Oil and Gas Manufacturing and Services Zone, digital programme management, capacity building, technology adoption, stakeholder engagement and

international cooperation.

**Financial Allocation:** Of the total outlay, ₹43,200 crore is allocated for drilling 60 deepwater exploratory wells, ₹28,534 crore for seismic data acquisition, ₹10,000 crore for common offshore infrastructure hubs and ₹2,000 crore for oil and gas manufacturing and services zones.

**Implementation and Risk Sharing:** The government will support up to 50% of the eligible drilling cost, subject to a maximum of ₹675 crore per well, to reduce exploration risks and encourage sustained public and private investment in offshore basins such as Krishna-Godavari, Cauvery, Mahanadi and the Andaman region.

**Current Progress:** ONGC plans to drill 150 deepwater wells over seven years and

assess nearly 5,600 Million Metric Tonnes of Oil Equivalent (MMTOE) of potential resources, while Oil India is exploring the Andaman region and has reported natural gas in Vijayapuram-2 and Vijayapuram-3.

**Production and Reserve Targets:** Subject to successful exploration, the scheme seeks to add over 600 MMTOE of reserves, raise annual domestic oil and gas production from about 62 MMTOE to 80 MMTOE and expand the resource base from 1.6 billion to 2.2 billion tonnes of oil equivalent.

**Significance:** The scheme could reduce crude oil imports by nearly ₹1 lakh crore annually, generate large-scale employment, strengthen indigenous manufacturing and develop a globally competitive offshore technology and services ecosystem.

## 3RD INDIA-AUSTRALIA ANNUAL LEADER'S SUMMIT

### Why in news?

The Prime Minister of India visited Australia for the 3rd India-Australia Annual Leaders' Summit (July 2026). The visit focused on deepening cooperation in the Indo-Pacific, securing energy and critical technology supply chains, defense collaboration, and building a durable strategic partnership.

### Key Outcomes of the Summit:

**Defence & Maritime Security:** Renewed the defence framework through the Joint Declaration on Defence and Security Cooperation, focusing on interoperability, cybersecurity, defence industry and cooperation in UNCLOS, ASEAN and IORA. The Maritime Security Collaboration Roadmap and ICG-Australia MBC MoU will strengthen information-sharing, maritime law enforcement and operational coordination.

**Energy & Nuclear:** Operationalised the 2014 Civil Nuclear Agreement, enabling Australian uranium supplies to India. Both sides also adopted a Joint Statement on Energy Security and launched a rooftop solar training academy

to train 2,000 women and youth.

**Technology & Critical Minerals:** Launched PACTS to strengthen cybersecurity, critical technologies and resilient supply chains. The ACITI trilateral partnership will promote cooperation in emerging technologies.

**Investment:** Australian Super committed an additional AUD 500 million to NIIF, taking its total India investments to AUD 3.3 billion.

**Education & Research:** Approved campuses of Flinders University in Bengaluru and Victoria University in Gurugram. IP Australia gained access to India's Traditional Knowledge Digital Library (TKDL) to prevent misappropriation of traditional knowledge.

**Space:** Australia supported Gaganyaan through a temporary space-tracking facility in the Cocos (Keeling) Islands.

**Culture & Sports:** Australia announced the return of three Indian artefacts and launched a Sports Collaboration Roadmap, including cooperation in Olympic and Para-sports.

**Digital Governance:** India welcomed Australia's move to restrict social-media

access for minors.

### **India–Australia Relations:**

#### **Major Challenges:**

**Strategic divergences:** Australia is closely aligned with the US and AUKUS, while India follows strategic autonomy. Their security priorities also differ, with Australia focused more on the Western Pacific and India facing both continental and maritime threats. Australia's economic dependence on China adds complexity.

**Trade barriers:** Progress towards CECA remains slow due to disagreements over agriculture and dairy access and Australia's stringent SPS standards. India's dependence on Australian coal and LNG contributes to trade imbalance.

**Critical minerals:** Despite Australia's rich reserves of lithium, cobalt and rare earths, limited processing capacity and dependence on China-linked refining chains constrain supply-chain diversification.

**Diaspora-related tensions:** Khalistani separatist activities, temple vandalism and

attacks on Indian institutions have periodically strained relations.

### **Way Forward**

**Deepen economic integration:** Finalise a balanced CECA, address SPS barriers through mutual recognition, and protect vulnerable Indian sectors through safeguards.

**Secure critical minerals:** Invest jointly in mineral processing and refining, leveraging the Quad Critical Minerals Initiative and PACTS.

**Expand defence cooperation:** Implement the JDDSC and MSCR through greater maritime awareness, military interoperability, joint R&D and defence co-production.

**Strengthen energy security:** Build long-term uranium supply arrangements under the India–Australia Civil Nuclear Agreement.

**Address security concerns:** Enhance intelligence and law-enforcement cooperation against extremism and separatist activities while protecting diplomatic institutions and legitimate freedom of expression.



# SOCIAL JUSTICE

What's Inside?

1. SHE LEAPS
2. VEPDEGESTRANT
3. NATIONAL LIST OF ESSENTIAL MEDICINES
4. INTEGRATED HEALTH INFORMATION PLATFORM 2.0 (IHIP 2.0)
5. AYUSHMAN BHARAT DIGITAL MISSION (ABDM)
6. TRIBEX: A DIGITAL LEARNING PLATFORM
7. NATIONAL ACADEMIC DEPOSITORY (NAD)
8. AISHE SURVEY 2022-23 AND 2023-24
9. SCHEME FOR ECONOMIC EMPOWERMENT OF DNTS (SEED)
10. DRUGS RULES 1945: HIGH ALCOHOL-CONTAINING DRUGS
11. JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0
12. NATIONAL HEALTH INTERVENTION CODES (NHIC)
13. I-DRONE INITIATIVE
14. LAKHPATI DIDI SCHEME
15. SKILL INDIA MISSION
16. PRAGYATA GUIDELINES
17. PM-YASASVI UMBRELLA SCHEME
18. NATIONAL SICKLE CELL ANAEMIA ELIMINATION MISSION (NSCAEM)
19. VATSALYA PORTAL
20. STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP)
21. PARAKH RASHTRIYA SARVEKSHAN
22. TB ELIMINATION MISSION

## SHE LEAPS

### Why in News?

SHE-LEAPS was launched on June 29, 2026, at the Rashtriya Gramin Vikas Sammelan in New Delhi.



The initiative is designed to strengthen the Lakhpati Didi mission by providing end-to-end tracking of income growth and enterprise performance, supporting the

government's target of increasing the number of Lakhpati Didis from 3 crore to 6 crore women.

### About SHE LEAPS

SHE-LEAPS (Self-Help Entrepreneur-Livelihoods and Enterprise Application for Prosperity and Sustainability) is a digital

platform developed by the Digital India Corporation and implemented under the LokOS platform.

**Purpose:** It empowers women in rural Self-Help Groups (SHGs) by providing a unified platform for enterprise creation, performance tracking, and financial inclusion.

**Functionality:** The platform supports both farm and non-farm rural enterprises by capturing real-time operational data across sectors and tracking the entire livelihood journey, from profile creation to enterprise growth.

**Implementation:** It will be implemented in 34 States and UTs to assist State Rural Livelihood Missions.

**Services:** The mobile application offers services such as Producer Group Systems, Entrepreneur & Enterprise Profiles, Producer Enterprise Systems, Cluster Management (IFC), Incubator Support Systems, and Custom Hiring Centers.

## VEPDEGESTRANT

### Why in News?

The U.S. FDA recently granted approval to Vepdegestrant, marking a milestone as the inaugural therapy to employ PROteolysis TArgeting Chimera (PROTAC) technology.

Departing from traditional methods that merely inhibit protein activity, this innovative class of "protein degraders" leverages the intrinsic waste management mechanisms of cells to systematically dismantle and eradicate oncogenic proteins.

### Addressing Resistance in Breast Cancer

The treatment is indicated for adult patients suffering from advanced or metastatic breast

cancer characterized as ER-positive and HER2-negative, specifically those harboring an ESR1 mutation.

**Therapeutic Context:** While endocrine therapies are the standard initial response for ER-positive cases, many patients eventually encounter treatment resistance.

**Mechanism:** This resistance is frequently driven by ESR1 mutations that fuel tumor growth; Vepdegestrant effectively neutralizes this by degrading the compromised estrogen receptors.

### Clinical Efficacy

Findings from the Phase 3 VERITAC-2 trial indicate that the drug provides a substantial clinical advantage over fulvestrant, the current

therapeutic standard, by lowering the relative risk of mortality or disease advancement by 43%.

### Patient-Centric Delivery

The therapy offers a significant improvement

in patient experience by transitioning from the painful intramuscular injections required by previous standards to a convenient once-daily oral tablet.

## NATIONAL LIST OF ESSENTIAL MEDICINES

### Why in the News?

An advocacy coalition known as the Working Group on Access to Medicines and Treatments has issued an urgent appeal to the Indian government to revise the National List of Essential Medicines (NLEM).

### About:

**Outdated List:** India's current NLEM was last notified in 2022 and contains 384 medicines. In contrast, the World Health Organization (WHO) updated its Model List of Essential Medicines in 2023 and 2025, expanding it to 523 medicines.

**Omission of Critical Drugs:** The advocacy group highlighted that several crucial, life-

saving medicines are missing from India's list. This notably includes critical drugs for treating non-communicable diseases like diabetes and cancer (with 17 active cancer-treating agents and four supportive agents reportedly excluded).

### Price Capping and Public Availability:

Inclusion in the NLEM is critical because the National Pharmaceutical Pricing Authority (NPPA) enforces a strict price cap on these drugs.

**Constitutional Concerns:** The advocacy group argues that delaying the inclusion of these newer drugs denies affordable access to millions of citizens and has constitutional implications regarding the Right to Life.

## INTEGRATED HEALTH INFORMATION PLATFORM 2.0 (IHIP 2.0)

### Why in news?

In July 2026, IHIP 2.0 is being actively leveraged to enhance real-time digital disease surveillance, supporting India's transition toward a comprehensive "One Health" approach.

**About:** IHIP 2.0 is an advanced, web-based disease surveillance system developed by the Ministry of Health and Family Welfare. Serving as the next-generation upgrade to the Integrated Disease Surveillance Programme (IDSP), it tracks 33 diseases (expanded from the earlier 18) and provides near-real-time, case-based data from the grassroots level to the central government.

### Key Features:

**Real-time reporting:** Utilizes mobile applications for immediate data entry by grassroots healthcare workers.

**Advanced Analytics:** Incorporates Geographic Information System (GIS) enabled dashboards for advanced data modeling and outbreak prediction.

**Geo-tagging:** Maps health facilities and disease outbreaks accurately to deploy targeted medical responses.

## AYUSHMAN BHARAT DIGITAL MISSION (ABDM)

### Why in news?

ABDM's continuous ecosystem expansion in July 2026 highlights its critical role in seamlessly connecting digital health records across public and private hospitals, bringing India closer to universal health coverage.

**About:** ABDM aims to develop the backbone necessary to support an integrated digital health infrastructure. It bridges the gap among different stakeholders of the healthcare ecosystem through digital highways, ensuring secure, interoperable, and consent-based access to health data.

### Core Pillars:

**Ayushman Bharat Health Account (ABHA):** A unique 14-digit number to identify individuals, authenticate them, and thread their health records seamlessly.

**Healthcare Professionals Registry (HPR):** A comprehensive repository of all healthcare professionals delivering services across both modern and traditional systems of medicine.

**Health Facility Registry (HFR):** A centralized database encompassing all health facilities, including hospitals, clinics, diagnostic labs, and pharmacies.

## TRIBEX: A DIGITAL LEARNING PLATFORM

### Why in news?

Ministry of Tribal Affairs (MoTA) launched TribeX, a first-of-its-kind digital learning initiative aimed at documenting, preserving, and promoting India's tribal cultural heritage.

**About:** TribeX serves as an integrated digital ecosystem and knowledge repository. It bridges traditional knowledge systems with contemporary academic frameworks by offering structured learning modules, ethnographic documentation, and scholarly research on tribal art, textiles, and culture.

### Platform Highlights:

**Academic Programs:** Offers five UGC-recognized hybrid diploma courses, including Tribal Language (Santali/Ol Chiki) and Museology, in partnership with Sampurnanand Sanskrit University.

**Livelihood Linkages:** Integrates market access tools to support the commercialization of authentic tribal products, enhancing tribal entrepreneurship and economic sustainability.

**Digital Repository:** Archives audio-visual recordings, photographs, and oral histories to safeguard cultural integrity for future generations.

## NATIONAL ACADEMIC DEPOSITORY (NAD)

### Why in news?

The push for seamless student mobility in July 2026 places NAD at the forefront of digital educational reforms, enabling instant verification of academic credentials through DigiLocker integrations.

### About:

NAD is a 24/7 online storehouse of all

academic awards (certificates, degrees, diplomas, and mark sheets) digitally lodged by educational institutions. It eliminates the risk of losing physical certificates, curbs the circulation of fake degrees, and ensures safe, transparent storage.

**Integration with Academic Bank of Credits (ABC):**

**Credit Mobility:** NAD works in tandem with the ABC to digitally store academic credits earned by students across various recognized Higher Education Institutions (HEIs).

**Flexible Learning:** This ecosystem directly

facilitates the National Education Policy (NEP) 2020 goal of allowing multiple entry and exit points in higher education.

## AISHE SURVEY 2022-23 AND 2023-24

### Why in news?

In July 2026, the Ministry of Education published the latest All India Survey on Higher Education (AISHE) reports, revealing historic milestones in university enrolments, STEM participation, and gender parity.

### About:

The AISHE report provides a comprehensive snapshot of India's higher education system. It offers crucial data on institutional growth, student demographics, and disciplinary trends, acting as the primary statistical baseline for national educational policy-making.

enrolment hit a record 4.50 crore, marking a 31.5% growth over the past decade.

**Gross Enrolment Ratio (GER):** The overall GER reached 30.0, aligning with the upward trajectory required to hit the NEP 2020 targets.

**Gender Parity:** The Gender Parity Index stands at 1.08, remaining above 1.0 for the seventh consecutive year. Female GER (31.2) consistently outpaces male GER (28.9).

**STEM Growth:** Total enrolment in Science, Technology, Engineering, and Mathematics crossed 1.02 crore, with women comprising an encouraging 44% of these students.

### Key Findings:

**Record Enrolment:** Total higher education

## SCHEME FOR ECONOMIC EMPOWERMENT OF DNTS (SEED)

### Why in news?

In July 2026, the Ministry of Social Justice and Empowerment reviewed the implementation and fund disbursement of the SEED scheme for marginalized tribes.

### About:

The SEED scheme is designed for the economic and social empowerment of De-notified, Nomadic, and Semi-Nomadic Tribes (DNTs). These communities have historically faced destitution and lack access to private land or mainstream support. The scheme targets families with an annual income of Rs. 2.50 lakh or less.

### Key Components:

**Educational Empowerment:** Provides good quality coaching for competitive exams and professional courses.

**Health Coverage:** Facilitates health insurance through the National Health Authority (NHA).



**Housing:** Offers financial assistance to build homes under the Pradhan Mantri Awas Yojana (PMAY).

**Livelihoods:** Supports institution building at the community level in association with the National Rural Livelihood Mission (NRLM).

## DRUGS RULES 1945: HIGH ALCOHOL-CONTAINING DRUGS

### Why in news?

In July 2026, the Government amended the Drugs Rules, 1945, to mandate licenses and prescription-only sales for medicinal formulations containing over 12% ethyl alcohol.

### About:

Previously, certain aromatic preparations and medicinal products were exempted from licensing under Schedule K. To address concerns of misuse and intoxication, formulations exceeding 12% alcohol in quantities above 30 mL have been shifted to Schedule H1. This means they now require a

valid license to sell and can only be dispensed against a Registered Medical Practitioner's prescription.

### Significance:

Strengthens regulatory oversight and ensures supply only through regulated pharmaceutical chains.

Reduces the risk of diversion, dependence, and accidental ingestion, especially in vulnerable groups.

Ensures continued availability for legitimate therapeutic use while maintaining strict record-keeping.

## JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0

### Why in news?

The Ministry of Jal Shakti intensified the JSJB 2.0 campaign in July 2026, integrating it with the "Catch the Rain" initiative to accelerate grassroots water conservation.

### About:

The JSJB initiative operates on the principle of community mobilization (Jan Bhagidari) to build sustainable, low-cost rainwater harvesting structures. By leveraging corporate social responsibility (CSR) funds, community donations, and individual contributions, the program aims to boost groundwater levels across water-stressed districts.

### Focus Areas:

Construction of localized structures like recharge shafts, pits, and borewells using locally available materials.  
Press Release Page | Press Information Bureau

Inter-sectoral convergence to maximize the impact of water conservation efforts.  
Press Release Page | Press Information Bureau

Building climate-resilient and water-secure rural communities.  
[jsjb.mowr.gov.in](http://jsjb.mowr.gov.in)



Jal Sanchay Jan Bhagidari.

## NATIONAL HEALTH INTERVENTION CODES (NHIC)

### Why in news?

In July 2026, efforts accelerated to integrate the National Health Intervention Codes (NHIC) for Ayurveda, Siddha, and Unani (ASU) systems into India's digital health infrastructure.

### About:

NHIC provides a standardized coding framework for medical procedures and interventions. By extending these codes to traditional medicine (ASU), the National Health Authority ensures that alternative medical treatments can be uniformly documented within the Ayushman Bharat Digital Mission (ABDM) ecosystem.

### Benefits:

Standardizes health records, making traditional medical data universally understandable.

Facilitates smoother processing of insurance claims and reimbursements for Ayush treatments.

Enhances interoperability between allopathic and traditional healthcare providers.

### Empowering India's Skill Ecosystem

Why in news? A comprehensive government review in July 2026 highlighted India's life-cycle approach to skilling, aiming to bridge the global talent gap and capitalize on the demographic dividend.

About: With over 62% of the population in

the working-age group, India is reshaping its labor market by integrating education, vocational training, and entrepreneurship. This ecosystem is designed to respond to emerging technological changes, such as automation, artificial intelligence, and green jobs.

### Core Initiatives:

Samagra Shiksha: Introduces skill education and vocational labs directly into school curriculums.

PM-SETU: Upgrades traditional government ITIs into modern, industry-aligned skilling institutions.

AI Readiness: Focuses on digital upskilling to ensure the workforce can adopt and benefit from artificial intelligence.



## I-DRONE INITIATIVE

### Why in news?

In July 2026, the ICMR's i-DRONE initiative achieved new milestones by successfully transporting sensitive biomaterials, including human corneas, reducing transit times drastically.

### About:

Drone Response and Outreach in North East (i-DRONE) was launched by the Indian Council of Medical Research (ICMR) to deliver critical medical supplies across difficult terrains. It utilizes Beyond Visual Line of Sight (BVLOS) technology to bypass traffic

congestion and geographical barriers.

### Healthcare Applications:

Rapid transport of temperature-sensitive vaccines, serums, and blood products during clinical emergencies.

Delivery of diagnostic specimens, such as TB sputum samples, from remote primary healthcare centers.

Overcoming logistical challenges to improve healthcare equity in underserved regions.



## LAKHPATI DIDI SCHEME

### Why in news?

In July 2026, strategic interventions were scaled up across states to meet the enhanced target of creating 3 crore “Lakhpati Didis” under the Day-NRLM.

### About:

The Lakhpati Didi initiative is a livelihood empowerment program aimed at rural women in Self-Help Groups (SHGs). Its primary goal is to ensure that these women achieve a sustainable annual household income exceeding Rs. 1,00,000. The program shifts away from being purely a loan scheme to providing comprehensive entrepreneurial support.

### Pillars of Support:

**Skill Training:** Equips women with skills in both traditional sectors (agriculture, dairy) and modern

enterprises (drone operation, solar tech).

**Financial Linkage:** Provides collateral-free loans, interest subventions, and dedicated viability gap funding.

**Market Access:** Establishes block-level incubation centers (One Stop Facilities) and promotes large-scale Producer Enterprises to improve bargaining power.



Women Empowerment through SHGs.

## SKILL INDIA MISSION

### Why in news?

The Ministry of Skill Development and Entrepreneurship marked the 11th anniversary of the Skill India Mission in July 2026, announcing enhanced integration with AI and green job sectors.

### About:

Launched in 2015, the Skill India Mission aims to empower the country's youth with industry-relevant skills, enhancing employability and promoting entrepreneurship. It operates as an umbrella framework converging various skilling efforts across ministries. The mission focuses on creating a robust institutional framework to bridge the gap between demand and supply of skilled manpower in India.

### Core Components

**Pradhan Mantri Kaushal Vikas Yojana (PMKVY):** The flagship scheme providing short-term training and Recognition of Prior Learning (RPL).



**National Apprenticeship Promotion Scheme (NAPS):** Incentivizes employers to engage apprentices, promoting on-the-job training.

**Jan Shikshan Sansthan (JSS):** Provides vocational training to non-literates, neo-literates, and school dropouts, particularly in rural areas.

## PRAGYATA GUIDELINES

### Why in news?

The Ministry of Education released an updated evaluation of digital learning outcomes in July 2026, mandating strict adherence to the PRAGYATA guidelines for blended and online education models.

### About:

PRAGYATA is an acronym (Plan, Review, Arrange, Guide, Yak/talk, Assign, Track, Appreciate). Formulated by the Ministry of Education, these guidelines provide a comprehensive roadmap for online and digital education for school students. They address

the physical, mental, and emotional health of students during remote learning.

### Core Directives

**Screen Time Caps:** Recommends specific duration limits for online classes based on the age and grade of the student (e.g., maximum 30 minutes for pre-primary).



**Ergonomics and Cyber Safety:** Advises on proper posture during digital learning and provides strict protocols for data privacy and cyber hygiene.

Focuses on bridging the digital divide by offering solutions for students with varying levels of access to digital infrastructure.

## PM-YASASVI UMBRELLA SCHEME

### Why in news?

The application portal for the PM-YASASVI scholarship for the 2026-27 academic year was launched in July 2026, featuring an expanded budget to cover more beneficiaries.

### About:

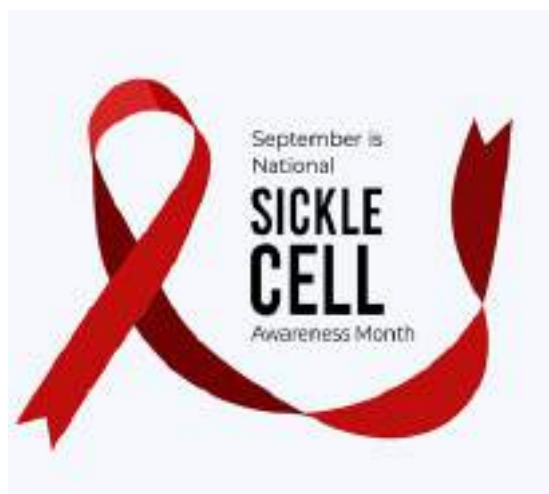
PM Young Achievers Scholarship Award Scheme for Vibrant India (PM-YASASVI) is an umbrella scheme formulated by the Ministry of Social Justice and Empowerment. It provides comprehensive scholarship support from pre-matric to higher education levels for students belonging to Other Backward Classes (OBCs), Economically Backward Classes (EBCs), and Denotified Tribes (DNTs).

### Subtopics: Integrated Schemes

**Pre-Matric and Post-Matric Scholarships:** Financial assistance for school and college education to prevent dropout rates among

vulnerable sections.

**Top Class Education:** Full tuition fee support for meritorious students securing admission in identified top-tier institutions.



**Construction of Hostels:** Provides funding for building hostels for OBC boys and girls to facilitate a conducive learning environment.

## NATIONAL SICKLE CELL ANAEMIA ELIMINATION MISSION (NSCAEM)

### Why in news?

In July 2026, the NSCAEM intensified its targeted screening drives in high-prevalence tribal districts, while Hydroxyurea distribution was actively scaled up at primary health centres.

### About:

Launched in 2023, the mission targets the elimination of sickle cell disease as a public health problem in India by 2047. It

**focuses on a tripartite approach:** generating awareness, conducting universal screening of the 0-40 age group in affected regions, and providing comprehensive care and counseling.

**Subtopics:** Hydroxyurea in NHM Essential Drugs List Hydroxyurea is a vital disease-modifying medication that increases fetal hemoglobin, reducing the frequency of painful crises and the need for blood transfusions.

Its recent inclusion in the National Health Mission (NHM) Essential Drugs List mandates its free and continuous availability at the

grassroots level, drastically lowering out-of-pocket expenditure for patients.

## VATSALYA PORTAL

### Why in news?

In July 2026, the Ministry of Women and Child Development expanded the functionalities of the Vatsalya portal to accelerate the digitization of child protection and adoption records nationwide.

### About:

The portal is an integrated digital platform serving as the backbone of Mission Vatsalya. It is designed to ensure a robust, transparent, and efficient ecosystem for the care, protection, and rehabilitation of children in difficult circumstances.

### Key Objectives

Streamlines child tracking systems, making it easier to locate and rehabilitate missing or abandoned children.

Digitally integrates adoption workflows directly with the Central Adoption Resource Authority (CARA).

Connects child care institutions, juvenile justice boards, and state authorities on a single, monitored grid.

### Mission Vatsalya

Mission Vatsalya (formerly the Integrated Child Protection Scheme) is a Centrally Sponsored Scheme (CSS) aimed at creating a robust safety net for children in difficult circumstances.

It operates under the legislative framework of the Juvenile Justice (Care and Protection of Children) Act, 2015, and the POCSO Act, 2012. The scheme prioritizes family-based, non-institutional care, treating the institutionalization of children strictly as a measure of last resort.



## STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP)

### Why in news?

A mid-year review of SVEP in July 2026 highlighted a massive surge in non-farm rural enterprises, successfully pushing block-level economic independence.

### About:

SVEP is a sub-scheme of the Deendaya Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM). It supports the rural poor in setting up enterprises at the village



level in non-agricultural sectors, aiming to foster self-employment, wealth creation, and local economic growth.

### Support Mechanisms

Delivers comprehensive business skills training and mentorship to aspiring rural entrepreneurs.

Facilitates easy and reliable access to finance through the established network of Self-Help Groups (SHGs).

Establishes Block Resource Centres (BRC) to act as local hubs for sustained business advisory services.

## PARAKH RASHTRIYA SARVEKSHAN

### Why in news?

In July 2026, the foundational learning outcome data from the PARAKH Rashtriya Sarvekshan was evaluated by the Ministry of Education to redefine systemic school assessments.

### About:

PARAKH (Performance Assessment, Review, and Analysis of Knowledge for Holistic Development) operates as an independent constituent body under NCERT. The Rashtriya Sarvekshan succeeds the National Achievement Survey (NAS) as India's primary

large-scale educational assessment, aligning with the principles of the National Education Policy (NEP) 2020.

### Core Focus

Establishes standardized evaluation guidelines and norms for all recognized school boards across India to ensure parity.

Continuously monitors educational achievement across foundational, preparatory, middle, and secondary stages.

Shifts the evaluation paradigm from rote memorization toward critical thinking and competency-based learning.

## TB ELIMINATION MISSION

### Why in news?

In July 2026, the Ministry of Health fast-tracked active case-finding campaigns and expanded nutritional support to consolidate gains toward India's ambitious TB elimination target.

### About:

The National Tuberculosis Elimination Programme (NTEP) drives India's goal to eradicate TB by 2025, strategically positioning the country five years ahead of the global Sustainable Development Goal (SDG) target of 2030. The mission relies on early diagnosis, strict treatment regimens, and community involvement.

### Major Interventions

The Ni-kshay Poshan Yojana provides direct benefit transfers (DBT) directly to TB patients

to ensure adequate nutritional support during treatment.

The TB Mukh Panchayat initiative empowers local governance bodies to drive localized awareness, remove social stigma, and support patients.

Implementation of shorter, oral, and more effective treatment regimens to combat rising cases of drug-resistant TB.



# Economic Development & Agriculture



What's Inside?

1. INDIAN SEMICONDUCTOR MISSION 2.0
2. INSURANCE SURETY BONDS FOR MMDR COAL BLOCKS
3. VB-GRAM G: FLOOR WAGE OF ₹300 PER DAY
4. BHARAT AUDYOGIK VIKAS YOJANA (BHAVYA)
5. MATCHA TEA INDIGENISATION IN INDIA
6. FERTILIZER CRISIS & THE STRAIT OF HORMUZ
7. E20 ETHANOL BLENDING PROGRAMME
8. INDIA'S ECONOMIC PROSPECTS POST-WEST ASIAN CRISIS
9. INTERNATIONALISATION OF HIGHER EDUCATION: IIM-B IN INDONESIA
10. UDISE+ 2025–26 REPORT
11. PERFORMANCE GRADING INDEX (PGI) 2.0 FOR STATES AND UTS
12. MISSION FOR COTTON PRODUCTIVITY (KAPAS KRANTI)
13. PM-SETU ROLLOUT
14. INTEGRATION OF ZED CERTIFICATION, DIGITAL MARKET ACCESS, AND MSME INITIATIVES
15. TRANSFORMATION OF POWERLOOM SERVICE CENTRES INTO ITADCS
16. SUB-MISSION ON AGRICULTURAL MECHANIZATION (SMAM)
17. PM-SETU (PRADHAN MANTRI SKILLING & EMPLOYABILITY TRANSFORMATION THROUGH UPGRADED ITIS)
18. CIRCULAR ECONOMY ACROSS INDIA'S TEXTILE VALUE CHAIN & WEAVE THE FUTURE 4.0
19. OVERSEAS FOREIGN CURRENCY BORROWINGS (OFCBS)

20. MOBILE PHONE MANUFACTURING SCHEME (MPMS)
21. NATIONAL INVESTMENT POLICY FOR UREA-2026 (NIPU-2026)
22. COAL EXCHANGE RULES, 2026 & COAL CONTROLLER ORGANIZATION (CCO)
23. UDAN 2.0 (REGIONAL CONNECTIVITY SCHEME EXPANSION)
24. CODEX STANDARDS FOR LARGE CARDAMOM, CORIANDER, AND VANILLA
25. OPERATION PARIVARTAN
26. HYDROGEN FUEL CELL TRAIN (INDIAN RAILWAYS)
27. WHITE REVOLUTION 2.0 & SAHKAR SE SAMRIDDHI
28. COKING COAL DESIGNATION AS A CRITICAL MINERAL
29. NATIONAL COAL GASIFICATION MISSION (TARGET 100 MMT BY 2030)
30. WTO AGREEMENT ON FISHERIES SUBSIDIES: INDIA'S ACCEPTANCE
31. LITHIUM DEPOSITS: "INDIA'S WHITE GOLD"
32. NATIONAL NUCLEAR ENERGY MISSION (SMR FOCUS)
33. AAROH REPORT (SUSTAINABLE RURAL LIVELIHOODS)
34. PRADHAN MANTRI MATSYA SAMPADA YOJANA (PMMSY) & BLUE REVOLUTION

35. ONE DISTRICT ONE PRODUCT (ODOP), DISTRICTS AS EXPORT HUBS & PM EKTA MALLS
36. PM FORMALISATION OF MICRO FOOD PROCESSING ENTERPRISES (PMFME) SCHEME
37. REVAMPED PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)
38. MISSION FOR INTEGRATED DEVELOPMENT OF HORTICULTURE (MIDH): OPERATIONAL GUIDELINES
39. BHARAT PASHUDHAN DATABASE & NATIONAL LIVESTOCK MISSION
40. INDIGENOUS POTASH PRODUCTION UNDER NUTRIENT BASED SUBSIDY (NBS)
41. PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)
42. APEDA'S VALUE-CHAIN PROMOTION & FIRST MANGO SHIPMENTS
43. FOUR-PILLAR STRATEGY TO REVITALISE INDIA'S SHIPBUILDING SECTOR
44. INDIA'S TOY EXPORTS SURGE & DOMESTIC MANUFACTURING REBOUND
45. NATIONAL TECHNICAL TEXTILES MISSION (NTTM)
46. PM E-DRIVE SCHEME (PM ELECTRIC DRIVE REVOLUTION IN INNOVATIVE VEHICLE ENHANCEMENT)
47. STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP)

## INDIAN SEMICONDUCTOR MISSION 2.0

### Why in News?

In July 2026, the Union Cabinet approved the India Semiconductor Mission 2.0 (ISM 2.0) with a total budgetary outlay of ₹1,27,500 crore.

The new phase marks a strategic policy shift from foundational capacity creation (under ISM 1.0) toward building a comprehensive, end-to-end semiconductor ecosystem encompassing indigenous chip design and equipment manufacturing.

### About

The India Semiconductor Mission (ISM) is the designated nodal agency under the Ministry of Electronics and Information Technology (MeitY) responsible for driving India's semiconductor and display ecosystem strategies.

While ISM 1.0 successfully initiated domestic fabrication and packaging units, ISM 2.0 focuses

on achieving deep technological self-reliance, intellectual property (IP) creation, and securing the broader supply chain.

The programme integrates start-ups, academia, and global enterprises to reduce import dependencies and position India as a trusted node in the global semiconductor network by 2035.

### Significance

**Technological Sovereignty:** Reduces strategic vulnerability by cutting reliance on foreign IPs and critical equipment imports for defense, telecommunications, and industrial automation.

**Supply Chain Resilience:** Localization of specialty chemicals, materials, and machinery plugs the biggest structural gaps exposed during earlier phases, shielding India from geopolitical shocks.

**Economic Growth & Employment:** Expected to accelerate

large-scale capital investments, foster a vibrant start-up ecosystem, and generate high-quality employment for specialized engineers.

## Challenges

**Capital and Infrastructure Intensity:** Semiconductor fabrication demands massive, sustained investments and uninterrupted access to highly pure resources like water and electricity.

**Technological Complexity:** Developing indigenous full-stack IP and precision manufacturing equipment requires long-term, high-risk R&D, an area where India currently lags behind established global leaders.

**Severe Talent Deficit:** The industry faces an estimated shortage of nearly three lakh professionals with specific expertise in advanced packaging and cleanroom operations.

## Way Forward

**Strengthen Industry-Academia Linkages:** Policies must continuously incentivize collaborative R&D to translate academic research into commercial semiconductor IP.

**Ensure Policy Stability:** Long-term tax stability, efficient transfer pricing mechanisms, and strong IP protection laws are essential to retain global investor confidence.

**Strategic Global Partnerships:** While

promoting indigenization, India must actively collaborate with global technology leaders for technology transfers and securing critical raw material supply chains.

## The Six Pillars:

**Pillar 1 — Full-Stack IP & Fabless Design:** Direct venture funding, EDA tool access, and design subsidies to create proprietary Indian silicon IPs.

**Pillar 2 — Indigenous Semiconductor Equipment:** Subsidies for manufacturing precision photolithography peripherals and etching tools domestically.

**Pillar 3 — Specialized Materials & High-Purity Chemicals:** Fiscal support for plants producing ultra-pure specialty gases and semiconductor-grade silicon wafers.

**Pillar 4 — Commercial Fabs & Advanced Nodes:** 40% CapEx support on a pari-passu basis for CMOS fabs, targeting sub-28nm fabrication lines.

**Pillar 5 — Advanced Packaging (ATMP / OSAT):** Subsidies for 3D wafer-level packaging and chiplet integration.

**Pillar 6 — Talent Generation & Cleanroom Infrastructure:** Upgrading university laboratories into operational cleanrooms to train industry-ready semiconductor engineers.



## Prelims Facts

**Total Outlay:** ₹1,27,500 crore.

**Nodal Agency:** India Semiconductor Mission (ISM), under the Ministry of Electronics and Information Technology (MeitY).

**Subsidies:** 40% CapEx subsidy for CMOS

Fabs; 35% for compound semiconductors and display fabs.

**Associated Scheme:** Design Linked Incentive (DLI) Scheme (supports semiconductor design start-ups).

# INSURANCE SURETY BONDS FOR MMDR COAL BLOCKS

## Why in News?

In July 2026, the Ministry of Coal officially implemented the Coal Blocks Allocation (Amendment) Rules, 2026.

The rules permit coal block allottees under the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957, to submit Insurance Surety Bonds as performance security instead of Performance Bank Guarantees (PBGs).

## About

An Insurance Surety Bond is a tripartite financial agreement where an insurer (surety) guarantees that the coal mine allottee (principal) will fulfill obligations owed to the government authority (obligee).

The amendment allows IRDAI-licensed general insurers to issue these instruments for performance security and mine closure compliance.

It addresses the long-standing issue of working capital blockage caused by bank guarantees, aligning coal block governance with broader public procurement reforms.

## Significance

Unlocks massive working capital for mine developers, as surety bonds do not require heavy collateral or cash margins like commercial bank guarantees.

Boosts private sector participation and bidding aggression in commercial coal mine auctions.

Diversifies the financial instruments available in India's mining and infrastructure sectors.

## Challenges

Developing standard underwriting capacities and risk assessment expertise among domestic general insurers.

Potential disputes regarding claim settlement timelines between the Coal Ministry and insurance providers.

## Prelims Facts

**Governing Act:** Mines and Minerals (Development and Regulation) Act, 1957 (specifically for MMDR blocks).

**Regulatory Body for Insurers:** Insurance Regulatory and Development Authority of India (IRDAI).

**Nodal Ministry:** Ministry of Coal.

# VB-GRAM G: FLOOR WAGE OF ₹300 PER DAY

## Why in News?

In July 2026, the Union Government notified a nationwide statutory floor wage of ₹300 per day under the Viksit Bharat-Guarantee for Rozgar and Ajeevika Mission (Gramin) (VB-GRAM G) framework.

The notification mandated immediate upward wage revisions across 21 States and Union Territories that were previously paying below this baseline.

## About

VB-GRAM G is the restructured national rural employment guarantee framework designed to provide livelihood security, seasonal safety nets, and climate-resilient community asset creation.

The uniform floor wage establishes a national income floor beneath which no state or UT rural public works program can operate.

The wage mechanism links rural work compensation to regional Consumer Price Index metrics while guaranteeing a baseline standard of living.

### Social and Economic Significance

Prevents distress migration from economically lagging regions by providing remunerative local work opportunities.

Mitigates inter-state wage disparities and ensures minimum nutritional and basic living standards for rural unorganised labour.

Directly injects disposable income into rural households, stimulating rural consumption demand.

### Challenges

Fiscal burden on the central and state exchequers due to higher wage liabilities.

Ensuring the timeliness of wage transfers directly to Aadhaar-linked bank accounts without biometric friction.

### Prelims Facts

Mandated Minimum Floor Wage: ₹300 per day.

Beneficiaries: Rural households demanding unskilled manual work.

Nodal Ministry: Ministry of Rural Development.

## BHARAT AUDYOGIK VIKAS YOJANA (BHAVYA)

### Why in News?

In July 2026, the Department for Promotion of Industry and Internal Trade (DPIIT) completed the first round of evaluation under the ₹33,660 crore Bharat Audyogik Vikas Yojana (BHAVYA).

The scheme operationalises a competitive selection model for setting up 100 modern industrial parks across India to boost high-tech manufacturing and exports.

### About

BHAVYA is a Central Sector Scheme implemented through the National Industrial Corridor Development and Implementation Trust (NICDIT).

It provides financial assistance (up to ₹1 Crore per acre for State/CPSE-led projects and up to ₹50 Lakh per acre for PPP projects) to develop plug-and-play industrial infrastructure.

Unlike conventional industrial estates, BHAVYA parks mandatorily integrate testing facilities (BIS, Export Inspection Agency, FSSAI) and incubation zones for deep-tech startups and

R&D units.

### Economic and Export Significance

Fast-tracks export clearance by co-locating Export Inspection Agency (EIA) certification centres and Bureau of Indian Standards (BIS) labs within the parks.

Enhances domestic value addition and global supply chain integration by bridging the gap between innovative startups and large-scale manufacturing facilities.

Fosters competitive federalism by awarding central equity and infrastructure support based on state readiness, land contiguousness, and logistics connectivity.

### Prelims Facts

**Total Financial Outlay:** ₹33,660 Crore.

**Nodal Body:** DPIIT (Ministry of Commerce and Industry) via NICDIT / NICDC.

**Target: 100 industrial parks across states.**

**Minimum Land Requirement:** 100 contiguous acres for regular states; 25 contiguous acres for

hilly, North-Eastern, and special category states.

## MATCHA TEA INDIGENISATION IN INDIA

### Why in News?

In July 2026, the Chota Tingrai Tea Estate in Tinsukia district, Assam, became the first tea estate in India to commercially produce and auction Japanese-style Matcha tea.

The inaugural batch was successfully sold at the Guwahati Tea Auction Centre (GTAC) at ₹3,000 per kg.

### About

Matcha is a finely ground powder of specially grown and processed green tea leaves, traditionally cultivated in Japan.

Unlike regular green tea where leaves are steeped in hot water and discarded, Matcha powder is whisked directly into liquid and consumed entirely.

Production requires shade cultivation (covering tea bushes 3–4 weeks prior to harvest), which suppresses the conversion of the amino acid L-theanine into bitter catechins, giving Matcha its characteristic umami flavour and vibrant chlorophyll-rich green colour.

### Matcha green tea and preparation whisk.

**Agronomic and Economic Significance**

**Value Addition:** Offers high-margin realization (up to ₹3,000/kg or more) for Indian tea planters currently facing falling real prices for conventional CTC black tea.

**Export Diversification:** Enables India—the world's 2nd largest tea producer—to tap into the

growing global specialty tea and nutraceutical market.

**Technology Transfer:** Represents successful bilateral agro-processing collaboration between Indian tea gardens and Japanese agronomists/machinery providers.

### Prelims Facts

**Scientific Name:** *Camellia sinensis* (Family: Theaceae).

**Processing Step:** Shading → Steaming → Drying (Tencha) → Stone/Milling to fine powder.

**First Commercial Producer in India:** Chota Tingrai Tea Estate, Tinsukia, Assam.

**Global Context:** Japan and China are traditional producers; India is the 2nd largest tea producer and largest tea consumer globally.



## FERTILIZER CRISIS & THE STRAIT OF HORMUZ

### Why in News?

In July 2026, rising geopolitical friction in

West Asia triggered maritime transit disruptions and elevated war-risk freight insurance across the Strait of Hormuz.

The disruption escalated concerns over India's supply chain for imported urea, di-ammonium phosphate (DAP), and liquefied natural gas (LNG) feedstock used in domestic fertilizer production.

## About

The Strait of Hormuz is a critical maritime choke point connecting the Persian Gulf with the Gulf of Oman and the Arabian Sea.

Bordered by Iran to the north and Oman and the United Arab Emirates (UAE) to the south, it handles nearly 20% to 25% of global liquefied natural gas (LNG) and a substantial volume of international crude and petrochemical movements.

For India, West Asia serves as the principal supplier of rock phosphate, phosphoric acid, finished urea, and LNG—the primary feedstock required for the Haber-Bosch ammonia synthesis process.

Strait of Hormuz maritime choke point.

## Impact on India

**Input Cost Escalation:** Surge in spot LNG prices directly raises the cost of domestic urea production, expanding the Centre's nutrient-based subsidy (NBS) and urea subsidy burden.

**Kharif Sowing Vulnerability:** Any delay in DAP and MoP (Muriate of Potash) shipments impacts peak fertilizer application schedules during the monsoon crop cycle.

Supply Concentration Risk: India imports

roughly 20%–30% of its finished urea and a major portion of raw phosphatic inputs from West Asian trade channels.

## Way Forward

Accelerate overseas joint ventures and equity buyback agreements in resource-rich nations outside West Asia (e.g., North Africa, Canada, and Russia).

Expand coal gasification-based urea plants (such as the Talcher unit) and scale the adoption of nano-fertilizers and bio-fertilizers under the PM-PRANAM scheme.

## Prelims Facts

**Choke Point:** Strait of Hormuz (connects Persian Gulf and Gulf of Oman).

**Littoral States:** Iran, Oman (Musandam Peninsula), UAE.

**Critical Feedstock:** Natural gas / LNG accounts for nearly 70%–80% of the production cost of indigenous urea.



# E20 ETHANOL BLENDING PROGRAMME

## Why in News?

Official data compiled in July 2026 revealed

that India sustained a 20% ethanol blending run-rate (E20) nationwide across the 2025–26 supply year.

The focus has now transitioned from capacity creation to long-term economic sustainability, grain diversion limits, and flex-fuel vehicle adoption.

## About

The Ethanol Blended Petrol (EBP) Programme is coordinated by the Ministry of Petroleum and Natural Gas (MoPNG) to reduce crude import dependence, lower vehicular emissions, and boost farm incomes.

India advanced its target of achieving 20% ethanol blending in petrol from 2030 to 2025–26.

The programme utilizes first-generation (1G) feedstocks (sugarcane juice, B-heavy molasses, damaged food grains, surplus maize) and second-generation (2G) cellulosic agricultural residues.

## India's ethanol blending policy milestones.

### Key Features

**Feedstock Diversification:** Differential pricing models incentivize grain-based ethanol (maize, damaged grains) alongside traditional sugarcane-based routes.

**Financial Incentives:** Interest subvention schemes for distilleries and dedicated tripartite agreements between Oil Marketing Companies (OMCs), banks, and ethanol producers.

### Macroeconomic Savings:

Cumulative foreign exchange savings exceeding ₹1.8 lakh crore and crude import substitution over 300 lakh metric tonnes.

## Concerns

**Food vs. Fuel Trade-off:** High allocation of food grains (maize and rice) creates inflationary pressure in poultry and animal feed sectors.

**Water Table Depletion:** Sugarcane and rice are water-intensive crops, conflicting with sustainable water management in drought-prone belts.

**Logistics & Material Compatibility:** Ethanol is hygroscopic (absorbs moisture) and corrosive, requiring corrosion-resistant pipelines, rubber seals, and dedicated storage infrastructure.

## Prelims Facts

**Nodal Ministry:** Ministry of Petroleum and Natural Gas (MoPNG).

**Target Blend:** 20% Ethanol blended with petrol (achieved nationwide).

**Primary Feedstocks:** Sugarcane molasses, sugar syrup, maize, damaged food grains, broken rice.



# INDIA'S ECONOMIC PROSPECTS POST-WEST ASIAN CRISIS

## Why in News?

In July 2026, macroeconomic reviews highlighted India's external sector resilience and

vulnerabilities in the wake of prolonged shipping disruptions and energy market realignments in West Asia.

## About

The West Asian region is central to India's economic security, serving as the source for over 50% of its crude oil and petroleum gas imports, hosting nearly 9 million Indian diaspora workers, and generating significant annual remittances.

Geopolitical instability impacts India through trade route detours (via the Cape of Good Hope), surging container freight rates, elevated war-risk insurance, and imported inflation.

## Economic Significance

**Current Account Deficit (CAD):** Every \$10/ barrel rise in global crude prices widens India's CAD by approximately 0.4%–0.5% of GDP.

**Inward Remittances:** Inward remittances from Gulf Cooperation Council (GCC) economies remain a crucial buffer for India's balance of payments.

**Export Competitiveness:** Engineering goods, textiles, and agricultural shipments to Europe face

higher shipping transit times and landed costs due to Red Sea/Gulf transit bottlenecks.

## Way Forward

Deepen local currency settlement agreements (such as the Rupee-Dirham bilateral trade mechanism) to cushion currency volatility.

Expedite alternative multimodal corridors, including the India-Middle East-Europe Economic Corridor (IMEC) and the International North-South Transport Corridor (INSTC).

## Prelims Facts

**Energy Reliance:** India imports ~85% of its domestic crude oil requirements.

**Strategic Corridors:** IMEC (Eastern Corridor connecting India to the Arabian Gulf, Northern Corridor connecting the Gulf to Europe); INSTC (7,200 km multi-modal transit via Iran to Central Asia/Russia).

# INTERNATIONALISATION OF HIGHER EDUCATION: IIM-B IN INDONESIA

## Why in News?

In July 2026, the Indian Institute of Management Bangalore (IIM-B) announced the establishment of its first international campus in the Singhasari Special Economic Zone (SEZ), Malang, Indonesia.

## About

The initiative is part of the operationalisation of the National Education Policy (NEP) 2020 mandate on the internationalisation of higher education.

The campus represents the first overseas establishment of IIM Bangalore and follows earlier global outposts by IIT Madras (Zanzibar), IIT Delhi (Abu Dhabi), and IIM Ahmedabad (Dubai).

It will initially deliver executive management education programmes before expanding into degree courses.

## Significance

**Educational Diplomacy & Soft Power:** Strengthens India's Comprehensive Strategic Partnership with Indonesia and projects Indian higher education across the ASEAN region.

**Global Hub for Affordable Quality Education:** Positions India as an alternative educational hub for emerging economies in the Global South.

**Curricular Cross-Pollination:** Facilitates joint research, ASEAN-India business case studies, and faculty exchange programmes.

## Prelims Facts

**Location of Overseas Campus:** Singhasari Special Economic Zone, Malang, East Java, Indonesia.

**Policy Pillar:** Internationalisation of Higher Education under NEP 2020.

**Other Indian Overseas Campuses:** IIT Madras (Zanzibar, Tanzania), IIT Delhi (Abu

Dhabi, UAE), IIM Ahmedabad (Dubai, UAE).

## UDISE+ 2025–26 REPORT

### Why in News?

In July 2026, the Department of School Education and Literacy, Ministry of Education, released the Unified District Information System for Education Plus (UDISE+) 2025–26 report on school education in India.

### About

UDISE+ is an automated, web-based management information system collecting comprehensive annual data from over 14.8 lakh recognized schools, 1.02 crore teachers, and 26 crore students across India.

It covers public, private, and government-aided institutions across foundational, preparatory, middle, and secondary education stages (aligned with the NEP 2020 5+3+3+4 design).

### Key Findings

**Teacher Strength & PTR:** Total school teacher strength crossed 1.02 crore (54.9% female teachers). Pupil-Teacher Ratios (PTR) stood at 10:1 (Foundational), 12:1 (Preparatory), 17:1 (Middle), and 21:1 (Secondary), remaining well within the NEP benchmark of 30:1.

**Dropout & Retention Trends:** Secondary dropout rates declined to 7.0% (down from 8.2%

in 2024–25), while secondary retention rose to 51.9%.

**Infrastructure Metrics:** 95.0% schools have electricity access, 99.5% drinking water, 98.5% functional girls' toilets, and 69.9% have computer facilities.

### Governance Issues

**Secondary Retention Cliff:** A drop from ~98.5% retention at the foundational stage to 51.9% at the secondary stage highlights learning drop-offs after upper primary schooling.

**Special Needs (CWSN) Accessibility:** Only 58.2% of schools possess ramp-and-handrail infrastructure, pointing to accessibility gaps for differently-abled learners.

### Prelims Facts

**Released by:** Department of School Education and Literacy, Ministry of Education.

**Total School Teachers:** 1.02 crore (Female teachers: 54.9%).

**Curricular Stages Tracked:** Foundational, Preparatory, Middle, Secondary (5+3+3+4 framework).

## PERFORMANCE GRADING INDEX (PGI) 2.0 FOR STATES AND UTS

### Why in News?

In July 2026, the Ministry of Education released the Performance Grading Index (PGI 2.0) assessing the performance of school education systems across States and Union Territories.

### About

PGI 2.0 is an evidence-based assessment tool designed to evaluate state-level education systems across 73 indicators grouped under 2 categories

(Outcomes, Governance & Management) and 6 domains.

Scores are assigned out of a maximum of 1,000 points and graded into 10 performance levels ranging from 'Daksh' / 'Utkarsh' (highest) to 'Akanshi-3' (lowest).

It integrates data from UDISE+, National Achievement Survey (NAS), PM POSHAN, and Vidyanjali portals.

## Key Findings

**Top Performers:** Chandigarh and Punjab emerged at the upper tiers of state rankings.

**Absence of Top Tier:** No State or UT achieved the highest 'Daksh' grade (941–1000 points), indicating widespread institutional gaps in learning outcomes and governance efficiency.

**Elimination of Lowest Bands:** No State fell into the lowest 'Akanshi-3' band, showing baseline convergence in school provisioning across lagging

regions.

## Prelims Facts

**Released by:** Ministry of Education.

**Total Indicators:** 73 indicators across 6 domains (Learning Outcomes, Access, Infrastructure, Equity, Governance Processes, Teacher Education).

**Highest Grade:** Daksh (941–1000 points);  
**Lowest Grade:** Akanshi-3 (up to 400 points).

# MISSION FOR COTTON PRODUCTIVITY (KAPAS KRANTI)

## Why in News?

In July 2026, the Ministry of Agriculture and Farmers Welfare advanced the implementation of the ₹5,659 crore Mission for Cotton Productivity ("Kapas Kranti") to bridge India's persistent cotton yield gap.

## About

India has the world's largest cotton acreage (~38% of global area) but ranks low in yield (~440–480 kg lint/ha versus global average of ~800 kg/ha).

Kapas Kranti is an integrated mission aimed at improving lint productivity, promoting High-Density Planting Systems (HDPS), developing pest-resilient varieties, and scaling Extra-Long Staple (ELS) cotton.

It coordinates interventions between the Central Institute for Cotton Research (CICR), state agricultural universities, and textile value-chain stakeholders.

## Key Features

**High-Density Planting System (HDPS):** Introduction of compact, short-duration, synchronized-maturing varieties allowing machine

pickability and higher plant population per hectare.

**ELS Cotton Scaling:** Dedicated financial incentives to expand indigenous production of Extra-Long Staple (ELS) cotton, reducing reliance on Egyptian (Giza) and American (Pima) imports.

**Integrated Pest Management:** Scientific containment of Pink Bollworm (*Pectinophora gossypiella*) resistance against Bollgard II (Bt cotton) hybrids.

**Traceability & Branding:** Integration with the Kasturi Cotton Bharat certification to ensure quality benchmarking, physical testing, and blockchain-based traceability.

## Prelims Facts

**Scheme Name:** Mission for Cotton Productivity – Kapas Kranti.

**Nodal Bodies:** Ministry of Agriculture and Farmers Welfare and Ministry of Textiles.

**Research Lead:** ICAR-Central Institute for Cotton Research (CICR), Nagpur.

**Agronomic Requirement:** Deep black soils (Regur), tropical/subtropical climate, 210 frost-free days.

# PM-SETU ROLLOUT

## Why in News?

In July 2026, the Ministry of Skill Development

and Entrepreneurship (MSDE) cleared the pan-India rollout of the ₹60,000-crore Pradhan Mantri Skilling and Employability Transformation through

Upgraded ITIs (PM-SETU) scheme.

## About

PM-SETU is a Centrally Sponsored Scheme to transform 1,000 Government Industrial Training Institutes (ITIs) into modern, industry-aligned skill hubs.

The governance model relies on a Hub-and-Spoke structure (200 Hub ITIs and 800 Spoke ITIs) managed through Special Purpose Vehicles (SPVs) with 51% industry equity.

Global co-financing is supported through results-based lending from the World Bank and the Asian Development Bank (ADB).

## Key Features

**Industry-Led Management:** SPVs with private majority ownership handle curriculum design, instructor training, machinery installation, and placement drives.

**National Centres of Excellence (NCoEs):** Five National Skill Training Institutes (NSTIs)

in Bhubaneswar, Chennai, Hyderabad, Kanpur, and Ludhiana are elevated to NCoEs.

## National Credit Framework (NCrF)

**Alignment:** Courses are integrated into credit pathways (1,200 instruction hours + 150 mandatory on-the-job training hours yielding 45 academic credits).

**School-Level Vocation Labs:** Establishes 1,200 Vocational Skill Labs across Navodaya Vidyalayas and Eklavya Model Residential Schools (EMRS).

## Prelims Facts

**Scheme Name:** PM-SETU (Centrally Sponsored Scheme).

**Total Outlay:** ₹60,000 crore (Centre: ₹30,000 Cr, States: ₹20,000 Cr, Industry: ₹10,000 Cr).

**Multilateral Backing:** World Bank and Asian Development Bank (ADB).

**Nodal Ministry:** Ministry of Skill Development and Entrepreneurship (MSDE).

# INTEGRATION OF ZED CERTIFICATION, DIGITAL MARKET ACCESS, AND MSME INITIATIVES

## Why in News?

In July 2026, the Quality Council of India (QCI) and the National Small Industries Corporation (NSIC) signed a strategic 5-year MoU to integrate the MSME Sustainable (ZED) Certification with the Open Network for Digital Commerce (ONDC) and MSME Global Mart.

## About

The initiative unites the MSME Sustainable (ZED) Scheme, Trade Enablement and Marketing (TEAM) Initiative, and the Single Point Registration Scheme (SPRS) into a unified digital market-access pipeline.

The MSME ZED (Zero Defect, Zero Effect) scheme assesses micro, small, and medium enterprises on manufacturing quality (Zero Defect) and environmental consciousness (Zero Effect).

The integration connects certified units

directly to public procurement and e-commerce platforms with verified quality credentials.

## Significance

**Public Procurement Access:** Certified MSMEs receive preferential onboarding and waiver benefits under Central Government public procurement mandates.

**E-Commerce Onboarding:** Facilitates access to ONDC through the TEAM initiative, enabling small manufacturers to bypass platform monopolies.

**ESG Compliance:** Prepares Indian MSMEs to meet stringent international quality, carbon accounting, and supply-chain due-diligence standards (such as the EU's CBAM).

## Prelims Facts

**Implementing Bodies:** Quality Council of India (QCI) and National Small Industries

Corporation (NSIC) under the Ministry of MSME.

**ZED Certification Levels:** Bronze, Silver, Gold (based on parameters like quality control,

safety, waste management, and energy efficiency).

**Key Digital Platforms:** ONDC, MSME Global Mart, and GeM (Government e-Marketplace).

## TRANSFORMATION OF POWERLOOM SERVICE CENTRES INTO ITADCS

### Why in News?

In July 2026, the Ministry of Textiles reviewed the nationwide transformation of erstwhile Powerloom Service Centres (PSCs) into Integrated Textile and Apparel Development Centres (ITADCs).

### About

ITADCs represent a structural upgrade of traditional single-function powerloom centres into comprehensive, multi-disciplinary facilitation hubs.

Implemented under the Office of the Textile Commissioner, ITADCs support the decentralized powerloom and MSME textile sector across technology adoption, testing, design, skill building, institutional credit, and exports.

The transition aims to modernize India's weaving clusters, which account for the vast majority of commercial fabric production in the country.

### Key Features

**One-Stop Service Delivery:** Combines yarn/fabric testing laboratories, computer-aided design (CAD) facilities, and export compliance desks in local production clusters.

**Promotion of Next-Gen Fibres:** Technical handholding for processing unconventional and sustainable fibres like bamboo, hemp, flax, banana, and pineapple.

**Digital KPI Portal:** Real-time monitoring of institutional service delivery, cluster modernization, and credit facilitation through a dedicated digital performance portal.

### Prelims Facts

Nodal Ministry: Ministry of Textiles.

Administrative Body: Office of the Textile Commissioner.

Sectoral Context: Powerlooms account for roughly 60%–70% of total cloth production in India's textile and apparel sector.

## SUB-MISSION ON AGRICULTURAL MECHANIZATION (SMAM)

### Why in News?

In July 2026, the Ministry of Agriculture and Farmers Welfare released cumulative progress data under the Sub-Mission on Agricultural Mechanization (SMAM).

The review highlighted the distribution of over 21.61 lakh agricultural machines and financial support exceeding ₹9,404 crore.

### About

Launched in 2014–15, SMAM operates as a Centrally Sponsored Scheme under the

restructured Rashtriya Krishi Vikas Yojana (RKVY) framework.

It addresses the challenge of low farm power availability and the predominance of small and fragmented landholdings by subsidising farm machinery and creating shared-access infrastructure.

Funding is shared on a 60:40 basis between the Centre and States (90:10 for North-Eastern and Himalayan States, and 100% for Union Territories).

Mechanization in Indian agriculture.

## Key Features

**Custom Hiring Centres (CHCs):** Financial assistance up to 40% of the project cost is provided to establish CHCs, enabling small and marginal farmers to hire machinery on demand.

**Differentiated Subsidies:** Provides 50% capital subsidy for SC/ST, small, marginal, and women farmers, compared to 40% for general category beneficiaries.

**Kisan Drone Promotion:** Extends 100% grant assistance to ICAR institutes, KVKs, and State Agriculture Universities for drone purchase and demonstrations, alongside subsidized hiring rates for farmers.

**Farm Machinery Banks (FMBs):** Establishes village-level equipment banks through Self-Help Groups (SHGs) and Farmer Producer Organisations (FPOs).

## Significance

**Input Efficiency:** Timely mechanization reduces seed and fertilizer wastage by 15%–20% and lowers overall cultivation costs.

**Crop Residue Management:** Promotes happy seeders, super seeders, and mulchers to curb in-situ stubble burning across north-western agrarian belts.

**Overcoming Farm Labour Shortages:** Bridges acute seasonal labour deficits during peak sowing and harvesting windows.

## Challenges

**Fragmented Landholdings:** Small field parcel sizes in eastern and southern states constrain the manoeuvrability of large machinery like combined harvesters.

**Credit and Maintenance Gaps:** High initial capital costs for CHC operators and a lack of certified local repair technicians in remote districts.

Prelims Facts

**Nodal Ministry:** Ministry of Agriculture and Farmers Welfare.

**Umbrella Scheme:** Rashtriya Krishi Vikas Yojana (RKVY).

**Institutional Components:** Custom Hiring Centres (CHCs), Hi-Tech Hubs, Farm Machinery Banks (FMBs).



## PM-SETU (PRADHAN MANTRI SKILLING & EMPLOYABILITY TRANSFORMATION THROUGH UPGRADED ITIS)

### Why in News?

In July 2026, the Ministry of Skill Development and Entrepreneurship (MSDE) initiated the rollout of the ₹60,000-crore PM-SETU scheme across all States and Union Territories.

The programme establishes industry-managed Special Purpose Vehicles (SPVs) to modernise 1,000 Government Industrial Training Institutes (ITIs).

### About

PM-SETU is a Centrally Sponsored Scheme aimed at overhauling vocational education to align technical trades with Industry 4.0 standards.

It follows a Hub-and-Spoke model: 200 Hub ITIs equipped with high-end tech labs mentor 800 Spoke ITIs delivering foundational trade courses.

Financing is co-shared between the Centre (₹30,000 crore), States (₹20,000 crore), and industry partners (₹10,000 crore), supported by results-based lending from the World Bank and the Asian Development Bank (ADB).

### Key Features

**Industry Majority in SPVs:** Operational

management is delegated to SPVs where industry partners hold 51% equity, directing curriculum design, machinery procurement, and hiring.

**National Centres of Excellence (NCoEs):** Five National Skill Training Institutes (NSTIs) in Bhubaneswar, Chennai, Hyderabad, Kanpur, and Ludhiana are elevated to NCoEs for advanced instructor training.

**National Credit Framework (NCrF) Integration:** ITI certificate programmes are embedded with academic equivalence (1,200 instruction hours + 150 on-the-job training hours yielding 45 credits).

**School-Level Exposure:** Sets up 1,200 Vocational Skill Labs across Navodaya Vidyalayas and Eklavya Model Residential Schools (EMRS).

### Prelims Facts

**Nodal Ministry:** Ministry of Skill Development and Entrepreneurship (MSDE).

Total Outlay: ₹60,000 crore.

**Governance Mechanism:** Hub-and-Spoke model with 51% industry-led Special Purpose Vehicles.

## CIRCULAR ECONOMY ACROSS INDIA'S TEXTILE VALUE CHAIN & WEAVE THE FUTURE 4.0

### Why in News?

In July 2026, the Ministry of Textiles unveiled the “Weave the Future 4.0” strategic roadmap at Bharat Tex 2026, establishing circularity standards for the domestic textile supply chain.

The policy addresses global regulatory shifts, including the European Union's Carbon Border Adjustment Mechanism (CBAM) and Corporate Sustainability Due Diligence Directive.

### About

“Weave the Future 4.0” is an institutional framework designed to transition India's textile sector from a linear “take-make-dispose” model to a circular lifecycle involving mechanical/chemical recycling, zero liquid discharge (ZLD), and regenerated fibres.

It coordinates interventions across the Prime Minister's 5F Vision (Farm to Fibre to Factory to

Fashion to Foreign).

Circular fashion economy lifecycle.

### Key Features

**Textile Waste Valorisation:** Mandatory integration of post-consumer textile waste sorting and shredding units in upcoming PM MITRA mega textile parks.

**Regenerated Fibre Promotion:** Subsidised capital support for mills converting recycled polyester (rPET) and pre-consumer cotton cutting waste into commercial-grade yarns.

**Digital Product Passports (DPP):** Pilot rollout of QR-code-based product passports tracing fibre composition, water intensity, and carbon footprints for export-oriented garments.

### Economic Significance

**Export Competitiveness:** Protects India's \$40+ billion textile and apparel exports against non-tariff environmental barriers in Western markets.

**Resource Security:** Reduces reliance on virgin petrochemical fibres and water-intensive virgin

cotton cultivation.

### Prelims Facts

Nodal Ministry: Ministry of Textiles.

Flagship Global Platform: Bharat Tex (Organised by the Bharat Tex Trade Federation and Ministry of Textiles).

Strategic Concept: 5F Framework (Farm → Fibre → Factory → Fashion → Foreign).



## OVERSEAS FOREIGN CURRENCY BORROWINGS (OFCBS)

### Why in News?

In July 2026, the Reserve Bank of India (RBI) streamlined the regulatory compliance architecture for Overseas Foreign Currency Borrowings (OFCBs) and External Commercial Borrowings (ECBs) by Indian corporates.

### About

OFCBs and ECBs are commercial loans raised by eligible resident Indian entities from non-resident lenders in foreign currency.

Borrowings fall under two frameworks: the Automatic Route (examined by Authorized Dealer Category-I banks) and the Approval Route (requiring explicit RBI clearance).

These instruments allow Indian infrastructure

developers and manufacturing firms to access deep, long-tenor global debt capital markets at competitive interest rates.

### Key Dimensions

**Hedging Mandates:** Mandatory 70% currency hedging requirement for infrastructure borrowings with an average maturity of less than 5 years to mitigate systemic foreign exchange shocks.

**Negative End-Use List:** Funds cannot be deployed in real estate speculation, equity market trading, or general working capital outside prescribed manufacturing guidelines.

**Benchmark Transition:** Fully establishes Secured Overnight Financing Rate (SOFR) / Sterling Overnight Index Average (SONIA) references, replacing legacy LIBOR benchmarks.

## Prelims Facts

Regulatory Authority: Reserve Bank of India (under the Foreign Exchange Management Act, 1999).

Key Limits: \$750 million per financial year under the Automatic Route for eligible borrowers.

Benchmark Rate: Alternative Reference Rates (ARR) such as SOFR (USD).

# MOBILE PHONE MANUFACTURING SCHEME (MPMS)

## Why in News?

In July 2026, the Ministry of Electronics and Information Technology (MeitY) announced the Mobile Phone Manufacturing Scheme (MPMS) to deepen component-level localisation in India's electronics sector.

## About

Building on the success of the Production Linked Incentive (PLI) scheme for Large Scale Electronics Manufacturing, MPMS shifts the focus from final assembly to the domestic production of high-value sub-assemblies.

It targets the manufacturing of printed circuit board assemblies (PCBA), camera modules, displays, and mechanics, which currently constitute the bulk of India's electronics import bill.

## Significance

**Domestic Value Addition:** Aims to

increase India's value addition in mobile phone manufacturing from the current 15%–20% to over 35%–40%.

**Export Hub Status:** Strengthens India's position as the world's second-largest mobile phone manufacturer, enabling deeper integration into global supply chains.

**Employment Generation:** Component manufacturing is highly labour-intensive, projecting significant direct and indirect job creation across electronics clusters.

## Prelims Facts

**Nodal Ministry:** Ministry of Electronics and Information Technology (MeitY).

**Objective:** Deepening component-level localisation (PCBA, camera modules, displays).

**Global Standing:** India is the 2nd largest mobile phone manufacturer globally.

# NATIONAL INVESTMENT POLICY FOR UREA-2026 (NIPU-2026)

## Why in News?

In July 2026, the Cabinet Committee on Economic Affairs (CCEA) approved the National Investment Policy for Urea-2026 for Atmanirbhar Bharat (NIPU-2026).

It replaces the New Investment Policy (NIP-2012).

## About

NIPU-2026 provides a long-term fiscal framework to attract fresh domestic and private investment for setting up 8–9 new gas-based urea manufacturing plants.

The policy aims to add approximately 100 lakh metric tonnes (10 MMT) of indigenous production capacity, eliminating the country's annual urea import requirement.

## Key Features

**Unbundled Cost Structure:** Segregates fixed capital costs from variable feedstock (natural gas) costs, ensuring transparent and market-linked subsidy computation.

**Defined Return on Equity (RoE):** Guarantees a regulated RoE band of 12% (floor) to 16% (ceiling) to balance investor profitability and public subsidy outflows.

**Foreign Exchange Risk Shield:** Converts fixed costs into Indian Rupees (INR) after a 4-year gestation period based on prevailing exchange rates, shielding operators from rupee depreciation.

**Equal Sectoral Treatment:** Provides identical incentives across public sector units, private corporations, and cooperative societies (e.g., IFFCO, KRIBHCO).

### Prelims Facts

**Approving Body:** Cabinet Committee on Economic Affairs (CCEA).

**Administrative Department:** Department of Fertilizers.

**Status:** Replaces NIP-2012.

**Target Capacity Addition:** ~10 million metric tonnes (MMT).

## COAL EXCHANGE RULES, 2026 & COAL CONTROLLER ORGANIZATION (CCO)

### Why in News?

In July 2026, the Ministry of Coal operationalised the Coal Exchange Rules, 2026, establishing an electronic spot and derivative trading platform for coal in India.

The Coal Controller Organization (CCO) was officially designated as the regulator.

### About

Derived from the Mines and Minerals (Development and Regulation) (MMDR) framework, the Coal Exchange replaces the traditional bilateral coal auction system with an open, multi-seller, multi-buyer electronic market.

It allows captive and commercial mine owners, Coal India subsidiaries, and private producers to list coal transparently, enabling market-determined pricing.

### Key Dimensions

**Regulatory Powers of CCO:** CCO is

authorized to grant 25-year operating registrations to exchange platforms, approve bye-laws, and inspect settlement mechanisms.

**Price Discovery:** Establishes a transparent National Coal Index (NCI) reference price, curbing arbitrary premiums and ensuring price predictability for power, cement, and steel plants.

**Third-Party Quality Verification:** Mandatory automated sampling and grade certification to resolve grade slippage disputes between coal producers and thermal utilities.

### Prelims Facts

**Statutory Authority:** Coal Controller Organization (CCO), established in 1945, headquartered in Kolkata.

**Parent Ministry:** Ministry of Coal.

**Registration Validity for Exchanges:** 25 years.

**Functions of CCO:** Regulates coal quality, compiles official coal statistics, monitors captive block milestones, and regulates coal exchanges.

## UDAN 2.0 (REGIONAL CONNECTIVITY SCHEME EXPANSION)

### Why in News?

In July 2026, the Ministry of Civil Aviation reviewed the milestone achievements under the expanded UDAN (Ude Desh ka Aam Nagrik) framework, highlighting over 600 operational regional routes.

### About

UDAN is a Centrally Sponsored regional airport development and “Regional Connectivity Scheme” (RCS) launched in 2016.

It operates on a market-driven mechanism

where airlines bid for unserved and underserved regional routes, supported by Viability Gap Funding (VGF) and state-level tax concessions.

### Key Features

**Fare Cap & VGF:** Airfares for 50% of seats are capped at affordable rates for a 1-hour flight (~500 km), with the revenue shortfall compensated through the Regional Connectivity Fund (RCF).

**Multi-Modal Connectivity:** Expanded to include seaplane routes via water aerodromes (e.g., Andaman & Nicobar, Lakshadweep, Gujarat) and advanced heliports in Himalayan States.

**Tourism & Cargo Integration:** Dedicated sub-components (UDAN Tourism and Krishi UDAN) for perishable agro-produce transport from the North East and tribal belts.

### Prelims Facts

**Nodal Ministry:** Ministry of Civil Aviation.

**Implementing Agency:** Airports Authority of India (AAI).

**Funding Source:** Regional Connectivity Fund (financed via a small levy on departures on major domestic routes).

## CODEX STANDARDS FOR LARGE CARDAMOM, CORIANDER, AND VANILLA

### Why in News?

In July 2026, the Codex Alimentarius Commission (CAC) formally adopted international quality standards for Large Cardamom, Dried Coriander Seeds, and Vanilla, based on proposals championed by India.

### About

The standards were formulated by the Codex Committee on Spices and Culinary Herbs (CCSCH), for which India serves as the permanent Host Country and Secretariat through the Spices Board of India.

The Codex Alimentarius Commission is an international food standards body established jointly by the Food and Agriculture Organization (FAO) and the World Health Organization (WHO).

### Significance

**Global Quality Harmonisation:** Harmonises moisture limits, volatile oil content, extraneous matter thresholds, and pesticide residue limits across international borders.

**Elimination of Non-Tariff Barriers:** Protects Indian spice exporters from arbitrary cargo rejections in North American and European ports.

**Spices Board Leadership:** Affirms India's institutional authority as the global leader in spice trade standardization.

### Prelims Facts

**International Body:** Codex Alimentarius Commission (CAC) (HQ: Rome, Italy).

**Subsidiary Body:** Codex Committee on Spices and Culinary Herbs (CCSCH).

**Large Cardamom Hub:** Sikkim and North-Eastern States (India is the largest producer of large cardamom).

## OPERATION PARIVARTAN

### Why in News?

In July 2026, multi-agency law enforcement bodies published results under Operation PARIVARTAN, having destroyed extensive illicit cannabis (ganja) cultivation across eastern and southern peninsular belts.

### About

Operation PARIVARTAN is an integrated, intelligence-led enforcement initiative combining geospatial mapping, satellite imagery from ISRO, and drone surveillance to identify and eradicate illegal narcotics crops.

It is coordinated by state law enforcement agencies in close partnership with the Narcotics Control Bureau (NCB) and the Directorate of Revenue Intelligence (DRI).

### Key Dimensions

**Tech-Driven Interdiction:** Employs hyperspectral remote sensing to detect illicit plantation patches hidden deep within reserved forest tracts.

**Alternative Livelihood Rehabilitation:** Converts eradicated agricultural tracts into legitimate horticultural crops (millets, coffee, turmeric) through convergence with MGNREGS

and MIDH.

**Financial Forensics:** Freezes assets of trafficking kingpins under the Prevention of Money Laundering Act (PMLA) and the NDPS Act.

### Prelims Facts

**Nodal Central Agency:** Narcotics Control Bureau (NCB).

**Governing Legislation:** Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985.

**Technology Partner:** Advanced satellite imagery provided via National Remote Sensing Centre (NRSC / ISRO).

## HYDROGEN FUEL CELL TRAIN (INDIAN RAILWAYS)

### Why in News?

In July 2026, Indian Railways conducted extensive track trials of its first indigenous Hydrogen-Powered Fuel Cell Train under the “Hydrogen for Heritage” project on the Jind–Sonipat section in Haryana.

### About

The train utilizes Proton Exchange Membrane (PEM) Fuel Cells to convert hydrogen and oxygen into electricity, emitting only pure water and steam as exhaust.

It forms a cornerstone of Indian Railways’ climate commitment to achieve Net Zero Carbon Emissions by 2030.

Hydrogen-powered fuel cell train.

### Key Features

**Zero Direct Emissions:** Eliminates greenhouse gas emissions, particulate matter, and noise pollution associated with diesel multiple units (DEMUs).

**Fuel Cell Hybrid System:** Integrates onboard hydrogen storage cylinders, fuel cell stacks, and high-discharge lithium-ion traction batteries for peak acceleration.

**Heritage Route Deployment:** Targeted for deployment across

sensitive ecological zones and UNESCO mountain railways (Kalka–Shimla, Darjeeling Himalayan, Nilgiri Mountain).

### Prelims Facts

**Implementing Agency:** Indian Railways.

**Project Name:** “Hydrogen for Heritage”.

**Emission Profile:** Pure water vapour (\$H\_2O\$) — zero sulfur oxides, nitrogen oxides, or particulate matter.

Net Zero Target for Indian Railways: 2030.



## WHITE REVOLUTION 2.0 & SAHKAR SE SAMRIDDHI

### Why in News?

In July 2026, the Ministry of Cooperation accelerated the rollout of White Revolution 2.0 to establish 2 lakh new Primary Agricultural Credit Societies (PACS), Dairy, and Fishery Cooperatives covering all uncovered Gram Panchayats.

### About

White Revolution 2.0 is an integrated cooperative dairy strategy designed to increase milk procurement by 50% over the next five years and modernize cooperative infrastructure under the vision of "Sahkar Se Samriddhi".

The initiative links village-level dairy

National Cooperative Dairy Federation of India (NCDFI) marketing networks.

Cooperative dairy farming in India.

### Key Features

**Universal Panchayat Coverage:** Establishes viable Multipurpose PACS (M-PACS) and Dairy Cooperative Societies in every gram panchayat lacking formal milk pooling infrastructure.

**Dairy Processing & Infrastructure Development Fund (DIDF):** Provides subsidized credit to cooperative unions for installing bulk milk coolers (BMCs), automated milk collection units, and cold-chain logistics.

**Women Empowerment:** Focuses on all-women dairy cooperative societies, routing procurement payments directly to female members' bank accounts.

### Prelims Facts

**Nodal Ministry:** Ministry of Cooperation.

**Apex Promotional Agency:** National Dairy Development Board (NDDB).

**Core Mandate:** Expansion of dairy cooperatives to uncovered gram panchayats through



cooperatives directly with district unions and

Multipurpose PACS (M-PACS).

## COKING COAL DESIGNATION AS A CRITICAL MINERAL

### Why in News?

In July 2026, the Ministry of Mines and Ministry of Coal reviewed policy incentives following the formal inclusion of Coking Coal and Metallurgical Coal in the National Critical

and Strategic Minerals list.

### About

Coking coal (metallurgical coal) is an essential, non-substitutable reducing agent and thermal source used in blast furnaces to manufacture

primary steel.

Unlike non-coking thermal coal used for power generation, India imports over 85% of its coking coal requirements due to high ash content in domestic reserves.

### Strategic Significance

**National Steel Mission 2030:** Securing coking coal is vital for achieving the target of 300 million tonnes (MT) of crude steel production by 2030–31.

**Import Vulnerability:** High reliance on foreign coking coal exposes domestic primary steelmakers to global price shocks.

**Mineral Security:** Classification allows the

government to offer expedited environmental clearances, dedicated auction windows, and concessional royalty rates for domestic coal washeries.

### Prelims Facts

**Primary Use:** Blast furnace reduction of iron ore into hot metal/pig iron (Steelmaking).

**Key Import Suppliers:** Australia, United States, Russia.

**Domestic Constraint:** High ash content (>30%) and low vitrinite content in Indian coking coal.

## NATIONAL COAL GASIFICATION MISSION (TARGET 100 MMT BY 2030)

### Why in News?

In July 2026, the Ministry of Coal cleared the second tranche of financial incentives under the ₹8,500 crore Viability Gap Funding (VGF) scheme for commercial coal gasification projects.

### About

The National Coal Gasification Mission targets the gasification of 100 million metric tonnes (MMT) of domestic coal by 2030.

Coal gasification is a thermo-chemical process that converts solid coal into Syngas (a mixture of carbon monoxide, hydrogen, and carbon dioxide), which can then be converted into synthetic natural gas (SNG), urea, methanol, and chemicals.

### Significance

**Environmental Transition:** Cleaner than

direct thermal coal combustion, allowing for sulfur scrubbing, carbon capture utilization and storage (CCUS), and zero fly ash release.

**Chemical Import Substitution:** Reduces imports of methanol, ammonia, and petrochemical building blocks, supporting Atmanirbhar Bharat in fertilizers and polymers.

**Energy Diversification:** Converts low-grade, high-ash Indian coal into high-value clean energy vectors.

### Prelims Facts

**Target:** 100 Million Metric Tonnes (MMT) of coal gasified by 2030.

**Primary Product:** Syngas (Carbon Monoxide + Hydrogen + Carbon Dioxide).

**Downstream End-Products:** Synthetic Natural Gas (SNG), Urea, Methanol, DME.

## WTO AGREEMENT ON FISHERIES SUBSIDIES: INDIA'S ACCEPTANCE

### Why in News?

In July 2026, India formally deposited its

Instrument of Acceptance for the World Trade Organization (WTO) Agreement on Fisheries

Subsidies at the WTO Headquarters in Geneva.

## About

Adopted at the 12th Ministerial Conference (MC12) in 2022, the Agreement establishes global, binding disciplines to eliminate harmful subsidies that drive illegal, unreported, and unregulated (IUU) fishing and overcapacity.

The treaty requires acceptance by two-thirds of WTO member nations to enter into force.

## Key Dimensions

**Prohibition of IUU Subsidies:** Prohibits subsidies to vessels or operators engaged in illegal, unreported, and unregulated fishing activities.

**Protection for Unregulated High Seas:** Prohibits subsidies for fishing in unregulated high seas beyond nations' Exclusive Economic Zones (EEZs).

## Special & Differential Treatment (S&DT):

Preserves complete policy space and subsidies for small-scale, artisanal, and traditional fishers operating within India's territorial waters (up to 12 nautical miles) and EEZ (up to 200 nautical miles).

## Prelims Facts

**Adopted at:** WTO 12th Ministerial Conference (MC12, 2022).

**Entry into Force Threshold:** Formal ratification/acceptance by two-thirds of WTO members.

**Territorial Scope Safeguards:** Baseline artisanal fishing protected within 12 nautical miles (Territorial Sea) and the 200-nautical-mile Exclusive Economic Zone (EEZ).

# LITHIUM DEPOSITS: "INDIA'S WHITE GOLD"

## Why in News?

In July 2026, the Geological Survey of India (GSI) and the Ministry of Mines announced advanced exploration and auction milestones for hard-rock lithium reserves in Jammu & Kashmir and Chhattisgarh.

## About

Lithium is a soft, silvery-white alkali metal known as "White Gold" due to its indispensable role in manufacturing high-energy-density Lithium-ion battery cells.

It is the primary element powering electric vehicles (EVs), renewable battery energy storage systems (BESS), and smartphones.

Lithium hard-rock mineral ore samples.

## Strategic Significance

**EV Transition & Decarbonisation:** Essential for fulfilling India's targets

under the PM E-DRIVE scheme and reducing urban vehicular emissions.

**Mitigating Geopolitical Vulnerabilities:** Lessens reliance on imports from the "Lithium Triangle" (Chile, Bolivia, Argentina) and processing facilities in China.

**Domestic Value Chain:** Accelerates the development of domestic Gigafactories under the



Production Linked Incentive (PLI) for Advanced Chemistry Cell (ACC) Battery Storage.

### Prelims Facts

Identified Domestic Sites: Salal-Haimana block (Reasi, J&K) and Katghora block (Korba,

Chhattisgarh).

Global “Lithium Triangle”: Chile, Bolivia, and Argentina.

Atomic Number: 3; Symbol: Li.

## NATIONAL NUCLEAR ENERGY MISSION (SMR FOCUS)

### Why in News?

In July 2026, the Department of Atomic Energy (DAE) and NITI Aayog released the operational architecture for deploying indigenous Small Modular Reactors (SMRs) with private sector industrial partnerships.

### About

The mission aims to scale nuclear power from baseload grid generation to captive industrial decarbonisation across steel, aluminum, and chemical sectors.

SMRs are advanced nuclear fission reactors with power capacities of up to 300 MW(e) per unit—roughly one-third of the generating capacity of traditional commercial nuclear power reactors.

### Key Features

**Bharat Small Reactors (BSRs):** R&D tailoring of India’s proven 220 MW Pressurised Heavy Water Reactor (PHWR) design for captive industrial

installations.

**Modular & Factory Fabricated:** SMR components can be manufactured in serial factory settings and transported by road/rail, reducing construction gestation from 8–10 years to under 3–4 years.

**Passive Safety Systems:** Features gravity-fed cooling, natural circulation, and containment cooling that operate without external electrical power during emergencies.

### Prelims Facts

**Defining Capacity of SMRs:** Up to 300 MW(e) per reactor (defined by IAEA).

Indigenous Platform: Bharat Small Reactor (BSR).

Nodal Agency: Department of Atomic Energy (DAE).

## AAROH REPORT (SUSTAINABLE RURAL LIVELIHOODS)

### Why in News?

In July 2026, the Ministry of Rural Development released the annual AAROH Report, documenting income generation and graduation rates of “Lakhpati Didis” across Indian states.

### About

The AAROH Report provides an assessment of rural socio-economic mobility under the Deendayal Antyodaya Yojana - National Rural

Livelihoods Mission (DAY-NRLM).

It measures household economic stabilization across multiple livelihood avenues, including farm interventions, non-farm micro-enterprises, and access to revolving Community Investment Funds (CIF).

### Key Findings

Lakhpati Didi Saturation: Over 1.5 crore women SHG members have achieved sustained

annual household incomes exceeding ₹1,00,000.

**Shift to Non-Farm Value Chains:** Rural household income shares from food processing, rural retail, custom drone services, and textile mini-enterprises expanded significantly.

**Reduction in High-Cost Debt:** Institutional credit linkage through SHG-Bank linkage programs reduced dependency on unorganised

rural moneylenders to record lows.

### Prelims Facts

Released by: Ministry of Rural Development.

Key Mission Covered: DAY-NRLM.

Flagship Target: Creating 3 crore “Lakhpati Didis” (women SHG members earning  $\geq$  ₹1 lakh/year).

## PRADHAN MANTRI MATSYA SAMPADA YOJANA (PMMSY) & BLUE REVOLUTION

### Why in News?

In July 2026, the Department of Fisheries marked the completion of six years of the Pradhan Mantri Matsya Sampada Yojana (PMMSY), recording national fish production of over 185 lakh tonnes.

### About

Launched in May 2020 under the Atmanirbhar Bharat package with an investment of ₹20,050 crore, PMMSY is the flagship scheme driving the sustainable transformation of India's fisheries sector.

It addresses critical infrastructure bottlenecks

across the value chain, from seed and feed production to landing centres, cold chains, and export certification.

### Key Features

**Inland & Coastal Aquaculture:** Scale-up of Recirculatory Aquaculture Systems (RAS), Biofloc systems, and deep-sea tuna longlining fishing vessels.

**Mariculture & Seaweed Cultivation:** Establishment of dedicated Seaweed Parks to generate coastal livelihoods and bio-stimulant inputs for agriculture.

### Fisheries Infrastructure Development



**Fund (FIDF):** Subsidised concessional finance for modernising fishing harbours, fish landing centres, and refrigerated transport vans.

**Aquatic Animal Health:** Deployment of national disease surveillance networks and computerized pathogen tracing for shrimp hatcheries.

### Prelims Facts

**Scheme Name:** Pradhan Mantri Matsya Sampada Yojana (PMMSY).

**Total Outlay:** ₹20,050 crore.

**Nodal Ministry:** Ministry of Fisheries, Animal Husbandry and Dairying.

**Global Standing:** India is the 2nd largest fish producer and the 2nd largest aquaculture nation globally.

## ONE DISTRICT ONE PRODUCT (ODOP), DISTRICTS AS EXPORT HUBS & PM EKTA MALLS

### Why in News?

In July 2026, the Department for Promotion of Industry and Internal Trade (DPIIT) announced the operationalisation of 15 PM Ekta Malls across state capitals, providing dedicated commercial platforms for ODOP and GI-tagged products.

### About

The One District One Product (ODOP) initiative converges with the “Districts as Export Hubs” (DEH) scheme to identify, brand, and promote at least one unique product from each of the 750+ districts in India.

PM Ekta Malls are permanent commercial complexes built in State capitals to showcase and sell handicrafts, handlooms, and agricultural produce from every Indian state and district.

### Key Dimensions

**Export Promotion:** Formulation of District

Export Action Plans (DEAPs) identifying local product clusters, addressing logistics bottlenecks, and securing international buyer access.

**GI Tag Integration:** Provides targeted packaging, branding, and testing assistance to Geographical Indication (GI) certified rural artisanal goods.

**E-Commerce Onboarding:** Direct linkage of ODOP artisans to the Open Network for Digital Commerce (ONDC) and Government e-Marketplace (GeM).

### Prelims Facts

**Implementing Agency:** DPIIT, Ministry of Commerce and Industry.

**Key Mechanism:** District Export Action Plans (DEAPs).

**Infrastructure Component:** PM Ekta Malls (funded through special 50-year interest-free capital loans to State Governments).

## PM FORMALISATION OF MICRO FOOD PROCESSING ENTERPRISES (PMFME) SCHEME

### Why in News?

In July 2026, the Ministry of Food Processing Industries (MoFPI) reported the credit linking of over 1.2 lakh micro-enterprises under the PMFME scheme.

### About

PMFME is a Centrally Sponsored Scheme launched under the Atmanirbhar Bharat Abhiyan with an outlay of ₹10,000 crore.

It adopts the One District One Product (ODOP) approach to provide financial, technical,

and business support for upgrading unregistered and unorganised micro-food processing enterprises.

### Key Features

**Credit-Linked Capital Subsidy:** Provides 35% capital subsidy (up to ₹10 lakh per unit) for individual micro-enterprises undertaking technological upgrading.

**Seed Capital for SHGs:** Financial assistance of ₹40,000 per member for working capital and small tool purchases to members of food-processing SHGs.

**Common Infrastructure Support:** Subsidies up to 35% for setting up common processing facilities, cold storage, and packaging lines by FPOs and cooperatives.

### Prelims Facts

**Nodal Ministry:** Ministry of Food Processing Industries (MoFPI).

**Outlay:** ₹10,000 crore (Cost-shared 60:40 between Centre and States).

**Principle Approach:** One District One Product (ODOP) food-processing clusters.

## REVAMPED PRADHAN MANTRI FASAL BIMA YOJANA (PMFBY)

### Why in News?

In July 2026, the Ministry of Agriculture implemented enhanced technological protocols under the revamped PMFBY, mandating the universal use of the YES-TECH and WINDS platforms for automated claim settlements.

### About

PMFBY is India's flagship crop insurance scheme providing comprehensive financial protection to farmers against non-preventable natural risks from pre-sowing to post-harvest stages.

The restructured framework utilizes space technology, automated weather stations, and drone-based yield estimations to eliminate manual crop-cutting delays and payment disputes.

### Key Features

**YES-TECH (Yield Estimation System based on Technology):** Satellite and drone-derived vegetation index models to accurately estimate crop yields at the gram panchayat level.

**WINDS (Weather Information Network Data Systems):** A hyper-local network of automatic weather stations (AWS) and rain gauges at the block and panchayat levels.

**Premium Structure:** 2.0% for Kharif crops, 1.5% for Rabi crops, and 5.0% for Commercial/Horticultural crops.

### Prelims Facts

**Nodal Ministry:** Ministry of Agriculture and Farmers Welfare.

**Nature of Scheme:** Voluntary for all farmers.

**Tech Portals:** YES-TECH (Yields), WINDS (Hyperlocal Weather), CROPIC (Photographic verification).

## MISSION FOR INTEGRATED DEVELOPMENT OF HORTICULTURE (MIDH): OPERATIONAL GUIDELINES

### Why in News?

In July 2026, the Ministry of Agriculture issued updated operational guidelines under MIDH,

enhancing cost norms for protected cultivation (polyhouses), cold chain infrastructure, and clean plant centres.

## About

MIDH is a Centrally Sponsored Scheme promoting the holistic growth of the horticulture sector, covering fruits, vegetables, root and tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, and cocoa.

It subsumes major national sub-missions, including the National Horticulture Mission (NHM), Horticulture Mission for North East & Himalayan States (HMNEH), and the National Bamboo Mission (NBM).

## Key Features

**Clean Plant Programme (CPP):** Establishes virus-free mother plant nurseries and tissue culture facilities to enhance planting material quality.

## Post-Harvest Management (PHM):

Capital subsidies for pack houses, pre-cooling units, controlled atmosphere (CA) storage, and refrigerated transport.

**Protected Cultivation:** Scaling green houses, shade net houses, and plastic mulching to promote high-value, climate-resilient horticulture.

## Prelims Facts

**Nodal Ministry:** Ministry of Agriculture and Farmers Welfare.

**Cost Sharing:** 60:40 (Centre:State) in general states; 90:10 in North East and Himalayan states.

**Subsumed Schemes:** NHM, HMNEH, National Bamboo Mission.

# BHARAT PASHUDHAN DATABASE & NATIONAL LIVESTOCK MISSION

## Why in News?

In July 2026, the Department of Animal Husbandry and Dairying achieved 100% digital registry coverage of over 30 crore bovine and small ruminant livestock on the Bharat Pashudhan Database.

## About

The Bharat Pashudhan Database is an integrated digital platform under the National Digital Livestock Mission (NDLM).

Every bovine animal is assigned a unique 12-digit Barcoded / RFID Ear Tag (Pashu Aadhaar), creating an end-to-end traceable lifetime health, pedigree, vaccination, and breeding record.

## Significance

**Disease Control & Eradication:** Tracks

vaccination cycles under the National Animal Disease Control Programme (NADCP) for Foot and Mouth Disease (FMD) and Brucellosis.

**Breed Improvement:** Connects artificial insemination, embryo transfer, and progeny testing to improve milk yields per cow/buffalo.

**Farmer Direct Benefit Transfers:** Seamlessly verifies livestock ownership for insurance claims and Kisan Credit Card (KCC) animal husbandry limits.

## Prelims Facts

**Administrative Agency:** Department of Animal Husbandry and Dairying (DAHD).

**Identification System:** 12-digit unique Animal ID (Pashu Aadhaar ear-tagging).

**Integrated Portal:** Bharat Pashudhan Portal.

# INDIGENOUS POTASH PRODUCTION UNDER NUTRIENT BASED SUBSIDY (NBS)

## Why in News?

In July 2026, the Department of Fertilizers approved special additional subsidy incentives

under the Nutrient Based Subsidy (NBS) framework for fertilizer manufacturers producing Potash from Molasses (PDM) and Glaucanite mining.

## About

India is traditionally 100% import-dependent for Muriate of Potash (MoP), relying on imports from Canada, Russia, Belarus, and Israel.

To address this supply chain vulnerability, the government has integrated indigenously manufactured Potash Derived from Molasses (PDM) and mined polyhalite/glaucinite minerals into the NBS subsidy scheme.

## Economic Significance

**Circular Economy in Sugar Sector:** PDM is extracted from spent wash ash generated by sugarcane molasses distilleries, transforming an industrial waste into a high-value agricultural

nutrient.

**Forex Outflow Reduction:** Reduces the multi-billion-dollar annual fertilizer import bill and stabilizes domestic potash availability for balanced NPK fertilization.

## Prelims Facts

**Implementing Body:** Department of Fertilizers, Ministry of Chemicals and Fertilizers.

**Policy Framework:** Nutrient Based Subsidy (NBS) Scheme.

**Key Indigenous Alternative:** Potash Derived from Molasses (PDM).

# PRADHAN MANTRI KISAN SAMMAN NIDHI (PM-KISAN)

## Why in News?

In July 2026, the Central Government transferred the 17th installment of the PM-KISAN scheme, directly disbursing over ₹20,000 crore to more than 9.3 crore beneficiary farmer families nationwide.

## About

Launched in February 2019, PM-KISAN is a Central Sector Scheme providing supplemental income support to all landholding farmer families across India.

Under the scheme, an amount of ₹6,000 per year is transferred directly into the Aadhaar-seeded bank accounts of beneficiary farmers in three equal four-monthly installments of ₹2,000 each.

## Key Features

**Exclusion Criteria:** Institutional landholders, families holding constitutional posts, serving/retired government employees, professionals (doctors, engineers, lawyers), and income-tax payers are excluded.

**Digital Authentication:** 100% verification through the PM-KISAN portal using biometric Aadhaar authentication, facial recognition app e-KYC, and land title seeding via State Bhulekh portals.

## Prelims Facts

**Scheme Nature:** 100% Central Sector Scheme.

**Total Benefit:** ₹6,000 per year in three installments of ₹2,000.

**Administrative Ministry:** Ministry of Agriculture and Farmers Welfare.

# APEDA'S VALUE-CHAIN PROMOTION & FIRST MANGO SHIPMENTS

## Why in News?

In July 2026, the Agricultural and Processed Food Products Export Development Authority (APEDA) facilitated the first commercial export shipments of GI-tagged mango varieties from

non-traditional export states to newer markets in Oceania, Central Asia, and Scandinavia.

## About

APEDA is a statutory body established under

the Agricultural and Processed Food Products Export Development Authority Act, 1985, functioning under the Ministry of Commerce and Industry.

It is responsible for the export promotion and market development of scheduled agro-products, including fresh fruits, vegetables, processed foods, livestock, and cereals.

### Key Interventions

**Vapour Heat Treatment (VHT) & Irradiation:** Establishes automated phytosanitary treatment facilities to meet the stringent quarantine standards of importing nations.

**GI-Tag Branding:** Promotes unique indigenous cultivars, including Malda (West

Bengal), Banganapalle (Andhra Pradesh), Alphonso (Maharashtra), Jardalu (Bihar), and Kesar (Gujarat).

**Cold-Chain Logistics:** Financial assistance for integrated pack houses, pre-cooling centres, and sea-freight reefer container testing to reduce air-freight transport dependencies.

### Prelims Facts

**Statutory Authority:** APEDA (Established under APEDA Act, 1985).

**Parent Ministry:** Ministry of Commerce and Industry.

**Quality Infrastructure:** Vapour Heat Treatment (VHT), Gamma Irradiation.

## FOUR-PILLAR STRATEGY TO REVITALISE INDIA'S SHIPBUILDING SECTOR

### Why in News?

In July 2026, the Ministry of Ports, Shipping and Waterways finalised a comprehensive cabinet note detailing the “Four-Pillar Shipbuilding Revitalisation Policy” to elevate India into the top 5 global shipbuilding nations by 2047.

### About

Despite having a long coastline of 7,517 km and handling over 95% of international trade by volume via sea, India's share in global commercial shipbuilding remains under 1%.

The Four-Pillar Strategy provides structural financial and regulatory reforms to compete with shipbuilding hubs in China, South Korea, and Japan.

### Key Features (The Four Pillars)

**Pillar 1 — Financial Assistance Policy (SBFAP 2.0):** Extended and graduated financial subsidies (up to 20%–25%) on the contract price for constructing specialized green, LNG-fuelled, and electric coastal vessels.

**Pillar 2 — Infrastructure Status & Long-Term Financing:** Implementation of Harmonised Infrastructure Status for shipyards, enabling access to 25–30 year low-cost infrastructure loans.

**Pillar 3 — Maritime Development Fund (MDF):** Establishment of a dedicated ₹25,000-crore maritime investment fund to provide equity and credit guarantees to domestic yards.

**Pillar 4 — Cluster-Based Shipbuilding Parks:** Creation of dedicated Maritime Clusters with plug-and-play steel fabrication and drydock facilities along the eastern and western coasts.

### Prelims Facts

**Nodal Ministry:** Ministry of Ports, Shipping and Waterways.

**Key Target:** Expanding India's global shipbuilding share from <1% to >5% under Maritime Amrit Kaal Vision 2047.

**Key Institutional Mechanism:** Maritime Development Fund (MDF).

# INDIA'S TOY EXPORTS SURGE & DOMESTIC MANUFACTURING REBOUND

## Why in News?

In July 2026, official trade data confirmed that India's toy exports recorded an 89.1% growth compared to baseline years, alongside a 52% decline in toy imports.

## About

India's transformation in the toy sector represents a successful integration of tariff protection, quality regulation, cluster-level manufacturing, and export-oriented branding.

Historically dominated by low-quality, cheap imports, the domestic toy manufacturing industry has transitioned toward high-value, safe, and culturally resonant toys.

## Key Drivers of Growth

**Mandatory BIS Certification:** Implementation of the Toys (Quality Control) Order, 2020, making Bureau of Indian Standards (BIS) safety and non-toxicity marks mandatory for all domestic and imported toys.

**Tariff Protections:** Increase of Basic Customs Duty (BCD) on imported toys to 70%, incentivising global brands to establish manufacturing lines in India.

Scheme for Micro and Small Enterprises:

Dedicated cluster infrastructure development under the Scheme of Fund for Regeneration of Traditional Industries (SFURTI) for traditional toy craft belts.

## Prelims Facts

**Regulatory Standard:** Mandatory BIS (Bureau of Indian Standards) certification under Quality Control Order (QCO).

Basic Customs Duty (BCD) on Toys: Raised to 70%.



**Traditional Craft Clusters:** Channarayana (Karnataka), Kondapalli (Andhra Pradesh), Kinhal (Karnataka), Asharikandi (Assam).

# NATIONAL TECHNICAL TEXTILES MISSION (NTTM)

## Why in News?

In July 2026, the Ministry of Textiles approved 35 new specialized R&D projects and expanded the operational guidelines for indigenous technical textile testing laboratories under the National Technical Textiles Mission (NTTM).

## About

Technical textiles are textile materials and

products manufactured primarily for their technical performance and functional properties rather than their aesthetic or decorative characteristics.

The National Technical Textiles Mission operates with an outlay of ₹1,480 crore to establish domestic self-reliance, reduce imports, and position India as a global exporter across 12 distinct segments.

## Key Features

**Research & Innovation:** Grants for fundamental and applied R&D in carbon fibre, aramid fibres, and indigenous medical implants.

**Promotion & Market Development:** Mandatory usage mandates for technical textiles in highway construction (Geotextiles) and agriculture (Agrotextiles).

**Export Promotion:** Dedicated Export Promotion Council for Technical Textiles (EPCTT).

**Education & Skill Training:** Upgrading university engineering curricula to include specialized technical textile degrees.

### Prelims Facts

Total Outlay: ₹1,480 crore.

**Nodal Ministry:** Ministry of Textiles.

**Functional Categories:** 12 defined segments (e.g., Geotech, Meditech, Mobiltech, Agrotech, Protech).

## PM E-DRIVE SCHEME (PM ELECTRIC DRIVE REVOLUTION IN INNOVATIVE VEHICLE ENHANCEMENT)

### Why in News?

In July 2026, the Ministry of Heavy Industries reviewed the nationwide adoption milestones under the ₹10,900-crore PM E-DRIVE Scheme, focusing on fast-track EV public charging network deployment and e-bus fleet additions.

### About

PM E-DRIVE is the successor flagship EV promotion scheme replacing the erstwhile FAME-II framework.

With a financial outlay of ₹10,900 crore, the scheme incentivises electric two-wheelers, electric three-wheelers, e-ambulances, e-trucks, and the mass deployment of public electric buses.

### Key Features

**Demand Incentives for Mass Mobility:** Upfront purchase subsidy linked directly to battery capacity, administered via digital e-vouchers.

**Targeted E-Bus Deployment:** Outlay of over ₹4,300 crore to procure 14,000+ public transport e-buses through competitive state transport undertaking (STU) auctions.

**Public Charging Infrastructure:** Subsidised installation of 72,000+ high-capacity fast-charging points across high-density highway corridors and urban centres.

**Localization & Phased Manufacturing:** Mandatory compliance with the Phased Manufacturing Programme (PMP) to ensure domestic value addition in EV power electronics, motors, and battery management systems.

### Prelims Facts

**Nodal Ministry:** Ministry of Heavy Industries (MHI).

Total Outlay: ₹10,900 crore.

Successor to: FAME-II Scheme.

## STARTUP VILLAGE ENTREPRENEURSHIP PROGRAMME (SVEP)

### Why in News?

In July 2026, the Ministry of Rural Development reported the successful incubation of over 3.5 lakh micro-enterprises across 250+ rural blocks under the Startup Village Entrepreneurship

Programme (SVEP).

### About

SVEP is a Centrally Sponsored sub-scheme under the Deendayal Antyodaya Yojana - National

Rural Livelihoods Mission (DAY-NRLM).

It aims to support rural households in setting up non-farm micro-enterprises by providing end-to-end technical assistance, financial linkages, and market access.

### Key Features

**Community Resource Person - Enterprise Promotion (CRP-EP):** Identifies, trains, and deploys local rural youths as certified business advisers to handhold micro-entrepreneurs in bookkeeping, business planning, and compliance.

**Block Resource Centres (BRCs):** Community-owned and managed institutional mechanisms established at the block level to evaluate loan

applications and monitor enterprise sustainability.

**Community Enterprise Fund (CEF):** Provides affordable seed capital loans to self-help group members to launch enterprises in manufacturing, services, and trading.

### Prelims Facts

**Nodal Ministry:** Ministry of Rural Development.

**Umbrella Scheme:** DAY-NRLM.

**Grassroots Cadre:** Community Resource Persons for Enterprise Promotion (CRP-EP).

**Community Hub:** Block Resource Centre (BRC).

# GEOGRAPHY,

# ENVIRONMENT,

# BIODIVERSITY AND

# DISASTER MANAGEMENT

What's Inside?

1. GLOBAL PLASTICS TREATY
2. INDIA NEEDS A SECOND HOME FOR ASIATIC LIONS
3. STANDARD OPERATING PROCEDURES FOR MANAGING EL NIÑO RISKS IN INDIAN AGRICULTURE
4. INDIA'S NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (2024–2030)
5. NMCG'S FOCUS ON NATURE-BASED SOLUTIONS
6. CAMPA
7. ALL INDIA WATER SECRETARIES' CONFERENCE 2026
8. EK PED MAA KE NAAM CAMPAIGN
9. JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0
10. REWARD PROGRAMME OF KARNATAKA
11. MITIGATING THE URBAN HEAT ISLAND EFFECT IN INDIAN CITIES
12. MISSION MAUSAM AND BHARAT FORECAST SYSTEM
13. ACCESS AND BENEFIT SHARING (ABS)
14. INDIA DISASTER RESOURCE NETWORK (IDRN)
15. MISSION LIFE
16. IMPACT OF NATIONAL CLEAN AIR PROGRAMME ON PM2.5 LEVELS
17. BRICS DISASTER RISK REDUCTION WORK PLAN (2025–2028)
18. BRAHMAPUTRA FLOOD FORECASTING AND CLIMATE RESILIENCE
19. BIOE3 POLICY
20. X-BAND DOPPLER WEATHER RADAR
21. SCIENTIFIC MINE CLOSURE: FROM EXHAUSTED MINES TO NEW WEALTH
22. INDIA LEADS THE WILDERNESS IN TIGER CONSERVATION
23. IMPACT OF CLIMATE CHANGE ON CHANGPA TRIBES
24. XTREME WEATHER GRADE (XWG) DIESEL
25. PM SURYA SAROVAR YOJANA
26. PM E-DRIVE SCHEME
27. TECHNOLOGY-DRIVEN CROP INSURANCE: WINDS AND YES-TECH

## GLOBAL PLASTICS TREATY

### Why in News?

The **3rd Global Conclave on Plastic Recycling and Sustainability (GCPRS)** was held at **Bharat Mandapam, New Delhi, from 2–5 July 2026**. It highlighted the need for coordinated global action against plastic pollution and alignment of national efforts with the emerging **UN Global Plastics Treaty**.

### What is the Global Plastics Treaty?

The treaty is a proposed **legally binding international instrument** being negotiated under the **UN Environment Assembly (UNEA)** through the Intergovernmental Negotiating Committee (INC). It seeks to address plastic pollution across the entire life cycle of plastics—from **production and design to use, reuse, recycling and disposal**.

### Why is it Needed?

**Transboundary pollution:** Plastics travel across borders through rivers, oceans and trade, requiring coordinated global action.

**Environmental & health impacts:** Plastic waste damages ecosystems, while microplastics and associated chemicals pose potential risks to human health.

**Climate concerns:** Fossil-fuel-based plastic production and disposal contribute to greenhouse-gas emissions.

**Fragmented governance:** Existing global frameworks address specific aspects of plastics but lack a comprehensive life-cycle approach.

### Major Issues in Negotiations

The key divide is whether the treaty should regulate **plastic production** or focus primarily on pollution and waste management. Major contentious issues include:

**Caps on primary plastic polymer production;**

regulation of chemicals and additives;

phase-out of problematic plastics;

financing and technology transfer for developing countries; and

**equity and CBDR** based on differing national circumstances.

### India's Position

India supports a legally binding framework but opposes **global caps on primary plastic polymer production**, arguing that these could constrain developing countries' developmental space. It also favours flexibility regarding phase-outs and timelines.

India advocates **consensus-based decision-making, national circumstances, financial and technological support, a dedicated multilateral fund**, and avoidance of unnecessary overlap with institutions such as the WTO.

### India's Domestic Measures

India has strengthened plastic governance through the **Plastic Waste Management Rules, 2016, Extended Producer Responsibility (EPR)** and the ban on identified **single-use plastic items**.

## INDIA NEEDS A SECOND HOME FOR ASIATIC LIONS

India has successfully conserved the **Asiatic lion**, with its population rising to about **891 from 239 in 1985**. However, the entire wild population remains concentrated in the

**Gir landscape**, creating a major ecological vulnerability. A geographically separate second population is therefore essential for long-term survival.

## Need for a Second Population

**Single-point vulnerability:** Epidemics, fires, droughts or disasters in Gir could threaten the entire population.



**Disease risk:** The 2018 Canine Distemper Virus (CDV) outbreak killed 28 lions, highlighting this vulnerability.

**Habitat pressure:** Increasing lion movement outside protected areas has intensified human–wildlife conflict.

**Genetic resilience:** Separate populations can improve genetic diversity and reduce extinction risks.

**Metapopulation approach:** Multiple populations across suitable habitats provide greater ecological resilience.

## Scientific and Legal Support

The **Wildlife Institute of India (WII)** has repeatedly recommended establishing a second free-ranging population. In **2013**, the **Supreme Court directed translocation of Asiatic lions from Gir to Kuno National Park**, emphasising ecological considerations over regional interests. **Project Lion (2020)** also aims to expand lion habitats.

## Difficulty in Creating a Second Population

**State resistance:** Gujarat has opposed transferring lions outside the State, citing conservation success and habitat concerns.

**Policy deadlock:** Scientific recommendations and judicial directions remain inadequately implemented.

**Habitat requirements:** Alternative sites need sufficient prey, water, habitat and protection.

**Genetic management:** Small founder populations require careful genetic planning.

**Centre–State coordination:** Effective conservation requires cooperation between States and national institutions.

## Barda Wildlife Sanctuary

**Barda**, around 100 km west of Gir, is being developed as a satellite habitat under Project Lion. A male lion naturally entered Barda in 2023, while relocated lionesses subsequently produced cubs. Habitat restoration and prey augmentation are underway.

# STANDARD OPERATING PROCEDURES FOR MANAGING EL NIÑO RISKS IN INDIAN AGRICULTURE

## Why in News?

Amid concerns over **weak-to-moderate El Niño conditions during July–August**

**2026**, ICAR has issued **Standard Operating Procedures (SOPs) for Krishi Vigyan Kendras (KVKs)** to help districts manage potential agricultural risks.

## Why is El Niño a Concern for Indian Agriculture?

El Niño involves **abnormal warming of the central and eastern tropical Pacific Ocean** and can influence the Indian monsoon. A weak monsoon or delayed rainfall can cause moisture stress, affect sowing and reduce crop yields. However, **El Niño does not invariably result in below-normal rainfall in India.** (Press Information Bureau)

## Key Elements of the SOPs

**Early warning & monitoring:** KVKs are expected to translate weather information into timely, localised farmer advisories.

**Crop diversification:** Shift towards short-duration, drought-tolerant and climate-resilient crops/varieties where rainfall is delayed or deficient

**Moisture Conservation:** Promoting in-situ moisture conservation techniques, including mulching with crop residues and timely weeding to reduce evaporation.

**Efficient Irrigation:** Encouraging micro-irrigation systems (drip/sprinkler) and lifeline/

supplemental irrigation planning using farm ponds and local water bodies.

**Seed Availability:** Pre-positioning and ensuring adequate supply of alternate short-duration seed varieties across states before sowing windows close. [1]

**Contingency planning:** Implement district-specific plans based on rainfall, soil moisture, crop stage and local vulnerability.

**Alternative crops:** Where delayed monsoon affects crops such as tur, soybean and cotton, advisories may promote alternatives such as maize, bajra and moong.

**Livestock protection:** Ensure availability of green/dry fodder and cattle feed in vulnerable areas.

## Significance

The SOPs represent a shift from **post-disaster relief to anticipatory and climate-resilient agricultural management.** KVKs act as the last-mile link between agricultural research and farmers, enabling location-specific adaptation.

# INDIA'S NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (2024–2030)

India's **National Biodiversity Strategy and Action Plan (NBSAP) 2024–2030** is the country's roadmap for implementing the **Convention on Biological Diversity (CBD)** and is aligned with the **Kunming-Montreal Global Biodiversity Framework (KMGBF)** adopted at CBD COP15.

## Key Features

**23 National Biodiversity Targets (NBTs):** India has formulated 23 targets to be achieved by 2030, covering ecosystem conservation, species protection, sustainable use and biodiversity financing.

**Whole-of-government approach:** Biodiversity considerations are sought to be integrated into **development planning, infrastructure and economic activities**, rather than treating conservation as a standalone sector.

**Ecosystem restoration:** Emphasis on conservation and restoration of **forests, wetlands, coastal and marine ecosystems** and other ecologically important areas.

**Species conservation:** Strengthening protection and recovery of **threatened and endemic species** and improving habitat management.

**Sustainable use:** Promotes sustainable agriculture, forestry, fisheries and other resource-based activities while maintaining ecosystem health.

**Access and Benefit Sharing (ABS):** Ensures that benefits arising from the utilisation of **genetic resources and associated traditional knowledge** are shared fairly with communities.

**Community participation:** Recognises the role of **local and indigenous communities** as custodians of biodiversity and traditional ecological knowledge.

**Biodiversity finance:** Seeks to mobilise resources and **align public and private**

financial flows with biodiversity conservation.

**Monitoring:** India has developed national indicators to track progress towards its biodiversity targets.

## Significance

India is a **megadiverse country**, with biodiversity supporting livelihoods, food and water security, healthcare, climate resilience and cultural traditions. The NBSAP provides a framework to reconcile **economic development with ecological sustainability** and mainstream biodiversity into national development.

# NMCG'S FOCUS ON NATURE-BASED SOLUTIONS

## Why in News?

The **National Mission for Clean Ganga (NMCG)** is increasingly adopting **Nature-Based Solutions (NbS)** as a cost-effective and eco-friendly complement to conventional engineering for river rejuvenation and pollution control. Recent initiatives include **constructed-wetland pilot projects** at Shastri Park and Kailash Nagar drains in Delhi, designed to treat sewage before it reaches the Yamuna.

## What are Nature-Based Solutions?

NbS involve **protecting, restoring or sustainably managing natural ecosystems** to address societal challenges while providing environmental and social benefits.

## Key Focus Areas

### 1. Constructed Wetlands

Pilot projects use **natural rock filters, stone masonry and aquatic plants** to treat wastewater.

Projects include those at **Shastri Park and Kailash Nagar in Delhi and Khatauli for the Kali River**.

They offer low-energy and decentralised alternatives to conventional treatment.

### 2. Small River Rejuvenation

NMCG promotes frameworks focusing on **local water storage, natural river connectivity, catchment treatment and geomorphological restoration** rather than only large engineering interventions.

### 3. Urban River Management Plans (URMPs)

Being expanded across around **60 cities in the Ganga basin**.

Focus on watershed management, urban flooding, wetland conservation and improving local water quality through natural and community-based interventions.

### 4. Biodiversity & Afforestation

Native tree plantation, wetland conservation and protection of aquatic species such as **Gangetic dolphins and turtles** help restore river ecosystems and their natural self-purification capacity.

## Significance

NbS can provide multiple benefits simultaneously—pollution reduction, flood mitigation, groundwater recharge, biodiversity conservation and climate resilience. They can also reduce dependence on energy-intensive infrastructure.

## CAMPA

### Why in News?

The **7th Meeting of the Governing Body of National CAMPA** was held at Coimbatore, chaired by the Union Minister for Environment, Forest and Climate Change. The meeting reviewed compensatory afforestation, CAMPA fund utilisation, forest conservation and wildlife protection initiatives.

### What is CAMPA?

The **Compensatory Afforestation Fund Management and Planning Authority (CAMPA)** manages funds collected from user agencies when forest land is diverted for non-forest purposes. These funds support compensatory afforestation, forest restoration, wildlife protection and related activities.

### Key Developments

**Digital Annual Plan of Operations (APO):** From 2026–27, States and UTs are required to submit CAMPA Annual Plans exclusively through an **online, workflow-based system**, enabling digital monitoring of proposals, approvals, fund utilisation and plantation performance.

**GIS-based Monitoring:** A dedicated **GIS Lab** is being established to use satellite imagery, GIS and field verification for transparent monitoring of compensatory afforestation

and CAMPA-funded projects.

**Harit-SANKALP Portal:** Developed with FAO-India, the portal provides QR-code-based traceability of **seeds, nurseries and planting material**, enabling monitoring from the national to range level.

**MISHTI:** Under the **Mangrove Initiative for Shoreline Habitats & Tangible Incomes (MISHTI)**, ₹88.40 crore has been released for mangrove restoration in six States/UTs. The programme has been extended till 2029, with an additional ₹500 crore, taking its total outlay to ₹600 crore.

**Nagar Van Yojana:** **652 Nagar Vans/Vatikas** have been developed with ₹571.50 crore released, promoting urban green spaces.

**Green Credit Scheme:** ₹7.28 crore has been released to **ICFRE** to promote plantation-based expansion of green cover.

### Significance

The reforms seek to make CAMPA implementation more **transparent, technology-driven and outcome-oriented**, while improving monitoring of afforestation, ecosystem restoration and biodiversity conservation.

## ALL INDIA WATER SECRETARIES' CONFERENCE 2026

### Why in News?

The All India Water Secretaries' Conference was held in New Delhi in July 2026 by the Department of Water Resources, River Development & Ganga Rejuvenation, with participation from senior officials of all States and UTs. The conference focused on strengthening cooperative federalism and sustainable water-resource management.

### Key Agenda and Initiatives

**1. Catch the Rain 2026:** A special one-month nationwide campaign aims to promote rainwater harvesting, groundwater recharge, restoration of traditional water bodies, pond desilting and plantation. States were urged to upload activities on the Jal Shakti Abhiyan: Catch the Rain portal.

**2. M-CADWM Scheme:** The Modernisation of Command Area Development and Water

Management scheme seeks to improve irrigation efficiency through better water distribution, Water User Associations and modern infrastructure, thereby improving water-use efficiency and farmers' incomes.

**3. Dam Safety:** Under the Dam Safety Act, 2021, the Centre aims to complete Comprehensive Dam Safety Evaluation (CDSE) of all specified dams by December 2026.

**4. State Water Reforms Framework (SWRF)** Launched in May 2026, the framework promotes water governance reforms, digitisation, project monitoring and citizen participation. All 36 States and UTs have nominated nodal officers.

**5. Evidence-based Water Governance:** The conference reviewed the 7th Minor Irrigation

Census, 2nd Water Bodies Census, 1st Major and Medium Irrigation Project Census and 1st Springs Census, strengthening data-driven planning.

### Important Documents Released

- City-level Action Plan for Reuse of Treated Water for Varanasi – promotes safe wastewater reuse and a circular water economy.
- O&M Manual for Artificial Recharge and Groundwater Conservation Structures – jointly developed by NWM and CGWB.
- Schedule of Rates for Drilling and Allied Works – promotes transparency and standardisation.
- 

## EK PED MAE KE NAAM CAMPAIGN

### Background

**Ek Ped Mae Ke Naam** is a nationwide tree-plantation campaign launched by Prime Minister Narendra Modi on **5 June 2024 (World Environment Day)**. It encourages citizens to plant a tree as a tribute to their mothers and to strengthen environmental stewardship.

### Key Features

- **Citizen-centric campaign:** Seeks to transform afforestation from a government programme into a **people's movement**, encouraging individuals, communities, institutions and organisations to participate.
- **Linking ecology with emotion:** The campaign connects environmental protection with the **emotional and cultural significance of mothers**, making conservation more participatory.
- **Mass plantation:** The campaign aims to increase green cover through plantation

on appropriate public, institutional and community lands.

- **Native species:** Emphasis on ecologically suitable and preferably **native tree species**, which can support local biodiversity and ecosystem services.
- **Digital participation:** Plantation activities can be recorded through the **Meri LiFE portal/app**, enabling citizen participation and monitoring.
- **Mission LiFE:** The campaign complements India's **Lifestyle for Environment (LiFE)** approach by encouraging sustainable behaviour at the individual level.

### Significance

**Climate mitigation:** Trees act as carbon sinks and contribute to India's efforts towards achieving its climate commitments.

**Biodiversity conservation:** Native vegetation provides habitat and food for birds, insects and other wildlife.

**Ecosystem services:** Trees help regulate temperature, reduce soil erosion, improve groundwater recharge and enhance air quality.

**People's participation:** It promotes Jan Bhagidari in environmental conservation and strengthens environmental awareness.

**Urban resilience:** Plantation in cities can help reduce the urban heat-island effect, improve green spaces and enhance quality of life.

## JAL SANCHAY JAN BHAGIDARI (JSJB) 2.0

### Why in News?

The **Jal Sanchay Jan Bhagidari (JSJB) 2.0** initiative has crossed its target of creating **1 crore artificial groundwater recharge and water-storage structures**. More than **1.5 crore structures** were reported nationwide against the target by May 2026. The reported works are undergoing physical verification and field validation.

### About JSJB 2.0

Launched on **1 June 2025** by the Ministry of Jal Shakti, JSJB 2.0 builds on JSJB 1.0 and focuses particularly on **Over-Exploited and Critical groundwater districts**.

Its objective is to accelerate groundwater recharge through **low-cost, hyper-local interventions** using a Whole-of-Government and Whole-of-Society approach. (Press Information Bureau)

### Key Features

**Artificial recharge:** Construction of recharge pits, shafts, borewell recharge structures and other locally appropriate interventions.

**Community participation:** Involves citizens, Panchayati Raj Institutions, civil society,

industries and government agencies, making water conservation a Jan Andolan.

**3C approach:** Emphasises Community, CSR and Cost-effective solutions.

**Local solutions:** Interventions are designed according to local hydrogeological and water-stress conditions.

**Monitoring:** A dedicated JSJB 2.0 portal tracks reported works and enables public feedback, improving transparency and maintenance.

**Groundwater focus:** Particularly targets districts facing critical groundwater depletion.

### Significance

JSJB 2.0 shifts water conservation from a purely government-led activity towards **community-owned groundwater management**. It can improve groundwater availability, strengthen climate resilience and reduce water stress.

However, the number of structures alone does not guarantee groundwater security. Scientific site selection, functionality, maintenance, physical verification and monitoring of actual groundwater recharge are essential.

## REWARD PROGRAMME OF KARNATAKA

### Why in News?

Karnataka is implementing the REWARD programme, a World Bank-supported initiative aimed at strengthening science-based watershed management, agricultural resilience and farmers' livelihoods. The programme is particularly significant for Karnataka because a large part of the State

is rainfed and vulnerable to drought and rainfall variability.

### What is REWARD?

REWARD stands for Rejuvenating Watersheds for Agricultural Resilience through Innovative Development. It is implemented under the Watershed Development Component of

Pradhan Mantri Krishi Sinchayee Yojana (WDC-PMKSY).

The programme is supported by a \$115 million World Bank financing package, including \$60 million for Karnataka and \$49 million for Odisha.

### Key Features

**Science-based watershed planning:** Uses Land Resource Inventory (LRI), spatial data, GIS and hydrological information to improve watershed planning.

**Rainfed agriculture:** Focuses on improving resilience in rainfed districts vulnerable to drought and climate variability.

**Watershed development:** Promotes soil and water conservation, groundwater recharge and efficient use of land and water resources.

**Farmer Producer Organisations (FPOs):** Supports value-chain development and

stronger market linkages to improve farm incomes.

**Institutional strengthening:** Builds the capacity of Karnataka's Watershed Development Department for better planning, implementation and monitoring.

**Lighthouse State:** Karnataka is designated as a 'lighthouse' state, enabling it to share its experience in science-based watershed planning with other States.

### Significance

REWARD shifts watershed development from conventional infrastructure-led interventions towards data-driven, participatory and climate-resilient management. It seeks to simultaneously improve **water security, agricultural productivity, farmer incomes and ecosystem sustainability**

## MITIGATING THE URBAN HEAT ISLAND EFFECT IN INDIAN CITIES

### What is Urban Heat Island (UHI)?

The Urban Heat Island effect refers to the phenomenon where urban areas experience higher temperatures than surrounding rural areas due to concrete surfaces, reduced vegetation, heat generated by buildings and vehicles, and limited natural cooling. It intensifies heat-wave impacts and threatens public health, livelihoods and urban infrastructure.

### Government Measures

**1. Heat Action Plans (HAPs):** The NDMA's 2019 guidelines require cities to assess UHI vulnerabilities and incorporate mitigation measures into HAPs. HAPs have been prepared by 23 States, 195 districts and 64 cities.

**2. Protection of Informal Workers:** NDMA recommends shaded vending zones, hydration facilities, cooling centres, flexible working

hours and timely heat alerts for street vendors and outdoor workers, with gender-sensitive measures.

**3. Climate-resilient Urban Planning:** MoHUA guidelines promote urban green spaces, water bodies, open areas, semi-permeable surfaces, green roofs, green buildings and climate-responsive building and street design.

**4. AMRUT & AMRUT 2.0:** Under AMRUT, 3,458 parks covering 11,119 acres have been developed. AMRUT 2.0 has also supported waterbody restoration and green mobility projects.

A pilot "Building Heat Resilient Cities" programme is assessing heat risks in 12 cities, including Bengaluru, Bhopal, Guwahati, Jodhpur and Visakhapatnam, and developing city-specific solutions.

**5. Delhi's Climate Action:** Delhi's revised SAPCC incorporates cool roofs, cooling corridors, urban green infrastructure, wetland restoration, improved drainage and heat-health surveillance.

**6. India Cooling Action Plan (ICAP):** ICAP aims to reduce cooling demand, improve energy efficiency and promote sustainable cooling technologies.

## MISSION MAUSAM AND BHARAT FORECAST SYSTEM

### Mission Mausam

Mission Mausam is a Government of India initiative aimed at making India a "Weather-ready and Climate-smart" nation. It is implemented by the India Meteorological Department (IMD), National Centre for Medium Range Weather Forecasting (NCMRWF) and Indian Institute of Tropical Meteorology (IITM).

### Key Objectives

- Strengthen weather observation networks through Automatic Weather Stations, radars and other instruments.
- Improve Numerical Weather Prediction (NWP) and climate modelling.
- Provide impact-based forecasts and risk-based warnings for extreme events.
- Promote AI/ML-based forecasting and nowcasting.
- Expand forecasts from district level to panchayat and village levels.
- Strengthen early-warning systems for cyclones, floods, heatwaves, thunderstorms and other hazards.
- Enhance computational capacity through supercomputers such as Arka and Arunika.

### Bharat Forecast System (BharatFS)

- BharatFS is an indigenous high-resolution numerical weather prediction model

developed under Mission Mausam. It represents a major improvement over earlier 12-km resolution forecasting systems.

- 6-km spatial resolution, enabling forecasts at block, panchayat or cluster-of-panchayats level.
- Can provide rainfall predictions for up to 10 days.
- Captures localised weather phenomena more effectively because of its finer resolution.
- Supports short- and medium-range weather forecasting.
- Uses enhanced computational infrastructure to process large volumes of atmospheric data.

### Significance

BharatFS enables hyperlocal weather information, which is particularly important for agriculture, disaster management, aviation, urban planning and water management. Panchayat-level forecasts can help farmers decide sowing, irrigation and harvesting activities and allow local authorities to prepare for extreme weather.

Mission Mausam also represents a shift from simply predicting "what the weather will be" towards forecasting "what the weather will do", through impact-based and risk-based warnings.

## ACCESS AND BENEFIT SHARING (ABS)

### What is Access and Benefit Sharing?

Access and Benefit Sharing (ABS) is the principle that benefits arising from the utilisation of genetic resources and associated traditional knowledge should be shared fairly and equitably with the countries and communities that provide them.

It is one of the three objectives of the Convention on Biological Diversity (CBD), along with conservation of biodiversity and sustainable use of its components.

### International Framework

- **CBD (1992):** Recognises the sovereign rights of countries over their biological resources and establishes ABS as a core principle.
- **Nagoya Protocol (2010):** A supplementary agreement to the CBD providing a legal framework for access to genetic resources and fair and equitable benefit sharing.
- **Benefits may be monetary** (royalties, fees, benefit-sharing payments) or non-monetary (technology transfer, capacity building, research collaboration).

### India's ABS Framework

India implements ABS primarily through the Biological Diversity Act, 2002, amended in 2023, and the Biological Diversity Rules, 2024.

The National Biodiversity Authority (NBA) regulates access to biological resources and

associated knowledge in specified cases, while State Biodiversity Boards and Biodiversity Management Committees (BMCs) operate at State and local levels.

People's Biodiversity Registers (PBRs) document local biological resources and associated traditional knowledge, providing a basis for conservation and benefit sharing.

### Why is ABS Important?

- **Prevents biopiracy:** Protects biological resources and traditional knowledge from unauthorised commercial exploitation.
- **Empowers local communities:** Communities can receive benefits from commercial use of resources and traditional knowledge.
- **Promotes conservation:** Sharing benefits creates incentives for sustainable management of biodiversity.
- **Supports equity:** Ensures that benefits from biological resources do not accrue solely to commercial users or developed countries.

### Key Challenge

A major challenge is ensuring that benefit-sharing actually reaches local and indigenous communities, while balancing ease of access for legitimate research and innovation.

## INDIA DISASTER RESOURCE NETWORK (IDRN)

### What is IDRN?

The India Disaster Resource Network (IDRN) is a nationwide, web-based inventory of equipment, skilled human resources and critical supplies available for disaster response. It was initiated by the Ministry of Home Affairs in 2003 under the GoI-UNDP Disaster Risk Management Programme.

Since 2008, the National Institute of Disaster Management (NIDM) has been responsible for its monitoring and maintenance.

### Key Features

- **Resource inventory:** Maintains information on disaster-response resources such as rescue equipment, medical supplies and trained personnel.

- **District-level focus:** Resources are mapped at the district level, enabling authorities to identify what is available and where it is located.
- **Multi-sectoral database:** Includes resources from government departments, private organisations and PSUs.
- **Decision-support tool:** Helps disaster managers rapidly identify and mobilise appropriate resources during emergencies.
- **Preparedness assessment:** Enables authorities to assess resource availability and preparedness for different disaster scenarios.
- **Digital platform:** The database is hosted on NIC infrastructure, while NIDM centrally monitors and maintains it. District Collectors/Magistrates facilitate data collection and updating.

## Resources Covered

The portal categorises resources into:

- Equipment – boats, cutters, lifting equipment, search-and-rescue machinery etc.
- Human resources – skilled personnel required for emergency response.
- Medical supplies – essential materials required during disasters.

## Significance

IDRN strengthens the preparedness and response pillars of disaster management by reducing the time required to locate and mobilise resources. It promotes inter-agency coordination, resource optimisation and evidence-based disaster preparedness.

# MISSION LIFE

## Why in News?

A recent government update on 23 July 2026 highlighted the progress of Mission LiFE (Lifestyle for Environment), India's mass movement promoting sustainable lifestyles and environmentally responsible behaviour. As of December 2025, over 6 crore people had participated in more than 34 lakh LiFE-related events, with 4.96 crore pledges recorded.

## What is Mission LiFE?

Mission LiFE was launched by India in 2022 as an India-led global movement to shift society from mindless consumption to mindful and sustainable utilisation of resources. It seeks to make individual and community behaviour an important component of climate action.

## Seven Key Themes

Mission LiFE promotes behavioural changes around:

- Save Energy
- Save Water
- Reduce Waste
- Reduce E-waste
- Say No to Single-Use Plastic
- Adopt Sustainable Food Systems
- Adopt Healthy Lifestyles

## Core Concept and Goals

**Pro Planet People (P3):** Builds a global network of individuals committed to sustainable daily habits.

**Circular Economy:** Seeks to substitute the traditional “use-and-dispose” consumption model with recycling and reuse.

**Mindful Action:** Encourages simple, localized choices—like saving water and energy or cutting down single-use plastics.

### Phrased Phases of Progress

**Change in Demand:** Nudges people to adopt eco-friendly habits in daily routines.

**Change in Supply:** Influences markets and industries to shift production to match

sustainable consumer requests.

**Policy Scaling:** Encourages governmental frameworks globally to support green infrastructure and long-term climate targets

## IMPACT OF NATIONAL CLEAN AIR PROGRAMME ON PM2.5 LEVELS

### Why in News?

A recent **Rajya Sabha** reply (July 2026) highlighted the progress of the **National Clean Air Programme (NCAP)**. Of the 130 cities covered under NCAP, **65 cities met the National Ambient Air Quality Standard (NAAQS) for PM2.5** in 2025–26, with the standard set at  $40\text{ }\mu\text{g}/\text{m}^3$ .

### About NCAP

Launched in **2019** by the Ministry of Environment, Forest and Climate Change, NCAP aims to improve air quality in identified **non-attainment and million-plus cities** through coordinated city-level action.

The original target of **20–30% reduction in particulate matter by 2024** was subsequently revised to achieving up to **40% reduction in PM10 concentration or meeting the NAAQS by 2025–26**, compared with the 2019–20

baseline.

### Impact on PM2.5

65 of 130 NCAP cities met the PM2.5 standard of  $\leq 40\text{ }\mu\text{g}/\text{m}^3$  in 2025–26.

2025–26 PM2.5 levels included:

- **Hyderabad** –  $34\text{ }\mu\text{g}/\text{m}^3$
- **Surat** –  $32\text{ }\mu\text{g}/\text{m}^3$
- **Mumbai** –  $33\text{ }\mu\text{g}/\text{m}^3$
- **Pune** –  $41\text{ }\mu\text{g}/\text{m}^3$
- **Delhi** –  $102\text{ }\mu\text{g}/\text{m}^3$ .

While NCAP has shown measurable progress, considerable variation remains between cities.

### Impact on PM10

The programme has recorded broader improvement in PM10:

- **108 cities** recorded reductions in annual PM10 levels in 2025–26 compared with 2017–18.
- **72 cities** achieved reductions exceeding 20%.
- **26 cities** achieved reductions exceeding 40%.
- **14 cities** met the PM10 NAAQS of  $60\text{ }\mu\text{g}/\text{m}^3$ , compared with six in 2017–18.

### Key Measures

NCAP supports **city-specific Clean Air Action Plans**, monitoring networks, road-dust control, waste management, cleaner transport, industrial emission control and increased green cover.



## Significance

The progress indicates that **coordinated, city-specific interventions can improve air quality**, but PM2.5 remains a major challenge because of multiple sources including

transport, industry, construction, residential combustion and secondary particulate formation.

# BRICS DISASTER RISK REDUCTION WORK PLAN (2025–2028)

## Why in News?

Under **India's BRICS Chairship 2026**, the **3rd BRICS Ministerial Meeting on Disaster Risk Reduction** was held in New Delhi on **24 July 2026**. Ministers reviewed the implementation of the **BRICS Disaster Risk Reduction Work Plan (2025–2028)** and adopted a Joint Statement to strengthen cooperation in disaster resilience.

## About the Work Plan

The Work Plan provides a framework for **BRICS cooperation on disaster prevention, preparedness, mitigation, response and recovery**, with greater emphasis on climate-related and multi-hazard risks.

## Key Focus Areas

- **Prevention and mitigation:** Shift from post-disaster response towards proactive risk reduction, consistent with the Sendai Framework for Disaster Risk Reduction 2015–2030.
- **Climate-resilient DRR:** Integrate climate-change considerations into disaster-risk planning and development.
- **Early Warning Systems:** Strengthen forecasting, multi-hazard early-warning systems and dissemination of warnings to vulnerable communities.
- **Resilient infrastructure:** Promote disaster- and climate-resilient infrastructure and risk-informed development.

- **Science, technology and innovation:** Share technologies, data, research and best practices for disaster prediction and management.
- **Nature-Based Solutions:** Promote ecosystem-based approaches for reducing risks such as floods, droughts and coastal hazards.
- **Community resilience:** Strengthen local capacities and community participation, particularly among vulnerable groups.
- **Capacity building and knowledge sharing:** Facilitate training, institutional cooperation and exchange of expertise among BRICS countries.

## Significance for India

India faces increasing risks from **cyclones, floods, heatwaves, landslides, droughts and urban flooding**. BRICS cooperation can help India access diverse experiences, technologies and best practices, while allowing it to share initiatives such as **SACHET, early-warning systems and community-based disaster management**.

The Work Plan reinforces India's transition from a relief-centric approach to prevention, preparedness and resilience, while strengthening South-South cooperation in disaster management.

# BRAHMAPUTRA FLOOD FORECASTING AND CLIMATE RESILIENCE

## Why in News?

A **Rajya Sabha** reply on 30 July 2026 highlighted measures to strengthen **flood forecasting and climate resilience in the Brahmaputra basin**, particularly Assam. The government outlined the role of **Mission Mausam, Central Water Commission (CWC) and IMD** in improving early-warning systems.

## Mission Mausam

Approved in 2024, Mission Mausam aims to make India “**Weather-ready and Climate-smart**” by improving:

- Weather observation networks.
- High-resolution numerical weather prediction.
- High-performance computing.
- Early-warning systems and **last-mile dissemination** of forecasts.

It uses **physical as well as AI-based weather models**, with forecasts generated through multi-model ensemble techniques and the **Multi-Hazard Early Warning Decision Support System (MHEW-DSS)**.

## Brahmaputra Flood Forecasting

The **Central Water Commission (CWC)** provides short-range flood forecasts with a lead time of **up to 24 hours**.

CWC maintains **32 flood-forecast stations** covering the Brahmaputra and its tributaries and the Barak River system in Assam.

AI/ML-based models have been developed for **12 level-forecast stations** nationally.

**8 of these stations are located in the Brahmaputra basin in Assam**, strengthening technology-driven flood forecasting.

## Institutional Network

The **India Meteorological Department (IMD)** provides weather services through **8 Regional Meteorological Centres and 25 Meteorological Centres**.

The **Regional Meteorological Centre, Guwahati** serves Assam and other northeastern regions, supported by a network of meteorological observatories that continuously collect weather and climate data.

## Significance

The Brahmaputra basin is highly vulnerable to **floods, erosion, extreme rainfall and climate variability**. Combining meteorological forecasting with hydrological flood prediction and AI/ML can improve **early warning, disaster preparedness and evacuation planning**.

However, a 24-hour forecast window remains challenging for rapidly developing floods. Strengthening **real-time data sharing, basin-wide forecasting, local-level warnings and community preparedness** is essential for climate-resilient flood management.

# BIOE3 POLICY

The **BioE3 (Biotechnology for Economy, Environment & Employment) Policy** was approved by the Union Cabinet in August 2024 to promote **high-performance biomanufacturing** and build a globally competitive bioeconomy in India.

## Objectives

- Develop a resilient biomanufacturing ecosystem for bio-based products.
- Promote green and sustainable manufacturing as an alternative to fossil-fuel-based production.

- Strengthen collaboration among academia, start-ups, SMEs and industry.
- Create skilled employment and reduce dependence on imported technologies and products.
- Integrate biotechnology, engineering, AI and digital technologies for large-scale production.

## Six Thematic Sectors

1. Bio-based chemicals, biopolymers, APIs and enzymes
2. Smart proteins and functional foods
3. Precision biotherapeutics
4. Climate-resilient agriculture
5. Carbon Capture and Utilisation (CCU)
6. Futuristic marine and space research

## Key Implementation Mechanisms

**Biofoundries & Biomanufacturing Hubs:** Provide shared infrastructure to start-ups, SMEs, academia and industry for pilot and pre-commercial scale production.

**Bio-AI Hubs:** Integrate AI with biotechnology for faster biological discovery, design and optimisation.

**BioE3-Strain Resource Centre:** Established at BRIC-NCCS, Pune, it provides indigenous microbial strains with freedom-to-operate, reducing dependence on imported strains.

**Centre-State Partnership:** BioE3 Cells are being established by States to develop State-specific biomanufacturing strategies.

## Major Applications

- Development of **biopolymers, enzymes and bio-based chemicals** as import substitutes.
- **CAR-T therapies, monoclonal antibodies and mRNA therapeutics** under precision biotherapeutics.
- Bio-inputs and genome-based technologies for **climate-resilient agriculture**.
- Biological solutions for **carbon capture and utilisation**.
- Sustainable **seaweed cultivation, aquaculture and marine biotechnology**.
- **Space biotechnology and biomanufacturing** through DBT-ISRO collaboration.

## Significance

BioE3 can help India move from being primarily a **consumer of biotechnology to a producer of bio-based technologies and products**. It supports Atmanirbhar Bharat, **green growth, circular economy, climate resilience and employment generation**, while strengthening India's emerging **bioeconomy**.

# X-BAND DOPPLER WEATHER RADAR

## Why in News?

The proposed installation of an X-Band Doppler Weather Radar in Lahaul and Spiti, Himachal Pradesh, is currently on hold as the India Meteorological Department (IMD) has not been able to identify a suitable site. Expert surveys found that the region's severe mountain barriers would cause beam blockage, preventing the radar from effectively scanning weather systems.

The government is instead relying on

Automatic Weather Stations (AWS) and rain gauges installed across Himachal Pradesh for local weather monitoring.

## What is X-Band Doppler Weather Radar?

An X-Band Doppler Weather Radar operates at a frequency of around 8–12 GHz and uses electromagnetic waves to detect precipitation and atmospheric particles. Its Doppler capability enables measurement of the velocity and movement of precipitation and winds.

## Key Features

High spatial resolution: Shorter wavelengths enable detection of small-scale and localized weather phenomena.

- **Nowcasting:** Useful for forecasting rainfall, thunderstorms and other events over the next few hours.
- **Flood forecasting:** Provides high-resolution rainfall information useful for urban and flash-flood warnings.
- **Storm monitoring:** Helps track the intensity and movement of thunderstorms and severe weather systems.
- **Doppler capability:** Measures the speed and direction of atmospheric particles, providing information about wind patterns.

## Limitations

- **Terrain sensitivity:** Mountains can block the radar beam, creating areas of poor or no observation.

- **Shorter range:** X-band signals experience greater attenuation, particularly during heavy rainfall.
- Hence, X-band radars are generally used as **complementary, high-resolution systems** alongside larger S- and C-band radars.

## Significance

X-band radars are particularly valuable for **mountainous and urban regions** where localized extreme weather requires high-resolution monitoring. Under **Mission Mausam**, expanding India's weather-observation network can improve early warnings for **cloudbursts, thunderstorms, heavy rainfall and flash floods**.

However, the Lahaul-Spiti case demonstrates that radar deployment must account for **terrain, beam blockage and site suitability**, highlighting the importance of integrating radars with AWS, rain gauges and satellite observations.

# SCIENTIFIC MINE CLOSURE: FROM EXHAUSTED MINES TO NEW WEALTH

## Why in News?

The Ministry of Coal released AAROH – Annual Report on Mine Closure, documenting the scientific closure of 42 coal mines and showcasing post-mining land-use models. The initiative aims to transform exhausted mines into centres of environmental restoration, economic activity and sustainable livelihoods, supporting India's transition towards a circular economy.

## What is Scientific Mine Closure?

Mine closure involves systematic restoration and rehabilitation of mining areas after extraction ends. A scientific approach goes beyond simply abandoning mines and focuses on:

- Ecological restoration and land reclamation.

- Safe and productive utilisation of mine water.
- Sustainable post-mining land use.
- Livelihood creation for local communities.
- Conversion of degraded land into productive assets.

## Key Initiatives

**AAROH:** Documents best practices from 42 scientifically closed mines, providing a roadmap for future post-mining land use.

**RECLAIM:** Promotes land reclamation and ecological restoration of mined-out areas.

**LIVES:** Focuses on livelihood generation and community development in coal-bearing regions.

**SUVIKALP:** Supports productive and

sustainable utilisation of reclaimed mining land.

**Coal NEER:** Promotes utilisation of mine water for productive purposes, including community needs.

**GIZ Partnership:** The Ministry of Coal and Germany's GIZ have entered into a technical cooperation agreement to strengthen scientific mine closure.

## Post-Mining Opportunities

Reclaimed mines can support agriculture, renewable energy, tourism, water-resource development and skill centres. Greater participation of Self-Help Groups and women

can convert post-mining restoration into sustainable local employment.

## Significance

Scientific mine closure advances the principles of a circular economy by converting exhausted resources and degraded land into productive assets. It simultaneously promotes resource efficiency, environmental restoration, sustainable land use and community development.

It also supports India's Net Zero target by 2070, ensuring that economic development is accompanied by responsible restoration of natural resources.

# INDIA LEADS THE WILDERNESS IN TIGER CONSERVATION

## Why in News?

**International Tiger Day (29 July)** highlights India's leadership in tiger conservation. India hosts nearly **70% of the world's wild tigers**, with the **2022 All India Tiger Estimation** recording 3,682 tigers.

## India's Tiger Conservation Success

India's tiger population has **more than doubled since 2006**, reflecting sustained habitat protection, scientific monitoring and institutional support.



**Project Tiger**, launched as a Centrally Sponsored Scheme, provides financial and technical assistance to tiger-range States.

The programme now covers **58 tiger reserves across 18 States**, spanning about **84,500 sq km**.

### Institutional & Legal Framework

**National Tiger Conservation Authority (NTCA)**: Provides scientific, technical and financial guidance and approves Tiger Conservation Plans.

**Wildlife (Protection) Act, 1972**: Section 38V(3) mandates Tiger Conservation Plans for every tiger reserve.

The Tiger Task Force contributed to reforms in 2006, strengthening the institutional framework through NTCA and the Wildlife Crime Control Bureau.

### Technology-Based Conservation

**All India Tiger Estimation (AITE)** is conducted every four years and is regarded as the **world's largest biodiversity survey**.

**M-STrIPES**, camera traps, GPS, remote sensing and AI-based tools such as **CaTRAT**

and **ExtractCompare** enhance monitoring and individual tiger identification.

**Management Effectiveness Evaluation (MEE)** assesses reserve management and identifies gaps.

### Global Cooperation

**International Big Cat Alliance (IBCA)** promotes conservation of seven big-cat species.

**Global Tiger Forum (GTF)**, headquartered in New Delhi, brings together **13 tiger-range countries**.

India also collaborates with Nepal, Bhutan, Russia and other countries on transboundary conservation.

### Way Forward

- Strengthen **wildlife corridors and landscape-level conservation**.
- Promote climate-resilient habitats and community participation.
- Continue technology-driven monitoring and capacity building of frontline personnel.

## IMPACT OF CLIMATE CHANGE ON CHANGPA TRIBES



### Why in News?

The **Changpa pastoralists of Ladakh** are highly vulnerable to climate change because their livelihoods depend heavily on livestock, seasonal migration and fragile high-altitude ecosystems.

### Who are the Changpa?

- The Changpa are **semi-nomadic pastoralists** inhabiting the high-altitude **Changthang region of Ladakh**.
  - Their traditional economy revolves around **pashmina goat rearing**, sheep, yak and other livestock.
- Impact of Climate Change on Changpa Tribes.

- **Pashmina production** is a major source of livelihood and is closely linked with their pastoral culture.

## Impact of Climate Change

- **Changing precipitation patterns:** Altered snowfall and rainfall affect the availability of water and pasture, disrupting traditional grazing cycles.
- **Pasture degradation:** Rising temperatures and changing moisture conditions can reduce the quality and availability of high-altitude grasslands.
- **Water stress:** Changes in snow and glacier melt can affect the availability of water for both people and livestock.
- **Livestock vulnerability:** Extreme weather events, changing pasture conditions and disease risks can increase livestock mortality and reduce productivity.
- **Threat to pashmina:** Changes in temperature, pasture quality and animal health can adversely affect Changra goats and the quantity/quality of pashmina fibre.
- **Disruption of traditional migration:** Climate variability can make established

seasonal grazing routes less predictable, affecting centuries-old pastoral practices.

## Wider Socio-Economic Impacts

Declining livestock productivity can increase **economic insecurity and dependence on alternative livelihoods**.

Climate-induced ecological changes may contribute **to sedentarisation and erosion of traditional knowledge and culture**.

The vulnerability is intensified by the region's **fragile high-altitude ecosystem** and limited livelihood alternatives.

## Way Forward

Promote **climate-resilient pastoralism**, improved veterinary services and fodder management.

Strengthen water conservation and sustainable management of high-altitude rangelands.

Support **pashmina value chains**, insurance and livelihood diversification while protecting Changpa cultural practices.

Involve Changpa communities in **local climate adaptation and rangeland management**.

# XTREME WEATHER GRADE (XWG) DIESEL

## Why in News?

The Chief of the Army Staff, General Dhiraj Seth, launched **indigenously developed Xtreme Weather Grade (XWG) Diesel on 31 July 2026**. Developed jointly by the **Indian Army and Oil Marketing Companies (OMCs)**, it is designed to keep military and logistics vehicles operational in extreme cold.

## What is XWG Diesel?

XWG Diesel is a **specialised cold-weather fuel** designed for high-altitude and snow-bound areas.

It remains effective at temperatures as low as **-42°C**, overcoming the limitations of conventional diesel.

Conventional diesel can **thicken at very low temperatures and clog fuel filters**, disrupting vehicle operations.

XWG Diesel is compliant with **BS-VI standards and IS 1460:2025 specifications**.

## Strategic Significance

- **Enhanced operational readiness:** Ensures uninterrupted mobility of combat and logistics vehicles in extreme climatic conditions.
- **High-altitude warfare:** Particularly important for deployments in areas such as **Ladakh and other Himalayan sectors**, where severe winter conditions can affect military logistics.

- **No fleet modification:** It can be used in the Army's existing vehicle fleet **without engine modification or re-homologation**.
- **Personnel safety:** Reduces the need for practices previously required to keep vehicles functional during severe winters.
- **Atmanirbhar Bharat:** Demonstrates indigenous capability in developing

specialised defence technologies and fuels.

### Wider Applications

The technology has potential civilian applications in **high-altitude and severe winter regions**, improving the reliability of vehicles and equipment operating under extreme conditions.

## PM SURYA SAROVAR YOJANA

### Why in News?

The Union Cabinet approved the Pradhan Mantri Surya Sarovar Yojana (PM-SSY) on **31 July 2026** with an outlay of ₹5,070 crore. The scheme aims to develop **5,000 MW of Floating Solar Photovoltaic (FSPV) projects** integrated with energy storage systems.

### Key Features

- **Target:** 5,000 MW of floating solar capacity along with co-located Energy Storage Systems (ESS).
- ESS will have a minimum storage capacity of **2 hours**, equivalent to **10,000 MWh**.
- **Implementation period:** FY 2026–27 to 2030–31.
- Covers **all States and Union Territories**.
- Projects will utilise reservoirs and suitable inland water bodies, reducing dependence on scarce land resources.
- India currently has around **700 MW** of floating solar capacity; PM-SSY will significantly expand it.

### Why Floating Solar?

- **Land efficiency:** Solar panels installed on water bodies avoid competition for agricultural and other land.
- **Reduced evaporation:** Floating panels can help reduce water evaporation from reservoirs, particularly valuable in water-

stressed regions.

- **Higher efficiency:** Cooling from the water surface can potentially improve photovoltaic performance.
- **Grid support:** Integrated storage can help manage peak electricity demand and intermittency of solar power.

### Environmental & Economic Significance

- India has an estimated 102.18 GWp floating-solar potential across reservoirs and suitable inland water bodies.
- The scheme is expected to reduce approximately 10 million tonnes of CO<sub>2</sub> annually.
- It is projected to generate around 16,000–17,000 full-time equivalent jobs.
- It can promote domestic manufacturing of PV cells, modules, floating structures and energy-storage systems.

### Challenges

- High initial costs and maintenance requirements.
- Ecological concerns regarding effects on aquatic ecosystems and water quality.
- Floating infrastructure must withstand wind, waves and fluctuating reservoir levels.

## PM E-DRIVE SCHEME

### Why in News?

The **PM E-DRIVE Scheme** has been extended beyond its original March 2026 timeline, with several components continuing into 2028. The scheme is aimed at accelerating **electric vehicle (EV) adoption, developing charging infrastructure and strengthening India's EV manufacturing ecosystem.**

### Key Features

- **PM E-DRIVE** stands for **PM Electric Drive Revolution in Innovative Vehicle Enhancement.**
- Launched by the **Ministry of Heavy Industries (MHI)** in September 2024 and originally operational from **1 October 2024 to 31 March 2026.**
- Provides demand incentives for eligible electric vehicles through an **e-voucher mechanism.**
- Supports **e-2Ws, e-3Ws, e-ambulances and e-trucks,** among other emerging EV segments.

### Major Components

- **Electric buses:** ₹4,391 crore has been provided for procurement of **14,028 e-buses** by State Transport Undertakings and public transport agencies.

- **e-Ambulances:** ₹500 crore allocated to promote their deployment.
- **Charging infrastructure:** Supports the creation of EV Public Charging Stations, addressing range anxiety and infrastructure gaps.
- **Testing agencies:** Funds upgradation of MHI testing agencies with new and emerging technologies.

### Significance

- Reduces **oil-import dependence** and supports energy security.
- Helps reduce **vehicular emissions and urban air pollution.**
- Promotes domestic EV manufacturing and technological development.
- Supports India's broader **green mobility and net-zero transition.**

### Challenges

- High upfront cost of EVs.
- Uneven charging infrastructure.
- Battery supply-chain dependence and recycling concerns.
- Need for greater consumer confidence and standardisation.

## TECHNOLOGY-DRIVEN CROP INSURANCE: WINDS AND YES-TECH

### Why in News?

The Government is strengthening technology-based implementation of the **Pradhan Mantri Fasal Bima Yojana (PMFBY)** through initiatives such as **Weather Information Network and Data System (WINDS)** and **Yield Estimation System based on Technology (YES-TECH)** to improve weather data, crop-yield estimation and timely claim settlement.

### Weather Information Network and Data System (WINDS)

- Aims to create a **national network of Automatic Weather Stations (AWS) and Automatic Rain Gauges (ARGs).**
- Generates **long-term, hyperlocal weather data** for crop insurance, agricultural advisories and disaster-risk resilience.

- Adopted by **7 States/UTs**: Assam, Himachal Pradesh, Kerala, Odisha, Puducherry, Uttar Pradesh and Uttarakhand.
- **16,843 sites** have been approved; civil work completed at **1,188 sites**, with **892 AWS/ARGs installed**.

## YES-TECH

- Implemented under PMFBY from **Kharif 2023** for objective crop-damage and yield assessment.
- Uses **remote sensing and technology-based methods** for more accurate yield estimation.
- Initially covered **paddy and wheat**; soybean was included from **Kharif 2024**.
- A mandatory **30% weightage** is assigned to YES-TECH-derived yield.
- In 2025-26, it was implemented in **12 States and 344 districts**.
- Madhya Pradesh gives **100%**, while Maharashtra and Uttar Pradesh give **50%** weightage to technology-based yield estimation.

## Improving Claim Settlement

- **National Crop Insurance Portal (NCIP)**: Single digital platform for enrolment, subsidy and claim processing.
- **Digicclaim Module**: Integrates NCIP with PFMS and insurers for transparent claim payments.
- **12% penalty** for delayed insurer payments from Kharif 2024 and delayed State subsidy release from Kharif 2025.
- **CCE-Agri App, land-record integration and CLAP** strengthen digital crop-loss assessment.

## Significance

Promotes **objective, transparent and timely** crop insurance.

Reduces dependence on manual Crop Cutting Experiments.

Strengthens **climate-resilient agriculture and disaster-risk management**.



# SCIENCE & TECHNOLOGY

## What's Inside?

1. VIKRAM-1: INDIA'S GROWING PRIVATE SPACE ECOSYSTEM
2. FUTURE CIRCULAR COLLIDER (FCC)
3. WD 1856B – PLANET AROUND A WHITE DWARF
4. GAGANYAAN MISSION: FIRST SOLVE GROUND TEST
5. EV RETROFITMENT: A MISSING LINK IN INDIA'S CIRCULAR MOBILITY TRANSITION
6. KAVACH 4.0
7. NIDAR 2.0
8. KEWDA: ANCIENT PLANT LINEAGE SURVIVING IN INDIA
9. WHITE RABBIT TECHNOLOGY-BASED INDIAN STANDARD TIME DISSEMINATION NETWORK
10. PAIMANA: DATA-DRIVEN INFRASTRUCTURE GOVERNANCE
11. PUMPED STORAGE PROJECTS
12. NUCLEAR ENERGY MISSION & INDIGENOUS SMRS
13. BHARAT 6G ALLIANCE (B6GA)
14. MEPHEDRONE
15. ANDROMEDA GALAXY (M31)
16. ZINC-AIR BATTERIES
17. NATIONAL QUANTUM MISSION (NQM)
18. INDIA'S PUSH FOR 6G TECHNOLOGY
19. INDIA MOBILE CONGRESS (IMC) 2026
20. INDIAAI MISSION: AI-DRIVEN GOVERNANCE
21. AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)

July 2026

# VIKRAM-1: INDIA'S GROWING PRIVATE SPACE ECOSYSTEM

## Why in News?

Skyroot Aerospace is preparing to launch Vikram-1 under Mission Aagaman, described in the source as India's first privately developed orbital launch vehicle. The mission highlights the growing role of private players following reforms in India's space sector.

## Key Highlights

Vikram-1 can place 350 kg into Low Earth Orbit (LEO) and uses an all-carbon composite structure, solid-fuel boosters and a 3D-printed liquid engine.

It is planned to deploy multiple customer payloads at an altitude of 450 km, including satellites and a robotic arm for orbital-debris capture.

India's space-startup ecosystem has expanded from 1 startup in 2014 to over 400 in 2026.

The space economy is valued at around USD 8.4 billion and is projected to reach USD 40–45 billion by 2030.

## Major Reforms

- Indian Space Policy 2023

Opened the entire space value chain to Non-Government Entities (NGEs).

Covers satellite manufacturing, launch services and space applications.

- IN-SPACe

Acts as a single-window agency for authorisation and promotion of space activities.

4,500+ organisations registered and 133 authorisations issued as of June 2026.

- Funding Support

IN-SPACe Seed Fund: Grants up to ₹1 crore.

MISSION AAGAMAN

VIKRAM-1

India's First Privately Developed Orbital Launch Vehicle

KG

Payload Capacity

350 kg

into Low Earth Orbit (LEO)

Orbit

LEO

(450 km altitude)

Applications

Communication, Navigation, Earth Observation, Scientific Research

BUILT WITH INNOVATION

All-Carbon Composite Structure

Reliable Solid-Fuel Boosters

3D-Printed Liquid Engine

A milestone that validates India's indigenous commercial launch capability and the success of space sector reforms.

VIKRAM-1

LAUNCH WINDOW

12 JULY – 4 AUGUST 2026

MULTIPLE CUSTOMER PAYLOADS

Deployed to LEO at 450 km (280 miles)

Skyroot's SCOPE Satellite

DCUBED's Technology Demonstration Payload

Grahra Space's SOLARAS S3 Satellite

Cosmoserve Space's Embrace Robotic arm for orbital debris capture

SYMBOLIC PAYLOADS

"Cosmic Bloom" Floral-shaped artwork

18-Karat Gold Micro-Rocket

Microscopic sculptures of C. V. Raman, Vikram Sarabhai and A. P. J. Abdul Kalam each smaller than a grain of rice

THE CATALYST

114

July 2026

Venture Capital Fund: ₹1,000 crore.

Technology Adoption Fund (TAF): ₹500 crore.

- **Liberalised FDI Policy**

Satellite manufacturing & operations: Up to 74% automatic FDI.

Launch vehicles & spaceports: Up to 49% automatic FDI.

Satellite components & subsystems: Up to 100% automatic FDI.

## Significance

The reforms are shifting India from an predominantly government-led space programme towards a **competitive public-private ecosystem**, encouraging innovation, investment, technology commercialisation and global launch services.

# FUTURE CIRCULAR COLLIDER (FCC)

## Why in News?

CERN has completed the Feasibility Study for the proposed Future Circular Collider (FCC), a next-generation particle collider intended to succeed the Large Hadron Collider (LHC). The project is being considered as part of Europe's long-term strategy for particle physics.

## About Future Circular Collider

The FCC is a proposed **91-km underground circular particle collider**, around three times

the circumference of the 27-km LHC.

It would be located beneath the **French departments of Ain and Haute-Savoie and the Swiss canton of Geneva**, with an average depth of about 200 metres.

## The project is planned in two stages:

- **FCC-ee:** An electron-positron collider, expected to begin operations around the mid-2040s, designed primarily as a "Higgs factory" for highly precise studies

## LARGE HADRON COLLIDER (LHC) & FUTURE CIRCULAR COLLIDER (FCC)

FROM DISCOVERING THE HIGGS TO EXPLORING THE NEXT FRONTIERS

| LARGE HADRON COLLIDER (LHC)                                                                                                                                                                                                                                                                                                                                                                                                     | CERN<br>(European Organization for Nuclear Research)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | FUTURE CIRCULAR COLLIDER (FCC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|-----------------|--------------------|--------------------------------------|----------------------|-------|--------------------------|-------------|------------------------|-------------------------------------------------------------------------|---------------|--------------|-------------------------|-----------------|------------------------|-------------------------------------|--|
| <p><b>WHAT:</b> World's largest and most powerful particle accelerator.</p> <p><b>LOCATION:</b> On the France–Switzerland border.</p> <p><b>SIZE:</b> 27 km circular underground tunnel.</p> <p><b>FUNCTION:</b> Accelerates protons to near light speed and collides them.</p> <p><b>KEY ACHIEVEMENT:</b> Discovery of the Higgs boson in 2012.</p> <p><b>PURPOSE:</b> Study fundamental particles and the laws of nature.</p> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <p><b>WHAT:</b> Next-generation particle collider proposed as successor to the LHC.</p> <p><b>SIZE:</b> 91 km circular underground tunnel (more than 3× LHC).</p> <p><b>LOCATION:</b> Geneva region, beneath parts of France and Switzerland.</p> <p><b>STAGES:</b> <ul style="list-style-type: none"> <li>• FCC-ee: Electron-positron collider for precision Higgs studies.</li> <li>• FCC-hh: Proton-proton collider with up to ~100 TeV energy.</li> </ul> </p> <p><b>AIM:</b> Explore new physics beyond the Standard Model.</p> |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                 | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr style="background-color: #002060; color: white;"> <th>FEATURE</th> <th>LHC</th> <th>FCC</th> </tr> </thead> <tbody> <tr> <td><b>LOCATION</b></td> <td>France–Switzerland</td> <td>Geneva region (France &amp; Switzerland)</td> </tr> <tr> <td><b>CIRCUMFERENCE</b></td> <td>27 km</td> <td>91 km (more than 3× LHC)</td> </tr> <tr> <td><b>TYPE</b></td> <td>Proton-proton collider</td> <td>Two stages:<br/>• FCC-ee (electron-positron)<br/>• FCC-hh (proton-proton)</td> </tr> <tr> <td><b>ENERGY</b></td> <td>Up to 14 TeV</td> <td>Up to ~100 TeV (FCC-hh)</td> </tr> <tr> <td><b>TIMELINE</b></td> <td>Operational since 2010</td> <td>FCC-ee: mid-2040s<br/>FCC-hh: ~2070s</td> </tr> </tbody> </table> | FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | LHC | FCC | <b>LOCATION</b> | France–Switzerland | Geneva region (France & Switzerland) | <b>CIRCUMFERENCE</b> | 27 km | 91 km (more than 3× LHC) | <b>TYPE</b> | Proton-proton collider | Two stages:<br>• FCC-ee (electron-positron)<br>• FCC-hh (proton-proton) | <b>ENERGY</b> | Up to 14 TeV | Up to ~100 TeV (FCC-hh) | <b>TIMELINE</b> | Operational since 2010 | FCC-ee: mid-2040s<br>FCC-hh: ~2070s |  |
| FEATURE                                                                                                                                                                                                                                                                                                                                                                                                                         | LHC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | FCC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
| <b>LOCATION</b>                                                                                                                                                                                                                                                                                                                                                                                                                 | France–Switzerland                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Geneva region (France & Switzerland)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
| <b>CIRCUMFERENCE</b>                                                                                                                                                                                                                                                                                                                                                                                                            | 27 km                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 91 km (more than 3× LHC)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
| <b>TYPE</b>                                                                                                                                                                                                                                                                                                                                                                                                                     | Proton-proton collider                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Two stages:<br>• FCC-ee (electron-positron)<br>• FCC-hh (proton-proton)                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
| <b>ENERGY</b>                                                                                                                                                                                                                                                                                                                                                                                                                   | Up to 14 TeV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Up to ~100 TeV (FCC-hh)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |
| <b>TIMELINE</b>                                                                                                                                                                                                                                                                                                                                                                                                                 | Operational since 2010                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FCC-ee: mid-2040s<br>FCC-hh: ~2070s                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |     |     |                 |                    |                                      |                      |       |                          |             |                        |                                                                         |               |              |                         |                 |                        |                                     |  |

**✓ KEY TAKEAWAYS**

- LHC discovered the Higgs boson in 2012.
- FCC will be larger and more powerful.
- Both projects are led by CERN with global collaboration.

**💡 SCIENTIFIC GOALS OF FCC**

- Understand dark matter
- Matter-antimatter asymmetry
- Higgs boson precision studies

- Search for new particles and forces
- Origin of neutrino masses

of the Higgs boson and other Standard Model particles.

- **FCC-hh:** A future proton–proton collider that could reach collision energies of around 100 TeV, far exceeding the LHC.

### Scientific Significance

The FCC aims to investigate questions beyond the **Standard Model**, including:

- Nature of **dark matter**
- Matter–antimatter asymmetry
- Properties and interactions of the **Higgs boson**
- Possible **new particles and forces**
- Origin of neutrino masses and other unexplained phenomena.

## WD 1856B – PLANET AROUND A WHITE DWARF

### Why in News?

**WD 1856b** is an unusual Jupiter-sized exoplanet orbiting a **white dwarf**, offering important clues about how planetary systems evolve after their host stars die.

### About WD 1856b

**WD 1856b** is a gas-giant-sized exoplanet located about **80 light-years from Earth** in the constellation **Draco**.

It orbits **WD 1856+534**, a small, dense **white dwarf**.

The planet is roughly **Jupiter-sized** but has a mass estimated to be several times that of Jupiter.

It completes one orbit around its host star in just **1.4 days**, at a very close distance.

The system is notable because the planet appears to have survived the transformation of its original star into a white dwarf.

### What is a White Dwarf?

A **white dwarf** is the hot, extremely dense remnant left behind after a **low- or medium-mass** star, such as the Sun, exhausts its nuclear fuel and sheds its outer layers. It no longer undergoes normal nuclear fusion and gradually cools over time.

### Why is WD 1856b Important?

The planet's survival challenges questions about **planetary evolution**. When a star becomes a red giant, planets orbiting nearby could be engulfed or destroyed. The presence of WD 1856b suggests that planets can survive or migrate into close orbits around a stellar remnant.

Studying such systems can help scientists understand the future evolution of our Solar System, as the Sun is expected to eventually become a white dwarf.

## GAGANYAAN MISSION: FIRST SOLVE GROUND TEST

### Why in News?

The Indian Space Research Organisation (ISRO) has successfully conducted the first SOLVE (Simulation of Life-support system Operations and Validation Experiment) ground test for the Gaganyaan human spaceflight mission, marking progress in validating critical life-support systems for astronauts.

### About Gaganyaan

Gaganyaan is India's first human spaceflight programme, aimed at sending Indian astronauts into Low Earth Orbit (LEO) and safely returning them to Earth.

The mission is being developed by ISRO with support from Indian industries and research institutions.

The human-rated launch vehicle is the Human-rated Launch Vehicle Mark-3 (HLVM3), derived from the LVM3 rocket.

The spacecraft includes a Crew Module and a Service Module, supported by an Environmental Control and Life Support System (ECLSS).

### What is the SOLVE Test?

SOLVE focuses on validating the functioning of the spacecraft's life-support system under simulated operational conditions.

The ECLSS is crucial for maintaining a habitable environment inside the crew module by regulating:

- Oxygen supply
- Carbon dioxide removal

- Temperature and humidity
- Atmospheric pressure
- Overall cabin environmental conditions

### Significance

Human spaceflight requires highly reliable life-support systems because astronauts cannot depend on Earth's atmosphere once in space. Ground validation through SOLVE helps identify technical issues before actual crewed missions.

Gaganyaan will enhance India's capabilities in human spaceflight, space medicine, life-support technology, crew safety and advanced launch systems, while strengthening India's position in global space exploration.

# GAGANYAAN MISSION

## ISRO CONDUCTS FIRST SOLVE GROUND TEST

### SOLVE

(SIMULATION OF LIFE-SUPPORT SYSTEM OPERATIONS AND VALIDATION EXPERIMENT)

FIRST GROUND TEST SUCCESSFUL



**PURPOSE**

VALIDATES **LIFE-SUPPORT** SYSTEMS FOR ASTRONAUTS

**CRUCIAL FOR**

SAFE HUMAN SPACEFLIGHT IN GAGANYAAN MISSION

**TESTS FUNCTIONS LIKE**

- OXYGEN SUPPLY
- CARBON DIOXIDE REMOVAL
- TEMPERATURE & HUMIDITY
- ATMOSPHERIC PRESSURE

**SIGNIFICANCE**

ENSURES RELIABLE AND SAFE ENVIRONMENT INSIDE CREW MODULE IN SPACE

**ISRO**  
INDIAN SPACE RESEARCH ORGANISATION

**GAGANYAAN**  
INDIA'S FIRST HUMAN SPACEFLIGHT MISSION

**LAUNCH VEHICLE**  
HUMAN-RATED LAUNCH VEHICLE MARK-3 (HLVM3)

**SPACECRAFT**  
CREW MODULE + SERVICE MODULE

**DESTINATION**  
LOW EARTH ORBIT (LEO)

## EV RETROFITMENT: A MISSING LINK IN INDIA'S CIRCULAR MOBILITY TRANSITION

India's transport sector contributes around 9% of GHG emissions, with over 30 crore ICE vehicles on the roads. While the Vehicle Scrappage Policy (2021) promotes recycling and PM E-DRIVE supports new EV adoption, EV retrofitment addresses the often-neglected reuse tier of the circular economy.

### Why EV Retrofitment Matters

**Resource efficiency:** Retains structurally sound chassis, reducing premature scrappage and demand for raw materials.

**Affordable decarbonisation:** Conversion can be cheaper than purchasing a new EV, especially for commercial fleets and auto-rickshaws.

**Reduced fossil-fuel dependence:** Existing petrol/diesel vehicles can be electrified without waiting for end-of-life.

**Green employment:** Certified conversion centres can create skilled jobs, particularly in Tier-2 and Tier-3 cities.

### Key Bottlenecks

**Policy bias:** Major national EV incentives focus on new vehicle purchases, with limited support for retrofitted vehicles.

**Certification costs:** Compliance with AIS-123 can be expensive and time-consuming for smaller manufacturers.

**Financing gaps:** Banks provide limited dedicated credit for EV retrofitment.

**Tax burden:** Conversion kits and replacement batteries may face taxation that reduces their cost advantage.

**Safety concerns:** Poor-quality conversions can create battery, electrical and vehicle-safety risks.

### Way Forward

India needs a National EV Retrofitment Policy that integrates certified conversions into clean-mobility programmes. Measures should include simplified AIS-123 certification, standardised retrofit kits, regional testing facilities, rationalised taxation and dedicated low-cost financing.

## KAVACH 4.0

### Why In News:

The Railway Ministry informed Parliament that only two consequential train accidents occurred in 2026-27, a sharp improvement attributed to the accelerated rollout of Kavach Version 4.0, India's indigenous Automatic Train Protection (ATP) system.

### What is Kavach?

**About:** Kavach is India's indigenous Automatic Train Protection (ATP) system, originally developed in 2012 as the Train Collision Avoidance System (TCAS) and later renamed

"Kavach" (meaning armour).

**Latest Version:** Kavach 4.0 represents the most advanced version, refined through continuous upgrades and operational feedback.

**Design & Suitability:** It is specifically designed for India's high-density, multi-line railway network, ensuring quick response, high reliability, and seamless integration with existing signalling and interlocking systems.

**Technology Base:** The system uses a combination of microprocessors, GPS, and radio communication to continuously track train position, speed, and signal status.

**Safety Functions:** Kavach can automatically prevent Signal Passing at Danger (SPAD), control overspeeding, and apply brakes to avoid collisions.

It also ensures safe train operations in low visibility or adverse weather, while alerting loco pilots about wrong-direction movement and level-crossing gate status.

**Standards & Approval:** It meets Safety Integrity Level (SIL)-4, the highest global railway safety standard, and is approved by the

Research Designs and Standards Organisation (RDSO).

### Related Facts

Consequential train accidents have fallen from **135 in 2014-15** to just a handful in **2026-27**, reflecting the impact of sustained safety investment.

**Rashtriya Rail Sanraksha Kosh (RRSK):** A dedicated non-lapsable safety fund created in 2017 to finance replacement and renewal of critical safety assets on Indian Railways.

## NIDAR 2.0

### Why in News?

The Ministry of Electronics and Information Technology (MeitY) and Drone Federation India (DFI) launched NIDAR 2.0 (2026–27) on 13 July 2026 under the SwaYaan initiative. The challenge aims to develop autonomous drones powered by indigenous technology, including India's VEGA processor.

### What is NIDAR?

NIDAR – National Innovation Challenge for Drone Application and Research is a student-focused innovation programme under SwaYaan that promotes research and development in autonomous drone technologies.

The first edition, launched in 2025, involved 3,448 students from 22 States, 4 UTs and 109 cities, focusing on disaster management and precision agriculture.

### NIDAR 2.0 – Key Features

The second edition shifts focus from merely building drone airframes to developing autonomous systems, indigenous avionics and core components.

### Track 1 – Drone Innovation

- Development of autonomous swarm drones capable of locating survivors

and delivering medical supplies during disasters.

- Drones capable of GPS-denied navigation for confined-space industrial inspection.
- Swarm systems are designed to operate even without an external communication network.

### Track 2 – Component Innovation

- Development of an indigenous flight controller and autopilot based on the VEGA processor.
- The top 100 teams will receive VEGA processor kits for development and testing.

### VEGA Processor

VEGA is a family of indigenous microprocessors developed by C-DAC under MeitY's **Digital India RISC-V (DIR-V)** programme. It is based on the open **RISC-V architecture** and aims to reduce dependence on foreign chip designs and licensing costs.

### Significance

NIDAR 2.0 promotes **Atmanirbhar Bharat** in drone technology by developing indigenous hardware, software and autonomous systems. Its applications extend to **disaster management, agriculture, infrastructure**

inspection, logistics and defence.

The programme also strengthens the student-academia-industry-startup ecosystem, with

a prize pool exceeding ₹65 crore, along with incubation support, cloud credits and internships.

## KEWDA: ANCIENT PLANT LINEAGE SURVIVING IN INDIA

### Why in News?

Fossil leaves discovered in the Makum Coalfield, Assam, show that the Kewda/Kevda (Pandanus) lineage has survived in the Indian subcontinent for at least 24 million years. Scientists from the Birbal Sahni Institute of Palaeosciences (BSIP) studied four fossil leaves from the Tikak Parbat Formation. The findings, published in *Geobios*, highlight India's role as a refuge for ancient plant lineages during climate change.

### Fossil Evidence

The fossils closely resemble modern Kewda leaves, displaying:

- Long, sword-shaped leaves
- Parallel venation
- Characteristic marginal prickles
- Anatomical features of the **Pandanaceae family**

The fossils were compared with modern specimens and fossil records from across the world.

### Evolutionary Significance

Ancestors of Pandanus were once widely distributed across the Northern Hemisphere. Fossils from **Europe and North America date back 85–66 million years**. Following global cooling after about **34 million years ago**, these plants disappeared from many regions and became largely restricted to tropical and subtropical areas.

The Assam fossils indicate that **India acted as a climatic refuge**, enabling this ancient lineage to survive.

### Significance

**Palaeobotany:** Fills a gap in the evolutionary history of the Pandanaceae family.

**Climate science:** Provides evidence of how plants responded to past climate change.

**Biodiversity:** Demonstrates the deep evolutionary history of India's tropical vegetation.

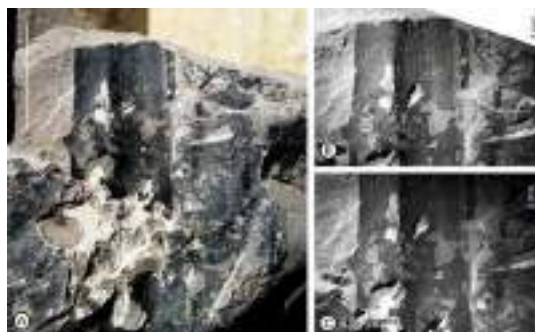
**Climate resilience:** Past ecosystem responses can provide insights into future climate impacts.

**Evolutionary refuge:** Highlights India's importance in preserving ancient tropical lineages.

### About Kewda

Kewda is economically and culturally important for its **fragrant flowers**, used in kewra essence, sweets, traditional medicine and religious practices. The discovery establishes that this familiar plant lineage has an evolutionary history extending far beyond human civilisation.

Fossil leaf of Pandanus showing marginal prickles (black arrows), M-shaped transverse section and mid-vein (yellow arrows), characteristics of the Pandanaceae family. Scale bar: 1cm unless specified.



# WHITE RABBIT TECHNOLOGY-BASED INDIAN STANDARD TIME DISSEMINATION NETWORK

## Why in News?

The White Rabbit Technology-based Indian Standard Time (IST) Dissemination Demonstration Network was commissioned at RRSL, Bengaluru, on 16 July 2026. Developed by the Department of Consumer Affairs, CSIR-NPL and ISRO, it is a key step towards the “One Nation, One Time” initiative.

## What is White Rabbit Technology?

White Rabbit (WR) is a high-precision network synchronisation technology based on the Precision Time Protocol (PTP). It enables extremely accurate and reliable distribution of a common time reference across geographically separated systems.

The network disseminates UTC (NPLI)-traceable Indian Standard Time, providing a trusted and indigenous national time reference.

## Key Features

**High-precision synchronisation:** Enables accurate coordination of distributed digital and physical systems.

**Secure & resilient:** Reduces dependence on external timing sources.

**Critical infrastructure:** Designed for financial markets, telecommunications, power grids, transportation and digital governance.

**Indigenous capability:** Combines expertise of Indian scientific and space institutions.

The technology has already been used to verify secure IST dissemination between RRSL Bengaluru and NSE Chennai, in collaboration with SEBI, NSE, BSNL and other stakeholders.

## Significance

**Financial stability:** Accurate time-stamping is essential for high-frequency trading, transaction sequencing and financial-market integrity.

**Cybersecurity:** A trusted national time source can strengthen authentication, logging and cyber-resilience.

**Critical infrastructure:** Synchronised timing improves coordination and reliability of power grids, telecom networks and transportation systems.

**Consumer protection:** A standardised national time reference can support accurate time-based transactions and strengthen fair trade and legal metrology.

**Strategic autonomy:** Indigenous time dissemination reduces dependence on foreign timing systems and strengthens India's digital sovereignty.

# PAIMANA: DATA-DRIVEN INFRASTRUCTURE GOVERNANCE

## Why in News?

PAIMANA was launched by the Ministry of Statistics and Programme Implementation (MoSPI) on 25 September 2025 to monitor Central Sector infrastructure projects costing ₹150 crore and above. On 8 July 2026, the PAIMANA-CRIP module was launched,

replacing DPIIT's Integrated Project Monitoring Portal (IPMP) and envisaged as a Central Repository of Infrastructure Projects.

## Key Features

**Project Monitoring:** PAIMANA tracks project progress, expenditure and implementation through data entry and API-based integration.

Over 20 Ministries/Departments regularly update project information, while more than 60% of projects are automatically updated through APIs.

**Performance Monitoring Dashboard:** Launched in April 2026, it assesses infrastructure performance across six sectors—Power, Civil Aviation, Telecommunications, Railways, Roads, and Ports, Shipping & Waterways.

It currently contains **165 indicators**, covering:

- Access
- Quality
- Utilisation
- Affordability
- Fiscal cost & revenue

This shifts monitoring from merely measuring physical outputs to multidimensional

infrastructure performance.

### Current Status

As of June 2026, PAIMANA monitored **1,847 projects** across 17 Central Ministries/Departments with a revised cost of **₹40.54 lakh crore**. About **709 projects** had crossed 80% physical progress.

The Transport & Logistics sector accounts for the largest share, with 1,341 projects worth ₹22.32 lakh crore.

### Significance

PAIMANA strengthens **transparency, accountability and evidence-based policymaking** by providing a unified digital platform for project and performance monitoring. Integration with **PRAGATI and PMG** can further improve coordination and timely resolution of implementation bottlenecks.

## PUMPED STORAGE PROJECTS

### Why in News?

The Ministry of Power highlighted the rapid expansion of Pumped Storage Projects (PSPs) as India seeks to integrate increasing renewable energy into the electricity grid. As of June 2026, 11 PSPs with 15,870 MW capacity were under construction, while another 6 projects totalling 8,140 MW had been appraised/concurred by the CEA.

### What are Pumped Storage Projects?

PSPs are essentially “water batteries” that store electricity by pumping water from a lower reservoir to an upper reservoir when electricity is surplus. During periods of high demand, water is released downhill through turbines to generate electricity.

Thus, PSPs provide long-duration energy storage without directly generating energy from the storage process.

### Importance for India

**Renewable energy integration:** Stores surplus solar and wind power and supplies it when renewable generation falls.

**Grid stability:** Provides rapid response, balancing and peak-load management.

**Energy security:** Reduces dependence on fossil-fuel-based peaking power.

**Long-duration storage:** Particularly suitable for storing electricity for several hours.

**Supports Net Zero:** Facilitates India's transition towards a renewable-heavy electricity system.

CEA projects PSP requirements of 26.69 GW/175 GWh by 2031–32, requiring an estimated investment of around ₹1.29 lakh crore.

## Government Support

100% waiver of Inter-State Transmission System (ISTS) charges for 25 years for eligible PSPs whose construction is awarded by 30 June 2028.

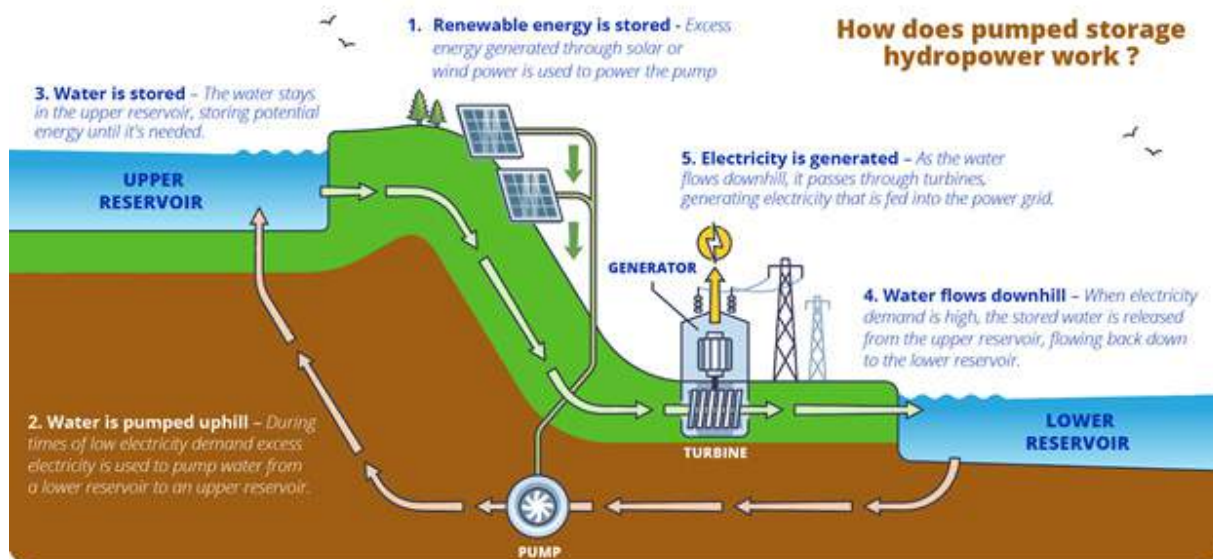
Environmental appraisal procedures have been streamlined for certain PSP categories.

CEA released a roadmap for 100 GW of hydro

pumped storage projects by 2035–36.

## Challenges

High capital costs, long gestation periods, land and environmental concerns, water availability, geological risks and lengthy clearances can delay projects.



# NUCLEAR ENERGY MISSION & INDIGENOUS SMRS

## Why in News?

India is implementing the Nuclear Energy Mission (NEM) announced in Union Budget 2025–26 to expand nuclear power capacity to 100 GWe by 2047, supporting Viksit Bharat and the Net Zero 2070 goal. The Mission also aims to operationalise at least five indigenous Small Modular Reactors (SMRs) by 2033.

## Key Targets & Roadmap

- Present nuclear capacity: 8.78 GW.
- Expected to reach around 22 GW by 2031–32 through projects under implementation.
- NPCIL plans another 32 GW by 2047 through indigenous PHWRs and LWRs.
- The remaining 46 GW is envisaged

through PSUs, States, private sector and joint ventures.

- SHANTI Act, 2025 enables greater private participation in nuclear power and R&D.

## Indigenous SMRs under Development

### 1. BSMR-200

- 220 MWe, indigenous Pressurised Water Reactor.
- Tarapur, Maharashtra, approved as site.
- Engineering and construction received in-principle approval.

### 2. SMR-55

- 55 MWe, based on Pressurised Water Reactor technology.
- Tarapur approved as the site.

3. HTGCR

- Up to 5 MWth.
- Designed by BARC as a nuclear heat source for hydrogen production through thermochemical cycles.
- Proposed at BARC, Vizag; siting consent and environmental ToR obtained.

Significance of SMRs

SMRs offer modular construction, potentially lower upfront costs, flexible deployment and suitability for industrial applications, including hydrogen production. Indigenous development can reduce technology dependence and strengthen India’s nuclear

manufacturing ecosystem.

SHANTI Act & Safety

The SHANTI Act, 2025 provides a framework for private participation while giving the Atomic Energy Regulatory Board (AERB) statutory status and strengthening its independent regulatory functions.

Nuclear safety follows defence-in-depth, redundancy, multiple containment barriers and periodic regulatory review. Radioactive waste is treated, conditioned and stored/ disposed of under AERB regulations with environmental monitoring.

BHARAT 6G ALLIANCE (B6GA)

Why in News?

India is strengthening the Bharat 6G Alliance (B6GA) to position itself as a global leader in 6G technology and standards.

It is facilitated by the Department of Telecommunications (DoT).

Focus is on developing indigenous technology, intellectual property and global 6G standards.

What is B6GA?

Industry-led, government-facilitated platform for 6G research and development.

Brings together industry, start-ups, academia and international organisations.

Aims to build an Atmanirbhar and globally competitive 6G ecosystem.

Has partnerships with 6G organisations in the USA, Europe, South Korea, Japan, Brazil and ESA.

Key Functions

1. 6G Research

- Promotes advanced research in 6G, terahertz communication, AI and IoT.
- Supports multi-institutional projects

through the Telecom Technology Development Fund (TTDF).

- Example: 6G Terahertz testbed at SAMEER, Kolkata.

2. Spectrum Planning

- Studies future high-frequency spectrum requirements.
- Provides inputs for India’s national spectrum roadmap.

3. Global Standards & IPR

- Promotes Indian technologies in ITU and 3GPP.
- Seeks to embed India’s interests in IMT-2030 (6G) standards.
- Helps Indian companies create and own 6G intellectual property.

4. Hardware Development

- Supports development of indigenous:
- System-on-Chips (SoCs)
- Multi-chip modules
- IoT devices
- Helps start-ups participate in global telecom standardisation bodies.

### 5. Global Supply Chains

- Collaborates with international research centres to build secure and trusted telecom supply chains.
- Promotes open and interoperable 6G technologies.

### Significance

- Moves India from technology adopter → technology developer and standards setter.

- Reduces dependence on imported telecom technologies.
- Promotes domestic manufacturing and start-ups.
- Strengthens cybersecurity and digital sovereignty.
- Connects Indian research institutions with industry for commercialisation.

## MEPHEDRONE

### What is Mephedrone?

Mephedrone (4-MMC) is a synthetic stimulant drug belonging to the synthetic cathinone group.

Chemically related to cathinone, a naturally occurring stimulant found in the khat plant (*Catha edulis*).

It acts mainly on the central nervous system (CNS).

It is also illicitly known by names such as “meow meow” and “M-CAT”.

### Effects

Produces stimulant effects such as:

Increased energy and alertness

Euphoria

Increased sociability

Elevated heart rate and blood pressure

Its effects are associated with changes in neurotransmitters such as dopamine, serotonin and noradrenaline.

### Health Risks

Can cause:

Anxiety and agitation

Rapid heartbeat and hypertension

Hyperthermia

Dehydration

Insomnia

Heavy or repeated use can lead to dependence and serious cardiovascular, neurological and psychiatric complications.

### Legal Status in India

Mephedrone is controlled under the Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985.

Its unauthorised manufacture, possession, sale, purchase, transport and use attract penalties under the NDPS framework.

It has emerged as a challenge for law-enforcement agencies because it is a synthetic drug that can be illicitly manufactured rather than cultivated like plant-based narcotics.

### Why is it a Concern?

Growth of synthetic-drug trafficking networks.

Serious public-health consequences, particularly among young users.

Illicit manufacture can involve clandestine laboratories and organised criminal networks.

Highlights the need for stronger drug intelligence, forensic capacity, interstate coordination and international cooperation

## ANDROMEDA GALAXY (M31)

### Why in News?

A recent study using data from NASA's Hubble Space Telescope found that star formation in the Andromeda Galaxy has been declining over the past 500 million years. The finding provides insights into how large spiral galaxies evolve from active, star-forming systems towards more quiescent stages.

### About Andromeda

- Also known as M31, Andromeda is a large spiral galaxy.
- Located about 2.5 million light-years from Earth in the constellation Andromeda.
- It is the nearest major galaxy to the Milky Way and can be seen with the naked eye under suitable conditions.
- It is comparable in size to the Milky Way.
- It has a bar-like stellar structure at its centre, making it a barred spiral galaxy.
- Andromeda is moving towards the Milky Way at about 110 km/s.

### Declining Star Formation

- Hubble observations indicate that Andromeda's star-formation activity has declined significantly over the last 500 million years.
- This suggests that the galaxy is

transitioning from a more active phase towards a quiescent or "middle-aged" stage.

- Studying such changes helps scientists understand the life cycle and evolution of galaxies.

### Andromeda–Milky Way Interaction

- Andromeda and the Milky Way are gravitationally interacting.
- Their relative motion means they are expected to have a close interaction in the distant future.
- Such galactic interactions can alter stellar distribution, gas dynamics and star formation.

### Hubble Space Telescope

- Launched in 1990 by NASA aboard the Space Shuttle Discovery.
- Named after astronomer Edwin Hubble.
- Observes primarily in the ultraviolet, visible and near-infrared portions of the electromagnetic spectrum.
- Its long-term observations have significantly improved understanding of galaxies, stars, exoplanets and the evolution of the Universe.

## ZINC-AIR BATTERIES

### Why in News?

Growing demand for safe, affordable and long-duration energy storage for renewable power is increasing interest in alternative battery technologies such as zinc-air batteries.

### What are Zinc-Air Batteries?

- A type of metal-air battery using:
  - Zinc as the anode.

- Atmospheric oxygen as the cathodic reactant.
- Usually an alkaline, water-based electrolyte.
- Since oxygen is drawn from the air, the battery requires less active cathode material, giving it high theoretical energy density.

## Working Mechanism

- Oxygen enters through the porous air cathode.
- Oxygen reacts with water and electrons to form hydroxide ions (OH<sup>-</sup>).
- OH<sup>-</sup> ions move through the electrolyte towards the zinc anode.
- Zinc is oxidised, releasing electrons and forming zinc oxide (ZnO).
- Electrons flow through the external circuit, producing electricity.

## Advantages

High energy-density potential due to use of atmospheric oxygen.

Suitable for long-duration energy storage.

Aqueous electrolytes offer lower fire and thermal-runaway risks.

Zinc is abundant, relatively inexpensive and recyclable.

Can diversify battery supply chains away from critical minerals.

## Applications

Hearing aids – already widely used in primary batteries.

Grid-scale storage – storing surplus solar and wind power.

Telecom towers – backup power.

Remote/off-grid areas – paired with renewable energy.

Potential application in electric three-wheelers.

## Challenges

Difficult rechargeability and limited cycle life.

Formation of zinc dendrites, which can cause short circuits.

Zinc corrosion and passivation reduce efficiency.

Slow and complex oxygen reduction/evolution reactions require better catalysts.

Air electrodes degrade due to moisture, CO<sub>2</sub> and impurities.

## Significance

Zinc-air batteries are not yet a replacement for lithium-ion batteries, particularly in EVs requiring high power and rapid charging. Their greatest potential lies in safe, low-cost, long-duration stationary energy storage, supporting India's renewable-energy transition

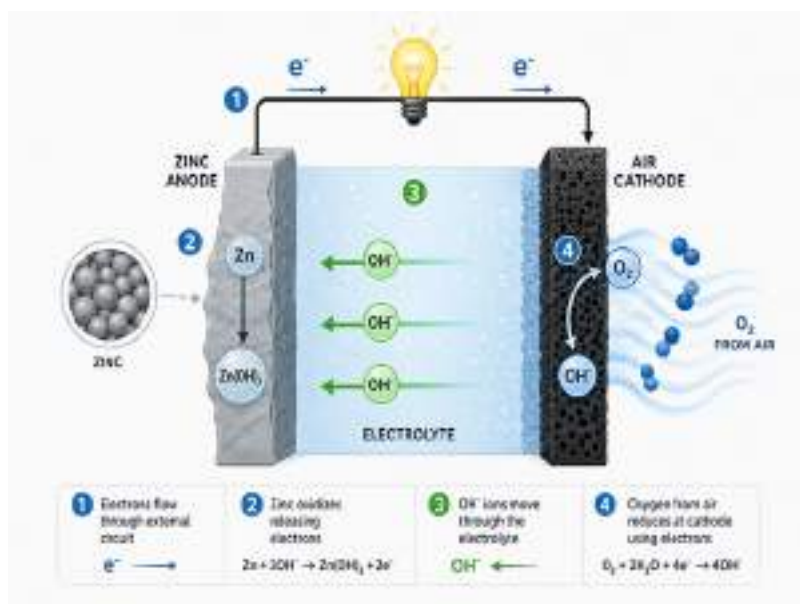


Figure: Mechanism of action.

# NATIONAL QUANTUM MISSION (NQM)

## Why in News?

Under the National Quantum Mission, 23 academic institutions have been approved to establish quantum teaching laboratories, while more than 100 additional proposals are under evaluation. The initiative aims to

expand India's quantum research and skilled human-resource base.<sup>2</sup>

## About NQM

Flagship mission of the Department of Science & Technology (DST).

Approved with an outlay of ₹6,003 crore for 2023–24 to 2030–31.

Aims to make India a leading global player in quantum technologies.

Focuses on developing indigenous capabilities and linking research with industry and applications.

## Four Key Domains

### 1. Quantum Computing

Develop quantum computers with 50–1,000 physical qubits within eight years.

Applications include optimisation, drug discovery, AI and cryptography.

### 2. Quantum Communication

Develop satellite-based secure quantum communication over distances of around 2,000 km.

Promote long-distance Quantum Key Distribution (QKD) for secure communication.

### 3. Quantum Sensing & Metrology

Develop highly sensitive magnetometers and precision atomic clocks.

Applications in navigation, defence,

telecommunications and scientific research.

### 4. Quantum Materials & Devices

Develop capabilities for fabrication of quantum materials and devices.

Supports indigenous quantum hardware development.

## Implementation

Follows a Hub-and-Spoke model.

Four Thematic Hubs have been established at premier Indian institutions.

Teaching laboratories will help create a skilled quantum workforce.

## Significance

Strengthens India's technological sovereignty in a strategic emerging technology.

Supports applications in defence, cybersecurity, communications and critical infrastructure.

Promotes collaboration between academia, industry and start-ups.

Complements initiatives such as Digital India, Make in India and Skill India.

# INDIA'S PUSH FOR 6G TECHNOLOGY

## Why in News?

India is preparing for 6G deployment around 2030 through the Bharat 6G Vision and Bharat 6G Project.

India is seeking to move from being a technology adopter to a technology developer and global standards setter.

## What is 6G?

- Sixth-generation mobile communication technology, expected to succeed 5G.
- Will combine AI, advanced wireless technologies, sensing and computing.
- Expected to provide much higher speeds, ultra-low latency and massive device connectivity.

## Key Features

- Terahertz (THz) communication: Uses very high-frequency bands for extremely high data rates.
- AI-driven networks: AI can optimise traffic, resources and network performance.
- Massive MIMO: Uses large numbers of antennas to support many simultaneous connections.
- Network slicing: Creates dedicated virtual networks for different applications.
- xURLLC: Enables highly reliable, ultra-low-latency communication for mission-critical applications.

- Integrated sensing: Networks can potentially combine communication with precise environmental/object sensing.
- Enhanced security: Stronger encryption, authentication and protection against attacks such as jamming.

## Applications

- Healthcare: AI-enabled ambulances and remote medical services.
- Agriculture: Real-time crop, irrigation and weather monitoring using IoT and AI.
- Transport: Autonomous vehicles and urban air mobility.
- Education: Immersive virtual/augmented learning.
- IoT: Connectivity for billions of sensors and devices.
- Space: Real-time control of space robots and high-resolution data transmission.

## India's Initiatives

- Bharat 6G Vision: Targets secure,

intelligent and pervasive connectivity by 2030.

- Bharat 6G Project: Supports Indian start-ups, companies, universities and research institutions.
- TIG-6G: Technology Innovation Group established by DoT to develop India's 6G roadmap.
- India has contributed to the ITU 6G Vision Framework.

## Challenges

- High infrastructure and R&D costs.
- THz signals have shorter range and propagation difficulties.
- Limited spectrum availability.
- Cybersecurity risks from massive data flows.
- Inadequate fibre connectivity—especially to telecom towers—could constrain deployment.

# INDIA MOBILE CONGRESS (IMC) 2026

## Why in News?

The 10th edition of India Mobile Congress (IMC) 2026 will be held from 7–10 October 2026 at Yashobhoomi, New Delhi.

## Theme: “Scale without Boundaries”.

Organised by Department of Telecommunications (DoT) and Cellular Operators Association of India (COAI).

It aims to showcase India's progress and promote global collaboration in digital technologies.

## Key Pillars

### 1. Srishti – Building the Future

- Focus on innovation and emerging technologies.
- Development of next-generation digital infrastructure.

### 2. Suraksha – Strengthening Trust

- Focus on cybersecurity, resilience and trusted digital ecosystems.

### 3. Sashakt – Expanding Opportunities

- Use technology to empower citizens, businesses, start-ups and communities.
- Promote inclusive digital access.

### 4. Samvardhan – Fueling Growth

- Promote investment, entrepreneurship, employment and economic growth through digital technologies.

## Technologies in Focus

- 5G and 6G
- Artificial Intelligence
- Internet of Things (IoT)
- Cloud and edge computing

- Satellite communications
- Electronics manufacturing
- Quantum technologies
- Green technologies

### Significance for India

- Reflects India's transition from a technology market to a technology developer and exporter.
- Provides a platform for Indian start-ups to access investors, industry and global markets.
- Supports the Atmanirbhar Bharat objective in telecom and electronics.

- Promotes India's role in developing global telecom standards, particularly in 6G.
- Encourages collaboration between government, industry, academia, start-ups and investors.
- Can accelerate the adoption of emerging technologies across sectors and regions.

### Start-up Ecosystem

The ASPIRE programme connects technology start-ups with investors, incubators, accelerators and industry leaders.

IMC aims to move beyond technology demonstrations towards commercialisation and large-scale adoption.

## INDIAAI MISSION: AI-DRIVEN GOVERNANCE

### Why in News?

- The IndiaAI Mission has identified 762 AI use cases across 62 Ministries/ Departments to improve governance, public services and operational efficiency.
- Government has approved 58 AI Centres of Excellence (AI-CoEs) and 543 Data & AI Labs across ITIs and polytechnics.

### IndiaAI Mission – 7 Pillars

- **IndiaAI Compute:** Builds high-end computing infrastructure for AI research and start-ups.
- **Foundation Models:** Develops indigenous LLMs, multimodal and domain-specific AI models.
- **Application Development (IADI):** Promotes AI solutions for governance, healthcare, agriculture, climate, etc.
- **FutureSkills:** Builds AI talent through Data & AI Labs and fellowships.
- **AIKosh:** Provides access to datasets, models and AI tools.

- **Safe & Trusted AI:** Promotes responsible, secure and ethical AI.
- **Startup Financing:** Provides funding support from prototyping to commercialisation.

### AI in Governance

**UPSC:** AI-based face authentication for examination integrity and Intelligent Document Processing are being deployed.

**Cybersecurity:** AI helps classify cybercrime complaints and identify emerging crime patterns.

**Healthcare:** CATCH supports AI-based cancer screening and diagnostics.

**PMJAY:** AI-based automated processing of health-insurance claims.

**Agriculture & Minerals:** AI/ML used for agricultural applications and mineral targeting.

**Regulation:** AI tools are being developed for financial compliance and drug-regulatory workflows.

## Capacity Building

58 AI-CoEs approved across States/UTs; 2 allocated to Tamil Nadu.

543 Data & AI Labs approved; 18 allocated to Tamil Nadu.

686 IndiaAI Fellowships awarded across 178 institutions.

## Safe & Responsible AI

India AI Governance Guidelines (2025) provide a framework for safe and inclusive AI.

13 Responsible AI projects focus on bias mitigation, explainability, privacy and algorithmic auditing.

AI Safety Institute is being established for AI safety research and evaluation.

The DPDP Act, 2023 provides safeguards for personal-data processing.

## Significance

Promotes AI-driven, evidence-based governance.

Improves efficiency, accessibility and quality of public services.

Builds indigenous AI capabilities and skilled manpower.

Balances AI innovation with privacy, accountability, fairness and safety

# AI AS INDIA'S NEXT DIGITAL PUBLIC INFRASTRUCTURE (DPI)

## Why in News?

- Public policy experts have proposed making AI a Digital Public Infrastructure (DPI) by making AI compute and inference affordable, accessible and interoperable.
- The idea draws inspiration from India's successful DPI platforms such as Aadhaar, UPI and DEPA.

- Support Indian innovation: Cheap foundational AI allows developers to focus on building applications.
- Reduce foreign dependence: Dependence on proprietary foreign AI models can create strategic and economic vulnerabilities.
- Democratisation: Prevent advanced AI from becoming accessible only to large corporations.

## What does “Commoditising AI” Mean?

- Treating AI intelligence and inference as an affordable public utility rather than an expensive commercial service.
- Aim: Make advanced AI accessible to start-ups, students, MSMEs, governments and citizens.

## Why AI as DPI?

- Next layer of DPI: Add AI intelligence to India's existing stack of identity, payments and data-sharing infrastructure.
- Affordable access: Lower AI costs can support rural healthcare, local-language education and small businesses.

## Existing Initiatives

- IndiaAI Mission: ₹10,372 crore mission to develop India's AI ecosystem.
- GPU access: Over 38,000 GPUs onboarded, with plans to scale to 1 lakh, offering subsidised computing to eligible users.
- BHASHINI: Promotes AI and language technologies for Indian languages through public datasets and models.

## Key Challenges

- Dependence on imported high-end GPUs.
- High energy requirements of AI data centres.
- Dominance of closed-source foreign

foundation models.

- Limited high-quality datasets in Indian languages and local contexts.
- High dollar-denominated API costs for Indian start-ups.

### Way Forward

- Integrate AI data-centre requirements into national power planning.
- Promote open-weight AI models, especially those developed using public resources.
- Develop a Unified Intelligence Interface

(UII)—an interoperable gateway connecting applications with different AI models.

- Provide subsidised AI-compute access to start-ups, students and researchers.
- Expand investment in Indic datasets, AI skills and indigenous computing capacity.

### Significance

- Can transform India from a consumer of foreign AI intelligence into a developer of AI applications.
- Strengthens technological sovereignty, innovation and inclusive digital growth.



# SECURITY

What's Inside?

1. ROADMAP VIJAY OF INDIAN ARMY
2. PROJECT 17 A STEALTH FRIGATE
3. PINAKA LONG RANGE GUIDED ROCKET
4. OPERATION VAJRA
5. THE VISION DOCUMENT ON DRUG CONTROL (2026–2029)

## ROADMAP VIJAY OF INDIAN ARMY

### Why in news?

Recently, Chief of the Army Staff General Dhiraj Seth unveiled the “VIJAY” roadmap for the Indian Army’s modernization.

### About roadmap VIJAY

The VIJAY Roadmap is a comprehensive modernisation strategy for the Indian Army under the leadership of General Dhiraj Seth. It focuses on improving operational readiness, technological capability, jointness among forces, and soldier welfare while strengthening self-reliance in defence production.

### Core Pillars of the ‘VIJAY’ Roadmap:

**Vigilance (V):** Prioritizes heightened operational readiness and constant alertness along India’s borders to effectively counter evolving security dynamics.

**Innovation and Transformation (I):** Focuses

on the integration of modern military doctrine, cutting-edge technologies, and rapid capability development to adapt to the changing character of warfare.

**Jointness and Integration (J):** Emphasizes deeper structural synergy among the Army, Navy, and Air Force, alongside military-civil fusion through a Whole-of-Nation approach to achieve the vision of Viksit Bharat 2047.

**Atmanirbharta (A):** Reaffirms the armed forces’ absolute commitment to indigenization under the core guiding principle of “Winning Our Wars with Indigenous Solutions”, driving defense self-reliance.

**Yodha First (Y):** Centers on human capital development, prioritizing enhanced training standards, technological skilling, and welfare frameworks for everyone from Agniveers to veterans and Veer Naris.

## PROJECT 17 A STEALTH FRIGATE

### Why in news?

Recently, Indian Navy commissions Made-in-India advanced stealth frigate ‘INS Mahendragiri’.

### About INS Mahendragiri:

It is the sixth ship of Nilgiri Class (Project 17A), designed by Warship Design Bureau (WDB) and built at Mazagon Dock Shipbuilders Limited (MDSL) Mumbai

**Propulsion:** These ships are configured with Combined Diesel or Gas (CODOG) propulsion plants. It Comprises a diesel engine and a gas turbine that drive a Controllable Pitch Propeller (CPP) on each shaft, and state-of-the-art Integrated Platform Management System (IPMS).

**Armaments:** The potent weapon and sensor suite comprises anti-surface, anti-air, and anti-submarine warfare systems. It is capable of undertaking anti-air, anti-surface, and

anti-submarine operations.

It is equally suited for maritime security, power projection, Humanitarian Assistance and Disaster Relief (HADR), Search and Rescue (SAR), and sustained presence missions.

### About Project 17A:

It also known as the Nilgiri-class, comprises the development and deployment of seven stealth guided-missile frigates developed as a follow-on to the Shivalik-class (Project 17).

Of the seven frigates, four (Nilgiri, Udaygiri, Taragiri, Mahendragiri) are being built by Mazagon Dock Shipbuilders Ltd (MDL), and three (Himgiri, Dunagiri, Vindhyagiri) by Garden Reach Shipbuilders & Engineers Ltd.

**Significance:** Project 17A frigates are designed for blue-water operations, enabling the Navy to project power across vast distances and protect maritime trade routes.

## PINAKA LONG RANGE GUIDED ROCKET

### Why in news?

Recently, the DRDO successfully tested the Pinaka Long Range Guided Rocket at the Integrated Test Range in Chandipur, Odisha, validating its minimum strike range of 60 km with high precision.

### About Pinaka Long Range Guided Rocket

It is an extended-range, precision-guided rocket developed for the Indian Army's Pinaka Multiple Launch Rocket System (MLRS).

It has been developed by the Armament Research and Development Establishment (ARDE) in association with the High Energy Materials Research Laboratory, Hyderabad-based Research Centre Imarat (RCI) and Defence Research and Development Laboratory (DRDL).

### Features of Pinaka Long Range Guided Rocket:

**Range:** Its maximum strike range of around 120 kilometres.

**Backward compatibility:** The rockets are backward compatible, meaning they can fit into existing launch systems without any significant structural changes.

**Guidance system for improved accuracy:** It makes it highly effective in mountainous terrain, where precision is critical.

In the Guided Pinaka system, launchers carry eight guided rockets due to additional electronic components.

It is equipped with a guidance system that significantly improves accuracy, enabling it to engage targets such as enemy artillery positions, command nodes and logistics installations at long distances.

## OPERATION VAJRA

### Why in news?

Recently, The Central Bureau of Narcotics (CBN) has dismantled an inter-state counterfeit drug network in Bihar under Operation Vajra, seizing illegal narcotic drugs, counterfeit medicines, and an illicit manufacturing unit.

### About Operation vajra:

It is an operation against an interstate synthetic drug trafficking syndicate led by the Central Bureau of Narcotics (CBN).

**Led by:** The operation was carried out by the Preventive Branch of the Central Bureau of Narcotics (CBN), Madhya Pradesh.

**Legal Framework:** The arrests, seizures, and possession of machinery, equipment, and chemicals were carried out under the Narcotic Drugs and Psychotropic Substances Act, 1985.

**Aim:** The operation aims to dismantle organised drug trafficking networks and support the national vision of a Drug-Free India (Nasha Mukht Bharat).

**Interstate Footprint:** The investigation and coordinated operations were conducted between 1st–10th July 2026 across Madhya Pradesh, Maharashtra, and Rajasthan, leading to the dismantling of a sophisticated laboratory in Pune

# THE VISION DOCUMENT ON DRUG CONTROL (2026–2029)

## Why in news?

Recently, the Union Home Minister launched the Vision Document on Drug Control (2026–2029) during the 10th Apex-Level Meeting of the Narco-Coordination Centre (NCORD), organised by the Narcotics Control Bureau (NCB).

## Key features of the vision document:

- Foundation – The Vision Document is built upon a three-pronged strategy:
  - Detect trafficking networks through intelligence.
  - Disrupt supply chains and financial networks.
  - Destroy organised narcotics ecosystems through coordinated enforcement
- National Strategy Against Narcotics – The document provides a time-bound national strategy to dismantle the entire narcotics ecosystem by targeting, drug trafficking, drug abuse, illicit financial networks, organised criminal syndicate and cross-border trafficking.
- Dismantling Major Drug Cartels – Dismantling of, 100 major inter-state and transnational drug cartels through intelligence-led investigations coordinated multi-agency operations, financial disruption and strong prosecution.
- The focus shifts from arresting individual couriers to eliminating entire criminal networks.
- Enhanced Stakeholder Coordination – The Vision Document aims to integrate the efforts of over 40 Ministries and agencies, including:
  - Central Government departments
  - State Governments
  - District administrations
  - Educational institutions
  - Civil society organisations
  - Citizens
- This whole-of-government approach seeks to ensure better coordination and information sharing.
- Financial Disruption of Drug Networks – Recognising that drug trafficking is driven by financial gains, the document proposes, Mandatory financial investigations in major drug cases.
- Attachment and confiscation of assets acquired through drug proceeds
- Tracking money laundering linked to narcotics trade
- This approach weakens criminal organisations by targeting their economic foundations.
- Greater Use of the 1988 act – The vision document recommends wider application of the PITNDPS act, 1988.
- States are encouraged to use this legislation against drug kingpins and organised trafficking syndicates.



# HISTORY



## ART & CULTURE

What's Inside?

1. PANDAVANI FOLK ART
2. TRIPURA CHONGPRENG
3. SARNATH INSCRIBED ON THE UNESCO WORLD HERITAGE LIST

## PANDAVANI FOLK ART

### Why in news?

Recently, the legendary Pandavani folk singer Teejan Bai who took Chhattisgarh's traditional storytelling art to audiences across the world passed away.

### About Pandavani

Pandavani is one of India's most distinctive oral storytelling traditions, originating in the central state of Chhattisgarh.

The name literally means "the story of the Pandavas" and refers to a musical narration of episodes from the ancient Indian epic, the Mahabharata.

### Features of Pandavani

Unlike classical theatre, Pandavani relies primarily on a single lead performer, who narrates the story while singing verses and acting out different characters.

The performance is accompanied by musicians playing traditional instruments such as the harmonium, tabla, manjira, and dholak.

The storyteller often carries a tambura or ektara, using it not just as a musical instrument but also as a prop that transforms into a weapon, chariot, mace, or bow depending on the scene being enacted.

There are two styles of narration in Pandavani

**Vedamati:** In the Vedamati style, the lead artist narrates the story in a simple manner, sitting on the floor throughout the performance.

**Kapalik:** In this narrator enacts the incidents and characters. Performers move around the stage, adopt different voices, enact battle scenes, and use dramatic gestures to bring the Mahabharata's characters to life.

**Famous artists of Pandvani:** Teejan Bai and Ritu Verma are renowned singers of Pandvani.

## TRIPURA CHONGPRENG

### Why in news?

Recently, in the latest edition of Mann Ki Baat, our PM highlighted Tripura's traditional musical instrument, Chongpreng, and appreciated folk artist Surya Kumar Debbarma for his efforts to revive and preserve this indigenous musical heritage.

### About Chongpreng:

Chongpreng is a traditional three-stringed musical instrument of the indigenous communities of Tripura.

It is handcrafted mainly from bamboo

and wood, reflecting the region's rich craftsmanship.

The instrument produces a deep and melodious sound, often compared to that of the Sarod.

It is traditionally played during folk songs, festivals, community gatherings and cultural ceremonies of the tribal communities.

Over time, the instrument witnessed a decline in popularity due to changing musical preferences and reduced transmission of traditional knowledge.

## SARNATH INSCRIBED ON THE UNESCO WORLD HERITAGE LIST

### Why in news?

Recently, the Ancient Buddhist Site of Sarnath in Uttar Pradesh has been inscribed on the

UNESCO World Heritage List during the 48th Session of the World Heritage Committee held in Busan, Republic of Korea.

## About the Ancient Buddhist Site of Sarnath:

**Historical and Spiritual Significance of Sarnath:** Sarnath is universally recognized in Buddhist tradition as the sacred geography where Gautama Buddha delivered his first sermon in the 6th century BCE after attaining enlightenment in Bodhgaya. This monumental event is known as the “Turning of the Wheel of the Law” (Dharmachakra Pravartana).

**Birthplace of the Sangha:** It was at Sarnath that the Buddha met his first disciples, marking the formal inception of the Buddhist monastic order (the Sangha) and the establishment of the Noble Eightfold Path.

**One of the Four Principal Pilgrimage Sites:** The Buddha himself indicated Sarnath as one of the four key sites of Buddhist pilgrimage (alongside Lumbini, Bodhgaya, and Kushinagar).

With this inscription, three of these four primary sites - Lumbini (Nepal), Mahabodhi Temple at Bodhgaya (India), and now Sarnath (India) are protected as UNESCO World Heritage Properties.

**Historical Nomenclature:** In ancient texts, Sarnath is referred to by various names, including Rishipatana, Ishipatana, and Mrigadava (Deer Park).

**National Emblems Found:** Excavations here yielded the famous Mauryan Lion Capital (which became the National Emblem of India) and the Dharmachakra Pravartana Buddha statue from the Classic Gupta Art period.

These are housed in India's earliest site museum, established at Sarnath in 1904.

## About UNESCO World Heritage Site:

**About:** A World Heritage Site is a landmark or area given legal protection by an international convention administered by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

**The 1972 Convention:** Sites are designated based on the Convention Concerning the Protection of the World Cultural and Natural Heritage, adopted in 1972. Currently, there are 1,248 properties across 170 countries on the list.

The Archaeological Survey of India (ASI) is the nodal agency for all UNESCO World Heritage matters in India.

India ratified the Convention in 1977 and served as a member of the UNESCO World Heritage Committee from 2021 to 2025 and hosted the 46th Session of the World Heritage Committee in New Delhi in July 2024.

India has 69 sites on UNESCO's Tentative List, the mandatory prerequisite for future nomination to the World Heritage List.

Each State Party can nominate only one site per year for consideration by the World Heritage Committee for inscription.

### Categories:

**Cultural:** Historic buildings, archaeological sites, and works of monumental sculpture.

**Natural:** Outstanding physical, biological, and geological formations.

**Mixed:** Sites exhibiting both outstanding natural and cultural values (e.g., Mount Olympus in Greece; Khangchendzonga National Park in India).