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1. Detection of Erythrulose in Interstellar Medium

Key Highlights & Summary

- **Discovery in Space:** Astronomers using two dish-shaped radio telescopes in Spain have successfully detected erythrulose, a complex type of sugar, in a large gas cloud near the center of the Milky Way.
- **Location of Detection:** The sugar molecule was identified lurking within the interstellar medium, which consists of thin clouds of gas and dust scattered between stars.
- **Complexity of Molecule:** Erythrulose represents one of the most complex sugars spotted in space so far, providing a pristine example of organic matter floating out in the galaxy.
- **Implications for Life:** While this specific sugar is not essential for life, it can easily convert into forms crucial for kick-starting biological life, acting as a potential precursor to genetic material.
- **Astrobiological Theories:** The finding strengthens theories regarding the origin of life, suggesting that key biochemical building blocks can develop natively in deep space rather than relying solely on planetary delivery.

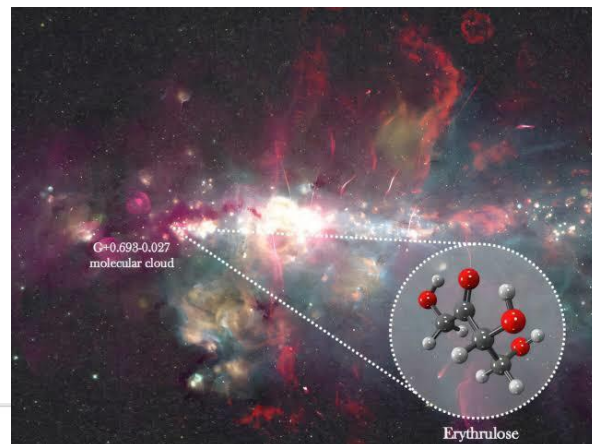
Essential Definitions

- **Erythrulose:** A complex tetrose sugar molecule, chemically related to table sugar, commonly found on Earth in raspberries and self-tanning products.
- **Interstellar Medium (ISM):** The matter and radiation that exist in the space between the star systems in a galaxy, primarily composed of cosmic gas, dust particles, and cosmic rays.

Legal and Constitutional Framework

While space chemistry lacks direct constitutional mandates, it falls under broader frameworks governing scientific advancements:

- **Article 51A(h) of the Indian Constitution:** Enjoins a Fundamental Duty upon Indian citizens to develop a scientific temper, humanism, and the spirit of inquiry and reform.
- **National Space Policy:** Aligns with international treaties like the Outer Space Treaty (1967), ensuring peaceful space exploration and scientific research for the benefit of humanity.



Conclusion

The detection of erythrulose in the interstellar medium offers profound insights into prebiotic chemistry. It underscores that the universe possesses the fundamental ingredients necessary to develop life elsewhere, bridging the gap between astronomy and biology.

UPSC Relevance

- **GS Paper III (Science and Technology):** Highly relevant for topics concerning space exploration, astrobiology, and developments in basic sciences.
- **Prelims Focus:** Direct questions can be framed on biochemicals in space (like Erythrulose), telescopes involved, and definitions related to the interstellar medium.

2. Flue Gas Desulphurisation Exemptions and SO₂ Emissions in Delhi-NCR

Key Highlights & Summary

- **Major Source of Pollution:** An analysis of 37 coal plant units within a 300 km radius of Delhi-NCR reveals that 20 units emit sulfur dioxide SO₂ well above safe limits, primarily due to exemptions from installing pollution control systems.
- **Regulatory Dilutions:** Although the installation of Flue Gas Desulphurisation (FGD) systems was made mandatory in 2015, the government has extended deadlines four times and ultimately exempted Category C units—comprising nearly 4/5ths of India's coal fleet—from mandatory installation.
- **Disproportionate Contribution:** Out of an estimated 154 kilotonnes of SO₂ emitted annually by the studied units, 90% comes from plants lacking FGD technology, with Category C plants alone contributing 81%.

- **Global Emission Rankings:** With over six million tonnes of SO₂ released annually, India's power plant emissions stand higher than any other country, running nearly three times higher than China's despite India having only 1/5th of China's coal capacity.
- **Efficacy of FGD Technology:** In contrast to heavy polluters like Rajpura and Talwandi Sabo, units equipped with functional FGD systems, such as Dadri and Mahatma Gandhi thermal power plants, recorded the lowest SO₂ outputs despite high electricity generation.
- **Institutional Warning:** The study, conducted by the Centre for Research on Energy and Clean Air (CREA), highlights that even where FGDs are installed, some units fail to meet emission limits due to scrubbers running below capacity or during maintenance.

Essential Definitions

- **Flue Gas Desulphurisation (FGD):** A set of technologies used to remove sulfur dioxide SO₂ from the exhaust flue gases of fossil-fuel power plants before it is released into the atmosphere.
- **Sulfur Dioxide SO₂:** A toxic gaseous pollutant primarily generated through anthropogenic activities like fossil fuel burning in coal-fired power plants, acting as a precursor to secondary particulate matter (PM_{2.5}) in the atmosphere.

Legal and Constitutional Framework

- **Article 21 of the Indian Constitution:** The Supreme Court has repeatedly interpreted the Right to Life to include the right to a clean, healthy, and pollution-free environment.
- **Article 48A (DPSP):** Directs the State to protect and improve the environment and to safeguard the forests and wildlife of the country.
- **The Air (Prevention and Control of Pollution) Act, 1981:** Provides the statutory framework for the Commission for Air Quality Management (CAQM) and Central Pollution Control Board (CPCB) to regulate industrial emissions and enforce ambient air quality standards.

Conclusion

The findings by CREA underscore a critical policy disconnect between industrial growth and environmental sustainability. Constant deadline extensions and sweeping exemptions for Category C thermal units severely undermine India's clean air targets, proving that technology adoption like FGD must be uniformly enforced rather than diluted.

UPSC Relevance

- **GS Paper III (Environment & Pollution):** Crucial for topics addressing environmental pollution, degradation, industrial emission norms, and the effectiveness of statutory bodies like CAQM.
- **Mains Analysis:** Can be utilized to write balanced answers regarding the challenges of balancing energy security with environmental commitments and the enforcement of environmental regulations.

3. Supreme Court Stay on Madras High Court's Blanket Cow Slaughter Ban in Tamil Nadu

Key Highlights & Summary

- **Interim Stay by Apex Court:** The Supreme Court of India stayed a Madras High Court order that had directed the Tamil Nadu government to ensure a complete, state-wide ban on the slaughter of cows and calves.
- **Contradiction with State Law:** The Tamil Nadu government appealed the High Court order, arguing that a blanket ban directly contravenes the Tamil Nadu Animal Preservation Act, 1958, which conditionally permits the slaughter of certain cattle.
- **Judicial Overreach Argued:** The state contended that the High Court went beyond the scope of the original Public Interest Litigation (PIL)—which only sought to prevent open, public slaughter during Bakrid—by delivering a sweeping, state-wide prohibition.
- **Procedural Inconsistency:** While the High Court correctly observed in its judgment that animal slaughter must strictly take place within designated, licensed slaughterhouses, it paradoxically ordered an absolute ban on all cow and calf slaughter, creating an internal legal contradiction.
- **Regulation vs. Prohibition:** The state clarified that multiple legislations, including local urban body rules, are designed to strictly regulate the conditions and venues of animal slaughter rather than enforce a total, blanket prohibition.

Essential Definitions

- **Blanket Ban:** An absolute, comprehensive prohibition applied universally without exceptions or qualifying conditions.
- **Judicial Lawmaking:** A term used when the judiciary goes beyond interpreting existing statutes and effectively creates new legal mandates or policies, a role constitutionally reserved for the legislature.

Legal and Constitutional Framework

- **Article 48 (Directive Principles of State Policy):** Directs the State to organize agriculture and animal husbandry on modern lines, and specifically to take steps for preserving and improving breeds, and prohibiting the slaughter of cows, calves, and other milch and draught cattle.
- **Tamil Nadu Animal Preservation Act, 1958:** Statutorily permits the slaughter of cows and other cattle if they are over 10 years of age, unfit for work or breeding, and certified as such by a competent authority.
- **Prevention of Cruelty to Animals Act, 1960:** A central legislation that regulates the treatment of animals and outlines guidelines for humane slaughter in designated facilities.

Supreme Court stays Madras High Court's blanket ban on cow slaughter in Tamil Nadu



Conclusion

The Supreme Court's intervention reinforces the principle of separation of powers, highlighting that courts must avoid judicial overreach by overriding valid, existing legislative frameworks. While the preservation of cattle remains a key constitutional directive under Article 48, its execution must align with statutory guidelines enacted by the state legislature rather than absolute judicial mandates.

UPSC Relevance

- **GS Paper II (Polity and Governance):** Highly relevant for topics concerning judicial activism versus judicial overreach, separation of powers, and the implementation of Directive Principles of State Policy (Article 48) vis-à-vis Fundamental Rights and state statutes.
- **Prelims Focus:** Questions can be framed on the constitutional status of Article 48, the division of power regarding animal husbandry (State List), and landmark judgments surrounding animal preservation laws.

4. Autonomous Hill Development Councils for All Seven Districts of Ladakh

Key Highlights & Summary

- **Democratic Decentralization:** In a historic administrative reform, the Union Territory (UT) of Ladakh announced the constitution of an Autonomous Hill Development Council (AHDC) for each of its seven districts. This expands elected local self-governance far beyond the previous dual structure of Leh and Kargil.
- **New Districts Empowerment:** Following the expansion of Ladakh from two to seven districts, the five newly notified districts—Sham, Nubra, Changthang, Zaskar, and Drass—will now possess the exact same legislative, executive, financial, and administrative powers held by Leh and Kargil.
- **Financial and Administrative Autonomy:** Each of the seven Councils will maintain an independent revenue base through a dedicated Council Fund and hold the statutory authority to levy taxes and collect local fees.
- **Local Decision-Making:** The newly established councils will independently formulate district-specific development plans and regulate recruitment and promotions for local district-cadre employment, eliminating dependence on central offices in Leh or Kargil.
- **Proposed Overarching UT Body:** To streamline governance, the administration has proposed a first-of-its-kind Union Territory-level institution that will sit above the seven district councils. This apex body will function under a customized Article 371 framework.
- **Parallel Three-Tier System:** Panchayati Raj institutions will continue to operate alongside the newly constituted Hill Councils, ensuring an integrated system of elected representation at the village, district, and UT levels.



Essential Definitions

- **Autonomous Hill Development Council (AHDC):** A decentralized, statutory administrative body empowered to manage local governance, land allotment, taxation, and developmental priorities within a specified mountainous district.

- **Customised Article 371 Framework:** A tailored constitutional provision designed to grant special administrative safeguards and autonomy to protect the unique cultural identity, land rights, and economic interests of a region.

Legal and Constitutional Framework

- **Section 3(1) of the LAHDC Act:** Provides the statutory basis for the Ladakh administration to constitute an Autonomous Hill Development Council in any district of the UT through an official gazette notification.
- **Article 371 of the Indian Constitution:** The proposed overarching UT-level body aims to leverage this article to institute a tailored governance framework, addressing long-standing local demands for regional constitutional safeguards.
- **Article 243ZD (Committee for District Planning):** Aligns with the spirit of democratic decentralization by empowering local bodies to draft comprehensive development plans at the grassroots level.

Conclusion

The transition from a centralized administration to seven distinct, fully empowered Autonomous Hill Councils marks a defining moment in Ladakh's modern administrative history. By empowering remote regions like Zaskar and Changthang, this structural overhaul bridges administrative gaps, fulfills public aspirations, and establishes a robust model of cooperative federalism tailored for frontier terrains.

UPSC Relevance

- **GS Paper II (Polity and Governance):** Highly relevant to federalism, democratic decentralization, Sixth Schedule demands, constitutional safeguards under Article 371, and the governance of Union Territories.
- **Prelims Focus:** Direct conceptual questions can be framed on the structure of the LAHDC Act, the administrative differences between Fifth/Sixth Schedule provisions, and the mechanics of Article 371.

5. Policy Focus on Gender Wealth Inequality and Prebiotic Asset Gaps

Key Highlights & Summary

- **Mismeasuring Economic Status:** Global reports like the World Inequality Report (WIR) 2026 and the UN's "Counting What Counts" primarily rely on average hourly earnings to measure gender economic disparities, heavily undercounting structural inequalities.
- **The Asset Ownership Gap:** By focusing almost exclusively on labor market participation, policy frameworks ignore critical disparities in capital, land, and asset ownership between genders.
- **Invisibility of Informal Workers:** Using hourly earnings as a metric fails to capture the economic reality of the Global South, where 86% of female workers in India are informally employed and 73% of rural women are self-employed as unpaid family labor.
- **The Multidimensional Impact of Assets:** Empirical evidence proves that maternal asset ownership, particularly land, directly improves child health, survival, and education, while significantly lowering domestic violence risks.

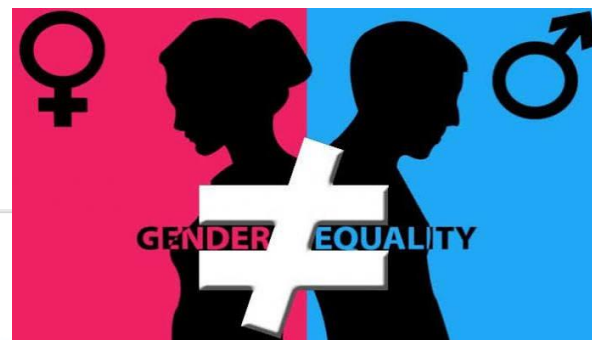
- **The Role of Inheritance:** While global reports attribute gender inequality to employment barriers like transport and childcare, data shows that inheritance—not earnings—remains the primary driver of wealth inequality.

Essential Definitions

- **Gender Wealth Inequality:** The disparity in the ownership of accumulated assets, capital, and property between men and women, distinct from the gender pay gap which only measures employment earnings.
- **De Facto Farmers:** Women who perform the bulk of agricultural labor due to male out-migration but lack legal land titles, leaving them without access to agricultural credit or cooperative benefits.

Legal and Constitutional Framework

- **Article 39(a) and 39(d) of the Constitution:** Directs the State to secure an adequate means of livelihood for all citizens and ensure equal pay for equal work for both men and women.
- **Article 300A (Right to Property):** Safeguards the constitutional right to acquire, hold, and dispose of property, which forms the legal basis for demanding equal inheritance laws.
- **Hindu Succession (Amendment) Act, 2005:** Granted equal coparcenary rights to daughters, establishing a statutory milestone to address historical gender wealth disparities in ancestral property.



Conclusion

Ignoring gender wealth disparities while focusing solely on labor participation perpetuates a system where men yield capital while women merely sell labor. Policy interventions must shift from income-centric models to asset-building strategies that target structural barriers like discriminatory inheritance customs and unequal land distribution.

UPSC Relevance

- **GS Paper I (Social Issues):** Directly relevant to women's empowerment, developmental issues, and urbanization challenges.
- **GS Paper III (Indian Economy):** Crucial for evaluating inclusive growth, agricultural employment dynamics, and land reform policies.

6. India's Act East Policy in an Uncertain Indo-Pacific

Key Highlights & Summary

- **Strategic Foreign Policy Shift:** India's foreign policy witnessed a structural transition in 2014 when the "Look East Policy" (originally launched in 1991) was upgraded to the "Act East Policy," focusing heavily on action-oriented bilateral and multilateral ties.
- **Expanded Geopolitical Scope:** Unlike its predecessor, which focused primarily on economic relations with Southeast Asia, the Act East Policy extends geographically to the wider Asia-Pacific, incorporating maritime security, connectivity, and cultural diplomacy.

- **Net Security Provider:** The policy positions India as a responsible maritime power and a "net provider of security" in the Indian Ocean region, backed by strategic partnerships like the Quad to counter regional challenges, including China's rising assertiveness.
- **Collaborative Security Frameworks:** Regional cooperation is actively pursued through non-traditional security initiatives such as SAGAR (Security and Growth for All in the Region), IPOI (Indo-Pacific Oceans Initiative), and MAHASAGAR, targeting threats like illegal fishing, piracy, and trafficking.
- **Key Geopolitical Challenges:** India faces significant strategic hurdles, including political instability in neighboring countries (such as Myanmar, Bangladesh, and Sri Lanka) and inconsistent policy stances from extra-regional partners like the United States.
- **Infrastructure Bottlenecks:** A major domestic impediment to the policy's success is the lack of adequate connectivity and infrastructure in Northeast India, which serves as the physical gateway to Southeast Asia.

Essential Definitions

- **Act East Policy:** A diplomatic initiative aimed at promoting economic cooperation, cultural ties, and developing strategic relationships with countries in the Asia-Pacific region through continuous engagement.
- **Net Security Provider:** A nation that possesses the capability and political will to address regional security threats, maintain maritime order, and assist neighboring states during humanitarian and natural disasters.



Legal and Constitutional Framework

- **Article 51 of the Indian Constitution (DPSP):** Instructs the State to promote international peace and security, maintain just and honorable relations between nations, and foster respect for international law and treaty obligations.
- **Allocation of Business Rules, 1961:** Under these rules, the Ministry of External Affairs (MEA) is constitutionally and legally mandated to formulate and execute foreign policy initiatives, including the Act East Policy.

Conclusion

The transformation of the Look East Policy into the Act East Policy marks a pragmatic transition in India's foreign policy, emphasizing proactive maritime security and regional connectivity. To fully realize its potential, India must expeditiously resolve infrastructure deficits in its Northeast region while deftly managing geopolitical volatility in its immediate neighborhood.

UPSC Relevance

- **GS Paper II (International Relations):** Directly relevant to India's foreign policy, bilateral, regional, and global groupings involving India (ASEAN, Quad, BIMSTEC), and the strategic dynamics of the Indo-Pacific region.
- **Mains/Prelims Focus:** Essential for answering analytical questions on the transition of Look East to Act East, maritime security initiatives (SAGAR, IPOI), and the geopolitical impact of China's rise on India's neighborhood policy.

7. CBSE's Three-Language Policy Rollout and the Supreme Court Defense

Key Highlights & Summary

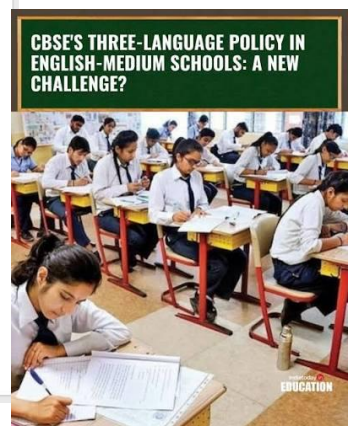
- **Supreme Court Defense:** The Central Board of Secondary Education (CBSE) defended its three-language mandate for Class 9 students in a counter-affidavit filed before the Supreme Court, arguing that the policy facilitates multilingual learning outcomes in a structured manner.
- **High School Preparedness:** CBSE highlighted that 47.3% of its 28,848 affiliated schools already offer two or more native Indian languages (Bhartiya Bhashas) to Class 9 students, eliminating the immediate need for additional staffing.
- **Staffing and Infrastructure:** The board revealed that 99.19% of its schools have at least one native language teacher. For schools facing temporary deficits, CBSE has permitted flexible staffing mechanisms like utilizing other subject teachers with functional language proficiency, virtual teaching, and resource sharing.
- **Petitioner Grievances:** The legal challenge—led by parents and foreign-language teachers—contends that the policy is unconstitutional, arbitrary, and violates Articles 14, 19, 21, and 21A. They argue that the sudden rollout lacks textbooks, proper assessment guidelines, and trained educators, forcing students to utilize Class 6 materials.
- **Foreign Language Regulation:** The Centre clarified that foreign languages are not banned but regulated; students may choose them as a third language only after selecting two native Indian languages, or as an optional fourth subject.
- **Examination Relaxation:** To ease academic pressure on Class 10 board examinations, CBSE clarified that the third language (R3) will not feature in the external board papers but will instead be assessed through school-based internal grading.

Essential Definitions

- **Three-Language Formula:** A language learning policy originally formulated in 1968 that mandates students to learn three languages: typically the regional language, Hindi (or another Indian language), and English (or another modern European language).
- **Bhartiya Bhashas:** Native languages of Indian origin, particularly those listed within the Eighth Schedule of the Indian Constitution, emphasized for promotion under the National Education Policy (NEP) 2020.

Legal and Constitutional Framework

- **Article 21A (Right to Education):** Guarantees free and compulsory education to all children aged 6 to 14, forming the constitutional basis of the petitioners' claims regarding academic burden and accessibility.
- **Article 351 (Directive for Development of the Hindi Language):** Directs the Union to promote the spread and enrichment of the Hindi language as a medium of expression for all elements of the composite culture of India.



- **Eighth Schedule of the Constitution:** Lists the 22 official scheduled languages of India, which serve as the foundation for the NCERT curriculum and textbooks deployed under the new policy.

Conclusion

The legal tussle over the three-language policy reflects the delicate challenge of transitioning from an executive policy (NEP 2020) to structured school-level implementation. While local capacity-building through flexible staffing cushions the initial blow, bridging the logistical divide of curriculum development and language teacher recruitment remains paramount to avoid turning classroom learning into an administrative battleground.

UPSC Relevance

- **GS Paper II (Social Sector & Education):** Highly relevant for analyzing government education policies, issues relating to the development of social sectors, and judicial scrutiny of executive guidelines.
- **Mains Focus:** Evaluating the federal dynamics of language policy, the challenges of implementing NEP 2020 at the grassroots level, and balancing cultural preservation with global competitive skills.

8. Civil Registration System (CRS) Report 2024: Trends, Benefits, and Gaps

Key Highlights & Summary

- **Near-Universal Civil Registration:** India officially recorded 99.1% of its estimated births and 99.4% of its estimated deaths in 2024, marking a monumental shift toward universal coverage from just 56% birth and 48% death registration in 2000.
- **Registration Spurt vs. Vital Rates:** Registered births rose to 254.7 lakh and registered deaths reached 89.4 lakh. This rise reflects dramatic improvements in data capture and systemic reporting efficiency rather than a sudden spike in actual national fertility or mortality rates.
- **Skewed Sex Ratio at Birth (SRB):** The national SRB stands at 917 females per 1000 males, remaining skewed compared to the natural biological norm of 950–975. Arunachal Pradesh recorded the highest SRB (1050), while Nagaland and Lakshadweep recorded the lowest (865).
- **Drivers of Improved Registration:** The rapid transition is driven by a rise in institutional deliveries, the expansion of public health schemes (like PM-JAY) requiring documentation, and digitisation under the amended 2023 registration rules.

• LEVEL OF REGISTRATION OF BIRTHS, 2024

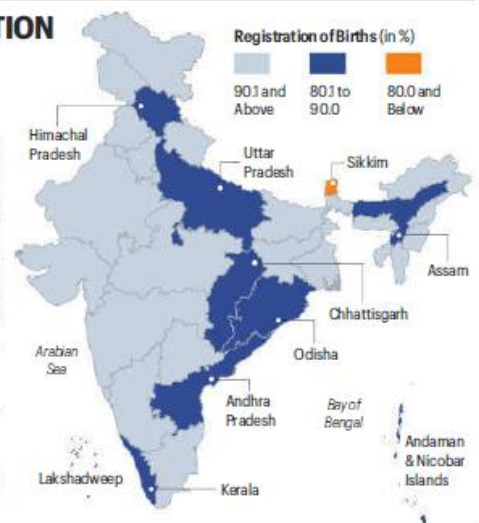
States in grey have at least 90.1% registration of births



STATES SUCH AS Kerala, Arunachal Pradesh, Himachal Pradesh, and Goa achieved universal birth registration coverage by the early 2000s.

BUT DEATH registration coverage lagged. Only Goa, Mizoram, and Kerala achieved universal coverage by that period.

TODAY, MOST states have very high rates of registration of births.



- **Persistent Gaps & Quality Issues:** Challenges persist, including delayed registration past the mandatory 21-day window, severe under-reporting of infant deaths in rural areas (where 84.2% of registered infant deaths are from urban areas), and a lack of reliable medical certification of cause of death.

Essential Definitions

- **Civil Registration System (CRS):** A continuous, permanent, compulsory, and universal recording of the occurrence and characteristics of vital events (births, deaths, and stillbirths) under statutory provisions.
- **Sex Ratio at Birth (SRB):** The number of female births recorded per 1000 male births in a population over a specific period, serving as a key indicator of gender bias and prenatal sex-selective practices.

Legal and Constitutional Framework

- **Seventh Schedule (Concurrent List):** "Vital statistics including registration of births and deaths" falls under Entry 30 of the Concurrent List, allowing both Parliament and State Legislatures to formulate laws on the subject.
- **Registration of Births and Deaths (Amendment) Act, 2023:** This amendment designates the birth certificate as the single, primary document for essential services, including educational admissions, driving licenses, voter registration, Aadhaar enrollment, and public employment.
- **PCPNDT Act, 1994:** The Pre-Conception and Pre-Natal Diagnostic Techniques Act serves as the core legislative tool to curb sex-selective abortions and address the declining Sex Ratio at Birth highlighted in the CRS report.

Conclusion

Achieving near-universal registration of births and deaths is a crowning milestone in India's journey toward digital governance and evidence-based public planning. However, the next phase must focus on enhancing data quality, establishing reliable medical certification of deaths, and addressing regional disparities to turn raw statistics into robust developmental outcomes.

UPSC Relevance

- **GS Paper II (Governance and Social Sector):** Highly relevant for analyzing welfare schemes, e-governance initiatives, demographic changes, and the execution of statutory acts (RBD Amendment Act, 2023).
- **Prelims Focus:** Direct questions can be asked on the findings of the CRS report, institutional frameworks (Office of the Registrar General of India under the Ministry of Home Affairs), and constitutional entries related to vital statistics.

9. Commissioning of INS Mahendragiri and India's Warship Building Prowess

Key Highlights & Summary

- **Strategic Induction:** The Indian Navy officially commissioned the indigenously built advanced stealth frigate, INS Mahendragiri, into its Eastern Fleet at a ceremony in Visakhapatnam.

- **Project 17A Milestone:** This induction marks the commissioning of the sixth advanced stealth frigate under the Navy's Project 17A within a compressed span of just 18 months.
- **High Indigenous Content:** Designed by the Warship Design Bureau (WDB) and built by Mazagon Dock Shipbuilders Limited (MDL), INS Mahendragiri features over 75% indigenous content, drawing components from over 200 domestic MSMEs.
- **Lethal Combat Arsenal:** The 6,670-tonne warship is armed with BrahMos supersonic surface-to-surface missiles, Barak-8 surface-to-air missiles, torpedoes, and integrated anti-submarine warfare systems.
- **Production Timeline Compression:** Due to public-private partnerships, modular assembly, and advanced simulation modeling, the construction timeline from launch to delivery was compressed by 50% (from 63 to 31 months).
- **Blue-Water Reach:** Operating with a top speed of 28 knots, INS Mahendragiri is a multi-mission platform capable of anti-air, anti-surface, and anti-submarine operations, extending India's reach across the Indian Ocean Region (IOR).



Essential Definitions

- **Project 17A (Nilgiri-class):** A class of guided-missile stealth frigates built for the Indian Navy, featuring improved radar cross-section signatures, advanced weapons, and high-level platform automation compared to the predecessor Shivalik-class.
- **Acceptance of Necessity (AoN):** The initial, formal regulatory clearance granted by the Defence Acquisition Council (DAC) that kickstarts the procurement and manufacturing process for military platforms.

Legal and Constitutional Framework

- **Article 246 (Seventh Schedule):** Places "Naval, military and air forces; any other armed forces of the Union" under Entry 2 of the Union List, giving the Central Government exclusive legislative and executive domain over national defense.
- **Aatmanirbhar Bharat Initiative:** The statutory and policy push to maximize the indigenization of defense acquisition under the Defence Acquisition Procedure (DAP) to achieve self-reliance in security manufacturing.

Conclusion

The rapid commissioning of INS Mahendragiri highlights the Indian Navy's transition from a "Buyer's Navy" to a "Builder's Navy." By adopting modern modular construction methods and fostering a robust domestic defense industrial base, India has successfully established itself as an emerging maritime powerhouse capable of deploying advanced naval assets ahead of schedule.

UPSC Relevance

- **GS Paper III (Security and Science & Technology):** Highly relevant for topics covering indigenization of technology, defense manufacturing, security challenges, and their management in border/maritime areas.

- **Prelims Focus:** Specific questions can target the features of Project 17A, the role of the Warship Design Bureau, the significance of the Eastern Fleet, and domestic defense initiatives.

10. Special Supreme Court Benches to Clear Decades-Old Pending Cases

Key Highlights & Summary

- **Targeted Backlog Clearance:** To systematically address the massive backlog of cases, Chief Justice of India Surya Kant has established four new special division benches dedicated exclusively to hearing and resolving the oldest pending civil and criminal matters.
- **Dedicated Division Roster:** Two division benches, led by Justices P K Mishra and S V N Batti, will focus solely on the oldest civil cases, while two other division benches, led by Justices Manoj Misra and Ujjal Bhuyan, are dedicated entirely to resolving the oldest criminal matters.
- **Non-Miscellaneous Days Operation:** These special benches will convene exclusively on "non-miscellaneous days" (Tuesdays, Wednesdays, and Thursdays) to ensure uninterrupted judicial focus on complex, long-standing regular matters rather than fresh listings.
- **Scale of Pendency Paradox:** The National Judicial Data Grid reveals that the Supreme Court currently faces 96,045 pending cases (74,244 civil and 21,801 criminal). This backlog persists despite the court hitting record-high disposal rates, primarily because the volume of fresh filings outpaces case resolutions.
- **Decades-Old Litigations:** Highlighting the depth of the backlog, there are 24 civil and two criminal cases currently pending for over 30 years. The oldest active civil case dates back to 1986, while the oldest criminal case was registered in 1991.
- **Evolution of Roster Strategies:** The reform builds on previous administrative initiatives, including former CJI U U Lalit's structured time slots, CJI D Y Chandrachud's automated classification project (SC-JUDICARE), and former CJI Sanjiv Khanna's focused scrutiny of fresh admission matters.



Essential Definitions

- **Miscellaneous Days:** In the Supreme Court, Mondays and Fridays are designated for preliminary hearings, fresh admissions, and brief procedural arguments.
- **Regular Matters:** Complex, substantive cases that require detailed legal scrutiny, extensive arguments by counsel, and formal judicial determination.

Legal and Constitutional Framework

- **Article 145 of the Indian Constitution:** Empowers the Supreme Court, with the approval of the President, to make rules for regulating the practice and procedure of the court, giving the CJI master of the roster powers.

- **Article 21 (Right to Speedy Justice):** The Supreme Court has repeatedly affirmed that the right to a speedy trial and the timely delivery of justice is an intrinsic part of the fundamental Right to Life and Personal Liberty.
- **National Judicial Data Grid (NJDG):** A comprehensive national database that serves as a monitoring tool to track the pendency, filing, and disposal of cases across Indian courts.

Conclusion

The constitution of specialized benches to tackle chronic judicial pendency is a pragmatic step toward operational efficiency. By insulating dedicated judges from the daily influx of fresh admissions, the Indian judiciary aims to restore public trust and breathe life into the constitutional promise of timely justice.

UPSC Relevance

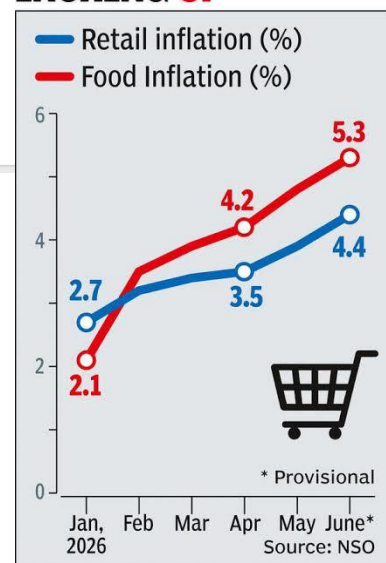
- **GS Paper II (Polity and Governance):** Highly relevant for topics covering the structure, organization, and functioning of the Judiciary, issues of judicial delay, and reforms in justice delivery.
- **Mains Focus:** Analyzing the institutional challenges of judicial pendency, assessing structural reforms initiated by successive CJIs, and examining the separation of powers.

11. Retail Inflation Surges Past 4% as Food and Fuel Prices Rise

Key Highlights & Summary

- **Inflation Breach:** India's retail inflation, measured by the Consumer Price Index (CPI), rose to 4.38% in June, marking the first time in 16 months that consumer prices crossed the Reserve Bank of India's (RBI) 4% medium-term target.
- **Double-Digit Food Pressure:** Driven by weak rains and high summer temperatures, food inflation surged to 5.32% in June from 4.78% in May, with the Consumer Food Price Index (CFPI) rising 1.7% month-on-month.
- **Fuel and Transport Costs:** Successive fuel price hikes pushed personal transport inflation to 7.35% in June (up from 3.06% in May), reflecting the immediate and full impact of diesel and petrol hikes on retail dynamics.
- **Costly Services:** The "restaurant and accommodation services" category rose sharply to 6.9% in June, fueled by rising commercial LPG prices and increased operating costs for eateries.
- **Monsoon Dependencies:** While the cumulative rainfall deficit narrowed to 18%, experts emphasize that adequate July-August precipitation remains critical to support Kharif sowing and contain food price pressures.
- **Policy Rate Implications:** The elevated headline inflation of 4.38% reinforces expectations that the RBI's Monetary Policy Committee will keep the repo rate on hold to ensure durable alignment with its targets.

INCHING UP



Essential Definitions

- **Consumer Price Index (CPI):** A macroeconomic indicator that measures the weighted average of prices of a representative basket of goods and services consumed by households over time.
- **Headline Inflation:** The raw inflation figure reported through the CPI, reflecting total inflation in an economy, including highly volatile sectors like food and fuel.
- **Base Effect:** The distortion in the current inflation reading caused by abnormally high or low inflation rates in the corresponding month of the previous year.

Legal and Constitutional Framework

- **RBI Act, 1934 (Amendment of 2016):** Provides a statutory basis for the Flexible Inflation Targeting (FIT) framework, legally mandating the RBI to maintain inflation at 4% with a tolerance band of 2% to 6%.
- **Collection of Statistics Act, 2008:** The legislative framework under which the Ministry of Statistics and Programme Implementation (MoSPI) collects monthly retail price data across rural and urban markets.

Conclusion

The June uptick in inflation underscores the continuing vulnerability of India's retail basket to weather anomalies and global fuel price shocks. Addressing these supply-side disruptions requires a coordinated strategy of proactive trade policies, agricultural interventions, and vigilant monetary monitoring to keep inflation securely anchored within the RBI's target band.

UPSC Relevance

- **GS Paper III (Indian Economy):** Directly relevant to issues relating to inflation, monetary policy, pricing, and agricultural planning.
- **Mains Focus:** Analyzing the impact of monsoon vagaries and global fuel shocks on domestic inflation, the efficacy of the inflation targeting framework, and the structural transition of CPI base revisions.

12. Safety and Integration Debate Over Advanced Thorium-HALEU Fuel (ANEEL)

Key Highlights & Summary

- **Bilateral Nuclear Dispute:** US-based nuclear fuel developer Clean Core Thorium Energy (CCTE) has refuted reactor safety concerns raised by scientists at India's Bhabha Atomic Research Centre (BARC) regarding its proprietary ANEEL fuel.
- **The BARC Argument:** A paper published by BARC scientists in the journal *Current Science* argued that deploying ANEEL fuel in India's existing Pressurised Heavy Water Reactors (PHWRs) would necessitate extensive reactor redesigns and could elevate safety risks during accidents.
- **The Counter-Argument:** CCTE's peer-reviewed study in *Nuclear Engineering and Design* argues that ANEEL is a "plug-and-play" fuel replacement that maintains the same external

dimensions and geometry as traditional natural uranium fuel, requiring no structural modifications.

- **Efficiency and Energy Yield:** Proponents highlight that the thorium-HALEU blend has the potential to generate approximately six times more energy than conventional natural uranium fuel while operating safely within the existing PHWR fleet.
- **Strategic Energy Partnership:** State-owned NTPC Ltd entered a strategic partnership with CCTE to explore ANEEL's deployment in Indian reactors, alongside plans for sovereign-guaranteed supply chains and potential manufacturing indigenisation.
- **US Export Approval:** CCTE is only the second American company in nearly two decades to secure a nuclear technology export license to India from the US Department of Energy, underscoring its geopolitical and strategic weight.

Essential Definitions

- **ANEEL (Advanced Nuclear Energy for Enriched Life):** A patented advanced fuel developed by CCTE that combines thorium with High-Assay Low-Enriched Uranium (HALEU) to optimize safety, waste management, and energy yield.
- **HALEU (High-Assay Low-Enriched Uranium):** Nuclear fuel enriched between 5% and 20% with Uranium-235, which is higher than the 3% to 5% enrichment used in standard commercial light-water reactors.

Legal and Constitutional Framework

- **The Atomic Energy Act, 1962:** Provides the core legal framework for development, control, and use of atomic energy for peaceful purposes in India, vesting authority over nuclear fuel cycles and safety regulation in the Central Government.
- **Entry 6 of the Union List (Seventh Schedule):** Places "Atomic energy and mineral resources necessary for its production" under the exclusive legislative and executive domain of the Union Government.
- **Civil Liability for Nuclear Damage Act, 2010:** Regulates liability and compensation mechanisms in the event of nuclear accidents, which remains a key compliance touchpoint for importing foreign-designed nuclear technologies.

Conclusion

The debate surrounding ANEEL fuel highlights the ongoing technical challenges in transitioning to thorium-based energy systems. While CCTE offers a promising, high-yield solution to jumpstart thorium utilization within India's extensive PHWR fleet, reconciling its safety parameters with the rigorous standards of India's premier nuclear research body (BARC) remains a vital prerequisite for field deployment.

UPSC Relevance

- **GS Paper III (Science & Technology and Energy Security):** Directly relevant to nuclear energy, India's three-stage nuclear power program, indigenisation of technology, and international civil nuclear cooperation agreements.

• THORIUM FUEL PUSH

THE BARC paper had argued that deploying ANEEL in India's existing PHWR fleet will require reactor re-designs and could increase safety risks under accident conditions

CCTE HAS developed the patented thorium-based fuel called ANEEL that combines thorium with high-assay low-enriched uranium for use in PHWRs

ANEEL CAN be deployed in India's PHWR fleet, which accounts for the majority of the



country's operational nuclear reactors, as per the company

- **Prelims Focus:** Direct questions can target the components of ANEEL fuel (Thorium + HALEU), the operational mechanism of PHWRs, the role of BARC, and nuclear regulatory authorities.

