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Contents

1. Mains Analysis.....	7
1.1 West Asian Crisis from the Lense of India	7
1.2 India and Paradoxes	8
1.3 Demographic Revolution.....	10
1.4 India’s Future Gen Obesity Challenge.....	11
1.5 Steering through the Troubled West	13
1.6 Re-Strategizing Agri Exports	14
1.7 The Multidimensional Effect of the War.....	16
1.8 Air Quality Woes of India	17
1.9 Dynamics of Farm Loan Waivers.....	19
1.10 Reset in India-Canada Ties	21
1.11 Implications of Growing China and Afghan Relations	22
1.12 Importance of Sovereign AI	24
1. 13 The Speaker: The Linchpin of Parliamentary Democracy	25
1.14 The Digital Revolution: India’s Journey.....	27
1.15 Self-Reliance is the Need of the Hour.....	29
1.16 Right to Die with Dignity	30
1.17 SC to Study What Constitutes Personal Data.....	32
1.18 Representation of Women	33
1.19 India Focuses on Pandemic Agreement.....	35
1.20 Transgender Persons (Protection of Rights) Amendment Bill.....	37
1.21 US Opened Probe Against India to Investigate Forced Labour	38
1.22 Democratizing AI	40
1.23 Importance of Sex Education in Academia	42
1.24 Weapons of Destruction of the Past are Today’s Shield	43
1.25 Employment and Employability Challenges in India.....	45
1.26 E-Transmission Duty	47
1.27 Menstrual Leave: A Tool for Inclusion or Exclusion?	48
1.28 Fire Hazards and Remedy	50
1.29 The Changing Dynamics of Asymmetric Warfare	52
1.30 Possible IPO of Profitable RRBs.....	53
1.31 Digital Arrest Scam	55
1.32 Revisiting Collegium System	57
1.33 AYUSH: Integrating Traditional Wisdom with Modern Healthcare	58
1.34 Weather Anomalies Hit India	60
1.35 Current Oil Shock to have an Impact larger than the shock of 70s?	62

1.36 Possibility of Strategic Overhaul in Indo Nepal Ties	63
1.37 Judicial Pendency.....	65
1.38 Permanent Commission for Women in Armed Forces	67
1.39 Dissent: The Currency of Democracy	68
1.40 India Raised its Clean Energy Ambition	70
1.41 Trade in Local Currency	72
1.42 SC Status and Religious Conversion (2026 Ruling).....	74
1.43 Dynamics of Centre State Relations	75
1.44 250 Years of American Revolution	77
1.45 Neighbourhood Matters.....	79
1.46 India's Energy Landscape: Transition, Vulnerabilities, and Strategic Resilience.....	81
1.47 Left Wing Extremism: Maoists are "more or less wiped out"	82
1.48 Clean Cooking Crisis: Limits of Welfare Design	84
2. PRELIMS BOOSTERS.....	86
2.1 Chandra Shekhar Azad	86
2.2 Macaques	87
2.3 ASTraM.....	87
2.4 Fortified Rice	88
2.5 Meningococcal infection	88
2.6 Operation Epic Fury	89
2.7 Legacy Thrust Territories.....	89
2.8 Ruddy Shelduck.....	90
2.9 Karbi Anglong Ginger	90
2.10 Oleum Gas.....	91
2.11 Shtil Missiles.....	92
2.12 Mark-48 Torpedo	92
2.13 World Obesity Atlas 2026.....	92
2.14 Dusky Eagle-Owl	93
2.15 Finland.....	94
2.16 Golestan Palace	94
2.17 Project HANUMAN	95
2.18 Thirumangai Alvar	95
2.19 Kappatagudda Wildlife Sanctuary.....	96
2.20 United Nations Convention on the Law of the Sea (UNCLOS)	96
2.21 The Striped Hyena	97

2.22 Gravity Bomb	97
2.23. Mother-to-Child Transmission of HIV & Syphilis Eliminated by Denmark	98
2.24. Levant (PYQ and in News).....	98
2.25 Mascots for Census 2027.....	99
2.26 Kurds	99
2.27 Su-30MKI	100
2.28 Very Low Earth Orbit (VLEO) Satellite Systems.....	101
2.29 Open Market Operations (OMO).....	101
2.30 MAGHREB	102
2.31 Raisina Dialogue 2026	102
2.32 Nirbhaya Nisha Initiative	103
2.33 Terminal High Altitude Area Defence (THAAD)	103
2.34 LaBL 2.0.....	104
2.35 Essential Commodities Act (ECA).....	104
2.36 Mashriq	105
2.37 The Blue Book	105
2.38 Proba-3 mission	105
2.39 Exercise Lamitiye.....	106
2.40 Cold Response Drill.....	106
2.41 Look Out Circulars.....	107
2.42 SheLeadsBharat – Shakti Walk Initiative	108
2.43 Heatwaves	108
2.44 Asteroid 2024 YR4.....	109
2.45 Savitribai Phule.....	109
2.46 Lake and Air Watch initiative.....	110
2.47 PM SETU Scheme.....	110
2.48 Devon Island	111
2.49 LIGO-India's 1st Gravitational Wave Observatory	111
2.50 Nutrient Transporter Protein.....	112
2.51 Black Rain in Iran.....	113
2.52 India's 1st Comprehensive Checklist of Fireflies.....	113
2.53 Silverpit Carter	114
2.54 HALEU-Thorium Fuel	114
2.55 The Centre for Development of Telematics (C-DOT).....	115
2.56 Kharg Island.....	115
2.57 V.O. Chidambaranar Port.....	116
2.58 Western Tragopan.....	117

2.59 Fiscal Health Index 2026	118
2.60 Samridh Gram Phygital Services Pilot Initiative	118
2.61 Joha Rice	119
2.62 Balirajgarh Fort.....	119
2.63 Project Great Indian Bustard (GIB)	120
2.64 Sejil Ballistic Missile.....	120
2.65 Sharansthi Initiative.....	121
2.66 Sujal Gaon ID	121
2.67 Jnanpith Award.....	122
2.68 Economic Stabilisation Fund.....	122
2.69 Dual Sex Crab	122
2.70 24 Speed Post.....	123
2.71 Exercise Sea Dragon 2026.....	123
2.72 Sahitya Akademi Award	124
2.73 Silent Valley National Park	124
2.74 Port of Fujairah	125
2.75 Coconut Promotion Scheme	125
2.76 Appropriation Bill.....	126
2.77 Mahad Satyagraha.....	127
2.78 World Happiness Report 2026	127
2.79 Dark Fleet	128
2.80 Stockholm Water Prize 2026	128
2.81 RISA	129
2.82 Small Hydro Power Development Scheme.....	129
2.83 South Pars Gas Field	130
2.84 Bharat Audyogik Vikas Yojna (BHAVYA).....	130
2.85 Malawi.....	131
2.86 Floating LiDAR Buoy System.....	131
2.87 Shaheed Diwas (Martyrs' Day).....	132
2.88 Model Code of Conduct	132
2.89 PRARAMBH 2026	132
2.90 The India BioEconomy Report (IBER) 2026	133
2.91 Suraksha Sankalp Karyashala.....	133
2.92 TB CHAMPION Movement.....	134
2.93 Tughlakabad Fort.....	134
2.94 Anti-Dumping Duty	135
2.95 INS Taragiri	136

2.96 Diego Garcia Island	136
2.97 The Iran-Pakistan-India (IPI) Pipeline	137
2.98 ANMOL Initiative.....	137
2.99 Lipulekh Pass	138
2.100 Randomization of EVM-VVPATs	138
2.101 Model Context Protocol (MCP)	139
2.102 Strategic Petroleum Reserve	139
2.103 The Aghanashini-Vedavathi River-Linking Project	140
2.104 Jal Seva Aankalan	140
2.105 City of Tyre	141
2.106 Proálcool Programme	141
2.107 Biologics	142
2.108 Vayu Baan Project	143
2.109 S-400 Triumph	143
2.110 IVFRT Scheme	144
2.111 AssamSAT Mission	144
2.112 Natural Mineral Water	145
2.113 Veerangana Durgavati Tiger Reserve.....	145
2.114 CALM-Brain.....	146
2.115 Modified UDAN Scheme.....	146
2.116 AI Tokens	147
2.117 Gruh Sugam Portal	147
2.118 Nasha Mukta Vidyalaya Initiative.....	148
2.119 Grameen Credit Score (GCS)	149
2.120 PRISM-SG Portal	149
2.121 Bab-el-Mandeb Strait.....	150
2.122 SRY Gene Screening.....	150
2.123 Tunguska Air Defence Missile System (2K22M)	151
2.124 Biotechnology Research and Innovation Council (BRIC)	151
2.125 Baltic Sea.....	152
2.126 Denotified, Nomadic and Semi-Nomadic Tribes (DNTs).....	152
2.127 Competition Commission of India (CCI)	154
2.128 OPU-IVF-ET Technology.....	154

1. Mains Analysis

1.1 West Asian Crisis from the Lense of India

The direct military conflict between Iran and Israel (and by extension the U.S.) has transitioned from a decades-long "shadow war" to an overt, high-intensity regional conflagration. This escalation represents the most significant threat to global stability in the 21st century.

Destabilization of West Asia and Global Geopolitics

1. **Collapse of Regional Deterrence:** The direct targeting of Iranian leadership and nuclear facilities has shattered the "gray zone" tactics previously used to manage conflict, leading to an all-out war of attrition.
2. **Expansion of the Conflict Theater:** Retaliatory strikes by Iran have not been limited to Israel but have extended to U.S. bases and commercial hubs in the UAE, Qatar, and Bahrain, dragging neutral GCC states into the fray.
3. **Weaponization of Maritime Chokepoints:** The threat to the **Strait of Hormuz** (where 20–30% of global oil passes) and the ongoing instability in the Bab-el-Mandeb have created a dual-chokepoint crisis.
4. **Global Inflationary Shock:** Brent crude prices have surged toward **\$80–\$100** per barrel within days, threatening to derail the post-pandemic recovery of fragile economies in Europe and South Asia.
5. **Fragmentation of Global Alliances:** The conflict has forced a "binary choice" on the world, potentially pushing Russia and China closer to Iran, thereby hardening the "New Cold War" blocs.



Is the World on the verge of WW3?

While "World War 3" is often a sensationalist term, the current scenario contains the structural "ingredients" for a globalized conflict:

1. **Direct Great Power Involvement:** With the U.S. conducting "Operation Epic Fury" alongside Israel, a superpower is now a primary combatant.
2. **Nuclear Dimensions:** Strikes on Iran's nuclear sites have raised the stakes to an existential level, where "breakout" or "dirty bomb" scenarios are no longer theoretical.
3. **Multi-Front Proxy Escalation:** Hezbollah (Lebanon), Houthis (Yemen), and PMF (Iraq) are operating as a unified "Axis of Resistance," making this a continental war rather than a bilateral one.
4. **Cyber and Economic Warfare:** Massive cyberattacks on civilian infrastructure and the total blockade of energy routes suggest a "Total War" philosophy.
5. **Diplomatic Paralysis:** The UN Security Council remains deadlocked, and early 2026 negotiations have collapsed, leaving no credible "off-ramp" for de-escalation.

Challenges India Facing

India's "Strategic Autonomy" is under its greatest test, as it maintains deep ties with the U.S./Israel camp while sharing a strategic partnership with Iran.

1. **Energy Security:** India imports nearly **80% of its oil** and **50% of its LNG**. A closure of the Strait of Hormuz would physically block 1.5–2 million barrels of India's daily crude supply.
2. **Expatriate Safety:** Over **9 million Indians** live and work in the Gulf. Their safety and the potential need for a "Mega-Evacuation" (vaster than the 1990 Kuwait airlift) is a nightmare scenario for New Delhi.

3. **Economic Strain:** Every \$10 rise in oil prices increases India's trade deficit by approximately **\$12–\$14 billion**, weakening the Rupee and fueling domestic inflation.
4. **Strategic Assets at Risk:** India's investment in the **Chabahar Port** and the **INSTC (International North-South Transport Corridor)**—intended to bypass Pakistan—could be rendered useless or physically destroyed.
5. **Remittance Crisis:** The Middle East accounts for over **\$40–\$50 billion** in annual remittances. A regional war would collapse the labor markets that sustain millions of Indian households.

India's Recommended Course of Action

India must shift from "Passive Neutrality" to "Active De-escalation" to protect its core national interests.

1. **Strategic Hedging and Non-Partisanship:** India must resist pressure to join any military coalition. It should advocate for an immediate ceasefire while maintaining communication channels with both the Trump/Netanyahu administration and the new Iranian leadership.
2. **Energy Diversification & SPR Management:** Immediately maximize imports from non-Gulf sources (Russia, USA, Guyana) and fast-track the filling of **Strategic Petroleum Reserves (SPR)** to provide a 60–90 day buffer.
3. **Contingency Evacuation Planning:** The Ministry of External Affairs (MEA) should establish a **"West Asia Task Force"** to coordinate with Indian Navy assets (*Operation Sankalp*) for the potential sea-borne evacuation of citizens.
4. **Protection of Connectivity Projects:** Use diplomatic leverage with the U.S. and Israel to ensure that "non-military" infrastructure like **Chabahar** remains outside the target list, emphasizing its role in humanitarian aid to Afghanistan.
5. **Leading the "Global South" Voice:** As a leader of the Global South, India should use forums like the **G20** or **BRICS** to highlight the disproportionate impact of West Asian wars on developing nations, pushing for a "humanitarian corridor" for energy and food.

1.2 India and Paradoxes

India is often described as a "land of contradictions," where the 21st century coexists with the 18th. For every soaring skyscraper in Mumbai, there is a sprawling slum beneath it; for every tech billionaire, there are millions dependent on subsidized rations.

The Dimensions of Indian Paradoxes

India's complexity is defined by the sharp contrasts between its achievements and its challenges.

1. **Affluence vs. Deprivation:** India is the world's 5th largest economy (aiming for 3rd), yet it ranks 111th out of 125 countries in the **Global Hunger Index (2023)**. It houses the third-highest number of billionaires globally while 15% of its population remains "multidimensionally poor."
2. **Technological Leap vs. Digital Divide:** While India leads the world in **Real-time Digital Payments (UPI)**, nearly 50% of the rural population still lacks consistent internet access, creating a "knowledge gap" in education and healthcare.
3. **Space Prowess vs. Basic Sanitation:** India was the first to land on the Lunar South Pole (**Chandrayaan-3**), yet a significant portion of the urban population lacks access to piped water



and scientific waste management.

4. **Gender Empowerment vs. Safety Paradox:** India has one of the highest numbers of female pilots and STEM graduates globally, yet the **Female Labour Force Participation Rate (FLFPR)** remains low at roughly 37%, and crimes against women continue to rise.
5. **Demographic Dividend vs. Skill Deficit:** India has the world's largest youth population, but industry reports suggest that only about **50% of Indian graduates** are actually "employable" due to a mismatch between academic curricula and market needs.

Reasons for These Paradoxes

These contradictions are not accidental; they are the result of deep-seated structural and historical factors.

1. **Historical Baggage and Caste:** Centuries of colonial exploitation drained wealth, while the rigid caste system created "silos of opportunity," preventing social mobility and equitable wealth distribution.
2. **Uneven Economic Transition:** Unlike Western nations that moved from Agriculture to Manufacturing to Services, India skipped the manufacturing stage. This led to a "jobless growth" where the Service sector drives GDP but doesn't employ the masses.
3. **The "Dual Economy" Model:** Formal sectors (IT, Finance) follow global standards, but **90% of India's workforce** is in the informal sector with no social security, leading to a massive wealth gap.
4. **Governance and "Last Mile" Challenges:** While India has excellent policies on paper, the "administrative friction"—corruption, red tape, and lack of local capacity—often prevents benefits from reaching the intended recipients.
5. **Sociocultural Inertia:** Deeply ingrained patriarchal norms and traditional mindsets often clash with modern legal rights, leading to the paradox of "modern laws vs. ancient practices."

The Path Forward: Reducing the Divide

To bridge these gaps, India must move from "growth" to "inclusive development."

1. **Universal Basic Services (UBS):** Focus should shift from just "income" to providing high-quality, free healthcare and education. A healthy, educated population is more likely to bridge the rural-urban divide.
2. **Reviving Manufacturing (Labour Intensive):** Scaling the **PLI (Production Linked Incentive)** schemes for MSMEs (Small businesses) is crucial to absorbing the rural workforce into formal, dignified jobs.
3. **Gender-Responsive Budgeting:** We need more than just "safety" laws; we need structural support like affordable childcare, safe public transport, and equal pay to bring women into the formal economy.
4. **Decentralized Governance:** Empowering **Panchayati Raj Institutions (PRIs)** with the "3 Fs" (Funds, Functions, and Functionaries) ensures that development is tailored to local rural needs rather than a "one-size-fits-all" Delhi approach.
5. **Digital Democracy:** Expanding BharatNet to ensure that high-speed internet is a "public utility" will help democratize access to the digital economy, bridging the gap between a tech-savvy urbanite and a rural farmer.

1.3 Demographic Revolution

The decline in India's Total Fertility Rate (TFR) is one of the most significant demographic transitions of the 21st century. As per the **National Family Health Survey (NFHS-5)** and recent 2025-26 estimates, India's TFR has fallen to **1.9**, which is below the replacement level of **2.1**.

While this indicates successful population stabilization, it brings forth a new set of socio-economic challenges that nations like China and South Korea are already struggling to manage.

Factors Leading to Lowering Fertility in India

The decline is not a result of coercive policies but an organic socio-economic transition.

- Women's Empowerment & Education:** There is a direct inverse correlation between a woman's education level and the number of children. Higher literacy leads to delayed marriages and better reproductive agency.
- Economic Cost of Child-rearing:** The rising cost of education, healthcare, and urban living has made "intensive parenting" (investing heavily in one or two children) the preferred model for the middle class.
- Increased Contraceptive Prevalence:** Improved access to the "Contraceptive Basket" (e.g., *Antara* injectables and *Chhaya* pills) has reduced unmet needs for family planning.
- Lower Infant Mortality Rate (IMR):** As healthcare improves and IMR declines, the "insurance motive" (having many children to ensure some survive to adulthood) has weakened.
- Urbanization & Lifestyle Shifts:** Urban career aspirations often lead to delayed parenthood. Additionally, rising environmental factors and stress have contributed to increased biological infertility in urban pockets.

A static trend

The Total Fertility Rate (TFR) for the country has remained at 2.0 in 2021 and 2020. The chart shows the TFR for 2016-2021



Source: SRS Statistical Report 2021

Implications of the Decline

The shift from a "youth bulge" to an "aging society" has profound consequences:

- Demographic Overhang:** While the workforce is currently large, the proportion of the elderly (60+) is projected to double from 10.5% in 2022 to **over 20% by 2050**, creating a massive "silver generation."
- Economic Productivity:** A shrinking youth population can lead to labor shortages and higher wages, potentially pushing labor-intensive industries to migrate to other countries.
- Dependency Ratio:** The "Old-age Dependency Ratio" will rise, placing a heavy burden on the working-age population to fund social security and healthcare through taxes.
- Fiscal Strain:** Governments will have to divert funds from infrastructure and education to geriatric care, pensions, and specialized healthcare for non-communicable diseases.
- Skewed Regional Dynamics:** Southern states (TFR ~1.5 to 1.7) are aging faster than Northern states (Bihar/UP ~2.1+). This creates a political and economic "North-South divide" regarding tax devolution and parliamentary representation.

Lessons from China and South Korea

China and Korea serve as "demographic mirrors" for India's future:

- **China's "Great Crossover":** Despite ending the One-Child Policy, China's TFR has plummeted to ~1.0. They face the **"Six-Pocket Syndrome"**, where one child must support two parents and four grandparents.
- **South Korea's "Gender War":** Korea has the world's lowest TFR (~0.72–0.80). Extreme work pressure and gender inequality in domestic chores have led to a "marriage strike" among women.
- **The "Low-Fertility Trap":** Both nations show that once fertility falls significantly below 1.5, it is extremely difficult to raise it back, even with massive cash incentives.

Precautionary Measures for India

India must act now while it still enjoys its "Demographic Dividend" to avoid the pitfalls seen in East Asia.

1. **Investing in the "Care Economy":** Establish universal, high-quality, and subsidized creche facilities (like the *Palna* scheme) to ensure women don't have to choose between a career and motherhood.
2. **Gender-Neutral Parental Leave:** Moving beyond "Maternity Leave" to "Parental Leave" for both fathers and mothers to normalize shared caregiving and reduce the "motherhood penalty" in the corporate sector.
3. **National Migration Policy:** To address regional labor imbalances, India needs a policy that ensures "portability of social security" (One Nation, One Ration Card/Health Card) so workers from the North can seamlessly fill labor gaps in the aging South.
4. **Geriatric Healthcare Infrastructure:** Start reorienting the healthcare system from primary maternal care toward specialized geriatric care and elderly-friendly urban infrastructure (Universal Design).
5. **Skilling for Automation:** As the workforce shrinks, productivity must be maintained through high-end skilling in AI and robotics, ensuring that "fewer workers produce more value."

1.4 India's Future Gen Obesity Challenge

According to the **World Obesity Atlas 2026**, India has overtaken many Western nations to rank **2nd globally** (after China) in the number of children living with obesity and overweight. By 2025, approximately **41 million** Indian children (aged 5–19) had a high BMI, a figure projected to rise to **56 million** by 2040.

Factors Causing Childhood Obesity in India

Childhood obesity is no longer a "rich man's disease"; it is a systemic result of the **"Obesogenic Environment"** in India.

1. **Dietary Shift & Ultra-Processed Foods (UPF):** India is one of the fastest-growing markets for UPFs. High consumption of "HFSS" foods (High in Fat, Sugar, and Salt) like instant noodles, sugary beverages, and packaged snacks has replaced traditional, fiber-rich diets.
2. **Sedentary Lifestyle & Screen Addiction:** Over **74% of Indian adolescents** do not meet the recommended physical activity levels. Increased screen time (averaging 3–4 hours daily) has led to "Digital Sedentariness."
3. **The "Chubby Child" Cultural Myth:** In many Indian households, a heavy child is culturally perceived as "healthy" or "prosperous," leading to overfeeding and a lack of early intervention by parents.
4. **Urban Planning Deficit:** Rapid urbanization has resulted in a lack of safe, open public spaces and playgrounds, discouraging outdoor play and active commuting (walking/cycling to school).
5. **Aggressive Marketing:** Children are targeted by sophisticated advertisements for junk food, often using celebrity endorsements or "bait" marketing (toys/collectible items), which influences their food preferences from a very young age.



Can Lifestyle and Educational Changes Reduce the Burden?

Yes, behavioral and structural shifts are the most effective long-term solutions:

1. **School Curriculums:** Integrating "Food Literacy" as a core subject, where children learn to read food labels and understand the "traffic light" nutrition system.
2. **Parental Modeling:** Shifting from "Food as a Reward" (using chocolates/pizza for achievements) to "Activity as a Reward" (family outings, sports).
3. **Active Commuting:** Schools and municipalities collaborating to create "Safe Routes to School" to encourage walking/cycling.
4. **Mindful Eating Education:** Schools implementing "No-Screen Mealtimes" and teaching children to recognize satiety (fullness) cues.
5. **Fitness Tracking:** Integrating wearable tech or app-based fitness challenges into school grades to make physical activity competitive and fun.

Other Steps India Should Take

1. **Front-of-Pack Labeling (FOPL):** Implementing mandatory, easy-to-understand warning labels (like "Red Stars" or "High in Sugar" alerts) on packaged foods.
2. **Fat Tax / Sugar Tax:** Levying higher taxes on SSBs (Sugar-Sweetened Beverages) and ultra-processed snacks to discourage consumption, similar to "Sin Taxes" on tobacco.
3. **Stricter Ad Regulation:** Banning junk food advertisements during prime-time children's programming and on digital platforms like YouTube Kids.
4. **Nutri-Gardens (Poshan Vatikas):** Expanding the use of school gardens to provide fresh produce for mid-day meals and teach children about "farm-to-table" nutrition.
5. **Pediatric Obesity Clinics:** Establishing specialized wings in District Hospitals for early screening of high-BMI children and metabolic counseling.

Measures Already Taken by India

1. **Eat Right School (FSSAI):** A flagship program to certify schools that maintain a healthy food environment and ban the sale of junk food within 50 meters of campus.
2. **Fit India Movement:** Launched to promote a culture of fitness; includes "Fit India School

Rating" based on physical education infrastructure.

3. **Mission Poshan 2.0:** While primarily focusing on under-nutrition, it now increasingly targets the "Dual Burden of Malnutrition" (overweight + underweight) through the *Poshan Tracker*.
4. **National Programme for NCDs (NP-NCD):** Integrated screening for hypertension and diabetes, now being extended to school-age children in "Health Hotspots."
5. **Advertising Guidelines (2022):** The CCPA (Central Consumer Protection Authority) released guidelines to prevent "Misleading Advertisements" specifically targeting children with unhealthy food claims.

1.5 Steering through the Troubled West

India's "Link West" policy has transformed its role from a passive buyer of energy to a preferred strategic partner for almost all major powers in the region. However, as the regional security architecture faces unprecedented volatility in 2026, India's "multi-alignment" is being tested.

India's Relations with Major West Asian Blocs

India maintains a unique, non-hyphenated relationship with the three primary "camps" of the region:



1. **The Gulf Cooperation Council (GCC):** Led by **Saudi Arabia** and the **UAE**, this is India's most critical economic corridor.
 - **Stats:** The GCC accounts for over **\$180 billion** in bilateral trade. The UAE is India's 3rd largest trading partner and hosts over **3.5 million** Indian expatriates who contribute significantly to India's **\$110+ billion** annual remittance inflow.
2. **Israel:** A "Strategic Partnership" focused on high-tech defense and agriculture.
 - **Stats:** India is the **largest buyer** of Israeli defense equipment, with bilateral trade (excluding defense) exceeding **\$10 billion**. Cooperation now extends to the **I2U2 Group** (India, Israel, USA, UAE).
3. **Iran:** A gateway to Central Asia and a key security partner in the North-South corridor.
 - **Stats:** The **Chabahar Port** project, where India has committed **\$120 million** for infrastructure and a **\$250 million** line of credit, remains the cornerstone for bypassing Pakistan to reach Afghanistan and Eurasia via the **INSTC**.
4. **Egypt:** A growing partner in the Mediterranean and a leader in the Arab world.
 - **Stats:** Bilateral trade reached an all-time high of **\$7.5 billion** in recent years, with a focus on green hydrogen and defense co-production.
5. **Qatar:** The primary source of India's energy security.
 - **Stats:** Qatar supplies nearly **40%** of India's total **LNG imports**. Despite occasional diplomatic friction, the 20-year LNG deal signed recently ensures long-term energy stability.

Multidimensional Hard Points of a Troubled West Asia

A destabilized West Asia creates a "Hard Point"—a convergence of crises—for India:

1. **Energy Volatility & Inflation:** Any disruption in the **Strait of Hormuz** (through which 20% of global oil flows) triggers a spike in crude prices. A \$10 increase per barrel can widen India's current account deficit by **0.5% of GDP**, stoking domestic inflation.
2. **The Diaspora Dilemma:** With nearly **9 million** Indians in the region, any full-scale conflict necessitates massive, expensive evacuation operations (e.g., Operation Raahat or Vande Bharat), straining Indian logistics and the exchequer.
3. **Connectivity Paralysis:** The ambitious **IMEC (India-Middle East-Europe Economic Corridor)**, intended to counter China's BRI, remains a "paper project" if regional transit points like Haifa (Israel) or Dubai are under threat.
4. **Security Spillover (Radicalization):** Sustained conflict in the Levant and Yemen provides breeding grounds for extremist ideologies. For India, this translates into heightened maritime security threats (as seen with Red Sea drone attacks) and potential domestic radicalization.
5. **Strategic Encirclement:** A vacuum left by regional instability allows **China** to expand its "mediator" role (as seen in the Saudi-Iran deal), potentially diminishing India's influence in its "extended neighborhood."

The Strategic Way Forward: How India Should Steer

India must evolve from a "balanced observer" to a "proactive stabilizer":

1. **Institutionalizing "Minilateralism":** Strengthen frameworks like the **I2U2** and the **India-UAE-France** trilateral. These allow India to cooperate on food and energy security without getting embroiled in the direct military rivalries of the region.
2. **Strategic Autonomy 2.0:** India must continue to resist joining military coalitions (like Operation Prosperity Guardian) in favor of **independent maritime patrols**. This maintains India's image as a neutral, "Net Security Provider" in the Indian Ocean.
3. **Leveraging the "Middle Power" Status:** Use the **G20 legacy** to act as a bridge between the Global South and the West. India is one of the few nations that can talk to Tehran, Tel Aviv, and Riyadh simultaneously; it should offer "discreet mediation" rather than "loud diplomacy."
4. **Diversifying Connectivity:** While IMEC is the future, India should accelerate the **INSTC via Iran** to ensure that its trade routes to Europe and Russia are not dependent on a single geography.
5. **Securing the Diaspora through Bi-laterals:** Move beyond "emergency evacuations" to "stability agreements." India should sign comprehensive social security and protection treaties with GCC nations to ensure the safety of its workforce during "gray-zone" conflicts.

For India, West Asia is not just a source of oil, but a pillar of its rise as a *Vishwa Mitra* (Global Friend). In a world of polarized camps, India's ability to remain "equiproximity" rather than "equidistant" will determine its success in navigating the West Asian hard point.

1.6 Re-Strategizing Agri Exports

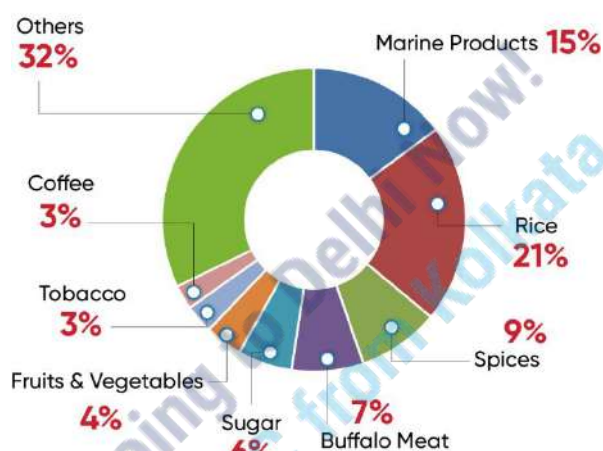
India is the world's largest rice exporter, accounting for approximately **40% of global trade**. However, this dominance comes at a staggering cost. The shift from "food security" to "export-oriented surplus" has created deep systemic vulnerabilities.

Dimensions of the Toll on the Nation

The unchecked export of rice, particularly non-basmati varieties, impacts India across five critical dimensions:

- 1. Ecological Dimension (Virtual Water Export):** Rice is a water-intensive crop, requiring ~3,000–5,000 liters of water for 1 kg of grain. By exporting 20 million tonnes of rice, India effectively exports **billions of cubic meters of "virtual water"** from water-stressed regions like Punjab and Haryana.
- 2. Soil Health & Biodiversity:** Intensive monoculture has led to the depletion of soil micronutrients (zinc, iron) and the dangerous lowering of water tables. The "Rice-Wheat" cycle has replaced traditional diverse cropping systems, leading to a loss of indigenous seed varieties.
- 3. Economic Distortion (Subsidy Leakage):** India's rice exports are indirectly subsidized through free electricity for irrigation, subsidized fertilizers, and the Minimum Support Price (MSP). Essentially, the Indian taxpayer is subsidizing the food consumption of foreign nations.
- 4. Climate Dimension (Methane Emissions):** Flooded rice paddies are a major source of **methane**, a potent greenhouse gas. As global pressure for "Green Trade" increases, India's high carbon footprint from rice production could lead to future "Carbon Border Taxes."
- 5. Domestic Food Inflation:** High export demand often creates a domestic supply-demand mismatch. In 2023–2025, India had to impose export bans/duties to control local prices, which damaged its reputation as a reliable global supplier.

Composition of Agricultural Exports (FY-24)



Total Agri-Exports: USD 48.9 Billion

Strategic Alternatives: Replacing Rice Exports

To maintain export earnings without the ecological baggage, India should pivot toward high-value, low-water-footprint alternatives:

- 1. The "Millet" Revolution:** Positioned as "**Shree Anna**," millets require 70% less water than rice. With 2023 having been the International Year of Millets, India can capture the global "superfood" market, targeting health-conscious consumers in Europe and North America.
- 2. Horticulture & Processed Foods:** Instead of raw grains, focus on fruits (Mangoes, Grapes), vegetables, and their processed derivatives (pulp, concentrates). Value addition in the food processing sector increases "export value per drop of water."
- 3. Technical Textiles (Natural Fibers):** Diverting acreage to **Jute, Hemp, or Organic Cotton** can feed the growing global demand for sustainable fashion. These crops provide higher returns to farmers with lower water intensity compared to paddy.
- 4. Oilseeds & Pulses (Import Substitution as Export):** India spends billions on importing edible oils. By shifting rice land to Mustard, Soyabean, or Pulses, India reduces its import bill—effectively a "reverse export" that saves foreign exchange.
- 5. Climate-Smart Floriculture:** The global cut-flower market is multi-billion dollar. Utilizing controlled-environment agriculture for flowers and medicinal plants (like Ashwagandha) offers exponentially higher profit margins than bulk cereals.

The Way Forward: A Sustainable Agri-Trade Policy

Transitioning away from a rice-centric export model requires a structural "de-risking" of Indian agriculture:

- 1. Water-Based Export Accounting:** Implement a "Virtual Water Tax" or a credit system for

exports. Crops grown in water-surplus regions (like Eastern India) should be prioritized for export over those from water-scarce zones (North-West India).

2. **Direct Benefit Transfer (DBT) Over Subsidies:** Shift from input subsidies (power/fertilizer) to **Direct Income Support** (like PM-KISAN). This removes the incentive for farmers to grow water-intensive crops just because inputs are "free."
3. **Promoting DSR & SRI Techniques:** For remaining rice production, mandate **Direct Seeded Rice (DSR)** or System of Rice Intensification (SRI), which can reduce water consumption by 25–30% and significantly cut methane emissions.
4. **Infrastructure for Perishables:** To replace grain exports with horticulture, India must invest in a "Farm-to-Port" cold chain. This reduces post-harvest losses (currently 15–20%) and ensures high quality for international markets.
5. **Agri-Diplomacy & Brand India:** Use the G20 and SCO platforms to market Indian Millets and Organic products as "Premium & Sustainable." Moving from a "Volume-based" exporter to a "Value-based" exporter is the only way to sustain 2047 growth targets.

India's status as a "Rice Superpower" is a 20th-century achievement that is becoming a 21st-century liability. A strategic retreat from bulk rice exports toward high-value, climate-resilient alternatives is not just an environmental necessity, but an economic imperative to ensure long-term "Atmanirbharta" in agriculture.

1.7 The Multidimensional Effect of the War

Beyond the immediate shock to the oil and gas sector, a conflict between Iran and Israel creates a "contagion effect" across several non-energy industrial segments in India.

Impact on Non-Energy Industrial Segments

1. **Aviation and Logistics:** The closure of Iranian and Israeli airspaces forces Indian carriers to take longer "detour" routes to Europe and the US. This increases **Aviation Turbine Fuel (ATF)** consumption and flight durations, leading to higher freight costs and passenger fares.
2. **Agriculture and Basmati Exports:** Iran is one of the largest importers of **Indian Basmati rice**. A war-induced maritime blockade or economic sanctions on Tehran would lead to a massive backlog of inventory, crashing domestic prices for farmers in Punjab and Haryana.
3. **Gems and Jewellery:** Israel is a global hub for **diamond cutting and polishing** and a major trade partner for Surat's diamond industry. Any disruption in Tel Aviv's business districts halts the supply of rough diamonds and the export of finished ornaments.
4. **Information Technology (IT) and Startups:** Many Indian IT majors (like TCS, Infosys, and Wipro) have R&D centers in Israel. Furthermore, the Indian startup ecosystem is deeply integrated with **Israeli "Deep Tech."** A war-footing economy in Israel diverts human capital to military service, stalling joint innovation projects.
5. **Pharmaceuticals:** India is the "Pharmacy of the World," but it relies on West Asian ports for smooth distribution to African and European markets. Increased **insurance premiums (war risk surcharges)** for shipping through the Arabian Sea make Indian generic drugs less competitive globally.



Macroeconomic Impact on the Indian Economy

1. **Inflationary Pressure (WPI & CPI):** Beyond fuel, high energy costs increase the "input costs" for manufacturing and the "transportation costs" for food. This leads to a spike in both the **Wholesale Price Index (WPI)** and **Consumer Price Index (CPI)**, eroding the purchasing power of the middle class.
2. **Current Account Deficit (CAD) Widening:** India's trade deficit is sensitive to commodity prices. For every \$10 increase in the price of a barrel of oil, India's CAD is estimated to widen by approximately **0.5% of GDP**, putting immense pressure on the national exchequer.
3. **Currency Depreciation:** Geopolitical instability triggers "risk-off" sentiment, leading Foreign Portfolio Investors (FPIs) to pull money out of emerging markets like India. This flight of capital leads to the **depreciation of the Rupee** against the US Dollar, making all imports (not just oil) more expensive.
4. **Stock Market Volatility:** The uncertainty leads to massive corrections in the **BSE Sensex and NSE Nifty**, particularly in sectors like Paint, Tyres, and Aviation, which are highly sensitive to crude oil derivatives. This wipes out household wealth and slows down private consumption.
5. **Fiscal Math and Subsidies:** To prevent a direct price shock to citizens, the government may be forced to absorb price hikes by cutting **excise duties** or increasing **fertilizer/LPG subsidies**. This diverts funds away from planned capital expenditure (CapEx) on infrastructure like railways and highways.

Probable Steps India Should Take

India must transition from a "reactive" to a "proactive" industrial policy to cushion these sectors from external shocks.

1. **Financial Support for Exporters:** The Government should consider a **Credit Guarantee Scheme** or interest subvention for exporters (especially in the Rice and Textile sectors) whose payments are stuck in Iran due to banking channel disruptions.
2. **Expansion of 'Operation Sankalp':** The Indian Navy must expand its protective umbrella to provide **escort services** not just for oil tankers, but for container ships carrying high-value electronics and agricultural goods through "choke points."
3. **Accelerating Digital Trade Corridors:** To bypass physical disruptions, India should promote the **digitization of trade documents** (e-Bills of Lading) and settle trade in **Rupee (INR)** or local currencies to minimize the impact of potential SWIFT sanctions on Iran.
4. **Strengthening Domestic 'Deep Tech' R&D:** To reduce reliance on Israeli defense and cyber-security tech, the government should increase funding for **iDEX (Innovations for Defence Excellence)** to encourage indigenous alternatives to Israeli components.
5. **Logistical Hedging via Multi-modal Routes:** India should expedite the use of the **Eastern Maritime Corridor (Chennai-Vladivostok)** as a long-term alternative to the Suez Canal route, ensuring that trade with Europe and Russia remains insulated from West Asian volatility.

1.8 Air Quality Woes of India

A report by the **Centre for Research on Energy and Clean Air (CREA)** released in early March 2026 highlights a grim milestone: **204 out of 238 Indian cities** failed to meet the National Ambient Air Quality

Standards (NAAQS) during the winter of 2025–26. Ghaziabad, Noida, and Delhi emerged as the top three most polluted, while not a single city met the stringent WHO safety guidelines.

Issues Faced by Indian Cities in Air Quality Management

1. **Fragmented Governance:** Air quality management is split across multiple bodies (CPCB, SPCB, Municipalities) with no single executive authority. This leads to a lack of accountability and "reactive" rather than "preventative" action.
2. **Monitoring Gaps:** Despite expansion, approximately **25% of NCAP cities** still lack Continuous Ambient Air Quality Monitoring Stations (CAAQMS). In existing stations, data quality is often hampered by poor maintenance and suboptimal sensor placement.
3. **Source Apportionment Deficit:** Only a fraction of cities have completed "Source Apportionment" studies. Without knowing exactly how much pollution comes from road dust vs. vehicles vs. industry, cities rely on generic, less effective measures.
4. **Enforcement Bottlenecks:** While policies like **Graded Response Action Plan (GRAP)** exist, enforcement on the ground—such as stopping construction or illegal waste burning—is inconsistent due to a shortage of dedicated environmental staff at the ULB level.
5. **Airshed Neglect:** Pollution is often treated as a city-specific problem, ignoring the "airshed" effect. Pollutants from rural stubble burning or neighboring industrial hubs move freely across municipal borders, making isolated city-level plans insufficient.



Impact of Growing Population on Air Quality

1. **Housing and Construction Spikes:** Rapid population growth demands massive infrastructure. Construction dust is a leading contributor to PM10 levels; in cities like Hyderabad, smog episodes in 2026 are already being linked to record-high construction activity.
2. **Vehicular Density:** More people equals more demand for mobility. In the absence of robust public transit, this leads to a surge in private two-wheelers and cars, increasing tailpipe emissions and secondary particulate matter formation.
3. **Waste Management Overload:** Urban local bodies struggle to manage the waste of a growing population. Overfilled landfills often catch fire or lead to open biomass burning, releasing toxic gases and particulate matter into the urban atmosphere.
4. **Energy Consumption:** High-density living increases local energy demand for cooling and appliances. In many cities, this demand is still met by localized diesel generators (DG sets) or inefficient neighborhood-scale energy systems.
5. **Urban Heat Island Effect:** A growing population leads to the loss of "green lungs" (urban forests) to accommodate housing. The resulting concrete jungles trap heat and pollutants, preventing the vertical dispersion of smog during winter months.

Way Forward: A Road to Breathable Air

1. **Airshed-Based Management:** Move beyond city-specific targets to a **Regional Airshed Authority** (similar to the CAQM model for NCR) for all major pollution zones like the Indo-Gangetic Plain to coordinate inter-state action.
2. **Transition to "Smart" Monitoring:** Deploy low-cost sensor networks to augment CAAQMS, allowing for **hyperlocal air quality data** that helps citizens and authorities identify specific "hotspots" within a single ward.
3. **Fiscal Decoupling & Incentives:** Link Central Finance Commission grants to **measurable air**

quality outcomes (PM2.5 reduction) rather than just "expenditure." Use funds to subsidize MSMEs for switching to PNG or electricity.

4. **Aggressive Modal Shift:** Prioritize "Transit-Oriented Development" (TOD). Every Indian city with a population over 1 million should have a mandatory mandate to increase the share of **electric public transport** to at least 50% by 2030.
5. **Strict Industrial Compliance:** Set a non-negotiable deadline for all coal-fired thermal power plants to install **Flue Gas Desulphurisation (FGD)** units and enforce "Ultra-Low Emission" standards for heavy industries like cement and steel.

1.9 Dynamics of Farm Loan Waivers

The issue of farm loan waivers (FLWs) remains one of the most contentious debates in Indian fiscal federalism. It sits at the intersection of humanitarian distress, economic efficiency, and political opportunism.

Impact on Finances: States, Centre, and RBI Highlights

The Reserve Bank of India (RBI) has repeatedly cautioned that loan waivers create a "moral hazard" and erode credit culture.

1. **Fiscal Deficit Compression:** Since 2014, cumulative state-level waivers have exceeded **₹2.5 lakh crore**. This forces states to cut **Capital Expenditure (CapEx)** in productive sectors like irrigation and roads to maintain fiscal deficit targets under the FRBM Act.
2. **State Budgetary Stress:** According to the **RBI's State Finances Report (2024-25)**, loan waivers have pushed the debt-to-GSDP ratio of several states (like Punjab and Andhra Pradesh) beyond the sustainable **25%** limit.
3. **The "Crowding Out" Effect:** Massive government borrowing to fund waivers increases the cost of credit for the private sector, "crowding out" private investment in the agricultural value chain.
4. **Credit Culture Erosion:** RBI highlights that waivers lead to a rise in **Strategic Defaults**, where even capable farmers stop repaying loans in anticipation of a future waiver. This leads to a spike in **Non-Performing Assets (NPAs)** for rural and cooperative banks.
5. **Recent RBI Highlight (2026):** The RBI Governor recently noted that "farm loan waivers are a 'sub-optimal' tool that provides only temporary liquidity relief but fails to address the structural solvency of the Indian farmer."



Are Farm Waivers Done for Political Mileage? (Arguments)

Arguments For (Political Tool):

1. **Election Timing:** Historically, 80% of loan waivers are announced within six months of a state or general election, suggesting a "vote-for-waiver" quid pro quo.

2. **Exclusion Error:** Waivers often benefit "creamy layer" farmers with formal bank loans, while the most distressed (landless laborers and those indebted to private moneylenders) are excluded.
3. **Short-termism:** They offer a "quick fix" for political optics instead of long-term investments in cold storage or food processing that don't yield immediate electoral results.

Arguments Against (Necessary Intervention):

1. **Sovereign Duty:** In a country where **50%** of the workforce is in agriculture but contributes only **~15%** of GDP, waivers are seen as a necessary social safety net during climate shocks.
2. **Market Failure:** Farmers suffer from "Price Discovery" failures. When the state cannot guarantee MSP, a waiver is viewed as a compensatory mechanism for suppressed incomes.

Importance of Farm Loan Waivers

1. **Immediate Relief from Agrarian Distress-** Preventing Suicides, Mitigating Natural Calamities.
2. **De-clogging the Credit Cycle-** Renewed Eligibility, Injecting Liquidity.
3. **Social Equity and Wealth Redistribution-** Protecting Small/Marginal Farmers.
4. **Consumption Stimulus in Rural Markets- Boosting Demand.**

Managing Farm Waivers: A Better Way Forward

To move away from "competitive populism," India must transition from debt relief to income support and structural reform.

1. **Universal Basic Income (UBI) / PM-KISAN+:** Instead of one-time waivers, scale up direct benefit transfers (DBT) like **PM-KISAN**. This provides predictable liquidity without destroying the banking credit culture.
2. **Agricultural Insurance (PMFBY 2.0):** Strengthen the **Pradhan Mantri Fasal Bima Yojana** to ensure that payouts for crop loss are automated via satellite data, making loan waivers redundant during droughts or floods.
3. **Credit Registry & Digitization:** Implementing a **Digital Agri-Stack** (as proposed in the 2026 Budget) to track the credit history of farmers. This allows for "Targeted Relief" to small and marginal farmers rather than blanket waivers.
4. **Interest Subvention vs. Principal Waiver:** The government should focus on **Interest Subvention** (reducing the interest burden) for timely payers, which incentivizes a healthy repayment culture rather than rewarding defaults.
5. **Infrastructure Investment:** Shift the fiscal "fiscal space" from waivers to **Post-Harvest Infrastructure**. Investing in the **Agriculture Infrastructure Fund (AIF)** ensures farmers can store crops and sell when prices are high, addressing the root cause of debt.

While farm loan waivers provide immediate "oxygen" to a distressed rural economy, they act as a double-edged sword that bleeds the exchequer and hampers long-term agricultural productivity. The transition must be from **"Debt Relief" to "Income Empowerment"** through structural reforms in marketing (e-NAM) and climate-resilient technology.

1.10 Reset in India-Canada Ties

In early 2026, India and Canada embarked on a historic "**Strategic Reset**" following the official visit of Canadian Prime Minister **Mark Carney** to India. This reset effectively ended the diplomatic freeze triggered in late 2023.

Evolution of Ties: A Brief Overview

The relationship has transitioned through distinct phases:

1. **The Nuclear Beginning (1950s–1970s):** Ties began with "Atoms for Peace," but soured after India's 1974 nuclear test (Smiling Buddha), which Canada viewed as a breach of trust.
2. **The Economic Re-engagement (2010s):** The 2010 Civil Nuclear Deal and the elevation to a **Strategic Partnership in 2015** marked a peak in bilateral trust.
3. **The "Cratered" Phase (2023–2024):** Relations hit an all-time low in September 2023 following allegations by former PM Justin Trudeau regarding the killing of Hardeep Singh Nijjar. This led to the expulsion of diplomats and a suspension of trade talks.
4. **The Resurgence (2025):** A breakthrough occurred at the **G7 Summit in Kananaskis (June 2025)**, where PM Modi and PM Carney agreed to restore High Commissioners and move toward "economic realism."
5. **The Strategic Reset (2026):** The current phase focuses on "de-risking" from other major powers and building a durable economic anchor.

Convergence Points: The "Win-Win" Sectors

India and Canada are moving from "episodic transactions" to deep economic integration.

1. **Energy Security:** A landmark **\$2.6 billion deal** with Canada's Cameco (2026) ensures uranium supply for India's nuclear reactors until 2035.
2. **Critical Minerals:** Canada is a key supplier of lithium, cobalt, and potash. India recently endorsed the **G7 Critical Minerals Action Plan** (supported by Canada) to secure EV and semiconductor supply chains.
3. **Investment Powerhouse:** Canadian Pension Funds (like CPPIB) have invested over **\$100 billion** in Indian infrastructure, renewables, and real estate, showing deep trust in India's growth.
4. **Trade Diversification:** Both nations seek to reduce dependence on the US market. They have set an ambitious target to double bilateral trade to **\$50 billion by 2030** (from ~\$13 billion in 2024).
5. **Clean Tech & AI:** The 2026 visit saw the launch of the **India-Canada Strategic Energy Partnership** and cooperation on "AI Compute Corridors" for startups.



Friction Points: The Remaining Hurdles

Despite the reset, structural challenges persist:

1. **Extremism & Sovereignty:** India remains concerned about **Khalistani extremism** and the safety of its diplomats. Canada emphasizes its domestic legal frameworks and "freedom of expression."
2. **Foreign Interference Allegations:** A 2025 Canadian inquiry (PIFI) accused India of clandestine interference in Canadian elections—a claim India has vehemently rejected as "politically motivated."
3. **The Nijjar Case:** While the 2026 visit signaled a move forward, the trial for the accused in Canada (expected August 2026) remains a potential flashpoint for diplomatic headlines.
4. **Trade Barriers:** India's high tariffs on pulses and Canada's strict non-tariff barriers on Indian pharmaceuticals often lead to friction during trade negotiations.
5. **Visa & Consular Delays:** The 2023 staff reductions caused a massive backlog in student and

business visas, which is only now being progressively resolved.

The Way Forward: Building a Resilient Partnership

To ensure the "Reset" survives political cycles, both nations must adopt a pragmatic roadmap:

1. **Institutionalizing Security Dialogue:** Operationalizing the **2025 National Security Work Plan** to address extremism and organized crime through institutional liaison rather than public "megaphone diplomacy."
2. **Early Conclusion of CEPA:** Finalizing the **Comprehensive Economic Partnership Agreement (CEPA)** by the end of 2026 to provide a legal and economic anchor that transcends political shifts.
3. **Middle-Power Coordination:** Leveraging their status as "Middle Powers" to coordinate in the G20 and G7 on global issues like the "Rules-based Order" and climate change.
4. **Diaspora as a Bridge:** Utilizing the **1.8 million-strong Indian diaspora** (4% of Canada's population) to foster B2B (Business-to-Business) ties rather than letting it become a source of political friction.
5. **Technology Corridors:** Establishing joint "Innovation Sandboxes" and the **Australia-Canada-India (ACITI) Partnership** to co-develop emerging technologies like 6G and Regenerative Medicine.

1.11 Implications of Growing China and Afghan Relations

In the evolving geopolitical landscape, China's bid to mediate the conflict between Afghanistan and Pakistan—and its growing footprint in Kabul—presents a complex strategic challenge for India. While regional stability is a shared interest, the methods and motivations behind Beijing's "active mediation" have significant implications for New Delhi.

Consequences for India The primary consequence of China's mediation is the **formalization of a China-centric regional order** in South Asia.

1. **Diminished Role as a Net Security Provider:** China's mediation positions it as the "regional stabilizer," a role India historically seeks. Success in mediation would showcase Beijing as a more capable arbiter than New Delhi.
2. **Strategic Isolation:** If China successfully integrates Afghanistan into the **China-Pakistan Economic Corridor (CPEC)**, India faces a "Two-Front Connectivity" challenge, where land routes to Central Asia are permanently dominated by adversarial powers.
3. **Dilution of Democratic Values:** China's "non-interference" model prioritizes security over inclusive governance. This may embolden the Taliban to ignore Indian and global calls for women's rights and ethnic minority representation.



4. **Shift in Geoeconomic Gravitation:** With China eyeing Afghanistan's **\$1–3 trillion mineral wealth** (lithium, copper, rare earths), Indian investments in projects like the Hajigak iron ore mines risk becoming stranded or irrelevant.
5. **Weakening of the "Strategic Depth" Paradox:** Historically, Pakistan sought "strategic depth" in Afghanistan against India. China's mediation could flip this, where a China-aligned Afghanistan provides Beijing with a land-based "strategic depth" to pressure India's western flank.

Threats Due to Chinese Presence in the Backyard

China's presence in Afghanistan and among "trusted partners" like Iran and Central Asian states creates a "Ring of Influence" around India.

1. **Encirclement (String of Pearls 2.0):** Beyond the maritime front, China is creating a **continental encirclement**. A Beijing-mediated peace ensures that Afghanistan remains a "pro-China" node, completing a land-link from Xinjiang to Gwadar and Kabul.
2. **Intelligence & Surveillance Gap:** The deployment of Chinese AI-enabled security systems and the **AN/TPY-2 style radars** (or their Chinese equivalents) in the Wakhan Corridor could give Beijing unprecedented electronic intelligence (ELINT) over Indian movements in Ladakh and J&K.
3. **Militant Re-orientation:** While China wants to curb Uyghur militants, it may use its leverage to ensure the Taliban remains "neutral" on Kashmir or, worse, allows Pakistan-based groups (LeT/JeM) to operate under a different "Chinese-sanctioned" umbrella.
4. **Leverage over Infrastructure (Chabahar Risk):** India's gateway to Afghanistan—the **Chabahar Port**—depends on a stable, non-hostile Afghanistan. China's "Belt and Road" could offer the Taliban more lucrative alternatives, effectively making Chabahar a "bridge to nowhere."
5. **Erosion of Traditional Partnerships:** Countries like **Iran** and **Russia**, traditionally aligned with India on Afghan stability, are increasingly coordinating with Beijing via the SCO. India risks becoming the "odd man out" in regional formats.

Precautionary Measures for India

India must adopt a policy of "**Proactive Pragmatism**" to safeguard its interests.

1. **Upgrading the "Technical Mission" to De-Facto Embassy:** India should continue its 2025 trajectory of upgrading its Kabul presence. Direct engagement with the Taliban—without formal recognition—is essential to prevent a total "intelligence vacuum."
2. **Leveraging "People-to-People" Goodwill:** Unlike China's extractive approach, India's **developmental assistance** (dams, schools, hospitals) has created immense local goodwill. India should double down on small-scale community development projects (SDPs) to maintain social leverage.
3. **Strengthening the INSTC-Chabahar Nexus:** India must fast-track the **International North-South Transport Corridor (INSTC)** and integrate it with Central Asian republics (Uzbekistan, Turkmenistan) to provide a viable economic alternative to CPEC.
4. **Strategic Multi-Alignment:** India should utilize the **Shanghai Cooperation Organisation (SCO)** and the **Moscow Format** to force a "multilateral" resolution rather than a "bilateral" (China-Taliban) one, ensuring that no single power dictates Afghan security.
5. **Enhanced Border Intelligence & Defense:** Given the risk of "spillover" from a China-managed Afghanistan, India should accelerate its "**Vibrant Villages**" program and deploy advanced integrated surveillance systems along the LAC and the LoC to prevent grey-zone incursions.

1.12 Importance of Sovereign AI

In the digital landscape, **Sovereign AI** has emerged as a cornerstone of national security and strategic autonomy. For India, developing indigenous algorithms is no longer just a technological milestone but a necessity to protect its "digital borders" and cultural identity.

Importance of Sovereign AI for India

Sovereign AI refers to a nation's ability to produce using its own infrastructure, data, and human capital.

1. **Strategic Autonomy & National Security:** Relying on foreign Large Language Models (LLMs) creates a "supply-chain vulnerability." In geopolitical crises, access to proprietary AI could be restricted, crippling critical sectors like defense, finance, and disaster management.
2. **Digital Public Infrastructure (DPI) Integration:** India's "India Stack" (Aadhaar, UPI, Bhashini) requires AI that can operate population scale. Sovereign models ensure citizen data remains within national jurisdiction while enhancing public service delivery.
3. **Economic Resilience:** By transitioning from a "consumer" to a "creator" of AI, India can capture a significant share of the global AI market, which is projected to add over **\$1.7 trillion** to the Indian economy by 2035.
4. **Technological Decolonization:** Sovereign AI prevents "Digital Colonialism," where a few global tech giants set the rules, harvest domestic data, and dictate the technological trajectory of the Global South.
5. **Auditability & Accountability:** For high-stakes decisions (e.g., judicial aid or healthcare), the government needs "Explainable AI." Indigenous models allow for complete transparency in the "black box" of algorithms, which is impossible with proprietary foreign models.



Perpetuation of Bias by Western AI Models

Current global AI models are predominantly trained on data from the Global North, leading to an "Imperial Gaze" in algorithmic reasoning.

1. **Linguistic Exclusion:** Most Western models are optimized for English. In a country with 22 official languages and thousands of dialects, these models often fail to capture regional nuances, leading to poor performance for rural users (the "AI Divide").
2. **Cultural and Normative Bias:** Western AI often mirrors the social values, historical perspectives, and legal frameworks of the US and EU. This can result in outputs that are culturally tone-deaf or even offensive to Indian sensibilities (e.g., misinterpreting religious symbols or social customs).
3. **Socio-Economic Distortion:** Algorithms trained on urban, high-income datasets often fail in the Indian context of "scarcity-driven innovation." For example, Western credit-scoring AI might disqualify a rural Indian entrepreneur who lacks a formal credit history but has high community trust.

4. **Representational Harms:** Image generation and facial recognition models often exhibit "colorism" or gender bias, as their training sets lack the vast phenotypic diversity of the Indian population.
5. **Epistemological Dominance:** By prioritizing Western logical frameworks, AI can marginalize indigenous knowledge systems (e.g., Ayurveda or traditional agricultural practices), treating them as "errors" or "unscientific" due to a lack of representative training data.

Steps India Should Take

1. **Building Compute Sovereignty:** India must expand its national GPU cluster (currently targeting **38,000+ GPUs**) to provide affordable "Compute-as-a-Service" for local startups, reducing dependence on foreign cloud providers.
2. **Curating "Bharat" Datasets:** Through initiatives like **AIKosh**, the government should release anonymized, non-personal public data (health, agri, transport) to help developers train models that reflect Indian ground realities.
3. **Promoting Foundational Models:** Support for indigenous projects like **BharatGen** and startups like **Sarvam AI** is crucial. These models are designed from the ground up to be multilingual and culturally fluent.
4. **Regulatory "Sutras" & Safety:** Establish an **AI Safety Institute (AISI)** to develop benchmarks for bias mitigation. India should adopt a "risk-based" regulatory framework that balances innovation with the **Digital Personal Data Protection (DPDP) Act, 2023**.
5. **Skill & Talent Retention:** To counter the "Brain Drain," the **IndiaAI Future Skills** pillar should focus on PhD fellowships and AI labs in Tier-2 and Tier-3 cities, creating a pipeline of 1 million AI-ready professionals by 2027.

1. 13 The Speaker: The Linchpin of Parliamentary Democracy

The Office of the Speaker in India is a position of high constitutional dignity. As the "conscience keeper" of the House, the Speaker is the sole guardian of the powers and privileges of the members, the House as a whole, and its Committees. However, the frequent threat of "removal motions" (Article 94) by the Opposition reflects a deepening crisis of trust in this institution.

The Speaker: The Engine of Harmonious Governance

The Speaker is not just a presiding officer but the institutional glue that ensures the legislature remains a deliberative body rather than a site of constant conflict.



1. **Guardian of Minority Rights:** The Speaker ensures that the Opposition is given sufficient "say" even if the Government has the "way."
 - *Example:* Allotting time for **Short Duration Discussions (Rule 193)** on matters of public importance allows dissenting voices to be heard.
2. **Final Interpreter of Rules:** The Speaker's decisions on the Rules of Procedure and Conduct of Business are final, preventing procedural anarchy.

- *Example:* The Speaker's ruling on whether a member's remarks are "**unparliamentary**" and must be expunged helps maintain the decorum of the House.
- 3. **Neutral Arbitrator of Deadlocks:** By acting as a non-partisan referee, the Speaker prevents the "tyranny of the majority."
 - *Example:* The **Casting Vote (Article 100)** is used only in the case of a tie, traditionally exercised to maintain the status quo or allow further discussion.
- 4. **Curbing Executive Overreach:** The Speaker represents the House in its relations with the Executive.
 - *Example:* By admitting **Adjournment Motions**, the Speaker forces the Government to set aside its planned business to address an urgent national crisis.
- 5. **Presiding over Joint Sittings:** Under **Article 108**, the Speaker presides over joint sittings of both Houses to resolve deadlocks on ordinary bills.
 - *Example:* This was crucial during the passage of the *Dowry Prohibition Act (1961)* and *POTA (2002)*.

Contemporary Issues and Allegations

In recent years, the neutrality of the Speaker's chair has been scrutinized, with critics alleging a "pro-executive" bias that undermines parliamentary oversight.

1. **Partisanship in Anti-Defection Cases:** Under the **10th Schedule**, Speakers are often accused of "strategic delay" or "undue haste" based on political convenience.
 - *Example:* The Supreme Court in the *Keisham Meghachandra Singh case (2020)* noted that the Speaker cannot sit indefinitely on disqualification petitions.
2. **The "Money Bill" Controversy:** Allegations exist that the Speaker has incorrectly certified "ordinary bills" as "Money Bills" to bypass the Rajya Sabha's veto power.
 - *Example:* The certification of the **Aadhaar Act** and certain amendments in Finance Acts as Money Bills was challenged in the *Roger Mathew case*.
3. **Weaponizing Suspensions:** The frequent and en masse suspension of Opposition MPs for "unruly behavior" is often viewed as a tool to stifle debate.
 - *Example:* In late 2023, the record suspension of over 140 MPs led to several key bills being passed without meaningful Opposition participation.
4. **Bypassing Parliamentary Scrutiny:** The practice of "Guillotining" budgetary demands and not referring bills to Standing Committees.
 - *Example:* Only about **13% of bills** were referred to Committees during the 17th Lok Sabha, compared to 60-70% in previous decades.
5. **Discretionary Scheduling:** The Speaker is often accused of favoring the government by refusing to admit **No-Confidence Motions** promptly.
 - *Example:* Delays in admitting the No-Confidence Motion during the Manipur crisis (2023) drew sharp criticism from constitutional experts.

Path to Neutrality: Global Best Practices and Reforms

To restore the sanctity of the chair, India must move from a "Party Speaker" to a "Parliamentary Speaker."

1. **Adopting the UK Model:** In Britain, the convention is "**Once a Speaker, Always a Speaker.**" The Speaker resigns from their party upon election and is usually not opposed by major parties in general elections.
2. **Automatic Re-election (Irish Model):** In Ireland, the Speaker (*Ceann Comhairle*) is automatically deemed re-elected to the next Parliament, removing the need to please party bosses for a ticket.

3. **Independent Disqualification Tribunal:** The power to disqualify members under the 10th Schedule should be moved from the Speaker to an independent permanent tribunal (as recommended by the **Justice Malimath Committee**).
4. **Secret Ballot Election (Canadian Model):** Electing the Speaker via a secret ballot rather than a simple majority motion ensures the candidate seeks the confidence of the *entire* House, not just the Treasury benches.
5. **Cooling-off Period:** There should be a mandatory "cooling-off" period after the Speaker leaves office, barring them from accepting any political or executive appointments to prevent "quid pro quo" bias.

As Jawaharlal Nehru remarked, the Speaker represents the "**liberty of the House.**" For Indian democracy to remain effective, the Speaker must be seen as the umpire of the game, not a player for the winning team. Structural reforms, combined with the adoption of global conventions, are essential to ensure the "Blue Book" of parliamentary conduct is followed in letter and spirit.

1.14 The Digital Revolution: India's Journey

As of early 2026, India has achieved a historic milestone with broadband subscriptions crossing the **1 billion mark** and the **BharatNet project** effectively bridging the rural-urban divide. This digital metamorphosis is not merely a technological shift but a socio-economic revolution that is reconfiguring the relationship between the citizen and the state.

Drivers of the Massive Upscaling

The rapid expansion of India's digital footprint is the result of a "triad" of policy, infrastructure, and market competition.

1. **BharatNet Phase III:** The completion of the final mile of the world's largest rural broadband project using a mix of optical fiber, satellite (LEO), and radio waves.
2. **The "Jio Effect" & Data Affordability:** India continues to have among the **lowest data costs globally**, making internet access a "basic commodity" rather than a luxury.
3. **Indigenous 5G/6G Stack:** The rollout of the indigenous 5G stack and early trials of 6G have provided the high-speed backbone necessary for "Data-led" growth.
4. **Public-Private Partnership (PPP) Models:** Utilizing Village Level Entrepreneurs (VLEs) through the **Udyami model** for maintenance and operation of rural internet infrastructure.
5. **Satcom Integration:** The entry of global and domestic satellite communication players has finally connected the "shadow zones" in Himalayan and North-Eastern regions.



The Snapshot: Digitization Statistics (2026)

- **Broadband Reach:** Over **1 billion active subscriptions** (combined wireless and wireline).
- **BharatNet Progress:** ~2.15 lakh Gram Panchayats (GPs) integrated with functional high-speed Wi-Fi hotspots and FTTH connections.
- **Digital Transactions:** UPI (Unified Payments Interface) processing over **18 billion transactions monthly**, accounting for nearly 80% of retail digital payments.
- **Internet Penetration:** Rural internet growth rate (15% YoY) has surpassed urban growth, leading to a "Digital Reverse Migration" of services.

- **Data Consumption:** An average Indian user consumes approximately **28–30 GB of data per month**, primarily driven by video content and digital education.

Impact on Governance and Livelihoods

Digitization has transitioned from a "convenience" to a "catalyst" for equitable growth.

1. **Precision in DBT:** The "JAM" (Jan Dhan-Aadhaar-Mobile) trinity has evolved into a "Digital Credit" system, preventing leakages and ensuring **100% targeting** of subsidies.
2. **Agritech Revolution:** Farmers now access real-time soil health data, e-NAM (National Agriculture Market) price discovery, and drone-based pesticide spraying via village broadband.
3. **Democratizing Education & Health:** Platforms like **PM e-Vidya** and **Ayushman Bharat Digital Mission (ABDM)** have brought specialist doctors and IIT-level education to the remotest hamlets.
4. **Gig Economy & Rural BPOs:** High-speed rural internet has enabled the rise of "Micro-work" hubs in Tier-2 and Tier-3 cities, reducing the distress migration to metros.
5. **Transparent Judiciary & Policing:** E-Courts and the **CCTNS** (Crime and Criminal Tracking Network & Systems) have improved the speed of justice and inter-state police coordination.

Challenges to Universal Digital Inclusion

Despite the progress, the "Digital Divide" has evolved from an infrastructure problem to a literacy and safety problem.

1. **The Gender Gap:** While narrowing, women in rural India are still **25-30% less likely** to own a smartphone or use mobile internet than men.
2. **Cybersecurity & Frauds:** Rapid onboarding of "first-time users" has led to a surge in phishing and financial scams, targeting the digitally illiterate.
3. **Language Barriers:** Most high-value digital content and e-commerce interfaces remain English-centric, alienating those who speak only regional dialects.
4. **Electronic Waste (E-waste):** The 1-billion-device milestone has made India the **third-largest producer of e-waste**, with inadequate formal recycling infrastructure.
5. **Hardware Dependency:** Dependence on imported semiconductors and components for 5G equipment poses risks to "Digital Sovereignty" and supply chain stability.

The Way Forward: Towards "Digital Antyodaya"

1. **Bhashini Integration:** Scaling the **AI-based Bhashini platform** to ensure all government services are available via "Voice-to-Voice" in 22 scheduled languages.
2. **Digital Intelligence Unit (DIU):** Strengthening the DIU to proactively combat cyber-frauds and improve the "Cyber-Hygiene" of rural users.
3. **Circular Tech Economy:** Implementing an "Extended Producer Responsibility" (EPR) framework to manage the lifecycle of 1 billion digital devices.
4. **Semicon India Mission:** Accelerating domestic chip manufacturing to ensure that the "hardware" of the digital revolution is as "Atmanirbhar" as the "software."
5. **Universal Digital Literacy:** Transitioning from "Functional Literacy" to "Critical Digital Literacy," teaching users how to navigate AI, deepfakes, and algorithmic bias.

1.15 Self-Reliance is the Need of the Hour

The 2026 West Asian crisis, marked by escalating conflict involving major regional and global powers, has underscored the strategic imperative of **Atmanirbharta** (Self-Reliance). For a nation like India, which imports over **85% of its crude oil** and nearly **90% of its LPG** from the Gulf, geopolitical instability is not just a foreign policy challenge but a direct threat to macroeconomic stability and internal security.

How Self-Reliance Could Have Helped Deal with the War

If India had achieved higher levels of self-reliance prior to the 2026 crisis, the "War Premium" and supply chain disruptions would have had a significantly mitigated impact:

1. **Cushioning against Energy Inflation:** With a greater share of renewable energy and nuclear baseload, the "cost-push" inflation—currently driven by \$80+ Brent crude—would be lower, protecting household budgets from rising LPG transport costs.
2. **Strategic Autonomy in Diplomacy:** Reduced dependence on West Asian oil would allow India navigate the "diplomatic tightrope" between Israel, Iran, and the US without the constant fear an energy blockade at the **Strait of Hormuz**.
3. **Fiscal Stability:** Self-reliance would have prevented the widening of the **Current Account Deficit (CAD)**. Currently, every 10% rise in oil prices increases inflation by 30 basis points; domestic production would have decoupled the Indian economy from this volatility.
4. **Resilient Supply Chains:** Indigenous manufacturing of fertilizers (Urea/NPK) would have shielded Indian farmers from the current 40% disruption in fertilizer imports, preventing a potential crisis in the agricultural sowing season.
5. **Enhanced Net Security Provider Role:** A self-reliant defense industry, including indigenous sea-based drone swarms and surveillance, would allow the Indian Navy to protect its merchant fleet independently without relying on US-led naval coalitions.



AATMA-NIRBHAR
BHARAT

What India Needs to Do to Become More Self-Reliant

To move from "vulnerability" to "resilience," the following strategic steps are essential:

1. **Expansion of Strategic Petroleum Reserves (SPR):** India must move beyond its current 10-day buffer. Expansion of Phase II SPRs (at Chandikhol and Padur) is critical to ensure a minimum 90-day emergency fuel supply.
2. **Accelerating the "Nuclear Shift":** As highlighted in the **Union Budget 2026-27**, India needs to fast-track **Bharat Small Reactors (BSRs)** and private participation in nuclear energy to provide a reliable alternative to fossil-fuel-based power.
3. **Development of Rare Earth Corridors:** To secure the future of EVs and defense tech, India must operationalize the newly announced Rare Earth Corridors (in Odisha, Kerala, etc.) to break the 90% import dependence on critical minerals like Lithium and Cobalt.

4. **Diversification of Energy Geography:** Beyond "Make in India," New Delhi must pursue "Strategic Sourcing" by increasing investments in energy assets in Africa, the Americas, and Central Asia to reduce the 55% concentration risk in West Asia.
5. **Incentivizing Circular Economy & Recycling:** Developing a robust ecosystem for urban mining (recycling e-waste and batteries) can provide up to 25% of the required critical minerals domestically, as envisioned in the **National Critical Mineral Mission**.

The 2026 West Asian conflict serves as a "stress test" for India's growth story. While short-term macroeconomic buffers like high forex reserves are helping for now, long-term survival in a fragmented global order depends on **Strategic Atmanirbharta**. True self-reliance will be achieved only when India's energy and defense lifelines are decoupled from the volatile geography of the Persian Gulf.

1.16 Right to Die with Dignity

The discourse on the "Right to Die with Dignity" has evolved from the landmark *Gian Kaur* case to the comprehensive guidelines in the *Common Cause* (2018) and the subsequent procedural easing in 2023. Under **Article 21** of the Constitution, the right to life has been interpreted to include the right to a dignified death, ensuring that a person is not forced to live in a vegetative state against their will.

Recent Rulings of the Supreme Court on Passive Euthanasia

In 2023, a five-judge bench led by Justice K.M. Joseph modified the 2018 guidelines to make the process more "workable":

1. **Simplified "Living Will":** The requirement for a Living Will to be countersigned by a Judicial Magistrate was removed; it can now be attested by a Notary or Gazetted Officer.
2. **Expedited Medical Boards:** Two boards are required—Primary and Review. The new ruling mandates these boards be formed within **48 hours**, preventing prolonged suffering due to red tape.
3. **Removal of District Collector's Role:** The 2018 mandate that the Review Board must be constituted by the District Collector was scrapped. Hospitals can now form their own Review Boards.
4. **Secondary Medical Board Composition:** The requirement for the Secondary Board to have 20 years of experience was reduced to **5 years**, easing the availability of specialists.
5. **Counselling Mandate:** The court emphasized the "informed consent" of the family and the patient, requiring the Primary Medical Board to counsel the relatives on the implications of withdrawal.

Why Passive Euthanasia Upholds Dignity of Human Life



The judiciary argues that dignity is not just about biological existence but the quality of that existence:

1. **Bodily Autonomy:** It recognizes the individual's right to control their own body, preventing unwanted medical interventions that violate physical integrity.
2. **Prevention of Suffering:** It allows for the cessation of "fruitless treatment" where there is no hope of recovery, preventing the dehumanization of a person reduced to a machine-dependent state.
3. **Philosophical "Ending":** A dignified death allows a person to conclude their life story on their own terms, rather than being a passive subject of medical technology.
4. **Economic Integrity:** It prevents the financial ruin of families who might otherwise be forced to pay for "futile care," which can be seen as a violation of the family's dignity.
5. **Spiritual/Personal Closure:** It provides the opportunity for "death with grace," allowing families to grieve and find closure rather than watching a loved one linger in a vegetative state.



Critical Arguments on Allowing Passive Euthanasia

While the intent is humanitarian, the implementation faces several challenges:

1. **Potential for Misuse:** In a country with low legal literacy and high property disputes, there is a risk of families or "guardians" coercing the withdrawal of life support for inheritance.
2. **Slippery Slope to Active Euthanasia:** Critics argue that once the state permits "omission" (passive), it may eventually permit "commission" (active), leading to lower valuation of vulnerable lives.
3. **Medical Ethics Conflict:** The Hippocratic Oath focuses on "do no harm" and preserving life. Withdrawing support can create a moral burden on healthcare professionals.
4. **Inadequate Palliative Care:** In India, palliative care is in its infancy. Critics argue the "Right to Die" might become a "Duty to Die" if affordable, quality end-of-life care is unavailable.
5. **Inconsistency in "Vegetative" Diagnosis:** Medical science is not infallible; there have been rare cases of patients recovering from deep comas or "locked-in" syndromes after years.

Global Best Practices

Different nations offer various models for end-of-life care and euthanasia:

1. **Netherlands (The Groningen Protocol):** One of the first to legalize both active and passive euthanasia, focusing on "unbearable suffering" with no prospect of improvement.
2. **Switzerland (Dignitas Model):** Allows "Assisted Suicide" where the patient performs the final act. It emphasizes the role of non-profit organizations in providing a "human-centric" exit.
3. **Canada (MAID - Medical Assistance in Dying):** A comprehensive legislative framework that covers both euthanasia and assisted suicide, with rigorous reporting and monitoring.
4. **USA (Oregon - Death with Dignity Act):** Focuses on terminally ill patients with a prognosis of 6 months or less, requiring a self-administered lethal dose prescribed by a doctor.
5. **Belgium:** Extended the right to minors under very strict conditions (terminal illness and constant physical suffering), focusing on the "evolving capacity" of the individual.

Way Forward

To balance the Right to Life with the Right to Dignity, India must move beyond judicial guidelines to legislative action:

1. **Codified Legislation:** Parliament should enact a formal "Medical Treatment of Terminally Ill Patients Bill" to give statutory weight to the SC guidelines.
2. **National Palliative Care Policy:** Integrate palliative care into the **Ayushman Bharat** scheme to ensure that patients choose death due to pain relief failure, not lack of funds.
3. **Digital Living Will Registry:** Create a secure, blockchain-based national registry for Living Wills, linked to the **ABHA (Ayushman Bharat Health Account)** for instant access by doctors.
4. **Awareness Campaigns:** Sensitize the public and medical community about the difference between "killing" and "letting die" to reduce the social stigma and legal fear.
5. **Ethics Committees in Hospitals:** Standardize the formation of clinical ethics committees in all tertiary care hospitals to provide a multidisciplinary approach to end-of-life decisions.

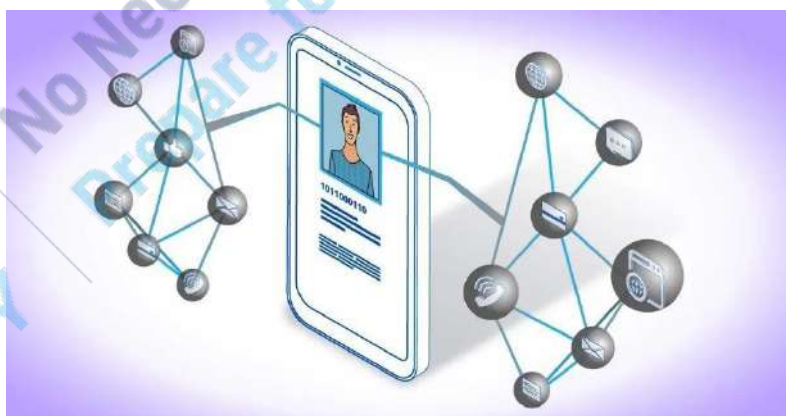
1.17 SC to Study What Constitutes Personal Data

The Supreme Court of India issued a notice to the Union government to examine the constitutional validity of the **Digital Personal Data Protection (DPDP) Act, 2023** and the **DPDP Rules, 2025**.

The core of the judicial scrutiny lies in the tension between **Privacy** (Article 21) and the **Right to Information** (Article 19), specifically regarding how the law defines and protects "personal data" versus what belongs in the "public domain."

Why Defining "Personal Data" is a Challenge

The definition of personal data is the "jurisdictional trigger" for any privacy law. If information is not "personal," the law doesn't apply.



1. **The Fluidity of "Identifiability":** The Act defines personal data as any data about an individual who is "identifiable." With modern AI and big data, "anonymous" data can often be re-identified by combining multiple datasets (the **Mosaic Effect**).
2. **Public vs. Private Dichotomy:** Information about public officials (e.g., assets, education, or performance) was traditionally accessible via RTI. The DPDP Act's broad definition of personal data now shields this, creating a conflict between an official's privacy and the public's right to know.
3. **Inferred Data:** It is unclear if "inferred data" (data created by algorithms about your preferences, health risks, or political leanings) constitutes personal data.
4. **Publicly Available Data:** If a user posts data on social media, it is technically "personal" but also "publicly available." The challenge is determining whether companies can "scrape" this data without consent.
5. **Contextual Sensitivity:** A phone number is personal data in one context but a public business contact in another. Fixed definitions struggle to adapt to these varying contexts.

Major Challenge Points in the DPDP Act

Critics and legal experts have highlighted five significant structural concerns:

1. **Dilution of the RTI Act:** Section 44 of the DPDP Act amends Section 8(1)(j) of the RTI Act, removing the "public interest override." Now, any "personal information" can be denied by a Public Information Officer (PIO) without checking if it serves a larger public cause.
2. **Broad State Exemptions:** Section 17 allows the government to exempt any "instrumentality of the State" from the law in the interest of national security, public order, etc. This creates a "surveillance vacuum" where the State can process data without the safeguards applicable to private firms.
3. **Lack of Compensation:** The Act repeals Section 43A of the IT Act, 2000. While the Data Protection Board can levy heavy penalties (up to **₹250 crore**), this money goes to the **Consolidated Fund of India**, leaving the victim (data principal) with no direct compensation for their loss.
4. **Independence of the Data Protection Board (DPBI):** The Chairperson and members are appointed entirely by the Executive. This lacks the "judicial independence" required for a body that performs quasi-judicial functions and adjudicates disputes involving the government.
5. **Absence of "Right to Data Portability" and "Right to be Forgotten":** Unlike the EU's GDPR, the Indian law does not explicitly empower citizens to easily move their data between service providers or demand the permanent deletion of past digital footprints.

The Way Forward

To balance the digital economy with civil liberties, the following steps are suggested:

1. **Restoring the Public Interest Test:** The judiciary may need to "read down" the RTI amendment to ensure that the privacy of public officials does not become a tool to hide corruption or administrative inefficiency.
2. **Strengthening DPBI Autonomy:** The selection committee for the Data Protection Board should include members of the judiciary or independent experts to ensure it can hold the government accountable without bias.
3. **Defining "Harm" and Compensation:** Rules should be updated to define "harm" (identity theft, financial loss, reputational damage) and create a mechanism where a portion of the penalty can be used to compensate the affected individual.
4. **Judicial Oversight on Exemptions:** Government exemptions should satisfy the **Triple Test of Puttaswamy** (Legality, Necessity, and Proportionality). Blanket exemptions should be replaced by "case-to-case" justifications.
5. **Phased Digital Literacy:** Since the law is "consent-centric," the government must launch massive awareness campaigns. Consent is meaningless if a user cannot understand complex "privacy notices" written in legal jargon.

1.18 Representation of Women

The contrast between women's participation at the grassroots (Panchayati Raj) and their representation in high-level legislative bodies is often described as the **"Broken Ladder" of Indian politics**. While over **1.45 million** women are currently elected representatives at the local level (due to the 73rd and 74th Amendments), this momentum fails to translate to the Parliament and State Assemblies.

In the **18th Lok Sabha (2024)**, the number of women MPs stands at **74 (13.6%)**, which is a decline from the **78 (14.3%)** elected to the 17th Lok Sabha.

Reasons for the Decline and Disparity

1. **Stagnant Ticket Allotment:** Despite the rhetoric of "Nari Shakti," major political parties remain hesitant to field women. In 2024, women constituted only about **10%** of the total candidates fielded by major national parties.
2. **The "Winnability" Myth:** There is a persistent patriarchal bias among party leadership that women have lower "winnability." However, ECI data often shows that the success rate of female candidates is frequently higher than or equal to that of males.
3. **Low Base in State Assemblies:** National representation is fueled by the state "pipeline." Currently, the national average of women MLAs in state assemblies is a meager **9%** (States like HP and Nagaland have historically had near-zero representation).
4. **The "Rabri Devi" Syndrome (Proxyism):** Even at the local level, many women are perceived as *Sarpanch Patis* (proxies). This undermines their credibility when they seek to transition to higher, more competitive state or national tiers.
5. **Rising Cost of Elections:** High-level politics requires massive financial "muscle." ADR reports show that the assets of winning candidates are soaring; women, who lack equal access to inherited property and capital, find it harder to self-fund or attract donors.



Challenges Women Face in Representation

1. **Structural and Institutional Barriers:** Unlike the local level, there was no mandatory reservation in the Parliament and Assemblies until the (yet-to-be-implemented) **Nari Shakti Vandan Adhiniyam**. Without a "quota," internal party democracy remains male-dominated.
2. **The "Double Burden" and Biological Clock:** The peak age for a political career (30s and 40s) coincides with heavy domestic and childcare responsibilities. The lack of institutional support for "motherhood" in politics acts as a barrier.
3. **Criminalization and Character Assassination:** The rising "muscle power" in Indian politics is a deterrent. Furthermore, female politicians are disproportionately targeted with **gendered disinformation**, deepfakes, and character assassination on social media.
4. **Lack of Political Mentorship:** Politics in India operates through informal networks (boys' clubs) and patronage. Women often lack access to these "smoke-filled rooms" where key decisions and ticket allotments happen.
5. **Hostile Work Environment:** Many legislative buildings lack basic facilities like crèches or even adequate ladies' toilets, symbolizing an environment that was never designed to accommodate women.

The Way Forward

1. **Immediate Implementation of the 128th Amendment:** The **Nari Shakti Vandan Adhiniyam** (33% reservation) must be operationalized. Decoupling it from the "delimitation" exercise could expedite its benefits.
2. **Internal Party Quotas:** Following the example of some European countries, India should encourage or mandate political parties to reserve a minimum percentage of "tickets" for women during candidate selection.
3. **Gender-Neutral Legislative Rules:** Amending the rules of procedure in Parliament to ensure gender-sensitive language and the inclusion of more women in **Cabinet and Department-related Standing Committees**.

4. **Dedicated Funding:** Creating a "Gender-Equity Election Fund" to provide financial assistance to women candidates from marginalized backgrounds to level the playing field against wealthy male candidates.
5. **Capacity Building Post-Panchayat:** Creating a formal mechanism to "graduate" successful women Sarpanches into state-level politics through specialized training and mentorship programs.

Global Best Practices

1. **Rwanda (The World Leader):** With nearly **61%** women in Parliament, Rwanda uses a "Triple Ballot" system and constitutional quotas, proving that political will can transform representation in post-conflict societies.
2. **Mexico (Gender Parity in Everything):** Mexico implemented "**Parity in Leadership**," a constitutional requirement that parties must field 50% women in all elective positions (federal, state, and local).
3. **Sweden (The "Zebra" System):** Many Swedish parties voluntarily use "zipper lists" for proportional representation, where the candidate list alternates between a man and a woman (Man-Woman-Man).
4. **South Africa (Proportional Representation):** The African National Congress (ANC) voluntarily adopted a 50% quota for women on its party lists, significantly boosting the national average to over 45%.
5. **New Zealand (Inclusive Culture):** Under leaders like Jacinda Ardern, the country normalized "parenting in office," with the Prime Minister taking maternity leave and bringing her infant to the UN, shifting the global cultural perception of a "leader."

1.19 India Focuses on Pandemic Agreement

In the wake of the COVID-19 pandemic, India has emerged as a vocal advocate for a legally binding **WHO Pandemic Agreement**. By leveraging its status as the "Pharmacy of the World," India seeks to bridge the gap between the Global North and the Global South, ensuring that the "scarcity" seen in 2020-2022 never repeats.

Need for a Pandemic Treaty: Lessons from COVID-19 Scarcity

The COVID-19 pandemic exposed a "fragmented global health architecture." The treaty aims to move from a "charity-based" model to a "rights-based" legal framework.

1. **Failure of Voluntary Mechanisms:** Initiatives like COVAX, while noble, were underfunded and outpaced by "Vaccine Nationalism," where wealthy nations hoarded doses.
2. **Inadequacy of IHR 2005:** The existing International Health Regulations focus on notification but lack enforceable mandates for resource sharing or financial support.



3. **Information Silos:** Delayed sharing of pathogen data and genetic sequences hindered the rapid development of diagnostics in several regions.
4. **Supply Chain Fragility:** The pandemic revealed an over-reliance on a few manufacturing hubs, leading to critical shortages of PPE, oxygen, and APIs (Active Pharmaceutical Ingredients).
5. **Economic Disruption:** Without a coordinated global "trigger" for response, uncoordinated lockdowns caused avoidable global economic shocks.

Ensuring Equity: The Pact as a Leveler

Equity is the "cornerstone" of the proposed agreement. India and the "Group for Equity" insist on the following mechanisms:

1. **PABS System:** The **Pathogen Access and Benefit-Sharing (PABS)** system ensures that if a country shares a virus sample, it is legally entitled to a share of the vaccines or treatments derived from it.
2. **Production Set-asides:** A proposal to reserve at least **20% of pandemic-related health products** (tests, vaccines) for the WHO to distribute to low-income countries in real-time.
3. **TRIPS Waivers & Tech Transfer:** The pact encourages the "sharing of know-how" and intellectual property (IP) waivers to allow regional hubs (like those in India or Africa) to manufacture generics.
4. **Affordable Pricing:** Provisions to ensure that publicly funded research leads to "not-for-profit" or affordable pricing for developing nations during emergencies.
5. **Global Supply Chain & Logistics (GSCL) Network:** Establishing a WHO-coordinated network to prevent export bans and ensure the unhindered flow of life-saving goods.

Concerns and Challenges in Creation

Negotiating a "once-in-a-generation" pact involves reconciling deep-seated geopolitical and economic interests.

1. **Sovereignty Fears:** Some nations fear the WHO might gain "supranational" powers to mandate lockdowns or travel bans (though the WHO has clarified it cannot override national laws).
2. **Intellectual Property (IP) Deadlock:** Developed nations (and their pharma lobbies) argue that IP waivers stifle innovation, while developing nations see them as a moral necessity.
3. **Pathogen "Data vs. Benefits":** High-income countries want immediate, free access to pathogen data, while developing countries refuse to share data without guaranteed "benefits" (vaccines/royalties).
4. **Financing Gap:** There is significant disagreement over who will fund the **Coordinating Financial Mechanism** to help poorer nations build surveillance labs.
5. **Enforcement Limits:** Like most international law, there is a lack of "teeth" or penalties for countries that fail to comply with the treaty's obligations during a crisis.

Way Forward and India's Leadership

India is uniquely positioned to act as a "**South-South**" collaborator and a bridge to the West.

1. **Institutionalizing 'Vasudhaiva Kutumbakam':** India can lead by codifying its "Vaccine Maitri" spirit into the treaty, pushing for a "Global Medical Library" of open-source medical data.

2. **Digital Public Infrastructure (DPI):** India can offer its **CoWIN/U-WIN** platforms as a "Global Digital Good" for vaccine distribution and tracking to other LMICs (Low and Middle-Income Countries).
3. **Regional Manufacturing Hubs:** India should lead the creation of regional "Pharma Clusters" in Southeast Asia and Africa to decentralize global production away from a single-source dependency.
4. **Standardizing 'Benefit Sharing':** As a biodiversity-rich nation, India can provide the legal template for "Access and Benefit Sharing" (ABS) based on its domestic Biological Diversity Act.
5. **Balanced Diplomacy:** India must continue to chair crucial committees (like the IHR drafting groups) to ensure the treaty remains "inclusive" and doesn't become a tool for "Health Hegemony" by any single bloc.

The Pandemic Treaty is not just a health document; it is a "New Social Contract" for global survival. For India, leading this talk is an opportunity to cement its role as a "**Vishwa Bandhu**" (Friend of the World) while safeguarding its domestic pharmaceutical interests.

1.20 Transgender Persons (Protection of Rights) Amendment Bill

The **Transgender Persons (Protection of Rights) Amendment Bill, 2026** was introduced in the Lok Sabha on March 13, 2026. This Bill marks a significant shift from the "self-identification" model established by the landmark NALSA judgment (2014) to a "biological and socio-cultural" model.

Key Amendments: Redefining Identity (2026 Bill)

The amendment seeks to replace "vague" definitions with "precise" biological and socio-cultural criteria to target benefits more effectively.

1. **Narrowed Definition:** Redefines a transgender person to include only those with socio-cultural identities (e.g., *Kinner, Hijra, Aravani*) and those with biological "intersex variations."
2. **Removal of Self-Identification:** Omits the right to "self-perceived gender identity." It explicitly excludes persons based on "different sexual orientations" or "personal choice."
3. **Mandatory Medical Board:** Replaces the direct application to a District Magistrate (DM) with a requirement for a **Medical Board** (led by a CMO) to recommend the issuance of an identity certificate.
4. **Stricter Penalties:** Introduces graded punishments for "forced conversion" into transgender identities through mutilation or coercion—ranging from 10 years to life imprisonment.
5. **Official Document Updates:** Entitles a person with an identity certificate to change their first name across all official birth and identity records.



The Government has launched several "rights-based" and "welfare-oriented" schemes under the Ministry of Social Justice and Empowerment.

1. **SMILE Scheme:** The flagship "Support for Marginalized Individuals for Livelihood and Enterprise" provides comprehensive rehabilitation, including skill development and credit linkages.
2. **Garima Greh:** Establishment of shelter homes across states to provide safe housing, food,

and medical care for transgender persons in distress.

3. **Ayushman Bharat TG Plus:** A dedicated health insurance module providing **500,000 INR** per year, covering Gender Affirming Care (GAC) and Sex Reassignment Surgery (SRS).
4. **National Portal for Transgender Persons:** A digital-first approach allowing individuals to apply for Identity Cards and Certificates without physical interface with officials.
5. **National Council for Transgender Persons (NCTP):** A statutory body constituted to advise the government on policy formulation and grievance redressal.

Socio-Economic Issues Faced by the Community

Despite legal frameworks, the community remains one of the most marginalized sections of Indian society.

1. **Social Ostracization:** Systematic "removal from household" often leads to homelessness and forces individuals into traditional occupations like *badhai* (ceremonial singing) or begging.
2. **Healthcare Barriers:** Lack of sensitive medical professionals often leads to "medical gatekeeping" and denial of treatment for non-transition-related health issues.
3. **Economic Exclusion:** High rates of workplace discrimination result in unemployment, pushing the community toward the informal sector or "forced labor."
4. **Legal Inconsistency:** The move away from "self-identification" is seen by activists as a violation of the **NALSA (2014)** and **Puttaswamy (2017)** judgments regarding privacy and dignity.
5. **Education Gap:** High dropout rates due to bullying and lack of gender-neutral infrastructure (washrooms) in schools and colleges.

Way Forward: Towards True Inclusion

Inclusion requires moving beyond "tolerance" to "active acceptance" and structural change.

1. **Sensitization of State Machinery:** Mandatory training for police, healthcare workers, and the judiciary to eliminate the "stigma of the medical board."
2. **Horizontal Reservation:** Implementing the Supreme Court's direction for "reservations in education and public employment" to ensure economic mobility.
3. **Gender-Neutral Infrastructure:** Making public spaces, workplaces, and educational institutions inclusive through neutral restrooms and "Equal Opportunity Policies."
4. **Community-Led Monitoring:** Ensuring the National Council (NCTP) has strong, diverse representation to audit the implementation of the SMILE scheme at the grassroots level.
5. **Promoting Digital Public Goods:** Leveraging India's DPI to provide "trans-inclusive" credit and insurance products that do not require legacy binary documents.

While the 2026 Bill aims to check exploitation and provide "precise" benefits, it must balance administrative "verification" with the "fundamental right to dignity." The path to a truly inclusive India lies in aligning legislative action with the constitutional promise of "Equality of Status and Opportunity."

1.21 US Opened Probe Against India to Investigate Forced Labour

The United States Trade Representative (USTR) initiated a significant **Section 301 investigation** against 60 economies, including India. This probe focuses on the failure of trade partners to prohibit the importation of goods produced with **forced labor**, which the US argues creates an unfair trade advantage and restricts US commerce.

Reasons for the US Trade Probe

1. **Unfair Trade Advantage:** The US alleges that forced labor results in "artificially lower labor costs," allowing Indian goods to be sold at prices that harm American businesses and workers.
2. **Failure of Prohibition:** The probe examines whether India has taken "sufficient steps" to prohibit the entry of forced labor goods into its own territory and supply chains.
3. **Specific Sectoral Concerns:** High-risk sectors identified include **Shrimp (Aquaculture)**, **Tea**, **Textiles (Thread/Yarn)**, **Sugarcane**, and **Electronics (E-waste)**.
4. **Humanitarian and National Security:** The USTR links the eradication of forced labor to national security, arguing that exploitative supply chains fund illegal activities and destabilize global trade.
5. **International Standards:** The probe checks for compliance with International Labour Organization (ILO) standards, citing that global profits from forced labor have surged (estimated at **\$63.9 billion** in 2024).



Reasons for Forced Labor and Labor Abuses in India

1. **Debt Bondage:** Millions of workers, particularly in brick kilns and agriculture, are trapped in "Inter-generational debt," where they work for little to no pay to settle loans.
2. **Informalization of Economy:** Over **90%** of India's workforce is in the informal sector, which lacks formal contracts, making it difficult for labor inspectors to monitor conditions.
3. **Vulnerability of Migrants:** Internal migrants (e.g., from West Bengal to Andhra Pradesh shrimp farms) often face language barriers, lack of local social networks, and "employer-restricted movement."
4. **Socio-Economic Marginalization:** A high percentage of victims belong to **Dalit, Adivasi, or Minority** communities, who face systemic discrimination and limited access to legal recourse.
5. **Poverty and Illiteracy:** Dire economic conditions force families to enter "advance-payment" agreements with labor contractors (*Sardars/Agents*), leading to systemic exploitation.

Constitutional and Legal Initiatives to Eliminate Forced Labour

1. **Article 23 of the Constitution:** Explicitly prohibits "traffic in human beings and *begar* (forced labor)," making any violation a punishable offense.
2. **The Bonded Labour System (Abolition) Act, 1976:** Provides for the identification, release, and rehabilitation of bonded laborers and the discharge of their debts.
3. **The Child Labour (Prohibition & Regulation) Act, 1986:** (Amended in 2016) Prohibits the engagement of children in all occupations and adolescents in hazardous ones.
4. **Section 370 of IPC:** Comprehensive law against human trafficking for the purpose of exploitation, including physical or sexual abuse and forced labor.
5. **The 4 New Labour Codes (2020-2025 implementation):** Particularly the **Code on Wages** and **Social Security Code**, which aim to formalize employment and ensure minimum wage floor across all sectors.

The Way Forward

1. **Strengthening e-Shram Portal:** Universalizing the registration of informal workers to provide them with a digital identity and direct access to social security benefits.
2. **Supply Chain Traceability:** Implementing blockchain or IoT-based tracking in high-risk sectors like shrimp and tea to ensure "labor-clean" exports.
3. **Enhanced Labour Inspection:** Transitioning from "Inspector Raj" to a transparent, **AI-driven inspection system** that targets high-risk industrial clusters based on data.
4. **Financial Inclusion:** Strengthening the **PM-JANMAN** (for PVTGs) and other rural credit schemes to prevent workers from falling into the trap of private money lenders.
5. **Collaborative Diplomacy:** Engaging with the USTR through the **India-US Trade Policy Forum (TPF)** to demonstrate compliance and avoid unilateral tariffs.

1.22 Democratizing AI

India has pivoted from being a mere consumer of technology to a global advocate for **Democratizing AI**. This vision was recently showcased at the **India-AI Impact Summit 2026** in New Delhi, where the philosophy of "*Sarvajan Hitay, Sarvajan Sukhaye*" (Welfare for all, Happiness for all) was established as the bedrock of India's AI strategy.

Meaning and Benefits of Democratizing AI

Democratizing AI means moving away from the "Silo Model"—where AI power is concentrated in a few Big Tech firms—towards a "**Commons Model**" where the building blocks of AI are treated as public goods.

1. **Affordable Compute Access:** Providing startups and researchers with subsidized access to high-end GPUs (e.g., via the IndiaAI Mission's 58,000+ GPU cluster).
2. **Inclusive Data (AI Kosh):** Creating a national repository of high-quality, diverse datasets that represent regional nuances, not just Western contexts.
3. **Open Source Frameworks:** Encouraging the use of open-weights models and open-source code to reduce entry barriers for small innovators.
4. **Public Service Delivery:** Using AI to bridge the "last-mile" in governance—such as AI-driven weather alerts for farmers or diagnostic tools for rural clinics.



5. **Linguistic Inclusion:** Breaking the English-centric barrier of AI through platforms like **Bhashini**, allowing citizens to interact with technology in their native tongue.

Key Initiatives to Democratize AI (2024–2026)

1. **IndiaAI Mission (₹10,372 Cr):** The umbrella mission focusing on sovereign compute capacity, startup financing, and a safe AI environment.
2. **Bhashini Platform:** A massive AI-led language translation mission that has crossed 1.2 million downloads and supports 36+ Indian languages.
3. **AI Kosh:** A shared national resource hosting over 7,500 datasets and 270+ AI models available to the public and private sectors.
4. **AI Impact Summit 2026:** The first high-level global AI summit hosted in the Global South to set human-centric AI standards.
5. **YUVAi & AI-By-HER:** Specialized challenges designed to bring AI literacy and innovation opportunities to school students and women entrepreneurs.

India as the Leader of the Global South

India's "Democratization" narrative is its primary diplomatic tool to lead the Global South.

1. **Frugal Innovation Model:** Unlike the resource-heavy AI of the West, India offers "Frugal AI" solutions—low-cost, task-specific models suited for developing economies.
2. **DPI as a Blueprint:** By successfully exporting the **Digital Public Infrastructure (DPI)** model (UPI/Aadhaar), India has gained the trust of 80+ countries as a "Digital Provider."
3. **Alternative to Big Tech Dominance:** India advocates for **Sovereign AI**, helping Global South nations build their own models rather than becoming "data colonies" for foreign corporations.
4. **South-South Cooperation:** India is sharing its AI stacks (like Bhashini) with African and Southeast Asian nations to help them solve similar socio-economic challenges.
5. **Policy Representation:** In global forums like the GPAI and UN, India acts as a voice for the "Majority World," demanding that AI safety and ethics don't stifle the development needs of poor nations.

The Way Forward: Becoming a Global AI Superpower

To transition from a "convener" to a "leader," India must address critical gaps:

1. **Hardware Self-Reliance:** Accelerated implementation of the **India Semiconductor Mission** to design and manufacture indigenous AI chips (GPUs) to reduce reliance on foreign supply chains.
2. **Energy Sustainability:** Aligning AI compute centers with green energy (Solar/Nuclear) to ensure that the "AI Techade" doesn't compromise India's Net Zero 2070 goals.
3. **Ethical Guardrails:** Operationalizing the **IndiaAI Safety Institute** to combat deepfakes, algorithmic bias, and cyber-threats without stifling innovation.
4. **Talent Retention:** Moving from providing "AI-literate workers" to "AI researchers" by strengthening the 4 National Centres of Excellence and encouraging high-end R&D.
5. **Sovereign Model Development:** Scaling indigenous Large Language Models (LLMs) like **BharatGen** that are specifically trained on non-English, high-fidelity Indian data.

1.23 Importance of Sex Education in Academia

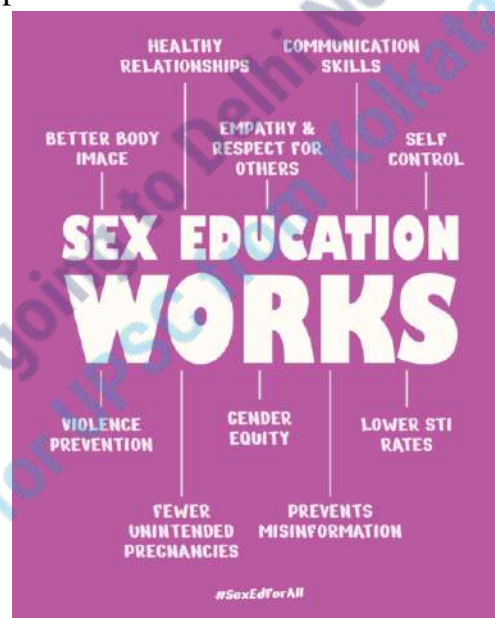
Comprehensive Sexuality Education (CSE) is a curriculum-based process of teaching and learning about the cognitive, emotional, physical, and social aspects of sexuality. It is not merely about the biological mechanics of reproduction but encompasses:

- **Physicality:** Understanding puberty, anatomy, and sexual health.
- **Consent & Boundaries:** Recognizing personal agency and respect for others.
- **Relationship:** Fostering healthy, non-violent, and respectful emotional bonds.
- **Diversity:** Understanding gender identity, sexual orientation, and inclusivity.
- **Rights:** Empowering individuals to protect their reproductive and sexual rights.

Why Sex Education is a Taboo in India

Despite being the land of the *Kamasutra* and temple erotica, modern India views sex education through a lens of hesitation.

1. **Cultural Conservatism:** A prevailing belief that discussing sex "corrupts" young minds or encourages "promiscuity," leading to a preference for silence over safety.
2. **Moral Policing:** The conflation of biological education with "Western cultural invasion," which triggers resistance from traditionalist groups.
3. **Linguistic Barriers:** The lack of standardized, non-vulgar vocabulary in local languages to discuss reproductive health makes teachers and parents uncomfortable.
4. **Patriarchal Structures:** Maintaining a "culture of shame" often helps sustain traditional power dynamics where women's reproductive health and agency are suppressed.
5. **Educational Inertia:** A historical focus on rote learning and marks over life-skills, leaving little room for "sensitive" subjects in a rigid curriculum.



III-Effects of the Taboo

1. **Misinformation:** Youth turn to pornography or unreliable peers, leading to distorted views of intimacy and consent.
2. **Health Risks:** High rates of Unintended Pregnancies, STIs (including HIV), and poor menstrual hygiene management.
3. **Psychological Trauma:** Guilt and anxiety regarding natural bodily changes (puberty) due to lack of guidance.
4. **Safety Vulnerability:** Children cannot report abuse because they lack the vocabulary to describe "bad touch" or realize it is a violation.

Significance in Academia: Needs of the Time

1. **Countering Digital Proliferation:** In an era of easy internet access, schools must provide a "fact-based counter-narrative" to the unrealistic depictions found in online adult content.

2. **Gender Sensitization:** Academia can dismantle toxic masculinity and gender stereotypes by teaching equality as a core component of human relationships.
3. **Public Health Efficiency:** Educated students grow into adults who utilize maternal health services, practice family planning, and reduce the burden on India's healthcare system.
4. **Emotional Intelligence:** It fosters empathy, helping students navigate the complexities of peer pressure and emotional well-being.
5. **Alignment with Global Goals:** It is essential for achieving **SDG 3 (Good Health)**, **SDG 4 (Quality Education)**, and **SDG 5 (Gender Equality)**.

Potential to Reduce Child Abuse & Create a Harmonious Society

1. **Agency and "No" Go:** CSE teaches the "Underwear Rule"—the concept that certain parts of the body are private—giving children the confidence to say "No" to any unwanted touch.
2. **Early Disclosure:** By normalizing discussions about the body, victims are more likely to report abuse to trusted teachers or parents without the fear of being blamed.
3. **Reducing Stigma:** A harmonious society is built on the acceptance of diverse identities (LGBTQ+). Sex education fosters tolerance, reducing bullying and hate crimes.
4. **Curbing Sexual Violence:** By emphasizing **consent** as a mandatory pillar of any interaction, it addresses the root cause of harassment and rape culture.
5. **Informed Citizenship:** It creates a generation that respects bodily autonomy, leading to lower domestic violence rates and healthier family units.

Way Forward

1. **Age-Appropriate Curriculum:** Implement the **Adolescent Education Programme (AEP)** and **Ayushman Bharat-School Health Program** with age-specific modules (e.g., "Good Touch/Bad Touch" for primary; "Reproduction/Consent" for secondary).
2. **Teacher Sensitization:** Teachers must be trained to handle these subjects without embarrassment. If the educator is uncomfortable, the student remains ignorant.
3. **Community Engagement:** Use Anganwadi workers and NGOs to hold "Panchayat-level" awareness sessions to take parents into confidence and dispel myths.
4. **Policy Integration:** Move beyond "biology chapters" to integrate "Value-based Sexuality Education" into Social Studies and Ethics (moral science) classes.
5. **Digital Safety Education:** Explicitly include modules on **Cyber-security** (sexting, deepfakes, and online grooming) to protect youth in the digital ecosystem.

1.24 Weapons of Destruction of the Past are Today's Shield

This transition from "Total Destruction" to "Strategic Deterrence" is a central theme in international relations, often referred to as the **Nuclear Paradox**. While these weapons possess the power to end civilization, they have paradoxically prevented a direct Third World War between major powers.

The Evolution: From Weapons of Destruction to Defense Shields

The shift occurred through the doctrine of **Mutual Assured Destruction (MAD)**. In the early 1940s, nuclear weapons were seen as "super-bombs" to end conventional wars. However, as multiple nations acquired them, the cost of using them became so high that they transitioned into "political weapons"

intended to ensure they are never used.

International Cases of Transition

1. **The Cuban Missile Crisis (1962):** The closest the world came to nuclear war. The realization that "victory" was impossible led to the creation of the **Hotline Agreement**, shifting the focus from "winning a war" to "managing a crisis."
2. **The India-Pakistan Conflict:** Despite being "permanent rivals," the presence of nuclear weapons (Post-1998) has arguably prevented full-scale conventional wars (like 1965 or 1971). Conflicts like **Kargil (1999)** and **Balakot (2019)** were localized precisely because both nations feared crossing the "nuclear threshold."
3. **The Korean Peninsula:** North Korea views its nuclear arsenal not as a tool for conquest, but as a **"Regime Survival Shield"** to prevent a fate similar to Libya or Iraq. This demonstrates the shift from offensive utility to defensive existential security.



Why Non-Proliferation Has Failed

Despite the **Non-Proliferation Treaty (NPT)**, the world has seen a steady increase in nuclear-capable states and modernized arsenals.

1. **Structural Inequality of NPT:** The NPT created a "nuclear apartheid" by dividing the world into "Haves" (P5 nations) and "Have-nots," without a binding timeline for the P5 to disarm.
2. **Security Dilemma:** When one nation builds a shield, its neighbor feels vulnerable. This leads to a chain reaction (e.g., China's rise prompted India's testing, which in turn prompted Pakistan).
3. **The "Libya Lesson":** States observed that Muammar Gaddafi gave up his nuclear program only to be ousted by Western-backed forces years later. This has incentivized rogue states to hold onto their "nuclear insurance."
4. **Technological Proliferation:** The clandestine "Nuclear Black Market" (notably the A.Q. Khan network) allowed sensitive technology to bypass international watchdogs like the **IAEA**.
5. **Modernization vs. Disarmament:** Instead of reducing stocks, major powers are developing

Tactical (small) Nuclear Weapons and Hypersonic delivery systems, lowering the threshold for potential use.

Way Forward: Saving Humankind from Disaster

The risk of "accidental" nuclear war or escalation via miscalculation is higher today than during the Cold War.

1. **Universal Disarmament (Global Zero):** Moving beyond the NPT to the **Treaty on the Prohibition of Nuclear Weapons (TPNW)**. Nuclear weapon states must commit to a phased, verifiable, and time-bound elimination of stockpiles.
2. **Strengthening No-First-Use (NFU) Policies:** Encouraging all nuclear states to adopt a formal NFU policy (like India and China) would reduce the "hair-trigger" alert status of missiles and prevent preemptive strikes.
3. **De-hyping Tactical Weapons:** International pressure must be applied to stop the development of low-yield "battlefield" nukes, which make the idea of "limited nuclear war" seem falsely plausible.
4. **Cyber-Nuclear Security:** As command-and-control systems become digitized, there is a risk of hackers or AI triggers causing a launch. Global protocols for the **"Human-in-the-loop"** and cybersecurity of nuclear silos are urgent.
5. **Reviving Arms Control Treaties:** Reinstating and expanding treaties like the **INF (Intermediate-Range Nuclear Forces)** and **New START** to include emerging powers like China is essential for global stability.

Nuclear weapons have acted as a "disturbing peacekeeper" for decades, but peace based on fear is inherently fragile. As the world becomes multi-polar, the "Shield" of deterrence must be replaced by the "Armor" of diplomacy and international law to ensure the survival of the species.

1.25 Employment and Employability Challenges in India

The **Azim Premji University (APU) State of Working India 2026** report, titled *"Youth in the Labour Market: Pathways from Learning to Earning,"* presents a sobering picture of India's employment landscape. The headline finding—that **less than 7% of male graduates** secure a permanent salaried job within one year of graduation—highlights a structural "bottleneck" in the school-to-work transition.

Structural Issues in Youth Employment

The report underscores that while educational attainment has risen, the "quality" of absorption into the labor market has deteriorated.



1. **Job-Education Mismatch:** There is a significant disconnect between what the industry requires and what the higher education system produces. Despite a 28% tertiary enrollment rate, nearly **40% of graduates under 25 remain unemployed**.
2. **Stagnation of High-Quality Jobs:** The economy is failing to create "formal" salaried roles. The report finds that only **3.7% of male graduates** land a white-collar job in their first year, pushing the rest into "waiting" or precarious informal work.

3. **The "Waiting" Phenomenon:** High graduate unemployment is often a function of "aspiration." Youth from relatively stable backgrounds "wait" for government or high-end service jobs, leading to a massive pool of unemployed graduates (estimated at **11 million**).
4. **Slowdown in Wage Growth:** For the first time in decades, the "**earnings premium**" for male graduates has stagnated since 2017, meaning a degree no longer guarantees significantly higher income growth as it once did.
5. **Regressive Employment Shifts:** Post-pandemic, there has been a worrying reversal where a large chunk of the workforce (nearly **40 million** between 2022–24) moved back into **agriculture**, indicating a lack of industrial and service-sector depth.

The Risk of a "Demographic Burden"

If not addressed, India's "Demographic Dividend" (expected to peak around 2030) could transform into a **Demographic Disaster/Burden** for the following reasons:

1. **Social Instability & Unrest:** A massive population of educated but idle youth is a recipe for social friction. History shows that "youth bulges" without jobs often lead to increased crime rates and political radicalization.
2. **Erosion of Human Capital:** Long-term unemployment leads to "**skill atrophy**." When a graduate remains unemployed for 3–5 years, their degree becomes obsolete, and they become "unemployable," turning a potential asset into a lifelong dependent.
3. **The Middle-Income Trap:** If the workforce remains stuck in low-productivity sectors (like subsistence farming or gig work), India may never achieve the high per-capita income required to become a developed nation before its population starts aging.
4. **Widening Inequality:** The report notes that unemployment is rising even among the poorest 25% of households. This creates a cycle of poverty where families invest in education but see no return, leading to debt traps.
5. **Mental Health Crisis:** Persistent joblessness among the most "aspirational" age group is leading to a silent epidemic of anxiety and loss of agency, diminishing the nation's overall "Gross National Happiness" and productivity.

Tapping Human Resources: The Way Forward

To convert this challenge into an opportunity, India needs a "Mission Mode" shift in its employment strategy.

1. **Revamping the Vocational Pipeline:** Initiatives like **PM-SETU** (supported by the World Bank) must be scaled to upgrade ITIs into "Hub and Spoke" centers of excellence that are industry-managed rather than just government-run.
2. **Incentivizing Labor-Intensive Manufacturing:** India needs to pivot toward "Light Manufacturing" (textiles, leather, footwear) which can absorb semi-skilled youth. The **PLI (Production Linked Incentive) Schemes** should be linked specifically to "number of jobs created."
3. **Strengthening the "Orange" and Care Economy:** As suggested in **Budget 2026**, sectors like Tourism, Creative Arts (AVGC), and Healthcare (caregivers/allied health) can be massive job multipliers that don't always require traditional 4-year degrees.
4. **Bridging the Digital-Skilling Divide:** Establishing **University Townships** near industrial corridors (as proposed in recent policy) will ensure that curriculum design is updated in real-time based on the needs of the neighboring industries.

5. **Social Security for Informal Workers:** Since a large majority will remain in the informal/gig sector, expanding the social security net (health insurance, pension) to these workers is vital to ensure that "informal" doesn't mean "exploitative" or "unproductive."

1.26 E-Transmission Duty

The **Electronic Transmission (ET) Moratorium** has become one of the most contentious "North-South" battlegrounds at the World Trade Organization (WTO). As of March 2026, ahead of the **14th Ministerial Conference (MC14)** in Cameroon, the US is pushing to make this 1998 ban permanent, while India and several developing nations are leading a vocal opposition to let it lapse.

1. What is E-transmission Duty?

- **Definition:** It is a customs duty (tariff) on "electronic transmissions." This includes anything delivered digitally—from software and e-books to movies, music, and data for 3D printing.
- **The Moratorium:** Since **1998**, WTO members have agreed to a "temporary" moratorium (ban) on imposing such duties. It has been renewed every two years.
- **The "Goods vs. Services" Debate:** A major technical hurdle is whether these transmissions are "**goods**" (taxable under GATT) or "**services**" (governed by GATS, which generally prohibits customs duties).
- **Current Status:** At MC13 (2024), members agreed the moratorium would finally expire on **March 31, 2026**, unless renewed by consensus at MC14.

Issues Surrounding the Moratorium

1. **Revenue Loss:** Developing countries argue that as physical trade (CDs, books) shifts to digital, they are losing massive tariff revenues. UNCTAD estimates this loss at **\$10 billion annually** for developing nations.
2. **Digital Industrialization:** India argues the moratorium restricts "policy space." Without tariffs, domestic digital startups cannot be protected from the "Big Tech" monopolies of the US and China.
3. **The 3D Printing Challenge:** As 3D printing matures, physical goods (like spare parts) can be sent as digital files and printed locally. This could eventually lead to the erosion of the entire physical customs revenue base.
4. **Definition Ambiguity:** There is no agreed-upon WTO definition of "electronic transmission." Does it cover only the *carrier wave* or the *content* (the movie/software) as well?
5. **Negotiating Leverage:** Developing nations often use the moratorium as a "bargaining chip" to extract concessions on other issues like **Public Stockholding (PSH)** for food security.



Needs of LDCs (Least Developed Countries)

1. **Technical Assistance:** LDCs require help in building digital infrastructure and skills to even *participate* in e-commerce, let alone tax it.
2. **Revenue Predictability:** For many LDCs, customs duties are a primary source of government

funding. They need a system that doesn't "hollow out" their tax base as they digitize.

3. **Bridging the Digital Divide:** They seek technology transfers and "flexibility" to apply tariffs selectively to protect infant domestic industries.
4. **Administrative Simplicity:** Taxing "data at the border" is technically complex. LDCs need simplified mechanisms (like VAT/GST) rather than complex customs procedures.

Analysis: Positives vs. Negatives of the Moratorium

Feature	Positives (Arguments for Permanence)	Negatives (Arguments for Removal)
Global Trade	Ensures predictability and lowers costs for global digital supply chains.	Creates an uneven playing field where developed nations dominate digital exports.
Consumer Benefit MSMEs	Keeps digital tools (Zoom, Netflix, Coursera) affordable for the masses. Allows small startups to export globally without navigating 160+ different tax regimes.	Results in massive foregone revenue for developing nation governments. Local MSMEs face " unfair competition " from global tech giants who pay no import duty.
Innovation	Fosters a "borderless" internet, accelerating AI and software development.	Leads to " Digital Colonialism " where data is extracted and sold back without local benefit.
Complexity	Avoids the "impossible task" of monitoring and valuing every bit of data at the border.	Erodes sovereignty by preventing nations from using traditional trade policy tools.

The Way Forward

- **Clarifying Definitions:** The first step must be a consensus on what constitutes "electronic transmission" to prevent "grey area" disputes.
- **Internal Taxation (VAT/GST):** Instead of border tariffs, nations could be encouraged to use **consumption-based taxes** (like India's Equalization Levy or GST), which are less trade-distortive.
- **Hybrid Extension:** A middle path could be a **limited extension** (e.g., 5 years) specifically tied to a "Digital Development Fund" funded by developed nations to help LDCs.
- **Tiered Implementation:** Allowing LDCs a "grace period" or a "de minimis" threshold where they can tax high-value digital luxury goods while keeping educational content duty-free.
- **Multilateral Framework:** Moving the discussion from a "temporary ban" to a permanent **WTO Agreement on Digital Trade** that balances revenue needs with the "free flow of data."

1.27 Menstrual Leave: A Tool for Inclusion or Exclusion?

The Supreme Court of India, while hearing a petition for a national menstrual leave policy, cautioned that a mandatory legal requirement could be "counter-productive." The Court observed that instead of empowering women, a rigid mandate might create a "**psychological barrier**" for employers, potentially leading to "**statistical discrimination**"—where women are viewed as more expensive or less reliable resources than their male counterparts.

Menstrual Leave: A Tool for Inclusion vs. Exclusion

The debate oscillates between recognizing biological reality and preventing professional marginalization.

As a Tool for Inclusion

1. **Equity over Equality:** It acknowledges that "treating unequals equally" is a form of injustice. Since biological cycles are unique to women, providing rest for debilitating pain ensures a level playing field.
2. **Workplace Dignity:** It destigmatizes a natural biological process, fostering an empathetic culture that values the reproductive health of nearly 50% of the workforce.
3. **Retention and Productivity:** By allowing rest during peak discomfort, companies can reduce "presenteeism" (being at work but unproductive) and lower the burnout-induced attrition of female talent.
4. **Formalizing Support for Disorders:** It provides a legitimate framework for women suffering from chronic conditions like **Endometriosis** or **PCOS**, which are often dismissed as "regular cramps."
5. **Normalization of Health Conversations:** Legislative or policy backing encourages open dialogue, moving menstruation from a "taboo" topic to a standard health and safety consideration.



As a Tool for Exclusion

1. **Hiring Bias:** Employers, especially in the private sector, may hesitate to hire women to avoid the perceived "loss of man-days" and the administrative cost of managing monthly leaves.
2. **The "Glass Ceiling" Effect:** As noted by the SC, women might be overlooked for high-stakes, time-sensitive roles (like presiding over a trial or leading a project launch) due to presumed monthly unavailability.
3. **Reinforcement of Stereotypes:** Mandatory leave may inadvertently signal that women are "physically weaker" or "naturally less capable" of consistent work, undoing decades of progress in gender parity.
4. **The Gender Pay Gap:** If leave is unpaid, it increases the financial disparity; if paid, it might lead to lower starting salaries for women to offset the employer's cost.
5. **Intrusion of Privacy:** Requiring a woman to declare her cycle to a supervisor (often male) can be a source of embarrassment and may lead to subtle workplace harassment or "period-shaming."

Global Best Practices

1. **Spain (2023):** The first European country to introduce **medically certified** menstrual leave. Critically, the **state social security system** pays for the leave, not the employer, reducing the hiring bias.

2. **Japan (1947):** One of the oldest laws globally. It mandates that employers cannot force a woman to work if she requests leave; however, it does not mandate *paid* leave, and social stigma often keeps uptake low.
3. **South Korea:** Provides one day of "Physiological Leave" per month. If the leave is not taken, some companies provide additional pay as an incentive, treating it as a flexible benefit.
4. **Zambia:** Known as "**Mother's Day**," it allows all women one day of leave per month without a medical certificate. It is a legally protected right across all sectors.
5. **Indonesia:** Grants two days of menstrual leave per month. While legally strong, implementation is often negotiated through collective bargaining agreements between unions and firms.

Moving Forward: The Way Ahead

To balance welfare with employability, society and the State must adopt a "middle path":

1. **Shift to "Gender-Neutral" Wellness Leaves:** Instead of a specific "menstrual leave," companies can expand "sick leave" or introduce "well-being days" that any employee can use for reproductive or mental health, reducing the "gender-cost" tag.
2. **State-Funded Models:** Following Spain's example, the government could subsidize the cost of menstrual leave for MSMEs and the private sector to ensure women do not become "unattractive" human resources.
3. **Focus on Infrastructure:** The Supreme Court emphasized that providing **gender-segregated toilets**, resting rooms, and free sanitary products at workplaces is more immediately inclusive than a blanket leave policy.
4. **Flexibility over Absenteeism:** Promoting "**Work From Home**" (WFH) or flexible hours during those days can allow women to manage pain comfortably without total withdrawal from their professional responsibilities.
5. **Incentivizing Voluntary Policies:** Rather than a "one-size-fits-all" law, the government can provide **tax incentives** or "**Diversity Ratings**" to companies that voluntarily adopt menstrual-friendly policies, encouraging a bottom-up cultural shift.

1.28 Fire Hazards and Remedy

The recurring tragedies of fire hazards in Indian hospitals and commercial buildings highlight a critical gap between urban development and safety infrastructure. Addressing this requires a shift from a **reactive** (firefighting) approach to a **proactive** (fire prevention) framework.

Recent Incidents (2025–2026)

1. **SCB Medical College Fire, Cuttack (March 2026):** A massive fire in the Trauma ICU claimed **13 lives**. Investigations pointed to a short circuit in aging electrical systems and non-functional sprinklers.
2. **Palam Residential-Commercial Blaze, Delhi (March 2026):** A fire in a building



with a ground-floor cosmetics shop killed **9 family members**. Narrow lanes and illegal storage of flammable spirits hampered rescue efforts.

3. **Indore EV-LPG Explosion (March 2026):** An Electric Vehicle (EV) charging unit malfunctioned, leading to a fire that ignited stored LPG cylinders in a residential building, killing **8 people**.

Structural & Governance Issues

1. **Electrical Neglect:** Nearly **80% of urban fires** are triggered by short circuits. Older buildings often fail to upgrade wiring to handle the "load-creep" from modern ACs and medical equipment.
2. **Haphazard Urbanization:** High population density and "vertical slums" create narrow access routes. This prevents fire tenders from reaching the site within the "Golden Hour" of 5–7 minutes.
3. **Lax Regulatory Oversight:** Fire No-Objection Certificates (NOCs) are often seen as a one-time bureaucratic hurdle rather than a requirement for continuous safety. Periodic third-party audits are rarely enforced.
4. **Flammable Material Proliferation:** Increased use of modern, highly combustible materials like **ACP (Aluminium Composite Panels)** for facades and **PUF (Polyurethane Foam)** for insulation creates toxic "smoke-traps."
5. **Hospital-Specific Vulnerabilities:** The presence of high-pressure oxygen cylinders and non-ambulatory patients makes hospitals high-risk zones where fire spreads rapidly and evacuation is physically challenging.

Existing Fire Safety Standards in India

1. **National Building Code (NBC) 2016:** Part 4 of the NBC is the "Bible" of fire safety, classifying buildings by occupancy and detailing requirements for fire-resistant construction.
2. **The Model Fire Service Bill (2019):** A central guideline for states to modernize fire services and standardize safety legislation across India.
3. **Compartmentation Mandates:** NBC requires buildings to be divided into fire zones using fire-rated doors (1–2 hour resistance) to prevent the horizontal and vertical spread of smoke.
4. **Specific Hospital Norms:** Standards mandate that hospital exits must be at least **2 meters wide** to facilitate stretcher movement and that ICUs must have automated smoke-extraction systems.
5. **BIS Certifications:** Firefighting equipment like extinguishers and hydrants must meet **Bureau of Indian Standards (BIS)** quality markers (e.g., IS 1641 to IS 1648) for reliable performance.

Recommendations: Reducing Fire Hazards

1. **Mandatory Third-Party Audits:** Move away from self-certification. Establish an independent body of certified fire engineers to conduct **annual, surprise safety audits** for all public buildings.
2. **Electrical Safety Overhaul:** Implement **Residual Current Circuit Breakers (RCCB)** and Fire-Retardant Low Smoke (FRLS) wiring as a non-negotiable standard for all renewals of commercial licenses.
3. **Incentivizing "Fire-Resilient" Tech:** Use AI-based heat sensors and IoT-connected smoke detectors that alert the nearest fire station automatically, bypassing human delay.
4. **Community-Led Preparedness:** Integrate fire safety and evacuation drills into the **school curriculum** and local "Mohalla" committees to ensure citizens are first-responders, not just victims.
5. **Uniform State Fire Acts:** While "Fire Services" is a State subject (Schedule VII), the Centre should push for a

1.29 The Changing Dynamics of Asymmetric Warfare

The rapid proliferation of **Dual-Use Technologies**—specifically Unmanned Aerial Systems (UAVs), Artificial Intelligence (AI), and Cyber-warfare—has revolutionized modern conflict. In the Indian context, these technologies have shifted the paradigm from traditional "kinetic" warfare to **Non-Kinetic, Asymmetric, and Grey-Zone warfare**, significantly lowering the cost of aggression for adversary nations and non-state actors.

Increased Threats to India: The Technological Shift

The democratization of high-tech weaponry has neutralized some of India's traditional conventional advantages.

1. **Drone Swarms & Loitering Munitions:** Small, low-cost drones can overwhelm traditional Air Defense (AD) systems. The **2021 Jammu Air Force Station attack** was a watershed moment, proving that "low-slow-small" targets can breach high-security zones.
2. **Narcotics & Arms Smuggling:** Along the **International Border (IB) in Punjab and Jammu**, drones are increasingly used for the "delivery-as-a-service" of drugs and AK-series rifles, creating a "silent front" that bypasses physical fencing.
3. **AI-Enhanced Cyber Attacks:** Adversaries use AI to automate phishing and identify vulnerabilities in India's **Critical Information Infrastructure (CII)**. The 2023-24 attempts by "APT" groups (Advanced Persistent Threats) to target India's power grids and healthcare systems are prime examples.
4. **Deepfakes and Cognitive Warfare:** AI-generated misinformation is used to incite communal disharmony or spread fake news during sensitive periods (e.g., elections or border standoffs like Galwan), aiming to destabilize India from within.
5. **Maritime Gray-Zone Tactics:** The use of "Dark Fleets" and autonomous underwater vehicles (UAVs) in the **Indian Ocean Region (IOR)** allows adversaries to conduct surveillance and disrupt Sea Lines of Communication (SLOCs) while maintaining plausible deniability.



Initiatives Taken by India

India has adopted a multi-layered approach involving policy, procurement, and indigenous R&D to counter these threats.

1. **IDEX (Innovations for Defence Excellence):** Launched to foster a defense ecosystem where startups develop niche techs like **Swarm Drones** and **Underwater Autonomous Vehicles**.

2. **Anti-Drone Systems Deployment:** The Indian Army and IAF have inducted "**Indrajaal**" (an autonomous wide-area anti-drone dome) and various "Soft-kill" (jamming) and "Hard-kill" (laser-based) systems along the Western and Northern borders.
3. **Establishment of Specialized Agencies:** To centralize the response to high-tech threats, India created the **Defence Cyber Agency (DCyA)**, the **Defence Space Agency (DSA)**, and the **National Cyber Coordination Centre (NCCC)**.
4. **Project 75-I and Autonomous Platforms:** Increased focus on building Unmanned Surface Vessels (USVs) and integrating AI into the **Integrated Battlefield Management System (IBMS)** for real-time situational awareness.
5. **Policy Frameworks:** The **National Strategy for Artificial Intelligence (NITI Aayog)** and the **Drone Rules 2021** (amended) provide a regulatory and developmental roadmap to make India a "Global Drone Hub" by 2030.

Way Forward: Strengthening the Digital Shield

To maintain a strategic edge, India must transition from a reactive to a proactive technological posture.

- **Indigenous AI Algorithmic Development:** India must move beyond hardware to develop indigenous AI algorithms for **Predictive Policing** and **Border Surveillance**, ensuring "Data Sovereignty" so that sensitive defense data isn't processed on foreign-owned clouds.
- **Public-Private Partnership (PPP) in R&D:** Emulate the "DARPA" model by funding high-risk, high-reward research through private tech giants and academia to reduce the "**sensor-to-shooter**" time gap.
- **Development of Directed Energy Weapons (DEWs):** To counter drone swarms cost-effectively, India must accelerate the development of high-energy lasers and high-power microwaves (e.g., DRDO's **DURGA-2** project).
- **Cyber-Diplomacy and International Norms:** India should lead the global discourse on the **Responsible Use of AI in Military (REAIM)** to establish international legal frameworks against autonomous "killer robots" and shadow fleet operations.
- **Skill Upgradation of Human Capital:** Creating a "**Cyber-Sainik**" cadre within the armed forces who are trained specifically in electronic warfare, data analytics, and real-time counter-propaganda tactics.

1.30 Possible IPO of Profitable RRBs

Regional Rural Banks (RRBs) were established under the **RRB Act, 1976**, following the recommendations of the **Narasimham Working Group (1975)**. They were designed as "state-sponsored, regionally-based, and rural-oriented" credit institutions to combine the local feel of cooperatives with the business discipline of commercial banks.

□ Prelims Pointers on RRB

- **First RRB: Prathama Bank** (sponsored by Syndicate Bank) in Moradabad, UP (1975).
- **Ownership Pattern:** Central Govt (**50%**), Sponsor Bank (**35%**), State Govt (**15%**).
- **Statutory Body:** Governed by the **RRB Act, 1976**.
- **Regulatory Hierarchy:** Regulated by **RBI** but supervised by **NABARD**.
- **PSL Target:** Mandatory **75%** of Adjusted Net Bank Credit (ANBC).

- **Key Committee: Narasimham Committee (1975)** recommended their birth; **Kelkar Committee** suggested stopping new RRBs in 1987.
- **Exemption:** Only the states of **Sikkim and Goa** do not have any RRBs

Role of RRBs in Uplifting Rural Society

RRBs act as the backbone of the rural economy by ensuring that the "last mile" of the population is financially included.

1. **Credit to the Unbanked:** They provide institutional credit to small and marginal farmers, agricultural laborers, and rural artisans who were historically dependent on usurious moneylenders.
2. **Priority Sector Lending (PSL):** RRBs have a higher PSL target of **75%** (compared to 40% for Scheduled Commercial Banks), ensuring a massive flow of funds into agriculture and rural MSMEs.
3. **Financial Inclusion (Jan Dhan):** They are the primary drivers of the **PM Jan Dhan Yojana** in hinterlands, bringing millions into the formal banking fold and enabling Direct Benefit Transfers (DBT).
4. **Promotion of SHGs:** RRBs are the most effective agencies for the **SHG-Bank Linkage Programme**, empowering rural women through micro-credit and entrepreneurial support.
5. **Local Employment:** By focusing on the "Sons of the Soil" policy in recruitment, they provide local employment and understand the local dialect and socio-economic nuances of the rural populace.



IPOs for Profitable RRBs: Ushering a New Era

The government's move to allow RRBs to tap the capital markets via **Initial Public Offerings (IPOs)** marks a structural shift from state-dependency to market-accountability.

1. **Capital Adequacy & Autonomy:** IPOs will help RRBs meet the **9% CRAR (Capital to Risk-weighted Assets Ratio)** norms without constantly relying on the cash-strapped government for recapitalization.
2. **Enhanced Governance:** Listing on stock exchanges mandates higher transparency, regular audits, and disclosures, which will professionalize the management and reduce "political interference."
3. **Technological Upgradation:** Fresh capital from the market can be diverted toward **Digital Banking infrastructure**, UPI integration, and AI-based credit scoring for rural borrowers.
4. **Brand Valuation:** Public listing will boost the "trust factor" among rural and urban depositors alike, allowing RRBs to compete with Private and Small Finance Banks.
5. **Expansion of Scale:** Profitable RRBs can use the funds to expand their branch network or diversify into non-fund-based businesses like insurance and pension products for rural residents.

Persisting Issues of RRBs

Despite their reach, RRBs face systemic challenges that hinder their sustainability.

1. **High NPA Levels:** Due to the nature of their clientele (vulnerable to weather shocks) and periodic **agricultural loan waivers**, RRBs suffer from high non-performing assets.
2. **Rising Operating Costs:** Maintaining many small, low-volume rural branches leads to a high

cost-to-income ratio, making many units unviable.

3. **Limited Diversification:** Their heavy reliance on interest income from crop loans makes them vulnerable to agrarian distress; they lack a significant share in lucrative urban or corporate lending.
4. **Dual Control Conflict:** RRBs are supervised by **NABARD** and regulated by **RBI**, while the ownership is split between the Center (50%), Sponsor Bank (35%), and State Government (15%), leading to administrative friction.
5. **Technology Gap:** While improving, many RRBs lag behind private peers in mobile banking, data analytics, and cybersecurity, leading to customer migration to fintechs.

Way Forward

1. **Amalgamation & Consolidation:** Continue the process of merging RRBs within states to create "One State-One RRB" entities to achieve **Economies of Scale**.
2. **Product Diversification:** Encourage RRBs to move beyond "Kisan Credit Cards" (KCC) and venture into gold loans, housing loans for rural areas, and micro-insurance.
3. **Digitalization (RRB-2.0):** Implement a unified **Core Banking Solution (CBS)** across all RRBs and promote the use of "Business Correspondents" (BCs) for cost-effective expansion.
4. **HR Reforms:** Standardize the training and recruitment processes to create a specialized "Rural Banking Cadre" equipped with modern financial skill sets.
5. **Flexible PSL Norms:** While maintaining the rural focus, some flexibility could be allowed to let RRBs invest in high-yield instruments to balance their portfolios.

1.31 Digital Arrest Scam

The rise of digital scams, particularly the "Digital Arrest" phenomenon, represents a sophisticated shift in cyber-enabled financial crimes. In these scams, fraudsters weaponize fear by impersonating law enforcement to extort money.

Understanding "Digital Arrest" Scams

A **Digital Arrest** is a fraudulent tactic where scammers impersonate officials from agencies like the CBI, ED, or Narcotics Department via video calls (often WhatsApp or Skype).

- **Modus Operandi:** Scammers use fake backdrops resembling police stations and wear uniforms to gain credibility.
- **The Accusation:** Victims are falsely told they are linked to illegal activities, such as drugs found in a parcel or money laundering.
- **Virtual Confinement:** Victims are coerced into staying on a continuous video call, effectively "digitally arrested," and are forbidden from contacting family or lawyers.
- **Extortion:** Under the guise of a "security deposit" or "investigation fee" to clear their name, victims are pressured into transferring large sums.
- **Cross-Border Roots:** Investigations reveal many of these scams originate from "fraud factories" in Southeast Asian countries like Myanmar, Cambodia, and Laos.



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Scale of Financial Loss (India)

1. **Total Losses (2024-25):** According to Ministry of Home Affairs (MHA) data, India lost over **₹22,845 crore** to cyber-enabled financial crimes in 2024, a staggering 206% increase from the previous year.
2. **Digital Arrest Specifics:** In 2024 alone, over **1.23 lakh cases** of digital arrest were recorded, with estimated losses reaching nearly **₹3,000 crore**.
3. **Complaint Volume:** The National Cybercrime Reporting Portal (NCRP) registered over **3.6 million complaints** in 2024.

Factors Influencing Digital Scams

The proliferation of these scams is driven by a combination of technological and socio-behavioral factors:

1. **Social Engineering & Fear:** Scammers exploit the inherent respect/fear of authority in Indian society and the "social stigma" associated with police cases.
2. **Technological Sophistication:** Use of **Deepfakes** to mimic official voices, **AI-driven** logo detection to bypass security, and **VPNs** to mask identities.
3. **Data Vulnerabilities:** Easy availability of personal data on the "Dark Web" (leaked from various sources) allows scammers to make highly personalized and convincing threats.
4. **The "Mule Account" Ecosystem:** Organized networks use thousands of rented bank accounts (mule accounts) to split and move stolen money within minutes, making it hard for banks to freeze.
5. **Regulatory Gaps in OTT Platforms:** The anonymity and lack of "SIM-binding" on apps like WhatsApp and Telegram have historically made them preferred channels for fraudsters.

Government Initiatives

- **Establishment of I4C:** The **Indian Cybercrime Coordination Centre (I4C)** acts as the nodal agency for pan-India coordination and real-time threat analysis.
- **Pratibimb & Samanvaya:** Technological modules like '**Pratibimb**' map the real-time locations of cyber-criminals, leading to thousands of arrests and the blocking of over **9.4 lakh SIM cards**.
- **SIM-Binding Mandate:** In late 2025, the DoT mandated "SIM-binding" for all communication apps (WhatsApp, Signal, etc.), ensuring accounts are tied to a physical, verified SIM.
- **Digital Arrest SOP (2026):** A new **Standard Operating Procedure (SOP)** issued in January 2026 provides a uniform framework for banks and police to freeze funds within the "Golden Hour" of a fraud report.
- **Inter-Departmental Committee (IDC):** A high-level committee involving MeitY and MHA now forces tech platforms to block the **Device IDs** of repeat offenders and retain deleted account data for 180 days.

Way Forward to Reduce Scams

To build a "Cyber-Resilient India," the focus must shift from reactive to proactive measures:

1. **Implementation of "Kill Switches":** Embedding an emergency "Kill Switch" in all UPI and banking apps to instantly freeze all transactions if a user suspects they are being defrauded.

2. **AI-Based Predictive Monitoring:** Banks must deploy AI to detect "velocity-based" anomalies—where a dormant account suddenly receives and disperses large sums (a sign of a mule account).
3. **International Cooperation:** Strengthening **Mutual Legal Assistance Treaties (MLATs)** with Southeast Asian nations to dismantle cross-border scam syndicates.
4. **Cyber-Insurance Framework:** Developing a specialized insurance pool (similar to terrorism insurance) to cover "social engineering" losses, which are currently excluded by most policies.
5. **Grassroots Digital Literacy:** Integrating cyber-hygiene into school curriculums and launching regional-language campaigns (e.g., "Cyber Dost") specifically targeting the elderly and rural populations.

1.32 Revisiting Collegium System

The **Collegium System** is a unique judicial innovation in India, born not out of the Constitution but through a series of Supreme Court judgments (the "Three Judges Cases"). It is a mechanism where a body of the senior-most judges of the Supreme Court and High Courts recommends the appointment and transfer of judges to the higher judiciary.

Does it Ensure Independence or Resist Reform?

The argument surrounding the Collegium is polarized between its role as a "shield" for autonomy and a "fortress" against transparency.

Arguments for Judicial Independence:

1. **Protection from Executive Overreach:** It prevents the "sycophant judge" phenomenon seen during the 1970s Emergency, ensuring that judges are not beholden to political masters for their promotion.
2. **Specialized Expertise:** Proponents argue that only judges can truly assess the legal acumen, judicial temperament, and integrity required for the Bench.
3. **Separation of Powers:** By keeping the executive at arm's length, it upholds **Article 50** (Directive Principles of State Policy) and the "Basic Structure" of the Constitution.
4. **Neutrality in Sensitive Cases:** An independent appointment process ensures that judges can rule against the government (the largest litigant in India) without fear of retribution.

Collegium System



Arguments for Resistance to Reform and Corruption:

1. **"Judges Appointing Judges":** India is the only major democracy where the judiciary has total control over its own appointments, leading to a lack of external checks and balances.
2. **Opacity and "Coterie" Culture:** Deliberations are held behind closed doors. Critics argue this fosters **nepotism** (often called the "Uncle Judge Syndrome") rather than pure merit.
3. **Resistance to Diversity:** As of 2026, representation for women, SC/ST, and OBC communities in the higher judiciary remains significantly lower than their population share, which critics blame on the Collegium's narrow selection pool.
4. **Deadlocks and Delays:** The friction between the Collegium and the Executive often leads to

"pocket vetoes," where the government sits on files, resulting in high vacancy rates and judicial pendency.

Global Best Practices

- **United Kingdom:** The **Judicial Appointments Commission (JAC)** is an independent body comprising judges, legal professionals, and lay members (non-lawyers). This ensures a mix of legal expertise and public accountability.
- **South Africa:** The **Judicial Service Commission (JSC)** includes the Chief Justice, the Minister of Justice, Members of Parliament, and representatives from the legal profession. It conducts **public interviews**, ensuring high transparency.
- **United States:** A system of "Executive Nomination and Legislative Confirmation." The President nominates, but the **Senate Judiciary Committee** conducts rigorous public hearings, ensuring democratic oversight.
- **Germany:** Judges of the Federal Courts are selected by a **Judges Election Committee**, consisting of ministers from various states and members elected by the Federal Parliament (Bundestag), ensuring a federal balance.
- **Canada:** Uses an **Independent Advisory Board** that provides a non-binding shortlist of functional and diverse candidates to the Prime Minister, balancing merit with social representation.

The Way Forward for India

To sustain public trust, the Collegium must transition from a "secret society" to a "transparent institution."

1. **Institutionalizing the Secretariat:** Establish a permanent, independent secretariat to vet candidates' backgrounds, assets, and judgments *before* the Collegium meets, making the process data-driven.
2. **Revised Memorandum of Procedure (MoP):** Finalize a clear MoP that sets **fixed timelines** for both the Judiciary and Executive to act on recommendations, preventing "seniority manipulation" via delays.
3. **Transparency through Disclosure:** Publish the broad criteria for selection and the minutes of the meetings (excluding sensitive personal details) to address concerns of favoritism.
4. **Diversity Mandate:** Formally integrate a "Diversity and Inclusion" policy within the selection criteria to ensure the Bench reflects India's multi-faceted social fabric.
5. **Revisiting the NJAC Model:** Explore a "Hybrid Commission" (NJAC 2.0) that ensures a judicial majority to protect independence while including "Eminent Persons" or the Law Minister to ensure democratic accountability.

1.33 AYUSH: Integrating Traditional Wisdom with Modern Healthcare

AYUSH is an acronym for the traditional and non-conventional systems of healthcare in India: **Ayurveda, Yoga & Naturopathy, Unani, Siddha, and Homeopathy**. Managed by the **Ministry of AYUSH** (established in 2014), it represents a formal effort to mainstream ancient medical wisdom into the national health architecture.

Supplementing Modern Allopathic Medicine

AYUSH does not compete with Allopathy; it complements it by filling gaps in chronic care and wellness.



1. **Integrative Oncology:** Centers like **AIIMS Delhi** now use Yoga and Ayurveda to manage the side effects of chemotherapy, improving the quality of life for cancer patients.
2. **Chronic Disease Management:** While Allopathy excels in acute care (surgery/trauma), AYUSH offers superior long-term management for lifestyle diseases like **Diabetes (Madhumekha)** and **Hypertension**.
3. **Preventive Healthcare:** Modern medicine is often "reactive." AYUSH is "proactive," focusing on *Dinacharya* (daily routine) and *Ritucharya* (seasonal routine) to prevent the onset of diseases.
4. **Post-Operative Recovery:** Yoga and Naturopathy are increasingly used for physical rehabilitation and mental health recovery following major allopathic surgeries.
5. **Holistic Health:** AYUSH addresses the psychosomatic aspect of health. For example, the **Sowa-Rigpa** system (Himalayan medicine) treats the mind-body connection, which modern medicine is only recently beginning to prioritize.

Significance of AYUSH

1. **Economic Contribution:** The AYUSH manufacturing sector has grown from **\$3 billion (2014)** to over **\$18 billion (2025-26)**, contributing significantly to the "Make in India" initiative.
2. **Universal Health Coverage (UHC):** With a shortage of MBBS doctors in rural India, **8.5 lakh registered AYUSH practitioners** provide the first line of defense in remote areas.
3. **Low-Cost Intervention:** AYUSH treatments are generally more affordable, reducing the **Out-of-Pocket Expenditure (OOPE)**, which is a major cause of poverty in India.
4. **Cultural Soft Power:** Yoga is a global phenomenon. Initiatives like the **International Day of Yoga** have positioned India as the "Vishwaguru" in wellness.
5. **Biodiversity Conservation:** The demand for AYUSH products encourages the cultivation of medicinal plants, supporting rural livelihoods and preserving India's rich botanical heritage.

Reviving Medical Tourism

AYUSH can differentiate India from other medical tourism hubs like Thailand or Turkey.

1. **Heal in India Initiative:** The government has launched a dedicated **AYUSH Visa** category for foreign nationals seeking traditional treatments, simplifying the entry process.
2. **Global Wellness Hub:** Cities like **Rishikesh (Yoga)** and states like **Kerala (Ayurveda)** attract thousands of tourists annually for "Wellness Retreats," which have higher profit margins than clinical tourism.
3. **WHO-GCTM:** The establishment of the **WHO Global Centre for Traditional Medicine** in Jamnagar, Gujarat, has provided international "brand-legitimacy" to Indian systems.
4. **Cost-Benefit Ratio:** A complete Panchakarma treatment in India costs a fraction of what a similar wellness program costs in Europe or the US, without compromising on authenticity.
5. **Integrated Packages:** India offers "Medical-Wellness" combos where a patient undergoes a bypass surgery in a modern hospital followed by Ayurvedic recuperation in a serene facility.

Key Issues and Challenges

1. **Lack of Standardization:** Unlike Allopathy, AYUSH lacks uniform "Standard Treatment Guidelines," leading to variations in practice and drug quality.
2. **Scientific Validation:** There is a "Credibility Gap" due to the lack of large-scale, double-blind clinical trials that modern science demands.
3. **Pseudoscience & Quackery:** The sector is often plagued by "bridge-course" controversies and practitioners prescribing allopathic medicines without proper training.
4. **Quality Control:** Issues regarding **heavy metal contamination** in Ayurvedic drugs and lack of stringent certification (like US-FDA) hinder global exports.
5. **Infrastructure Gaps:** Many AYUSH dispensaries are underfunded and lack the diagnostic equipment necessary to work alongside modern clinics.

Way Forward

1. **Evidence-Based Research:** Increasing funding for **Biotechnology-AYUSH collaboration** to decode the molecular mechanisms of traditional herbs.
2. **One Health Approach:** Implementing the **"One Nation, One Healthcare System"** policy by 2030 to allow students of both systems to have basic knowledge of the other.
3. **Strict Regulation:** Strengthening the **ASU&H (Ayurveda, Siddha, Unani & Homeopathy)** drug regulatory framework to ensure international safety standards.
4. **Digital Integration:** Using the **Ayushman Bharat Digital Mission (ABDM)** to maintain electronic health records that track the efficacy of integrated treatments.
5. **Mainstreaming in Education:** Introducing basic Ayurvedic principles in school curricula to foster a culture of preventive wellness from a young age.

1.34 Weather Anomalies Hit India

The year **2026** has seen India grapple with a series of extreme weather anomalies. March, typically the month of pleasant transition, was instead defined by a "bipolar" climate: record-breaking early heatwaves in the first fortnight followed by rare fog, intense Western Disturbances, and widespread hailstorms in the third week.

Reasons for Weather Unpredictability in 2026

The erratic nature of March 2026 is a result of complex atmospheric interactions:

1. **Intense Western Disturbances (WDs):** Unlike the typical cyclonic WDs, March 2026 saw a rare "**straight-line trough**"—a 1,000-km-long rain band that brought January-like chill and rare fog to North India late in the season.
2. **Super El Niño Transition:** The rapid development of a "**Super El Niño**" in the Pacific has disrupted the global jet stream, causing the Subtropical Westerly Jet to linger longer over India, delaying the retreat of winter systems.
3. **Arctic Amplification:** The weakening of the **Polar Vortex** (confirmed in early 2026) allowed cold Arctic air to meander southward, indirectly intensifying mid-latitude disturbances over the Indian subcontinent.
4. **Atmospheric Anticyclones:** High-pressure systems over Western India trapped heat early in the month, causing temperatures to surge **8°C to 13°C above normal** before being abruptly broken by unseasonal rain.
5. **Anthropogenic Forcing:** Long-term global warming has increased the moisture-holding capacity of the air (by about 7% for every 1°C rise), leading to more "**Compound Events**" where heatwaves are immediately followed by extreme precipitation.



Multi-dimensional Impact on Lives

1. **Agricultural Vulnerability:** Unseasonal rain and hailstorms in late March hit the **Rabi harvest** (wheat, mustard). Heat stress has caused "terminal browning" of grains, while hailstorms led to up to **30% fruit loss** in mango and apple belts.
2. **Economic & Inflationary Stress:** Erratic weather has become a **measurable economic variable**. Heat stress is estimated to erode **4% to 6% of India's GDP** annually through lost working hours and rising food inflation.
3. **Public Health Crisis:** Early heatwaves found the population "unacclimatized," leading to a surge in heatstrokes. Conversely, the sudden "March Chill" triggered a spike in respiratory infections and seasonal flu.
4. **Energy & Infrastructure:** Unpredictable temperature swings caused an early surge in peak power demand (mirroring May levels in March), stressing the national grid and forcing early, high-cost power procurement.
5. **Water Insecurity:** Lack of winter snowfall in the Himalayas and early evaporation from reservoirs has left **35% of major reservoirs** at below half-capacity, threatening summer water supplies for cities like Delhi and Chandigarh.

The Way Forward

1. **Mission Mausam (2026):** Implementing the government's newly approved ₹2,000-crore mission to integrate **AI, Machine Learning, and High-Performance Computing** (using supercomputers like *Mihir*) for "Nowcasting" extreme events.
2. **Climate-Resilient Agriculture:** Shifting towards "**Shree Anna**" (**Millets**) and heat-tolerant wheat varieties (e.g., DBW-187) that can withstand terminal heat stress and erratic rainfall.
3. **Urban Heat Action Plans (HAPs):** Scaling up the "Cool Roof" technology and "Sponge City" concepts to manage both urban heat islands and the sudden flash floods seen in arid regions.
4. **Overhaul of Crop Insurance:** Strengthening the **PM Fasal Bima Yojana (PMFBY)** to include "parametric insurance" that triggers payouts automatically based on weather data (like

hailstorm intensity) rather than manual crop-cutting experiments.

5. **International Cooperation:** Leveraging the **Coalition for Disaster Resilient Infrastructure (CDRI)** to share real-time data on "Compound Events" and Arctic-Himalayan linkages with the Global South.

1.35 Current Oil Shock to have an Impact larger than the shock of 70s?

The 1970s oil shocks remain the most significant energy crises in modern history, fundamentally altering global geopolitics and economics. In **2026**, against the backdrop of the current West Asia escalation and the closure of the Strait of Hormuz, the International Energy Agency (IEA) has warned of a "Great Energy Disruption" that could surpass the 1970s.

The 1970s witnessed two major "shocks" that ended the era of cheap energy:

- **The 1973 Crisis:** Triggered by the **OAPEC (Organization of Arab Petroleum Exporting Countries) embargo** against nations supporting Israel during the Yom Kippur War. Prices quadrupled from \$3 to \$12 per barrel.
- **The 1979 Crisis:** Caused by the **Iranian Revolution**, which severely disrupted global crude exports, leading to a doubling of oil prices.
- **Stagflation:** These shocks led to a rare economic phenomenon—high inflation coupled with stagnant economic growth and high unemployment in the West.
- **Strategic Shifts:** It led to the creation of the **International Energy Agency (IEA)** in 1974 and the mandate for Strategic Petroleum Reserves (SPRs).
- **Energy Diversification:** Western nations began shifting toward nuclear power, fuel efficiency, and North Sea oil exploration to reduce dependency on the Middle East.

Why the IEA Apprehends a Crisis Larger than 1970

The IEA Chief recently warned that the 2026 crisis is "multidimensional," unlike the "crude-only" shocks of the 20th century:

1. **The "Triple Threat":** Unlike the 1970s (only oil), the 2026 crisis involves a simultaneous crunch in **Oil, Natural Gas (LNG), and Coal** due to synchronized geopolitical conflicts.
2. **Weaponization of Supply:** The total closure of the **Strait of Hormuz** (through which 20% of global oil passes) is a physical blockage, whereas 1973 was a political embargo.
3. **Lack of Spare Capacity:** Major producers (OPEC+) are currently operating at near-peak capacity, leaving no "buffer" to replace lost Iranian or Russian volumes.
4. **The Green Transition Gap:** While the world is moving toward renewables, the infrastructure is not yet robust enough to compensate for a sudden loss of fossil fuels, creating a "security vacuum."
5. **Digital Vulnerability:** Modern energy grids are now susceptible to **cyber-warfare**, a dimension of energy security that did not exist in the 1970s.



Global and Domestic Implications for India

Global Implications:

1. **Global Recession:** A sustained oil price above \$150/barrel could trigger a worldwide economic contraction.
2. **Trade Imbalances:** Massive wealth transfer from energy-importing nations to energy-exporting "petrostates."
3. **Supply Chain Collapse:** Increased freight and shipping costs leading to "cost-push" inflation on essential goods.
4. **Energy Poverty:** Emerging economies in Africa and SE Asia may face total blackouts due to inability to outbid wealthy nations for spot LNG.
5. **Geopolitical Realignment:** A shift toward "minilateralism" where countries form exclusive energy-security blocs.

Implications for India:

1. **Current Account Deficit (CAD):** As India imports ~85% of its crude, every \$10 rise in oil prices widens the CAD by approximately 0.5% of GDP.
2. **Inflationary Pressure:** High fuel costs lead to a spike in the **WPI (Wholesale Price Index)**, affecting food and essential transport.
3. **Fiscal Slippage:** The government may have to cut excise duties or increase subsidies (Fertilizer/LPG), risking the fiscal deficit target.
4. **Rupee Depreciation:** Capital flight to the US Dollar (safe haven) combined with a high import bill weakens the Rupee.
5. **Energy Rationing:** Potential industrial slowdown if gas-starved power plants cannot meet peak summer demand in 2026.

Strategies to Tackle the Situation

1. **Utilization of SPRs:** Coordinated release of **Strategic Petroleum Reserves** by IEA member and associate countries (including India's reserves at Visakhapatnam, Mangalore, and Padur).
2. **Demand Side Management:** Implementing "Energy Austerity" measures—promoting public transport, work-from-home mandates, and odd-even schemes to curb fuel consumption.
3. **Diversified Procurement:** Exploring G2G (Government-to-Government) deals with non-traditional suppliers (e.g., Guyana, Brazil, and African nations) to bypass Hormuz.
4. **Accelerated Hybridization:** Rapid deployment of EV infrastructure and blending of ethanol/green hydrogen to reduce the "crude-intensity" of the economy.
5. **The "SAGE" Pipeline:** Fast-tracking deep-sea gas pipelines (like the Middle East to India Deepwater Pipeline) that bypass land-based chokepoints and vulnerable straits.

1.36 Possibility of Strategic Overhaul in Indo Nepal Ties

The political landscape of Nepal has undergone a significant shift in **early 2026**, with the formation of a new coalition government that appears more inclined toward a "neighborhood first" recalibration. For India, this represents a strategic window to reclaim its role as Nepal's primary partner amidst growing Chinese footprint in the Himalayas.

Brief History of India-Nepal Ties

The relationship is often described as "**Roti-Beti Ka Rishta**" (relationship of food and family), rooted in shared geography, culture, and religion.

- **1950 Treaty of Peace and Friendship:** The bedrock of the relationship, providing for an open border and "national treatment" for citizens of both countries in terms of residence, property, and business.
- **Special Security Relationship:** Nepal occupies a buffer status between India and China. India has traditionally been the largest provider of military hardware and training to the Nepal Army.
- **Economic Integration:** India is Nepal's largest trading partner and the largest source of Foreign Direct Investment (FDI). Nepal is also a landlocked country dependent on Indian ports (Kolkata/Haldia and Visakhapatnam) for third-country trade.
- **Development Partnership:** India has historically built Nepal's first highways (Tribhuvan Highway), airports, and major hospitals, focusing on "High Impact Community Development Projects" (HICDPs).
- **Hydropower Cooperation:** From the 1954 Kosi Agreement to the recent 2024 Long-Term Power Trade Agreement (10,000 MW export to India), energy is the strongest modern bond.



Recent Frictions (2015–2025)

The last decade has seen the relationship hit several "nadir" points:

1. **The 2015 Economic Blockade:** Following the promulgation of Nepal's new Constitution, a months-long border blockade (linked to Madhesi protests) led to a massive humanitarian crisis and fueled "anti-India" sentiment.
2. **The Map Controversy (2020):** Relations soured when Nepal issued a new political map including **Kalapani, Limpiyadhura, and Lipulekh** (territories claimed by India) after India inaugurated a road to Lipulekh Pass.
3. **The Agnipath Scheme:** Recruitment of **Gorkhas** into the Indian Army—a tradition since 1947—stopped in 2022 as Nepal objected to the four-year "short-term" nature of the new scheme.
4. **The "China Factor":** Nepal's previous regimes leaned heavily toward Beijing, signing the **Belt and Road Initiative (BRI)** and the Trans-Himalayan Multi-Dimensional Connectivity Network, viewed by Delhi as a security threat.
5. **Boundary Disputes:** Regular friction over the Susta and Kalapani regions, often used as political leverage by domestic parties in Kathmandu.

Will the Change in Government Smoothen Ties?

The **2026 political shift** in Kathmandu offers a "reset" button, but challenges remain:

1. **Pragmatic Neutrality:** The new leadership seems to realize that while China provides infrastructure, India provides the "market" (especially for electricity) and essential commodities (fuel/food).
2. **Resolution of Agnipath Stalled Issues:** There are indications that the new government is willing to negotiate a "special window" for Gorkha recruitment to maintain the historic military link.
3. **Connectivity Focus:** The shift favors Indian-led projects like the **Motihari-Amlekhgunj Pipeline** expansion and the **Raxaul-Kathmandu Railway**, which have seen faster approvals recently.

4. **Diminished BRI Momentum:** With China's own economic slowdown and Nepal's fear of a "debt trap," the new government is pivoting back to Indian grants and soft loans.
5. **Internal Stability:** A pro-India tilt is often met with domestic opposition; hence, the smoothening will be **gradual and transactional** rather than purely ideological.

Way Forward for Better Indo-Nepal Relations

1. **"Neighborhood First" with Sensitivity:** India must respect Nepal's sovereignty and avoid the "Big Brother" image. Projects should be completed on time to counter China's reputation for speed.
2. **The Power Sector Pivot:** India should facilitate the **Trilateral Power Trade** (Nepal-India-Bangladesh), allowing Nepal to earn revenue by selling surplus power across the Indian grid.
3. **Boundary Management:** Utilizing the **Boundary Working Group (BWG)** to settle technical disputes (Susta/Kalapani) quietly through diplomacy rather than public rhetoric.
4. **Modernizing the 1950 Treaty:** India should be open to reviewing/updating the 1950 Treaty to address Nepal's contemporary concerns, as recommended by the **Eminent Persons Group (EPG)**.
5. **Digital and Financial Connectivity:** Expanding **UPI (Unified Payments Interface)** and digital cross-border payments to help the thousands of seasonal migrants and tourists, deepening "people-to-people" ties.

1.37 Judicial Pendency

The Indian judiciary, often described as the backbone of the world's largest democracy, is currently facing a systemic crisis characterized by a "litigation explosion" and a "judicial bottleneck." As of **March 2026**, the total number of pending cases has crossed a staggering **55.8 million**, with over **85%** of this burden concentrated in the District and Subordinate Courts.

Reasons for the Judicial Backlog

1. **Low Judge-to-Population Ratio:** Despite recommendations by the Law Commission to have **50 judges per million** population, India currently hovers around **21.03 per million**.
2. **High Vacancy Rates:** Nearly **20-25%** of sanctioned posts in the High Courts and District Courts remain vacant due to the slow appointment process and friction between the Executive and Judiciary.
3. **Government as the Largest Litigant:** The State is a party to nearly **46%** of all pending cases, often filing appeals in routine matters where the legal point is already settled.
4. **Frequent Adjournments:** The "culture of adjournments" (Section 311 of CrPC and Order XVII of CPC) allows for procedural delays, with some cases pending for over **30 years**.
5. **Inadequate Infrastructure:** Many lower courts operate in dilapidated buildings with a severe lack of digital infrastructure, basic stenography services, and research assistants.



Other Critical Issues Faced by the Judiciary

1. **Hardships of Undertrials:** Over **75%** of India's prison population consists of undertrials, many of whom have spent more time in jail than their potential maximum sentence.
2. **Lack of Transparency:** The **Collegium System** of appointments is often criticized for being opaque and "closed-door," leading to allegations of nepotism.
3. **Language Barrier:** Most High Court and Supreme Court proceedings are in English, alienating a vast majority of the rural population.
4. **Low Budgetary Allocation:** Judicial spending is less than **0.1% of the GDP**, significantly lower than in developed economies.
5. **Quality of Legal Aid:** While the **NALSA** provides free legal aid, the quality of representation for the poor is often subpar compared to high-profile private counsel.

Way Forward: Reducing the Burden

1. **Judicial Impact Assessment:** Every new legislation should undergo an assessment to estimate the potential litigation it might generate and provide for additional judges accordingly.
2. **Promoting ADR Mechanisms:** Mandatory **Pre-Litigation Mediation** (as per the Mediation Act, 2023) and strengthening *Lok Adalats* can divert millions of petty cases.
3. **National Litigation Policy:** The government must implement a strict policy to stop "reflexive appealing" and move towards a "settlement-first" approach.
4. **Technology Integration (e-Courts Phase III):** Leveraging **Artificial Intelligence** for case scheduling, translation of judgments into regional languages, and automated listing.
5. **Specialized Benches:** Creating permanent benches for specific subjects (like Tax or IPR) and a separate **National Court of Appeal** to reduce the burden on the Supreme Court.

Will AIJS (All India Judicial Service) Help?

The proposal for an **All India Judicial Service (AIJS)**, similar to the IAS/IPS, is a debated reform for the lower judiciary.

Arguments in Favor:

- **Meritocracy:** It would attract the best legal talent through a nationwide competitive exam conducted by the UPSC.
- **Reduced Vacancies:** A centralized recruitment calendar would ensure timely filling of posts, bypassing state-level administrative delays.
- **Social Inclusion:** Uniform reservation policies would ensure better representation for SC/ST, OBC, and women across the judiciary.
- **Professionalism:** It would provide standardized training through a National Judicial Academy, improving the quality of judgments at the grassroots level.

Arguments Against:

- **Federalism Concerns:** States argue it infringes upon their power (Article 233) to manage the subordinate judiciary.
- **Language Barrier:** A judge from North India might struggle with local languages and nuances in South India, which is crucial for trial courts.

- **Promotion Tussle:** It may create a two-tier system between AIJS officers and state-promoted officers, affecting morale.

AIJS is not a "silver bullet" but a vital structural reform. If implemented with safeguards for regional languages, it can significantly professionalize the lower judiciary and expedite case disposal.

1.38 Permanent Commission for Women in Armed Forces

The journey of women in the Indian Armed Forces has transitioned from being a "peripheral necessity" to a "constitutional entitlement." In a landmark judgment on **March 24, 2026**, the Supreme Court (SC) addressed the "systemic discrimination" in the evaluation of women officers, granting them **Permanent Commission (PC)** and **pensionary benefits** by invoking its extraordinary powers under **Article 142**.

Impact on the Inclusion of Women

The SC's intervention acts as a catalyst for a more inclusive military architecture:



1. **Parity in Career Horizon:** By removing the "14-year cap" of the Short Service Commission (SSC), women now have a predictable career path up to retirement, making the forces an attractive long-term profession.
2. **Access to Command Roles:** The grant of PC is a prerequisite for "Criteria Appointments" (Commanding Officer). This allows women to lead battalions and direct operations, shattering the "glass ceiling" in leadership.
3. **Financial and Social Security:** Granting pensionary benefits (after 20 years of "deemed" or actual service) ensures economic dignity post-retirement, equivalent to their male counterparts.
4. **Institutionalized Entry via NDA:** With the SC's 2021 order and recent graduations in 2025, women are now entering the forces as "cadets" rather than "lateral entrants," ensuring they are socialized into military leadership from the start.
5. **Changing the "Warrior" Archetype:** Increased visibility of women in uniform (currently ~6.85% in Army, ~13% in Air Force) challenges the traditional patriarchal notion that national security is an exclusively male domain.

Arguments: Should Women be given Permanent Commission?

Arguments in Favor (Pro-PC):

- **Constitutional Mandate:** Articles 14 (Equality), 15 (Non-discrimination), and 16 (Equal opportunity) demand that gender cannot be a barrier to professional growth.
- **Modern Warfare Realities:** Modern combat is increasingly technical (cyber, electronic warfare, drone operations) where mental agility and technical expertise outweigh raw physical strength.
- **Proven Competence:** Women have excelled in specialized roles—from fighter pilots in the IAF to sea-going officers in the Navy—proving that merit is gender-neutral.
- **Global Best Practices:** Many modern militaries (USA, Israel, UK) have successfully integrated women into permanent and combat roles, enhancing operational diversity.
- **Dignity of Service:** Denying PC meant women were "retired" in their mid-30s without a pension, often struggling to start second careers while their male peers continued.

Arguments Against (Operational Concerns):

- **Physiological Limitations:** Critics argue that the rigors of frontline combat and extreme terrains (like Siachen) pose distinct physiological challenges for women.

- **Unit Cohesion:** There are concerns regarding the "socio-psychological" impact on all-male units and the potential for "distraction" or "protective bias" in high-stress battle zones.
- **Logistical Challenges:** Providing gender-segregated infrastructure (housing, sanitation) in remote or forward posts requires significant capital and logistical overhaul.
- **Family & Motherhood:** The "call of nature" (pregnancy and childcare) is often cited as a reason for potential absenteeism during critical deployment cycles.
- **PoW Risks:** The risk of women being taken as Prisoners of War (PoW) and subjected to gender-specific atrocities remains a sensitive societal and political concern.

Way Forward for Gender Integration

To move beyond judicial mandates toward organic integration, the following steps are vital:

1. **Gender-Neutral Evaluation:** As noted by the SC in 2026, Annual Confidential Reports (ACRs) must be graded without the "presumption of exit," ensuring women are sent for career-enhancing courses (like the Junior Command Course) at par with men.
2. **Infrastructure Overhaul:** Fast-tracking the creation of gender-sensitive facilities in forward areas and onboard all naval vessels (beyond the currently open categories).
3. **Standardized Fitness Benchmarks:** Establishing "role-based" physical standards rather than "gender-based" ones, ensuring that anyone (male or female) in a combat role meets the specific requirements of that role.
4. **Sensitization and Culture Change:** Implementing "Gender Sensitivity Training" for male officers and personnel (PBORs) to dismantle deep-seated biases and foster a culture of professional respect.
5. **Supportive HR Policies:** Formalizing policies around maternity leave, childcare, and "couple postings" (where both spouses are in service) to ensure that family responsibilities do not force talented women to quit.

The Supreme Court's 2026 ruling marks the end of a 15-year legal battle. However, **Permanent Commission is the floor, not the ceiling.** For true equality, the Armed Forces must transition from a "compliance-based" model of inclusion to a "conviction-based" model where a woman's contribution is valued for its professional merit alone.

1.39 Dissent: The Currency of Democracy

In a vibrant democracy, dissent is not a sign of weakness but a "safety valve" that prevents the buildup of systemic pressure. As Justice D.Y. Chandrachud famously remarked, **"Dissent is the symbol of a vibrant democracy."**

Dissent: The Currency of Democracy

Dissent represents the active participation of the governed in the process of governance. It ensures that the "consent of the governed" is not a one-time electoral act a continuous dialogue.



but

1. **Check on Majoritarianism:** Dissent ensures that the "tyranny of the majority" does not silence the legitimate concerns of the minority.

2. **Policy Refinement:** Robust criticism acts as a feedback loop, allowing the government to identify loopholes and unintended consequences in its legislation.
3. **Social Progress:** Historically, movements against Sati, untouchability, and for LGBTQ+ rights began as dissenting voices against the prevailing status quo.
4. **Accountability:** Dissenting voices—from activists to whistleblowers—expose corruption and administrative inertia, keeping the executive on its toes.
5. **Pluralism:** It fosters a culture of tolerance, where multiple "Indias" can coexist by debating their differences rather than suppressing them.

Legal and Constitutional Provisions

The right to dissent is not explicitly mentioned but is woven into the "Golden Triangle" (Articles 14, 19, and 21) of the Indian Constitution.

1. **Article 19(1)(a):** Guarantees **Freedom of Speech and Expression**, which the Supreme Court has interpreted to include the right to criticize government policies.
2. **Article 19(1)(b):** Ensures the **Right to Assemble Peaceably** and without arms, providing the physical space for collective dissent (protests).
3. **Judicial Dissent:** The Constitution allows judges to record dissenting opinions (e.g., **Justice H.R. Khanna in ADM Jabalpur**), which often serve as the basis for future legal corrections.
4. **Article 19(1)(c):** Provides the **Right to form Associations/Unions**, enabling organized dissent through NGOs, pressure groups, and political parties.
5. **Shreya Singhal v. Union of India (2015):** The SC struck down Section 66A of the IT Act, reinforcing that "advocacy" or "discussion" of a cause, no matter how unpopular, is protected until it incites violence.

At times Dissent may hurt Democracy

1. **Conflict of Competing Rights (The Horizontal Challenge):** Dissent often manifests as public protests, leading to a "Rights vs. Rights" scenario. While Article 19(1)(b) protects the right to assemble, it frequently clashes with the **Right to Movement** of the general public. **E.g.** As noted by the Supreme Court in the *Shaheen Bagh Case (2020)*, "the right to protest cannot be exercised by occupying public ways indefinitely".
2. **Threat of "Veto Culture" and Policy Paralysis:** Persistent dissent by localized interest groups can lead to "**Veto-crazy**," where major projects—like the *Kudankulam Nuclear Plant* or *Narmada Bachao Andolan*—face years of delay.
3. **Vulnerability to "Hybrid Warfare" and Subversion:** In the era of **Information Warfare**, can sometimes be weaponized by external state or non-state actors to foment internal instability. When "protest" is hijacked by "toolkit" maneuvers, the State faces the critical challenge of distinguishing between a "**conscientious objector**" and a "**national security threat**."
4. **Semantic Erosion: Dissent vs. Disaffection:** When the State fails to distinguish between *disaffection toward the government* (political criticism) and *disaffection toward the State* (sedition/secession), dissent is criminalized. Conversely, when dissenters use democratic platforms to incite communal disharmony or violence, they undermine the very Constitution that empowers them.
5. **Erosion of Deliberative Space and Radicalization:** In a polarized digital ecosystem, dissent often hardens into **inflexible radicalization**.

Balancing Dissent and National Integrity

While dissent is vital, it is not absolute. A democracy must distinguish between "**Disagreement**" and "**Destruction**."

1. **Reasonable Restrictions (Article 19(2)):** Dissent can be curtailed in the interest of the **sovereignty and integrity of India**, security of the State, public order, and decency.
2. **The "Violence" Threshold:** As per the **Kedar Nath Singh v. State of Bihar (1962)** ruling, dissent crosses the legal line only when it involves "incitement to violence" or "disorder."
3. **Rights of Others:** In the **Shaheen Bagh Case (2020)**, the Supreme Court ruled that while the right to protest is fundamental, it cannot be exercised by occupying public ways indefinitely, as it infringes on the "Right to Movement" of other citizens.
4. **Institutional Channels:** A mature democracy encourages dissent through **Parliamentary Committees**, Question Hour, and Judicial Review, rather than letting it spill exclusively onto the streets.
5. **Distinguishing State from Government:** Legal frameworks must ensure that "Disaffection toward the Government" (political criticism) is not equated with "Disaffection toward the State" (sedition/anti-national activity).

Dissent is the "currency" that buys a democracy its legitimacy. However, for this currency to hold value, it must be backed by the "gold standard" of **Constitutional Morality**—which demands that protestors remain peaceful and the State remains tolerant. A democracy that stifles dissent eventually loses its moral authority to govern.

1.40 India Raised its Clean Energy Ambition

India's transition toward a green economy is not just an environmental necessity but a strategic economic imperative. As the world's third-largest energy consumer, India has repositioned itself from a "follower" to a "trendsetter" in global climate action, particularly through the **Panchamrit** targets announced at COP26 and further solidified by 2026.

Recent Initiatives: From Ambition to Action

India has moved beyond policy advocacy to mission-mode implementation through several "first-of-its-kind" global initiatives:

1. **National Green Hydrogen Mission (NGHM):** With an outlay of nearly **₹20,000 crore**, India aims to become a global hub for the production and export of Green Hydrogen. The target is to reach **5 MMT (Million Metric Tonnes)** annual production by 2030, decarbonizing "hard-to-abate" sectors like steel and refineries.
2. **PM-KUSUM & Solarization:** Decentralizing solar power by helping farmers install solar pumps and grid-connected solar plants on barren lands.



Green goals

The targets set for 2035 under the Nationally Determined Contribution (NDC) are part of India's formal climate pledges under the Paris Agreement

Reduce emissions intensity of GDP by 47% from 2005 level	Achieve 60% installed electric power from non-fossil fuel energy resources
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Create carbon sink of **3.5 to 4.0 billion tonnes** of CO₂ equivalent through forest and tree cover

As a signatory to the Paris Agreement, India was required to update its NDC by 2025 with actions towards curbing fossil fuel and improving energy efficiency

This transforms "**Annadata**" (food provider) into "**Urjadata**" (energy provider).

3. **Global Biofuel Alliance (GBA):** Launched during India's G20 Presidency, this initiative (led by India, Brazil, and the USA) aims to double the global biofuel trade and accelerate the adoption of **E20 (20% ethanol blending)** by 2026.
4. **Green Credit Programme (GCP):** An innovative market-based mechanism introduced under the **LiFE (Lifestyle for Environment)** movement. It incentivizes voluntary environmental actions (like afforestation and water conservation) by individuals and industries through tradable "Green Credits."
5. **PLI Schemes for Clean Tech:** The Production Linked Incentive (PLI) schemes for **High-Efficiency Solar PV Modules** and **Advanced Chemistry Cell (ACC) Batteries** are reducing India's import dependency on China and building a domestic manufacturing ecosystem for EVs.

Challenges in the Transition: The "Green Hurdles"

The shift from a coal-dependent economy to a renewable-led one involves complex structural and financial barriers:

1. **Intermittency and Grid Stability:** Solar and wind energy are variable. As the share of renewables in the national grid increases, maintaining a stable frequency becomes difficult without massive investments in **Battery Energy Storage Systems (BESS)**.
2. **Critical Mineral Dependency:** The "Green Transition" is mineral-intensive. India faces a shortage of **Lithium, Cobalt, and Rare Earth Elements (REEs)** required for EVs and turbines, often relying on fragile global supply chains dominated by a few countries.
3. **Financing the Transition:** According to estimates, India requires billions of dollars in annual investment to meet its 2030 targets. The high cost of capital and the lack of "Green Finance" at low interest rates remain significant bottlenecks.
4. **The "Just Transition" Dilemma:** Millions of livelihoods in the "Coal Belt" (Jharkhand, Odisha, Chhattisgarh) depend on the coal ecosystem. Phasing out coal too quickly without providing alternative employment could lead to socio-economic distress.
5. **DISCOM Health:** The financial stress of State Power Distribution Companies (DISCOMs) hinders their ability to sign new Power Purchase Agreements (PPAs) for renewable energy and upgrade local distribution infrastructure.

Strategic Management: The Way Forward

To navigate these challenges, India must adopt a multi-pronged strategy that balances growth with sustainability:

1. **Diversified Energy Mix (Circular Economy):** Instead of relying solely on Solar/Wind, India must push for **Small Hydro, Nuclear power, and Bio-energy**. This provides a stable "base load" while reducing the pressure on grid storage.
2. **Mineral Diplomacy and Recycling:** Securing "Critical Mineral Partnerships" (like with Australia and Chile) and launching a **National Circular Economy Policy** for recycling E-waste and batteries will reduce reliance on fresh mining.
3. **Mobilizing Green Finance:** Strengthening the domestic **Sovereign Green Bond** market and operationalizing the **Social Stock Exchange** to attract ESG (Environmental, Social, and Governance) funds from global investors.
4. **Skill Development for "Just Transition":** Implementing massive re-skilling programs in coal-dependent regions to shift the workforce into the "Orange Economy" (creative/service sectors) or the new "Green Construction" and "Hydrogen Manufacturing" sectors.
5. **Technological Self-Reliance (R&D):** Moving from being an "assembler" to a "creator" of technology. Focusing on indigenous **Sodium-ion batteries** (as an alternative to Lithium) and high-efficiency electrolyzers will provide long-term cost advantages.

India's climate leadership is defined by the principle of "**Common but Differentiated Responsibilities (CBDR)**". By achieving its NDC (Nationally Determined Contributions) targets ahead of schedule, India is proving that "Development" and "Decarbonization" can be two sides of the same coin. The success of this transition will depend on the synergy between **State-led policy** and **Citizen-led movement (Jan Andolan)**.

1.41 Trade in Local Currency

The shift toward trading in local currencies—often termed "**De-dollarization**" or "**Local Currency Settlement (LCS)**"—is a strategic pivot in India's foreign and economic policy. As of early 2026, India is actively negotiating and "experimenting" with this mechanism for West Asian oil imports to shield its economy from global volatility.

What is Trade in Local Currency?

In brief, it is a bilateral arrangement where two nations agree to settle their trade obligations in their own domestic currencies (e.g., Indian Rupee and UAE Dirham) instead of a third-party "hard currency" like the US Dollar (USD).



1. **Mechanism:** Importers pay in their domestic currency into a **Special Vostro Account** of the partner country's bank.
2. **Settlement:** Exporters are paid from this account in their own local currency, bypassing the need for an intermediate exchange.
3. **Scope:** It covers current account transactions (goods and services) and permitted capital account transactions.
4. **Infrastructure:** Requires interlinking of national payment systems (like India's UPI with UAE's IPP).
5. **Goal:** To reduce the "Dollar-dependency" in global value chains.

Why India is Shifting to Local Currency for West Asian Oil

India imports nearly **80%** of its oil, with the **Gulf Cooperation Council (GCC)** accounting for nearly half of these imports.

1. **Mitigating Exchange Rate Volatility:** A depreciating Rupee (hitting all-time lows of ₹94/\$) makes dollar-denominated oil significantly more expensive, even if global oil prices are stable.
2. **Reducing Transaction Costs:** Converting Rupee to Dollar and then Dollar to Dirham/Riyal incurs a **2–3%** loss per stage. Local trade can save **5–6%** in total transaction value.
3. **Energy Security Amid War:** Recent conflicts in West Asia (2025–26) have spiked oil prices. Paying in Rupee prevents a "fiscal double-hit" of high prices and a weak currency.
4. **Circumventing Sanctions:** Following the Russia-Ukraine precedent, India seeks "sanction-proof" payment channels to ensure uninterrupted energy flows during geopolitical friction.

5. **Improving Trade Deficit Management:** By using Rupees for imports, India can encourage West Asian nations to use those Rupee reserves to buy Indian exports (food, textiles, pharma).

Future Benefits for India

1. **Internationalization of the Rupee:** Wider acceptance of the INR for high-value commodities like oil is a prerequisite for it becoming a global reserve currency.
2. **Reduced Forex Pressure:** India can preserve its \$USD\$ reserves for other critical needs (like external debt servicing) rather than spending them on routine energy imports.
3. **Monetary Policy Autonomy:** India becomes less vulnerable to the "**Spillover Effect**" of US Federal Reserve interest rate hikes, which typically trigger capital flight from emerging markets.
4. **Strengthened Strategic Partnerships:** Moving from a "buyer-seller" relationship to a deep financial integration (e.g., India-UAE CEPA) locks in long-term regional stability.
5. **Global Value Chain Integration:** Lower logistics and transaction costs will make Indian SMEs more competitive in West Asian markets.

Pushback Against Discarding the Dollar System

1. **The "Trump Factor" & Tariffs:** The US administration (under Donald Trump) has threatened **100% tariffs** on countries that actively move to "discard" the dollar.
2. **Liquidity & Acceptability:** The USD remains the most liquid currency globally. Partners may be hesitant to hold large reserves of the Rupee if they cannot easily spend it elsewhere.
3. **Trade Imbalance Issues:** Since India imports more from the Gulf than it exports, Gulf nations might accumulate a "**Rupee Glut**" (excess Rupees) they have no use for, similar to the initial issues with Russia.
4. **Risk of Fragmentation:** Transitioning could lead to competing currency blocs, complicating global accounting and increasing exchange rate determination problems.
5. **Financial Stability Risks:** A sudden shift could deter foreign institutional investors (FIIs) who prefer the predictability of dollar-denominated assets.

The Way Forward

1. **Expanding LCSS Frameworks:** India must scale the **Local Currency Settlement System (LCSS)** beyond the UAE to Saudi Arabia, Oman, and Qatar.
2. **Boosting High-Value Exports:** To prevent the "Rupee Glut," India must export more engineering goods, high-tech, and refined products to the Gulf to balance the accounts.
3. **Developing Deep Financial Markets:** India needs to allow foreign entities to invest their Rupee reserves back into Indian government bonds and equity markets safely.
4. **Interlinking Digital Infrastructure:** Broadening the footprint of **UPI and RuPay** in West Asia to facilitate retail and remittance payments alongside bulk oil trade.
5. **Maintaining Multi-Alignment:** India must frame this as "currency diversification" rather than "anti-dollar" to manage its strategic relationship with the United States.

1.42 SC Status and Religious Conversion (2026 Ruling)

The debate over Scheduled Caste (SC) status for Dalit converts to Christianity and Islam is one of India's most complex legal and sociological challenges. In **March, 2026**, the Supreme Court delivered a landmark judgment in **Chinthada Anand v. State of Andhra Pradesh**, reaffirming the existing religious boundaries of the SC category.

Summary: SC Status and Religious Conversion (2026 Ruling)

The Supreme Court clarified that SC status is not merely a birthright but is legally tied to the religion one "professes."

- **Immediate Loss of Status:** The Court ruled that conversion to any religion other than **Hinduism, Sikhism, or Buddhism** results in the "immediate and complete loss" of SC status.
- **Interpretation of "Profess":** To "profess" a religion means to publicly practice or declare it. A person cannot publicly identify as a Christian or Muslim while claiming statutory benefits meant for SCs.
- **Loss of Legal Protection:** Because the status is lost, converts cannot invoke the **SC/ST (Prevention of Atrocities) Act, 1989**, even if they face caste-based violence.
- **Absolute Bar:** The Court held that **Clause 3 of the 1950 Order** is an "absolute bar" that admits no exceptions for religions of "foreign origin" (Christianity/Islam).
- **Theological Basis:** The Court noted that since Christianity and Islam do not scripturally recognize the caste system, a person leaving Hinduism for these faiths is legally presumed to have left the "disability of untouchability" behind.



Significant Judicial Proceedings on SC Status

- **Constitution (Scheduled Castes) Order, 1950:** Originally restricted SC status to Hindus. It was amended in **1956** to include Sikhs and in **1990** to include Buddhists.
- **Soosai v. Union of India (1985):** The SC dismissed a plea from a Dalit Catholic, stating there was insufficient "empirical evidence" to prove that social disabilities persist in the same degree after conversion to Christianity.
- **K.P. Manu v. Scrutiny Committee (2015):** The SC allowed for "Reconversion." It ruled that a person who returns to Hinduism can reclaim SC status if they prove their original community has accepted them back.
- **Chinthada Anand Case (2026):** The most recent ruling which quashed an FIR filed by a Christian pastor under the Atrocities Act, stating his status as a "pastor" was definitive proof of his conversion and subsequent loss of SC rights.

Arguments for Extending SC Status (Dalit Christians & Muslims)

Proponents argue that "caste follows the person," not the faith.

1. **Persistence of Stigma:** Sociological data shows that conversion does not end "untouchability"; Dalit converts often have separate graveyards and churches/mosques.
2. **Violation of Equality (Article 14 & 15):** Critics argue that making a state benefit contingent on remaining in a specific religion violates the secular nature of the Constitution.
3. **Inconsistency with ST/OBC:** Scheduled Tribes (ST) and Other Backward Classes (OBC) are **religion-neutral** categories. Denying this to SCs is seen as discriminatory.
4. **The "Exit" Paradox:** Converting is often an attempt to escape caste, but by losing state protection, the individual becomes more vulnerable to the very discrimination they tried to flee.
5. **Recommendations of Commissions:** The **Ranganath Mishra Commission (2007)**

recommended completely de-linking SC status from religion, calling the current exclusion "unconstitutional."

Arguments Against Extending SC Status

The Government and certain social groups argue that the SC category was designed for a specific historical wrong.

1. **Rooted in Untouchability:** The SC category was specifically created to address the unique "historical disability" of untouchability found within the Hindu fold.
2. **Theological Contradiction:** Since Islam and Christianity claim to be egalitarian and casteless, providing "caste-based" benefits to their followers is a theological and legal contradiction.
3. **Protecting the "Pie":** Existing SC groups (Hindus, Sikhs, Buddhists) fear that adding millions of new beneficiaries would dilute the limited 15% quota, depriving the "most backward" of their due.
4. **Incentivizing Conversion:** Opponents argue that extending benefits would lead to "mass conversions," as the social "cost" of leaving the original faith (loss of reservation) would be removed.
5. **Foreign Origin Argument:** The State often argues that religions like Sikhism and Buddhism are "Indic" and internal to the broader Hindu civilizational context, unlike Islam or Christianity.

The Way Forward

The resolution of this issue likely lies in a mix of empirical data and legislative action.

1. **K.G. Balakrishnan Commission:** The findings of this commission (expected in **April 2026**) will be the primary source of contemporary empirical data on whether converts still face "untouchability."
2. **Standardizing "Backwardness":** Moving toward a model like the OBC list, where social and educational backwardness is the primary metric regardless of religion, could align with the spirit of Article 14.
3. **Parliamentary Prerogative:** The Supreme Court has repeatedly stated it cannot amend the 1950 Order. Any change must come from a **Constitutional Amendment** by Parliament under Article 341(2).
4. **Strengthening Civil Rights:** Regardless of SC status, the State must ensure that the **Protection of Civil Rights Act, 1955** is robustly applied to all citizens facing discrimination, regardless of their faith.
5. **Judicial Review of the 1950 Order:** A larger Constitution Bench may eventually need to decide if the "religious bar" in the 1950 Order itself violates the **Basic Structure** of the Constitution (Secularism).

1.43 Dynamics of Centre State Relations

In a federal system like India, the relationship between the Centre and the States is the bedrock of democratic stability and national integrity. Often described as "**Quasi-federal**" or a "**Union of States**," the Indian model requires a delicate balance between a strong central authority and autonomous state units.

Importance of Harmonious Relation



1. **Ensuring National Security & Integrity:** Internal security challenges—such as terrorism, left-wing extremism, and cross-border crimes—require seamless coordination between Central agencies (NIA, IB) and State police forces.
2. **Effective Implementation of Welfare Schemes:** Most "Centrally Sponsored Schemes" (e.g., Jal Jeevan Mission, PM-AWAS) are funded by the Centre but executed by the States. Friction leads to "policy paralysis".
3. **Economic & Fiscal Stability:** A unified market (via **GST**) and efficient resource allocation (via the **Finance Commission**) rely on mutual trust. Harmonious relations prevent "fiscal competition" (like states withdrawing from the National Pension System) and ensure a stable environment for Foreign Direct Investment (FDI).
4. **Disaster Management & Crisis Response:** During events like the COVID-19 pandemic or major floods, the Centre provides the "macro-guidelines" and resources, while the States manage the "micro-execution."
5. **Accommodating Regional Aspirations within National Unity:** India is a "Union of States" with immense linguistic and cultural diversity. Harmonious relations ensure that regional identities (represented by States) feel respected and included.

Constitutional and Legal Provisions for Smooth Relations

1. **Seventh Schedule (Article 246):** Clearly demarcates powers into three lists—**Union, State, and Concurrent**. This ensures that both levels of government have defined jurisdictions to avoid overlap and friction.
2. **Inter-State Council (Article 263):** Empowered to investigate and discuss subjects of common interest. It serves as the primary constitutional forum for resolving disputes and coordinating policy between the Union and the States.
3. **Finance Commission (Article 280):** A quasi-judicial body appointed every five years to recommend the distribution of net tax proceeds between the Centre and States (**Vertical Devolution**) and among States (**Horizontal Devolution**), ensuring fiscal equity.
4. **All India Services (Article 312):** Officers (IAS, IPS) are recruited by the Centre but serve the States. This creates a "shared bureaucracy" that maintains uniform administrative standards across the country.
5. **GST Council (Article 279A):** A post-2016 legal innovation that embodies "Cooperative Federalism." It is a joint forum where the Centre and States decide on indirect tax rates through a consensus-based voting mechanism.

Despite the framework, several states have recently accused the Union of overstepping its constitutional boundaries, citing "creeping centralisation."

Arguments Regarding Central Encroachment

1. **Misuse of the Office of Governor:** States often allege that Governors act as "agents of the Centre," particularly in opposition-ruled states, by indefinitely delaying assent to Bills (Article 200) or interfering in university administrations.
2. **Fiscal Centralisation & Cesses:** While tax devolution happens via the Finance Commission, the Centre increasingly uses **Cesses and Surcharges** (which are not part of the divisible pool). This effectively reduces the actual share of revenue reaching the States.
3. **Encroachment on State List Subjects:** The Union has been accused of legislating on subjects like **Health, Education, and Agriculture** (e.g., through national-level schemes or central laws) even though these are primarily in the State or Concurrent lists.

4. **Terms of Reference (ToR) of Finance Commissions:** Recent friction has emerged over the ToR of the **16th Finance Commission**, with states arguing that the Centre uses these mandates to impose "fiscal discipline" that restricts the States' sovereign power to spend on welfare.
5. **Over-regulation through Central Agencies:** The proactive use of central agencies (ED, CBI, NIA) in cases traditionally handled by state police is often seen by regional governments as a tool to undermine the state's executive autonomy.

Way Forward for Smooth Relations

To transition from "Confrontational Federalism" to "Collaborative Federalism," the following structural reforms are necessary:

1. **Punchhi Commission Implementation:** The recommendations of the **M.M. Punchhi Commission (2010)** should be adopted, particularly regarding a "fixed tenure" for Governors and a "6-month timeline" for them to decide on State Bills.
2. **Strengthening the Inter-State Council:** The Council should be made a **permanent body** with mandatory periodic meetings (as suggested by the Sarkaria Commission) to discuss major policy changes *before* they are introduced in Parliament.
3. **Reform of Fiscal Federalism:** Cesses and surcharges should be brought under the **divisible pool** of taxes. Furthermore, Centrally Sponsored Schemes (CSS) should offer more "flexibility" to states to adapt them to local geographical and social realities.
4. **Consultative Legislating:** For subjects in the **Concurrent List**, the Centre should establish a convention of consulting State Governments before moving a Bill. This prevents legal stalemates and "Anti-Union" sentiments at the grassroots.
5. **Activating Zonal Councils:** These councils should be utilized for "Regional Federalism," solving trans-boundary issues like river water disputes, internal security, and infrastructure connectivity at a sub-national level before they escalate to the Supreme Court.

1.44 250 Years of American Revolution

The **American Revolution (1775–1783)** was a watershed moment in world history, marking the first time a colony successfully overthrew its imperial master to establish a nation based on Enlightenment ideals. For the UPSC, it is studied as the precursor to modern democratic constitutionalism and a major influence on the Indian National Movement.

Factors Leading to the Revolution

The revolution was not a sudden event but the result of a decade-long estrangement between Britain and its 13 colonies.

1. **Economic Mercantilism:** Britain treated the colonies as a source of raw materials and a market for finished goods. Laws like the **Navigation Acts** forced colonists to trade only with British ships and ports, stifling local industry.
2. **Taxation Without Representation:** To recover debts from the **Seven Years' War (1756–63)**, Britain imposed direct taxes (e.g., **Stamp Act 1765, Sugar Act 1764**). Colonists argued that as they had no representatives in the British Parliament, the Parliament had no right to tax them.
3. **End of "Salutary Neglect":** For years, Britain had been lenient in enforcing trade laws. The



sudden shift to strict administrative control and the stationing of British troops (Quartering Act) created intense resentment.

- Ideological Awakening:** Enlightenment thinkers like **John Locke** (Natural Rights) and **Thomas Paine** (whose pamphlet *Common Sense* argued for independence) convinced the masses that a monarch's power is not divine but based on a "Social Contract" with the people.
- Prohibitive Territorial Policies:** The **Proclamation of 1763** forbade colonists from settling west of the Appalachian Mountains, frustrating those who had fought the French for that very land.

Brief Chronology of Key Events

Year	Event	Significance
1770	Boston Massacre	British soldiers fired on a crowd; used as propaganda to fuel anti-British sentiment.
1773	Boston Tea Party	Colonists dumped 342 chests of tea into the harbor to protest the Tea Act monopoly.
1774	1st Continental Congress	Delegates from 12 colonies met in Philadelphia to petition King George III for redress of grievances.
1775	Battles of Lexington & Concord	The "shot heard 'round the world"; start of armed conflict.
1776	Declaration of Independence	Adopted on July 4 ; formally announced the birth of the USA based on human equality.
1781	Surrender at Yorktown	General Cornwallis (later sent to India) surrendered to American and French forces.
1783	Treaty of Paris	Britain officially recognized the independence of the United States.

Fundamental Global Changes

The American Revolution acted as a "template" for future political transformations.

- Rise of Constitutionalism:** It led to the world's **first written constitution**, introducing a "checks and balances" system (Separation of Powers) that most modern democracies, including India, follow.
- Igniting the French Revolution:** The success of the American rebels and the bankruptcy of the French treasury (due to supporting the Americans) directly triggered the **French Revolution of 1789**.
- End of the First British Empire:** Britain shifted its focus from the West (Americas) to the East (India), leading to more direct and aggressive administrative control in the subcontinent (e.g., **Pitts India Act 1784**).
- Promotion of Republicanism:** It shattered the "Divine Right of Kings" theory, proving that a government could be run by elected representatives of the people rather than a hereditary monarch.
- Inspiration for Decolonization:** It provided a moral and political framework for 19th-century independence movements in **Latin America** (led by Simon Bolivar) and eventually for 20th-century Asian and African colonies.

Lessons for India

India can draw profound parallels and lessons from the American experience:

- Unity in Diversity:** The 13 colonies were diverse and often bickering, but they united against a common external threat. India's strength lies in a similar **Federal Unity** where regional identities coexist with national goals.
- Dangers of Fiscal Centralization:** The "Taxation without Representation" cry reminds us that the Centre must ensure **Fiscal Federalism**. Policies like the GST must be managed through consensus to prevent state alienation.
- The Role of Intellectuals:** Just as Jefferson and Paine mobilized the Americans, Indian leaders

(like Raja Ram Mohan Roy or Ambedkar) showed that **intellectual reform** is a prerequisite for political freedom.

4. **Civilian Control over Military:** One of the greatest legacies of George Washington was resigning his commission to ensure the military remained subordinate to the elected civilian government—a principle India has strictly upheld.
5. **The Limits of Force:** Britain had a professional army but lost to a motivated "People's Militia." This highlights that a state cannot govern effectively for long without the **consent of the governed**.

1.45 Neighbourhood Matters

The **Neighbourhood First Policy (NFP)**, reinvigorated over the last decade, is predicated on the belief that India's rise as a global power is inextricably linked to the peace and prosperity of its immediate periphery.

- **Non-Reciprocity:** Inspired by the *Gujral Doctrine*, India often provides assistance (financial, technical, or humanitarian) without expecting an equal return.
- **Consultative Approach:** Moving away from a "Big Brother" image to a "Lead Partner" role through mutual respect (**Samman**) and dialogue (**Samvad**).
- **Connectivity as Sovereignty:** Viewing regional integration (physical, digital, and energy) not just as trade but as a tool for collective strategic autonomy.

Importance of the Policy

The significance of a stable and friendly neighbourhood for India is multifaceted:

1. **Strategic Security:** Friendly neighbours act as a "buffer" against hostile actors. Cooperation is vital to manage "non-traditional" threats like cross-border terrorism, insurgencies in the North-East (e.g., cooperation with Myanmar/Bangladesh), and human trafficking.
2. **Countering the "String of Pearls":** As China expands its footprint through the **Belt and Road Initiative (BRI)**, NFP serves as India's primary tool to offer a transparent, sustainable alternative to "debt-trap diplomacy."
3. **Economic Integration:** For India's landlocked North-Eastern states, transit through Bangladesh and connectivity with Nepal/Bhutan are essential for unlocking the "Act East" potential.
4. **Net Security Provider:** To lead in the Indian Ocean Region (IOR), India needs the support of maritime neighbours like Sri Lanka, Maldives, and Bangladesh for **SAGAR** (Security and Growth for All in the Region).



Current Scenario

Country	Current Status	Key Dynamics
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Bangladesh	The Post-Hasina Reset	Following the February 2026 elections, India is engaging with the new administration (BNP-led) to move past the "Golden Era" of the Awami League. Focus is on the Ganga Water Treaty (expiring Dec 2026) and CEPA negotiations.
Nepal	Stability & Energy	After a period of "tilting" toward China, Nepal has stabilized ties with India. The focus has shifted to Hydro-diplomacy (selling power to India/Bangladesh) and completing the Integrated Check Posts (ICPs) .
Maldives	Strategic Balancing	After an "India Out" phase, relations have pivoted back to economic pragmatism. India recently restructured Maldivian debt and provided a \$565 million credit line.
Sri Lanka	The Credible Partner	India's \$4 billion "first responder" aid during the economic crisis has created long-term goodwill, focusing now on the Trincomalee Energy Hub .
China	Dependence of Supply Chain.	India's largest trading partner but issues in border settlement and rise of Chinese Cheque book diplomacy
Pakistan	Hub of Terrorism	Currently the ties are at the lowest point post Pulwama, Pehelgam terrorist attacks.

Challenges to the Policy

1. **The "China Factor":** China's deep pockets and rapid project execution continue to lure neighbours looking for infrastructure.
2. **Domestic Politics & Anti-India Sentiment:** "India Out" campaigns often become electoral tools in neighbouring democracies (Maldives, Bangladesh).
3. **Implementation Gaps:** India's "delivery deficit"—the gap between announcing a project and completing it—remains a major hurdle compared to Chinese efficiency.
4. **Internal Security-Foreign Policy Linkage:** Issues like the **CAA/NRC** or border killings (BSF-BGB) often create diplomatic friction with Bangladesh.

Way Forward: How to Improve

To truly solidify the "Neighbourhood First" philosophy, India must transition from a **reactive** to a **proactive** regional power:

1. **Institutionalize Ties:** Move away from "leader-to-leader" diplomacy to "institution-to-institution" engagement. This ensures that a change in government (as seen in Bangladesh) doesn't result in a total collapse of ties.
2. **The "3Cs" Focus:** 1. **Connectivity:** Rapidly complete the BBIN (Bangladesh-Bhutan-India-Nepal) motor vehicle agreement. 2. **Commerce:** Finalize pending Free Trade Agreements (like the CEPA with Bangladesh) to reduce trade deficits. 3. **Culture:** Leverage "Soft Power" (Buddhism, Bollywood, Yoga) and "Health Diplomacy" (Vaccine Maitri 2.0) to build people-to-people trust.
3. **Digital Public Infrastructure (DPI):** Export the "India Stack" (UPI, Aadhaar, Cowin) to neighbours. Making their economies digitally compatible with India creates a "sticky" relationship that is hard to undo.
4. **Crisis Management:** Strengthen the role of **BIMSTEC** as a viable alternative to the dormant SAARC, focusing on disaster management and blue economy.

India's destiny is geographically locked with its neighbours. A successful "Neighbourhood First" policy requires India to be a **benevolent hegemon**—one that is sensitive to the domestic anxieties of smaller states while remaining firm on its core national security interests.

1.46 India's Energy Landscape: Transition, Vulnerabilities, and Strategic Resilience

Overview: India's Current Energy Mix (2026 Status)

As of early 2026, India has achieved a historic pivot in its power sector, though its overall primary energy consumption remains tethered to fossil fuels.

- **Installed Power Capacity:** India has crossed the **51% mark** for non-fossil fuel sources in its installed electricity capacity (approx. **263 GW**), achieving its 2030 NDC target five years early.
- **Renewable Energy (RE) Dominance:** Solar energy is the primary driver, with installed capacity exceeding **140 GW**, followed by Wind (**54 GW**) and Large Hydro.
- **Coal's Paradox:** While its *share* in installed capacity is falling (now approx. **43%**), coal remains the "baseload" backbone, still accounting for over **70% of actual electricity generation**.
- **Oil & Gas Reliance:** India remains the world's third-largest consumer of crude oil, with an import dependence peaking at **88–89%** in 2025-26.
- **Emerging Sectors:** The **National Green Hydrogen Mission** and a renewed push for **Small Modular Reactors (SMRs)** in the nuclear sector (target 100 GW by 2047) are the new frontiers.

Key Energy Vulnerabilities

Despite the green transition, India faces structural risks that threaten economic stability:

1. **Import Dependence & Price Volatility:** With nearly 90% of oil and 50% of natural gas imported, India's fiscal health is a hostage to global Brent prices. Every \$10/barrel rise increases the trade deficit by approx. \$13 billion.
2. **Geopolitical Chokepoints:** A significant portion of India's LPG and LNG passes through the **Strait of Hormuz**. Recent regional tensions (2025-26) have highlighted how easily these "just-in-time" supply chains can be paralyzed.
3. **Critical Mineral Bottlenecks:** The shift to EVs and solar panels has replaced "oil dependence" with "mineral dependence." India relies heavily on imports for Lithium, Cobalt, and Rare Earth Elements, primarily from China-dominated supply chains.
4. **Grid Variability and Storage Gap:** As RE penetration increases, the "Duck Curve" effect (mismatch between peak supply and peak demand) worsens. India lacks sufficient **Battery Energy Storage Systems (BESS)** and Pumped Hydro to manage grid stability.
5. **Climate-Induced Demand Surges:** Unusually early and intense heatwaves (recorded in Feb-March 2026) cause massive spikes in cooling demand, straining even the most robust power grids.



Why These Vulnerabilities Prevailed in the Long Term?

1. **Stagnant Domestic Production:** Despite policies like HELP and OALP, domestic crude oil production has remained stagnant for a decade due to aging fields and high geological risks in deep-water exploration.
2. **Inadequate Strategic Reserves:** India's **Strategic Petroleum Reserves (SPR)** currently cover only about **9–10 days** of net imports, far below the IEA mandate of 90 days.
3. **Delayed Structural Reforms in DISCOMs:** The financial ill-health of Power Distribution Companies (DISCOMs) prevents them from investing in modern grid infrastructure and smart meters.

4. **Limited "Base Load" Alternatives:** Nuclear energy development was slowed by civil liability concerns and long gestation periods, leaving coal as the only viable "firm" power source for decades.
5. **Underdeveloped Gas Infrastructure:** Until recently, the "National Gas Grid" lacked the connectivity required to make natural gas a true "bridge fuel" for industries and transport.

Management Strategy: Short vs. Long Term

Short-Term Measures (0–2 Years)

- **Supply Diversification:** Ramping up crude sourcing from non-traditional partners (e.g., Russia, Guyana, Norway) to bypass maritime flashpoints.
- **Demand Side Management:** Implementing time-of-day (ToD) tariff structures to shift industrial load to daytime (solar peak).
- **Invoking the Essential Commodities Act:** Regulating gas allocation to prioritize households (PNG) and fertilizers over non-essential industries during crises.
- **Maximizing Refinery Flexibility:** Enabling refineries to process diverse crude grades and maximize LPG output to prevent domestic kitchen-fuel shortages.
- **Strategic Bilateral Swaps:** Negotiating LNG "swap" deals with friendly nations to divert cargoes in case of chokepoint closures.

Long-Term Measures (5–20 Years)

- **Mission Samudra Manthan:** Accelerating deep-water offshore drilling to double domestic production targets by 2030.
- **Expanding SPR Phase II:** Fast-tracking underground storage at **Chandikhol and Padur** to increase the reserve buffer to 30+ days.
- **Deep-Tech & Storage:** Incentivizing the **PLI Scheme** for Advanced Chemistry Cell (ACC) batteries and Green Hydrogen to "de-fossilize" heavy industry (Steel/Cement).
- **Nuclear Renaissance:** Launching indigenously designed **Small Modular Reactors (SMRs)** to provide clean, stable baseload power.
- **Biofuel Autonomy:** Achieving **E20 (20% Ethanol blending)** and scaling up Compressed Biogas (CBG) to reduce the petroleum import bill by billions.

India's energy security is no longer just about "access" but "resilience." While the record-breaking transition to renewables provides a sustainable path, the immediate "oil-gas-mineral" trilemma requires a pragmatic blend of aggressive domestic exploration and global strategic alliances.

1.47 Left Wing Extremism: Maoists are "more or less wiped out"

The recent statement by the Union Home Minister that Maoists are "more or less wiped out" from Bastar highlights a significant shift in India's internal security landscape. However, the issue of **Left Wing Extremism (LWE)** remains complex, requiring a balanced understanding of both achievements and continuing challenges.

Understanding Left Wing Extremism (LWE)

- **Definition:** LWE refers to extremist movements inspired by Maoist ideology aiming to overthrow the state through armed struggle.
- **Core Areas:** Concentrated in tribal and forest regions (earlier called the "Red Corridor")
- **Root Causes:** Underdevelopment, lack of governance, land alienation, and tribal exploitation

Recent Achievements in LWE Control

- Focus on **security operations &**



development measures

- Improved **state presence in remote areas**
- Significant weakening of Maoist organisational structure

Importance of Controlling LWE

1. **Internal Security:** LWE has been one of India's biggest internal security threats
2. **Development of Tribal Areas:** Ensures access to roads, schools, healthcare
3. **National Integration:** Brings remote regions into mainstream governance
4. **Investment Climate:** Stability encourages economic activity in mineral-rich regions

Government Strategy (Integrated Approach)

- **Security Measures:** Increased deployment of Central Armed Police Forces (CAPFs)
- **Development Initiatives:** Roads, ration shops, schools in remote areas
- **Administrative Reach:** Expansion of governance in previously inaccessible areas
- **Surrender Policy:** Incentives for Maoists to join mainstream

Opposition Concerns and Ground Reality

Despite achievements, concerns remain:

- **Premature Declaration:** Claim of being "Naxal-free" may be overstated
- **Residual Presence:** Maoist ideology and networks may still exist underground
- **Need for Vigilance:** Security gains can reverse if attention declines
- **Political Debate:** Differences over credit and approach

Key Challenges

1. **Ideological Persistence:** LWE is not just a law-and-order issue but also ideological
2. **Underdevelopment:** Tribal regions still face poverty and lack of basic services
3. **Trust Deficit:** Historical alienation between state and local communities
4. **Geographical Difficulty:** Dense forests and remote terrain aid insurgents

Way Forward: Sustaining the Gains

1. **Development-Led Approach:** Focus on education, health, and livelihoods in tribal areas
2. **Inclusive Governance:** Strengthen participation of local communities
3. **Continued Security Vigilance:** Prevent regrouping of Maoist elements
4. **Address Root Causes:** Land rights, forest rights, and social justice

While the decline of Maoist influence in regions like Bastar marks a major achievement, Left Wing Extremism cannot yet be considered fully eliminated. A sustained approach combining **security, development, and inclusive governance** is essential to ensure long-term peace and stability in affected regions.

1.48 Clean Cooking Crisis: Limits of Welfare Design

India's recent LPG crisis, triggered by global supply disruptions, has exposed structural weaknesses in its clean cooking policy. While schemes such as the Pradhan Mantri Ujjwala Yojana have significantly expanded access to LPG, they have not ensured continuity and reliability of supply. This raises important concerns regarding the effectiveness of welfare guarantees.

Understanding the LPG Welfare Model

The Pradhan Mantri Ujjwala Yojana was launched to provide LPG connections to poor households, especially women, with the objective of promoting clean cooking fuel and reducing dependence on traditional biomass.

- The scheme has provided more than ten crore connections and substantially increased LPG coverage in India.
- It has reduced indoor air pollution and improved health outcomes.
- It has also saved time for women, particularly in rural areas, by reducing the need to collect firewood.

However, the success of the scheme has been measured largely in terms of sustained usage.



Structural Weakness in Policy Design

The transition from kerosene-based systems under the Public Distribution System to LPG-based cooking reflects a shift from a state-controlled model to a market-dependent system.

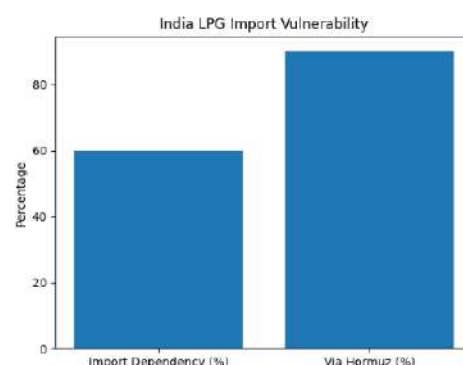
Aspect	Earlier System (PDS Kerosene)	LPG System (PMUY)
Supply Nature	State-controlled	Market-dependent
Distribution	Physical stock through ration shops	Dependent on global supply chains
Reliability	Relatively stable	Vulnerable to disruptions

This transition replaced an imperfect but state-managed system with one that is dependent on global markets, without building adequate safeguards against disruptions.

Key Causes of the LPG Crisis

The present crisis can be attributed to multiple structural factors:

1. India imports approximately sixty percent of its LPG consumption.
2. Nearly ninety percent of these imports pass through the Strait of Hormuz, making supply vulnerable to geopolitical disruptions.
3. While India maintains strategic petroleum reserves, there



is no equivalent buffer for LPG.

4. Disruptions in West Asia directly affect domestic supply and availability.

Gaps in Sovereign Responsibility

The welfare design focused on visible indicators such as connection distribution and subsidy transfer, but did not adequately address continuity of supply.

- The state gradually withdrew from direct supply responsibility.
- Physical stock management and supply assurance mechanisms were not strengthened.
- The system relies heavily on uninterrupted global supply chains.

As a result, when disruptions occur, the burden is transferred to households, undermining the idea of a welfare guarantee.

Socio-Economic Impact

The crisis has had significant socio-economic consequences:

1. Rising LPG prices have made refilling cylinders unaffordable for many poor households.
2. There are delays in delivery, especially in rural areas.
3. Marginalised groups, including Scheduled Castes and Scheduled Tribes, have lower access and usage rates.
4. Many households revert to biomass fuels such as firewood when LPG becomes inaccessible.

Gender Dimension

The impact of the crisis is particularly significant for women, who are the primary users of cooking fuel.

- Although women are formal beneficiaries of LPG connections, they often do not control supply or affordability.
- Studies indicate that a majority of women decide cooking practices, but are forced to shift back to traditional fuels when LPG becomes expensive or unavailable.
- This leads to increased physical burden and loss of welfare gains achieved through clean cooking initiatives.

Policy Issue: Access versus Continuity

The core issue lies in the distinction between access and sustained usage.

- Policy success has been measured in terms of the number of connections provided.
- However, access does not automatically ensure regular and affordable usage.
- A welfare scheme must guarantee continuity, especially during crises.

Key Challenges

1. Excessive dependence on global markets for essential welfare goods.
2. Absence of strategic reserves for LPG.
3. Weak last-mile delivery systems in rural areas.
4. Rising costs affecting affordability.
5. Persistent social and regional inequalities in access.

Way Forward: Strengthening Welfare Design

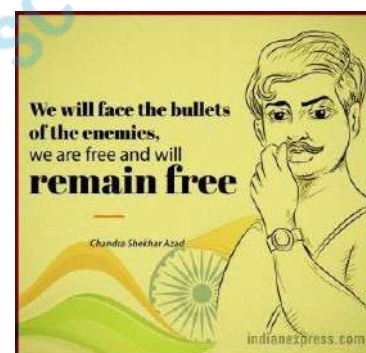
1. Establish a strategic LPG reserve to ensure supply during disruptions.
2. Diversify import sources to reduce dependence on specific routes such as the Strait of Hormuz.
3. Strengthen distribution networks, especially in rural and remote areas.
4. Promote alternative energy sources such as community biogas systems under initiatives like GOBAR-Dhan.
5. Redesign welfare policies to focus on reliability and continuity rather than mere access.

India's transition to clean cooking has been an important welfare achievement, but it remains incomplete. A system that depends heavily on global markets without adequate safeguards cannot ensure continuity for vulnerable households. The focus must now shift from expanding access to ensuring reliable, affordable, and resilient delivery of clean cooking energy.

2. PRELIMS BOOSTERS

2.1 Chandra Shekhar Azad

- At age 15, he joined Gandhi's movement and was arrested.
- **The Legend of 'Azad':** When produced before the magistrate, he famously gave his name as '**Azad**' (The Free), his father's name as '**Swatantrata**' (Independence), and his residence as '**Jail**'.
- **Key Organizational Roles**
 - **Hindustan Republican Association (HRA):** After the suspension of the Non-Cooperation Movement (1922), he joined the HRA, founded by **Sachindranath Sanyal** and **Ram Prasad Bismil**.
 - **Reorganization into HSRA (1928):** Following the arrest/execution of HRA leaders after the Kakori case, Azad (as Commander-in-Chief) and **Bhagat Singh** reorganized it into the **Hindustan Socialist Republican Association (HSRA)** at **Feroz Shah Kotla, Delhi**.
 - **Ideology:** Under his leadership, the organization moved toward **Socialism** as a core objective for a free India.
- **Major Revolutionary Activities**



Event	Year	Details
Kakori Train Robbery	1925	Looted the 8-Down train carrying government treasury; Azad was one of the few who evaded capture.
Saunders' Murder	1928	To avenge the death of Lala Lajpat Rai (injured during Simon Commission protests), Azad, Bhagat Singh, and Rajguru killed J.P. Saunders in Lahore.
Central Assembly Bombing	1929	Though Bhagat Singh and Batukeshwar Dutt threw the bombs, Azad was the key strategist behind the group's logistics and later attempts to rescue Bhagat Singh.
Viceroy's Train Bombing	1929	Involved in the attempt to blow up the train of Viceroy Lord Irwin .

- **Death Location: Alfred Park, Allahabad** (now Chandrashekhar Azad Park).
- Betrayed by an informer, he was surrounded by police. After a shootout where he helped his comrade **Sukhdev Raj** escape, he stayed true to his vow never to be captured alive and shot himself with his last bullet.

2.2 Macaques

- Macaques are a genus of **gregarious Old World monkeys** belonging to the family *Cercopithecidae*. There are more than 20 species, making them one of the most widespread and diverse primate groups.
- **Origin and Habitat:**
- While most species are native to **Asia**, their habitats vary significantly. They are highly adaptable and can be found in tropical rainforests, high-altitude mountains, rocky cliffs, and even urban plains.
- **Key Characteristics:**
 - They are robust primates with arms and legs of roughly equal length.
 - They possess dog-like but rounded muzzles with nostrils on the upper surface.
 - Unique large pouches allow them to carry and store extra food while foraging.
 - Variation is extreme; depending on the species, tails can be long, short, or even absent.
 - Males are significantly larger than females, with the Tibetan macaque being the largest (up to 18 kg).
- **Social Behaviour:**
 - **Complex Hierarchies:** Macaques live in troops with a strict **dominance rank order**.
 - In females, this is matrilineal (based on the mother's rank), while male rank is often determined by alliances and fighting ability.
 - **The Youngest Sister Rule:** In some species, like the Japanese macaque, the youngest sister often ranks higher than her older siblings.
 - **Integration and Bullying:** High-ranked members often show aggression toward lower-ranked individuals to reinforce status.
 - New or rejected members (like Punch) undergo a testing phase before finding their place.



2.3 ASTraM

- Actionable Intelligence for Sustainable Traffic Management is an **Integrated Traffic Management System (ITMS)** that uses Artificial Intelligence (AI) and Machine Learning (ML) to monitor and regulate urban traffic in real-time.
- The system was developed **through a collaborative effort between the Bengaluru Traffic Police and Arcadis**, a prominent Dutch design and consultancy firm.
- The primary objective of ASTraM is to **transform traffic policing from a reactive model (responding to complaints) to a proactive, data-driven model**.
- It **aims to reduce congestion, improve road safety, and streamline incident reporting** through automated intelligence.
- **Actionable Intelligence:** Unlike traditional CCTV which only records, ASTraM analyzes data to provide "actionable" alerts (e.g., detecting a breakdown and instantly alerting the nearest patrol).
- **Traffic Volume Analysis:** It uses AI to count vehicles and calculate "Queue Length" at junctions, allowing for dynamic signal timing rather than fixed timers.
- **Incident Reporting:** Integrates data from various sources (Google Maps, 112 emergency calls, and social media) onto a single dashboard.
- **Spatial Mapping:** It maps "Heat Maps" of congestion and identifies "Black Spots" (accident-prone areas) for long-term urban planning.
- **Predictive Analytics:** Monitors trends to forecast potential traffic chokeholds before they paralyze the roads.



ASTraM

2.4 Fortified Rice

- **The Process:** It involves increasing the content of essential micronutrients in rice.
- **The Method:** India primarily uses **Extrusion technology**.
- Dry rice flour is mixed with a **micronutrient premix**.
- This mixture is shaped into grains called **Fortified Rice Kernels (FRK)**.
- These kernels are blended with regular rice in a **1:100 ratio**.
- **Standards:** Set by the **Food Safety and Standards Authority of India (FSSAI)**.
- **Mandatory Nutrients (FSSAI Standards) -Iron, Folic Acid, Vitamin B12**, *Optional additions include Zinc, Vitamin A, and other B-complex vitamins.*
- **The Goal:** To combat **Anemia** and **Micronutrient Deficiency** (Hidden Hunger).
- **Universal Coverage:** The Cabinet approved the supply of fortified rice in a phased manner across all Government schemes by **2024**.
- **Schemes Included:** Targeted Public Distribution System (**TPDS**) under NFSA.
- PM-POSHAN (formerly **Mid-Day Meal**), Integrated Child Development Services (**ICDS**).
- Every package of fortified rice must carry the **" +F" logo**.
- It must display the statement: **"Fortified with Iron, Folic Acid, and Vitamin B12"**.
- **Crucial Warning:** Packages must carry a disclaimer for people with **Thalassemia** (to consume under medical supervision) and **Sickle Cell Anaemia** (advised not to consume iron-fortified food).
- **Bio-fortification vs. Food Fortification:** Bio-fortification happens at the **breeding/genetic level** (e.g., Golden Rice), whereas the current government initiative is **post-harvest food fortification** (manual blending).
- **Storage:** Fortified rice has a shelf life of at least **12 months**.
- **Cooking:** It does not require any change in cooking habits; the nutrients do not wash away during normal rinsing/boiling.
- The Central Government has decided to temporarily discontinue the distribution of fortified rice under the PMGKAY and other welfare schemes due to shelf-life concerns.



2.5 Meningococcal infection

- **Pathogen:** It is a bacterial infection caused by *Neisseria meningitidis* (also known as meningococcus).
- **Transmission:** Spread through **respiratory droplets** or throat secretions (coughing, sneezing, kissing, or sharing utensils). It requires close or prolonged contact.
- **Meningococcal bacteria primarily cause two life-threatening conditions:**
 - **Meningitis:** Infection of the protective membranes (meninges) covering the **brain and spinal cord**.
 - **Septicemia (Meningococcemia):** A blood poisoning/infection that leads to bleeding under the skin (purple rash) and organ failure.
- **The "Meningitis Belt":** The highest burden is in **Sub-Saharan Africa**, an area stretching from Senegal to Ethiopia.
- **Serogroups:** There are 12 groups, but **A, B, C, W, X, and Y** cause most outbreaks.
- **Carrier Status:** Interestingly, about **10% to 20%** of the population are asymptomatic "carriers" of



the bacteria in their throats without getting sick.

- The bacteria live in the upper respiratory tract (nose and throat) of humans. About **10% to 20%** of the population are asymptomatic carriers who have the bacteria without getting sick.
- **Treatment:** It is a medical emergency. Because it is bacterial, it is treated with **Antibiotics** (e.g., Ceftriaxone or Penicillin).

2.6 Operation Epic Fury

- **Lead Agency:** U.S. Central Command (**CENTCOM**) under the direction of the U.S. President.
- Conducted in tight coordination with Israel (Israel's parallel offensive is codenamed **Operation Roaring Lion**).
- **Primary Target: Iran** (specifically its nuclear infrastructure, ballistic missile sites, and leadership).
- **Core Objectives**
 - **Counter-proliferation.**
 - **Missile Degradation**
 - **Naval Neutralization**
 - **Regime Change/Leadership Decapitation**
- The operation resulted in **the confirmed death of Iran's Supreme Leader, Ayatollah Ali Khamenei**, during the initial daylight strikes in Tehran.
- Unlike typical "shock and awe" night attacks, **Epic Fury involved significant daylight strikes** to ensure senior officials were present in government compounds.
- **Multi-Domain Warfare:** The campaign utilized a "Fifth Domain" (Cyberspace) first strike. **U.S. Cyber Command** and **Space Command** disrupted Iranian communications and air defense sensors before kinetic (physical) bombs were dropped.
- **Weaponry Used:** Included **B-2 Spirit** stealth bombers (flying from the U.S. mainland), **F-22 Raptors**, **Tomahawk** cruise missiles, and the **USS Gerald R. Ford** and **USS Abraham Lincoln** carrier strike groups.
- Iran responded with **Operation True Promise III**, launching missile and drone swarms at Israel and U.S. bases in Qatar, Iraq, and the UAE.



2.7 Legacy Thrust Territories

- The Ministry of Home Affairs has introduced the concept of Legacy Thrust Territories to prevent the resurgence of LWE after major operational gains against Naxalism.
- Legacy Thrust Territories are **previously Naxal-affected districts** identified by the Union Government for continued security presence and focused developmental intervention, even after major decline in insurgent activities.
- The framework ensures that gains achieved against Left Wing Extremism are not reversed.
- **Regions Designated:**
 - Earlier, nearly 200 districts were affected by LWE (around 2000).
 - By 2025, the number declined to 38 districts.

- Currently, only 7 districts remain on the LWE list:
- 5 in Chhattisgarh
- 1 in Jharkhand
- 1 in Odisha
- These and other formerly affected districts are being brought under the Legacy Thrust framework for sustained monitoring.



- **Key Features: Sustained Security Deployment, Development Push, Phased Redeployment, Centre–State Coordination, Administrative Strengthening, Monitoring of Extremist Propaganda and Rehabilitation Focus.**

2.8 Ruddy Shelduck

- **IUCN Status: Least Concern.**
- **Indian Wildlife (Protection) Act, 1972:** Schedule II (high protection).
- **Common Name: Brahminy Duck**
- **Migratory Nature:** It is a winter visitor to the Indian subcontinent, arriving from **Central Asia, Tibet**, and **Southeastern Europe** (part of the **Central Asian Flyway**).
- **Breeding in India: Ladakh** is the primary breeding site in India (specifically the high-altitude wetlands). It is one of the few birds that breed at altitudes above 4,000 meters.
- **Wintering Grounds:** Found across the Indo-Gangetic plains, Northeast India (Brahmaputra riverine habitats), and peninsular India. Key sites include **Asan Barrage** (Uttarakhand) and **Chilika Lake** (Odisha).
- **Preferred Habitat:** Inland water bodies like lakes, reservoirs, and rivers with mudflats.
- **Physical Features:** Distinctive **orange-brown (ruddy)** body with a creamy-white head. Males develop a **narrow black neck-ring** during the breeding season.
- **Flight:** Striking contrast in wings—white coverts and black flight feathers, visible only when flying.
- **Behavior:** Largely **nocturnal** and highly vocal with a loud, nasal honking call.
- **Diet:** Omnivorous (feeds on grasses, aquatic plants, and small invertebrates).
- **Generally monogamous**, with long-term pair bonds.
- Clutch size ranges from **8–13 eggs**.



2.9 Karbi Anglong Ginger

- **GI Tag Status:** Granted **GI** tag in 2015 (along with Nadia ginger).
- **Origin:** Produced in the **Karbi Anglong** hill district of **Assam**.
- **Key Varieties:**
 - **Nadia:** High yield, consumer favorite for fresh use.
 - **Aizol:** Higher oil/oleoresin content, preferred for industrial processing.
- **Nodal Agency:** North Eastern Regional Agricultural Marketing Corporation.
- **Unique Characteristics**
 - **High Oleoresin Content**
 - **Low Fiber.**



- **Soil Type:** Prefers well-drained **sandy-loam** or **lateritic** soils found in the Karbi Hills.
- **Terrain:** Cultivated on hill slopes, often using **Jhum (Shifting Cultivation)** or terrace farming techniques.
- **Climate:** Requires high humidity and moderate to heavy rainfall (typical of the Northeast monsoon).
- **Sowing Season:** Usually April–May; harvested between December–February.
- **Export Potential:** Major exports to the **UAE, Germany, and USA**. Under the "**One District One Product**" (**ODOP**) scheme, Karbi Anglong is being developed as a global ginger hub.
- **Livelihood:** It is the primary cash crop for the **Karbi** and **Kuki** tribes, crucial for the socio-economic stability of the Autonomous Hill Council region.

2.10 Oleum Gas

- Also known as **Fuming Sulfuric Acid**. It is not a single compound but a solution of **Sulfur Trioxide (SO₃)** dissolved in **Concentrated Sulfuric Acid**.
- **Chemical Formula:** Often represented as **H₂S₂O₇** (Pyrosulfuric acid) or **H₂SO₄.xSO₃**.
- **Production:** Produced during the **Contact Process** (industrial method for making sulfuric acid). SO₃ is absorbed into H₂SO₄ to form Oleum, which is then diluted with water to get the desired concentration of sulfuric acid.
- **The "Fuming" Nature:** When exposed to air, the dissolved SO₃ gas escapes and reacts with atmospheric moisture to form a **dense white mist** of tiny sulfuric acid droplets. This is the "gas" or smoke seen during leaks.
- **Environmental & Health Impact**
 - **Corrosivity:** It is a powerful **dehydrating agent**
 - **Health Hazards:** Inhalation causes pulmonary edema (fluid in lungs), severe irritation of the respiratory tract, and can be fatal.
 - **Environmental Impact:** Leads to rapid acidification of soil and water bodies in the vicinity of a leak.
- **Properties of the Gas:**
 - **Appearance:** It appears as dense, white cloudish smoke when leaked into the air.
 - **Freezing Point:** Its freezing point varies strongly with concentration; it can be solid at room temperature or remain liquid as low as zero degree.
 - **Dehydration:** It is an extremely strong dehydrating agent, capable of pulling water elements out of sugars to leave pure carbon (the **carbon snake reaction**).
- A major oleum gas leak at Bhageria Industries Ltd in Boisar, Maharashtra, forced the evacuation of over 2,000 residents, including 1,600 students.



2.11 Shtil Missiles

- **Type:** Shtil is a ship-based surface-to-air missile (SAM) system designed to intercept aircraft, helicopters, anti-ship missiles, and other aerial threats targeting naval vessels.
- **Origin:** Russian (Naval version of the **Buk** missile family; NATO name: **SA-N-12 'Grizzly'**).
- **Launch System:** Features a **Vertical Launch System (VLS)**.
- The Ministry of Defence signed ₹5,083-crore defence contracts to strengthen India's maritime security, including procurement of Shtil surface-to-air missile systems for frontline Indian Navy warships.
- **Key features:**
 - **Medium-range naval SAM** system capable of engaging aircraft, UAVs, and anti-ship missiles.
 - **All-weather operational capability**, enabling engagements day and night in complex maritime environments.
 - **Rapid reaction time** for quick interception of incoming aerial threats.
 - **Integration with naval radar and fire-control** systems for improved target tracking and engagement.



2.12 Mark-48 Torpedo

- **Type:** Exclusively **submarine-launched** Heavyweight Torpedo (HWT).
- **Origin:** United States (Introduced in 1972).
- **Dimensions:** 21 inches (533 mm) in diameter; ~19 feet in length.
- **Propulsion:** Piston engine using **Otto Fuel II** (a liquid monopropellant).
- **Range & Speed:** Officially "greater than 5 miles" and "greater than 28 knots"
- **Dual-Role Capability:** Designed for both **Anti-Submarine Warfare (ASW)** and **Anti-Surface Warfare (ASuW)**.
- **Advanced Guidance: Wire-Guided:** Can be steered in real-time by the launching submarine via a thin wire.
- **Acoustic Homing:** Uses both **active** (pings) and **passive** (listening) sonar.
- **Autonomous Mode:** If the guidance wire breaks, the torpedo switches to its onboard logic to find the target.
- **"Keel-Breaking" Lethality:** Unlike missiles that hit the waterline, the Mk-48 is designed to detonate **under the keel** (bottom) of a ship. The resulting gas bubble snaps the ship's structural spine, causing it to split and sink rapidly.
- **Operational Milestone:** In March 2026, a Mk-48 was reportedly used by a U.S. submarine to sink the Iranian frigate *IRIS Dena* in the Indian Ocean—the first combat sinking of an enemy ship by a U.S. torpedo since WWII.



2.13 World Obesity Atlas 2026

- The World Obesity Atlas 2026, released by the World Obesity Federation.
- **Childhood Focus:** The 2026 report specifically focuses on children and adolescents (aged 5–19),

noting that childhood obesity is rising faster than adult obesity.

- **Prevalence:** More than **1 in 5 (20.7%)** children globally now overweight or obese, a significant jump from 14.6% 2010.
- **Economic Transition:** The fastest growth in obesity is occurring in **low- and middle-income countries**.
- **Milestone:** For the first time, the number of school-age children living with obesity globally has **surpassed** those who are underweight.
- **India-Specific Findings**
 - India is at the epicenter of this "silent emergency," facing a "**double burden**" of persistent undernutrition alongside surging overnutrition.
 - **Global Ranking:** India now ranks **2nd globally** in the number of children living with overweight and obesity, trailing only China.
- **Current Scale (2025/26 data):**
 - **41 million** school-age children have a high BMI.
 - **14 million** are living with clinical obesity.
 - **2040 Projections:** By 2040, India is expected to have **56 million** overweight/obese children, with 20 million of them being obese.



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2.14 Dusky Eagle-Owl

- **Appearance:** A large, powerful owl known for its **prominent ear tufts** (horned appearance) and **yellow eyes**.
- **Coloration:** Unlike the Great Horned Owl, it is grayish-brown with dark streaks and has a distinctive **sooty or "dusky"** plumage.
- **Size:** Approximately 48–58 cm in length.
- **Range:** Found across South and Southeast Asia (India, Pakistan, Nepal, Bangladesh, Malaysia, and Thailand).
- **Habitat:** Prefers **thickly forested areas**, well-wooded plains, and old plantations. It is often found near **water bodies** (rivers and lakes) and is frequently associated with large, old trees like Banyan or Peepal.
- **Unique Trait:** Unlike many other owls, it is **partially diurnal**, meaning it is often active and calls during the day, especially in cloudy weather.
- **IUCN Red List: Least Concern.**
- **CITES:** Appendix II.
- **Wildlife Protection Act (India), 1972: Schedule II.**
- **Apex Predator:** Plays a vital role in controlling populations of rodents, birds (including crows and parakeets), and small reptiles.
- **Nesting:** It does not build its own nest; it typically takes over the **abandoned stick nests** of large birds like vultures or eagles.
- **Breeding Season:** Primarily during the **monsoon** (November to April in North India), which is unique as most birds breed in spring.



2.15 Finland

- Finland is a Nordic country in Northern Europe, known for its strong welfare system, advanced technology sector, and high environmental standards.
- **NATO Membership:** Finland became the **31st member of NATO** in, 2023.
- **Border Dynamics (2026):** Finland shares **1,340 km border** with Russia.
- **Neighbouring Nations:** Norway, Russia, Sweden.
- Surrounded by water bodies such as the Gulf of Finland and Gulf of Bothnia.
- **Nuclear Policy Shift:** In March 2026, the Finnish government proposed lifting its long-standing ban on **nuclear weapons** on soil to align with NATO's deterrence strategy.
- **DCA with USA:** Finland has signed a **Defence Cooperation Agreement (DCA)** with the U.S., allowing the American military access to several Finnish bases.
- **"Land of a Thousand Lakes":** It actually has about **188,000 lakes** (Lake Saimaa is the largest).
- **Forestry:** It is Europe's most heavily forested country (covering ~75% of its land area).
- **Arctic Council:** A key member of the Arctic Council. One-third of Finland lies north of the **Arctic Circle**.
- **Precambrian Shield:** The country sits on the **Baltic Shield**, characterized by ancient granite rocks.



2.16 Golestan Palace

- The **Golestan Palace** (Palace of Flowers) is a masterpiece of the Qajar era located in **Tehran, Iran**.
- **UNESCO World Heritage Site:** Inscribed in **2013**.
- **Era:** It is the former royal directorial complex of the **Qajar Dynasty** (1789–1925).
- **Evolution:** While the foundations date back to the Safavid era (16th century), it reached its current form in the 19th century.
- **Political Role:** It was the seat of government and the residence of the Qajar family. It also hosted the coronations of the **Pahlavi kings**.
- Major reconstruction occurred during the reign of **Naser al-Din Shah in the 19th century**, giving the palace its current form
- **Architectural Style: "The Synthesis"**
 - The palace is a prime example of the integration of **Persian craftsmanship** with **European architectural influences**.
 - **Hybridity:** It represents a turning point in Iranian art, where traditional Persian elements (mirror work, glazed tiles) met Western techniques (photography, painting styles, neo-classical motifs).
 - The palace consists of **17 structures**, including palaces, museums, halls, and gardens built



largely during the Qajar period.

2.17 Project HANUMAN

- Launched by the Andhra Pradesh government, this project is a technology-driven response to rising human-wildlife conflicts.
- **Full Name:** Healing and Nurturing Units for Monitoring, Aid and Nursing of Wildlife.
- **Context:** Aimed at protecting forest-fringe villages in districts like Chittoor and Srikakulam from elephant and leopard incursions.
- **Key Components:**
 - **Fleet:** Deployment of over 100 GPS-enabled vehicles, including 93 **Rapid Response Vehicles** specialized **Wildlife Ambulances**.
 - **AI Monitoring:** Piloting AI-based early warning systems to track animal movements near human settlements.
 - **Rescue Centers:** Establishment of four major Wildlife Rescue and Treatment Centres at Visakhapatnam, Rajamahendravaram, Tirupati, and Byrluti.
 - **Enhanced Compensation:** Ex-gratia for human loss increased from ₹5 lakh to **₹10 lakh**.
 - **Village-level Volunteer Teams** – Creation of 'Vajra' (Wildlife Rakshak) teams to handle snake rescues and minor wildlife incidents in villages.
 - **HANUMAN Digital App** – A digital platform for wildlife monitoring, reporting conflicts, and coordination with authorities.
 - **Use of Kumki Elephants** – Deployment of trained elephants to manage and drive away wild elephant herds in conflict-prone districts.
 - **Inter-departmental Coordination** – Collaboration between forest, police, agriculture, revenue, horticulture, and Panchayati Raj departments.

Project HANUMAN: Andhra Pradesh's Tech-Driven Strategy to Prevent Human-Wildlife Conflict



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2.18 Thirumangai Alvar

- Thirumangai Alvar was the **12th and last of the Alvar saints**. The Alvars were Tamil poet-saints **who devoted their lives to Lord Vishnu in the Vaishnava tradition** during the 8th century CE.
- Originally named Kaliyan, he was born into the **Kallar community** (a warrior caste) and **served as a military commander** and chieftain (earning the title Thirumangai Mannan) under the Chola empire. He was a skilled archer.
- Prolific Literary Contribution: **He is renowned as "Narkavi Perumal"** (excellent poet) and authored over 1,000 verses, including major works like Periya Thirumozhi, Thirunedunthandakam, and Thirukkuruthandakam, which are part of the sacred Nalayira Divya Prabandham.
- Temple Legacy: He **contributed to the enrichment of the Srirangam temple** and is said to have visited all 108 Divya Desams (sacred Vishnu temples).
- He has **built one of the walls of Srirangam Sri Renganathaswamy Temple** (Tiruchirapalli, Tamil Nadu) and composed poems on Lord Sri Ranganathan.
- **Spiritual Significance:** He is **considered an incarnation of Vishnu's Sharanga bow**, and his life story highlights the theme of transformation from worldly materialism to ultimate devotion through bhakti.
- The **Ashmolean Museum, Oxford** returned a 16th-century bronze statue of **Saint Thirumangai**



Alvar to the Government of India after research established that it originated from the **Soundararaja Perumal temple** in Tamil Nadu.

2.19 Kappatagudda Wildlife Sanctuary

- **Location:** Situated in the **Gadag district** of Karnataka.
- **Landscape:** Characterized by dry deciduous forests, scrublands, and vast grasslands.
- **Hydrology:** It acts as the primary **catchment area for the Tungabhadra River** in the region.
- **Climate Feature:** The area experiences high-velocity winds year-round, making it a major hub for **wind energy** (hosting several windmills).
- **Area Expansion:** The **Karnataka High Court** directed the state government to include an additional **55 sq. km** of left-out reserve forest into the sanctuary.
- **ESZ Status:** The Union Government recently finalized the **Eco-Sensitive Zone (ESZ)** around the sanctuary to prohibit mining and stone-crushing activities in its vicinity.
- Kappatagudda is unique because it was primarily declared a sanctuary to protect its **wild flora**.
- **Flora:** Known as a "treasure trove" of medicinal plants, it houses over **400 species of medicinal herbs**.
- **Fauna: Antelopes:** It is one of the few places where three distinct antelope species coexist: **Blackbuck** (plains), **Chinkara** (slopes), and **Four-horned Antelope/Chousingha** (hilltops).

2.20 United Nations Convention on the Law of the Sea (UNCLOS)

- UNCLOS divides the ocean into specific zones based on distance from the **"Baseline"** (usually the low-water line along the coast).

Zone	Distance	Sovereignty/Rights
Internal Waters	Landward of baseline	Full sovereignty (like land). No right of "Innocent Passage."
Territorial Sea	Up to 12 nautical miles	Full sovereignty. Foreign ships have the right of Innocent Passage .
Contiguous Zone	Up to 24 nautical miles	Limited jurisdiction to prevent infringement of customs, fiscal, immigration, or sanitary laws.
Exclusive Economic Zone	Up to 200 nautical miles	Sovereign rights for exploring/exploiting resources (fishing, oil, minerals). Others have freedom of navigation/overflight.
High Seas	Beyond 200 nm	Beyond national jurisdiction. "Common Heritage of Mankind."

- **Members:** 168 parties including the European Union.
- **Major maritime powers like India are parties, while the United States has signed but not ratified the convention.**
- **International waters**, also called the High Seas, are areas of the ocean beyond the Exclusive Economic Zone (200 nautical miles) of any coastal state.
- **Features associated with International Waters:**
 - **Freedom of Navigation** – Ships of all states can sail freely without interference.
 - **Freedom of Overflight** – Aircraft can pass over high seas without restriction.
 - **Peaceful Use Principle** – Under **Article 88 of UNCLOS**, high seas must be reserved for peaceful purposes.
- The latest strike off Sri Lanka has raised questions about the legality of a military strike in international waters.

- **Shared Global Commons** – No country can claim sovereignty over international waters.
- **Limited Use of Force** – Military action in international waters is generally restricted unless self-defence or UN Security Council authorization exists.
- **Common Heritage Principle** – Resources in the seabed beyond national jurisdiction are treated as the common heritage of mankind.

2.21 The Striped Hyena

- **New Proposal:** In March 2026, **Tajikistan and Uzbekistan** formally proposed including the Striped Hyena in **Appendix I and the Convention on Migratory Species (CMS)**.
- **IUCN Red List: Near Threatened (NT).**
- **Wildlife Protection Act (WPA), 1972: Schedule I**
- **CITES:** Appendix III (in certain countries like Pakistan).
- **The Only One:** It is the **only hyena species found in the Indian subcontinent**. (Spotted, Brown, and Aardwolf are mostly African).
- **Indian Range:** Primarily found in arid and semi-arid regions. High densities are seen in **Rajasthan, Gujarat (Kutch/Velavadar), Maharashtra (Kadbanwadi), and Madhya Pradesh**.
- **Global Range:** Found across North and Sub-Saharan Africa, the Middle East, Caucasus, Central Asia, and the Indian Subcontinent.
- **Preferred Environments:** They thrive in arid and semi-arid regions, including savannas, grasslands, semi-deserts, open woodlands, and rocky mountainous terrain.
- **Nocturnal & Solitary:** Unlike the social "clans" of the Spotted Hyena, Striped Hyenas are mostly solitary or live in small family units.
- **The "Mane":** They possess a prominent **dorsal crest** of long hair that they can erect to appear 38% larger when threatened.
- **Diet:** Primarily a **scavenger**. Their powerful jaws can crush bones (to get to the marrow) that other carnivores leave behind. They also eat fruit (melons, dates) and human refuse.
- **Communication:** They do **not** "laugh" like spotted hyenas; their vocalizations are limited to soft growls and snorts.



II of

2.22 Gravity Bomb

- **Mechanism:** A bomb that does not have a propulsion system (like a rocket motor or jet engine). It relies entirely on the **aircraft's speed and altitude** at the moment of release, following a ballistic trajectory dictated by gravity.
- **Physics:** Its impact energy is a function of its mass and the square of its velocity
- **Composition:**
 - **The Warhead (Body):** A streamlined steel casing filled with high explosives (such as Tritonal or Composition H6). The current U.S. campaign utilizes the Mark 80 series (Mk 82, Mk 83, and Mk 84).
 - **The Fuse:** A device (mechanical or electronic) located in the nose or tail that triggers the explosion upon impact or at a specific altitude.
 - **The Guidance Kit (JDAM):** A modern add-on tail section that includes GPS receivers & steerable tail fins to turn a dumb bomb into a smart precision weapon.



- **Working Principle**

- **Release:** The pilot flies the aircraft to a specific release point. Once dropped, the bomb begins a free-fall trajectory.
- **Ballistics:** Its path is initially dictated by the speed and altitude of the aircraft, combined with gravity and aerodynamics.
- **Guidance Correction:** In the modern precision version, the JDAM tail kit uses GPS coordinates to adjust the steerable fins during flight, gliding the bomb toward the target.
- **Impact:** The bomb strikes the target, and the fuse detonates the explosive fill, creating a blast and fragmentation effect.

- **Key Features:**

- **Cost-Efficiency:** They are significantly cheaper than missiles.
- **Versatility:** They come in various weights for different targets
- **High Volume:** Because they are inexpensive and easy to transport.

2.23. Mother-to-Child Transmission of HIV & Syphilis Eliminated by Denmark

- Denmark is the first European Union member state to achieve this dual validation.
- *Note:* **Cuba** was the first country in the world to receive this validation in 2015.
- **Elimination of MTCT:** Mother-to-Child Transmission (MTCT) is the spread of infections like HIV and syphilis from a mother to her baby during pregnancy, childbirth, or breastfeeding, which without intervention can lead to infant infections, stillbirths, neonatal deaths, or congenital diseases.
- **Criteria of MTCT Elimination:** WHO's criteria for EMTCT include reducing mother-to-child transmission rates to below 50 per 100,000 live births and ensuring over 95% of pregnant women receive testing and treatment.
- **Global Context:** Denmark joins over 20 countries and territories worldwide validated by WHO for EMTCT or progressing toward certification. These include nations in the Caribbean (e.g., Anguilla, Antigua), South America (e.g., Brazil), Africa (e.g., Botswana), and Asia (Malaysia, Maldives).
- **WHO's Triple Elimination Strategy:** WHO promotes triple elimination of HIV, syphilis, and Hepatitis B
- Maldives became the first to achieve the full "triple elimination" (HIV, Syphilis, and Hepatitis B).

2.24. Levant (PYQ and in News)

- The term "Levant" (from the French *lever*, meaning "to rise," referring to the rising sun in the East) refers to a large area in the **Eastern Mediterranean**. Geographically, it serves as a land bridge between Africa, Asia, and Europe.

- In contemporary terms, the Levant typically includes: **Cyprus, Israel, Jordan, Lebanon, Palestine, Syria, Turkey** (specifically the Hatay Province and the southern coast)
- Physical boundaries is crucial for map-based questions:
 - **To the West:** The **Mediterranean Sea**.
 - **To the East:** The **Syrian Desert** and Mesopotamia (Iraq).
 - **To the North:** The **Taurus Mountains** (separating it from the Anatolian Plateau).
 - **To the South:** The **Arabian Desert** and the **Sinai Peninsula**.
- **Fertile Crescent:** The Levant forms the western wing of the Fertile Crescent, the "cradle of civilization."
- **The Levant Basin:** A focal point of modern maritime boundary disputes involving Cyprus, Turkey, Greece, and Israel over energy rights.
- **Levantine Corridor:** A key prehistoric migration route for humans moving out of Africa into Eurasia.



2.25 Mascots for Census 2027

- The government introduced two mascots to serve as the "friendly, relatable faces" of the Census 2027 campaign:
 - **Pragati:** Represents a **female enumerator**.
 - **Vikas:** Represents a **male enumerator**.
- **Symbolism:** They represent the **equal participation of women and men** in nation-building and align with the vision of *Viksit Bharat* (Developed India) by 2047.
- **Role:** They will be used in public outreach to encourage citizen participation and explain the census objectives across diverse sections of society.
- **Key Features of Census 2027**
 - **First Digital Census:** Data will be collected via secure mobile applications and digital platforms, completely replacing traditional paper-based enumeration.
 - **Self-Enumeration:** For the first time, citizens can fill in their own household details online through a secure portal before the enumerator's visit.
 - **Caste Enumeration:** It will include a comprehensive count of castes for the first time in a decennial census since 1931.
 - This is the **world's largest census**.
- **Digital Tools (Developed by C-DAC):**
 - **HLBC (Houselisting Block Creator):** Uses satellite imagery for digital mapping of census blocks.
 - **CMMS (Census Management and Monitoring System):** A centralized dashboard for real-time tracking of progress by officials.



2.26 Kurds

- **Ethnic Identity:** An Iranian-speaking ethnic group indigenous to the Middle East.

- **Largest Stateless Nation:** With an estimated population of 30–45 million, they are often cited as the world's largest ethnic group without a sovereign state of their own.
- The term **Kurdistan** refers to the contiguous mountainous region where Kurds form the majority. It is not an independent country.
- **Origin and History:**
 - The Kurds trace their ancestry back thousands of years to the ancient tribes of the Zagros Mountains.
 - **Post-WWI Betrayal:** Their modern stateless status stems from the aftermath of WW I. The 1920 Treaty of Sèvres initially promised an independent Kurdish state.
 - **Treaty of Lausanne (1923):** This treaty superseded Sèvres, partitioning the Kurdish homelands among the newly formed borders of Turkey, Iraq, and Syria, leaving the Kurds as minorities in every country they inhabited.
- The traditional Kurdish homeland, Kurdistan, is spread across four main countries of **West Asia: Turkey, Iran, Iraq, and Syria (Armenia also hosts Kurds).**



2.27 Su-30MKI

- **Origin:** Developed by Russia's **Sukhoi**, but manufactured under license by India's **Hindustan Aeronautics Limited (HAL)** at its Nashik facility.
- **Super Maneuverability:** It features **Thrust Vectoring Control (TVC)** and canards, allowing it to perform extreme maneuvers like the *Pugachev's Cobra*.
- The **Sukhoi Su-30MKI** is a **heavy, all-weather, long-range, two-seater multirole air superiority fighter**. It serves as the primary strike and air defense platform for the Indian Air Force, capable of performing complex missions ranging from ground attack to maritime strikes.
- **The "Super Sukhoi" Upgrade (2025–2026):** To keep the fleet relevant until 2055–2060, India has launched a massive **₹60,000–₹63,000 crore** modernization program.
- **Virupaksha Radar:** The aging Russian PESA radar is being replaced with the indigenous **Virupaksha AESA (Active Electronically Scanned Array)** radar
- **Indigenous "Brain":** A new, more powerful Indian-made **Mission Computer** will handle the data processing for modern electronic warfare (EW).
- **Indigenization Goal:** The project aims to increase the indigenous content of the aircraft to **~78%**.
- The Su-30MKI is unique for its massive **8,000 kg payload** capacity.
- **BrahMos-A:** It is the only aircraft in the world capable of air-launching the **BrahMos supersonic cruise missile**.



2.28 Very Low Earth Orbit (VLEO) Satellite Systems

- State-run defense major Bharat Electronics Limited and space-tech startup Bellatrix Aerospace have signed an MoU to jointly develop Very Low Earth Orbit (VLEO) satellite systems.
- **Altitude:** VLEO typically refers to orbits between **100 km and 450 km** above Earth's surface.
- **Distinction from LEO:** While standard Low Earth Orbit (LEO) extends up to 2,000 km, VLEO operates in the "fringes" of the Earth's atmosphere (the thermosphere).
- **The "Kármán Line" Connection:** VLEO begins just above the Kármán line (100 km), the internationally recognized boundary of space.
- **Aim:**
 - To build indigenous capabilities in VLEO satellite platforms.
 - To develop integrated satellite solutions for both strategic (defense) and civilian applications.
 - To combine PSU manufacturing depth with the agility of a deep-tech startup to accelerate space innovation.
- **Key Features of the Technology:**
 - **Superior Imaging:** Proximity to Earth allows for sub-meter resolution imaging with smaller, less expensive optical sensors.
 - **Ultra-Low Latency:** Signals have a shorter distance to travel, making it ideal for real-time strategic communication and high-speed internet.
 - **Reduced Launch Costs:** Deploying to a lower altitude requires less fuel/energy, potentially lowering the cost of putting assets into space.
 - **Self-Cleaning Orbit:** If a satellite fails, the atmospheric drag naturally pulls it down into the atmosphere to burn up, significantly reducing space debris.



2.29 Open Market Operations (OMO)

- OMO is a quantitative instrument of monetary policy that **involves the buying and selling of government securities** (G-Secs), including dated securities and T bills.
- **Purchase of securities injects liquidity** into the banking system (expansionary effect), while **sale of securities absorbs liquidity** (contractionary effect), thereby influencing the money supply.
- **Objective:** To regulate the money supply (liquidity) in the economy and influence short-term interest rates.
- **Authority: Only the RBI conducts** OMOs in India.
- **Key Concepts & Terms**
 - **Outright OMO:** Permanent purchase or sale of securities to adjust liquidity on a long-term basis.
 - **Repo/Reverse Repo:** These are technically "repurchase agreements" (temporary OMOs) under the Liquidity Adjustment Facility (LAF).
 - **Operation Twist:** A specific type of OMO where the RBI simultaneously buys long-term G-Secs and sells short-term G-Secs.
 - **Goal:** To lower long-term interest rates (yields) without changing the total money supply.
 - **Sterilization:** When the RBI uses OMO to offset the impact of large foreign capital inflows. For example, if RBI buys USD (injecting Rupees), it might sell G-Secs (absorbing Rupees) to keep the money supply stable.



2.30 MAGHREB

- **Etymology:** Derived from the Arabic word *al-Maghrib*, meaning "**the West**" or "the place where the sun sets."
- **Modern Definition (Arab Maghreb Union - AMU):** Includes the 5 countries: **Morocco, Algeria, Tunisia, Libya, Mauritania and Western Sahara.**
- **Boundaries:** **North:** Mediterranean Sea, **West:** Atlantic Ocean., **South:** Sahara Desert (and the Sahel region) and **East:** Bordered by Egypt
- **Key Mountain Range:** The **Atlas Mountains** (stretching across Morocco, Algeria, and Tunisia). It acts as a climatic barrier between the Mediterranean and the Sahara.
- **Water Bodies:** Strait of Gibraltar (separates the Maghreb from Spain/Europe).
- **Arab Maghreb Union (AMU):** Established in 1989 to promote economic and political unity.
- *Note:* The AMU is largely **dormant** due to the long-standing rivalry between Algeria and Morocco (mainly over the Western Sahara issue).
- **Strategic Importance:** The region is a major supplier of **Natural Gas and Oil** (especially Algeria and Libya) and **Phosphates** (Morocco) to Europe.



2.31 Raisina Dialogue 2026

- **Organizers:** Jointly organized by the **Ministry of External Affairs (MEA)** and the **Observer Research Foundation (ORF).**
- **Nature:** A multi-stakeholder, cross-sectoral conference (often compared to the *Munich Security Conference* or Singapore's *Shangri-La Dialogue*).
- **Venue:** New Delhi (Named after Raisina Hill, the seat of the Government of India).
- **2026 Edition: Chief Guest: Alexander Stubb**, the President of **Finland.**
- The theme for 2026 is "**Samskāra: Assertion, Accommodation, Advancement.**" *
 - **Assertion:** Focuses on nations strengthening sovereignty over borders, data, and economic systems.
 - **Accommodation:** Refers to the rise of flexible coalitions (plurilateralism) over rigid, slow-moving multilateral institutions.
 - **Advancement:** Emphasizes the role of AI, digital public infrastructure (DPI), and green transitions.
- **DPI as a "Manhattan Project":** India's Digital Public Infrastructure was highlighted as a global model for financial and social inclusion.
- **Multipolarity vs. Multilateralism:** Discussions centered on how power is now distributed across regions, ending the era of a few "hegemons" dictating global deals.



2.32 Nirbhaya Nisha Initiative

- The **Nirbhaya Nisha Initiative** is a women's safety program launched by the **Kerala Police**
- **Core Objective:** To ensure safe and independent night travel for women between **9:00 PM and 5:00 AM**.
- The initiative is designed to provide a "safety net" for women commuting for work (especially night shifts), education, or medical emergencies.
- **Rapid Response:** Integration of the **112 National Emergency Helpline** and the SOS feature of the **Kerala Police 'Pol-App'**.
- **Force Deployment:** The launch included the flagging off of 28 **Force Gurkha jeeps** specifically driven by women police personnel to assist female travelers.
- **Nirbhaya Nisha Safety Poles:** Strategically placed in busy urban areas, these poles are equipped with **AI-enabled cameras** and **panic alarm buttons**.
- **Facial Recognition:** Used to identify potential offenders in crowded areas.
- **Hotspot Analysis:** Data-driven identification of vulnerable locations for increased patrolling.
- **Pink Patrols:** Utilization of existing "Pink Patrol" vehicles (specialized women-only patrol units) in coordination with highway patrols and district control rooms.



2.33 Terminal High Altitude Area Defence (THAAD)

- **Origin:** Developed by the **United States** (specifically Lockheed Martin).
- **Purpose:** A transportable, ground-based system designed to intercept and destroy **short, medium, and limited intermediate-range ballistic missiles**.
- **The "Terminal" Phase:** It targets missiles in their **final stage of flight** (the descent or re-entry phase).
- **Key Technical Features**
 - **"Hit-to-Kill" Technology:** Unlike traditional systems that use explosive warheads, THAAD interceptors **do not carry explosives**. They destroy the target through **pure kinetic energy**.
 - **Benefit:** This minimizes the risk of detonating conventional or nuclear warheads and reduces debris.
 - **Dual-Atmospheric Capability:** It is the only U.S. system capable of intercepting missiles both **inside (endo-atmospheric)** and **outside (exo-atmospheric)** the Earth's atmosphere.
 - **The Radar (AN/TPY-2):** It uses a powerful X-band radar that can detect and track threats at very long ranges (up to 3,000 km).
 - **Engagement Range:** It can engage targets at ranges of **150–200 kilometers**



2.34 LaBL 2.0

- **The Energy and Resources Institute (TERI) launched LaBL 2.0 (Lighting a Billion Lives 2.0)** in New Delhi to expand decentralized renewable energy solutions across India.
- LaBL 2.0 is a **next-generation decentralised renewable energy (DRE)** programme aimed at expanding clean energy access while enabling productive rural livelihoods and climate action.
- **Green Livelihoods:** Specifically targets women-led enterprises and rural micro-units to reduce migration to cities.
- To integrate climate finance, carbon markets, and sustainable development goals into grassroots energy projects.
- **Digital Carbon Marketplace:** TERI partnered with the Global Carbon Council to create India's first digital marketplace for household-level carbon credits. This allows small rural projects to earn money by selling carbon offsets on global markets.
- The initiative is frequently linked in official documents to **three major national and global goals:**
 - **SDG 7:** Affordable and Clean Energy for all.
 - **Net Zero 2070:** India's commitment to climate neutrality.



2.35 Essential Commodities Act (ECA)

- The Act was designed to ensure the easy availability of essential items to consumers and protect them from exploitation by unscrupulous traders.
- **Regulates:** Production, supply, and distribution.
- **Prevents:** Hoarding and black-marketing.
- **Price Control:** The government can fix the Maximum Retail Price (MRP) of any packaged commodity declared "essential."
- The Act itself **does not provide a permanent list** of essential commodities.
- Gives the **Central Government** the power to add or remove a commodity from the schedule if it is satisfied it is necessary in the public interest.
- While the **Center** makes the list, the **State Governments** are the ones who implement the orders (conducting raids, checking stocks, etc.).
- The **government can impose a limit on how much stock** a trader or wholesaler can hold. Exceeding this is a criminal offense.
- Authorities **can seize the excess stock** and the vehicles used to transport it.
- **Penalties:** Imprisonment ranges from **3 months to 7 years**, plus fines.
- **Recent Context: The 2020 Amendment**
 - **The Trigger:** Stock limits on these items can now only be imposed under extraordinary conditions (war, famine, extraordinary price rise etc.)
 - **Price Rise Trigger:** 100% increase in retail price of horticultural produce.
 - 50% increase in retail price of non-perishable food items (over the preceding 12



months or 5-year average).

2.36 Mashriq

- **Etymology:** Derived from the Arabic root *sh-r* (rise), it literally means "**the Place of Sunrise**" "**the East.**"
- **Location:** Refers to the eastern part of the Arab world, primarily located in Western Asia and Northeast Africa.
- **Core Countries:** Traditionally includes **Egypt, Jordan, Lebanon, Palestine, Syria, and Iraq.**
- **Broad Definition:** Often extended to include the entire Arabian Peninsula (Saudi Arabia, UAE, Kuwait, Qatar, Bahrain, Oman, and Yemen) and Sudan.
- **The Divide:** The boundary between the Mashriq and the Maghreb is typically placed at the **Gulf of Sidra (Sirtica)** in Libya. Eastern Libya (Cyrenaica) is often grouped with the Mashriq.



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2.37 The Blue Book

- "**The Blue Book**" refers to the confidential manual that outlines the security and protocol arrangements for the highest constitutional dignitaries in India.
- It is a protocol guide issued by the **Union Ministry of Home Affairs (MHA)**.
- **Scope:** It lists the detailed procedures, logistics, and security protocols for the visits of the President, Vice-President, and Prime Minister within India.
- **Maintenance:** Copies are numbered and circulated only to relevant authorities. At the district level, the manual is kept in the custody of the DM & SP.
- **Aim:**
 - To ensure uniform protocol, security arrangements, and administrative coordination during visits of high constitutional dignitaries.
 - To maintain dignity, security, and smooth conduct of official engagements of the President, Vice-President, and Prime Minister.
- **Key Features: Reception Protocol, Security Arrangements, Advance Approval of Protocol Lists, Logistical Guidelines, Table of Precedence** etc.



2.38 Proba-3 mission

- **Agency:** European Space Agency (**ESA**).
- **Launch Partner:** ISRO
- **Name:** PROBA stands for *Project for On-Board Autonomy*. It is the third in this series of technology-demonstration missions.
- **The "World First" Feature: Precision Formation Flying-** The mission consists of **two separate satellites** that act as a single "virtual" giant instrument.
- **The Two Satellites:**



- **Occluder Spacecraft (OSC):** Acts as a shield to block the Sun's bright disk.
- **Coronagraph Spacecraft (CSC):** Carries the telescope to observe the Sun's faint outer atmosphere (Corona).
- **The Mechanism:** They fly in a rigid formation, exactly **150 meters apart**, with millimeter-level precision.
- **The Goal:** To create a **sustained artificial solar eclipse** in space. This allows for nearly 6 hours of continuous observation per orbit—something impossible during a natural eclipse on Earth, which lasts only a few minutes.
- **Significance:**
 - By studying the corona, scientists can better understand Solar Winds and Coronal Mass Ejections, which can disrupt satellite communications and power grids on Earth.
 - If successful, the formation-flying technology proven by Proba-3 will pave the way for future distributed space telescopes that are too large to be launched as a single piece.

2.39 Exercise Lamitiye

- **Nations:** India and Seychelles.
- **Frequency:** Biennial (held every two years).
- "Lamitiye" translates to "**Friendship**" in **Creole** (the local language of Seychelles).
- **Inception:** The exercise has been conducted in Seychelles since **2001**.
- In 2026 for the first time since its inception, Exercise Lamitiye has evolved from a purely Army exercise to a **Tri-Service** engagement.
- **Key fact from 2026 edition:**
 - **Indian Army:** Represented by the **Assam Regiment**.
 - **Indian Navy:** Participation includes the stealth frigate **INS Trikand**.
 - **Indian Air Force:** Deployment of a **C-130J Super Hercules** transport aircraft.
 - **Sub-conventional Operations:** Focuses on tactical drills for neutralizing threats in **semi-urban environments**.
 - **Interoperability:** Aimed at enhancing synergy between the Indian Armed Forces and the **Seychelles Defence Forces (SDF)**.
 - **Venue:** Seychelles Defence Academy, Victoria, Seychelles.



2.40 Cold Response Drill

- Lead by **NATO** (North Atlantic Treaty Organization).
- **Host Nation:** Historically hosted by **Norway**.
- **Nature:** A long-standing, biennial (every two years) military exercise.
- **The Rebrand (2024-2026):** Following the accession of **Finland** and **Sweden** into NATO, the exercise was expanded and renamed "**Nordic Response**."
- **Primary Goal:** To test the alliance's ability to defend its northern flank and operate in **extreme cold-weather conditions** and rugged Arctic terrain.
- **Scope:** A "high-intensity" drill involving land, sea, and air elements.

- **Strategic Location:** Conducted in the **Arctic Circle**, specifically in northern parts of Norway, Sweden, and Finland.
- **Article 5 Context:** It simulates a collective defense scenario under NATO's Article 5 (an attack on one is an attack on all).
- **Aim:**
 - Strengthen NATO's collective defence capability in the Arctic region.
 - Enhance interoperability among allied forces operating in harsh Arctic environments.
 - Demonstrate NATO's deterrence posture against potential adversaries near Arctic borders.
- **Key Features**
 - **Arctic Warfare Simulation** – Conducted in snow-covered mountainous terrain and freezing temperatures to test combat readiness.
 - **Large Multinational Participation** – About 25,000 troops from 14 NATO and partner countries take part.
 - **Integration with Arctic Sentry Mission** – Supports NATO's broader effort to strengthen presence in the Arctic region.
 - **Civilian Preparedness Component** – Hospitals, businesses, and public institutions participate to support military operations.
 - **Total Defence Strategy** – Norway has declared 2026 as the Year of Total Defence, emphasizing society-wide resilience.
 - **Medical and Logistics Exercises** – Includes scenarios like treating mass casualties transported from a simulated frontline in Finland.



2.41 Look Out Circulars

- A **Look Out Circular (LOC)** is an administrative notice used by law enforcement agencies in India to monitor, track, or prevent the movement of individuals—both Indian and foreign nationals—who are wanted in connection with criminal cases or are deemed a threat to national interest.
- **Issuing Authority:** Primarily issued by the **Ministry of Home Affairs (MHA)** based on requests from various "Originating Agencies."
- **Nature:** It is not an arrest warrant in itself but a directive to immigration authorities at sea and airports to stop or monitor a person.
- **Legal Basis:** There is no specific statute governing LOCs. They are issued based on **executive instructions** and guidelines provided by the MHA (dating back to 1979, with significant updates in 2010 and 2021).
- **Validity:** Usually, an LOC is valid for **one year** from the date of issue unless a request for renewal is made by the originating agency. However, if the person is a fugitive or there is a court order, it can remain active indefinitely.
- An LOC cannot be requested by just anyone. Only "Originating Agencies" can initiate them, including:
 - **Police Authorities:** Rank of Superintendent of Police (SP) or above.



- **Central Agencies:** CBI, Enforcement Directorate (ED), DRI etc.
- **Financial Institutions:** Since 2018, **Heads of Public Sector Banks** can also request LOCs against "wilful defaulters" to prevent them from fleeing the country.

2.42 SheLeadsBharat – Shakti Walk Initiative

- **Organizing Ministry:** Ministry of Women and Child Development (**MoWCD**).
- **Occasion:** Held on **March 8, 2026**, to mark **International Women's Day**.
- **Location:** **Kartavya Path**, New Delhi
- **Aim:**
 - To promote women's empowerment and leadership across sectors.
 - To celebrate Nari Shakti and women's role in nation-building and the vision of Viksit Bharat 2047.
- **Participation:** Over **3,000 women** from 200+ Ministries and Departments, including the Armed Forces, Central Armed Police Forces (CAPF), healthcare workers (ANMs), drone pilots (Namo Drone Didis), and grassroots functionaries.
- **Vision Linkage:** Directly aligned with the vision of **Viksit Bharat 2047**, emphasizing that women are not just beneficiaries but "architects" of India's progress.
- **Cultural Showcase:** Featured traditional performances by women, such as: **Dollu Kunitha** (Karnataka), **Kalaripayattu** (Kerala), **Ranchandi** (Assam), **Ghoomar** (Rajasthan).



2.43 Heatwaves

- A heatwave is considered only if the maximum temperature reaches at least **40°C for Plains** and **30°C for Hilly regions**.
- **Based on Departure from Normal**
- **Heatwave:** Departure is **4.5°C to 6.4°C** from the normal temperature.
- **Severe Heatwave:** Departure is **> 6.4°C** from the normal temperature.
- **Based on Actual Maximum Temperature**
 - **Heatwave:** Actual maximum temperature reaches **45 °C**.
 - **Severe Heatwave:** Actual maximum temperature reaches **47 °C**.
- **Coastal Regions**
 - A heatwave is declared when the departure is **4.5°C** and the actual temperature is **37 °C**.
- **Note:** For a heatwave to be "officially" declared, these criteria must be met at at least **two stations** in a Meteorological sub-division for **two consecutive days**.
- **Favorable Conditions & Causes**
 - **Anti-cyclonic Circulation:** High-pressure systems over Northwest India cause air to sink (subsidence), which warms it up and prevents cloud formation.
 - **Dry Winds:** Transport of hot, dry air from regions like Pakistan/Thar Desert.
 - **Lack of Moisture:** Sparse pre-monsoon showers and clear skies lead to maximum solar insolation.
 - **Global Factors:** **El Niño** years are historically linked to more intense and frequent heatwaves in India.
 - **Urban Heat Island (UHI) Effect:** Concrete and asphalt in cities trap heat, making urban areas significantly warmer than surroundings.

2.44 Asteroid 2024 YR4

- **Discovery** by the **ATLAS** (Asteroid Terrestrial-impact Last Alert System) telescope.
- **Classification: Apollo-type asteroid.** These are near-Earth asteroids with orbits that cross Earth's orbit, spending most of their time outside it.
- **Size:** Approximately **53–67 meters** in diameter
- **Composition:** Most likely an **S-type (stony)** asteroid, primarily composed of silicates and nickel-iron.
- **Orbital Period:** About **4 years**.
- **The "Impact Scare" & The Torino Scale**
- **Initial Risk:** Shortly after discovery, it was rated **Level 3** on the **Torino Impact Hazard Scale**.
- **The Torino Scale:** A 0 to 10 scale used by astronomers to assess the risk of Near-Earth Objects (NEOs).
- **Origin and Formation**
 - **Main Belt Suburb:** Recent studies link its origin to the central region of the Main Asteroid Belt between Mars and Jupiter.
 - **The Yarkovsky Effect:** Scientists believe it was nudged toward Earth by the Yarkovsky effect, where uneven heating from the Sun acts as a mini-thruster, gradually shifting its orbit over millions of years.
- **Context:** NASA has officially ruled out the possibility of asteroid 2024 YR4 colliding with the Moon on December 22, 2032. Refined calculations using the James Webb Space Telescope (JWST) have confirmed the object will pass at a safe distance of 21,200 km.



2.45 Savitribai Phule

- Often hailed as the "**Mother of Indian Feminism**" and India's **first female teacher**, her work laid the foundation for women's education and the anti-caste movement in India.
- **Marriage:** Married to **Jyotirao Phule** at the age of 9. He educated her at home and encouraged her to undergo teacher training.
- **Major Contributions & Institutions**
- Together with Jyotirao Phule, she established several landmark institutions:
 - **First Girls' School (1848):** Opened at **Bhide Wada, Pune**. This was the first school for girls in India started by Indians.
 - **Satyashodhak Samaj (1873):** Co-founded the "Society of Seekers of Truth." It aimed at social equity, eliminating the need for priests, and uplifting Shudras, Ati-Shudras, and women.
 - **Balhatya Pratibandhak Griha (1863):** India's first home to prevent infanticide. It provided refuge to pregnant Brahmin widows and rape victims to save them from social stigma.
 - **Mahila Seva Mandal (1852):** A platform to create awareness about women's rights and issues like widow remarriage.
 - **Caste Reform:** In 1868, she famously opened the **water tank** in her house to "untouchables," a radical act of defiance against caste purity norms.
- **Literary Works-** **Kavya Phule (1854)**, **Bavan Kashi Subodh Ratnakar (1892)**, "**Go, Get Education**".



2.46 Lake and Air Watch initiative

- The **Lake and Air Watch (LAW)** initiative is a high-tech environmental monitoring project launched by the **Government of Gujarat**. It is a prime example of using digital governance and space technology for urban sustainability.
- **Purpose:** To monitor and improve the health of urban lakes and track air quality in real-time across the state.
- **Implementing Agency:** The **Gujarat Urban Development Mission (GUDM)** under the state's Urban Development and Urban Housing Department.



Feature	Details
Lake Monitoring	Uses Satellite Imagery to track lake area changes, waste accumulation, siltation, and algae growth (eutrophication).
Air Quality (AQI)	Installation of monitoring stations in 17 Municipal Corporations and 152 Municipalities .
Digital Platform	An integrated, state-level Digital Dashboard that provides maps, trends, and operational status to multiple departments.
Automated Alerts	The system triggers automatic alerts to relevant departments if AQI levels cross safe limits or lake conditions deteriorate.

- **Budget:** An initial allocation of **₹10 crore** for implementation.
- **Technology Mix:** It uniquely combines **Remote Sensing (Satellites)** for water bodies with **Ground-based Sensors** for air quality.
- **Citizen Participation:** Environmental data is shared transparently on a public dashboard to increase awareness and community involvement.

2.47 PM SETU Scheme

- Pradhan Mantri Skilling and Employability Transformation through Upgraded ITIs.
- **Nodal Ministry:** Ministry of Skill Development and Entrepreneurship (**MSDE**).
- **Type: Centrally Sponsored Scheme** (funded by Centre, States, and Industry).
- **Total Outlay: ₹60,000 crore** over a five-year period (2025–2030).
- **International Support:** Co-financed by the **World Bank** and the **Asian Development Bank (ADB)**.
- **Core Objectives**
 - To modernize **1,000 Government Industrial Training Institutes (ITIs)**.
 - To align vocational training with **global standards** and 21st-century industry needs (Industry 4.0).
 - To transition ITIs to a "**Government-owned, Industry-managed**" (GOIM) model.
- **Key Features & Implementation Model**
 - **Hub-and-Spoke Model**
 - **Anchor Industry Partners**
 - **Governance via SPVs**
 - **National Centres of Excellence (NCoE)**



2.48 Devon Island

- **World's Largest Uninhabited Island**
- **Climate:** Classified as a **Polar Desert**. It experiences extreme cold (average annual temperature of -16°C), very low precipitation, and has almost no vegetation except in the **Truelove Lowland** area.
- **Devon Ice Cap:** The eastern part of the island covered by a massive, permanent ice cap that is 700 meters thick.
- Devon Island is globally famous as a **Mars Analog** site because its barren, rocky, and cold environment mimics the Martian surface.
- **Haughton Impact Crater:** A 23-km wide crater formed roughly 39 million years ago. Its geological features (ice-rich permafrost, impact breccia) are used to study similar craters on Mars.
 - The rocks within the Haughton Crater house microorganisms that live inside stone to survive extreme UV radiation, a process known as **endolithic colonisation**.
- **Haughton-Mars Project (HMP):** An international multidisciplinary field research project (supported by NASA and the Mars Institute) that tests technology, rovers, and human survival strategies for future Mars missions.
- **Flashline Mars Arctic Research Station (FMARS):** A simulated Mars habitat where "analog astronauts" live in isolation to study the psychological and physical stresses of long-duration space travel.
- **Neighbouring Regions:**
 - North: Separated from Ellesmere Island by the Jones Sound.
 - South: Separated from Somerset Island and Baffin Island by the Lancaster Sound.
 - West: Cornwallis Island (home to the settlement of Resolute).
 - East: Baffin Bay.



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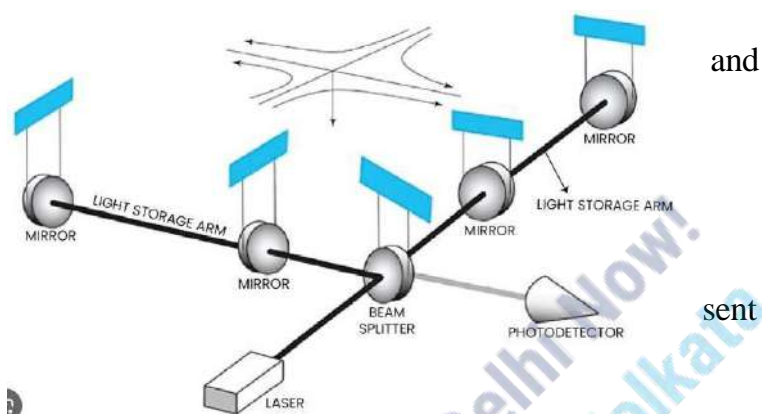
2.49 LIGO-India's 1st Gravitational Wave Observatory

- **Site: Aundha Nagnath**, Hingoli District, **Maharashtra**.
- The site was selected for its **seismic stability** (low ground vibration), which is critical for detecting waves that cause distortions smaller than the diameter of a proton.
- **Nodal Agencies:** A joint venture between the **Department of Atomic Energy (DAE)** and the **Department of Science and Technology (DST)**.

- **International Partner:** **LIGO Laboratory, USA** (operated by Caltech MIT and funded by the National Science Foundation).

- **The Instrument:** An **L-shaped interferometer** with two 4-km-long arms.

- **Working Principle:** It uses **Laser Interferometry**. A laser beam is split and down the two arms; if a gravitational wave passes through, it slightly changes the length of the arms (stretching and squeezing space-time), creating an interference pattern when the beams return.



- **Key Detection Targets:** Mergers of **Black Holes, Neutron Stars**, and supernovae.
- **Gravitational waves** are ripples in spacetime caused by the **acceleration of massive objects** and was first predicted by **Einstein's general theory of relativity** in 1915. They are a groundbreaking phenomenon in **modern physics**, allowing scientists to **observe cosmic events** that traditional telescopes cannot detect.
- **Primary Sources:** The strongest gravitational wave sources include: Binary systems of black holes or neutron stars spiraling inward and merging, Core-collapse supernova, Events from the early universe
- **Detection Challenge:** By the time they reach Earth, these waves are extraordinarily weak—typically causing fractional length changes of about 10^{-21} over kilometer-scale distances. This requires ultra-sensitive instruments like LIGO for detection.

2.50 Nutrient Transporter Protein

- A nutrient transporter protein is **a membrane protein that helps cells import nutrients** such as peptides and amino acids across the cell membrane.
- In this research, scientists engineered an **ABC transporter in bacteria (E. coli) to import peptides carrying artificial amino acids so that cells can build customised proteins.**
- **Aim:**
 - To enable cells to efficiently incorporate artificial amino acids into proteins, allowing the creation of designer proteins with new biological or chemical functions.
 - This helps overcome the difficulty of transporting synthetic amino acids across the cell membrane.
- **Functions:**
 - Scientists engineered an ABC transporter protein, which normally imports small peptides as nutrients.
 - Artificial amino acids are hidden inside tripeptides or tetrapeptides (short chains of natural amino acids).
 - The transporter carries these peptides into the cell.
 - Once inside, cellular enzymes break the peptides apart, releasing the artificial amino acids.
 - The ribosome then uses these amino acids to produce custom-designed proteins.
- **Significance:**
 - **Advanced Drug Delivery:** Designer proteins can carry drugs to precise locations inside the body.
 - **Biotechnology Applications:** Enables creation of proteins with **novel chemical properties** not found in nature.

- **Synthetic Biology Breakthrough:** Expands the genetic code beyond the natural 20 amino acids.

2.51 Black Rain in Iran

- **Definition:** A rare environmental event where rainfall becomes contaminated with dark particles like **soot, ash, and hydrocarbons**.
- **Formation:** It occurs when massive plumes of smoke and pollutants from large-scale fires (in this case, oil refineries) rise into the atmosphere and mix with moisture. When it rains, these particles are "washed out" of the sky, falling as oily, blackened water.
- **Composition:** The rain contains toxic substances including **sulfur dioxide, nitrogen oxides**, and **Polycyclic Aromatic Hydrocarbons**, which are often carcinogenic.
- **Characteristics:**
 - **Appearance:** Oily, jet-black droplets that leave permanent or difficult-to-remove stains.
 - **Odor:** A pervasive, bitter smell of burning petroleum and chemicals.
 - **Texture:** Viscous and greasy to the touch compared to normal water.
 - **Reach:** Capable of falling dozens of miles away from the actual site of the fire due to wind patterns.
- **Implications**
 - **Health Hazards:** Causes skin burns, eye irritation, and respiratory problems; prolonged exposure may lead to lung damage and cancers.
 - **Environmental Contamination:** Toxic pollutants can contaminate soil and groundwater, entering the food chain through crops and livestock.
 - **Acid Rain Effects:** Sulfur and nitrogen oxides can cause acidic rainfall, damaging buildings, infrastructure, and vegetation.



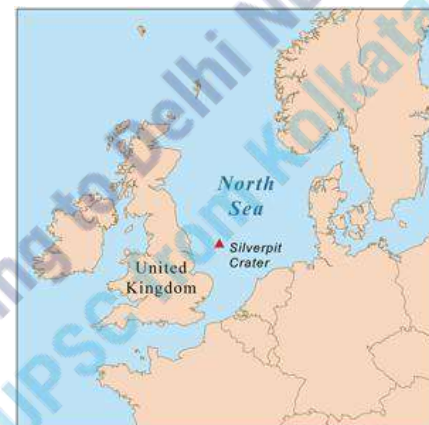
2.52 India's 1st Comprehensive Checklist of Fireflies

- Scientists compiled the **first-of-its-kind checklist** of Indian fireflies using more than 260 years of scattered scientific records, including documentation from 1881 to 2025, **identifying 92 species across 27 genera**.
- **Endemism:** Remarkably high, with **60.86%** (approx. 56 species) found exclusively in India.
- **Major Subfamilies: Luciolinae:** The dominant group (37 species), known for flashing light.
 - **Ototretinae:** 31 species (mostly non-luminescent).
- The checklist covers occurrences across **22 States and 1 Union Territory**.
- **Hotspots: Western Ghats:** Highest occurrence (**25.33%**), **North East:** Second highest (**22.66%**), **Gangetic Plain:** 17.33%.
 - **Absent Regions:** No firefly species were recorded in **Desert** and **Semi-Arid** zones due to their requirement for moisture.
- **Biology of the "Glow" - Bioluminescence:** Produced via a chemical reaction in the photophore (light-emitting organ) in the abdomen.
 - **Chemical Reaction:** The substrate **luciferin** reacts with oxygen, catalyzed by the enzyme **luciferase**, requiring ATP (energy).
 - **Efficiency:** It is a **"cold light,"** nearly 100% efficient with almost no energy lost as heat.
 - **Purpose: Adults:** Primarily for mating communication (each species has a unique flash code).



2.53 Silverpit Carter

- Located in the **Southern North Sea**, approximately 130 km (80 miles) off the coast of **Yorkshire, UK**.
- **Depth:** It lies **700 metres below the seabed** of the North Sea
- **The Cause:** A high-velocity impact of an asteroid approximately 160 metres wide.
- **The Aftermath:** The explosion created a 1.5-kilometre-high curtain of rock and water. Its collapse generated a 100-metre-high mega-tsunami.
- **Scientific Proof:** Researchers identified shocked quartz and feldspar—microscopic crystals with structural deformations that only occur under the extreme pressure of an asteroid strike.
- New research has finally confirmed that the Silverpit crater was formed by a 160-metre-wide asteroid impact approximately **43–46 million years ago**.
- **Naming:** It is named after the **Silver Pit**, a nearby seabed valley recognized by generations of North Sea fishermen.
- **Key Features:**
 - **Dimensions:** The central crater is about 3 kilometres wide.
 - **Structural Rings:** It is surrounded by a massive system of concentric circular faults (rings) spanning about 20 km in diameter.
 - **Morphology:** It features a classic central peak, a common characteristic of high-energy impact sites where the ground rebounds after being struck.



2.54 HALEU-Thorium Fuel

- **HALEU (High-Assay Low-Enriched Uranium):** Uranium enriched to between **5% and 20%** of the fissile isotope **U-235**.
- *Comparison:* Standard reactor fuel (LEU) is <5% enriched; weapons-grade (HEU) is >20%.
- **The Mix:** HALEU-Th is an advanced nuclear fuel mix combining High Assay Low Enriched Uranium (HALEU) with Thorium. A specific commercial version this fuel is called 'ANEEL' (Advanced Nuclear Energy for Enriched Life), developed by the U.S.-based company Clean Core Thorium Energy (CCTE).
- **ANEEL Fuel:** A specific commercial version of this fuel (Advanced Nuclear Energy for Enriched Life) has been developed by the US-based company **Clean Core Thorium Energy (CCTE)**, which is exploring a partnership with India's **NTPC**.
- **Production Procedure:**
 - **Enrichment:** Natural uranium is processed to increase the concentration of the fissile isotope U-235.
 - **Mixing:** To create HALEU-Th, uranium is enriched to between 5% and 20% (HALEU) and then mixed with Thorium.
 - **Fission Process:** While Thorium itself is not fissile (cannot sustain a chain reaction), the U-235 in the HALEU act as the driver to initiate and maintain the nuclear reaction, eventually converting Thorium into fissile U-233.
- **Key Features:**
 - **High Burn-up:** It offers a significantly higher energy output (up to 50–60 GWd/t)



of

- compared to natural uranium.
- **Reduced Waste:** only about 14% of what current reactors generate.
- **Non-Proliferation:** the fuel remains unsuitable for nuclear weapons.
- **Thorium Utilization**
- **Limitations:** Reactor Design Changes, Cost & Availability, Reprocessing Issues

2.55 The Centre for Development of Telematics (C-DOT)

- An autonomous Telecom Research & Development (R&D) centre under the **Department of Telecommunications (DoT)**, Ministry of Communications.
- It has transitioned from a rural switching provider to a global deep-tech hub for **5G/6G, Quantum Communications, and AI**.
- It received global recognition at the Mobile World Congress 2026 in Barcelona for its AI-driven fraud detection solution **Fraud Pro**.
- **FraudPro Recognition:** Uses AI/ML for large-scale image de-duplication and forged document detection to secure the **Sanchar Saathi** portal.
- **Key 2026 Initiatives**
 - **Samarth' Incubation Program:** Provides financial grants (up to ₹5 lakh in Phase-I) and access to C-DOT's high-tech labs in **Delhi and Bengaluru**.
 - **TRINETRA & RRU Partnership:** Establishing an 'Innovation-cum-Experience Centre' for **TRINETRA**, an AI-powered cybersecurity solution designed for Law Enforcement Agencies (LEAs).
 - **Bharat 6G Vision:** C-DOT is the lead agency for R&D in 6G. It recently received funding under the **Telecom Technology Development Fund (TTDF)** to develop 6G access points.
 - **Quantum Key Distribution (QKD):** C-DOT has developed indigenous QKD systems that can resist hacking by quantum computers, currently being tested for strategic sectors like Defense and Space.
 - **Indigenous 5G Stack:** Developed the end-to-end 4G/5G technology stack (in collaboration with TCS and Tejas Networks) that is the backbone of **BSNL's** nationwide rollout.



2.56 Kharg Island

- Located in the **Northern Persian Gulf**.
- Situated approximately 25–30 km off the Iranian coast and 55 km northwest of the port of **Bushehr**.
- A small **continental island** (around 25 sq. km) formed of coral limestone.
- **Unique Feature:** Unlike most islands in the Persian Gulf, it has **natural freshwater resources** trapped within its porous limestone, which has supported human settlement for centuries.
- It is the primary terminal for nearly **90-95% of Iran's crude oil exports**.
- **Deep-Water Advantage:** Most of the Iranian coastline is shallow; Kharg is unique because its proximity to deep waters allows **Very Large Crude Carriers (VLCCs)** and **Ultra Large Crude Carriers (ULCCs)** to dock.
- The United States has launched heavy air strikes on military targets on Kharg Island.



- **History:**

- **Ancient Period:** Archaeological evidence suggests human activity dating back to the Achaemenid period, including rock-cut tombs and remnants of early settlements.
- **18th Century:** The Dutch East India Company established a trading station, though it was later expelled by regional rulers.
- **Modern Era:** With Iran's oil boom in the 1960s, Kharg was developed into a major oil export terminal.

2.57 V.O. Chidambaranar Port

- In early 2026, **V.O. Chidambaranar Port (VOCP)** in Thoothukudi, Tamil Nadu, became the **first major port in India** to implement a **Digital Twin** platform.
- **Virtual Replica:** It is a high-fidelity, real-time digital mirror of the port's physical infrastructure, operational assets (cranes, berths), and the maritime ecosystem.
- **Integrated Tech Stack:** It utilizes a combination of **IoT sensors, GPS tracking, LiDAR mapping** (for precise spatial data), **drones**, and **AI-driven analytics**.
- **Primary Goal:** To enhance operational efficiency, safety, and sustainability through predictive maintenance and real-time data-driven decision-making.
- **Key Operational Benefits- Reduced Turnaround Time, Predictive Maintenance, Scenario Simulation and Sustainability.**
- It is one of India's 13 major ports, operating as an artificial, all-weather deep-sea port on the **Coromandel Coast**.
- **Strategic Geographical Location:** Situated at Thoothukudi in the Gulf of Mannar, the port enjoys a strategic position near the East-West international sea routes.
- It ranks as the **2nd-largest port in Tamil Nadu (after Chennai port) and the 3rd-largest container terminal in India.**





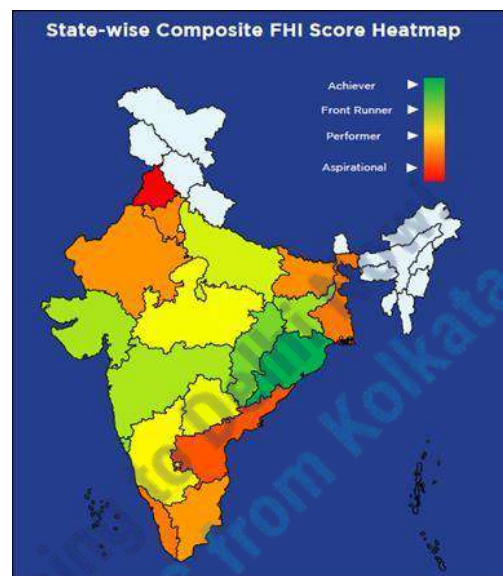
2.58 Western Tragopan

- The **Western Tragopan** also known as the **Jujurana** (meaning "King of Birds").
- It is one of the five species of Tragopans (horned pheasants) found in Asia.
- **Physical Features: Males:** Spectacularly colored with black plumage, bright red neck, and white spots. They possess two fleshy blue "horns" and a lapet (throat flap) displayed during courtship.
 - **Females:** Cryptic brownish-grey to camouflage in the undergrowth.
- It is the **State Bird of Himachal Pradesh**.
- **Endemicity:** It is endemic to the **North-West Himalayas**.
- **Range:** Found from North-Pakistani Kashmir through Jammu & Kashmir and Himachal Pradesh, up to the western parts of Uttarakhand.
- **Altitude:** Shows **altitudinal migration**.
 - **Summer:** High-altitude temperate forests (2,400m to 3,600m).
 - **Winter:** Moves down to dense coniferous or broad-leaved forests (1,750m to 2,000m) to avoid heavy snow.
- **Preferred Vegetation:** Dense undergrowth of **Ringal bamboo** and Rhododendron.
- **IUCN Red List: Vulnerable** (Population is small, fragmented, and declining).
- **WPA 1972: Schedule I** (Highest legal protection in India).
- **CITES: Appendix I**.



2.59 Fiscal Health Index 2026

- **NITI Aayog** released the second edition of the **Fiscal Health Index (FHI)**
- The index evaluates states on a scale of 0 to 100 based on five key metrics:
 - i. **Quality of Expenditure**
 - ii. **Revenue Mobilisation:** Ability of states to generate their own tax and non-tax revenue.
 - iii. **Fiscal Prudence:** Management of fiscal deficits and adherence to **FRBM**
 - iv. **Debt Index:** Overall debt levels relative to the state's economy (GSDP).
 - v. **Debt Sustainability:** ability to service & repay debt without compromising growth.
- NITI Aayog classifies states into four tiers based on their composite scores:
 - **Achievers (Top): Odisha** (Rank 1 for the second consecutive year), followed by **Goa** and **Jharkhand**.
 - *Common traits:* Own-tax shares above 60%, fiscal deficits below 3%, and debt under 25% of GSDP.
 - **Aspirational (Bottom):** West Bengal, Kerala, Andhra Pradesh, and **Punjab** (Rank 18).
 - *Common issues:* High "committed expenditure" (pensions/salaries) often exceeding 50% of revenue.
- For the first time, 10 North-Eastern and Himalayan (NEH) states were ranked separately to account for their unique challenges (terrain, sparse population).
 - **Top Performer (NEH): Arunachal Pradesh**, followed by Uttarakhand.
 - **Bottom Performer (NEH):** Himachal Pradesh and Manipur.
- **Expenditure Shifts:** Recent years have seen a greater emphasis on capital expenditure and social sector spending across several states.
- **Macro-Fiscal Linkage:** State finances now account for roughly one-third of India's general government debt, making their fiscal health critical for national macroeconomic stability.



2.60 Samridh Gram Phygital Services Pilot Initiative

- **Ministry:** Ministry of Communications.
- **Implementing Agency:** Department of Telecommunications (**DoT**) through the **Telecom Centres of Excellence (TCoE)**.
- **Funding Source:** Telecom Technology Development Fund (**TTDF**).
- **Aim:**
 - To demonstrate the use of BharatNet connectivity for delivering integrated public services at the village level.
 - To develop a replicable model for rural digital transformation through convergence of digital infrastructure, governance services, and community participation.
- **"Phygital" Definition:** A blend of **Physical** (on-ground presence) and **Digital** (high-speed connectivity) infrastructure.
- **The Hub (Samridhhi Kendra):** Each village hosts a "Samridhhi Kendra," a one-stop service hub located typically in the **Panchayat Bhawan**.
- **Digital Backbone:** The initiative is built entirely upon the **BharatNet** infrastructure, leveraging

its fiber-to-the-home (FTTH) and public Wi-Fi hotspots.

- **Key Service Sectors- Healthcare, Agriculture, Education, e-Governance, Finance & Commerce, Safety etc.**

2.61 Joha Rice

- **Geographical Origin:** Indigenous to **Assam**, specifically the Brahmaputra valley.
- **Type:** A unique **short-grain** aromatic winter rice.
- **Growing Season:** Primarily grown as a **Sali/Kharif** crop.
- **Aroma:** Known for its distinct floral fragrance (unlike the nutty aroma of Basmati), often attributed to specific volatile oils.
- It was granted the **GI Tag in 2017**.
- **Context:** The **APEDA** facilitated the first major export consignment of GI-tagged Joha rice to the **United Kingdom and Italy**.
- **Scientific & Nutritional Profile**
 - **Diabetes Management:** It has a **lower Glycemic Index (GI)** compared to other rice varieties and is effective in lowering blood glucose levels.
 - **Fatty Acids:** Rich in essential unsaturated fatty acids- **linoleic acid (omega-6)** and **linolenic acid (omega-3)**.
 - **Antioxidants:** High concentration of phenolic compounds, flavonoids, and oryzanol, which offer cardio-protective benefits.
- **Yield:** Generally has a lower yield compared to high-yielding varieties (HYV), but commands a premium price due to its quality.



2.62 Balirajgarh Fort

- The **Archaeological Survey of India (ASI)** has granted fresh approval for renewed scientific excavation at **Balirajgarh Fort** (officially the "**Remains of Ancient Fort of Garh**") in Madhubani district, Bihar.
- **Objective:** The 2026 mission specifically aims to search for the "Early Mithila Civilization" and explore pre-Mauryan layers that were previously inaccessible due to a high water table.
- It is a **centrally protected national monument** dating to around **200 BCE**, offering insights into the **Mithila region's** early civilisation and its legendary links to **King Bali** (benevolent asura ruler from Hindu mythology).
- The **fortification** dates primarily to circa **200 BCE** during the **Shunga period**, with evidence suggesting earlier **Iron Age origins**.
- **Historical Significance:** Many scholars believe it to be the site of **ancient Mithila**, the capital of the **Videha kingdom** (Janaka Dynasty).
- **Excavations have revealed a 5-fold cultural sequence spanning** the Northern Black Polished Ware (NBPW) phase (circa 700–200 BCE), followed by the Shunga, Kushan, Gupta, and Pala periods (up to the 12th century CE), indicating continuous habitation from early historic to early medieval times.
- **Historical finding suggests that it was a sprawling urban centre.**



2.63 Project Great Indian Bustard (GIB)

- **Project Great Indian Bustard (GIB)** entered the fourth year of its captive breeding programme with the hatching of two new chicks at the Conservation Breeding Centre in Rajasthan, raising the **total captive population to 70 birds**.
- **Artificial Insemination:** One of the 2026 chicks was produced via artificial insemination—a significant scientific breakthrough for the species.
- **Soft Release Plan:** The government has announced that 2026 will mark the first "soft release" phase, where captive-bred chicks will be reintroduced into the wild.
- **About:** It is **India's most critically endangered bird** and the State bird of Rajasthan, regarded as a flagship species representing the health of grassland ecosystems.
 - GIB is one among four bustard species found in India, alongside the Lesser Florican, Bengal Florican, and Macqueen's Bustard.
 - It is omnivorous and vulnerable to power line collisions due to lack of frontal vision.
- **Status: IUCN: Critically Endangered.**
 - **Wildlife Protection Act, 1972: Schedule I**
 - **CITES: Appendix I.**
 - **CMS (Bonn Convention): Appendix I**
 - The species is covered under the Integrated Development of Wildlife Habitats scheme of MoEFCC to support recovery and conservation measures.
- **Habitat: Dry and semi-arid grasslands.**
- **Physical Trait:** One of the heaviest flying birds in the world. It has poor frontal vision, which makes it unable to detect power lines until it is too late to maneuver.
- **Population:** Less than 150 left in the wild, primarily in the Thar Desert (Rajasthan) and Kutch (Gujarat).



2.64 Sejil Ballistic Missile

- **Type:** Medium-Range Ballistic Missile (**MRBM**).
- **Origin:** Indigenous to **Iran** (developed by the Aerospace Industries Organization).
- **Propulsion: Two-stage Solid-Propellant.** This is its most significant feature, as solid fuel allows for:
- **Rapid Launch:** No need for time-consuming fueling on the pad.
- **Higher Survivability:** It is road-mobile and can be stored fully fueled, making it harder to detect or hit in a pre-emptive strike.
- **Range:** Approximately **2,000–2,500 km**, making it capable of reaching targets across the Middle East/ Levant region (including Israel) and Southeastern Europe.
- **Payload:** Can carry a warhead of **500–1,000 kg** (Conventional or Nuclear-capable).
- The Sejil-2 variant used in the current conflict features integrated GPS and inertial guidance systems for improved terminal accuracy.
- It has gained the nickname "**Dancing Missile**" in recent defense reports because of its **terminal phase maneuverability**. It can change its trajectory during descent, making it exceptionally difficult for air-defense systems (like the Arrow or Patriot) to calculate an intercept point.
- **Speed:** Descends at hypersonic speeds (above Mach 5), providing a very narrow window for interception.



2.65 Sharansthi Initiative

- A rehabilitation and social justice initiative of the **Jammu & Kashmir Administration**.
- To provide **compassionate government employment** to the **Next of Kin (NoK)** of victims who lost their lives due to terrorism in the Union Territory.
- **Philosophy:** The administration describes it as "Sharansthi" (meaning **support/sanctuary**), viewing it not as charity, but as a matter of **justice** and institutional acknowledgment of the suffering of terror victims.
- Lieutenant Governor Manoj Sinha distributed appointment letters to **50 next of kin** of terror victims at a ceremony in Srinagar.
- **Historical Redressal:** The 2026 phase of the initiative specifically targeted families who had been waiting for justice for decades, some dating back to the 1990s.
- **Upcoming Phases:** The government announced that a dedicated review of pending cases for families without a strong administrative voice will take place in **April 2026**.
- **Implementing Authority:** J&K General Administration Department (GAD) under the **Compassionate Appointment Rules**.
- **Reintegration Strategy:** Beyond just a job, the initiative aims at the socio-economic reintegration of families affected by conflict into the mainstream.
- **Zero Tolerance Policy:** It is part of the broader "Whole of Government" approach to counter-terrorism, where the state supports victims while maintaining a **Zero Tolerance** policy toward perpetrators.



2.66 Sujal Gaon ID

- It is a scheme-based **unique digital identifier** assigned to every rural piped water supply scheme in India.
- **Primary Objective:** To enable **source-to-tap digital mapping** of all rural water supply assets on a unified national platform.
- **Digital Architecture:** It is the foundational component of the **"Sujalam Bharat"** national digital framework.
- **Integration:** Each Sujal Gaon ID integrates two critical data points:
 - **Infrastructure ID:** Details of the physical assets (pipes, pumps, tanks).
 - **Service Area ID:** Mapping the specific habitations and households served by that infrastructure.
- **Adoption Status:** As of mid-March 2026, over **1.64 lakh Sujal Gaon IDs** have already been created across **31 States/UTs**.
- **Mandatory Compliance:** The creation of these IDs is now a **prerequisite for the release of Central funds** to States under JJM 2.0.
- The Sujal Gaon ID marks a shift from "Infrastructure Creation" to **"Service Delivery"**:
 - **Real-time Monitoring:** The ID allows for evidence-based decision-making by tracking water quality, supply reliability, and O&M (Operation & Maintenance) status in real-time.
 - **Integration with Sujalam Bharat Platform:** The ID is linked with Sujalam Bharat IDs, combining infrastructure ID and service-area ID for complete mapping of water supply systems.
 - **National Digital Architecture:** Creates a source-to-tap digital monitoring system for rural water supply schemes across the country.



- o **Gram Panchayat Role:** Local bodies will use the ID to certify "Har Ghar Jal" status only after verifying sustainable O&M arrangements on the digital platform.

2.67 Jnanpith Award

- The **Jnanpith Award** is India's highest literary honour.
- **Established:** 1961 by the **Bharatiya Jnanpith** (a cultural organization founded by industrialist Sahu Shanti Prasad Jain).
- **First Awarded:** 1965.
- **Prize:** ₹11 lakh, a citation, and a bronze replica of **Vagdevi** (Goddess Saraswati).
- **Eligibility:** Only **Indian citizens**.
- **Languages:** Works in any of the **22 languages** of the 8th Schedule of the Constitution + **English**).
- **Posthumous Rule:** The award is **never** given posthumously.
- **Repeat Rule:** A writer who receives the award once is not considered again.
- **Language Gap:** A language that receives the award is generally not eligible for consideration for the next two years.
- Eminent Tamil lyricist and author **R. Vairamuthu** has been selected for the **60th Jnanpith Award**, becoming only the **3rd Tamil writer** to receive the prize and the **1st** to be recognised for **Tamil poetry**.



2.68 Economic Stabilisation Fund

- It is a newly established fiscal buffer in India designed to protect the economy from external shocks without derailing the government's fiscal deficit targets.
- The Finance Minister introduced the ESF during the debate on the **Supplementary Demands for Grants (FY 2025–26)**.
- **Objective:** To act as a "financial shock absorber" against global headwinds like oil price spikes, West Asia conflicts, and supply chain disruptions.
- **Total Corpus:** ₹1 lakh crore.
- **Net Cash Outgo:** Approximately ₹57,381 crore.
- **Remaining Balance:** Sourced through government savings and higher receipts.
- **Management:** Placed under **Reserve Funds** and managed by the **Department of Economic Affairs (DEA)**, Ministry of Finance.
- **Fiscal Discipline:** The fund allows the government to meet emergency spending (like fertilizer or fuel subsidies) without breaching the **4.4% fiscal deficit target** for FY26.
- **Constitutional Basis:** Created via **Article 115** (Supplementary, additional or excess grants), which allows for spending beyond the initial Budget Estimates.



2.69 Dual Sex Crab

- The "Dual-Sex Crab" is a rare **bilateral gynandromorph**.
- **Definition:** An organism that contains both male and female characteristics, physically split down

the middle.

- **Found In:** Tree holes within the Silent Valley National Park, Kerala.
- **Habitat:** It is an endemic species, meaning it is found only in the forests and streams of the Central Western Ghats.
- **Species:** *Vela carli*
- **Reason for Dual Sex (Gynandromorphy):**
 - Gynandromorphy typically occurs due to genetic anomalies during early embryonic development.
 - While the provided text identifies the condition as the first instance for this family, the biological root is the rare expression of both male and female traits on the same body—a condition distinct from hermaphroditism (where organs function sequentially or both are fully functional).
 - **Endemic Species:** *Vela carli* is endemic to the Central Western Ghats, meaning it occurs only in this region.
- **Size:** Described as a tiny freshwater crab.
- **Significance:**
 - **Scientific Milestone:** This is the first time gynandromorphy has been reported in the family Gecarcinucidae, expanding our understanding of crustaceans.
 - **Biodiversity Indicator:** The discovery highlights the unique and understudied biodiversity of the **Western Ghats** and the Silent Valley ecosystem.



2.70 24 Speed Post

- The **24 Speed Post** is a premium express delivery service launched by the **Department of Posts** (Ministry of Communications).
- It is a strategic move to reposition India Post as a modern logistics player capable of competing with private giants like Blue Dart and Delhivery, specifically targeting the booming e-commerce sector.
- **Guaranteed Timelines: 24 Speed Post:** Guaranteed **Next-Day Delivery**.
- The service will initially be available across all PIN codes of **six metro cities:** New Delhi, Mumbai, Chennai, Kolkata, Bengaluru, and Hyderabad
- **Key Features:**
 - **OTP-Based Secure Delivery**
 - **Real-Time Tracking**
 - **Money-Back Guarantee:** Full postage refund if next-day delivery is delayed.
 - **Parcel Capacity:** Supports **parcels up to 5 kg**.
 - **BNPL (Buy Now Pay Later):** Credit facility for corporate and bulk customers.



2.71 Exercise Sea Dragon 2026

- **Exercise Sea Dragon** is a premier multinational exercise that focuses on **Anti-Submarine Warfare (ASW)**.
- **Host & Location:** Led by the **U.S. Navy** (7th Fleet) at **Andersen Air Force Base, Guam** (Western Pacific).
- **Participants:** India, USA, Australia, Japan, and **New Zealand**.
- **South Korea** was a participant in 2025 but is absent/replaced by New Zealand in the primary 2026

roster mentioned in current reports

- **India's Contribution:** The Indian Navy has deployed the **P-8I Poseidon** (long-range maritime patrol aircraft).
- **Primary Focus:** Enhancing interoperability in **Anti-Submarine Warfare (ASW)**.
- **The Format:** Aircrews from participating nations are tested on their ability to detect and track a **live U.S. Navy submarine** in the open ocean.
- **Training Intensity:** Involves over 200 hours of in-flight training, ranging from tracking simulated targets to "real-world" underwater threats.
- **The "Dragon Belt" Award-** Events are graded on speed, accuracy, and coordination. The highest-scoring nation wins the **"Dragon Belt."**
- **Winner Tracker: 2025: Australia** (RAAF No. 11 Squadron) won the belt.

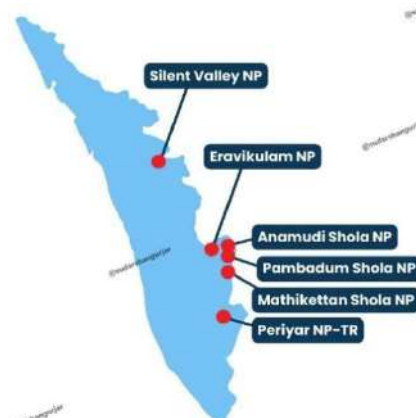
2.72 Sahitya Akademi Award

- **Established:** 1954 (India's National Academy of Letters).
- **Nodal Ministry:** Ministry of Culture.
- **Languages (24 total):** 22 languages from the 8th Schedule + **English** and **Rajasthani**.
- **The Prize:** ₹1 lakh, a shawl, and an engraved copper plaque (designed by Satyajit Ray).
- **Eligibility:** Must be an **Indian citizen**. The book must be an "outstanding contribution" published in the 5 years prior to the award year.
- The 2025 awards covered 8 books of poetry, 4 novels, 6 short stories, 2 essays, 1 literary criticism, 1 autobiography, and 2 memoirs.
- **No Posthumous Award:** Like the Jnanpith, this is generally not given posthumously unless the author dies after the selection but before the ceremony.
- **The "One-Time" Rule:** An author can win the Main Sahitya Akademi award **only once** in their lifetime.
- **Selection Process:** A 3-member jury for each language makes the final decision based on recommendations from a 10-member preliminary panel.



2.73 Silent Valley National Park

- **State:** Palakkad district, **Kerala**.
- **Mountain Range:** Located in the **Nilgiri Hills** (Western Ghats).
- **Core Area:** It forms the core of the **Nilgiri Biosphere Reserve**
- **The "Silent" Name:** Traditionally believed to be "silent" because of the **absence of Cicadas** (though recent studies have found some populations).
- Primarily **Tropical Evergreen Rain Forests** (Shola-grassland ecosystem).
- **River System:** The **Kunthipuzha River** flows through the entire length of the park. It is a perennial river and a tributary of the **Bharathapuzha**.
- **Terrain:** It is a rectangular plateau, shielded on all sides by high ridges (protecting it from extreme winds and human interference).
- **Flagship Species:** **Lion-tailed Macaque** (Endangered). Silent Valley holds the largest viable



population of this primate in the world.

- **Flora:** Home to the rare **Cullenia exarillata** (the favorite fruit of the Lion-tailed Macaque).
- **New Discoveries (2025–26):**
 - **Vela carli:** The tiny freshwater "Dual-Sex Crab" found in tree holes.
 - **New Frog Species:** Several species of *Indirana* (Dancing Frogs) were recently cataloged here.
 - **Avifauna:** Part of the **BirdLife International** Important Bird Area (IBA). Home to the Ceylon Frogmouth and Great Indian Hornbill.

2.74 Port of Fujairah

- **Location:** Situated on the **Gulf of Oman** (eastern seaboard of the UAE).
- **The "Hormuz Bypass":** It is the only UAE emirate without a coastline on the Persian Gulf. This allows oil to bypass the **Strait of Hormuz** (a major chokepoint) via the **Habshan–Fujairah Pipeline** (ADCOP).
- **Global Rank:** It is one of the world's top three bunkering (ship refueling) hubs, alongside Singapore and Rotterdam.
- **IMEC Gateway:** Fujairah is identified as a key maritime node in the **India-Middle East-Europe Economic Corridor (IMEC)**. It serves as the primary entry point for the "Eastern Corridor" (India to UAE).
- **Key Features:**
 - **Advanced Infrastructure:** Over 9.5 km quay length, modern terminals for crude, refined products, and container cargo.
 - **High Maritime Activity:** Around 12,000 vessels annually; ~174 anchorage positions.
 - **Integrated Industrial Zone:** Hosts **Fujairah Oil Industrial Zone (FOIZ)** and multiple global oil companies.



2.75 Coconut Promotion Scheme

- **Nature:** Central Sector Scheme (formulated by the Ministry of Agriculture & Farmers Welfare).
- **Financial Outlay:** Part of a **₹350 crore** package specifically for high-value plantation crops (Coconut, Cashew, and Cocoa).
- **Primary Objective:** To enhance productivity and competitiveness by **rejuvenating old and non-productive (senile) plantations** with high-yielding, climate-resilient varieties.
- **Key Pillars of Intervention**
 - **Rejuvenation:** Financial assistance to replace aged palms with early-bearing and hybrid varieties.
 - **Expansion:** Promoting cultivation in **non-traditional areas** (e.g., North-East India, Odisha, West Bengal, and Gujarat).
 - **Value Addition:** Support for processing units (Virgin Coconut Oil, Coconut Water, Neera,



- and Coir Pith) to move beyond raw copra.
- **Climate Resilience:** Focus on drought-tolerant and disease-resistant genotypes (targeting threats like **Root Wilt Disease**).
- **Technology Integration:** Use of the **Bharat-VISTAAR (AI-Advisory)** platform for real-time pest and nutrient management.
- **India's Coconut Economy (Data Bank)**
 - **Global Rank:** India is the **world's largest producer** of coconuts (~30.37% of global output), followed by Indonesia and the Philippines.
 - **Livelihood:** Supports nearly **30 million people**, including 10 million farmers.
 - **Top Producing States:** Kerala, Tamil Nadu, Karnataka, and Andhra Pradesh (Traditional Belt).
 - **Productivity:** Approximately **9,871 nuts per hectare**.
- **Coconut Development Board (CDB):** Statutory Body (established in 1981).
 - **Headquarters:** Kochi, Kerala.
 - **Role:** Implementation agency for the scheme; provides technical and financial assistance.
- **Minimum Support Price (MSP):** Fixed for **Milling Copra** and **Ball Copra**.
- **Nodal Agencies for Procurement:** NAFED and National Cooperative Consumers' Federation (NCCF).

2.76 Appropriation Bill

- **Article 114:** Explicitly mandates that no money shall be withdrawn from the **Consolidated Fund of India (CFI)** except under appropriation made by law.
- **Classification:** It is a **Money Bill** (under Article 110).
- **Purpose:** It legalizes the "expenditure side" of the budget. While the *Demands for Grants* are voted on, they don't give the government legal authority to actually pull the cash out of the CFI; only the Appropriation Act does that.
- Can only be introduced in the **Lok Sabha** after the *Voting on Demands for Grants* (Article 113) is complete.
- **Rajya Sabha** has **limited powers**. It can only discuss the bill and make recommendations.
 - It must return the bill within **14 days**.
 - The Lok Sabha is free to accept or reject any or all recommendations.
- **President's Assent:** The President **cannot return** a Money Bill for reconsideration (since it's introduced on his/her prior recommendation).
- **Scope of Amendments (The "Lock" Feature)- No amendment** can be proposed in either House that:
 - Varies the **amount** of any grant already made.
 - Alters the **destination** (purpose) of any grant.
 - Varies the amount of any **Expenditure Charged** on the CFI.
 - **Speaker's Authority:** The Speaker's decision on whether an amendment is admissible under these rules is final.



Feature	Appropriation Bill	Finance Bill
Side of Budget	Expenditure (Withdrawal)	Revenue (Taxation/Income)
Article	Article 114	Article 110
Amendments	Cannot vary amount/destination	Can be moved to reduce or abolish a tax
Timeline	Passed after Demands for Grants	Passed at the very end of the budget process

2.77 Mahad Satyagraha

- **Leader:** Dr. B.R. Ambedkar.
- **Date:** March 20, 1927 (Observed today as **Social Empowerment Day**).
- **Location:** Mahad, Raigad district, Maharashtra (then Bombay Presidency).
- **Objective:** To assert the right of "untouchables" (Dalits) to use water from the **Chavdar Tank**, a public water source.
- In 1923, the Bombay Legislative Council passed the **S.K. Bole Resolution**, which stated that "Depressed Classes" should be allowed to use all public water places, wells, and dharamshalas maintained by the government.
- The Mahad Municipality had officially opened the tank in 1924, but local upper-caste opposition prevented Dalits from actually using it. The Satyagraha was launched to **enforce** this legal right.
- **The Symbolic Act:** Ambedkar led a procession of ~2,500 people to the tank, where he drank water—a revolutionary act of defiance.
- **Legal Victory:** In **1937**, the Bombay High Court finally ruled that Dalits had the legal right to use the water from the tank.



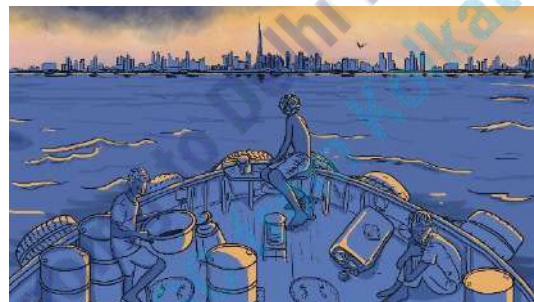
2.78 World Happiness Report 2026

- **Published by:** The Wellbeing Research Centre at the **University of Oxford**, in partnership with **Gallup** and the **UN Sustainable Development Solutions Network**.
- **Data Source:** Uses the **Gallup World Poll**, specifically the "Cantril Ladder" question (where respondents rate their life from 0 to 10).
- The report was inspired by **Bhutan's** initiative on Gross National Happiness.
- **The 6 Key Parameters**
 - **GDP per capita** (Economic strength)
 - **Social Support** (Having someone to count on)
 - **Healthy Life Expectancy**
 - **Freedom** to make life choices
 - **Generosity** (Donations to charity)
 - **Perceptions of Corruption** (Trust in government/business)
- **Top 3: Finland** (1st for the 9th consecutive year), **Iceland** (2nd), and **Denmark** (3rd).
- **Regional Trends:** Nordic countries continue to dominate.
- **Bottom of the List: Afghanistan** (147th) remains the unhappiest country, followed by Sierra Leone and Malawi.
- **English-Speaking Decline:** For the 3rd year, no major English-speaking nation (USA, UK, Canada) made it into the top 20, largely due to a decline in youth well-being.
- **India's Performance- Rank 2026: 116th** out of 147 countries.
- **Trend:** India has shown slight improvement (**118th in 2025** and **126th in 2024**).
- **Comparison:** India still ranks lower than many of its neighbors, including **Nepal (99th)** and **Pakistan (104th)**, though it is ahead of Sri Lanka and Bangladesh.
- **India-Specific Finding:** The report notes that older Indians (60+) generally report higher life satisfaction than the youth, with family bonds and social support being the primary drivers of happiness in India.



2.79 Dark Fleet

- **Definition:** An aging fleet of oil tankers (usually **15+ years old**) with **opaque ownership** that operates outside the mainstream maritime industry.
- **Primary Purpose:** Used by countries under international sanctions (primarily **Russia, Iran, and Venezuela**) to bypass oil price caps and trade restrictions.
- **Scope:** By early 2026, it is estimated that nearly **20% of the global VLCC** (Very Large Crude Carrier) fleet operates in this "shadow" category.
- **Operational Characteristics (How they stay "Dark")**
 - **Spoofing & "Going Dark":** Turning off **AIS (Automatic Identification System)** transponders to hide their location (a violation of IMO regulations).
 - **Ship-to-Ship (STS) Transfers:** Moving oil between tankers in the middle of the ocean (often in international waters like the **Laccadive Sea** or **Mediterranean**) to disguise the original source of the oil.
 - **Flag Hopping:** Frequently changing the country of registration (Flags of Convenience) to avoid oversight—often using registries like Panama, Liberia, or newcomers like **Gabon** and **Eswatini**.
- **Key Risks**
 - **Environmental Risk:** Since these ships are old and often lack **P&I (Protection and Indemnity) Insurance**, an oil spill would be a catastrophic "orphan" event—no clear owner to pay for the cleanup.
 - **Maritime Safety:** Many of these vessels do not undergo standard safety inspections, increasing the risk of collisions.
 - **Global Economy:** They facilitate a "two-tier" oil market, complicating the effectiveness of Western sanctions (like the G7 Price Cap).



2.80 Stockholm Water Prize 2026

- **Instituted:** 1991.
- **Awarded by:** **The Stockholm Water Foundation** in collaboration with the Royal Swedish Academy of Sciences.
- **Eligibility:** Open to individuals and organizations worldwide for outstanding water-related achievements in science, management, or policy.
- **Kaveh Madani** has been awarded the 2026 Stockholm Water Prize, the world's most prestigious water-related honour.
- He is **the youngest laureate and first UN official to receive the award** for linking water science with policy, diplomacy, and public outreach.
- **Aim:**
 - To honour individuals/organizations contributing to water resource conservation and sustainability.
 - To promote scientific innovation & policy solutions for global water challenges.
 - To enhance awareness of water security and environmental protection.



2.81 RISA

- **RISA: Timeless Tribal** is a premium national brand for tribal textiles, embroidery, and handicrafts, designed to showcase India's indigenous craftsmanship in domestic and global premium markets while preserving cultural heritage.
- **Nodal Ministry:** Ministry of Tribal Affairs
- **Implementing Agency:** TRIFED (Tribal Cooperative Marketing Development Federation of India)
- **Aim:**
 - To preserve and promote tribal weaves, embroidery, and crafts.
 - To support Vocal for Local and Atmanirbhar Bharat through value addition.
- **Key Features:**
 - **Premium branding approach:** Positions tribal products in high-end domestic and international markets.
 - **Cluster-based development:** First phase covers **10 clusters** including weaves, embroidery, and crafts across states.
 - **Design intervention:** Introduction of **modern designs and product innovation** while retaining traditional essence.
 - **Capacity building:** Skill training and upskilling of artisans to produce high-value, export-ready products.
 - **Infrastructure support:** Development of **weaving clusters and stitching units** for integrated production.
 - **Sustainable packaging:** Eco-friendly premium packaging developed by NID for **global market appeal**.
 - **Strategic designer partnerships:** Collaboration with leading designers to bridge tradition with contemporary fashion.
 - **Diverse craft inclusion:** Covers iconic tribal products like: Eri silk (Assam), Pashmina (Ladakh). Dokhra art (Chhattisgarh), Toda embroidery (Tamil Nadu)



2.82 Small Hydro Power Development Scheme

- **Nodal Ministry:** Ministry of New and Renewable Energy (MNRE).
- **Definition:** In India, hydro projects with a capacity **up to 25 MW** are classified as "Small Hydro." (Projects >25 MW fall under the Ministry of Power).
- **Technology:** Primarily **"Run-of-the-River"** (RoR) systems. These use the natural flow of water without large dams or reservoirs.
- **Timeline:** Approved for the period **FY 2026-27 to FY 2030-31**.
- **Financial Outlay:** ₹2,584.60 crore.
- **Capacity Target:** Installation of approximately **1,500 MW**.
- **Indigenous Mandate:** 100% of plant and machinery must be sourced **indigenously** (Atmanirbhar Bharat).
- **Central Financial Assistance (CFA):**
 - **For NE States and Border Districts:** Rs. 3.6 crore per MW or 30% of project cost (whichever is lower), with an upper limit of Rs. 30 crore per project.



- **Other States:** Rs. 2.4 crore per MW or 20% of project cost (whichever is lower), with a cap of Rs. 20 crore per project.

2.83 South Pars Gas Field

- **Location:** Offshore in the **Persian Gulf**, straddling the maritime border between **Iran** and **Qatar**.
- **Shared Ownership:** It is a single geological reservoir divided into two parts:
 - **South Pars:** The northern section (approx. 3,700 sq km) belonging to **Iran**.
 - **North Dome (or North Field):** The southern section (approx. 6,000 sq km) belonging to **Qatar**.
- **Depth:** Located about 3,000 meters below the seabed.
- **Strategic & Economic Significance**
 - **Global Reserve:** It is the **world's largest natural gas field**, holding roughly **10% of global proven reserves** and 20% of the world's gas condensate.
 - **Iran's Lifeline:** Accounts for **70-75% of Iran's total gas production** and fuels nearly 80% of its electricity generation.
 - **Qatar's Engine:** The North Field is the primary source for Qatar's status as the world's leading **LNG exporter** via the **Ras Laffan** industrial hub.
 - **Geological Homogeneity:** Because the reservoir is connected, excessive extraction on one side can cause pressure drops or "gas migration" from the other side.



2.84 Bharat Audyogik Vikas Yojna (BHAVYA)

- **Nodal Ministry:** Ministry of Commerce & Industry (DPIIT).
- **Implementing Agency:** National Industrial Corridor Development Corporation.
- **Primary Goal:** To develop **100 "Plug-and-Play" Industrial Parks** across India to accelerate the "Intent to Production" timeline for investors.
 - To accelerate manufacturing-led economic growth.
 - To enhance ease of doing business through pre-approved infrastructure.
 - To promote cluster-based industrial development and strengthen domestic supply chains. To generate large-scale employment and attract investments.
- **Vision:** Aligned with **Viksit Bharat 2047** and **Atmanirbhar Bharat**.
- **Total Outlay:** ₹33,660 crore.
- **Duration:** 6 years (FY 2026-27 to FY 2031-32).
- **Phased Approach:** The first phase aims to develop **50 parks**.
- **Key Features (The "Plug-and-Play" Model)**
 - **Scale:** Parks will range from **100 to 1,000 acres**.
 - For **North-Eastern and Hilly States**, the minimum area is reduced to **25 acres**.
 - **Central Financial Assistance (CFA):**
 - **Internal Infrastructure:** Up to **₹1 crore per acre** for core and value-added facilities (social factors).



- **External Connectivity:** The Centre funds up to **25% of the cost** for last-mile connectivity (roads, rail links), aligned with **PM GatiShakti**.

2.85 Malawi

- **Location:** A landlocked country in **Southeastern Africa** occupying a narrow strip of land along the **East African Rift Valley**.
- **The "Calendar Lake":** Lake Malawi (also known as **Lake Nyasa**) is the country's dominant feature.
- It is the **3rd largest lake in Africa** and the southernmost lake in the **East African Rift System**.
- **Neighboring Nations:** It is bordered by **Zambia** to the west, **Tanzania** to the north and northeast, and **Mozambique** to the east, south, and southwest.
- **Shared Borders of the Lake:** Malawi, Mozambique, and Tanzania.
- **Highest Point:** **Sapitwa Peak** in the **Mulanje Massif** (approx. 3,002m).
- **Major River:** The **Shire River** is the only outlet of Lake Malawi; it flows south to join the **Zambezi River** in Mozambique.
- **India-Malawi Relations**
- **Food Security Aid (March 2026):** India recently dispatched **1,000 Metric Tonnes of rice** to Malawi to help mitigate a national food crisis caused by severe **El Niño-induced droughts**.
- India and Malawi held a high-level bilateral meeting during the Bharat Electricity Summit 2026 in New Delhi to strengthen cooperation in the energy sector.
- **International Solar Alliance (ISA):** Malawi is a member of the India-led ISA, focusing on off-grid solar solutions for its rural population.



2.86 Floating LiDAR Buoy System

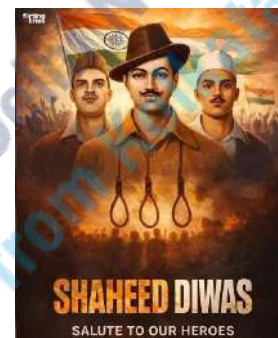
- An advanced, ocean-based remote sensing instrument that integrates **LiDAR technology** onto a stabilized **floating buoy**.
- **Working Principle:** It emits **laser pulses** into the atmosphere. These pulses reflect off airborne particles (aerosols, dust, moisture). By measuring the frequency shift of the returned signal (**Doppler Effect**), the system calculates precise wind speed and direction.
- **Measurement Range:** It can profile wind conditions up to **300 meters** above sea level—far exceeding the height of traditional land-based sensors and reaching the hub height of modern offshore wind turbines.
- **The National Institute of Ocean Technology (NIOT)** has successfully tested an indigenous Floating LiDAR Buoy System off the Muttom coast in Tamil Nadu.
- **Test Location:** Successfully tested off the **Muttom coast, Tamil Nadu**.
- **Strategic Shift:** Previously, India relied on expensive European imports. This indigenous version reduces costs by **30-40%** and supports the **Atmanirbhar Bharat** initiative.
- **Key Functions:**
 - **Vertical Profiling:** Unlike traditional anemometers, it can measure wind conditions at multiple heights up to 300 metres above sea level.



- **Real-time Monitoring:** It continuously tracks wind speed, direction, turbulence, and atmospheric pressure.
- **Ocean-Atmosphere Interaction:** It gathers data on how sea surface conditions influence air movement, which is critical for climate modeling.
- **Data Transmission:** Equipped with satellite or cellular telemetry to transmit live data to shore-based research stations.

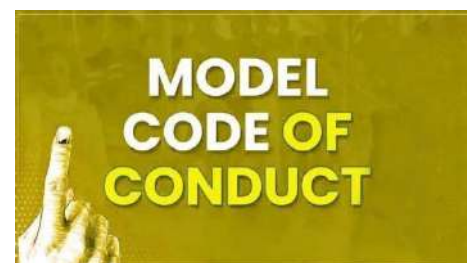
2.87 Shaheed Diwas (Martyrs' Day)

- **March 23, Date of execution of Bhagat Singh, Rajguru, and Sukhdev (1931).**
- **Hanged in Lahore Jail for the Lahore Conspiracy Case.**
- **The Cause:** The trio was executed for the assassination of British police officer John Saunders (1928), which was an act of revenge for the death of Lala Lajpat Rai during the anti-Simon Commission protests.
- **HSRA Connection:** Bhagat Singh and Chandrashekhar Azad reorganized the HRA (Hindustan Republican Association) into the HSRA in 1928 at Feroz Shah Kotla, Delhi, shifting the ideology toward Socialism.
- **Central Assembly Bombing:** On April 8, 1929, Bhagat Singh and B.K. Dutt threw non-lethal bombs in the Central Legislative Assembly to protest the Public Safety Bill and the Trade Dispute Bill. Their slogan: "To make the deaf hear."
- **Writings:** Bhagat Singh's essay "Why I am an Atheist" was written in Lahore Jail.



2.88 Model Code of Conduct

- The **Model Code of Conduct (MCC)** is a set of guidelines issued by the Election Commission of India (ECI) to regulate the conduct of political parties and candidates during elections.
- **Legal Status:** The MCC is **not statutory**.
- **Enforceability:** While the MCC itself isn't a law, certain provisions are enforceable through corresponding sections in the **Indian Penal Code (IPC) 1860**, **Code of Criminal Procedure (CrPC) 1973**, and the **Representation of the People Act (RPA) 1951**.
- **Origin:** It originated in the **1960 Kerala Assembly elections**. The ECI first circulated it to all recognized parties for the 1962 Lok Sabha elections.
- **Timing and Duration**
 - **Kick-off:** It comes into operation **immediately** from the moment the ECI announces the election schedule.
 - **Conclusion:** It remains in force until the **declaration of results**.
 - **Jurisdiction: Lok Sabha:** Applies across the entire country.
 - **Legislative Assembly:** Applies across the entire State.
 - **Bye-elections:** Applies only to the specific district(s) where the election is being held.



2.89 PRARAMBH 2026

- The Government of India has launched **PRARAMBH 2026**, a nationwide awareness campaign to facilitate smooth implementation of the **Income Tax Act, 2025** effective from 1 April 2026.
- Launched by the **Ministry of Finance** (specifically the CBDT).

- **Purpose:** To educate taxpayers and the public about the **Income Tax Act, 2025**, which is a complete recasting of the old 1961 Act.

- **Aim:**

- Ensures taxpayers and officials adapt seamlessly to updated provisions and compliance systems.
- Builds trust-based taxation where awareness reduces evasion and encourages honest reporting.
- Focuses on clarity, reduced disputes, and citizen-friendly processes in tax administration.



- **Key Features:**

- **Multimedia Outreach Campaign.**
- **Taxpayer Guidance Material.**
- **AI Chatbot 'Kar Saathi': Offers real-time service.**
- **Multilingual Communication.**
- **Capacity Building Workshops.**
- **Aaykar Seva Kendras Support.**

2.90 The India BioEconomy Report (IBER) 2026

- The **India BioEconomy Report (IBER) 2026** the 14th Foundation Day of **BIRAC** (Biotechnology Industry Research Assistance Council).
- **Total Market Size:** India's BioEconomy reached **\$195.3 billion** in 2025.
- **GDP Contribution:** It now accounts for approximately **4.8% to 5%** of India's national GDP (up from ~4.2% in 2024).
- **Growth Rate:** The sector grew by **18%** in 2025—the highest annual growth rate recorded in recent years.
- **Targets:** * **\$300 billion** by 2030. **\$1 trillion** by 2047.
- The BioEconomy is divided into four key segments:
 - **BioIndustrial (\$90.2 billion):** The **largest contributor**. Driven by biofuels (20% ethanol blending target), bioplastics, and enzymes.
 - **BioPharma (\$64.5 billion):** Significant focus on **biosimilars and peptides** as major global patents expire in 2025-26.
 - **BioServices (\$26 billion):** Powered by over 150 Global Capability Centres (GCCs) and CROs (Contract Research Organizations).
 - **BioAgri (\$14.6 billion):** The **smallest segment**, lagging behind despite the potential of climate-resilient crops and bio-fertilizers.
- **Total Startups:** India now has over **11,855 registered biotech startups**.
- **Annual Addition:** 1,780 new startups were established in 2025 alone.
- **Geographic Shift:** Increasing growth is being observed in **Tier-2 and Tier-3 cities**, supported by the **BioNEST** network (100+ incubators).



2.91 Suraksha Sankalp Karyashala

- The **Ministry of Health & Family Welfare**, through **National AIDS Control Organisation**

(NACO), organised the Suraksha Sankalp Karyashala to strengthen district-level HIV/AIDS response in Haryana and Delhi.

- **What it is:** A series of national and regional workshops (Karyashalas) aimed at decentralizing India's HIV/AIDS response.
- **Core Goal:** To accelerate district-level ownership and implementation to end AIDS as a public health threat.
- **The 2027 Deadline:** The government has set an ambitious target to bring the HIV epidemic "under control" by **December 1, 2027** (World AIDS Day), ahead of the global 2030 target.
- **Identification:** The government has identified **219 high-priority districts** across 18 states/UTs for intensified action.
- **Focus Areas (2026):** Recent major workshops have focused specifically on **Haryana** (11 districts) and **Delhi** (7 districts), as well as **Karnataka** (27 districts) and the **Northeast** (Guwahati-based workshop).
- **Selection Criteria:** Based on high prevalence rates, transmission risks, and gaps in treatment linkage.



2.92 TB CHAMPION Movement

- It is a community-led component of India's **National Tuberculosis Elimination Programme (NTEP)** and the **Pradhan Mantri TB Mukh Bharat Abhiyaan**.
- It marks a shift from a purely clinical approach to a "Jan Andolan".
- **Definition:** A TB Champion is a **survivor** who is trained to support others.
- **Role:** They act as peer educators, counsellors, and advocates.
- **Core Objectives**
 - **Stigma Reduction:** Openly sharing their survival stories to normalize the disease in the community.
 - **Treatment Adherence:** Providing psychosocial support to current patients to ensure they don't drop out of the long treatment course.
 - **Case Finding:** Helping health workers identify "missing cases" by encouraging people with symptoms to get tested.
 - **Feedback Loop:** Acting as a bridge between the community and the health system to report ground-level challenges (e.g., drug shortages or side effects).
- **Institutional Framework**
 - **PM TB Mukh Bharat Abhiyaan:** The movement is a pillar of this campaign (launched in 2022) which seeks to eliminate TB in India by **2025** (five years ahead of the Global SDG target of 2030).
 - **Ni-kshay Mitras:** Donors (individuals, NGOs, Corporates) who provide nutritional/vocational support.
 - **Ni-kshay 2.0:** The digital portal for managing these community interactions.



2.93 Tughlakabad Fort

- The **Tughlaqabad Fort** is a massive, ruined citadel in Delhi that serves as a prime example of **14th-century Indo-Islamic architecture**.
- It was built to reflect the power—and the paranoia—of the Tughlaq dynasty.
- **Founder:** Built by **Ghiyas-ud-din Tughlaq** (the founder of the Tughlaq Dynasty).
- **"Third City":** It is considered the **third city of Delhi** (after Qila Rai Pithora and Siri).

- **Purpose:** Primarily built as a defensive military outpost to ward off the frequent **Mongol invasions** of the time.
- **Architectural Features**
 - **Sloping Walls (Batter)**
 - **Massive Scale:** The fort walls are made of enormous blocks of **sandstone** and granite. The perimeter spans about 6 km.
 - **Triple-Storeyed Towers**
 - **The Citadel:** The layout was divided into three parts:
 - The wider city area for the common people.
 - The citadel (Bijai-Mandal) for the king.
 - The palace area for the royal residences.
- **Ghiyas-ud-din's Tomb-** Located in a separate fortified enclosure connected to the main fort by a **stone causeway** (originally built over an artificial lake).
 - **Design:** It features a "**true dome**" and a distinct **red sandstone** body with white marble inlay.
 - **Enclosure:** Unusually, the tomb itself is built like a mini-fortress with sloping walls, intended to be a secure final resting place.



2.94 Anti-Dumping Duty

- **Anti-Dumping Duty (ADD)** is a protectionist tariff imposed by a government on foreign imports that it believes are priced below "fair market value"
- **Dumping:** Occurs when a country exports goods to another country at a price lower than what it charges in its own home market (or below the cost of production).
- **Purpose of ADD:** It is a **rectifying measure** to neutralize the "injury" caused to domestic industries by unfairly low-priced imports.
- **WTO Compliance:** ADD is **not prohibited** by the WTO. It is permitted under **Article 6 of GATT 1994** as a tool for fair competition.
- **Institutional Framework in India-** The process involves two distinct ministries, which is a common point for "trap" questions:
 - **Investigation & Recommendation:** The **Directorate General of Trade Remedies (DGTR)** under the **Ministry of Commerce and Industry**.
 - **Imposition & Notification:** The Finance Ministry takes the final call on whether to actually levy the duty recommended by DGTR.
- **Duration:** Usually imposed for **5 years**.
- **Sunset Review:** An investigation conducted before the expiry of the 5-year period to decide if the duty needs to be extended for another 5 years.



Feature	Anti-Dumping Duty (ADD)	Countervailing Duty (CVD)
Target	Low pricing by private companies/firms .	Subsidies provided by foreign governments.
Focus	Corrects "price discrimination."	Neutralizes "unfair state-backing."

2.95 INS Taragiri

- **INS Taragiri (F41)** is the fourth stealth frigate of the **Nilgiri-class**, built under the Indian Navy's ambitious **Project 17A**.
- **Successor to Shivalik-class:** Project 17A is a follow-on to the Project 17 (Shivalik-class) frigates.
- **The Fleet:** A total of **7 ships** are being built under this project.
- **Mountain Names:** All ships in this class are named after hill ranges in India (Taragiri is named after a hill range in **Garhwal, Himalayas**).
- **Key Technical Features**
 - **Stealth Technology:** It features a **reduced Radar Cross-Section (RCS)** through a sleeker hull design and radar-absorbent coatings.
 - Uses **Combined Diesel or Gas (CODOG)** propulsion. It has two gas turbines (
 - **Indigenous Content:** Over **75%** of the ship is indigenous
- **Weaponry & Sensors (The "Teeth")**
 - **Surface-to-Surface:** Equipped with **BrahMos** supersonic cruise missiles.
 - **Surface-to-Air:** Features the **Barak-8** (LRSAM) or MRSAM missiles for air defense.
 - **Anti-Submarine (ASW):** Armed with indigenous triple-tube lightweight torpedo launchers and rocket launchers.
 - **Radar:** Uses the advanced **MF-STAR** (Multi-Function Surveillance Track and Missile Guidance Radar).



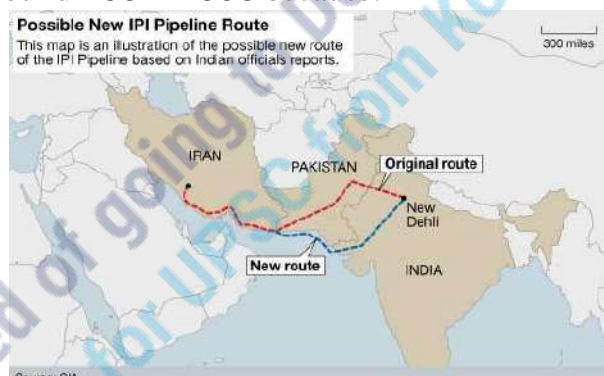
2.96 Diego Garcia Island

- **Archipelago:** It is the largest island of the **Chagos Archipelago**.
- Located at approximately **7° South** of the equator (Central Indian Ocean).
- **Physical Feature:** It is a classic **atoll**—a ring-shaped coral reef surrounding a deep natural lagoon that serves as a protected deep-water harbor.
- **Submarine Ridge:** It sits on the **Chagos-Laccadive Ridge**, an underwater mountain range that extends from the Lakshadweep islands down to the southern Indian Ocean.
- **The 2025–2026 Sovereignty Shift**
 - **The Treaty (May 2025):** The UK signed a historic treaty to transfer full sovereignty of the Chagos Archipelago to **Mauritius**.
 - **The 99-Year Lease:** As part of the deal, Mauritius has authorized the UK to exercise authority over **Diego Garcia** for an initial period of **99 years**.
 - This ensures the continued operation of the joint **UK-US military base**.
 - **Current Status (2026):** Ratification is ongoing. However, as of early 2026, the process has faced political "pauses" due to domestic pushback in the UK and shifting stances in the US (notably under the second Trump administration).
 - **Resettlement:** Under the treaty, Mauritius is free to resettle the **Chagossians** (displaced in the 1960s/70s) on any island in the archipelago *except* Diego Garcia.
- **"Unsinkable Aircraft Carrier":** It is one of only two major US bomber bases in the Indo-Pacific (the other being Guam). It can host B-52, B-1, and B-2 stealth bombers.
- **Chokepoint Control:** Its central location allows power projection over three vital maritime chokepoints: the **Strait of Hormuz**, **Bab-el-Mandeb**, and the **Strait of Malacca**.



2.97 The Iran-Pakistan-India (IPI) Pipeline

- The **Iran-Pakistan-India (IPI) Pipeline**, often called the "**Peace Pipeline**," is a classic "stalled" project.
- It has gained renewed attention as the ongoing West Asia crisis has disrupted India's LNG supply chains, forcing a re-evaluation of land-based alternatives.
- **Route:** Originates from Iran's **South Pars field** (the world's largest gas field, shared with Qatar), passing through **Balochistan** (Pakistan) to reach **Rajasthan/Delhi**.
- **Length:** Approximately **2,775 km**.
- **Capacity:** Designed to transport 60 million standard cubic meters per day (mmscmd) each to India and Pakistan.
- India effectively stopped participating in formal talks around **2007–2008** because:
 - **Pricing:** Disagreements over the "transit fee" and "transportation tariff" demanded by Pakistan.
 - **Security:** Concerns about the pipeline passing through **Balochistan**, a region prone to insurgency and sabotage.
 - **Geopolitics (The US Factor):** Pressure from the United States under **CAATSA** (Countering America's Adversaries Through Sanctions Act) and the priority given to the **Indo-US Civil Nuclear Deal**.
- **Delivery Guarantees:** India wanted Iran to take responsibility for the safe delivery of gas at the *India-Pakistan border*, while Iran insisted on the *Iran-Pakistan border*.



2.98 ANMOL Initiative

- **Full Form:** Advanced Newborn Monitoring and Optimal Lifecare.
- **Objective:** Early detection of **genetic, metabolic, and congenital disorders** in newborns to prevent irreversible disabilities or death.
- **Target Group:** All newborns in Delhi, regardless of whether they are born in **government or private hospitals**.
- **The "Single Drop" Model:** The scheme provides **56 different diagnostic tests** using just a **single drop of blood** (roughly 180 microlitres) collected on a filter paper.
- **Technology Used:** It utilizes **Tandem Mass Spectrometry (TMS)**, a high-end technology capable of detecting multiple metabolic disorders simultaneously from one sample.
- **Cost:** The service is provided **completely free of cost** to parents. In private labs, this panel of tests typically costs several thousand rupees.
- **Integrated Screening:** Beyond blood tests, the initiative also integrates point-of-care screening for **hearing impairment** and **congenital heart disease**.
- **Budgetary Outlay:** ₹25 crore has been specifically earmarked for this initiative.
- **Nodal Authority:** Delhi Health Department.
- **Early Intervention:** The tests are ideally conducted within **24 hours to 10 days** of birth. Early diagnosis of conditions like *Congenital Hypothyroidism* can prevent permanent mental retardation with simple, inexpensive medication.



2.99 Lipulekh Pass

- **Location:** Situated in the **Kumaon region** of Uttarakhand.
- It is a strategic mountain pass at the **India-China-Nepal trijunction**.
- It links Uttarakhand (India) with the **Tibet Autonomous Region** (China), specifically the trading town of **Taklakot (Purang)**.
- **River Basin:** It forms part of the **Kali River basin** (also known as Sharda or Mahakali).
- **First Trade Post:** It was the **first** Indian border post opened for trade with China
- After a six-year hiatus (since 2019/2020), India and China have officially agreed to **resume border trade in June 2026**.
- **Kailash Mansarovar Yatra:** It is one of the three primary routes for the pilgrimage. The others are via Nathu La (Sikkim) and Kathmandu (Nepal).
- **Core Issue:** A dispute between India and Nepal over **Kalapani-Limpiyadhura-Lipulekh** triangle.
- **Treaty of Sugauli (1816):** (signed between British India and the Kingdom of Nepal).
 - The treaty fixed the **Kali River** as Nepal's western boundary.
- **The Conflict:** India claims the river begins where various mountain streams join at Kalapani (placing the pass in India). Nepal claims the river originates further west at **Limpiyadhura** (placing the pass in Nepal).



2.100 Randomization of EVM-VVPATs

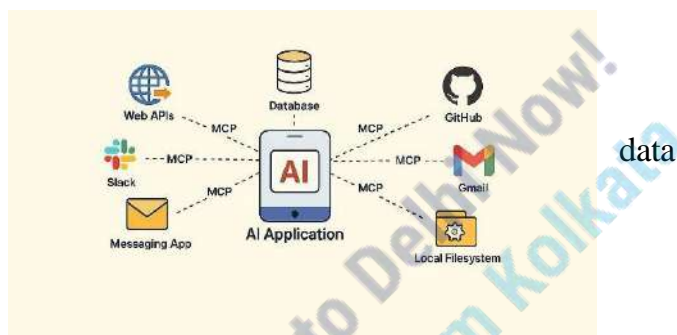
- The Election Commission of India has completed the first stage of EVM-VVPAT randomization across Assam, Kerala, and Puducherry to prepare for the upcoming April 2026 Assembly elections.
- It is a two-stage, software-driven process used to allocate voting machines to various constituencies and polling stations. It ensures that no one—including election officials—knows in advance which specific machine will be deployed to which polling station.
- **The process is executed in two distinct phases:**
 - **First Stage (District to Constituency):** Machines that have passed the First Level Checking (FLC) are randomly shifted from the District Warehouse to the specific Assembly Constituency (AC).
 - **Second Stage (Constituency to Polling Station):** Once the list of contesting candidates is finalized, the machines are again randomized to be assigned to specific Polling Stations within that constituency.
- **Timing:** Roughly 21 days before the poll.
- **Conducted by:** The **District Election Officer (DEO)**.
- **Presence:** Representatives of **recognized political parties** must be present.
- **Process:** Out of the entire district's "Available Pool" of EVMs/VVPATs, machines are randomly allocated to specific Assembly Constituencies using a computer software.
- **Strong Room Security:** After the first randomization, machines are moved to AC-specific Strong Rooms, which are sealed and guarded 24/7.



- **List Sharing:** The serial numbers of the randomized machines are shared transparently with political parties and candidates at every stage.

2.101 Model Context Protocol (MCP)

- The Government of India has launched a Model Context Protocol (MCP) server to link AI tools with the e-Sankhyiki portal, allowing AI applications to access verified official statistical data directly.
- **Launched In:** Originally introduced as an open standard in late 2024 (by Anthropic), with the Indian Government's specific implementation for official statistics launched in early 2026.
- **Aim:** To eliminate the silos between AI models and real-world data, enabling AI tools to provide more accurate, data-driven, and context-aware responses.
- **Working Principle:**
 - **Standardized Interface:** It functions like a **USB-C for AI**, providing a common port that any AI application can use to plug into any data source.
 - **Client-Server Architecture:** The AI application acts as the Client, and the data source (like the e-Sankhyiki portal) acts as the Server.
 - **Contextual Retrieval:** When a user asks a question, the AI uses the MCP to pull the relevant statistics from the server to use as context for its answer.
 - **Permission-Based Access:** The protocol ensures that the AI can only access the specific data tools or files it has been granted permission to use.
 - **Universal Integration:** A single MCP server allows a data source to be integrated with multiple AI assistants (Claude, ChatGPT, IDEs) simultaneously.



2.102 Strategic Petroleum Reserve

- India has established **5.33 Million Metric Tonnes (MMT)** of strategic crude oil storage in underground rock caverns at three coastal locations:
 - **Visakhapatnam, Andhra Pradesh:** 1.33 MMT
 - **Mangaluru, Karnataka:** 1.50 MMT
 - **Padur, Karnataka:** 2.50 MMT
- **Current Filling Level (March 2026):** Approximately **64% full** (~3.37 MMT).
- The government maintains that this level is "dynamic" and depends on market prices and supply conditions.
- **Coverage:** At full capacity, these reserves provide roughly **9.5 days** of India's crude oil requirements.

- **Expansion Plans (Phase II)**
 - **Public-Private Partnership (PPP)** mode
 - **Chandikhol, Odisha:** 4 MMT (New site)
 - **Padur, Karnataka:** 2.5 MMT (Expansion of existing site)
- **Model: Commercial-cum-Strategic.** This allows the private concessionaire to store and trade a portion of the oil commercially, while the government retains the right of first refusal during emergencies.
- **Target:** Total capacity is expected to reach **11.83 MMT** by 2029, extending the strategic buffer to about 24 days.
- **Managing Body: Indian Strategic Petroleum Reserves Limited (ISPRL).** It is a Special Purpose Vehicle (SPV) and a wholly-owned subsidiary of the **Oil Industry Development Board (OIDB)** under the Ministry of Petroleum & Natural Gas.
- **The 90-Day Rule:** The International Energy Agency (IEA) mandates that members hold reserves equivalent to **90 days of net imports**.
- **India's Standing:** India is an **Associate Member** of the IEA (not a full member).
- **Total Buffer:** When combining SPRs with the inventory held by Oil Marketing Companies (OMCs), India's total oil sub-surface and surface storage covers approximately **74 days** (as of March 2026).



2.103 The Aghanashini-Vedavathi River-Linking Project

- **Objective:** To divert "surplus" monsoon water from the **Aghanashini River** (West-flowing) to the **Vedavathi River** (East-flowing).
- **Purpose:** Primarily to provide drinking water and irrigation to the drought-prone "Bayaluseeme" (plains) region of Karnataka, specifically **Chitradurga, Davangere, and Ballari** districts.
- **Scale:** Aims to divert approximately **35 TMC** (Thousand Million Cubic Feet) of water via a 194-km long network of canals and pipelines.

Feature	Aghanashini River	Vedavathi River
Flow Direction	West-flowing (Arabian Sea)	East-flowing (Bay of Bengal system)
Origin	Sirsi (Shankara Tirtha), Uttara Kannada	Bababudangiri Hills, Chikkamagaluru
Nature	Pristine, free-flowing (undammed)	Seasonal; a lifeline for central Karnataka
Tributary Status	Independent river	Major tributary of Tungabhadra (Krishna Basin)
Key Fact	Estuary is a Ramsar Site (designated 2024)	Formed by confluence of Veda and Avathi

2.104 Jal Seva Aankalan

- The **Jal Seva Aankalan (JSA) Framework** is a critical recent addition to India's rural water governance under the **Jal Jeevan Mission (JJM)**.

- It represents a shift from "infrastructure creation" (laying pipes) to "service delivery" (ensuring water actually flows).
- **Ministry:** Launched by the **Ministry of Jal Shakti**.
- **Purpose:** A **Gram Panchayat-led digital tool** to assess functionality of drinking water services.
- The framework evaluates five specific pillars of water service at the village level:
 - **Regularity and Adequacy:** 55 litres per capita per day (lpcd)
 - **Water Quality:** Does the water meet **BIS 10500:2012** safety standards?
 - **Operation & Maintenance (O&M):** Efficiency of the local system's upkeep.
 - **Source Sustainability:** Long-term availability of water
 - **Institutional Arrangements:** Performance of the Village Water and Sanitation Committee (VWSC/Pani Samiti).
- **Community-Led:** It is a **self-assessment** process, reducing reliance on third-party surveys.
- Findings are presented and endorsed in the **Gram Sabha**.
- **Panchayat Secretary** uploads the data digitally on the **JJM-IMIS Dashboard**.
- **Transparency:** Once uploaded, the data is publicly visible on platforms like **eGramSwaraj** and the **Meri Panchayat App**.
- **Citizen Feedback:** A **30-day window** is provided for citizens to give feedback before the report is finalized.



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2.105 City of Tyre

- **Country:** Southern **Lebanon**, on the Mediterranean coast.
- **Physical Shift:** Originally an **island** city, it was turned into a **peninsula** (isthmus) by **Alexander the Great** in 332 BCE during his seven-month siege.
- **Harbors:** Historically featured two ports—the **Sidonian Harbor** (North) and the **Egyptian Harbor** (South).
- Famous for the production of **purple dye** extracted from the **Murex sea snail**. The dye was so expensive it became a symbol of royalty.
- **UNESCO World Heritage Status. Inscribed:** 1984.
- **Key Archaeological Sites:**
 - **Al-Bass Site:** Contains a massive **Roman Hippodrome** (one of the largest in the world, once seating 20,000) and a monumental **Triumphal Arch** (Hadrian's Arch).
 - **Al-Mina Site:** Located on the original island, featuring Roman baths, colonnaded streets, and a unique **rectangular arena**.
- **Current Threat (2024–2026):** UNESCO and ICOMOS have expressed grave concern over the site's integrity due to nearby airstrikes and regional instability.



2.106 Proálcool Programme

- The **Proálcool Programme** (National Alcohol Programme) is a landmark initiative of **Brazil**, often cited as the world's most successful biofuel strategy.
- **Launch Year:** 1975 (under the military government of Ernesto Geisel).

- Triggered by the **1973 Global Oil Shock**, which made oil imports prohibitively expensive.
- **Primary Goal:** To reduce national dependence on imported fossil fuels by substituting gasoline with **sugarcane-derived ethanol**.
- **Secondary Goal:** To stabilize the domestic sugar industry during periods of low global sugar prices.
- **Key Features:**
 - **Mandatory Ethanol Blending:** Petrol mandated to contain ethanol (initially ~11%, later increased to ~30%), ensuring steady demand for biofuels.
 - **Flex-Fuel Vehicle Ecosystem:** Introduction of vehicles capable of running on both petrol-ethanol blends and 100% ethanol using sensor-based technology.
 - **Dual Fuel Infrastructure:** Fuel stations equipped with separate pumps for blended petrol and pure ethanol, allowing consumer choice based on price.



2.107 Biologics

- **Definition:** Large, complex molecules derived from **living organisms** (mammalian cells, bacteria, yeast, or plant cells) rather than being chemically synthesized.
- **Nature:** They are often **proteins** (e.g., insulin, antibodies) or nucleic acids (DNA/RNA).
- **Sensitivity:** Extremely sensitive to heat and shear; they require a strict **cold chain** and sterile manufacturing environments.
- **Production Procedure**
 - **Host Cell Selection:** Scientists select living cells (bacteria, yeast, or mammalian cells) to act as factories.
 - **Genetic Engineering:** The specific DNA sequence for the desired protein is inserted into these cells.
 - **Large-Scale Culture:** The cells are grown in massive bioreactors under strictly controlled conditions.
 - **Purification:** The protein is extracted and purified from the cell culture to ensure it is free from contaminants.
 - **Batch Testing:** Because they are grown rather than made, every single batch must undergo extensive testing to ensure consistency and safety.
- **Key Features:**
 - **Molecular Complexity:** They are significantly larger and more structurally complex than chemically synthesized drugs.
 - **Living Sources:** Derived from living systems such as microorganisms, plant cells, or animal/human cells and plasma.
 - **High Specificity:** They bind to specific cell receptors, which allows for precision medicine with fewer off-target effects.
 - **Sensitivity:** Extremely sensitive to environmental factors like temperature and light; they usually require a cold chain for storage.
 - **Immunogenicity:** Because they are proteins, they have the potential to trigger an immune response in the human body, requiring rigorous safety monitoring.
- The Union Budget 2026 announced the **Biopharma SHAKTI strategy** to boost domestic production of biologics and biosimilars, alongside a shift toward non-animal testing models.

Examples of biologics include:



2.108 Vayu Baan Project

- The Indian Air Force (IAF) has initiated Vayu Baan, India's first **helicopter-launched autonomous drone system**.
- **Mechanism:** Small, indigenous drones are dropped from a moving helicopter mid-flight. Once released, they unfold their wings, activate propulsion, and fly independently.
- **Purpose:** To provide **stand-off capability**. This allows helicopters (the "mother ship") to identify and strike enemy targets from a safe distance (over **50 km**), staying outside the range of enemy surface-to-air missiles or MANPADS.
- **Launched By:** The project is being led by the IAF's Directorate of Aerospace Design.
- **Key Features:**
 - **Extended Range:** Capable of flying over 50 km after being dropped, significantly extending the reach of the mother ship.
 - **Dual-Role Capability:** Equipped for both high-definition ISR (Intelligence, Surveillance, and Reconnaissance) and precision strikes using an onboard warhead.
 - **Autonomous Navigation:** Features advanced flight control systems for autonomous waypoint navigation and target tracking.
 - **GNSS-Denied Operation:** Specifically designed to function effectively even in electronic warfare environments where GPS signals are jammed or disabled.
 - **Advanced Sensors:** Integrated with electro-optical and infrared (EO/IR) sensors for clear day and night operations.
 - **Endurance:** Provides approximately 30 minutes of loitering time to scout for targets or wait for the optimal strike window.



2.109 S-400 Triumph

- **Type:** Long-range Surface-to-Air Missile (SAM) system.
- **Origin:** Developed by **Almaz-Antey, Russia**.
- **Part of Sudarshan Chakra;** a multi-layer defense system to protect assets.
- **Layered Defence:** It is unique because it uses **four different types of missiles** to create a multi-layered shield.
- **Range & Altitude:** Can engage targets up to **400** away and at altitudes up to **30 km**.
- **Target Diversity:** Can intercept aircraft, UAVs (drones), cruise missiles, and **ballistic missiles**.
- **Speed:** Capable of neutralizing targets moving at **Mach 14** (~17,000 km/h).
- **Tracking:** Its radar can track **300 targets** simultaneously and engage **36-80 targets** (depending on configuration) at once.
- **Anti-Stealth:** Its multifunction radars (like the *91N6E Big Bird*) are designed to detect "low-observable" (stealth) aircraft.
- **Mobility:** It is a **mobile system** (truck-mounted). It features "Shoot-and-Scoot" capability—deployable in **5–10 minutes**.
- **Deployment in India:** Systems are currently deployed at the **Western Front** (facing Pakistan), the **Northern Border** (facing China), and the **Siliguri Corridor** (Chicken's Neck).



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2.110 IVFRT Scheme

- Implemented by the **Ministry of Home Affairs (MHA)**.
- **Purpose:** To interlink and optimize functions related to immigration, visa issuance, and registration of foreigners. It creates a unified digital platform to track a foreigner's journey from "Visa application to Exit."
- **Core Philosophy:** "Facilitate legitimate travelers while strengthening national security."
- The system links key stakeholders such as Indian Missions abroad, Immigration Check Posts (ICPs), Foreigners Regional Registration Offices (FRROs), and security agencies into a unified framework.
- **Technological Modernization:** The scheme adopts emerging technologies such as biometrics, self-service kiosks, and mobile-based services to ensure a contactless and faceless visa process.
- **Security & Surveillance:** A critical component is the tracking of foreigners within the country to manage illegal migration and ensure compliance with visa norms.
- **Operational Efficiency:** The system has already achieved a 100% contactless and faceless visa process, reducing e-Visa clearance times (91.24% cleared within 72 hours) and cutting average manual clearance at posts to 2.5–3 minutes.



2.111 AssamSAT Mission

- **Pioneering Status:** Assam is the first Indian state to float a tender for its own group of earth-observation satellites.
- It is a state-level **Earth Observation (EO)** satellite system.
- **Primary Goals:**
 - **Disaster Management:** Real-time monitoring of the flood-prone Brahmaputra valley.
 - **Border Security:** Surveillance of international borders (Bangladesh and Bhutan) to prevent infiltration and smuggling.
 - **Governance:** Monitoring infrastructure projects (roads, embankments) and tracking illegal activities like poaching in Kaziranga or drug trafficking.
- **Orbit:** Low-Earth Orbit (**LEO**).
- **Quantity:** The mission involves a constellation of **at least 5 satellites**.
- **Special Technology:** Expected to carry **Synthetic Aperture Radars (SAR)**.
- Assam is under cloud cover for nearly half the year; SAR can "see" through clouds and darkness, unlike optical sensors.
- **Implementation Model: DBLOTT** (Design–Build–Launch–Operate–Train–Transfer). The state will eventually own the assets.
- **Collaborators:** Proposed in collaboration with **IN-SPACE** (Indian National Space Promotion and Authorisation Centre) and **ISRO**.



2.112 Natural Mineral Water

- It must come from **underground sources** (aquifers/springs) that are naturally protected from pollution.
- It is water obtained directly from underground as opposed to surface sources (like rivers). To be labeled Natural Mineral Water in India (under IS 13428), it must be microbiologically wholesome and possess a constant level of minerals and trace elements.
- Under the **Food Safety and Standards (Food Products Standards and Food Additives) Regulations**, specific rules apply:
 - **Prohibited Treatments**
 - No **RO (Reverse Osmosis)** or **UV treatment**
 - No chemical disinfection or addition of antimicrobial agents.
 - **Permitted Treatments:** Only physical processes like **filtration** or **decantation** to remove unstable elements (like sand or silt) are allowed.
 - **Aeration:** It may be aerated or de-aerated (adding/removing carbon dioxide) for carbonation.
- **Key Chemical Characteristics**
 - **TDS (Total Dissolved Solids):** Must be high enough to provide a distinct taste and nutritional value.
 - **Trace Elements:** Naturally contains minerals like **Calcium, Magnesium, Potassium, and Sodium** in specific ratios.
 - **Microbiological Purity:** Must be free from pathogens like *E. coli* and *Salmonella* at the point of origin and during bottling.



2.113 Veerangana Durgavati Tiger Reserve

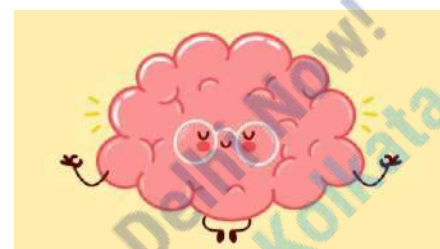
- **State:** Madhya Pradesh (MP).
- **Ranking:** It is the **7th tiger reserve in Madhya Pradesh** and the **54th in India**.
- **Districts:** Spread across Sagar, Damoh, and Narsinghpur districts.
- **Composition:** It was created by merging parts of the **Nauradehi Sanctuary** and the **Veerangana Durgavati Sanctuary**.
- **Landscape:** It is part of the **Vindhyan Range** and acts as a crucial corridor for tiger movement.
- **Ecological Significance & Connectivity**
- **Corridor Hub:** It provides a natural "green bridge" for tigers moving between the **Panna Tiger Reserve** and the **Satpura Tiger Reserve**.
- **Flora & Fauna:** Dominated by **Teak forests and dry deciduous vegetation**. It hosts tigers, leopards, sloth bears, and the Indian wolf.
- **River Basin:** The reserve falls within the **Narmada and Yamuna river basins**.
- Madhya Pradesh Chief Minister has laid the foundation for a new soft release Boma (enclosure) at the Veerangana Durgavati Tiger Reserve (VDTR), marking the start of India's third home for cheetahs.
- **Historical Context**



- **The Namesake:** Named after **Rani Durgavati**, the ruling Queen of **Gondwana** in the 16th century, known for her resistance against the Mughal Empire (specifically under Akbar's general, Asaf Khan).

2.114 CALM-Brain

- It is India's **first-of-its-kind digital repository** for data on brain structure and function regarding major psychiatric disorders.
- The repository has been developed by the National Institute of Mental Health and Neuro Sciences (NIMHANS) and the National Centre for Biological Sciences (NCBS) - TIFR under the Rohini Nilekani Centre for Brain and Mind (CBM).
- **Core Objectives & Coverage- Focus Disorders:** It specifically tracks five major neuropsychiatric conditions: **Addiction, Bipolar Disorder, Dementia, Obsessive-Compulsive Disorder (OCD), Schizophrenia.**
- **Data Types:** The repository is **multi-modal**, integrating clinical records, neuroimaging (**fMRI, MRI, EEG**), behavioral data, eye-tracking, and genetic information.
- **Longitudinal Study:** It tracks individuals over time to understand disease **onset** and **progression.**
- **Family-Based Analysis:** It includes data from over 2,700 participants across 1,100 families (studying both affected and unaffected members) to identify **biomarkers.**
- CALM-Brain provides **context-specific data** for the Indian population.
- **Precision Psychiatry:** It aims to move away from "one-size-fits-all" treatments toward **personalized/precision medicine** for mental health.
- **Biorepository Linkage:** The data is linked to a **stem cell biobank**, allowing researchers to study the biological origins of mental illness at a cellular level.
- **Early Intervention:** By identifying neurocognitive markers, the project helps in diagnosing disorders before severe symptoms manifest.



2.115 Modified UDAN Scheme

- The **Modified UDAN (Ude Desh ka Aam Nagrik) Scheme** is a revamped version of the original Regional Connectivity Scheme (RCS) approved by the Union Cabinet.
- It addresses the "viability crisis" of the previous phases, where nearly **50% of routes** (327 out of 663) were discontinued after initial subsidies ended.
- **High Discontinuation Rates:** According to a CAG of India report, only 7% to 10% of routes remained financially viable after their initial subsidy period ended.

Feature	Original UDAN (2016)	Modified UDAN (2026)
Subsidy Period	3 Years	Extended to 5 Years
Funding Source	RCS Levy on passengers (cross-subsidy)	Direct Budgetary Support (Exchequer)
Focus Area	Unserved/Underserved Airports	100 Airports + 200 Helipads
Duration	10 Years (till 2026/27)	Extended for 10 years (2026–2036)

- **Operation & Maintenance (O&M) Support:** For the first time, the government will provide O&M funding for 3 years (capped at **₹3.06 crore/year** for airports and **₹0.90 crore/year** for heliports) to sustain airports with low traffic.
- **Challenge Mode for Development:** 100 airports will be developed using a "Challenge Mode," prioritizing airstrips that show higher readiness and local demand.
- **Last-Mile Helipads:** A massive push for **200 modern helipads** in hilly, remote, and island regions

(e.g., J&K, Ladakh, NER, and A&N Islands) with a dedicated outlay of ₹3,661 crore.

- **Atmanirbhar Aircraft Procurement:** To solve the shortage of small aircraft, the government will procure indigenous planes like **HAL Dornier** (for Alliance Air) and **HAL Dhruv helicopters** (for Pawan Hans).

2.116 AI Tokens

- Tokens are the smallest units of data that a Large Language Model (LLM) processes. While humans read words, AI models break text down into tokens. A token can be a single character, a whole word, or even a part of a word (like the ing in running).
- **Functioning:**
 - **Tokenization:** When you enter a prompt, the tokenizer slices the text into tokens.
 - **Numerical Conversion:** Each token is converted into a unique numerical ID (vector) that the model can understand.
 - **Processing:** The AI predicts the next most likely token in a sequence based on mathematical patterns learned during training.
 - **Detokenization:** The predicted numerical tokens are converted back into human-readable text for the final response.
- **Key Characteristics**
 - **Language Variability:** Different languages require different numbers of tokens; for example, complex scripts or rare languages often use more tokens per word than English.
 - **Context Window:** Every AI model has a context window limit (e.g., 128k tokens), which defines how much information it can remember or process at one time.
 - **Statelessness:** Models generally process tokens in chunks; they don't know who you are unless the previous tokens of the conversation are re-sent to the model.
 - **Granularity:** Tokens allow models to understand the relationship between different parts of words, enabling them to handle spelling, grammar, and even coding languages effectively.



2.117 Gruh Sugam Portal

- The **Gruh Sugam Portal** (also referred to as *Gruha Sugam*) is a specialized digital platform launched by the **National Housing Bank (NHB)**.
- It is a dedicated digital bridge between **government employees** and lending institutions. The portal functions as an aggregator where employees can register their home loan requirements, receive multiple competitive offers from banks, and complete the application process digitally through their respective administrative units.

Feature	Details
Parent Ministry	Ministry of Finance (NHB is a Statutory Body under it).
Nature	Unified Digital Marketplace for housing loans.

• Core Objectives & Features

- **Location Independence:** Designed for personnel posted in remote or border areas who cannot physically visit banks.
- **Digital Integration:** Personnel apply through their **Administrative Units** digitally. No physical paperwork or bank visits are required for initial approvals.
- **Marketplace Model:** It acts as an aggregator where multiple **Primary Lending Institutions (PLIs)**—including banks and HFCs—provide competitive offers.
- **Transparency:** Users can compare interest rates and loan terms across different lenders on a single dashboard to find the "best-suited offer."
- **End-to-End Monitoring:** Includes built-in features for **Grievance Redressal**, consumer protection, and an AI-enabled **Chatbot** for real-time query resolution.



2.118 Nasha Mukt Vidyalaya Initiative

Feature	Details
Launch Ministries	Joint initiative of the Ministry of Education (MoE) and Ministry of Home Affairs (MHA) .
Parent Campaign Timeline	Nasha Mukt Bharat Abhiyan (NMBA) (Ministry of Social Justice & Empowerment).
Primary Target	A 3-Year Action Plan (2026–2029) .
Apex Guidance	Students, teachers, and school environments (both Government and Private). Directives from the 9th Apex Meeting of the Narco-Coordination Centre (NCORD) .

- **Declaration:** The area within a **500-metre radius** of every school must be formally declared a "Drug-Free Zone."
- **Enforcement:** It mandates the strict prohibition of the sale of any tobacco, alcohol, or narcotic substances within this perimeter.
- **Reporting Mandate:** School heads and designated "Nodal Teachers" are legally empowered and required to report any violations directly to local law enforcement (Police) for immediate action.
- The initiative utilizes the **Navchetna** (New Consciousness) modules developed by the Ministry of Social Justice & Empowerment:
- **Target:** 9 teacher-driven modules (8 for students of Classes 6th–11th and 1 for parents).
- **Focus:** Life-skills training, peer-pressure management, and identifying early signs of substance use.
- **Implementation:** Covers 30,000 schools across 300 vulnerable districts in the first phase.
- **Strategic Pillars**
 - **First Line of Defence:** Schools are treated as the primary platform for **behavioral change** and early intervention.
 - **Peer-Led Intervention:** Creation of "**Nasha Mukt Clubs**" in every school to foster student-to-student support systems.
 - **Multi-Level Monitoring:** A structured reporting framework exists at the School, District, and State levels, integrated with the **NMBA Dashboard**.
 - **Linkage with Health:** Schools are required to establish physical/operational links with



local health systems and **District De-addiction Centres (DDACs)** for referral and rehabilitation.

2.119 **Grameen Credit Score (GCS)**

- **What it is:** A specialized credit scoring framework tailored for the rural economy, moving beyond traditional models like CIBIL.
- **Primary Target:** Members of **Self-Help Groups (SHGs)**, Joint Liability Groups (JLGs), small farmers, and rural women entrepreneurs.
- **Implementation:** Developed by **Public Sector Banks (PSBs)** in collaboration with credit bureaus (like TransUnion CIBIL, Experian).
- **Key Features**
 - **Alternative Data Points:** Unlike traditional scores that rely on bank loan history, GCS uses "non-traditional" data:
 - SHG/JLG repayment patterns and internal lending records.
 - **Utility payments** (electricity, water) and mobile/TV recharges.
 - Agricultural cycles and seasonal income patterns.
 - Digital footprints like UPI transactions and government benefit transfers.
 - **Scoring Range: 300 to 900.**
- **Complementary Role:** It does not replace CIBIL/CRIF but works alongside them to provide a more holistic view of a rural borrower's creditworthiness.
- **Customized Credit Cards:** As part of this initiative, the government is launching Credit Cards for Micro-Enterprises with a limit of up to Rs 5 lakh.



2.120 **PRISM-SG Portal**

- **Full Form:** Portal for Rail-Road Inspection & Stages Management – **Steel Girders**.
- **Nodal Ministries:** A joint initiative of the **Ministry of Road Transport & Highways (MoRTH)** and the **Ministry of Railways**.
- **Objective:** To digitize and streamline the technical approvals and inspection processes specifically for **Steel Girders** used in **Road Over Bridges (ROBs)** and Railway Bridges.
- **Key Technical Features**
 - **End-to-End Digitization**
 - **Specific Documentation:** Digitizes the **Quality Assurance Plan (QAP)** and the **Welding Procedure Specification Sheet (WPSS)**.
 - **Inspection Management:** Online scheduling of physical inspections, instant upload of reports, geo-tagged photographs, and test results.
 - **Audit Trail:** Maintains an unalterable digital log of every approval stage, ensuring high accountability and transparency.
- **Significant Impact**
 - **Timeline Reduction:** Aims to reduce the approval and inspection cycle from **12 months to just 3–4 months** (a 70% reduction).
 - **Stakeholder Integration**
 - **Cost Efficiency**



2.121 Bab-el-Mandeb Strait

- **Connects:** The **Red Sea** (Northwest) to the **Gulf of Aden** / Arabian Sea (Southeast).
- **Separates:** The **Arabian Peninsula** (Asia) from the **Horn of Africa** (Africa).
- **Bordering Countries:** Yemen, Djibouti and Eritrea.

- **Key Islands:**

- **Perim Island (Mayyun):** A Yemeni volcanic island that divides the strait into two channels.
- **Seven Brothers (Sawabi Islands):** An archipelago located near the coast of Djibouti.

- **Strategic & Economic Significance**

- **The "Gate of Tears":** Its name (Arabic: *Bab-el-Mandeb*) refers to the historical dangers of navigating its currents and reefs.
- **Oil Chokepoint:** It is the **3rd most important chokepoint** for global oil and natural gas (after the Strait of Hormuz and Malacca).
- **Suez Canal Link:** It acts as the "Southern Gate" to the Suez Canal. If blocked, ships must detour around the **Cape of Good Hope** (South Africa), adding ~10-14 days to the journey.
- **Underwater Cables:** It is a major corridor for subsea fiber-optic cables that carry internet traffic between Europe and Asia.

BAB EL MANDEB



2.122 SRY Gene Screening

- **Location:** Found exclusively on the **Y chromosome**.
- **Function:** It is the "master switch" for male sex determination. It triggers the transformation of undifferentiated gonads into **testes**.
- **Mechanism:** It encodes the **TDF (Testis-Determining Factor)** protein. Without this gene (or if it is "switched off"), embryo develops female reproductive structures (ovaries) by default.
- The International Olympic Committee (IOC) announced a seismic policy change mandating SRY gene screening for all female athletes in international elite sports.
- This decision effectively bans transgender women and many DSD (Differences in Sex Development) athletes from female categories.
- **Aim:** The primary objective is to **protect the female category** in elite sports.

How it Works?

- **Sample Collection:** The athlete provides a simple **saliva sample** or a **cheek swab**
- **DNA Analysis:** to detect the presence or absence of the SRY gene.
- **Turnaround Time:** The process typically takes about **one week** for results.
- **Verification:** The results are submitted to the relevant international sports body. If negative, the athlete is permanently cleared for the female category.



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2.123 Tunguska Air Defence Missile System (2K22M)

- The Ministry of Defence signed a Rs 445 crore contract with Russia's JSC Rosoboronexport, to procure the Tunguska Air Defence Missile System for the Indian Army.
- **Type:** A tracked, self-propelled anti-aircraft weapon system (SPAAGM).
- **Origin:** Soviet Union/Russia (Developed by KBP Instrument Design Bureau).
- **Role:** Designed for **Short-Range Air Defence (SHORAD)** to protect mechanized infantry and tank regiments on the move.
- **The "Hybrid" Advantage (Key Feature)-** Unlike most systems that use *either* guns or missiles, the Tunguska integrates both on a single chassis:
 - **Guns:** Twin **30 mm autocannons** (2A38M) with a massive rate of fire (up to 5,000 rounds per minute). Effective range: **0.2 to 4 km**.
 - **Missiles:** Eight **9M311-series surface-to-air missiles** (SAM). Effective range: **2.5 to 10 km**; Altitude: up to **3.5 km**.
- **Technical Capabilities**
 - **Radar System:** Features a 360-degree target acquisition radar (detection up to **18 km**) and a dedicated tracking radar.
 - **Optical Backup:** Includes an optical sight with a laser rangefinder, allowing it to engage targets even if the enemy uses **Electronic Warfare (EW)** to jam its radar.
 - **Mobility:** Mounted on a tracked armored chassis (GM-352 series), allowing it to keep pace with T-90/Arjun tanks across rugged terrain.
 - **Fire-on-the-move:** It can fire its guns while moving, though missiles usually require a brief stop or very slow speeds for guidance accuracy.



2.124 Biotechnology Research and Innovation Council (BRIC)

Context:

- First meeting of BRIC–Research Advisory Board held at Regional Centre for Biotechnology

About BRIC

- **BRIC** is an **apex autonomous body** under the Department of Biotechnology (**Ministry of Science & Technology**).
- It is a **registered society**.
- Formed by merging **14 autonomous biotech institutes**.

Objective

- To bring all biotech research under **one coordinated system**
- Create a **decentralised national laboratory network** (many institutes working together)

Key Functions



- **Research Oversight:** Guides and monitors research through RAB
- **Mission Projects:** Runs national-level biotech programmes (health, agriculture, etc.)
- **Resource Sharing:** Promotes shared labs and infrastructure
- **Indigenous Tech:** Focus on **self-reliance** and local innovation
- **Capacity Building:** Develops skilled scientists

Significance

- Reduces **fragmentation** in biotech research
- Improves **efficiency and coordination**
- Boosts India's **bioeconomy and global competitiveness**

2.125 Baltic Sea

Context:

- A research expedition is mapping World War II munitions and shipwrecks on the Baltic Sea floor

About

- The Baltic Sea is a **semi enclosed, brackish inland sea** in Northern Europe
- It is one of the **largest brackish water bodies** in the world
- It is important for **trade, energy transport, and communication networks**

Location

- Lies between the **Scandinavian Peninsula, mainland Europe, and Danish islands**
- Connected to the North Sea through the **Kattegat and Skagerrak straits**

Bordering countries:

Denmark, Estonia, Finland, Germany, Latvia, Lithuania, Poland, Russia, Sweden



Key Features

- It is a **shallow sea** with an average depth of about 55 metres
- It has **very slow water renewal**, taking nearly 30 years
- Water is **brackish** due to mixing of river water and limited seawater
- It has **low biodiversity**, making it highly sensitive to disturbances
- It faces heavy human pressure from **shipping, pipelines, cables, and wind farms**

Environmental Concerns

- World War II ammunition releases **toxic chemicals such as TNT and mercury**
- These chemicals enter the **food chain and affect marine life and humans**
- Sunken ships carrying oil may cause **long term pollution**
- Slow water circulation leads to **long lasting environmental damage**

2.126 Denotified, Nomadic and Semi-Nomadic Tribes (DNTs)

About DNTs

• Denotified Tribes (DNTs):

- Communities earlier notified as “criminal tribes” under the **Criminal Tribes Acts (1871 to 1947)** during British rule
- Following the repeal of the Act in **1952**, these communities were **denotified**

• Nomadic Tribes:

- Communities that **migrate from place to place** for livelihood and generally lack permanent settlement

• Semi-Nomadic Tribes:

- Communities that combine **periodic mobility with partial settlement**
- These groups constitute some of the **most marginalised and socio-economically disadvantaged sections** of society
- Historically, they lacked **access to private land and housing**, relying on **forests and common grazing lands**

Status in India

- Approximately **10 percent of India’s population** is estimated to belong to these communities
- Around **1235 communities** have been identified

Commissions and Committees

• **Renke Commission (2008):** First comprehensive attempt to identify DNTs

• **National Commission for DNTs (2014):**

- Chaired by **Bhiku Ramji Idate**
- Submitted its report in **2018**
- Recommended state-wise identification and welfare measures

Institutional Framework

- **Development and Welfare Board for Denotified, Nomadic and Semi-Nomadic Communities (2019):**
 - Established under the Ministry of Social Justice and Empowerment
 - Mandated to **formulate and implement welfare and development programmes**

Scheme for Economic Empowerment of DNTs (SEED)

- Launched by the **Ministry of Social Justice and Empowerment**
- Implemented through the **Development and Welfare Board Key**

Features

- Target beneficiaries: Families with annual income up to **2.5 lakh rupees**
- Provides:
 - **Free coaching** for competitive examinations
 - **Health insurance coverage**
 - **Financial assistance for housing**
 - **Livelihood support initiatives**
- Financial allocation: **200 crore rupees** for five years from 2021 to 2026

2.127 Competition Commission of India (CCI)

About

- The **Competition Commission of India (CCI)** is a **statutory body** established under the **Competition Act, 2002**
- It functions under the **Ministry of Corporate Affairs**
- Established in **2003** and became operational in **2009**
- It replaced the **Monopolies and Restrictive Trade Practices (MRTP) Act, 1969**

Objective

- To ensure **fair competition in the market**
- To prevent **unfair trade practices**
- To protect **consumer interests** and ensure **freedom of trade**

Key Functions

- Prevents **anti-competitive agreements** such as price fixing and collusion
- Checks **abuse of dominant position** by large companies
- Regulates **mergers and acquisitions** to avoid monopoly formation
- Conducts **investigations and imposes penalties** on violators
- Provides **advisory support to the government** on competition-related matters

Composition

- Consists of a **Chairperson and up to 6 members**
- Appointed by the **Central Government**
- Members must have **at least 15 years of experience** in relevant fields such as law, economics, or finance

Important Provisions of the Competition Act, 2002

- **Section 3:** Prohibits anti-competitive agreements
- **Section 4:** Deals with abuse of dominant position
- **Sections 5 and 6:** Regulate mergers and acquisitions
- **Section 19:** Empowers the Commission to conduct inquiries

Recent Update

- **Competition (Amendment) Act, 2023:**
 - Strengthens regulation of **digital markets**
 - Introduces **faster approval process for mergers**
 - Increases **penalties for violations**

2.128 OPU–IVF–ET Technology

Context:

- Scientists at Indian Veterinary Research Institute produced **five Sahiwal calves from a single donor cow**

What is OPU–IVF–ET?

- It is an **advanced reproductive technology in livestock**

• Full form: **Ovum Pick-Up, In Vitro Fertilization, Embryo Transfer**

• It involves: Collecting eggs from a superior cow. Then, fertilising them in a laboratory and then transferring embryos into surrogate cows

Objective

- To **rapidly improve the genetic quality** of livestock
- To increase **milk production and productivity**

Key Features

- Enables **multiple offspring from one superior cow**
- Does not require heavy hormone use
- Embryos can be **stored and transported**
- Helps in **fast genetic improvement**

Sahiwal Cow

- One of the **best indigenous dairy breeds of India**
- Origin: **Punjab region (India and Pakistan)**
- Found mainly in **Punjab, Haryana, Rajasthan**

Characteristics

- **High milk yield** among indigenous breeds
- **Heat tolerant and disease resistant**
- Reddish-brown colour with **loose skin and hump**
- Milk is rich in **A2 protein (considered easier to digest)**

