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REDISTRIBUTION OF LOK SABHA SEATS BASED ON 2011 CENSUS

Context

- The Union Government has proposed the **Constitution (131st Amendment) Bill and the Delimitation Bill** to enable redistribution of Lok Sabha seats based on the 2011 Census.

Present distribution of seats in Lok Sabha

- Total Strength:** The maximum strength of the Lok Sabha is 550 seats (530 from States, 20 from Union Territories) as per the Constitution. At present, the effective strength is **543** elected members;
 - 530 members** from States
 - 13 members** from Union Territories.
- Basis of Distribution:** The allocation of seats among States is based on the **1971 Census** and the **division of constituencies** within States is based on the **2001 Census**.
- The freeze on the total number of seats in the Lok Sabha is valid until the first census conducted after 2026.

Key Features of the Proposed Bills

- The Bills propose to **remove the constitutional freeze on inter-State seat** allocation.
- The Delimitation Commission will be **required to reallocate seats** based on the latest **Census figures (2011)**.
- The maximum strength of the Lok Sabha is proposed to be increased from 550 to **850 seats**.
 - Out of the total seats, **815 will be allocated to States and 35 to Union Territories**.
- The proposals also indicate a possible uniform increase of around 50% in seats for each State, with assurances that **no State will lose its existing proportional share**.

Nari Shakti Vandan Adhiniyam

- The Constitution (106th Amendment) Act, 2023 also known as the **Nari Shakti Vandan Adhiniyam** provides **33% reservation** for women in the Lok Sabha and State Legislative Assemblies.
- The Act states that women's reservation can be implemented **only after two steps** are completed.
 - First, a national Census must be conducted.
 - Second, a delimitation exercise must be carried out based on that Census.

- The proposals are linked to the implementation of **33% reservation** for women in the Lok Sabha and State Assemblies.

Arguments in Favour

- Ensuring Democratic Equality:** The proposed delimitation aligns political representation with current population realities, thereby strengthening the principle of equal representation for equal population.
- Correcting Historical Distortions:** The reforms seek to remove imbalances created due to reliance on outdated Census data, particularly the continued use of the 1971 population figures.
- Reflecting Demographic Shifts:** The redistribution acknowledges significant inter-State population changes over decades, ensuring that rapidly growing regions receive proportionate representation.
- Enabling Women's Political Representation:** The proposals facilitate the implementation of long-pending 33% reservation for women by linking it with delimitation, thereby promoting gender inclusivity in legislatures.

Arguments Against

- Threat to Federal Balance:** There are apprehensions that reforms may **disproportionately favour States with higher population growth** particularly in Northern areas, thereby reducing the relative political weight of southern States and **disturbing federal equilibrium**.
- Weakening of Bicameral Balance:** The expansion of the Lok Sabha to around 850 members **without a corresponding increase in the Rajya Sabha** may tilt institutional balance in favour of the Lower House.
- Reduced Legislative Effectiveness:** A much larger Lok Sabha may dilute individual participation of Members of Parliament.
 - It may adversely affect the quality of debates, deliberation, and overall legislative functioning.

What is Delimitation?

- Delimitation refers to the **process of fixing the number of seats and boundaries** of territorial constituencies in each State for the Lok Sabha and Legislative assemblies.
 - It also includes determining the seats to be reserved for Scheduled Castes (SC) and Scheduled Tribes (ST) in these houses.

- **Article 82 and 170** of the Indian Constitution provide that the number of seats in the Lok Sabha and State Legislative assemblies as well as its division into territorial constituencies shall be readjusted after each Census.
- This process is performed by the '**Delimitation Commission**' that is set up under an act of Parliament.

Delimitation in the Past

- The number of seats in the Lok Sabha based on the 1951, 1961 and 1971 Census was fixed at 494, 522 and 543.
- However, it has been **frozen as per the 1971 Census** in order to encourage population control measures so that States with higher population growth do not end up having higher number of seats.
- This was done through the **42nd Amendment Act** till the year 2000 and was extended by the **84th Amendment Act till 2026**.
- The boundaries of territorial constituencies were readjusted (without changing the number of seats) and seats for SC and ST were determined as per the 2001 Census and will again be carried out after **2026**.

Concluding remarks

- The delimitation debate reflects a **deeper tension between demographic representation and federal equity**.
- A consensus-based approach involving all States should be adopted before implementing delimitation reforms.
- The emerging approach of **expansion-led accommodation** instead of **population-based redistribution** offers a potential middle path, but its success depends on clarity, consensus, and constitutional safeguards.

Source: TH

INDIA AS AN ARCHITECT OF THE EMERGING GLOBAL ORDER

Context

- The ongoing West Asian conflict triggered by "**Operation Epic Fury**" has exposed deep vulnerabilities in the global order and raised a critical question regarding India's credibility as an architect of a new world order.

Crisis in the Existing Global Order

- The conflict has highlighted the **failure of existing international institutions**, particularly the **United Nations**, in preventing escalation.
- Military interventions by major powers have undermined the principles of sovereignty and non-intervention enshrined in the UN Charter.
- The role of **NATO** has also come under strain, with **internal divisions** weakening collective security mechanisms.
- The crisis reflects a broader shift toward a **multipolar but unstable world order**.

Changing Geopolitical Dynamics

- **Emerging Strategic Gains:**
 - ♦ **Russia has benefitted** from increased energy revenues due to global supply disruptions and shifting geopolitical focus.
 - ♦ China has accelerated the process of **de-dollarisation** by promoting yuan-based energy trade and projecting diplomatic restraint.
- **Strategic Vulnerabilities**
 - ♦ Gulf countries such as **Saudi Arabia and the United Arab Emirates** have faced direct security threats, revealing the limitations of external security guarantees.
 - ♦ The broader region, including **India**, has experienced **economic instability** due to disruptions in energy supply chains.

Implications for India

- **Energy Security Vulnerability:** Nearly **50%** of India's crude oil imports pass through Hormuz, making it a strategic chokepoint. The blockade led to:
 - ♦ Increased dependence on **Russian crude imports**.
 - ♦ **Higher LNG imports** from the US.
 - ♦ **Domestic inflationary pressures**, especially affecting household energy consumption.
- **Diplomatic Ambiguity:** India maintained strategic silence on US-Israeli strikes. While this reflects **realpolitik considerations**, it risks undermining India's claim as the "**voice of the Global South**."
- **Strategic Constraints:** India demonstrated short-term adaptability through **diversification** of energy sources and **fiscal measures** like fuel tax cuts.
 - ♦ However, its limited geopolitical leverage became evident in shaping outcomes.

Why India Must Act as a Global Architect?

- India aspires to be the **voice of the Global South**, which requires both moral clarity and strategic action.
 - ♦ Passive diplomacy may **erode India's credibility** in shaping global norms and institutions.
- India's historical legacy of **non-alignment and strategic autonomy** provides a strong foundation for leadership in a multipolar world.
- The current crisis offers India an opportunity to **transition from a balancing power to a shaping power**.

Strategic Priorities for India

- **Pursue Proactive Diplomacy:** India must articulate clear positions on violations of international law and sovereignty. It should actively engage in conflict resolution and peace-building initiatives.
- **Strengthen Energy Security:** India must diversify its energy basket by increasing investments in renewable energy sources.
- **Lead Global South Cooperation:** India must leverage platforms like the **G20 and BRICS** to advocate for equitable global governance.
- **Build Regional Stability Frameworks:** India must enhance its engagement with West Asia through economic partnerships and diplomatic initiatives.
 - ♦ It should strengthen maritime security cooperation in the Indian Ocean Region.

Concluding remarks

- The present global crisis represents a defining moment in international relations. The weakening of existing institutions has created a **leadership vacuum** in global governance.
- By adopting a **proactive and principled approach**, India can contribute to building a stable, inclusive, and rules-based global system.

Source: IE

UNDP REPORT ON WEST ASIA CONFLICT

In News

- Recently, the United Nations Development Programme (UNDP) released a report titled 'Military Escalation In The Middle East: Human Development Impacts Across Asia And The Pacific'.

Key findings

- **Global Levels:** Military escalation in West Asia/ Middle East is worsening human development pressures across Asia-Pacific.
 - ♦ Higher fuel, freight, and input costs are reducing purchasing power, increasing food insecurity, straining budgets, and weakening livelihoods.
 - ♦ Across Asia-Pacific, the economic impact could reach up to \$299 billion.
 - ♦ Globally, up to 8.8 million people could be pushed into poverty under severe scenarios.
- **Poverty:** India's poverty increase ranges from about 4 lakh to 2.5 million people, depending on the scenario.
 - ♦ In the most severe estimate, about 24.6 lakh people may be pushed into poverty.
 - ♦ Poverty rate may rise slightly from 23.9% to 24.2%.
 - ♦ Total people in poverty could rise from about 35.15 crore to 35.40 crore.
- **Human Development Index (HDI) impact:** India may lose around 0.03 to 0.12 years of human development progress, while neighbouring countries like Nepal and Vietnam may also see smaller losses of about 0.02 to 0.09 and 0.02 to 0.07 years respectively.
 - ♦ Iran, however, could face a much sharper decline equivalent to about 1 to 1.5 years of HDI progress, whereas China's impact is relatively limited.
- **Energy and trade dependence:** India depends heavily on imports for its energy and fertilizer needs, with over 90% of its oil requirements coming from abroad, mainly West Asia.
 - ♦ The region supplies more than 40% of India's crude oil imports, around 90% of LPG imports, and over 45% of fertilizer imports, while domestic urea production is also significantly reliant on imported LNG.
- **Economic effects:** West Asia is an important trade partner for India, accounting for about 14% of its exports and 20.9% of imports. India's non-oil exports to the region, worth around \$48 billion, include products like basmati rice, tea, gems and jewellery, and apparel, while countries such as Bangladesh and India also face disruptions in shipments and logistics.
 - ♦ Rising LNG prices are pushing some countries (including India) toward higher coal usage.

- ◆ Trade disruptions affect 25 of 36 countries in the region, due to freight surcharges, insurance costs, and supply chain delays.
- **Food security & agriculture:** Food insecurity may worsen due to rising costs and reduced remittances from Gulf countries.
 - ◆ India may face timing risks during the Kharif (monsoon) cropping season.
 - ◆ Urea stocks (6.11 million tonnes) provide only a short-term buffer.
- **Remittances & labour impact:** Around 9.37 million Indians live in GCC countries, and remittances from the Gulf make up about 38–40% of India's total inward remittances.
 - ◆ A slowdown in Gulf economic activity could therefore reduce these inflows and negatively affect household incomes across South Asia.
- **Employment and MSMEs:** About 90% of India's workforce is informal, making it highly vulnerable to economic shocks.
 - ◆ MSME sectors such as hospitality, construction, gems, and manufacturing may face higher costs, supply shortages, job losses, and reduced working hours, with migrant and informal workers being the most affected.
 - ◆ Additionally, sectoral pressures include rising raw material costs for medical devices by around 50% and a 10–15% increase in medicine wholesale prices.

Suggestions

- Despite the negative impacts of the conflict, countries also have an opportunity to strengthen long-term resilience by improving social protection systems
- Countries need to build stronger local and regional supply chains.
- And they need to diversify energy and food systems to reduce future vulnerability.

Source :TH

INDIAN RAILWAYS: FROM STEAM TO SPEED

Context

- In India, railways reflect technological progress, nation-building, connectivity, and inclusive growth aligned with recent government initiatives on modernization and speed enhancement.

About Indian Railways

- **Steam Era (19th–Early 20th Century):** Railways emerged as symbols of industrial revolution and colonial economic integration.
 - ◆ In India, the **first train (1853) connected Mumbai to Thane**, initiating large-scale connectivity.
- **Transition From Steam to Diesel and Electric:** Post-independence focus shifted to efficiency and expansion.
 - ◆ Electrification improved energy efficiency and reduced dependence on fossil fuels.
 - ◆ Indian Railways gradually phased out steam locomotives, embracing modern traction systems.
 - ◆ Indian Railways have achieved **99.6% electrification** of the broad gauge network, and **higher** than those in the UK (39%), Russia (52%), and China (82%).

Modernization of Indian Railways: Key Pillars

- **Speed Enhancement:** Government initiatives have accelerated train speeds and reduced travel time.
 - ◆ Large-scale timetabling reforms and infrastructure upgrades have enabled faster operations.
 - ◆ Semi-high-speed services (**e.g., Vande Bharat**) represent a major leap.
- **Infrastructure Transformation:** Track modernization, dedicated freight corridors, and station redevelopment.
 - ◆ Introduction of **advanced signalling systems (e.g., Kavach)**.
- **Digital and Technological Integration:** ICT integration for ticketing, operations, and passenger services.
 - ◆ Real-time monitoring and predictive maintenance systems.

Socio-Economic Significance

- **Economic Growth:** Facilitates trade, reduces logistics costs, and boosts industrial corridors.
- **Social Integration:** Connects remote regions, promoting national integration and inclusive development.
- **Urbanization and Mobility:** Supports urban transit systems and transit-oriented development (TOD).

Key Issues and Concerns Ahead of Indian Railways

- **Capacity Constraints & Congestion:** High traffic density on major routes (Golden Quadrilateral, freight corridors); mixed traffic (passenger & freight) reduces efficiency; and demand often exceeds design capacity.
- **Financial Sustainability:** Heavy dependence on **freight revenue** to subsidize passenger fares; high operating ratio limits surplus for investment; and rising capital costs for modernization (HSR, DFCs).
- **Safety Concerns:** Accidents due to human error, outdated signalling, and track issues; and maintenance backlog remains a concern.
- **Infrastructure Deficit:** Aging tracks, bridges, and rolling stock; and slow pace of capacity expansion (doubling, electrification).
 - ♦ Infrastructure gaps constrain speed and efficiency.
- **Technological & Modernization Gaps:** Uneven adoption of digital systems and automation; and cybersecurity risks with increasing digitalization.
 - ♦ ICT diffusion is ongoing but incomplete.
- **Competition from Other Modes:** Road and air transport gaining market share; and railways losing high-value freight to trucking due to delays.
 - ♦ Competitiveness depends on speed, reliability, and pricing reform.
- **Land Acquisition & Environmental Issues:** Delays in infrastructure projects due to land acquisition hurdles; and environmental concerns in ecologically sensitive zones.
- **Governance & Institutional Challenges:** Centralized decision-making slows reforms; and coordination issues across zones and departments.
- **Human Resource & Skill Challenges:** Large workforce with skill gaps in modern technologies.

Key Reforms & Initiatives Towards High-Speed Rail and Future Mobility

- **High-Speed Rail (HSR):** Bullet train projects (e.g., Mumbai–Ahmedabad corridor) mark India's entry into high-speed rail.
 - ♦ Global experience shows HSR enhances regional connectivity and economic productivity.
 - ♦ **Union Budget 2026–27:** It allocated capital outlay of ₹2,78,000 crores.

- **Semi-High-Speed and Indigenous Innovation:** Vande Bharat trains showcase indigenous capability and reduced travel time.
 - ♦ Focus on 'Make in India' in rolling stock and signalling systems.
- **Sustainability and Green Railways:** Electrification targets net-zero carbon emissions.
 - ♦ Shift towards renewable energy and energy-efficient systems.

For Digital Infrastructure and Passenger Safety

- **Internet Protocol Multi-Protocol Label Switching (IP MPLS) Technology:** It aims to support high-capacity and mission-critical railway applications.
 - ♦ It enables centralized video surveillance and supports core operational systems.
- **Indigenous Kavach Automatic Train Protection System:** It aims to prevent train collisions and enhance operational safety.
 - ♦ It has been commissioned over **3,100 route kilometres**, with implementation underway on an additional **24,400 kilometres**.
- **AI-Enabled Video Surveillance:** It has been expanded to **1,874 railway stations**, using AI-based analytics and facial recognition technology to strengthen passenger safety and monitoring.
- **Real-Time Passenger Information:** The **Integrated Passenger Information System (IPIS)**, linked with the **National Train Enquiry System (NTES)**, ensuring timely announcements and better passenger communication.
- **Tunnel Communication Systems:** Communication systems have been introduced in key projects, including the **Udhampur–Srinagar–Baramulla Rail Link (USBRL)**, to ensure uninterrupted connectivity and safer operations in tunnel sections.

Way Forward

- Expand **Dedicated Freight Corridors** and high-speed corridors.
- Improve **financial viability** through tariff rationalization and PPP.
- Strengthen **safety systems** like Kavach.
- Enhance **multimodal integration** (PM Gati Shakti).
- Invest in **AI, digitalization, and skill development**.

Source: PIB

NEWS IN SHORT

GHAGGAR RIVER

In News

- Villages near the Ghaggar River report rising cancer cases linked to polluted water, but lack of data and poor healthcare hinder action.

Ghaggar River in northern India

- The Ghaggar River is an intermittent, monsoon-fed river in northern India.
- It originates in the village of Dagshai in the Shivalik Hills of Himachal Pradesh at about 1,927 metres elevation and flows through Punjab and Haryana into Rajasthan.
- Its main tributaries include the Kaushalya, Markanda, Sarsuti, Tangri, and Chautang rivers.

Source :TH

ANDAMAN SEA

In News

- A boat carrying Rohingya refugees and Bangladeshi nationals from Bangladesh to Malaysia capsized in the Andaman Sea.

Andaman Sea

- The Andaman Sea is a marginal sea in the northeastern Indian Ocean.
- It is bordered by Myanmar to the north and east, Thailand and Malaysia to the east, Indonesia to the south, and India's Andaman and Nicobar Islands to the west.
- It connects to the South China Sea through the Strait of Malacca and serves as an important international shipping route, especially between India and China.
- It also supports regional maritime trade through ports in Myanmar and surrounding countries.

Source : LM

AZEC PLUS AND MARITIME SECURITY

Context

- India, raised concerns over disruptions in maritime energy routes at the AZEC Plus meeting, amid tensions in the Strait of Hormuz, a critical global energy chokepoint.

About AZEC Plus

- The Asia Zero Emission Community (AZEC) is a **Japan-led initiative** launched in **2023** to promote **decarbonisation, clean energy transition, and energy security** in Asia.
- It **provides an alternative, Asia-centric model of energy transition, recognising diverse developmental** needs of Asian economies.
- **AZEC focuses on:**
 - ♦ Facilitating **technology transfer in clean energy** (hydrogen, ammonia, renewables).
 - ♦ Supporting **carbon neutrality** goals while maintaining economic growth.
 - ♦ Strengthening **energy supply chain resilience** in the region.
- **AZEC Plus is an expanded framework** that includes more Asian countries and global institutions such as Asian Development Bank and International Energy Agency.
 - ♦ It **addresses emerging challenges** like supply disruptions, critical mineral access, and maritime security.

Source: IE

HAFNIUM-OXIDE MEMRISTOR

Context

- Scientists have developed a hafnium-oxide-based memristor, a brain-inspired nanodevice, capable of significantly reducing energy consumption in artificial intelligence systems.

Neuromorphic Computing

- Neuromorphic computing is a field of technology that seeks to **replicate the architecture and functioning of the human brain** in electronic systems.
- In the human brain, **memory and processing occur simultaneously** within synapses, which leads to highly energy-efficient computation.
- This approach is fundamentally different from the **Von Neumann architecture**, which is used by nearly all modern general-purpose computers.
 - ♦ In this **memory and processing units are physically separated**, resulting in significant energy consumption due to constant data transfer.

What is a Memristor?

- A memristor is an electronic component that combines the properties of **memory and resistance**, allowing it to both store and process information within the same device.

- Unlike conventional resistors, a **memristor retains its resistance state even after the power supply is switched off**, thereby enabling non-volatile memory.
- In neuromorphic systems, a **memristor functions as an artificial synapse**, where different resistance levels represent the strength of connections between neurons.
- The memristor uses a **p–n junction mechanism** that allows smooth and continuous adjustment of resistance.

Synapse

- A synapse is a **junction (connection point)** between **two nerve cells (neurons)** in the brain.
- It is the place where **one neuron passes signals (information)** to another neuron.
- These signals are usually transmitted using electrical impulses and chemical substances (neurotransmitters).

Source: TH

REED SNAKE : CALAMARIA GAROENSIS

In News

- Recently, researchers have discovered a new species of burrowing reed snake, *Calamaria garoensis* (Garo Hills reed snake), in the West Garo Hills of Meghalaya, India.

Calamaria garoensis (Garo Hills reed snake)

- **Reed snakes (Calamaria genus)** are small, burrowing, and hard to study, and their close physical similarities have often led to misidentification and incorrect grouping under common species names.
- *Calamaria garoensis* was discovered in Oragitok, a biodiverse forest area, and is only known from this small region, indicating it has a very limited range and may need conservation attention.
- It is closely related to **Calamaria mizoramensis** but shows about 6.3% genetic divergence, supporting its status as a separate species.
- The species can be identified by features such as smooth dorsal scales in 13 rows, a short blunt tail, longitudinal body striping, a faint neck ring, and a distinctive dark stripe on the underside of the tail.

Latest Study

- The study also clarifies past misclassification of reed snakes previously grouped under *Calamaria pavementata*, now known to be a complex of multiple species.
- It highlights the rich but underexplored biodiversity of the Garo Hills and the need for further research and conservation.

Source :TH

