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JULY 13

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Iranian regional reprisals follow U.S. attacks

- U.S. says its attacks will weaken Tehran's ability to threaten shipping, insists the Strait is open
- Tehran launches attacks on West Asian countries hosting U.S. forces, says the Strait remains closed
- Iran's Revolutionary Guard said multiple vessels ignored orders; one 'was hit by a warning shot'

Associated Press
DUBAI

The U.S. attacked Iran early on Sunday over an Iranian strike on a container ship in the Strait of Hormuz that left one Indian sailor missing. Iran responded with attacks on several countries in West Asia, including Bahrain, Kuwait, Qatar, Jordan, and Oman.

The U.S. struck again later on Sunday. Iran's state-run *IRNA* news agency cited the Governor of Qeshm island near the strait as saying projectiles had been fired at military targets, with no casualties. It said explosions were heard in the coastal city of Bandar Abbas and Hajiabad city to the north.

The U.S. military's Central Command (CENTCOM) said it hit 140 targets, including missile and drone launch sites, ammunition dumps, communication equipment, and other sites. It said the attacks, heavier than in recent days, would weaken Iran's ability to threaten shipping. "We bombed the hell out of them last night," President Donald Trump said.

Tensions boil over: The U.S. says it hit 140 targets, including missile and drone launch sites and communication equipment, in Iran. REUTERS

Iranian state media later reported U.S. strikes across the country, including military sites in a province near Tehran. Semi-official news agencies said that a Navy officer was killed.

Iran retaliated by attacking nations in the region hosting U.S. military forces, while insisting it alone must control the Strait.

New questions

The U.S. military and Mr. Trump asserted that the Strait remained open on Sunday. Iran said the Strait was closed until calm is restored. The fighting raised new questions about the interim deal Iran and the U.S. reached on June 17, beginning a 60-day period aimed at reaching a permanent end to the war.

"The era of one-sided deals is OVER," Mohammad Bagher Ghalibaf, Speaker of Iran's Parliament and a key negotiator, wrote. "We told you: keep your word or pay the price. Reality is knocking."

Tehran added that it would consider targeting "additional enemy bases in the region" if it faced more attacks.

Qatar's military said it intercepted incoming Iranian fire. Three people, including a child, were wounded as a result of shrapnel from the interception of Iranian attacks, Qatar's Interior Ministry said. Missile alerts sounded in Bahrain which houses the U.S. Navy's 5th Fleet. Kuwait's military also said it was intercepting incoming fire.

The Omani state news agency said drones struck sites in an area that sits on the Strait of Hormuz and issued a shelter-in-place warning for residents in the region. The attack came a day after Oman and Iran held talks on the strait. Oman summoned the Iranian Ambassador to protest the strikes, the first such move since the war began, calling Iran's acts "irresponsible."

Three Iranian missiles struck areas across Jordan, causing minor damage but no injuries, Jordan's state news agency reported. Sirens also sounded in the UAE, but the government said missiles did not cross into its territory.

A Cyprus-flagged container ship was hit by Iran and suffered "significant engine room damage," CENTCOM said.

Iran's paramilitary Revolutionary Guard said multiple vessels "disregarded our warnings" and ignored instructions to follow what it called an approved route. One "was struck by a warning shot and brought to a stop".

The Strait, a key route for the global supply of oil and natural gas, has become the key sticking point in negotiations, and fighting over the past week has left negotiations in danger of collapse.

Oman on Saturday said it and Iran agreed to continue discussing the Strait "at the technical and political levels." Iran offered no statement about the Strait being open to all, something sought by the Trump administration.

RELATED REPORT ON
» PAGE 15

Govt. slams ship attack off Oman; seafarer missing

CHENNAI

The government has condemned the attack on a Cyprus-flagged commercial vessel off the coast of Oman that left one of its 11 Indian crew members missing. "We condemn the attack on the commercial vessel *GFS Galaxy*...," it said. » PAGE 4

- **Key Terms and Explanations**
- **Maritime Choke Point:** A narrow, naturally formed strategic waterway that connects two larger bodies of water and controls major global shipping routes.
- **Freedom of Navigation Operations (FONOPs):** Operational maneuvers conducted by naval forces to assert international maritime rights and challenge excessive maritime claims made by coastal states. These operations emphasize that global waters belong to the "Global Commons."
- **Asymmetric Warfare:** A conflict where the relative military power, strategies, or tactics of the opposing combatants differ significantly.
- **United States Central Command (CENTCOM):** A theater-level unified combatant command of the US Department of Defense. Its area of responsibility includes West Asia, Central Asia, and parts of South Asia, making it the primary military instrument for Western intervention in Gulf security.
- **Reprisals and Deterrence:** *Deterrence* involves military posture or actions intended to prevent an adversary from taking an aggressive course of action. *Reprisals* are retaliatory acts executed by a state to respond to an unlawful act committed by another state, aimed at forcing compliance or imposing costs.

- **Main Arguments and Substantive Parts**
- The current strategic impasse reveals a volatile cycle of action and reaction between global superpower presence and regional assertive powers:
- **The Core Thesis**
- The security of international shipping lanes is no longer a localized law-and-order issue; it has become deeply intertwined with state survival, regional hegemony, and broader diplomatic negotiations. When kinetic strikes displace diplomatic frameworks, commercial shipping and civilian seafarers bear the immediate collateral cost.
- **Key Arguments and Perspectives**
- **The Paradigm of Kinetic Deterrence:** Major global powers argue that robust, heavy-handed military strikes targeting drone infrastructure, communication nodes, and missile dumps are necessary to weaken an adversary's ability to threaten global trade. The underlying premise is that peace is maintained by imposing unacceptably high costs on the aggressor.
- **The Sovereign Assertion of Control:** Conversely, regional powers like Iran assert exclusive jurisdiction over close-proximity choke points like the Strait of Hormuz. They leverage their geographic positioning to counter foreign military presence, declaring that regional stability can only be restored when external forces exit the theater.
- **The Breakdown of Diplomatic Safeguards:** Kinetic escalations place delicate, short-term diplomatic frameworks—such as 60-day interim de-escalation agreements—on the brink of total collapse. The transition from "one-sided deals" to open military retaliation signals a shrinking space for back-channel diplomacy.
- **The Vulnerability of Neutral Global Stakeholders:** The human and economic cost extends far beyond the primary combatants. As commercial vessels (such as the Cyprus-flagged *GFS Galaxy*) are targeted, neutral nations like India face direct impacts, including the endangerment and disappearance of their merchant mariners and severe disruptions to trade.

- **Historical Evolution of the Issue**

- **The Pre-1979 Era (The Era of Stability):** Prior to the 1979 Islamic Revolution, Iran was a key pillar of Western security strategy in the Middle East under the Shah. The Strait of Hormuz was viewed as a secure, pro-Western transit corridor, free from state-sponsored disruption.

- **The 1980–1988 Tanker War:** During the protracted Iran-Iraq War, the conflict spilled over into the waters of the Persian Gulf. Both nations systematically targeted each other's commercial oil tankers to cripple economic lifelines. This forced international intervention, including the US Navy escorting reflagged Kuwaiti tankers (Operation Earnest Will), establishing a precedent for foreign military policing of the Gulf.

- **The Post-Cold War and Sanctions Regime:** Throughout the 1990s and 2000s, containment policies and Western economic sanctions isolated Iran. In response, Tehran developed its asymmetric naval doctrine, recognizing that its conventional navy could not match Western fleets but its mining and drone capabilities could choke global energy supplies.

- **The JCPOA and its Aftermath (2015–Present):** The signing of the Joint Comprehensive Plan of Action (JCPOA) in 2015 offered a temporary reprieve. However, the unilateral withdrawal of the US from the nuclear deal in 2018 and the subsequent "Maximum Pressure" campaign re-ignited maritime friction. This led directly to the contemporary landscape of drone strikes, ship seizures, and regional reprisals seen today.

- **Way Forward**

- **Establishing a De-escalation Corridor via Neutral Mediators:** Rather than relying solely on military force, international actors should support mediation efforts by neutral regional states like Oman. A localized, non-aligned communication channel can help manage immediate friction points and prevent tactical miscalculations from turning into a broader war.

- **Operationalizing a Multilateral Maritime Security Framework:** Security in the global commons should ideally be managed through broad international consensus rather than unilateral coalitions. Transitioning toward a UN-backed or widely representative maritime monitoring mechanism would build greater legitimacy and help hold state and non-state actors accountable under international maritime law.

- **Scaling Up India's Naval Footprint (Operation Sankalp):** For India, protecting its economic and human interests requires proactive measures. Expanding the Indian Navy's independent maritime security deployments (such as Operation Sankalp) allows India to protect its merchant vessels and citizens without joining formal, polarizing military alliances.

- **De-linking Commercial Shipping from Political Disputes:** The international community must establish clear diplomatic boundaries that protect neutral commercial vessels and their crews, treating them as off-limits during geopolitical friction. Harming neutral mariners should carry stiff, universally enforced diplomatic and economic consequences.

GEOPOLITICAL DYNAMICS OF THE WEST ASIAN MARITIME CRISIS: A COMPREHENSIVE ANALYSIS

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1 KEY TERMS & THEORETICAL BASE

Combin Section 1

MARITIME CHOKE POINT
Amaritime choke point —time las on-atlessed strait point —: moman choked blocking-nn strait.

FREEDOM OF NAVIGATION OPERATIONS (FONOPs)
Freedom of navigation operations to cnource operations of as amsmpansiissum eronocement or maining from contiituration iof BNDfs.

ASYMMETRIC WARFARE
Asymmetric warfare —komi bath am attack of tumastaram and sotoscturer wavrfare.

REPRISALS & DETERRENCE
Reprisals cootranets in the can-coxport attamps and noon-combactant deterrences.

REALISM & DETERRENCE PARADOX
Realisms i& deterrence paradox embaroce motine romatinoit and condumence workfiios.

2 HISTORICAL EVOLUTION

Section 3

- [1980-88: Tanker War]
- [2018: US Unilateral Escalations & Reprisals
- [2015: JCPOA Signed]
- [2018: US Unilateral Withdrawal]
- [Present: Kinetic Escalations & Reprisals]

3 MULTIDIMENSIONAL IMPACT ANALYSIS

Section 5

4 UPSC CSE PREPARATION & LINKAGES

GS PAPERS		ESSAY & OPTIONALS
• GS 2: IR • GS 3: Security, Econ • GS 4: Ethics	GS and 9	• PSIR • Geography

PRELIMS PYQ PRACTICE

✅ Strait of Hormuz: Persian Gulf & Gulf of Oman | ✅ Correct Answers: Persian Gulf &

5 THE WAY FORWARD & INDIA'S STRATEGIC ROLE 8

Section 8

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Drones move TB samples, cut diagnosis costs from ₹9,451 to ₹91 in new ICMR trial

Siddharth Kumar Singh
HYDERABAD

A drone flight costing patients almost nothing could replace journeys that once left suspected tuberculosis (TB) patients spending an average of ₹9,451 out of their own pockets. A study by the All India Institute of Medical Sciences, Bibinagar, in Telangana has found that transporting sputum samples by drone reduced patients' average expenditure to just ₹91 while cutting diagnosis time from 15 days to five days.

The study, published in the *International Journal of Tuberculosis and Lung Disease* evaluated the impact of using drones to transport sputum samples from remote villages to TB testing centres in Yadadri Bhuvanagiri district under the Indian Council of Medical Research's (ICMR) i-DRONE initiative. The study analysed data from 840 participants.

The drone programme aims to streamline the transport of sputum samples from PHCs in remote areas to testing facilities. FILE PHOTO

Before the intervention, suspected TB patients from remote villages, often located 10 km to 30 km from the nearest diagnostic centre, had to travel over poor roads with limited public transport to access testing facilities. During the drone phase, patients only needed to visit their nearest PHC or subcentre, where trained healthcare workers collected and securely packaged sputum samples before drones transported them to the designated TB facilities.

The average out-of-pocket expenditure for patients, including medical expenses, travel, food and wage loss for both patients and attendants, dropped from ₹9,451 to ₹90.9. The intervention also improved reporting times. Before drones were introduced, over 92% of patients waited more than two days to receive their test results.

During the drone phase, 76.3% received results the next day, while only 16.3% experienced delays beyond two days.

- **Key Terms and Explanations**

- **i-DRONE Initiative:** Initiated by the Indian Council of Medical Research (ICMR), the Drone Response and Outreach in Northeast (and extended to other regions) represents an operational framework designed to overcome geographical barriers in healthcare delivery. It leverages Unmanned Aerial Vehicles (UAVs) to transport critical medical supplies, vaccines, and diagnostic samples to and from remote, inaccessible terrains.

- **Out-of-Pocket Expenditure (OOPE):** This refers to the direct payments made by individuals to healthcare providers at the time of utilizing services, without reimbursement from insurance or state-sponsored welfare. In rural contexts, OOPE is not merely the clinical fee; it encompasses indirect costs such as travel, food, lodging, and the opportunity cost of lost daily wages for both the patient and their accompanying attendant.

- **Sputum Sample Logistics:** Sputum is the thick mucus coughed up from the lower airways, critical for diagnosing pulmonary diseases like Tuberculosis (TB). The logistics involve the sterile collection, secure containment, temperature preservation, and swift transportation of these biological specimens from primary care points to advanced molecular diagnostic laboratories.

- **Turnaround Time (TAT) in Diagnostics:** The total elapsed time from the moment a biological specimen is collected from a patient to the generation and communication of the final diagnostic report. Minimizing TAT is vital in infectious disease management to halt community transmission and initiate clinical therapy immediately.

- **Primary Health Centres (PHCs) and Sub-Centres:** These form the foundational tier of India's three-tier public health infrastructure. Sub-centres and PHCs act as the first point of contact between rural communities and institutional medical services, traditionally limited by basic diagnostic capabilities but vital for sample collection.

- **Main Arguments and Substantive Parts**
- **The Core Thesis**
- Integrating unmanned aerial logistics into the public healthcare architecture systematically dismantles the twin barriers of geographical isolation and catastrophic out-of-pocket spending. By shifting the physical burden of travel from the vulnerable patient to automated technology, the state can compress diagnostic timelines, prevent disease propagation, and safeguard the economic dignity of marginalized households.
- **Substantive Points and Supporting Evidence**
- **Economic Relief and Mitigation of Financial Shock:** Traditional diagnostic paths force suspected patients in remote areas to travel long distances over poor roads. Evidence demonstrates that transitioning to drone-assisted logistics slashes the average out-of-pocket expenditure from a crippling ₹9,451to a nominal ₹91per patient. This drop covers medical costs, travel, food, and the wage losses of the family.
- **Compression of Diagnostic Latency:** Delays in obtaining test reports directly stall clinical intervention. The introduction of drone transport reduces total diagnostic turnaround times from a protracted 15 days down to just 5 days. Furthermore, while over 92%of patients previously waited more than two days for results, drone implementation enables 76.3%of participants to receive their diagnostic verdicts by the very next day.
- **Decentralization of Public Health Delivery:** Instead of traversing miles of underserved infrastructure to reach district diagnostic hubs, patients only need to access their nearest grassroots PHC or sub-centre. Trained frontline healthcare workers collect and securely package samples locally, converting rural clinics into highly efficient nodes of an advanced diagnostic network.
- **Counterarguments and Structural Challenges**
- **Technological and Weather Dependencies:** Drone operations are highly susceptible to adverse meteorological conditions, battery limitations, and payload restrictions, which could disrupt diagnostic chains during monsoons or extreme weather events.
- **Bio-Safety and Handling Protocol Vulnerabilities:** Transporting active biological pathogens like sputum samples via automated aerial routes demands rigorous training of rural health workers to prevent spillage, contamination, or sample degradation during transit.
- **Fiscal and Operational Scaling Sustainability:** While initial institutional trials yield remarkable cost-to-benefit ratios, establishing permanent drone corridors across diverse topographies requires substantial capital investment in drone fleets, maintenance hubs, and dedicated digital piloting infrastructure.

- **Historical Evolution of the Issue**
- **Pre-Independence to Early Post-Independence (1940s–1950s)**
- During this era, Tuberculosis care was largely restricted to isolated sanatoriums situated in hilly terrains, focusing on segregation rather than mass community diagnostics. Public health infrastructure was fragmented, and rural populations had virtually no institutional access to laboratory-backed diagnostic tools, relying instead on symptomatic assessments by local practitioners.
- **The Institutionalization Phase: National TB Control Programme (1962)**
- The government launched the National Tuberculosis Control Programme (NTCP) built around district tuberculosis centres. While it aimed to set up specialized diagnostic facilities across districts, it suffered from severe logistical bottlenecks. Patients in remote villages remained disconnected due to poor rural road connectivity and a total absence of cold-chain or rapid sample transport systems.
- **The Structural Shift: RNTCP and the DOTS Framework (1997)**
- To rectify past operational failures, the Revised National TB Control Programme (RNTCP) was rolled out, incorporating the WHO-backed Directly Observed Treatment, Short-course (DOTS) strategy. Sputum microscopy laboratories were decentralized to sub-district levels. However, the onus of traveling to these diagnostic hubs still lay heavily on the patients, resulting in high drop-out rates during the diagnosis stage due to travel costs and wage losses.
- **The Aggressive Elimination Stance: National Strategic Plan (2017–2025)**
- The policy paradigm underwent a radical transformation with the National Strategic Plan (NSP), which set an ambitious target to eliminate TB by 2025, five years ahead of the global Sustainable Development Goals. The NSP recognized that traditional health delivery methods were insufficient and mandated the integration of digital health tracking, molecular diagnostic tools (like CBNAAT), and active, decentralized case-finding strategies.
- **The Tech-Integration and Aerial Logistics Era (2020s–Present)**
- This current phase marks the convergence of liberalized civil aviation drone regulations with public health delivery systems. Moving beyond pilot programs, initiatives like the ICMR's i-DRONE trial have turned aerial logistics into a functional tool for medical transport. This milestone shifts the emphasis from expanding physical clinics to deploying technology that bridges the final miles of healthcare delivery.

HISTORICAL EVOLUTION OF TB MANAGEMENT IN INDIA

- **Pre-Ind/1950s:** Sanatorium Isolation
- **1962:** NTCP (District Centres)
- **1997:** RNTCP/DOTS (Microscopy Hubs)
- **2017:** National Strategic Plan (Goal 2025)
- **Present:** Tech-Integration & i-DRONE

MULTIDIMENSIONAL ANALYSIS

1. SOCIAL

HEALTH EQUITY & TRIBAL ACCESS

2. POLITICAL

WELFARE GOVERNANCE & NATIONAL TB TARGETS

3. ECONOMIC

MITIGATING DEBT TRAPS & PRODUCTIVITY GAINS

5. POLLITICAL

AIRSPACE PROTOCOLS & BIOSAFETY

THE i-DRONE REVOLUTION: BEFORE VS. AFTER TRIAL COMPARISON

BEFORE: ₹9,451
Patients traveling long distances on poor roads

BEFORE: Catastrophic Out-of-Pocket Expenditure (OOPE) **₹9,451**

BEFORE: 15-day Diagnostic Turnaround Time (TAT)

AFTER: ₹91
i-DRONE transporting samples from local PHC/Sub-centres

AFTER: ₹91 OOPE

AFTER: 5-day / Next Day Results (76.3% of cases)

SOCIAL · PIEF RIAL · LEGAL · INTERNATIONAL

MULTIDIMENSIONAL ANALYSIS

4. LEGAL

AIRSPACE PROTOCOLS & BIOSAFETY

5. ETHICAL

DISTRIBUTIVE JUSTICE & ANTYODAYA

5. ETHICAL

MODEL FOR GLOBAL SOUTH

6. INTERNATIONAL

DISTRIBUTIVE & ANTYODAYA

WAY FORWARD: SCALING UP & SUSTAINABILITY

- Hub-and-Spoke Drone Networks
- Community Capabilities & Training
- Medical Green Corridors
- Medical Green Corridors
- Public-Private Partnerships (PPP) Financial Models

Notes: NCERT & UPSC CSE GS 2/3 linkages
Noes: UPSC CSE GS 2/3 linkages

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Barricades come up in Srinagar as security tightened on eve of 1931 revolt anniversary

Peerzada Ashiq
SRINAGAR

Jammu and Kashmir authorities on Sunday barricaded the roads leading to Srinagar's Naqshband Sahib shrine, which houses the graves of 22 civilians killed during an uprising against the Dogra monarchy in 1931.

The J&K Police had parked vehicles at the gates of the shrine, residents said. Barricades have also been erected on the roads to stop regional leaders from paying tributes at the shrine on July 13, the anniversary of the revolt.

Since the Centre ended J&K's special status in 2019, the administration has disallowed regional parties from visiting the graveyard and paying tributes. J&K Lieutenant Governor Manoj Sinha removed July 13 as an official holiday from the calendar after 2019. In 2025, J&K Chief Minister Omar Abdullah scaled the boundary walls to pay tribute at the shrine.

A scene outside Mehbooba Mufti's residence ahead of Martyrs' Day observance in Kashmir. X/@ILTIJAMUFTI_

'House arrest'

The Opposition Peoples Democratic Party leader Iltija Mufti said that she and her mother Mehbooba Mufti had been placed under house arrest on the eve of 'Martyrs Day'. "This is the normalcy they claim to have established in Kashmir? Make no mistake, the local government too is hand in glove using police in Sidhra to demolish homes and place opponents in detention," Ms. Mufti said.

"The 95th Youm-e-Shohada reminds of the defining chapter in Jammu and Kashmir's struggle for justice, dignity and democratic rights," ruling National Conference (NC) president Farooq Abdullah and the party's vice-president and J&K Chief Minister Omar Abdullah said in a joint statement. They described July 13, 1931 as a historic watershed that ignited a mass movement against autocracy, oppression and injustice in the erstwhile princely State. "Twenty-two unarmed Kashmiris were killed on July 13, 1931, after demanding basic civil and political rights. It laid the foundation for the people's long struggle led by Sheikh Muhammad Abdullah for human rights and dignity," they said.

The NC remains the true custodian of the legacy of the July 13 "martyrs" and was "committed to carrying forward their mission of building a just, prosperous and peaceful Jammu and Kashmir", they said.

- **Key Terms and Explanations**
- **The 1931 Kashmir Uprising:** This refers to the mass public revolt on July 13, 1931, against the autocratic rule of the Dogra monarchy. It is widely recognized by historians as the foundational moment of modern political consciousness and the struggle for democratic representation in Jammu and Kashmir. For instance, similar to how the Jallianwala Bagh massacre galvanized the pan-Indian freedom struggle, the 1931 firing incident transformed localized grievances into a organized mass movement.
- **Dogra Monarchy:** A dynastic lineage established in 1846 through the Treaty of Amritsar, under which the British East India Company sold the territory of Kashmir to Maharaja Gulab Singh. The administration was characterized by a highly centralized feudal structure where the majority population faced significant socio-economic and political marginalization.
- **Praja Mandal Movement:** A broader historical phenomenon across pre-independence India where citizens of various princely states organized political struggles against their respective hereditary rulers. These movements demanded civil liberties, responsible government, and democratic rights, working in ideological tandem with the Indian National Congress.
- **Preventive Detention and House Arrest:** Legal instruments used by the state executive to restrict an individual's liberty, movement, and communication without a formal trial. This is invoked purely on the apprehension that the individual might cause a breach of public peace or threaten national security.
- **Commemorative De-listing / Symbolic Politics:** The administrative practice of altering official calendars, public holidays, or state symbols to realign collective memory with a specific political or national narrative. An example is the removal of regional historical milestones from official holiday lists to emphasize a uniform national calendar.

- **Main Arguments and Substantive Parts**
- The ongoing debates regarding the public commemoration of historical events in Jammu and Kashmir reveal a deep-seated ideological divergence between administrative priorities and regional political narratives.
- **The Regional Narrative of Democratic Legacy**
- **Watershed for Civil Rights:** Regional political formations view the 1931 uprising as a secular, anti-feudal struggle aimed at securing fundamental human dignity, labor rights, and democratic representation. It is defended as the bedrock of the Kashmiri struggle against autocracy, independent of later separatist deviations.
- **Preservation of Identity:** Proponents argue that honoring this historical event is vital for preserving regional historical memory. Suppressing these commemorations, in their view, dilutes the historic sacrifices that paved the way for the region's eventual integration into a democratic India.
- **The Administrative Counter-Perspective**
- **National Uniformity and Integration:** Post-2019 administrative reforms emphasize the creation of a uniform legislative and emotional ecosystem across the country. From this viewpoint, continuing with regional holidays that carry contested historical or communal overtones complicates the process of comprehensive national integration.
- **Maintenance of Public Order:** The state apparatus prioritizes absolute security stability to foster economic development and prevent radical mobilization. Restricting public assemblies and placing political leaders under preventive containment is justified by administrators as a necessary preemptive measure to eliminate potential law-and-order disruptions.

- **Historical Evolution of the Issue**
- **The Feudal Era (1846–1930s):** Following the Treaty of Amritsar, the region was governed under an absolute monarchy. The majority agrarian population faced extreme taxation, institutional exclusion from state employment, and severe restrictions on freedom of expression.
- **The Turning Point (July 13, 1931):** A mass protest erupted outside the Srinagar Central Jail during the trial of Abdul Qadeer, an activist who had spoken out against monarchical oppression. The state police opened fire, resulting in the deaths of 22 protestors. This catalyst led to the formation of the All Jammu and Kashmir Muslim Conference under Sheikh Mohammad Abdullah.
- **Secularization of the Struggle (1939):** Recognizing the need for an inclusive struggle against feudalism, the movement transitioned into the National Conference in 1939. It aligned itself closely with Mahatma Gandhi and Jawaharlal Nehru's vision of a secular, democratic India, rejecting the communal two-nation theory.
- **Post-Independence Institutionalization:** Following the state's accession to India in 1947, July 13 was designated as 'Martyrs' Day' and declared an official gazetted holiday. It symbolized the triumph of popular sovereignty over hereditary autocracy.
- **Post-2019 Administrative Shift:** Following the statutory changes that reorganized Jammu and Kashmir into a Union Territory, the administration restructured the public holiday calendar. July 13 was removed as an official holiday, while October 26 (Accession Day) was elevated, signaling a clear shift in state-sponsored historical emphasis.

- **Way Forward**
- **Revitalizing the Democratic Process:** The primary path toward long-term stability lies in strengthening formal democratic institutions. Ensuring regular, representative local and assembly elections channels public sentiment into constitutional governance, reducing the reliance on street politics.
- **Framing Inclusive Historical Narratives:** Instead of completely erasing regional milestones, the administration can reposition events like the 1931 uprising as universal chapters in the fight against feudalism. Highlighting how these struggles aligned with the values of the Indian national movement helps bridge the gap between regional memory and national identity.
- **Calibrating Security Protocols:** Security agencies should transition from sweeping preventative measures, like house arrests and large-scale barricading, toward intelligence-led, non-intrusive crowd management. Minimizing disruptions to daily life helps prevent public frustration and alienation.
- **Sustained Institutional Dialogue:** Creating structured forums for civic engagement between administrative authorities, youth leaders, and civil society helps rebuild institutional trust, ensuring that security priorities do not permanently overshadow civil liberties.

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COMPREHENSIVE GEOPOLITICAL ANALYSIS: UNPACKING THE KASHMIR DYNAMICS (1931-PRESENT)

HISTORICAL EVOLUTION TIMELINE

1846
TREATY OF AMRITSAR & DOGRA RULE

1931
JULY 13 REVOLT: MASS MOVEMENT AGAINST AUTOCRACY

1939
POLITICAL SECULARIZATION

1947
ACCESSION TO INDIA

Post-1947
SYMBOLIC POLITICS: HOLIDAYS DE-LISTED

2019
REORGANIZATION & ADMINISTRATIVE SHIFT

CORE TENSION & DILEMMA.

Regional Perspective:
REGIONAL IDENTITY & HISTORICAL SACRIFICE

Administrative Perspective:
NATIONAL UNIFORMITY & STATE SECURITY

MULTI-DIMENSIONAL ANALYSIS

SOCIAL
- Alienation
- Youth identity

POLITICAL
- Local Voices
- Regional Parties

ECONOMIC
- Constitutional Rights
- Preventive Detention

LEGAL
- Historical Truth
- Reconciliation

ETHICAL
- Border Security
- Global Reputation

INTERNATIONAL
- Investment Stability
- Local Livelihood

ACADEMIC LINKAGES

NCERT
- Class XII Regional Aspirations
- Class XI Liberty & Rights

UPSC Syllabus Mapping
GS 1 2 3 4

KEY TERMS & PHILOSOPHICAL BASIS

1931 REVOLT
Contrains: an anmual assemocixzation and humal economic

PRAJA MANDAL
Centraed concerns of rationals praja mandal against if autocracy

HEGEMONY
Central aconters and rekinoual hegemony

Prajal sovereignty vs. Hereditary legitimacy

POPULAR SOVEREIGNTY
Independone wtere creators prolitical autonnents

VS.

HEREDITARY LEGITIMACY
Popular sovereignty vs now hereditary or legitimacy

WAY FORWARD

1. **DEMOCRATIC REVITALIZATION**
   Revital 's actionable recommendation
2. **INCLUSIVE DIALOGUE**
   Calibrate actionable recommendations
3. **CALIBRATED SECURITY APPROACH**

ISRO successfully carries out tests of Gaganyaan systems

One of the tests involved separation of the 'umbilical mechanism' that serves as a link between the crew module, where astronauts live, and the service module that provides propulsion, agency says

Press Trust of India
NEW DELHI

The Indian Space Research Organisation on Sunday said it had successfully carried out three major tests of the Gaganyaan crew module systems.

The first test pertained to ensuring an upright position of the crew module after splashdown in the sea, considered one of the most important crew safety requirements. To do this, a stored cold-gas-based uprighting system was developed and tested.

"A system-level qualification test set-up consisting of all the elements of CMUS (crew module uprighting system) was realised," the ISRO said, adding it successfully conducted inflation tests "for the primary inflation module wherein stored gas in the high-pressure gas bottle was made to inflate the floatation by operating the control valves."

The second test involved examining the separation of the umbilical mechanism that serves as a link between the crew module, where astronauts live, and the service module, which provides power and propulsion. The mechanism consists of two parts, each located at the crew module side, called CSU-1, and the service module side, called CSU-2.

Step-by-step: (Clockwise from left) The crew module uprighting system, the service module connect-disconnect system, and the apex cover that underwent testing. ISRO

Clean separation

During the crew module's earth re-entry stage, the service module first separates from the crew module after the CSU-1 disconnects. Subsequently, just before re-entry, the CSU-2 is also separated.

"Separation test of CSU-2 from simulated crew module was carried out. The test demonstrated the clean separation of CSU-2 as well as structural stability of the crew module panel and their interfaces," the space agency said. The third test validated the structural integrity of the crew module during the apex cover separation event. The apex cover protects the parachutes and associated subsystems during the mission. It is separated before parachutes are deployed to decelerate the crew module.

- **Key Terms and Explanations**
- **Human Spaceflight Programme (Gaganyaan):** India's flagship initiative designed to demonstrate indigenous capabilities to fly humans to a Low Earth Orbit (LEO) and safely return them to Earth. This marks a paradigm shift for India from utilizing space for societal benefits to active exploratory science.
- **Crew Module (CM):** The habitable, pressurized spacecraft environment specifically engineered to accommodate astronauts during spaceflight. It is equipped with life support systems and is thermally shielded to survive the extreme heat generated during atmospheric re-entry.
- **Service Module (SM):** An uncrewed structure that interfaces directly with the Crew Module to provide essential propulsion, electrical power, thermal management, and life support resources during orbital flight. It is jettisoned prior to re-entry into the Earth's atmosphere.
- **Crew Module Uprighting System (CMUS):** A critical safety subsystem consisting of high-pressure, cold-gas-operated flotation bags. Its primary purpose is to ensure that upon landing in the ocean (splashdown), the capsule remains upright. This prevents the capsule from capsizing or staying inverted, which would otherwise disrupt communication networks and endanger the crew's ventilation.
- **Umbilical Mechanism (CSU-1 and CSU-2):** The physical and electrical conduits linking the Crew Module and Service Module. It features a multi-stage separation system, divided into a crew module component (CSU-1) and a service module component (CSU-2), which must disconnect flawlessly under simulated stresses before re-entry.
- **Apex Cover Separation:** The controlled jettisoning of the protective structural shell located at the top of the Crew Module. The apex cover shields the deceleration parachutes and critical recovery systems from aero-thermal loads during flight and must separate cleanly to allow safe parachute deployment.

- **Main Arguments and Substantive Parts**
- **The Core Thesis**
- The overarching objective of current indigenous aerospace engineering is to move from theoretical mission design to empirical verification. Achieving a successful human spaceflight requires transitioning away from a reliance on statistical probabilities toward absolute, validated multi-layered redundancy and structural safety benchmarks.
- **Key Validation Milestones**
- **Post-Splashdown Stabilization:** To eliminate the risk of a capsule turning upside down in unpredictable open seas, a dedicated cold-gas inflation framework has been successfully tested. Operating via controlled high-pressure valves, this system ensures the structural buoyancy required to keep astronauts safe until recovery teams arrive.
- **Precision Stage Disconnection:** Prior to re-entering the atmosphere, the crew's living quarters must completely separate from the propulsion system. Ground evaluations have successfully confirmed a clean, step-by-step separation of the umbilical links (the CSU-1 and CSU-2 mechanisms), eliminating the threat of mechanical jamming or structural collision.
- **Unimpeded Recovery Sequences:** Terminal deceleration relies on a sequence of parachutes. Validating the structural integrity of the apex cover separation ensures that this protective cap can be cleanly thrown off under high dynamic pressures without damaging or entangling the deployment lines beneath it.
- **Critical Systemic Challenges**
- While system-level ground qualification tests demonstrate individual component reliability under simulated conditions, integrating these systems introduces significant complexities. The real challenge lies in ensuring that these separate pyrotechnic, pneumatic, and mechanical separation systems trigger in a flawless, automated sequence during actual, high-stress flight environments.

- **Historical Evolution of the Issue**
- **Foundational Era (1960s–1970s)**
- India's space exploration path began under the vision of Dr. Vikram Sarabhai and Dr. Homi Bhabha with the establishment of INCOSPAR in 1962 and the Thumba Equatorial Rocket Launching Station (TERLS). The initial decades focused entirely on basic atmospheric studies via sounding rockets and mastering the fundamentals of satellite design, culminating in the launch of Aryabhata in 1975.
- **Operational Independence (1980s–1990s)**
- This phase marked India's shift toward operational self-reliance. While Squadron Leader Rakesh Sharma became the first Indian in space in 1984 aboard the Soviet Soyuz T-11, domestic efforts prioritized building heavy launch infrastructure. The development and mastery of the Polar Satellite Launch Vehicle (PSLV) and the early development of the Geosynchronous Satellite Launch Vehicle (GSLV) formed the backbone of India's heavy-lift capabilities.
- **Transition to Deep Space Exploration (2000s–2010s)**
- Having secured robust communication and remote sensing satellite constellations, Indian space policy expanded into planetary exploration. The success of Chandrayaan-1 in 2008 (which discovered water molecules on the Moon) and the Mars Orbiter Mission (Mangalyaan) in 2013 demonstrated extreme cost-efficiency and technical maturity, laying the groundwork for more complex, crewed missions.
- **The Human Spaceflight Era (2018–Present)**
- The official authorization of the Gaganyaan project in 2018 marked a major evolution in India's space program. This phase required a shift from placing inanimate hardware into orbit to developing technologies that support human life. It led to the creation of the Human Space Flight Centre (HSFC) and a rigorous schedule of uncrewed test flights, crew escape system demonstrations, and critical subsystem validation tests to ensure complete safety before a crewed launch.

- **Way Forward**
- **Implementing Multi-Layered Automated Redundancy**
- ISRO must continue to build and refine triple-redundant architectures for all critical safety mechanisms. Automated sensor arrays should be capable of instantly identifying anomalies during re-entry or recovery, allowing the system to deploy backup safety frameworks without relying on manual commands from a distressed crew.
- **Deepening Integration with Private Industry**
- To optimize resources, routine component manufacturing and subsystem assembly should be systematically transitioned to private Indian aerospace groups and consortia. This approach allows ISRO to focus its internal expertise on core research, conceptual design, and deep-space mission planning.
- **Establishing a Dedicated National Space Regulatory Body**
- Passing a comprehensive domestic Space Activities Act is an important next step. India needs a clear, independent regulatory authority to govern safety standards, manage domestic liabilities, and oversee licensing processes for both public missions and a growing number of private space startups.
- **Balancing Sovereignty with Strategic Collaboration**
- While maintaining full control over core strategic technologies, India should actively seek international collaborations to standardize safety protocols, share tracking telemetry, and conduct joint training exercises. This approach enhances mission resilience while positioning India as a collaborative leader in global space safety.

ANALYSIS: ISRO'S GAGANYAAN SYSTEMS & INDIA'S HUMAN SPACEFLIGHT PROGRAMME

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KEY TERMS & EXPLANATIONS

- **Crew Module:** Crewhed in spew module and thed srstems & anctw module
- **Service Module:** Service module ol inte crew entand for sperth module
- **Crew Module Uprighting System:** Crewing upright in splashdown & crew module
- **Apex Cover separation:** Separatilised that separation and ceved by separation

HISTORICAL EVOLUTION (Timeline)

1960s-Present

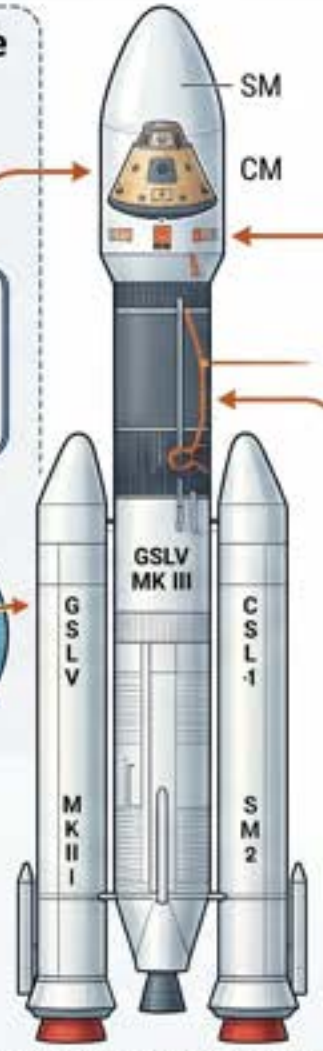
- **1975** Aryabhata
- **1984** Rakesh Sharma
- **2013** Mangalyaan
- **2008** Chandrayaan-1
- **2018** Gaganyaan Launch
- **Present** Testing phase

MULTIDIMENSIONAL ANALYSIS (Matrix)

Social	Political	Economic	International	Legal	Ethical
• Scientific Temper	• Geopolitical standing	• MSMEs/ spin-offs	• Strategic positioning	• Outer Space Treaty compliance	• Safety vs. cost
• Society Innovation	• Privatie Industry and huns	• MSMEs/ spin-offs	• L'ater comppiace standing	• Space Regulatory Body	• Safety vs. cost

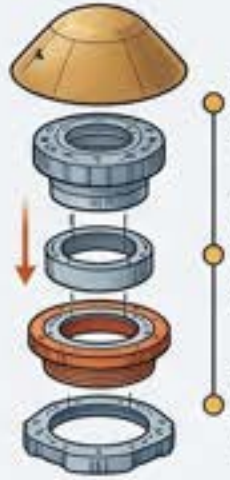
1 CMUS (Crew Module Uprighting System)

- Stored cold-gas-based uprighting system
- High-pressure gas inflation
- Ensuring upright splashdown & crew ventilation



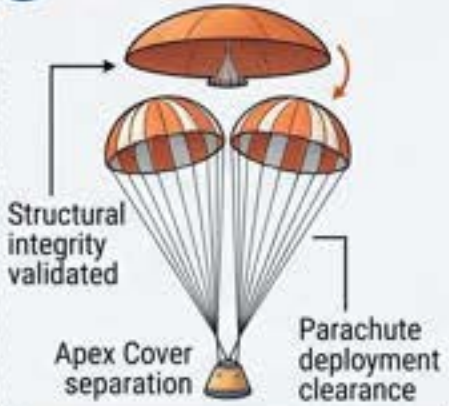
Gaganyaan stacked-vehicle (GSLV MK III , CM, SM)

2 CSU-1 & CSU-2 Umbilical Mechanism



- Pre-re-entry stage separation
- Clean separation of CSU-1 (CM) & CSU-2 (SM)
- Structural stability verification

3 Apex Cover



WAY FORWARD

- Multi-Layered Automated Redundancy
- Private Industry Integration
- National Space Regulatory Body
- Strategic Collaboration

UPSC GS LINKAGES

- **GS Paper III** (S&T) Achievements, indigenization, new technology
- **GS Paper II** (IR & Governance) Achievements, indigenization
- **GS Paper IV** (Ethics)

NCERT Text LINKAGES

- **Physics** (Motion, Gravitation, Fluids)
- **Political Science** (Space Race)

SAMPLE PYQs

- Sample prelims and mains questions on similar themes

Why has China banned helium exports?

Why is helium emerging as a strategic resource? How vulnerable is the world to a helium supply shock? Why is it considered a critical input for future technologies? Why is storing and transporting helium so expensive? What makes it so hard to replace?

EXPLAINER

Yasodevan Mukunth

The story so far: On July 10, the Ministry of Commerce and General Administration of Customs, China, has temporarily but immediately banned helium exports from the country. As of 4.30 pm IST on July 10, Beijing had not published any other information as to why it took this step now or its scope.

Is China a major helium producer?

China imports more than 80% of its helium needs but produces only around 1.6% of the world's helium. The export ban follows an extended period of supply strained by Russia's export restrictions – where the Prime Minister needs to sign off on shipments through 2027 – and supply risks tied to heightened tensions in West Asia.

The world's major helium producers are the U.S. (meeting 43% of total supply), followed by Qatar, Russia, Canada, and Algeria. In 2024, the U.S. privatised its Federal Helium Reserve and, selling its assets to the Messer Group and no longer buffering shocks such as those due to the U.S.-Iran conflict.

The next year, the U.S. House Committee on Oversight and Government Reform launched an investigation into Messer's Chinese interests, stoking the risk of tit-for-tat measures. Which China's latest export ban could be.

After the U.S., Qatar has been meeting 33% of the demand, especially in Asia. After the conflict with Iran escalated, as medical chemist and *Science* columnist Derek Lowe put it, "one-third of global helium production is now literally bottled up behind the Strait of Hormuz, a much higher percentage than world oil production [where the situation is bad enough already]."

In this light, China's new export restriction could preserve the country's helium supply for its domestic chip manufacturers and its medical sector.

Helium can only be transported in vacuum-jacketed stainless steel vessels that are manufactured only by a few companies worldwide. GETTY IMAGES

How is helium obtained?

Helium is the second-lightest element, after hydrogen, and is not manufactured. It is a non-renewable resource generated deep in the earth's crust, where the radioactive decay of uranium and thorium atoms emits alpha particles, which capture electrons to form helium atoms.

Over millions of years, this helium migrates into the same reservoirs of natural gas, and they are extracted together. This said, natural gas is not processed to isolate the helium from it until the latter makes up at least 0.3% by volume.

But once it does, the gas is isolated using the fact that it has a different boiling point.

Some operators also recover helium from LNG plants and from the air but these quantities are too low to matter to the global demand. Helium for commercial use is usually at least 99.997% pure.

What is helium used for?

Helium has an extremely low boiling point – negative 269°C – and does not participate easily in chemical reactions. These are good properties for a coolant that needs to cool the magnets in MRI machines, the silicon wafers in the semiconductor fabricating industry, and, increasingly, some of the devices used in quantum computers. Its small atoms mean the gas escapes easily through gaps that might be too small for oxygen or nitrogen atoms – so engineers use helium as a leak-detector.

Helium is also used in the process of drawing optical fibres to rapidly and uniformly cool molten glass and to displace oxygen or nitrogen from forming bubbles inside the material. Spaceflight organisations like ISRO, NASA, and SpaceX use helium to pressurise fuel tanks in rockets. Research and the tourism sector in many parts of the world also use helium to inflate balloons and airships.

According to the U.S. Geological Survey, laboratory use-cases account for 22% of the demand for helium, followed by controlled atmospheres and semiconductors (17%), lifting gas (17%), MRI scanners (15%), aerospace (9%), and detecting leaks (5%).

How much does helium cost?

In June 2026, the spot price for highly pure helium in Northeast Asia had reportedly spiked to $150-205 per thousand cubic feet, almost double what it was in late 2025. At least one major supplier, the U.S.-based industrial supplier Airgas, has invoked force majeure and tacked on surcharges of $13.50 per hundred cubic feet to existing contracts. Liquid helium is by default expensive to store and transport because helium only liquefies at -269°C.

In fact, the helium supply chain as a whole is cost-intensive because purification, storage, and transport are each expensive and technically sophisticated. A mid- to large-scale purification and liquefaction facility will require more than $100 million while smaller ones can cost around $10 million, thanks to the need for corrosion-resistant alloys that can withstand ultra-low temperatures.

The gas can be stored in underground salt caverns, which reduce leaks significantly – but these formations are rare and developing a new one can cost more than $200 million. It can also be stored as compressed gas or cryogenic liquid. The former typically costs up to $10 million to build while bulk cryogenic liquid storage systems generally need between $0.5 million and $20 million depending on capacity. Then there are the operational expenses.

Finally, helium can only be transported in vacuum-jacketed stainless steel vessels – which are manufactured by relatively few companies worldwide, including several Chinese ones.

Finally, the contractor transporting the containers must also ensure they are delivered before the holding time expires, after which the helium will start boiling off into the atmosphere.

THE GIST

- The export ban follows an extended period of supply strained by Russia's export restrictions – where the Prime Minister needs to sign off on shipments through 2027 – and supply risks tied to heightened tensions in West Asia.
- Helium is an important coolant in the semiconductor fabricating industry, where it removes heat from silicon wafers.
- The helium supply chain as a whole is cost-intensive because purification, storage, and transport are each expensive and technically sophisticated.

- **Key Terms and Explanations**
- **Helium (He):** A noble gas, the second-lightest element in the universe. Because it is chemically inert and has an incredibly low boiling point ($-269^{\circ}C$), it is the gold standard for supercooling.
- **Cryogenics:** The branch of physics dealing with the production and effects of very low temperatures. Helium is the essential coolant for cryogenic applications.
- **Resource Nationalism:** A political trend where countries exercise control over their natural resources, using them as tools of statecraft or to protect domestic industrial interests.
- **Strategic Resource:** Commodities that are essential for national security, defense, or high-tech industrial growth, making them susceptible to geopolitical leverage.
- **Supply Chain Inelasticity:** A state where the supply of a commodity cannot easily increase even if prices spike, often due to high barriers to entry (extraction complexity) or geological scarcity.

- **Main Arguments and Substantive Parts**
- **The Inevitable Scarcity:** Unlike renewable energy or water, helium is not manufactured; it is a byproduct of natural gas extraction. As natural gas fields are depleted or new, cleaner energy sources are prioritized, the supply of helium faces long-term decline.
- **The "Cold" Imperative:** Modern technology is increasingly heat-sensitive. Semiconductors require ultra-pure cooling environments to prevent thermal damage, and MRI machines rely entirely on liquid helium to keep superconducting magnets functional. Without it, these industries stall.
- **Geopolitical Bottlenecks:** Global supply is highly concentrated in a few nations (US, Qatar, Russia, Algeria). This concentration creates "choke points." If one of these nations restricts exports—due to war, sanctions, or domestic industrial needs—the global market is immediately destabilized.
- **High Barrier to Entry:** The helium supply chain is capital-intensive. Building purification, liquefaction, and transport infrastructure costs hundreds of millions of dollars. New suppliers cannot simply "switch on" production to compensate for a shortfall.

- **Historical Evolution of the Issue**
- **Pre-Independence/Early Era:** Helium was discovered as a geological anomaly, often vented into the atmosphere as a waste product during natural gas drilling. It was primarily viewed as a niche scientific curiosity rather than a strategic asset.
- **The US Hegemony:** For decades, the US dominated the global helium market through the Federal Helium Reserve. This stockpile stabilized global prices. However, the decision to privatize these assets in the 2010s marked the end of an era of supply stability.
- **Rise of Global Players:** As US production plateaued, global dependence shifted toward Qatar and Russia. This decentralized the supply but increased the sensitivity to regional conflicts (e.g., the Middle East tensions).
- **The Modern "Weaponization" Phase:** Recently, we have moved into an era where critical minerals and gases are being utilized as defensive tools. Following supply chain shocks (post-pandemic and geopolitical conflicts), nations are now hoarding strategic reserves, leading to export bans to ensure domestic industrial continuity.

- **Way Forward**
- **Circular Economy (Recycling):** We must incentivize the capture and recycling of helium. Currently, most helium is vented into the atmosphere after use. Closing this loop is the most sustainable long-term solution.
- **Strategic Stockpiling:** Nations must move toward a model of "Strategic Helium Reserves," similar to the Strategic Petroleum Reserves (SPR) India maintains, to weather temporary supply shocks.
- **Diversification:** India should invest in collaborative extraction projects with multiple countries to prevent over-reliance on a single supplier or geographic region.
- **R&D in Alternatives:** Investing in research to find alternative cooling technologies that do not rely on helium or require significantly less of it, thereby reducing industrial dependence on this volatile resource.

STRATEGIC GEOPOLITICS OF HELIUM: A CRITICAL ANALYSIS FOR UPSC

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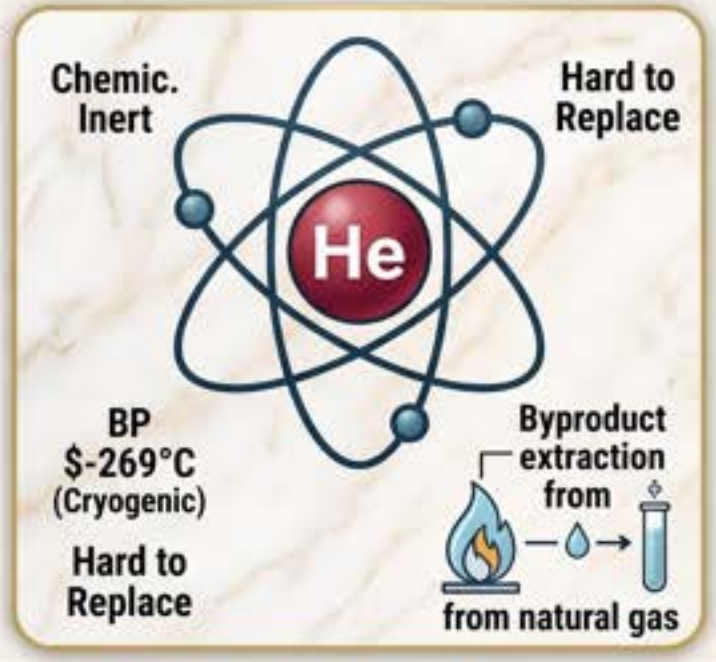
GLOBAL SUPPLY & GEOPOLITICAL BOTTLENECKS

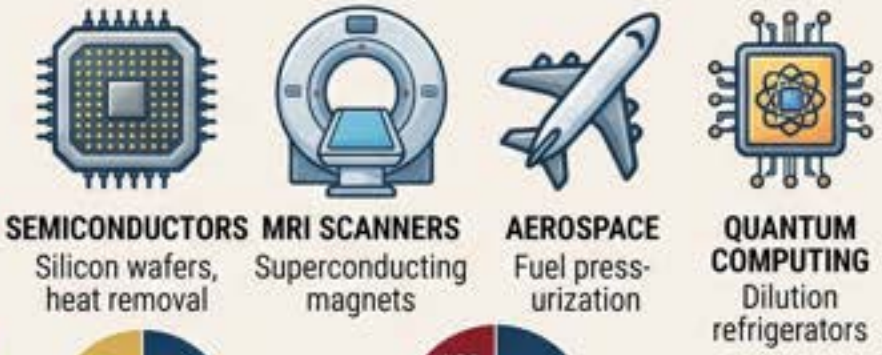
SUPPLY INELASTICITY & COST BARRIERS

Extraction and liquefaction Plant

- Capital Intensive (>$100M-200M)
- High Transport/ Storage Costs
- Vacuum-Jacketed Steel Vessels



CRITICAL USES & FUTURE TECHNOLOGIES



CHINA'S EXPORT BAN: RESOURCE NATIONALISM

- Preserve domestic supply for chip fabrication
- Geopolitical Leverage
- Risk of Tit-for-Tat Measures

A MULTIDIMENSIONAL ANALYSIS

Social	Political	Legal	Ethical	International	Economic
• Social analysis • Major	• Conttotting analysis • Russian export restrictions	• Politicnan Legal • Political or Iliem	• Legal Systems • Ethicatisd	• Rinancal negtoration • Economic	• Economic analysis • Economic • Risk of economic

B NCERT & UPSC LINKAGES

Class 10 Geography	Class 11 Economics	Class 12 Chemistry	GS Papers 2-4 Essay Ethics
Class 11 Geography	Class 12 Chemistry		

C WAY FORWARD: TOWARD HELIUM SECURITY

How DDCs changed local governance in J&K?

What is at stake in the debate over local democracy in Jammu and Kashmir?

Tikender Singh Panwar

The story so far:

The restructuring of Jammu and Kashmir's political and administrative framework through the constitution of District Development Councils (DDCs) has remained the subject of legal and constitutional debate. Formed in 2021, the DDCs completed their five-year term on February 24, 2026. With no fresh elections held and local government institutions remaining largely inactive in recent years, questions have resurfaced about the relevance of the DDC model. Introduced as a mechanism for direct local democracy, the DDCs are viewed by supporters as a step towards grassroots governance, while critics argue they have impeded rather than strengthened democratic decentralisation in the region.

What do the 73rd and 74th Amendments provide for?

One of the core arguments presented for the abrogation of Article 370 was the need to fully integrate J&K with the constitutional framework applicable to the rest of India.

A central element of this argument was the introduction of the 73rd and 74th Constitutional Amendment Acts, which provide for elected rural and urban bodies. This integration was intended to ensure regular, mandatory elections and empower grassroots democracy.

How is local governance structured?

The standard constitutional framework operates on a clearly defined multi-tier electoral system where citizens directly elect their local representatives:

Urban areas: Municipal Corporations, Municipal Councils, and Nagar Panchayats.

Rural areas: A three-tier structure comprising Gram Panchayats (Village Pradhans), Block Development Councils (BDCs), and District-level bodies (Zila Parishads).

Mandated under Article 243ZD of the Constitution, the District Planning Committee (DPC) is envisaged as a coordinating body that brings together development plans prepared by panchayats and municipalities and integrates them into a comprehensive district-level plan.

Unlike an independent executive authority, the DPC is intended to function as an institutional mechanism that reflects priorities generated by elected local bodies and facilitates bottom-up planning. In this sense, it is designed to strengthen democratic decentralisation by aggregating local mandates rather than exercising authority over them.

However, while the constitutional framework assigns a key role to DPCs in district-level planning, their functioning has been uneven across the country, with many remaining largely inactive, barring a few exceptions such as Kerala.

How do DDCs differ from DPCs?

The DDCs were established in J&K through an executive order rather than a legislative process. While the government presents DDCs as directly elected bodies that strengthen grassroots democracy, it is contended that the model contains major contradictions within the governance framework.

Critics argue that the DDC structure bypasses existing institutions such as Zila Panchayats and urban local bodies. Unlike the DPC, which is intended to aggregate development priorities emerging from lower tiers of government, the DDC functions as a parallel administrative authority with executive and developmental powers. This blurs the relationship between the electorate and the actual exercise of power.

The key distinction is that the DPC seeks to strengthen local democracy by consolidating mandates generated from the ground up, whereas the DDC operates from above, competing with lower tiers of governance and functioning as an instrument of centralised bureaucratic control rather than democratic decentralisation.

The DDC structure raises concerns about unequal representation. The allocation of seats across districts does not adequately reflect variations in population, thereby diluting the principle of uniform political weight.

For instance, Srinagar, with a population of roughly 12 lakh, and Kishtwar, with around 2.5 lakh residents, are allocated the same number of DDC members. This creates an imbalance where the political voice per capita is drastically skewed.

The DDCs are being compared to the "special purpose vehicles" used in Smart City projects. They create an illusion of decentralisation, but act as capital-driven, bureaucratically managed structures. Since DDCs can easily jettison legislatively approved local initiatives, they function as a governance substitute rather than a governance supplement.

The creation of 280 DDC members across J&K has established a form of parallel 'parliament' in disguise. Historically, in politically fragile regions, central authorities have often sought to weaken provincial or State-level assemblies by backing district-level entities.

With the J&K State Assembly absent or weakened for years, the DDC framework has allowed key functions and financial powers that would ordinarily rest with elected legislators and local panchayats to remain concentrated under Union administration control.

What is the way forward for local democracy in J&K?

Genuine local democracy cannot be reduced to an administrative or legal exercise; it is fundamentally a political question. True decentralisation requires the restoration of the DPC model envisaged under the 73th and 74th Constitutional Amendments, ensuring financially empowered and grounded local governments accountable to the State's electorate, rather than an administrative architecture serving centralised union control.

- **Key Terms and Explanations**
- **District Development Councils (DDCs):** These are administrative and developmental bodies introduced in Jammu and Kashmir via an executive amendment to the state's Panchayati Raj Act. Operating as independent executive authorities at the district level, they are designed to exercise direct executive and financial powers over local planning. Unlike traditional local bodies that act from the bottom up, DDCs tend to function as a distinct tier operating from above.
- **District Planning Committee (DPC):** A constitutionally mandated body under **Article 243ZD** of the Indian Constitution. A DPC is designed to be a coordinating mechanism rather than an independent executive power. Its primary role is to consolidate the development plans prepared by rural Panchayats and urban Municipalities, integrating them into a holistic, comprehensive district-level development plan.
- **73rd and 74th Constitutional Amendment Acts (1992):** The twin pillars of democratic decentralization in India. They granted constitutional status to rural local bodies (Panchayati Raj Institutions) and urban local bodies (Municipalities), establishing a mandatory three-tier governance system across the country to ensure regular elections, financial devolution, and grassroots empowerment.
- **Democratic Decentralization:** The process of devolving political, administrative, and fiscal powers from the central or state governments to democratically elected local authorities. True decentralization ensures that decision-making power rests with the lowest viable tier of governance, making institutions accountable directly to the local electorate.
- **Special Purpose Vehicles (SPVs):** Legal entities created to fulfill narrow, specific, and often capital-intensive objectives, such as those used to execute Smart City projects. In public governance, SPVs are typically bureaucratically managed and capital-driven, operating outside the standard democratic oversight of elected local councils.

- **Main Arguments and Substantive Parts**
- The core debate centers on whether the introduction of specialized district-level councils genuinely strengthens grassroots democracy or if it merely creates an administrative illusion of decentralization while reinforcing centralized bureaucratic control.
- **The Top-Down vs. Bottom-Up Paradox**
- A fundamental contradiction exists between the standard constitutional framework and the practical execution of these newly introduced councils. Constitutional bodies like District Planning Committees (DPCs) are built to strengthen democracy by consolidating mandates generated from the ground up. In contrast, the council model functions primarily from above. Instead of acting as a coordinating vessel for lower tiers, it operates as an independent executive authority, competing with rather than empowering lower-tier local bodies.
- **Institutional Bypassing and Governance Substitution**
- Rather than supplementing existing local governance systems, these councils frequently act as substitutes. Critics argue that they structurally bypass existing institutions such as Zila Parishads, Block Development Councils, and urban local bodies. Because these councils can easily set aside legislatively approved local initiatives, they function similarly to capital-driven Special Purpose Vehicles (SPVs). They risk creating an illusion of decentralization while actually running bureaucratically managed structures.
- **The Challenge of Unequal Representation**
- A major flaw in the current structural design is the allocation of seats across districts without adequate consideration of demographic variations. This dilutes the core democratic principle of uniform political weight. For instance, a densely populated district like Srinagar (with approximately 12 lakh residents) and a sparsely populated district like Kishtwar (with around 2.5 lakh residents) are allocated the exact same number of council members. This disparity skews the per capita political voice of the electorate, undermining the fairness of representation.
- **Concentration of Power Under Union Control**
- Historically, central authorities in politically fragile regions have often backed district-level entities to weaken provincial or state-level assemblies. With the state assembly absent or weakened for extended periods, this framework has allowed critical financial and functional powers—which should naturally rest with elected state legislators and local panchayats—to remain concentrated under the direct control of the Union administration.

- **Historical Evolution of the Issue**
- **The Pre-2019 Era**
- Prior to the major constitutional changes of 2019, local governance in Jammu and Kashmir operated under a distinct legal framework. Due to its unique constitutional status, the mandatory provisions of the 73rd and 74th Amendments were not automatically applicable. This led to an uneven landscape where local body elections were frequently delayed, heavily dependent on the prevailing security climate, and subject to the political will of the state administration. Grassroots empowerment remained largely unfulfilled.
- **The 2019 Pivot and Constitutional Integration**
- The abrogation of Article 370 in August 2019 completely restructured the political landscape. A primary justification for this restructuring was the comprehensive integration of the region into the constitutional framework of India. This shift intended to fully implement the 73rd and 74th Amendments, ensuring mandatory, regular elections and establishing a robust three-tier Panchayati Raj system to revitalize local democracy.
- **The 2020–2021 Structural Shift**
- Instead of transitioning immediately into the standard three-tier model through a routine legislative process, the Union government introduced District Development Councils (DDCs) in late 2020 via an executive order amending the Jammu and Kashmir Panchayati Raj Act. Direct elections for 280 DDC seats were conducted, and by early 2021, these councils were positioned as the primary drivers of district-level development, bypassing traditional structural models.
- **The 2026 Democratic Impasse**
- The DDCs completed their official five-year term on **February 24, 2026**. However, with no fresh elections scheduled and local government institutions remaining largely inactive, the region has entered a new phase of institutional uncertainty. This governance gap has renewed critical questions about whether these councils were designed to be long-term instruments of genuine grassroots empowerment or temporary tools of centralized administrative management.

- **Way Forward**
- **Restoring Constitutional Conformity**
- The governance framework should transition away from parallel executive structures established via executive decree. Steps should be taken to systematically restore and implement the District Planning Committee (DPC) model as envisioned under **Article 243ZD** of the Constitution. This ensures that district-level planning acts as a collaborative, coordinating platform that respects the autonomy of both rural and urban local bodies.
- **Correcting Representation Imbalances**
- To protect the democratic principle of equal political weight, representation frameworks must be adjusted to accurately reflect demographic realities. Seat allocations across districts should account for population variations, rectifying the imbalance between highly populated urban centers and smaller rural districts to ensure equitable per capita representation.
- **Deepening Fiscal and Functional Devolution**
- True decentralization requires meaningful financial autonomy. Clear funding streams and decision-making powers should be devolved directly to the lowest tiers of governance, including Gram Panchayats and urban municipalities. This helps ensure that local development funds are spent on community-approved initiatives rather than being concentrated within bureaucratically managed district portfolios.
- **Revitalizing the Democratic Cycle**
- An administrative structure cannot effectively substitute for an active political ecosystem. It is vital to conduct regular, timely elections for all tiers of local self-government. Prioritizing the full restoration of standard legislative processes alongside a fully functioning provincial assembly will ensure that local administration supplements rather than replaces regional democracy.

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COMPREHENSIVE ANALYSIS: REFORMING LOCAL GOVERNANCE IN JAMMU & KASHMIR

HISTORICAL EVOLUTION

Pre-2019

Irregular elections

Aug 2019

Abrogation of Art. 370

2020-21

DDC Creation

2026

Term End

HISTORICAL EVOLUTION

THE DDC MODEL: PARADOXES & CHALLENGES

"Top-Down vs. Bottom-Up"

Constitutional Vision	DDC Model
Panchayat	Centralized Union authority
BDC	DDC (independent executive authority)
Zila Parishad/DPC	Bypassing lower tiers
Electorate	Competing bodies

Community roots

Unequal Representation

- Srinagar (12 Lakh) → DDC SEATS
- Kishtwar (2.5 Lakh) → DDC SEATS
- Dilution of uniform political weight
- Skewed political voice per capita

Institutional Bypassing

DDC → DDC authority → Zila Parishads → BDCs, Urban Local Bodies

- Parallel administrative authority, Governance Substitute vs. Storie

DDC → Bureaucratically Supplement

- Illusory decentralization

MULTIDIMENSIONAL ANALYSIS

Political
Concentration of power under Union

Legal
Executive order vs. Constitutional Mandate

Ulsor
Illusion of devolution

Social
Disruption of grassroots grassroots leadership

Ethical
Illusion of devolution

Economic
- Centralized fiscal control
- SPV comparison
- Social economies

International
Geopolitical scrutiny of democratic health

THE WAY FORWARD

RESTORE CONSTITUTIONAL CONFORMITY
Restore the DPC Model (Art. 243ZD).

DEEPEN FISCAL AND FUNCTIONAL DEVOLUTION.

CORRECT REPRESENTATION IMBALANCES.
Allocate seats demographically.

HOLD REGULAR AND TIMELY ELECTIONS.

Has OpenAI's GPT-5.6 class beaten Anthropic's Fable-class models?

Just over a week after Fable 5 came back online for all users, OpenAI unveiled its own next-generation family: GPT-5.6 Sol, Terra, and Luna; rather than a single flagship, OpenAI split the release into three capability tiers priced separately with Sol at the top and Luna at the bottom

John Xavier

Anthropic and OpenAI are locked in an increasingly tight race for frontier AI supremacy, and the gap between their flagship models are narrowing to a benchmark by benchmark contest.

Claude has led on real-world software-engineering tasks with Fable 5 scoring 80.3% on SWE-Bench Pro – a benchmark that evaluates an AI model's software engineering capabilities through complex, realistic programming challenges – at its June launch, well ahead of GPT-5.5's 58.6%. But OpenAI's newly released GPT-5.6 Sol claims the state-of-the-art spot on the Artificial Analysis Coding Agent Index at 80, narrowly ahead of Fable 5, while using less than half the tokens and time.

Since launching Mythos and giving a select group of companies in its Glasswing Alliance early access, Anthropic has positioned itself at the front of the frontier race. It followed up by releasing Fable 5, a version of Mythos with extra safeguards around biology, cybersecurity, and AI research, to a much broader set of users, cementing that lead.

That momentum hit a snag when a dispute with the U.S. government over export controls led Anthropic to be treated as a supply-chain risk, forcing it to suspend access to Fable 5 and Mythos 5 for 19 days – from June 12 to July 1, 2026 – before the Commerce Department lifted the relevant controls and access was restored.

Just over a week after Fable 5 came back online for all users, OpenAI unveiled its own next-generation family: GPT-5.6 Sol, Terra, and Luna. Rather than a single flagship, OpenAI split the release into three capability tiers priced separately with Sol at the top and Luna at the bottom, arguing this lets each tier advance on its own tempo.

OpenAI has been vocal that Sol edges out Anthropic's flagship on several fronts. On Agents' Last Exam, an evaluation of long-running professional workflows across 55 fields, Sol scored 53.6, which OpenAI says is 13.1 points ahead of Fable 5. On the Artificial Analysis Coding Agent Index, Sol posted a new high of 80, about 2.8 points above Fable 5. It also claims new state-of-the art marks on BrowseComp (92.2%) and OSWorld 2.0 (62.6%).

Picture isn't one-directional

But the picture isn't one-directional. Anthropic still holds a wide lead on SWE-Bench Pro, where Fable 5's 80.3% sits far above the 64.6% OpenAI reports for Sol – a roughly 15-point gap on one of the most closely watched agentic-coding benchmarks.

Independent observers have pointed out that Terminal-Bench and SWE-Bench Pro reward different kinds of work: terminal automation favours Sol's Codex-style harness, while whole-codebase issue resolution still favours Claude.

To understand why the two companies can each claim a win, it helps to think of the two tests as different kinds of job interviews for the same candidate.

SWE-Bench Pro is like handing someone a half-finished house that a previous contractor left behind, and asking them to find exactly what's wrong and fix only that, without touching anything else or causing a different room to leak.

It rewards a model that can read carefully, navigate something large and unfamiliar, and make a precise, contained repair – the way a software engineer fixes a specific bug in a codebase they didn't build.

Terminal-Bench 2.1, on the other hand, is less about fixing one specific thing and more about general skillfulness around the whole house. One has to evaluate whether this person can set up the electricity, get the plumbing running, and recover if a step goes wrong midway.

It's a broader test of operating a computer's control panel that includes installing software, configuring servers, running multi-step jobs, and troubleshooting failures along the way.

A model can be a meticulous bug-fixer without being a great all-around operator, and vice versa. This is roughly why Fable 5 leads on the "fix this one thing precisely" test while GPT-5.6 Sol leads on the "handle this whole messy workflow" test.

There's a second wrinkle worth knowing as these scores aren't just testing the AI model itself but they're also testing the toolkit it's given to work with.

OpenAI has evaluated its models using its own in-house "Codex" toolkit, tuned to work well with how its models like to operate, a bit like letting the operator using their own tools versus renting them a standard set of equipment. A contractor will be adept at executing well with the tools he is used to, but may find it difficult to use a different toolkit.

In a normal scenario, this contractor will require some additional time to get used to the new tools before they start working. And even when they work with the new tools, it will take some time to gain tacit knowledge. If one were to factor this into GPT 5.6 Sol's capability, then its lead with Fable 5 will be narrower.

Apart from the GPT-5.6 family of models, the company also announced ChatGPT Work, an agentic mode built on GPT-5.6 that can read emails, summarise texts, create presentations, and organise inchoate ideas into charts and dashboards through a new "Sites" feature, as well as run scheduled or recurring tasks

Competing strengths, different trade-offs

This product is a direct competitor to Claude Cowork, which can similarly complete multi-step, tool-using tasks for users, though the two differ in their plugin ecosystems and how deeply each is woven into its maker's coding tools – Codex for OpenAI, Claude Code for Anthropic.

So how do the two flagship frontier labs' models compare and contrast? Based on what the benchmark and eval scores show, both are capable and land close to each other overall. Each comes with a different specialty rather than one model being categorically ahead.

The place where OpenAI clearly shows distinction is in token efficiency. On the Artificial Analysis Coding Agent Index, Sol matches or exceeds Fable 5's score while using less than half the output tokens, taking less than half the time, and costing about one-third less. On the broader Artificial Analysis Intelligence Index, Sol comes within a single point of Fable 5 while finishing tasks in 61% less time at roughly half the cost.

For teams weighing cost per completed task rather than raw benchmark scores this efficiency gap may be a deciding factor than which model tops any individual leaderboard. Though, as with the Codex-versus-neutral-harness comparison above, it's worth checking whether that efficiency holds up outside OpenAI's own tuned environment before betting a production workflow on it.

- **Key Terms and Explanations**
- **Frontier AI Models**
- These represent the most advanced, highly capable generative AI systems at the absolute bleeding edge of research and development. Unlike narrow AI, which performs a singular task, frontier models possess multi-domain capabilities, high-level reasoning, and adaptive problem-solving skills.
- **Agentic Workflows**
- A paradigm shift where an AI model does not merely respond to a prompt with text but acts as an autonomous "agent." It can plan, use external software tools, execute multi-step processes, self-correct errors mid-way, and operate continuously toward a macro-objective without constant human intervention.
- **Software Engineering Benchmarks (e.g., SWE-Bench Pro)**
- Standardized evaluation frameworks designed to test an AI's capacity to resolve real-world software engineering issues within massive, unfamiliar, and multi-file codebases. It measures deep logical comprehension and precision.
- **Systemic Orchestration Benchmarks (e.g., Terminal-Bench)**
- Evaluation systems that test an AI's ability to operate across a computer's entire control panel or operating system. It values general competence, adaptability, and the handling of messy, unpredictable workflows over isolated code editing.
- **Token Efficiency**
- Tokens are the basic units of data (syllables, words, or code fragments) processed by an AI. Token efficiency refers to a model's ability to solve a complex problem using fewer computational resources, fewer steps, and less time, directly translating to lower operational costs.
- **Technology Supply-Chain Risks and Export Controls**
- The classification of advanced software and hardware as critical dual-use technologies (having both civilian and military applications), leading governments to impose legal restrictions, sanctions, or operational pauses to safeguard national security.

- **Main Arguments and Substantive Parts**
- **The End of Linear AI Supremacy**
- The development of frontier AI has transitioned away from a simplistic, linear narrative where a single new model categorically outperforms all predecessors across every single metric. Instead, the current landscape is defined by architectural diversification, where different model lineages express distinct philosophical and functional strengths.
- **The Meticulous Bug-Fixer vs. The Systemic Orchestrator**
- Analysis reveals a stark structural dichotomy in how advanced systems approach problem-solving:
- **The Meticulous Focus:** Certain models are engineered for absolute precision within deep, dense environments. They navigate complex, unfamiliar codebases with remarkable focus, aiming for isolated, flawless execution. This makes them exceptional for structural debugging where a single error could trigger systemic failure.
- **The Systemic Focus:** Conversely, other next-generation models are designed as broad workflow managers. They excel at multi-tasking, executing terminal operations, configuring servers, and maintaining speed across fluid, messy environments. They may accept minor internal frictions if it means navigating the entire system toward a rapid resolution.
- **The Token-Economic Factor**
- A core substantive argument revolves around operational viability over raw performance scores. A model that achieves comparable accuracy while consuming half the computational volume and finishing in a fraction of the time introduces a massive shift in economic utility. For enterprise deployment, token-economic efficiency is rapidly outpacing minor, incremental increases in benchmark accuracy.
- **Evaluation Biases and Tooling Harnesses**
- True performance is heavily dependent on the testing ecosystem. Models frequently show inflated capabilities when evaluated within their own proprietary toolkit harnesses compared to independent, neutral testing environments. This highlights the urgent need for standardized, non-proprietary evaluation metrics in the tech sector.

- **Historical Evolution of the Issue**
- **Phase 1: Pre-2020 – The Era of Narrow and Rule-Based AI**
- AI development was dominated by narrow machine learning algorithms trained for singular, specific tasks like image classification, basic translation, or chess playing. The concepts of generalized coding capability or autonomous agentic behavior were confined to academic theories.
- **Phase 2: 2020–2022 – The Scale and Parameter Boom**
- The industry pivoted to Large Language Models (LLMs) built on transformer architectures. The reigning philosophy was "scale-determinism"—the assumption that adding more parameters and feeding more raw data would linearly generate higher intelligence. Models became outstanding conversationalists, but lacked the capacity to interact with external tools or execute sequential tasks.
- **Phase 3: 2023–2025 – The Rise of Multimodality and Early Agents**
- Models integrated text, voice, and vision capabilities. Software developers began building wrappers around LLMs to create early-stage automated agents. However, these systems suffered from high hallucination rates, immense computational costs, and an inability to handle long-term workflows without losing focus.
- **Phase 4: 2026 (Present Era) – Deep Specialization and Geopolitical Weaponization**
- As visually contextualized in **image_f05a01.jpg**, the current landscape has reached a point where raw linguistic scaling has plateaued, yielding to highly specialized, efficient agentic families. Concurrently, as seen during the regulatory pauses of mid-2026, governments have stepped in, treating frontier models not just as corporate software, but as strategic dual-use assets subject to stringent export controls and supply-chain intervention.

- **Way Forward**
- **Development of Open-Source, Non-Proprietary Benchmarks**
- To eliminate evaluation bias and the distortion caused by closed testing environments, the global tech community must invest in fully transparent, independent, and standardized benchmarking platforms. This ensures that a model's true capability is assessed objectively, protecting enterprises from vendor lock-in.
- **Strategic Transition to Sovereign AI Infrastructure**
- For nations like India, relying entirely on foreign-owned proprietary frontier models introduces immense supply-chain vulnerability. The state must actively champion indigenous AI development, creating localized foundational models and agentic workflows that are tailored to domestic infrastructure, languages, and regulatory environments.

FRONTIER AI RACE: OPENAI (GPT-5.6) vs ANTHROPIC (FABLE) - A COMPREHENSIVE ANALYSIS

AXIA IAS ACADEMY
RISE ABOVE THE REST

ANTHROPIC: FABLE-CLASS MODELS (e.g., Claude 5)

DEEP CODEBASE BUG-FIXING

Isolated code resolution in a large, unfamiliar repository

SWE-BENCH PRO (Coding)

- Conceptual
- High-Score

Specialized "Mythos" and secure deployment features (Glasswing Alliance).

KEY TRADE-OFFS:

ISOLATED PRECISION

vs

SYSTEMIC EFFICIENCY

OPENAI: GPT-5.6 CLASS MODELS (e.g., Sol)

SYSTEMIC ORCHESTRATION

AGENTIC WORKFLOWS
(ChatGPT Work)

TOKEN EFFICIENCY & SPEED

Low-Cost | Fast-Completion

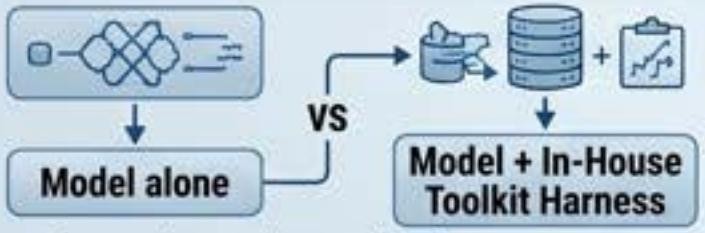
TERMINAL-BENCH / OSWORLD
(System Management)

MULTIDIMENSIONAL AI IMPACTS

(UPSC/APSC Context)

- **[SOCIAL]** - Jobs, skills transformation
- **[POLITICAL]** - Dual-use, Sovereign AI, policy
- **[ECONOMIC]** - Automation - Cost-efficiency
- **[LEGAL]** - Regulation - AI liability
- **[INTERNATIONAL]** Strategic competition - Dependencies
- **[ETHICAL]** - Safety, Alignment, - accountability

THE BENCHMARK PARADOX



Model alone

Model + In-House Toolkit Harness

Scores depend on evaluation ecosystem.

KEY TAKEAWAYS FOR ASPIRANTS

- Assess model philosophy, not just scores
- Analyze AI's strategic geopolitical role
- Understand specialized capabilities (e.g., deep code vs broad system)
- Leverage efficient models for deployment

‘Vizhinjam is no rival to Cochin Port’

Cochin Port Authority, together with DP World, is preparing an expansion plan to make the International Container Transshipment Terminal at Vallarpadam future-ready by deepening the channel draft and augmenting terminal infrastructure to tap growing opportunities in container traffic

NEWS ANALYSIS

Y. Sajeev Kumar

Cochin Port Authority (CoPA) is unfazed by the rapid rise of Vizhinjam Port as a transshipment hub and is instead focusing on expanding the International Container Transshipment Terminal (ICTT) at Vallarpadam to strengthen its position as a gateway terminal.

M. Anganuthu, Chairperson-in-charge of CoPA, said the port, together with DP World, is preparing an expansion plan to make the ICTT future-ready by deepening the channel draft and augmenting terminal infrastructure to tap the growing opportunities in container traffic, particularly transshipment.

“The expansion plans are aimed at transforming ICTT into a vibrant gateway terminal and transshipment hub,” he said in an interaction.

Mr. Anganuthu said he does not see Vizhinjam as a direct competitor to Cochin at present, noting that the two ports serve different markets.

“Vizhinjam is primarily a transshipment terminal, whereas Cochin is essentially a gateway terminal, although it also handles a significant volume of transshipment cargo. ICTT has a much larger demand potential as it serves central Kerala, including Kochi, which has major commercial and industrial centres,” he said.

Space crunch: Draft limitations remain a major challenge for ICTT in attracting larger container vessels as shipping lines increasingly deploy bigger ships to achieve economies of scale. THULASI KANNAT

However, he acknowledged that draft limitations remain a major challenge for ICTT in attracting larger container vessels as shipping lines increasingly deploy bigger ships to achieve economies of scale. While Vizhinjam has an 18-m draft, ICTT has 14.5 m. The terminal would need a draft of around 16 m to efficiently handle the next generation of container ships.

The Cochin Port Authority and DP World have jointly proposed to deepen the draft to 16 m as part of the terminal’s expansion programme.

Mr. Anganuthu highlighted Kochi’s strategic advantages, including its proximity to major international shipping routes and strong road, rail and inland waterway connectivity, which offer significant scope for developing integrated port-based industrial zones, logistics parks, and warehousing and value-added distribution facilities.

> ICTT has a much larger demand potential as it serves central Kerala, including Kochi, which has major commercial and industrial centres
>
> **M. ANGAMUTHU,** Chairperson-in-charge of CoPA

The advantages position Cochin Port as both a major container gateway and a transshipment hub while complementing the rapid growth of India’s maritime sector, he said.

On the flip side, the limited industrialisation in the hinterland poses a major challenge for the port due to the restricted growth in cargo.

The rising operational cost, especially the high annual maintenance dredging cost, is another factor eroding the competitiveness of the port.

The proximity of the Southern Naval Command imposes restrictions on crane heights and certain waterfront developments. Legacy labour issues, higher manpower costs and productivity constraints are some of the other factors affecting the service quality and overall competitiveness of the port.

Mr. Anganuthu said Cochin Port has the task of maintaining the channel, so the high annual dredging cost is a severe drain on its resources. The channel is extensively used by the Indian Navy, Coast Guard and Cochin Shipyard without any cost sharing.

The port has raised the issue with the government, he said. To help rationalise the cost, Cochin Port undertakes need-based dredging as the profile of the ships calling in at the port varies significantly in terms of draft.

Rail links

Asked about the idling railway line to ICTT, he replied that Container Corporation of India (CONCOR) had launched a rail service between Coimbatore and ICTT in 2016 but halted it after about 10 months due to viability issues. The rail service could not compete effectively with road transport on the short 190 km stretch between Coimbatore and Kochi.

The GST rollout in July 2017, the consequent shutdown of interstate check posts, and significant improvements in road connectivity between Cochin and Coimbatore (NH-544) also favoured road service. Today, the rail service between Coimbatore and ICTT can be revitalised only through significant cost reduction.

DP World is exploring the idea of establishing a rail service between Bengaluru and ICTT. The nearly 500 km distance augurs well for rail service vis-à-vis a road link, subject to demand potential.

He said the Kerala government’s proposed Mission Samudra is in sync with the port’s development objectives, as defined by the Centre’s Sagarmala Programme, especially in terms of multimodal infrastructure connectivity, port-led industrialisation, green shipping and shipbuilding, and blue economy and tourism.

The Cochin-Vizhinjam cluster has the potential to become a dual-hub model for South India, reducing dependency on foreign transshipment ports and offering more options to global shipping lines, he pointed out.

He acknowledged that a few small shipping services that had earlier connected ICTT with the non-major ports of Kollam, Beypore and Azhikkal between 2014 and 2019 were irregular and were soon discontinued due to lack of viability.

The redevelopment of Willingdon Island, he said, hinges on capitalising Kochi’s growing potential in heritage and cultural tourism, cruise tourism, leisure and coastal tourism, and medical and wellness tourism.

Berth upgradation

The port plans to upgrade the Q7 berth into a dry cargo terminal, especially steel. In addition, the Q6 berth and the boat train pier will remain fully mechanised cement terminals apart from handling other dry cargo.

The port sees a major growth opportunity in handling petroleum, oil, and lubricants (POL) cargo, containers and monetisation of land.

(The writer is with The Hindu businessline)

- **Key Terms and Explanations**
- **Transshipment Port / Hub**
- A specialized maritime hub where cargo containers are unloaded from large ocean-going vessels (mainline vessels) and transferred to smaller ships (feeder vessels) to reach their final destinations, or vice versa. It acts as a massive sorting and consolidation network.
- **Example:** International ports like Colombo or Singapore. Nationally, deep-water projects focus specifically on capturing this global transshipment traffic to prevent domestic cargo from being routed through foreign nations.
- **Gateway Port**
- A port that primarily serves its immediate geographic interior, known as the hinterland. It acts as the direct entry and exit point for commodities, raw materials, and finished goods consumed or produced by the regional economy.
- **Example:** A port that directly connects to local industrial, agricultural, and commercial manufacturing centers, handling local import-export demands rather than merely sorting passing cargo.
- **Draft (Port Draft)**
- The vertical distance between the waterline and the deepest point of a ship's hull. In port logistics, the available draft determines the maximum size of the vessels that can safely enter the harbor without running aground.
- **Example:** Ultra-Large Container Vessels (ULCVs) require deep drafts of 16 to 18 meters. Ports with shallower drafts (e.g., 14.5 meters) face architectural barriers in attracting next-generation mega-ships unless extensive engineering work is undertaken.
- **Maintenance Dredging**
- The continuous or periodic excavation and removal of accumulated underwater sediments, silt, and sand from shipping channels and berths to ensure navigational depths remain consistent over time.
- **Example:** Estuarine or riverine ports experience natural siltation from incoming water bodies, requiring constant financial investment into dredging fleets to keep shipping lanes operational for commercial traffic.
- **Hinterland Connectivity**
- The comprehensive logistics network consisting of highways, rail corridors, and inland waterways that link a seaport to inland industrial zones, agricultural belts, and population centers.
- **Example:** A port’s long-term commercial viability depends heavily on whether it can move a container to an inland manufacturing cluster located 200–500 kilometers away faster and cheaper via rail or road than its competitors.
- **Blue Economy**
- A holistic economic framework aimed at the sustainable utilization of ocean and coastal resources for economic growth, employment generation, and social inclusion, while simultaneously preserving the health of marine ecosystems.
- **Example:** Integrating green shipbuilding, coastal tourism, sustainable fisheries, and eco-friendly port-led industrialization under unified national development frameworks.

- **Main Arguments and Substantive Parts**
- The structural and operational dynamics of India's southwestern maritime infrastructure, highlight a key shift from a mindset of direct competition to one of functional complementarity.
- **The Dual-Hub Model: Complementarity Over Competition**
- The core thesis revolves around the idea that two mega-ports in close geographic proximity do not create a zero-sum game. Instead of cannibalizing each other's business, they can evolve into a co-dependent "Dual-Hub Model" for South India.
- **Specialization of Roles:** One port can leverage its natural deep-water capacity to operate as a dedicated international transshipment hub, while the other capitalizes on its extensive domestic industrial linkages, established cargo-handling history, and gateway capabilities. This collective capacity significantly reduces India's strategic dependency on foreign transshipment ports like Colombo or Singapore.
- **Demand Potential and Functional Focus**
- The economic viability of an established gateway port is anchored by its deeply integrated commercial ecosystem.
- **The Gateway Advantage:** Even when handling transshipment volumes, a gateway terminal serves as a lifeline for regional commercial and industrial centers. It possesses a resilient, built-in domestic demand potential that greenfield transshipment hubs lack in their initial phases.
- **Divergent Markets:** The two structural models cater to fundamentally different market segments—one captures passing mainline global shipping traffic, while the other drives the consumption and production engine of the immediate state and regional hinterland.
- **Infrastructure Bottlenecks and Engineering Upgrades**
- To maintain resilience against evolving global trade standards, older port architectures must undergo rapid infrastructure adaptation.
- **The Battle for Draft Depth:** As global shipping lines increasingly deploy larger vessels to achieve economies of scale, draft limitations become a severe operational constraint. A terminal limited to a 14.5-meter draft faces an existential need to deepen its channels to at least 16 meters to efficiently accommodate next-generation container ships.
- **Modernization Plans:** Strategic partnerships with global terminal operators are driving aggressive expansion plans, channel deepening projects, and terminal infrastructure augmentations to ensure long-term competitiveness.
- **Operational Vulnerabilities and Cost Impasses**
- The financial health of public-private port ecosystems is often threatened by unique operational, historical, and institutional constraints.
- **The Burden of Siltation:** Estuarine locations suffer from high annual maintenance dredging costs, which act as a severe drain on financial resources.
- **The Public Good Dilemma:** When commercial shipping channels are heavily utilized by national strategic assets (such as the Indian Navy, Coast Guard, or public shipyards) without an institutionalized cost-sharing mechanism, the commercial port authority bears an unfair financial burden.
- **Structural Challenges:** High manpower costs, legacy labor union issues, and rigid productivity constraints further erode the competitive edge of older legacy ports relative to highly automated, modern greenfield installations.

- **Historical Evolution of the Issue**
- **Colonial and Pre-Independence Foundation (1920s–1940s)**
- The modern trajectory of southwestern Indian ports began with colonial engineering interventions designed to open up restricted estuarine waters to global maritime trade. The creation of artificial islands and deep-water channels in the early 20th century transformed region-specific traditional trade into organized, secure deep-water harbors. These locations quickly became primary maritime gateways on the Arabian Sea, serving British commercial interests by exporting cash crops and spices from the southern hinterland.
- **Post-Independence Gateway Consolidation (1950s–1980s)**
- Following independence, the Government of India classified these established colonial harbors as Major Ports, placing them under central statutory control. The developmental focus during this era was heavily import-centric, configured to handle bulk cargo such as crude oil, fertilizers, and food grains to support a socialist, self-reliant domestic industrial model. Port operations were entirely state-run, characterized by high labor intensity, limited technological intervention, and a lack of specialized container-handling capabilities.
- **The Containerization Wave and Structural Shifts (1990s–2000s)**
- The liberalization of the Indian economy in 1991, combined with the global revolution in containerized cargo, exposed severe infrastructural deficits in India’s maritime network. Indian exporters suffered from prolonged turnaround times and high logistics costs. To counter this, the policy framework shifted toward establishing India's first dedicated International Container Transshipment Terminal (ICTT) at Vallarpadam. This period marked the early conceptual transition from basic gateway operations to capturing global transshipment markets.
- **The Public-Private Partnership (PPP) Paradigm (2010s)**
- The operationalization of specialized container terminals under the Public-Private Partnership (PPP) model brought global terminal operators into India's port ecosystem. However, despite heavy capital investments, these early transshipment experiments faced severe headwinds. Natural disadvantages, such as heavy siltation requiring continuous maintenance dredging, combined with strict cabotage laws and rigid tariff regulatory frameworks, prevented these terminals from fully achieving their intended potential as global transshipment alternatives.
- **The Modern Multi-Port Cluster Strategy (2020s–Present)**
- The contemporary era is defined by the coexistence of centrally managed legacy ports and state-backed deep-water greenfield ports. The realization that physical constraints (like draft depth) cannot be entirely engineered away has driven a policy evolution toward multi-port clusters. Aligned with national visions like the Sagarmala Programme and state-level initiatives like 'Mission Samudra', the emphasis has evolved from inter-port rivalry to regional maritime synergy, striving to create a comprehensive blue economy hub at the southern tip of India.

UPSC CSE: COMPREHENSIVE ANALYSIS - MARITIME INFRASTRUCTURE & ECONOMY

AXIA IAS ACADEMY

1. KEY TERMS & EXPLANATIONS

Transshipment Hub: sorting hand over ships, termnore the tanvension to sorting mentopod ment ships.

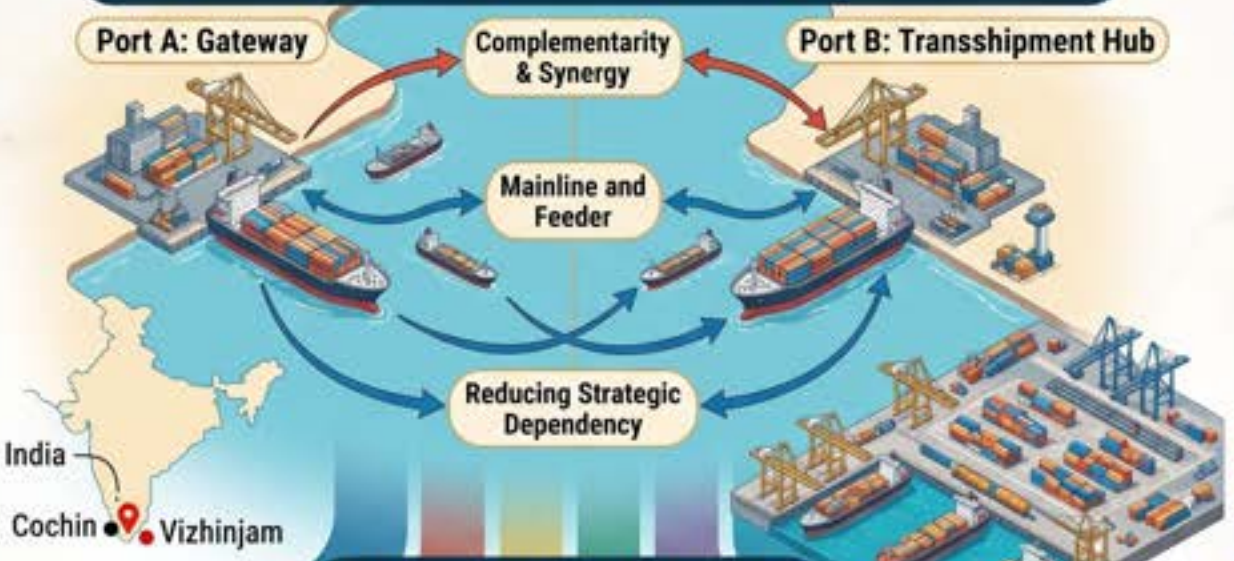
Gateway Port: direct gate to factory :mainly directw ships port noged.

Draft: The pretlenrite of the manliming in arrawoxer ships and direct ensures to blood through artiettlement matores.

2. HISTORICAL EVOLUTION

- **Colonial Era** (Cateway Factory)
- Including Container Containerization
- **Modern Cluster Strategy**
- Human Factory procesation
- Containerization rase of evoluitiors
- **Modern Cluster Strategy**

3. LOGICAL & PHILOSOPHICAL BASE: DUAL-HUB MODEL



4. MULTIDIMENSIONAL ANALYSIS (GS-3 & GS-4 Focus)

- **Social** Labor Reforms • Cataining properity raoces
- **Political** Center-State Synergy • Cervernment & imalinis
- **Legal** Cabotage Laws • Government ports
- **Ethical** Environmental Safeguards • Rentone matn in
- **International** IOR Security • Globe eonmity
- **Economic** Logistics Costs • Fioder and-itnand costes

5. UPSC SYLLABUS MAPPING & PYQ REFERENCES

GS Papers II
- Defense ol Port
- Marifreight Reactiors
- Maritime Infrastructures

GS Papers II, III
- Center-State Synergy
- Example PYQs: [GSTA–UR7A]
- Example PYQs: [GSI PI-GiS-40]

GS Papers IV
- Containerization and Ref Security
- Rail Freight Clustey Costs
- Example PYQs: [CSP-3523]

6. WAY FORWARD: REFORMS & POLICY

Defense Cost Sharing
- Defense cost sharing or nention of the key-terrmport.

Rail Freight Rationalization
- Rail freight rationalization and rationalization irsahm to becoming and integratated roess

Integrated Cluster Strategy
- Integrated cluster strategy merarured main need ports

EU and 14 countries reaffirm ruling on South China Sea

Associated Press
MANILA

The 2016 ruling invalidates China's claim in the region; verdict is null and void, says Beijing

The United States, the United Kingdom and a dozen other Western and Asian countries reasserted on Sunday that China's expansive claims in the South China Sea are illegal based on a 2016 arbitration ruling.

A joint statement issued by the 14 nations said they rejected "destabilising" actions in the disputed waters that threaten regional stability. The 27-nation European Union released a separate statement, reaffirming the ruling as a "landmark decision in the peaceful settlement of disputes."

The other countries listed in Sunday's statement include Japan, Australia, New Zealand and Canada.

The statements commemorated a July 12, 2016, arbitration ruling by a tribunal established in The Hague under the United Nations Convention on the Law of the Sea, saying the landmark decision is "final and legally binding."

China reiterated on Sunday that the ruling was "null and void and has no binding force" and Beijing "neither accepts nor recognises it".

China refused to join the arbitration initiated by the Philippines in 2013 after a tense stand-off in the contested waters a year earlier that ended with Beijing effectively seizing a disputed shoal.

The tribunal largely decided in favour of the Philippines

Beijing rejected the 2016 ruling and continues to defend its claims to virtually the entire sea passage, a key global trade route.

"We reiterate our strong opposition to any destabilising or unilateral actions including by force or coercion that threaten peace and stability in the region," they said.

"China opposes and will never accept any claim or action based on those awards," the Chinese Foreign Ministry said, adding that Beijing "does not accept any means of third-party dispute settlement or any solution imposed on China."

- **Key Terms and Explanations**
- **United Nations Convention on the Law of the Sea (UNCLOS):** Adopted in 1982, UNCLOS is often referred to as the "Constitution of the Oceans." It is a comprehensive international treaty that establishes a legal framework for all maritime activities, balancing the economic and ecological needs of coastal states with the navigational rights of global vessels. *Example:* Under UNCLOS, a country cannot simply claim ownership over open ocean water; its rights must shrink or expand based on codified distances from its actual land coastlines.
- **Permanent Court of Arbitration (PCA):** Established in 1899 and headquartered at The Hague, Netherlands, the PCA is an intergovernmental organization dedicated to facilitating arbitration and other forms of dispute resolution between states. It is not a court in the traditional sense, but rather an administrative framework to assemble arbitral tribunals. *Example:* When two nations reach a deadlock over a maritime boundary, they can utilize the PCA to appoint independent legal experts to adjudicate their dispute based on international law.
- **The "Nine-Dash Line":** This refers to a historically derived, loosely defined demarcation line used by China to claim sovereignty over up to 90% of the South China Sea. The line loops over 1,500 kilometers south of mainland China, cutting deep into the maritime zones of neighboring Southeast Asian countries. *Example:* Imagine a homeowner claiming ownership over most of a communal cul-de-sac simply because their ancestors used to walk across it, bypassing modern municipal zoning property lines.
- **Exclusive Economic Zone (EEZ):** Under UNCLOS, an EEZ is a marine zone extending up to 200 nautical miles from a country's coastal baseline. Within this area, the coastal state enjoys sovereign rights for exploring, exploiting, conserving, and managing natural resources (like fish, oil, and gas), though it must respect the freedom of navigation of other nations. *Example:* India's extensive coastline grants it exclusive rights to fish and drill for oil within its 200-nautical-mile EEZ in the Arabian Sea and the Bay of Bengal.
- **Freedom of Navigation Operations (FONOPS):** These are routine operational maneuvers conducted by naval forces (most notably the United States) in disputed waters to challenge what they perceive as excessive or unlawful maritime claims by coastal states. *Example:* A naval destroyer sailing peacefully through a contested strait to demonstrate that the waters remain international territory, thereby preventing a single nation from de facto converting public waters into its private territory.

- **Main Arguments and Substantive Parts**
- The core tension in international maritime governance centers on the conflict between a codified, rules-based multilateral order and unilateral expansionism rooted in historic exceptionalism.This issue can be broken down into three substantive arguments.
- **The Collective Defense of the Rules-Based International Order**
- A robust coalition of Western and Asian nations—including the European Union, the United States, Japan, and Australia—reaffirmed that the 2016 Permanent Court of Arbitration (PCA) ruling is final and legally binding. Their core argument rests on the principle that international law must supersede raw geopolitical power. They contend that allowing unilateral maritime expansionism to go unchallenged creates a dangerous global precedent where "might makes right," destabilizing critical trade corridors and undermining the sovereign equality of smaller littoral states like the Philippines.
- **The Doctrine of Historic Rights and State Exceptionalism**
- Conversely, the counterargument put forth by Beijing asserts that the 2016 arbitral award is "null and void" and holds no binding force. This stance is built on the premise of historic sovereignty, arguing that domestic rights established over centuries predate and outperform modern international treaties like UNCLOS. This perspective rejects third-party dispute settlements, viewing external legal interventions as an infringement on national sovereignty and arguing that maritime boundaries should only be settled via bilateral negotiations where large powers naturally hold greater leverage.
- **The Destabilization of Global Commons and Freedom of Navigation**
- A central pillar of the multilateral argument emphasizes that the South China Sea is not a domestic lake but a critical global common. Because over one-third of global maritime trade passes through these waters, the militarization of artificial features and the coercion of local fishermen are viewed as direct threats to global supply chains. The international coalition argues that upholding the 2016 ruling is not merely a regional matter between Manila and Beijing, but a functional necessity to secure the global economy against unilateral chokepoints.

- **Historical Evolution of the Issue**
- **Pre-1945: Colonial Overlaps and Early Claims:** Prior to World War II, the islands and features of the South China Sea (primarily the Spratlys and Paracels) were largely treated as terra nullius or subjected to overlapping claims by colonial powers, including French Indochina and the Japanese Empire. Local fishermen from various nations navigated these waters without rigid state-enforced boundaries.
- **1947–1953: The Cartographic Origin of the Dashes:** In 1947, the Nationalist government of China published a map featuring an "Eleven-Dash Line" to assert its historic rights over the region. Following the establishment of the People's Republic of China, two dashes in the Gulf of Tonkin were removed in 1953 under Premier Zhou Enlai, giving birth to the contemporary "Nine-Dash Line" which was integrated into official state cartography.
- **1982: The Codification of UNCLOS:** The adoption of the United Nations Convention on the Law of the Sea created a new legal dilemma. Signatory nations, including China and its Southeast Asian neighbors, agreed to base their maritime claims on land baselines and specific distance metrics (such as the 200-nautical-mile EEZ), setting up an inevitable legal clash with claims based purely on historic maps.
- **2012: The Scarborough Shoal Standoff:** A major escalation occurred when Chinese vessels blocked Filipino authorities from apprehending Chinese fishermen at Scarborough Shoal. The tense standoff ended with Beijing establishing effective de facto control over the shoal, fundamentally altering the status quo and demonstrating the limits of traditional diplomatic engagement for smaller nations.
- **2013–2016: The Philippines vs. China Arbitration Case:** Frustrated by the loss of Scarborough Shoal, the Philippines formally initiated arbitration under UNCLOS at the PCA in 2013. Despite China’s policy of non-participation, the tribunal proceeded and delivered a landmark verdict on July 12, 2016, ruling that China's "Nine-Dash Line" historic claims had no legal basis under international law and that its activities within the Philippine EEZ violated Manila’s sovereign rights.
- **Post-2016 to Present Day:** Since the ruling, the region has witnessed extensive island-building and militarization of low-tide elevations by Beijing, alongside a steady increase in multilateral pushback. Major global actors like the EU, US, and regional partners continue to formally rally around the 2016 verdict to challenge unilateral dominance and maintain a free and open Indo-Pacific.

- **Way Forward**
- Resolving deep-seated maritime disputes requires a balanced mix of firm deterrence, institutional reform, and inclusive, rules-based diplomacy.
- **Concluding a Binding and Standardized Code of Conduct (CoC)**
- There is an urgent need to expedite negotiations between ASEAN and China for a legally binding, enforceable, and transparent Code of Conduct (CoC) in the South China Sea. This framework must fully align with UNCLOS principles and avoid restricting the rights of third-party nations to navigate or conduct joint exercises in these international waters. A weak or non-binding code will only preserve the volatile status quo.
- **Institutionalizing Multilateral Maritime Domain Awareness (MDA)**
- Middle powers and regional stakeholders should build independent, shared Maritime Domain Awareness networks. By pooling satellite data, radar tracking, and coast guard intelligence, regional actors can create a transparent, real-time public record of maritime activity. This collective transparency acts as a strong diplomatic deterrent against illegal fishing, unlawful blockades, and grey-zone coercion.
- **Strategic Operationalization of India's Indo-Pacific Oceans Initiative (IPOI)**
- India can proactively leverage its Indo-Pacific Oceans Initiative (IPOI) to offer practical, non-security-focused partnerships to Southeast Asian littoral states. By leading initiatives centered on maritime ecology, disaster risk reduction, and the sustainable management of blue economies, New Delhi can provide a dependable, constructive alternative that strengthens regional resilience without forcing nations into rigid superpower alignment blocks.
- **Strengthening Global Dispute Resolution Enforcement Mechanisms**
- The international community should explore innovative ways to incentivize compliance with international tribunal rulings. While direct military enforcement remains unlikely, nations can introduce reputational and economic costs. This can be achieved by integrating compliance with international maritime law directly into standard bilateral trade agreements, investment treaties, and international maritime rating systems.

AXIA IAS ACADEMY
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COMPREHENSIVE ANALYSIS: SOUTH CHINA SEA MARITIME DISPUTE (UPSC CSE & APSC PREPARATION)

KEY TERMS & DEFINITIONS

UNCLOS
International Maritime Law

PCA
Arbitral Tribunal

NINE-DASH LINE
U-unaped over over-dash line

EEZ
200nm zone with oil rig and fish

MAIN ARGUMENTS: A PERSPECTIVE

Rules-Based International Order (Multilateral Groupings)	VS	Chinese Claim (Unilateral Stance)
• Sovereignty from UNCLOS • Respect EEZs • Binding PCA ruling		• Rejection of PCA • Historic rights • Bilateral negotiation

MULTIDIMENSIONAL ANALYSIS

(GS2, GS3, GS4 Linkages)

SOCIAL	POLITICAL	LEGAL	ETHICAL	INTERNATIONAL	ECONOMIC
Fishermen	Flags & Diplomacy	Gavel & Law book	Scales & Environment	Indo-Pacific map & security	Trade routes & containers

UPSC CSE SYLLABUS LINKAGES

UPSC CSE SYLLABUS LINKAGES

- **GS1:** Global History/Pol
- **GS3:** Maritime Security
- **GS2:** IR, Agreements
- **GS4:** Ethics in IR

HISTORICAL EVOLUTION: KEY MILESTONES

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2016
2016 PCA Ruling (Invalidates nimalhe binding historic claim

PRESENT
Trade routes trade routes & & containers, arnd of orumnens

WAY FORWARD & PREVIOUS YEARS' QUESTIONS (PYQs)

Examples of PYQ themes:
- Examples: South China Sea Tsland
- Examples: Chinese National Inlagnts
- Examples: Lite·susvensiants
- Examples: Ha-Fimtlo and Braos

Suggested actions:
- Legally Binding CoC
- Multilateral MDA
- IPOI Operationalization
- Enforcement

POLICY

EC now wants SIR status of new voters' parents: What this means

Damini Nath
New Delhi, July 12

THE ELECTION Commission of India's (ECI) online voter registration portal, ECINET, now requires applicants to provide details of their parents' status in the last Special Intensive Revision (SIR) of electoral rolls, down to the polling booth number and the elector's serial number on that roll. This is even as Form 6, which is the statutory form for new enrolments, has yet to be amended under the procedure established by law.

What is the new procedure?

ECINET lets users submit forms for new electoral registrations, changes to existing electoral rolls, and deletions. The version of Form 6, which is the electors' enrolment form under the Representation of the People Act, 1950, and the Registration of Electors Rules, 1960, available for online submission now has a part that asks applicants if their parents were in the last SIR. This is under a section called the "declaration form".

If yes, they are required to provide the Assembly constituency number, the polling booth number (part number) and the serial number at which their father or mother was registered in the last SIR.

So far, the EC has completed the SIR in 10 states and three UTs since June last year; for the remaining states/UTs, the last intensive revision refers to the exercise conducted in the early 2000s. The exercise is currently underway in 19 other states/UTs. For all states where the SIR has been completed or is underway, except for Bihar, the EC's online Form 6 submission process requires the applicant to fill the new "declaration form" about their parents. If the applicant's parents were not in the last SIR, then they must select that option and provide their parents' names and Electors Photo Identity Card (EPIC) numbers, if available.

SIR COVERAGE

- The SIR is on in 19 states/UTs, while the EC is yet to announce it for Himachal Pradesh, Ladakh and Jammu and Kashmir.
- In the case of Assam, the EC has decided not to hold the SIR till the National Register of Citizens (NRC) exercise is completed in the state.

What does the law say?

Article 326 of the Constitution guarantees the right to enrol as an elector to all adult citizens ordinarily resident in an Assembly constituency, unless otherwise disqualified by law.

The Representation of the People Act, 1950 gives the Centre the power to make rules regarding the conduct of elections and the registration of electors. Section 28 of the RPA, titled "Power to make rules", says every rule made under the Act "shall be laid, as soon as may be after it is made, before each House of Parliament". Form 6 is a part of the Registration of Electors Rules, 1960, which emanates from the Act. Therefore, any change to the form would require an amendment and gazette notification by the Law and Justice Ministry, according to former EC officials who spoke on condition of anonymity.

Has there been an amendment?

No. The Law and Justice Ministry is yet to notify any change to Form 6, as seen in the notifications available on the e-Gazette website from June 24, 2025 — when the EC first announced the SIR — so far. In fact, the Form 6 available for download on ECINET, ostensibly for printing and submitting physically to electoral officials, does not have the new SIR "declaration form" part.

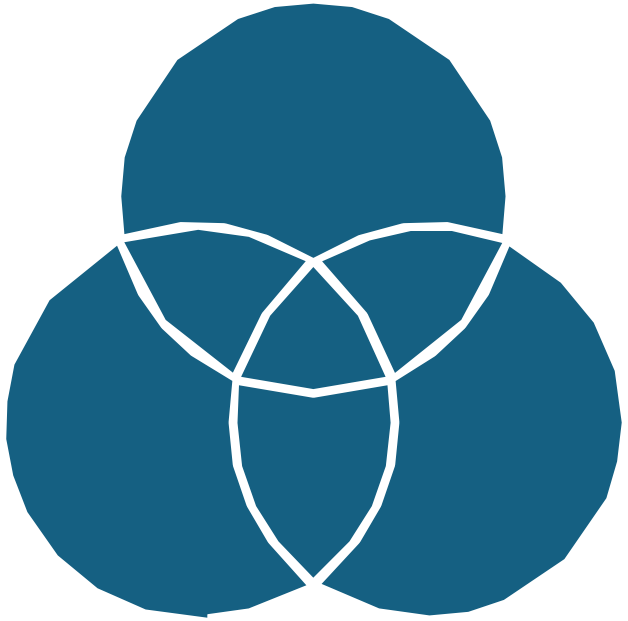
The EC did not respond to requests for comment.

What does it mean for new electors?

New applicants, predominantly people who have recently turned 18, are now required to trace their parents to the last SIR. Since the EC has yet to comment on or announce this change, it is unclear whether those who are unable to provide the details will face greater scrutiny.

The introduction of the declaration has greater significance at a time the EC is conducting an unprecedented SIR of electoral rolls, where the rolls are being prepared afresh instead of being revised as was done annually. A total of 5.58 crore names have been deleted from the rolls so far. Previous intensive revisions have not required all electors to submit forms and documents to prove their eligibility, including citizenship, as the SIR does.

- **Key Terms and Explanations**
- **Special Intensive Revision (SIR):** Unlike standard annual summary revisions where electoral rolls are merely updated based on voluntary claims and objections, an SIR involves a comprehensive, ground-up preparation of electoral rolls afresh. It often mandates rigorous document verification and enumeration to ensure the database contains zero duplicate, deceased, or ineligible entries. For instance, a regular revision might just add new 18-year-olds, whereas an SIR systematically cross-verifies the citizenship and residency status of entire swathes of the population.
- **Form 6:** This is the statutory legal document prescribed under the Registration of Electors Rules, 1960. Any eligible Indian citizen seeking to register as a new voter or transfer their constituency must submit this form to the Electoral Registration Officer (ERO).
- **Subordinate / Delegated Legislation:** This refers to rules, regulations, or bylaws framed by executive bodies or ministries under the authority delegated to them by a parent Act passed by Parliament. Under Section 28 of the Representation of the People Act, 1950, any rule change governing voter registration must be officially formulated by the Law Ministry, notified in the Gazette, and laid before both Houses of Parliament.
- **ECINET:** The proprietary, centralized online digital architecture and portal operated by the Election Commission of India (ECI). It serves as the primary interface for citizens to submit registrations, corrections, or deletions digitally.
- **Article 326 of the Constitution:** The bedrock of Indian electoral democracy which guarantees universal adult suffrage. It explicitly mandates that every adult citizen who is an ordinary resident is entitled to register as an elector, unless disqualified by a law enacted by Parliament on specific grounds like non-residence, unsoundness of mind, crime, or corrupt practice.



- **Main Arguments and Substantive Parts**
- The intersection of technology, institutional procedures, and constitutional mandates highlights several core structural dilemmas in electoral administration:
- **The Procedural Gap in Rulemaking:** A central concern emerges when a constitutional authority updates its digital registration interfaces ahead of formal legislative notification. The integration of mandatory fields demanding parental SIR historical details on the ECINET portal occurs while the physical statutory Form 6 remains unchanged under the law. This creates an administrative asymmetry between digital applicants and physical applicants.
- **The Burden of Heritage Verification:** Forcing first-time 18-year-old voters to trace and supply granular historical metadata—such as the exact assembly constituency, booth number, and serial number of their parents from the previous SIR cycle—fundamentally changes the onboarding process for new electors. This shifts a significant administrative burden onto young applicants, potentially acting as an unintended barrier to voter registration.
- **Electoral Purity versus Democratic Inclusivity:** The scale of ongoing intensive roll purification is massive, resulting in the deletion of approximately 5.58 crore names nationwide. While cleaning the electoral database helps eliminate duplicates and maintain integrity, applying stringent multi-generational tracing mechanisms can inadvertently risk excluding legitimate citizens who lack documentation.
- **Asymmetrical Regional Implementation:** Administrative priorities must adapt to complex regional realities. For instance, the deliberate suspension of the SIR exercise in Assam until the formal conclusion of the National Register of Citizens (NRC) process shows how electoral data management intersects with wider debates over citizenship and regional stability.

- **Historical Evolution of the Issue**

- **The Pre-Independence Baseline:** Prior to 1947, the right to vote was highly restrictive and based on property ownership, taxation, and educational qualifications under the Government of India Acts of 1919 and 1935. Less than 15% of the population could vote, meaning grandfathering or parental tracing was structurally impossible for the vast majority.

- **The Constitutional Genesis (1950s):** With the adoption of Article 326, India pioneered universal adult suffrage on an unprecedented scale. The Representation of the People Acts of 1950 and 1951 were designed to make registration straightforward, based primarily on age and ordinary residence rather than ancestral or parental status.

- **The Clean-up Era (1990s):** Under Chief Election Commissioner T.N. Seshan, the focus shifted toward improving electoral integrity. This era introduced Elector Photo Identity Cards (EPIC) to curb impersonation and bogus voting. It established the principle that the ECI could mandate specific identity proofs to verify the integrity of the vote.

- **The Digital Paradigm Shift (2010s):** The transition from manual, door-to-door enumeration to digital data entry via portals like ECINET changed how the state interacts with voters. While online registration increased convenience, it also enabled more stringent algorithmic filters and data fields.

- **The Present Era of Intensive Verification:** Moving away from routine summary updates, the current administrative focus leans toward widespread Special Intensive Revisions (SIRs). This approach uses inter-generational link tracking as a tool to clean the voter base, bringing the relationship between digital enforcement and legislative procedures to the forefront.

- **Way Forward**
- To balance the need for accurate electoral records with the goal of accessible voter registration, a few practical policy measures can be considered:
- **Synchronizing Digital and Statutory Frameworks:** Technical updates on portals like ECINET should ideally align with formal statutory notifications. Ensuring that digital changes are vetted by the Law Ministry and presented to Parliament helps maintain procedural consistency and strengthens regulatory clarity.
- **Utilizing Backend Data Verification:** Instead of requiring young applicants to manually look up specific parental metadata (like booth or serial numbers), the ECI could leverage backend databases. Allowing applicants to provide a parent’s basic EPIC number would let the system auto-verify records, reducing the manual burden on citizens.
- **Implementing Conditional or Provisional Registration:** For first-time voters who cannot easily access their parents' historic SIR details, a system of provisional registration could be introduced. This would allow eligible citizens to vote while giving administrative bodies time to verify records on the back end, helping to prevent accidental exclusion.
- **Expanding Offline Support Mechanisms:** Alongside digital options, maintaining robust offline support through local Booth Level Officers (BLOs) is essential. Active community outreach helps ensure that vulnerable, transient, or less digitally literate populations can navigate intensive revisions smoothly and stay registered.

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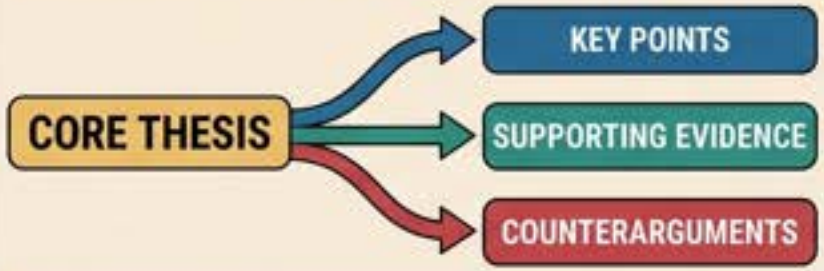
COMPREHENSIVE MULTI-DIMENSIONAL ANALYSIS: A STRATEGIC APPROACH FOR UPSC CSE PREPARATION

KEY TERMS & EXPLANATIONS

Define Important Terms, Concepts, or Acronyms.

Provide Simple Examples.

MAIN ARGUMENTS & SUBSTANTIVE PARTS



HISTORICAL EVOLUTION OF THE ISSUE

Trace the Timeline: Major Milestones, Policy Changes, and Influencing Events.

LOGICAL & PHILOSOPHICAL BASE

Discuss Underlying & Ancient Foundations

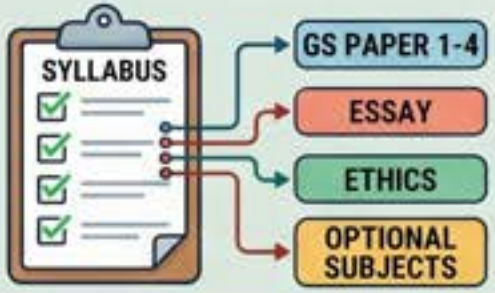
MULTI-DIMENSIONAL ANALYSIS (6 CORE AREAS)

Examine Across 6 Key Dimensions with Key Points

LINKAGES WITH NCERTS

Connect to Relevant NCERT Textbook Chapters (Book/Class, Why).

LINKAGES WITH UPSC CSE SYLLABUS



Map the Issue to Syllabus Sections. Prioritize Strongest Linkages.

WAY FORWARD (PRACTICAL SOLUTIONS)

Suggest Practical, Balanced Solutions & Policy

ALL PREVIOUS YEARS' UPSC & APSC QUESTIONS

List Relevant PYQs (CSE PRELIMS & MAINS, APSC Exams), Grouped by Year & Paper. Include Similar Themes.

- **Key Terms and Explanations**
- **Low Earth Orbit (LEO):** This refers to an orbital altitude ranging between 160 km and 2,000 km above Earth's surface. LEO is the premier real estate for modern satellite deployment due to lower launch energy requirements and minimal signal propagation delay.
- **Reusable Rocket Technology:** Traditional space flight relies on expendable launch vehicles where stages burn up or crash into oceans after a single use. Reusable technology allows the primary booster to perform a controlled re-entry and vertical or structured landing, preserving the highly expensive rocket engines for multiple flights.
- **Payload Margin and Capacity:** Payload capacity is the maximum weight a rocket can carry into a specific orbit. Every kilogram of structural weight added to a rocket—such as landing legs or fuel for descent—directly reduces its payload margin.
- **Leg-less Hook-and-Net Recovery System:** Unlike traditional recovery systems that use heavy, hydraulic landing legs to touch down on flat ground, this innovative mechanism replaces the landing legs with lightweight hooks built onto the rocket's fuselage. During descent, a maritime vessel coordinates a suspended wire net directly underneath the vehicle to catch it, completely shaving off structural leg weight.
- **The Artemis Program vs. Lunar South Pole Ambitions:** A highly competitive, parallel race toward lunar colonization. The American-led Artemis program aims to establish sustainable human presence on the Moon. Simultaneously, rival programs seek to secure vital "real estate" near the Lunar South Pole, where permanently shadowed craters hold billions of tons of water ice—critical for generating rocket propellant for deep-space exploration.

- **Main Arguments and Substantive Parts**
- The structural core of this issue highlights a shift in global space dominance, where technological design choices dictate geopolitical leverage.
- **The Breakdown of the Western Monopolistic Status Quo**
- For over a decade, private Western aerospace companies held a near-monopoly on economical, reusable spaceflight. The introduction of competitive, alternative architecture proves that Eastern aerospace models have bridged this technological chasm. This transition shifts the global space ecosystem from a unipolar, commercially driven arena into a highly contested, bipolar state-backed race.
- **Innovation via Weight Optimization**
- The core engineering argument focuses on the trade-off between structural safety and payload capacity. Traditional reusable boosters carry heavy hydraulic landing gear throughout their entire ascent and descent. By pioneering a maritime hook-and-net capture mechanism, engineers have removed this dead weight, maximizing the rocket's payload capacity to an impressive 16 metric tons to LEO while maintaining structural reusability.
- **The Strategic Enclosure of the Lunar South Pole**
- The ultimate goal of developing cost-effective, reusable heavy-lift infrastructure is not merely orbital dominance, but deep-space logistics. The race to the Moon's South Pole is driven by an urgent need to secure resource-rich zones. Whoever controls the lunar ice water controls the "refueling stations" of the future, dictating terms for subsequent missions to Mars and beyond.
- **Operational Vulnerabilities and Counterarguments**
- While structurally brilliant, a maritime-dependent net-capture system introduces severe operational vulnerabilities. Unlike ground-pad landings, maritime recoveries are highly susceptible to unpredictable sea states, oceanic winds, and salt-water corrosion. Furthermore, navigating past legacy hurdles of internal bureaucratic friction and defense-sector corruption within state-run apparatuses remains a critical challenge to sustaining high launch frequencies.

- **Historical Evolution of the Issue**
- **The Cold War and the Expendable Paradigm (1950s–1980s)**
- The dawn of the Space Age was defined by the military-industrial race between the US and the USSR. Rockets were treated as modified Intercontinental Ballistic Missiles (ICBMs)—disposable, single-use, and enormously expensive. Strategic focus prioritized rapid ideological dominance over economic sustainability, leading to the absolute dominance of expendable architectures like the Saturn V and early Soyuz variants.
- **The Space Shuttle Experiment (1981–2011)**
- Recognizing the unsustainable costs of disposable rockets, NASA launched the Space Shuttle program, aiming for full reusability. While a philosophical milestone, the system was a financial failure; the complexity of refurbishing the orbiter and its thermal protection tiles meant that maintenance costs often exceeded the price of building brand-new expendable systems.
- **The Commercial Disruption and Legged Landings (2010s)**
- The real revolution arrived when private enterprise treated space as a commercial market. By introducing vertical propulsive landings using hydraulic landing legs, private Western firms successfully commercialized rocket reusability. This slashed launch costs by orders of magnitude and shifted the global baseline of space logistics.
- **The Era of Non-Legged Captures and Bipolar Rivalry (2024–Present)**
- The current era has abandoned the constraints of traditional landing legs. Following the landmark 2024 mechanical arm "chopstick" catch of the Starship booster, alternative maritime-based hook-and-net catch systems emerged in 2026. This marks a new phase where space reusability is no longer an exclusive Western commercial luxury, but a fiercely contested tool of state power.

- **Way Forward**
- **Accelerating Domestic Reusability Timelines**
- For major spacefaring nations like India, relying on dependable but expendable launch vehicles like the LVM3 will not be economically viable long-term. Space agencies must aggressively fund and fast-track projects like the Reusable Launch Vehicle Technology Demonstrator (RLV-TD) and Next-Gen Launch Vehicle (NGLV) to ensure independent, cost-effective access to space.
- **Unleashing Private Aerospace Capital**
- State agencies should shift from acting as sole manufacturers to becoming strategic facilitators. By empowering specialized regulatory bodies like IN-SPACe and commercial arms like NSIL, governments can build an agile ecosystem of private aerospace startups. Providing these startups with access to state testing facilities and guaranteed government launch procurement contracts can mirror the rapid innovation cycles seen abroad.

• SCIENCE

China's Long March in space tech continues with reusable rocket

Arav Shah
New Delhi, July 12

CHINA ON Friday successfully landed a reusable rocket for the first time — a milestone for the country's space programme that will challenge American companies' dominance in the technology.

The Long March 10B rocket — which can carry a payload of up to 16 metric tons to low Earth orbit — lifted off from the Wenchang Commercial Space Launch Site in Hainan. Low Earth orbit is a region between 160 km and 2,000 km above the Earth.

Six minutes after lift off, the rocket's booster — the part that houses the engine and provides the initial thrust — separated from its upper stage and began a controlled descent to a floating platform on the sea. There, it was caught by a net.

Before China, only Elon Musk's SpaceX and Jeff Bezos's Blue Origin demonstrated the ability to launch and land rockets.

The mechanics of re-entry

All rockets lift off in the same way. Multiple segments, beginning with the first stage, power its ascent one by one before being discarded and destroyed. A reusable rocket, however, is one that can land on Earth after lifting off, thus allowing its valuable booster to be used again. This substantially reduces the cost of a launch and, by extension, space exploration.

How does the Chinese rocket differ?

There is one key difference between the SpaceX-Blue Origin reusable rockets and China's Long March — the final capture mechanism. Traditional reusable rockets rely on hydraulic landing "legs" to touch down on a ground pad or floating platforms on the sea. Space X pulled off a major feat in 2024 when it used giant mechanical arms — termed "chopsticks" — to catch its Starship rocket booster out of the air.

The Long March, though, uses a different system. Its onboard computer coordinates with a maritime landing vessel, which, in turn, aligns a suspended wire net directly below the descending rocket. The rocket is equipped with "landing hooks" that catch the net as the engines shut down.

Why does this test matter?

Space exploration is expensive. Reusable rockets make this process economical. China went a step further by removing the hydraulic landing legs in favour of the landing hooks — reducing the rocket's mass and thus increasing its payload margin.

Anushka Saxena, Research Analyst at the Takshashila Institution's Geostrategy programme told *The Indian Express*: "The technological and commercial base in China is faring very well despite having been shaken up by internal wrangling and corruption in the past."

China's Long March 10B rocket lands on a floating platform on Friday. AP

This test comes as the global aerospace sector races to deploy massive commercial satellite constellations and prepares for crewed lunar landings, and puts China in direct competition with SpaceX.

Here's a look at the various strategic implications of the Chinese milestone:

LUNAR RACE: The Long March 10 series of rockets is central to China's plans to put astronauts on the moon by 2030. This timeline directly competes with the American Artemis program, escalating the stakes of the race to secure real estate at the Moon's South Pole. This is where permanently shadowed craters contain billions of tonnes of ice water that can be used to create rocket propellant — making them key for any future deep space exploration.

LOW-EARTH ORBIT MISSIONS: Low Earth orbit missions are important for Earth observation and communication. China plans to deploy three communications satellite constellations comprising thousands of satellites each. Deploying such large numbers through traditional rockets is economically inviable. The Long March 10B's success (and its 16-tonne payload) provides the cost-effectiveness required to challenge Western rivals such as SpaceX.

"SpaceX and the Chinese are competing on two fronts — the frequency of launches and the capacity to fill the lower-earth orbit. The Chinese have demonstrated that they can do whatever the Americans can and are actively bridging the gap that SpaceX had created a decade ago," Saxena said, adding, "For other space-faring nations like India, it might take a long time before they can conclusively enter this circle."

AXIA IAS ACADEMY

GLOBAL SPACE TECH REVOLUTION: REUSABILITY & ASTROPOLITICS – A COMPREHENSIVE UPSC CSE ANALYSIS

TIMELINE

1. **COLD WAR** (EXPENDABLE ROCKETS)
2. **SPACE SHUTTLE** (PARTIAL REUSABILITY)
3. **2010s COMMERCIAL LEGGED LANDINGS**
4. **2024+ NON-LEGGED CAPTURES**

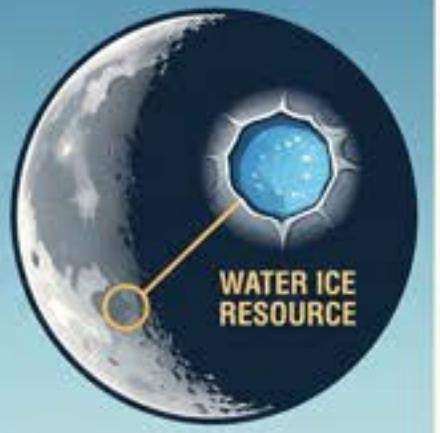
KEY TERMS

LEO
- **Low Earth Orbit** 160km-2,000km
- Premier spot for comms & imaging

Reusable Rocket Tech
- Vertical propulsive landing
- Saves cost most

Lunar South Pole
- Water Ice for fuel
- Key for deep-space

THE INNOVATIVE MARITIME HOOK-AND-NET RECOVERY



MAIN ARGUMENTS

- Bridging Western commercial gap
- Strategic enclosure of Lunar South Pole
- Weight optimization over traditional leg systems

MULTIDIMENSIONAL ANALYSIS

POLITICAL

ECONOMIC

SOCIAL
Bridging digital divide

LEGAL
Outer Space Treaty

INTERNATIONAL
Tech gap diagram

ETHICAL
Ethics
Commons management

NCERT & SYLLABUS LINKAGES

Geog | Phys | Pol Sci

WAY FORWARD: PRACTICAL SOLUTIONS

- Acceleration of RLV
- Private capital empowerment
- Global governance

PREVIOUS YEARS' QUESTIONS (PYQs)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