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Mains Marathon

March, 2025
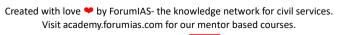
HISTORY
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SCIENCE AND TECHNOLOGY
GEOGRAPHY AND ENVIRONMENT

INDEX

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The conservation and management of wetlands have emerged as a challenge as these ecosystems are linked to broader developmental issues. Discuss the necessity of mainstreaming wetland conservation in India's environmental policy.

Introduction: Contextual Introduction
Body: Highlight challenges to wetland conservation and the need for mainstreaming wetland conservation
Conclusion: Way forward

Wetlands are among the most biologically productive ecosystems, offering critical ecological, economic, and social services.

Challenges to Wetland Conservation in India

- **Governance and Policy Gaps**: While India has designated 89 Ramsar sites, these constitute only 10% of the country's total wetland area. Conservation efforts are often limited to major wetlands, leaving many others vulnerable.
- **Fragmented Approach**: Wetland management initiatives in India largely focus on their ecological aspects, neglecting the socio-economic and developmental dimensions.
- **Anthropogenic Pressures**: Encroachment, pollution, and unregulated land-use changes are major threats. The depletion of urban wetlands has led to severe environmental consequences, such as increased flooding and loss of biodiversity.

The Need for Mainstreaming Wetland Conservation

- **Integration with Developmental Planning**: Wetlands should be recognized as blue-green infrastructure within urban planning to mitigate urban flooding, enhance water security, and support biodiversity.
- **Climate Change Mitigation**: Wetlands act as carbon sinks, making their conservation crucial for India's climate commitments. Monitoring and restoring wetland ecosystems can aid in climate adaptation strategies.
- **Sustainable Livelihoods**: Many communities depend on wetlands for fishing, agriculture, and tourism. Integrating wetland conservation with livelihood programs can ensure ecological and economic sustainability.
- **Alignment with International Commitments**: The Ramsar COP14 emphasized linking wetland conservation with Sustainable Development Goals (SDGs), biodiversity targets, and climate agreements like the UNFCCC. India must align its policies accordingly.

Way Forward

- **Strengthening Policy Frameworks**: A national wetland conservation strategy should integrate wetland protection into urban planning, climate action, and water management policies.
- **Community-Based Conservation**: Involving local communities in wetland governance through participatory models can enhance conservation outcomes.
- **Scientific Monitoring and Restoration**: Establishing a robust system for monitoring wetland health and initiating large-scale restoration projects is essential.
- **Inter-Departmental Coordination**: Wetland conservation should not remain the sole responsibility of the Ministry of Environment but should involve urban development, water resources, and agriculture departments.

Conclusion

A holistic, ecosystem-based approach, as advocated in Ramsar COP14, will ensure that wetlands continue to provide critical ecosystem services while supporting sustainable development.

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India has the potential to become the global leader in textiles. Analyze the strengths and challenges in realizing this goal.

Introduction: Contextual Introduction
Body: Highlight strengths and challenges in realizing India's potential to be the global leader in textiles
Conclusion: Way forward

The Indian textile and apparel industry holds immense potential to establish itself as a global leader. With a strong historical legacy, government support, and a growing domestic market, the sector is well-positioned for expansion.

Strengths of India's Textile Industry

- **Large Workforce & Employment Potential**: The textile industry is the second-largest employer in India, providing direct employment to 45 million people. Women make up 90% of the blue-collar workforce, making the sector crucial for women's empowerment and inclusion in the formal economy.
- **Favorable Government Policies**: Schemes like PM MITRA Parks have led to the establishment of large integrated textile hubs to improve efficiency and attract investments, PLI Scheme which incentivizes large-scale production and value addition & RoSCTL Scheme that ensures global competitiveness by refunding embedded taxes.
- **Growing Domestic Market & Consumption Trends**: India's middle class and Gen Z are driving a rise in apparel consumption. The rise of e-commerce and quick commerce platforms is increasing market penetration.
- **Geopolitical Shifts Favoring India**: China's shrinking manufacturing sector due to rising costs and global tensions. Bangladesh and Vietnam facing internal constraints, making India a preferred sourcing destination. Strong diplomatic ties with major economies like the US and EU enhance India's export prospects.

Challenges Hindering Growth

- **Labour Inefficiency and Cost Disadvantage**: India suffers a 15-20% cost disadvantage compared to Bangladesh and Vietnam. Lower labour productivity affects competitiveness in global markets.
- **Geographical Mismatch Between Jobs and Workforce**: Textile hubs like Tiruppur face labour shortages, while states like UP, Bihar, and Odisha have surplus labour but lack industry presence.
- **High Worker Attrition & Migration Issues**: The textile industry has a high attrition rate (~10%) due to inadequate living conditions and wage disparities. Migrant workers often spend a large part of their salaries on transport and accommodation.
- **Infrastructure and Supply Chain Bottlenecks**: Inadequate logistics and transport facilities increase production costs. There is a need for efficient supply chain integration, especially in cotton and synthetic fibre production.
- **Balancing Automation and Job Creation**: Automation improves efficiency but may reduce low-skill jobs. India must find a balance where technology enhances productivity while creating more high-skill employment opportunities.

Conclusion

India is at a crucial juncture where its textile industry can become a global leader. By addressing labour inefficiencies, improving infrastructure, and leveraging geopolitical shifts, India can establish itself as the top textile exporter. With a strategic approach, the "Indian Tiger" can roar on the global textile stage while China and other competitors cede market share.

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"Caring labor, particularly unpaid work, is a crucial yet often overlooked component of India's economy. Analyze the significance of centering care in India's economic policy and suggest measures to integrate it into mainstream economic planning."

Introduction: Contextual Introduction
Body: What is the significance of centering care in India's economic policy and suggest measures to integrate it into mainstream economic planning?
Conclusion: Way forward

Caring labor, particularly unpaid work, is an essential yet overlooked component of India's economy. Despite a record allocation of ₹4,49,028.68 crore to the Gender Budget (GB) in 2025, investments in care infrastructure remain inadequate. The invisibilisation of unpaid care work disproportionately affects women, limiting their economic participation. Recognizing and integrating care work into mainstream economic planning is crucial for achieving gender-inclusive growth.

Significance of Centering Care in Economic Policy

- **Economic Contribution:** If monetized, unpaid care work would significantly add to GDP, yet remains unaccounted for in economic planning. The Economic Survey 2023-24 highlights that direct public investment equivalent to 2% of GDP could generate 11 million jobs while easing the care burden.
- **Gender Equity and Labor Force Participation**: Over 53% of Indian women remain outside the workforce due to care responsibilities, compared to just 1.1% of men. This entrenched inequity hinders economic progress.
- **Addressing Time Poverty:** Women in low-income families often juggle 17–19 hours of daily tasks, reducing their ability to engage in paid work and eroding their well-being. Climate change further exacerbates this burden, with water-related unpaid labor projected to cost India $1.4 billion by 2050.
- **Improved Social Welfare and Productivity:** Investments in care infrastructure—such as childcare centers, eldercare support, and assistive technologies—would ease women's care burden and enhance overall workforce productivity.

Measures to Integrate Care into Economic Planning

- **Recognizing Unpaid Care Work:** Strengthening Time-Use Surveys by integrating them into existing household surveys would help quantify and recognize unpaid labor.
- **Reducing the Care Burden:** Expanding access to essential infrastructure like potable water (Jal Jeevan Mission), affordable childcare, eldercare, and labor-saving technologies is crucial. Delays in JJM implementation highlight the need for stronger execution strategies.
- **Redistributing Care Responsibilities:** Encouraging shared domestic responsibilities through policies like paternity leave, flexible work hours, and integrating care into urban planning—such as Bogotá's Care Blocks model—can create systemic change.
- **Investment in Care Infrastructure:** The newly announced ₹1 lakh crore Urban Challenge Fund can be leveraged to scale up pilot care infrastructure models under the Smart Cities Mission. Public-private partnerships should be encouraged to expand sustainable urban development.
- **Ensuring Women's Representation in Policymaking:** Women's involvement in decision-making processes enhances policy effectiveness significantly, ensuring that care work is addressed as a priority rather than an afterthought.

Conclusion

A well-funded, deliberate strategy is essential to ensure that care work is recognized and integrated into economic planning. By doing so, India can set a global example for a gender and care-sensitive economy, fostering inclusive and sustainable growth.

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"AI infrastructure is the key to achieving global AI supremacy. Discuss the strategic importance of AI infrastructure for India and analyze the lessons India can learn from global AI leaders like the U.S., the European Union, and China."

Introduction: Contextual Introduction
Body: What is the strategic importance of AI infrastructure & lessons India can learn from other nations?
Conclusion: Way forward

Artificial Intelligence (AI) has emerged as a transformative force shaping global economic and strategic landscapes. AI infrastructure, encompassing data centers, computing power, skilled workforce, and regulatory frameworks, is critical for achieving AI leadership.

Strategic Importance of AI Infrastructure for India

- **Technological Sovereignty & National Security:** India needs to develop a self-reliant AI ecosystem to reduce dependence on foreign AI computing and ensure cybersecurity.
- **Economic Growth & Digital Transformation**: AI is a General Purpose Technology (GPT) with widespread applications across sectors like healthcare, agriculture, and governance. India's vast IT workforce and cloud computing industry provide a strong foundation for AI-driven economic expansion.
- **Bridging the Computing Power Gap:** India lacks high-end AI chips and large-scale data centers, limiting its AI innovation capacity. Partnerships with U.S. and European firms to establish joint AI computing hubs can help bridge this gap without heavy capital investments.
- **Sustainable AI Development:** AI data centers require significant energy, posing challenges in a power-constrained country like India. Integrating AI data centers with renewable energy projects can help balance industrial and AI-related energy needs.

Lessons from Global AI Leaders

- **United States**: The U.S. has focused on leveraging federal lands for AI data centers and fostering private-sector participation. India can replicate this by offering incentives for private AI investments and using government land for AI infrastructure projects.
- **China**: China heavily subsidizes AI research and chip manufacturing to ensure domestic technological self-sufficiency. India, lacking similar financial capacity, must adopt a targeted approach—focusing on select AI hubs rather than nationwide infrastructure expansion.
- **European Union**: The EU promotes ethical AI development, sovereign cloud infrastructure, and open-source AI models. India can follow a similar approach by ensuring AI regulation balances innovation with ethical concerns while promoting open-source AI research.

Way Forward for India

- **Establish AI Supercomputing Hubs**: Instead of a nationwide rollout, India should develop select AI hubs with advanced computing power, talent clusters, and private-sector participation.
- **Leverage Public-Private Partnerships**: The government should facilitate AI infrastructure development by collaborating with industry leaders like TCS, Infosys, and global AI firms.
- **Focus on AI Talent Development**: Strengthening AI education and research institutions can create a skilled workforce that compensates for India's hardware limitations.

Conclusion

AI infrastructure is the defining factor in the global AI race. India must play to its strengths—leveraging its vast AI talent, fostering global collaborations, and developing AI supercomputing hubs—while ensuring sustainable and ethical AI growth.

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Rising obesity in India is emerging as a significant public health challenge with considerable economic and social costs. Discuss the factors contributing to increasing obesity rates in India and suggest holistic interventions to address this issue.

Introduction: Contextual Introduction
Body: Highlight Factors Contributing to Rising Obesity in India & measures to address the issue.
Conclusion: Way forward

India is undergoing a major epidemiological transition, with overweight and obesity emerging as critical public health concerns. The National Family Health Survey (NFHS-5, 2019-21) reports that nearly one in four Indians is obese, with obesity rates doubling in the last 15 years and tripling in the last three decades. The World Obesity Federation highlights that India has one of the world's steepest increases in childhood obesity.

Factors Contributing to Rising Obesity in India

- **Dietary Transition to HFSS and Ultra-Processed Foods (UPF):** The easy availability of high-fat, salt, and sugar (HFSS) foods has led to excessive calorie intake.
- **Sedentary Lifestyle:** Urbanization has reduced physical activity levels, with 50% of Indians failing to meet WHO-recommended activity levels. A lack of public spaces, cycling lanes, and urban planning deficiencies further exacerbate this issue.
- **Societal Normalization of Obesity:** Unlike undernutrition, obesity is not widely recognized as a health crisis. Cultural perceptions associate higher body weight with prosperity, leading to delayed interventions.
- **Economic Growth and Changing Food Habits**: Rising incomes have led to increased purchasing power for processed foods, while urbanization has led to greater consumption of fast food and sugary beverages.

Holistic Interventions to Address Obesity

- **Public Awareness and Structured Communication**: A nationwide science-based awareness campaign should highlight obesity as a disease contributing to diabetes, cardiovascular diseases, and liver disorders.
- **Improving Urban Infrastructure for Physical Activity**: Government policies must encourage bicycle lanes, open gymnasiums, and access to parks to facilitate regular physical activity.
- **Inter-Ministerial Coordination for Nutrition Programs**: Policies should involve health, education, urban planning, finance, and agriculture ministries to create a national 'Suposhan Abhiyan', focusing on mindful eating, micronutrient supplementation, and obesity prevention.
- **Regulating HFSS and UPF Consumption:** Higher taxation on ultra-processed foods and sugary drinks. Subsidies for healthier foods, including fruits, vegetables, and whole grains. Regulating food advertisements targeting children.
- **Workplace and School-Based Interventions**: Workplaces should incorporate regular weight assessments and awareness campaigns on obesity prevention. Schools should serve nutritious food in canteens, introduce mandatory physical activity programs, and adopt best practices from countries like Japan, where dietitians are part of school networks.

Conclusion

A comprehensive national strategy involving taxation on unhealthy foods, urban infrastructure reforms, workplace and school-based programs, and public health campaigns is essential to reduce obesity rates and ensure a healthier, more productive India.

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"China's dominance in the global critical minerals supply chain poses strategic and economic challenges for India. Discuss the need for India to secure its supply of critical minerals and suggest policy measures to reduce dependency on China."

Introduction: Contextual Introduction
Body: Need for India to secure a supply of critical minerals and measures to reduce dependency on China.
Conclusion: Way forward

China's dominance in the global critical minerals supply chain, backed by its Belt and Road Initiative (BRI), poses significant strategic and economic challenges for India.

Need for India to Secure Its Critical Minerals Supply

- **Strategic Vulnerabilities and Geopolitical Risks:** China's control over lithium, cobalt, and rare earth elements (REEs) gives it leverage over India's green energy and defense industries. Chinese firms acquire global mines through state-backed loans and joint ventures (JVs), ensuring supply chains remain under Beijing's control.
- **Energy Transition and Manufacturing Goals**: India's National Electric Mobility Mission and Renewable Energy Targets (500 GW by 2030) require stable access to lithium and REEs. Without a secure supply, India risks dependence on Chinese firms for solar panels, wind turbines, and electric vehicle (EV) batteries.
- **Economic Self-Reliance and Industrial Growth:** China's financing model, which involves subsidized loans and state-backed investments, enables it to dominate mining in Africa and Latin America. India's National Critical Minerals Mission remains in its early stages, making strategic acquisitions crucial to securing long-term resource security.

Policy Measures to Reduce Dependency on China

- **Strengthening Global Partnerships**: India should leverage the Quad (U.S., Japan, Australia, India) for joint ventures in Australia and Africa, ensuring diversified mineral sourcing. Partner with resource-rich nations like Chile, Brazil, and Zimbabwe, offering technology transfers and sustainable mining models to counter China's control.
- **Boosting Domestic Exploration and Mining**: Expedite mining in Rajasthan (lithium), Odisha (REEs), and Karnataka (nickel, cobalt). Strengthen Khanij Bidesh India Ltd. (KABIL) to compete with China's $56.9 billion BRI-backed mineral acquisitions.
- **Developing Refining and Processing Infrastructure**: India currently lacks significant domestic processing capabilities—even when raw materials are sourced from abroad, refining often happens in China. Government incentives should encourage public-private partnerships in mineral refining, reducing reliance on Chinese processing plants.
- **Strategic Investment in Overseas Mining**: Indian firms, such as Coal India and ONGC Videsh, should expand investments in Latin American lithium mines and African cobalt reserves. Establish sovereign-backed mining funds to finance acquisitions, reducing dependence on commercial lending.
- **Leveraging Recycling and Circular Economy**: Develop urban mining to extract lithium and rare earths from e-waste and used EV batteries. Invest in battery recycling technologies to reduce fresh mineral demand and enhance self-sufficiency.

Conclusion

To reduce dependency on China, India must diversify mineral imports, enhance domestic production, and expand refining infrastructure. Strengthening Quad partnerships, South-South cooperation, and the National Critical Minerals Mission will help India secure its critical minerals supply and maintain strategic autonomy in emerging industries.

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Discuss the implications of linking Aadhaar with the Election Photo Identity Card (EPIC) for electoral integrity in India. Analyze the potential benefits and concerns associated with this initiative.

> **Introduction:** Contextual Introduction
> **Body:** Highlight the potential benefits and concerns associated with linking Aadhaar with EPIC.
> **Conclusion:** Way forward

The integrity of India's electoral system relies on public confidence and the credibility of the Election Commission of India (ECI).

Potential Benefits of Aadhaar-EPIC Linkage

- **Elimination of Duplicate and Multiple Voter Registrations:** The issue of voters being registered in multiple states—potentially allowing them to vote more than once—can be addressed through Aadhaar linkage, ensuring a single voter identity.
- **Enhanced Electoral Integrity**: By making EPIC numbers unique and linking them to Aadhaar, electoral rolls can be updated accurately, reducing inconsistencies like the recent 48 lakh voter increase in Maharashtra.
- **Prevention of Electoral Fraud**: With biometric verification, the possibility of impersonation or bogus voting is minimized, bolstering trust in the electoral process.
- **Streamlining Voter Registration**: Aadhaar-based authentication can make voter registration more efficient, particularly for internal migrants, ensuring that they are registered only in their place of residence.

Concerns and Challenges

- **Aadhaar Identifies Residents, Not Citizens**: Since Aadhaar is issued to residents and not exclusively to Indian citizens, linking it to voter IDs does not guarantee that only eligible citizens are included in the electoral rolls. Additional proof of citizenship would be required.
- **Risk of Data Misuse and Voter Profiling**: Storing Aadhaar details in electoral rolls could lead to concerns over surveillance and targeted political profiling, potentially undermining voter privacy.
- **Technological and Authentication Failures**: Biometric authentication is not foolproof and has been known to exclude genuine individuals due to fingerprint mismatches, connectivity issues, or Aadhaar-related errors. This could lead to the disenfranchisement of eligible voters.
- **Legal and Constitutional Issues**: The Supreme Court's ruling in _K.S. Puttaswamy v. Union of India (2017_) upheld privacy as a fundamental right, raising concerns about whether making the Aadhaar linkage mandatory for voting would violate this right.
- **Political Trust Deficit in the ECI**: The lack of transparency in voter registration, as highlighted in recent State elections, suggests that Aadhaar linkage alone will not restore confidence in the electoral process unless accompanied by robust verification mechanisms and independent oversight.

Conclusion

While Aadhaar-EPIC linkage could help in eliminating duplicate voters and strengthening electoral integrity, it is not a panacea. The ECI must ensure that Aadhaar-based de-duplication is supplemented with alternative identity verification to prevent wrongful exclusions. Additionally, concerns over privacy, misuse, and the distinction between residents and citizens must be addressed through legislative safeguards and technological improvements. A balanced approach—ensuring both electoral accuracy and voter inclusivity—is essential to uphold India's democratic processes.

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Discuss the role of India's proposed AI Safety Institute (AISI) in ensuring the responsible development and deployment of artificial intelligence. How can India balance indigenous AI safety frameworks with global collaboration?

Introduction: Contextual Introduction
Body: Highlight the role of India's proposed AI Safety Institute (AISI) in ensuring the responsible development and deployment of artificial intelligence
Conclusion: Way forward

As AI adoption accelerates worldwide, ensuring its safe and ethical use is crucial. Recognizing this, India has proposed an AI Safety Institute (AISI) under the Safe and Trusted AI pillar of the IndiaAI Mission. This initiative aims to create India-specific AI safety solutions while aligning with global AI governance frameworks.

Role of AISI in AI Safety and Governance

- **Developing Indigenous AI Safety Frameworks**: AISI will focus on AI safety measures suited to India's socioeconomic diversity, addressing biases, linguistic inclusivity, and accessibility.
- **Addressing AI Risks and Ethical Challenges**: It will work on issues such as AI inaccuracy, misinformation, and bias mitigation, ensuring fairness and transparency.
- **Strengthening AI Research and Innovation**: By leveraging Indian datasets and responsible AI projects, AISI will develop watermarking, deepfake detection, and ethical AI tools.
- **Collaboration with Academia and Industry**: AISI will operate on a hub-and-spoke model, engaging startups, academic institutions, and policymakers to advance indigenous AI research.
- **Enhancing AI Governance and Policy Development**: It will assist in creating standardized regulations to ensure AI safety in critical sectors such as healthcare, finance, and public administration.

Balancing Indigenous Frameworks with Global Collaboration

- **Engagement with Global AISI Networks:** India must actively participate in global AI safety initiatives like the Bletchley Declaration to address cross-border AI threats.
- **Developing a Standardized AI Safety Taxonomy**: AISI should work towards a unified terminology for AI risks, enabling better coordination between policymakers, developers, and legal experts.
- **International Notification Framework for AI Models**: Establishing a framework for transparent AI model development will help monitor risks and share safety assessments globally.
- **Championing AI Safety in the Global South**: Given its leadership role, India can help developing nations formulate AI safety frameworks and bridge the digital divide.
- **Adopting Global Best Practices While Ensuring Local Relevance**: While aligning with OECD AI Principles and UN AI ethics guidelines, India must tailor AI regulations to its unique needs, ensuring inclusivity and equitable AI deployment.

Conclusion

India's AISI must ensure that AI development is safe, transparent, and inclusive. By integrating indigenous research with global AI governance mechanisms, India can strengthen its AI ecosystem while contributing to a global framework for AI safety.

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The India-Qatar relationship has evolved beyond energy trade into a multi-faceted strategic partnership. Discuss the key areas of cooperation and analyze their strategic significance for both nations.

Introduction: Contextual Introduction
Body: Highlight key areas of cooperation and analyze their strategic significance for both nations.
Conclusion: Way forward

India and Qatar have traditionally shared strong economic ties, primarily centered around energy trade. However, the recent visit of Sheikh Tamim bin Hamad Al Thani, the Amir of Qatar, to India underscores the transformation of this relationship into a multi-faceted strategic partnership.

Key Areas of Cooperation

- **Energy Cooperation and Transition to Renewables:** Qatar remains India's largest supplier of LNG, accounting for over 48% of its imports. Both nations are expanding their energy partnership into green hydrogen, solar and wind energy, and carbon capture and storage (CCS).
- **Economic and Investment Ties:** The Qatar Investment Authority (QIA) has committed an additional $10 billion to Indian infrastructure, startups, and renewable energy. Qatar has expressed interest in negotiating a Comprehensive Economic Partnership Agreement (CEPA) with India.
- **Defense and Security Cooperation**: Both nations have enhanced cooperation in counterterrorism, cybersecurity, and intelligence sharing. Maritime security cooperation is critical, given Qatar's strategic location along major global trade routes.
- **Healthcare, Education, and Technology Collaboration:** India seeks to expand its exports of pharmaceuticals and medical devices to Qatar. Both nations are keen on collaboration in emerging technologies, startups, and artificial intelligence (AI).
- **People-to-People Ties and Labour Relations:** The Indian diaspora in Qatar exceeds 830,000 and plays a crucial role in the Qatari economy. Qatar has introduced labour reforms, including a non-discriminatory minimum wage and streamlined grievance redressal mechanisms.

Strategic Significance for Both Nations

- **For India:** The deepening India-Qatar partnership ensures long-term energy security for India, particularly amid its rising energy demand, by securing stable LNG supplies and expanding cooperation in renewable energy. Additionally, Qatar's increased investments bolster India's infrastructure and startup ecosystems, fostering economic growth and job creation. The collaboration also strengthens maritime security, enhancing India's strategic presence in West Asia and ensuring the safety of crucial trade routes.
- **For Qatar:** Qatar secures a stable market for its LNG exports while diversifying its economy through investments in India. It benefits from India's expertise in technology, healthcare, and education, enhancing its sectors. Strengthening ties with India also boosts Qatar's regional influence.

Conclusion

The India-Qatar relationship exemplifies how pragmatic diplomacy and economic interdependence can overcome challenges and strengthen strategic ties. As both nations move towards a more diversified and sustainable partnership, further collaborations in trade, technology, and security will solidify their bilateral ties, making them key players in the evolving geopolitics of West Asia and the Indian Ocean region.

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Delimitation is a crucial exercise in a democracy, yet it raises concerns about gerrymandering and regional imbalances. Discuss the need for delimitation in India and analyze its potential benefits and challenges.

> **Introduction:** Contextual Introduction
> **Body:** Highlight the need for delimitation in India & Challenges and Concerns arising from this.
> **Conclusion:** Way forward

Delimitation, the process of redrawing electoral boundaries to reflect demographic changes, is a crucial aspect of representative democracy.

Need for Delimitation in India

- **Correcting Malapportionment** – The current freeze on delimitation, in place since 1976, has resulted in an imbalance where states with slower population growth, primarily in the South, enjoy higher representation than their population warrants, while populous states like Uttar Pradesh and Bihar remain underrepresented.
- **Reflecting Demographic Shifts** – India's population has changed significantly since the last delimitation, necessitating updated constituency boundaries to maintain equitable representation.
- **Ensuring Political Equality** – The principle of "one person, one vote" is weakened when constituency sizes vary widely in population, affecting democratic fairness.
- **Empowering Marginalized Groups** – The representation of Scheduled Castes (SCs), Scheduled Tribes (STs), and women remains inadequate due to outdated seat allocations based on the 2001 Census. A fresh delimitation can correct this underrepresentation.
- **Enhancing Participatory Democracy** – Expanding the number of seats in the Lok Sabha, as suggested by political experts, could ensure fairer representation without diminishing any state's current parliamentary strength.

Challenges and Concerns

- **Regional Disparities** – Delimitation could shift power to the Hindi heartland, causing concerns in southern states that have successfully controlled population growth and contribute more to the central treasury.
- **Potential Gerrymandering** – Political manipulation of constituency boundaries could distort representation and undermine democratic fairness.
- **Intra-State Inequalities** – The process must account for factors beyond population, such as urbanization and economic contributions, to avoid reinforcing economic and political disparities.
- **Delayed Women's Representation** – The Women's Reservation Bill (2023) is tied to the next delimitation exercise, delaying gender parity in legislative bodies until at least 2029.
- **Judicial Non-Intervention** – The Supreme Court has upheld the finality of delimitation orders, limiting avenues for legal challenges against unfair seat allocations.

Way Forward

- **Consensus-Driven Approach** – A broad political consensus is essential to ensure that delimitation enhances, rather than disrupts, India's democratic framework.
- **Expanding Lok Sabha Strength** – Instead of redistributing existing seats, increasing parliamentary seats could accommodate demographic shifts without diminishing representation for any region.
- **Strengthening Rajya Sabha** – Reforming the Rajya Sabha's role could provide a counterbalance to the North-South power shift and ensure fairer federal representation.
- **Devolving Power to States** – Linking delimitation to greater devolution of power can strengthen local governance and mitigate fears of regional dominance.

Conclusion

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A well-structured approach that balances demographic realities with federal equity can enhance India's democratic longevity, ensuring that political representation remains just and inclusive.

Discuss the challenges faced by women due to inadequate workplace facilities and suggest policy measures to create a more inclusive work environment.

Introduction: Contextual Introduction
Body: Challenges faced by women due to inadequate workplace facilities and suggested policy measures.
Conclusion: Way forward

Workplace infrastructure plays a crucial role in determining women's participation in the workforce. However, the lack of gender-inclusive facilities, especially safe and hygienic washrooms, remains a major barrier.

Challenges Faced by Women Due to Inadequate Workplace Facilities

- **Lack of Safe and Hygienic Toilets:** Many public and workplace restrooms lack basic amenities such as running water, secure locking systems, and proper lighting, compromising women's safety, dignity, and health.
- **Disproportionate Impact on Marginalized Groups:** Transgender individuals face even greater challenges, as they often face discrimination when accessing both men's and women's restrooms.
- **Restricted Workforce Participation:** The absence of gender-inclusive sanitation facilities forces women to leave jobs requiring long working hours outside the home.
- **Vulnerability to Harassment:** Poorly maintained or absent toilets increase women's exposure to harassment, as seen in reports from UP police stations and hospitals, where female personnel struggle with inadequate sanitary facilities.
- **Health Issues:** Holding in urine for long hours due to a lack of safe restrooms leads to urinary tract infections (UTIs) and other health complications, further deterring women from participating in the workforce.

Policy Measures for a More Inclusive Work Environment

- **Mandatory Gender-Inclusive Toilets:** Governments must enforce strict regulations ensuring that all workplaces, public institutions, and urban spaces provide clean and safe restrooms with secure locking systems, proper lighting, and running water.
- **Integration with Sustainable Development Goals (SDG 6):** Sanitation should be recognized as a fundamental right, with targeted policies ensuring equitable access for women, girls, and vulnerable groups. This includes providing sanitary napkin vending machines and disposal systems.
- **Improved Urban Planning:** City infrastructure should prioritize gender-sensitive sanitation, ensuring that women's needs are central to planning and funding decisions.
- **Workplace and Institutional Mandates:** Employers should be required to provide clean, gender-inclusive washrooms with separate facilities for women and trans individuals in offices, factories, and educational institutions.
- **Public-Private Partnerships:** Collaboration between governments, corporations, and NGOs can help fund and maintain hygiene infrastructure, ensuring long-term sustainability.
- **Community Participation and Monitoring:** Regular audits, strict monitoring mechanisms, and public feedback systems should be implemented to ensure that facilities remain functional and meet evolving needs.

Conclusion

Ensuring access to gender-inclusive sanitation is a fundamental step toward achieving gender equality, enhancing women's mobility, and enabling economic empowerment. Decision-makers must recognize that

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sanitation is not just about convenience but a critical determinant of dignity, safety, and participation in public life.

The prevalence of the 'sarpanch-pati' culture undermines grassroots democracy and women's political empowerment in India. Discuss the challenges posed by proxy leadership in panchayats and suggest measures to ensure genuine agency for elected women representatives.

Introduction: Contextual Introduction
Body: Challenges faced by women in panchayats and suggest measures to ensure genuine agency for elected women representatives.
Conclusion: Way forward

The Panchayati Raj Institutions (PRIs) were introduced with the vision of inclusive governance, reserving 33-50% of seats for women to ensure their active participation. However, the 'sarpanch-pati' culture, where male relatives wield de facto power, has hindered the realization of this goal.

Challenges Posed by Proxy Leadership

- **Erosion of Democratic Principles** – The essence of decentralized governance is compromised as elected women representatives remain mere figureheads.
- **Lack of Decision-Making Power** – Many women sarpanches lack the necessary training and are sidelined by male family members who take control of governance matters.
- **Systemic Weaknesses and Bureaucratic Apathy** – Government officials often display dismissive attitudes toward women leaders, limiting their ability to function independently.
- **Educational Barriers** – A significant number of elected women representatives have low literacy levels, making it difficult for them to navigate governance structures.
- **Financial Constraints** – The low honorarium for sarpanches in many states discourages serious participation and reduces their autonomy.
- **Lack of Mobility and Access to Technology** – Dependence on male relatives for transportation and digital access further restricts women's independence in governance.

Measures to Ensure Genuine Agency

- **Capacity Building and Training –** Mandatory high-quality training on governance, budgeting, and digital literacy. Quarterly workshops for at least two years post-election to ensure sustained support.
- **Legal and Institutional Reforms –** Enforcement of laws penalizing proxy leadership. Mandatory intervention by government functionaries to ensure women speak for themselves in meetings.
- **Minimum Education Qualification –** Introducing a 12th-grade qualification criterion to enable better governance capabilities.
- **Financial and Logistical Support –** Increased honorarium and proper remuneration for sarpanches. Provision of official transport and smartphones for independent access to governance tools.
- **Monitoring and Whistleblower Mechanisms –** Real-time oversight by government officials through digital platforms such as WhatsApp groups. A well-structured reporting system to prevent misuse of proxy leadership complaints for political vendetta.
- **Promoting Positive Role Models –** Encouraging successful women sarpanches to mentor new representatives. Recognition and incentivization of genuinely empowered women leaders.

Conclusion

Ensuring genuine agency for women in panchayats is crucial for achieving a truly inclusive democracy. While reservations have increased women's numerical representation, structural and societal reforms are needed to transform them into independent decision-makers. With the right support, women sarpanches can lead transformational change, prioritizing development issues that impact marginalized communities the most.

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"An equitable future for women in science is essential for India's scientific and technological progress." Discuss the key challenges faced by women in science in India and suggest measures to ensure their full inclusion.

Introduction: Contextual Introduction
Body: Highlight challenges faced by women in science in India & measures to ensure their full inclusion
Conclusion: Way forward

Women in India face a "minefield" of challenges in STEM fields, often starting early due to educational barriers, societal expectations, and workplace discrimination.

Key Challenges Faced by Women in Science in India

- **Educational Barriers and Early Attrition**: Limited access to quality STEM education, especially in rural areas. Gender norms discourage girls from pursuing science, creating an early disadvantage.
- **Cultural and Familial Expectations**: Women face pressure to prioritize family responsibilities over career growth. Career breaks for childbirth and caregiving affect research continuity.
- **Gender Bias in Hiring, Promotions, and Funding**: Women constitute only 17% of faculty in STEM across 98 institutions in India. Representation is even lower in higher-ranked institutions and leadership roles. Women scientists are often overlooked for grants, conferences, and career-enhancing opportunities.
- **Harassment and Non-Inclusive Work Environments**: Academic settings often pose hostile conditions, discouraging retention. Safety concerns, lack of institutional support, and exclusion from research networks further alienate women.
- **Leaky Pipeline and Career Transitions**: The postdoc-to-faculty transition is particularly difficult due to low confidence, familial responsibilities, and lack of role models. Structural barriers lead to higher dropout rates, described by models like the "Leaky Pipeline" and "Chutes and Ladders".

Measures to Ensure Full Inclusion of Women in Science

- **Institutional Reforms for Gender Equity**: Expanding policies like flexible work options, affordable childcare, and work-family integration. Ensuring transparent hiring, promotions, and research funding to eliminate gender bias. Strengthening initiatives like BiasWatchIndia to expose disparities and demand accountability.
- **Enhancing Representation and Leadership Opportunities**: Increasing the proportion of women in senior roles and decision-making committees. Encouraging mentorship networks and re-entry programs for women returning from career breaks.
- **Recognizing and Showcasing Women's Achievements**: Highlighting success stories of women in STEM to challenge stereotypes and inspire young girls. Addressing the Matilda Effect to ensure women receive due credit for scientific contributions.
- **Strengthening Government Initiatives**: Scaling up programs like GATI (Gender Advancement for Transforming Institutions) and WISE-KIRAN. Expanding Women Scientists Scheme (WOS) and BioCARe to support career continuity. Implementing age-neutral grant policies to accommodate career interruptions.
- **Creating Inclusive and Safe Work Environments**: Strengthening anti-harassment policies and grievance redressal mechanisms. Providing safe research spaces, fieldwork support, and transport facilities for women.

Conclusion

An inclusive and diverse scientific workforce is essential for India's technological leadership and innovation. India must scale existing efforts, recognize women's scientific contributions, and foster a more inclusive STEM ecosystem—setting a powerful global example in gender equity.

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"Bold government policies have significantly contributed to the empowerment of women in India. However, sustaining this momentum requires a more inclusive and holistic approach." Discuss the key achievements of government-led policies in women's empowerment and suggest measures to ensure long-term progress.

Introduction: Contextual Introduction **Body:** Achievements of government policies in women's empowerment & measures for long-term progress. **Conclusion:** Way forward

The Indian government has undertaken bold policy initiatives to empower women across multiple dimensions—sanitation, financial inclusion, entrepreneurship, and governance.

Key Achievements of Government-Led Policies in Women's Empowerment

- **Swachh Bharat Abhiyan (SBM):** The mission not only eliminated open defecation but also enhanced women's safety, dignity, and health.
- **Jal Jeevan Mission (JJM):** The mission increased rural tap water access from 17% to over 150 million households. This reduced the burden on women, freeing time for education and economic activities.
- **Startup India Initiative:** Over 73,000 startups with women in leadership positions have been recognized, showcasing an increasing presence of women in business.
- **Digital and Financial Connectivity:** BharatNet and PM-WANI have expanded internet access to rural areas, enabling financial inclusion. Over 300 million women now have Jan Dhan accounts, enhancing their economic participation.
- **Legislative Reservation:** The 33% reservation in legislatures ensures greater political representation for women, fostering gender-sensitive policymaking.
- **STEM and Leadership Roles**: Women constitute 43% of STEM graduates and are making significant contributions to science, technology, and innovation.

Measures to Ensure Long-Term Progress

- **Strengthening Implementation and Awareness**: Increase grassroots awareness and monitoring mechanisms to ensure that policies reach marginalized women. Expand training programs for women in financial literacy, digital skills, and governance.
- **Bridging Economic and Social Gaps**: Extend credit and market access for women entrepreneurs in rural and semi-urban areas. Promote gender-sensitive workplace policies to boost women's workforce participation.
- **Enhancing Digital and Technological Inclusion:** Strengthen digital literacy programs to enable more women to leverage financial and entrepreneurial opportunities. Ensure equitable internet access to close the digital divide in rural areas.
- **Encouraging Women's Leadership Beyond Quotas**: Capacity-building programs for women in leadership positions, including mentorship initiatives. Expand reservations to private sector boards and senior government positions.
- **Targeting Social Norms and Cultural Barriers:** Nationwide campaigns to address gender biases in education, employment, and leadership. Strengthening legal frameworks to protect women from workplace discrimination and violence.

Conclusion

India's progress in women's empowerment through bold government policies is commendable. However, to sustain this momentum, a holistic approach that includes social transformation, economic support, and policy reinforcement is essential. By fostering an enabling environment for women in all spheres, India can ensure that empowerment is not just a policy goal but a lived reality for generations to come.

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Closing the gender gap in the higher judiciary is essential for ensuring true representation and justice in India." Discuss the challenges faced by women in the higher judiciary and suggest measures to enhance their representation.

Introduction: Contextual Introduction
Body: Challenges faced by women in the higher judiciary and suggest measures to enhance their representation.
Conclusion: Way forward

The representation of women in India's higher judiciary remains significantly low, despite progress in legal education and lower judiciary appointments. While the first woman lawyer, Cornelia Sorabji, entered the profession in 1924, gender disparities continue at the High Court and Supreme Court levels.

Challenges Faced by Women in the Higher Judiciary

- **Low Representation and Delayed Appointments** – Women constitute only 14.27% of High Court judges, with some High Courts having just one or no woman judge. In the Supreme Court, only two women judges serve currently, with no new female appointments since 2021. Women are also appointed at a later age than men, limiting their rise to senior positions.
- **Opaque Collegium System** – The lack of transparent selection criteria disproportionately affects women. The Collegium, often male-dominated, fails to actively nominate meritorious women lawyers. Additionally, even when recommended, women's names face higher rejection rates by the government.
- **Systemic Bias and Stereotyping** – Women in the legal profession encounter heightened scrutiny and must prove merit more than their male counterparts. Gender biases within the judiciary and legal fraternity act as barriers to elevation.
- **Lack of Institutional Support** – Challenges such as work-life balance, gender-insensitive infrastructure, and insufficient mentorship discourage women from pursuing long-term judicial careers.

Measures to Enhance Women's Representation

- **Transparent Appointment Process** – The collegium must establish clear, merit-based selection criteria and allow lawyers to apply for judgeship, ensuring fairness.
- **Gender Diversity as a Stated Goal** – Similar to considerations for state-wise, caste, and religious representation, gender diversity should be explicitly factored into appointments. At least one-third of higher judiciary positions should be reserved for women.
- **Reforming Collegium Practices** – Collegium members should actively identify and nominate competent women for elevation and push back against unjustified rejections.
- **Encouraging Women in the Legal Profession** – Law schools, Bar Councils, and legal firms should foster female leadership, increasing the pool of potential judges.
- **Workplace Reforms –** Gender-friendly court environments, flexible policies, and mentorship programs will facilitate career progression for women.

Conclusion

Judicial inclusivity strengthens constitutional values and enhances public trust. As Justice Indira Banerjee stated, women's appointments must be normalized rather than seen as exceptions. Proactive reforms in judicial appointments will ensure a competent, diverse, and representative higher judiciary in India.

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The India-Mauritius relationship is deeply rooted in historical, cultural, and strategic ties. In light of the Indian Prime Minister's forthcoming visit, discuss the significance of this relationship and the key areas where cooperation can be strengthened.

> **Introduction:** Contextual Introduction
> **Body:** Discuss the significance of this relationship and the key areas where cooperation can be strengthened.
> **Conclusion:** Way forward

The India-Mauritius relationship is deeply rooted in shared history, cultural ties, economic interdependence, and strategic collaboration. Prime Minister Narendra Modi's visit in March 2025 underscores the importance of this partnership in an era of geopolitical uncertainty.

Significance of India-Mauritius Relations

- **Historical and Cultural Ties –** With nearly 70% of Mauritius' population of Indian origin, the two nations share a deep cultural and linguistic connection. The Mahatma Gandhi Institute and the World Hindi Secretariat reflect India's commitment to preserving these ties.
- **Political Continuity –** Despite political transitions in Mauritius, relations with India have remained strong, with past leaders, including Navinchandra Ramgoolam and his father, Sir Seewosagur Ramgoolam, being sensitive to India's security concerns.
- **Economic and Financial Hub –** Mauritius serves as a gateway to Africa, offering preferential trade agreements and a well-developed financial sector, with bilateral trade reaching $554 million in 2022-23. The Double Taxation Avoidance Agreement (DTAA) has facilitated foreign investments between the two countries.
- **Maritime and Security Cooperation –** Mauritius plays a crucial role in India's Indian Ocean security architecture through initiatives like the Colombo Security Conclave and Agaléga surveillance facilities, which counter the growing Chinese influence in the region.

Key Areas for Strengthening Cooperation

- **Maritime Security & Defense** – Enhancing domain awareness, coastal radar networks, and joint naval exercises to secure the Western Indian Ocean.
- **Economic and Trade Expansion** – Strengthening investment frameworks, trade partnerships, and infrastructure development.
- **Strategic Connectivity & Infrastructure** – Continuing India's support in developing ports, smart cities, and digital infrastructure.
- **Financial and Business Linkages** – Leveraging Mauritius as a bridge for Indian businesses entering Africa, particularly in Francophone regions.
- **Cultural and Educational Cooperation** – Expanding language promotion, scholarships, and academic exchanges.

Conclusion

India-Mauritius ties must remain a stable pillar in an evolving global landscape, ensuring mutual security, economic growth, and regional stability.

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With Jammu and Kashmir witnessing increasing private-sector interest, discuss the potential of tourism and horticulture in driving economic transformation in the region. What policy measures are needed to sustain and accelerate this growth?

Introduction: Contextual Introduction
Body: Highlight the role of tourism and horticulture in driving economic transformation in the region.
Conclusion: Way forward

Jammu and Kashmir (J&K) is undergoing a significant economic transformation, marked by increasing private-sector interest and infrastructural development. Strategic projects like the Sonmarg Tunnel, Vande Bharat connectivity, and private investments in manufacturing indicate a shift towards self-sustained growth.

Role of Tourism in Economic Transformation

- **Enhanced Connectivity:** New rail and road infrastructure, including the highest rail bridge over the Chenab, is making remote areas like Gool, Sangaldan, and Khari accessible, boosting tourism potential.
- **Expansion of Tourist Destinations:** Traditional hubs like Gulmarg and Pahalgam are seeing increased footfalls, while hidden gems like Bani, Dudu Basantgarh, and Gurez are being unlocked for tourism.
- **Diversification of Tourism Offerings:** To maximize returns, J&K must focus on high-value tourism—weddings, golf circuits, wellness resorts, and craft tourism—leveraging its natural beauty and cultural heritage.
- **Sustainable Tourism Strategy:** Expansion must be complemented with improved infrastructure (hotels, sanitation, transport) and ecological conservation to prevent environmental degradation.

Role of Horticulture in Economic Transformation

- **Improving Yields:** Apple production, the backbone of J&K's horticulture, lags behind global leaders like Italy and New Zealand. Intensive orcharding and high-yielding varieties can improve productivity.
- **Value Addition:** Instead of merely exporting raw produce, investments in post-harvest processing, cold chains, and food processing parks can capture greater value.
- **Expanding High-Value Crops:** With growing global demand for organic products, J&K can capitalize on saffron, walnuts, and exotic berries, significantly increasing its horticulture sector's current ₹10,000 crore value.

Challenges and Required Policy Measures

- **Infrastructure and Investment Climate:** Availability of land and essential utilities for businesses. Strengthening governance capacities to ensure faster approvals and investor-friendly policies.
- **Private Sector Participation:** Active encouragement of local entrepreneurs. Leveraging the New Industrial Development Scheme to attract long-term private investments.
- **Skill Development and Capital Access:** Establishing training centers for tourism, horticulture, and modern business practices. Improving access to credit and financial incentives for small and medium enterprises.
- **Ecological and Sustainable Development:** Stringent regulations to maintain ecological balance. Carrying capacity assessments for tourism hotspots to prevent overexploitation.

Conclusion

J&K is at the threshold of an economic resurgence, driven by targeted public investment, strategic infrastructure growth, and growing private-sector confidence. Tourism and horticulture can become the twin engines of this transformation, provided there is a strong policy framework ensuring sustainability, innovation, and ease of doing business.

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Discuss how access to digital technologies and small interventions have empowered women in agriculture. What challenges remain in ensuring equitable technological access for women farmers in India?

Introduction: Contextual Introduction
Body: Highlight how access to digital technologies and small interventions have empowered women in agriculture & challenges remain in ensuring equitable technological access for women farmers.
Conclusion: Way forward

India's agri-food systems—encompassing agriculture, livestock rearing, agroforestry, and fisheries—depend significantly on women's paid and unpaid labor.

How do Digital Technologies and Small Interventions Empower Women in Agriculture?

- **Enhancing Productivity and Reducing Workload**: Traditionally, women are assigned physically strenuous and time-consuming tasks like weeding, threshing, and de-hulling. Gender-responsive mechanization reduces workload, allowing women to focus on higher-value agricultural activities.
- **Improving Market Access and Decision-Making**: Digital tools like mobile apps, helplines, and advisories provide women with real-time market and weather information, enabling better crop planning and resource allocation.
- **Financial Inclusion and Economic Empowerment**: Women often struggle with poor access to credit and financial resources, limiting their ability to invest in modern farming. Digital payment systems and e-commerce platforms allow women fish vendors and farmers to conduct business transactions independently, reducing dependence on intermediaries.
- **Challenging Patriarchal Norms and Gender Barriers**: By training women to operate agricultural machinery, small interventions challenge deep-seated gender biases, enabling women to take on leadership roles in farming. Access to information and technology strengthens women's ability to break traditional barriers and exercise autonomy.

Challenges in Ensuring Equitable Technological Access for Women Farmers

- **Digital Divide and Literacy Barriers:** Many rural women lack digital literacy, limiting their ability to use mobile apps and online services effectively. Limited access to smartphones and internet connectivity further exacerbates the gap.
- **Socio-Cultural Constraints and Patriarchal Resistance:** Women's participation in decision-making remains restricted due to societal norms. Household-level investments often prioritize technologies that benefit men, sidelining women's specific needs.
- **Limited Policy Support and Institutional Barriers:** Government policies and agricultural extension services often fail to address gender-specific challenges. Women's lack of land ownership (only 13% of rural women own land) restricts their access to credit and agricultural schemes.
- **Economic and Structural Challenges:** Mechanization in agriculture and fisheries has led to job losses for women, pushing them into more precarious and informal labor. The growing presence of large buyers and export traders in fish markets has marginalized small-scale women vendors, reducing their access to fish supplies and fair pricing.

Conclusion

A multi-stakeholder approach—integrating government policies, community-driven initiatives, and private-sector innovations—is essential to ensure inclusive and equitable technological access for women farmers in India.

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Examine the challenges India faces in negotiating a trade agreement with the U.S. while ensuring compliance with WTO laws. How can India balance its strategic interests without succumbing to external pressure?

Introduction: Contextual Introduction
Body: Highlight the challenges India faces in negotiating a trade agreement with the U.S. while ensuring compliance with WTO laws.
Conclusion: Way forward

The proposed India-U.S. Bilateral Trade Agreement (BTA), announced during Prime Minister Narendra Modi's visit to the U.S. on February 13, 2025, marks a significant step in bilateral trade relations. However, given that both countries are members of the World Trade Organization (WTO), the agreement must align with WTO norms, particularly the Most Favoured Nation (MFN) principle and Article XXIV of the General Agreement on Tariffs and Trade (GATT).

Challenges in Negotiating the BTA

- **MFN Principle and Trade Preferences –** WTO law mandates that trade benefits granted to one country must be extended to all WTO members unless covered under an FTA or an exception. If India and the U.S. selectively reduce tariffs without forming an FTA, it would violate MFN rules.
- **Legal Validity of a Limited-Scope BTA –** For the BTA to comply with WTO laws, it must either:
  - Cover "substantially all trade" as per Article XXIV of GATT, or
  - Be notified as an "interim agreement" with a clear roadmap towards an FTA.
- **Avoiding Political Expediency –** If the BTA is used as a political tool to delay trade liberalization rather than as a genuine step towards an FTA, it could face legal scrutiny at the WTO.
- **Implications of the 'Enabling Clause' –** The enabling clause permits preferential treatment for developing countries, but the BTA does not qualify, as India is reducing tariffs on U.S. products, not vice versa.
- **U.S. Pressure on Trade Terms –** The U.S. has historically pushed for greater market access in India while restricting Indian exports through measures like high tariffs and visa barriers, making negotiations asymmetric.

Balancing Strategic Interests

- **Leveraging WTO Mechanisms –** India should ensure that the agreement follows WTO dispute resolution protocols and aligns with multilateral trade commitments.
- **Seeking Reciprocal Benefits –** Instead of unilaterally reducing tariffs, India must negotiate favorable terms, particularly in IT services, pharmaceuticals, and agricultural exports.
- **Strengthening Trade Diversification –** Expanding trade partnerships beyond the U.S. can prevent over-dependence and enhance India's bargaining power.
- **Defending Rule-Based Trade Order –** India, as a proponent of multilateralism, must resist attempts to erode WTO principles, such as the U.S. push for "reciprocal tariffs."

Conclusion

India must ensure that its trade negotiations with the U.S. do not compromise WTO commitments or national economic interests. A legally sound and strategically balanced approach—focused on long-term trade benefits, reciprocity, and WTO compliance—will be crucial in shaping an equitable and sustainable India-U.S. trade agreement.

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Discuss the strategic significance of Mauritius in India's Indian Ocean policy. How does India's engagement with Mauritius align with its broader geopolitical interests in the region?

> **Introduction:** Contextual Introduction
> **Body:** Highlight the strategic significance of Mauritius in India's Indian Ocean policy & how India's engagement with Mauritius aligns with its broader geopolitical interests in the region.
> **Conclusion:** Way forward

Mauritius, often referred to as the "Star and Key of the Indian Ocean," holds immense strategic importance for India due to its geographic location, historical ties, and geopolitical influence. Prime Minister Modi's recent visit underscores India's commitment to strengthening its partnership with Mauritius, particularly in the context of growing global interest in the Western Indian Ocean.

Strategic Significance of Mauritius for India

- **Maritime Security and SAGAR Initiative**: Mauritius plays a crucial role in India's Security and Growth for All in the Region (SAGAR) initiative, ensuring maritime stability in the Indian Ocean. India's development of logistics infrastructure on Agaléga Island enhances its maritime surveillance capabilities, countering China's expanding naval footprint.
- **Geopolitical Contestation and China's Influence**: The Indian Ocean is witnessing increased interest from major powers like China, Russia, the Gulf states, and European nations. India's engagement aims to balance China's influence and maintain regional stability.
- **Role in the Chagos Archipelago Agreement**: India played a diplomatic role in facilitating the UK-Mauritius agreement on the Chagos Islands, ensuring continued US military presence at Diego Garcia. This move counters Chinese attempts to establish naval bases in the Western Indian Ocean.
- **Geo-Economic Importance**: Mauritius serves as a financial hub, linking Asia, Africa, and the Middle East. It offers India opportunities to strengthen trade, investment, and economic connectivity with Africa.

Alignment with India's Broader Geopolitical Interests

- **Indian Ocean Regional Security**: The Agaléga infrastructure development bolsters India's strategic presence, deterring threats from adversaries. Enhancing maritime cooperation with Mauritius aligns with India's Indo-Pacific strategy.
- **Diplomatic Soft Power and Diaspora Engagement**: With nearly 70% of Mauritius's population of Indian origin, cultural and historical ties foster strong diplomatic relations. India positions itself as a reliable development partner through infrastructure projects, scholarships, and defense cooperation.
- **Countering China's Expanding Footprint**: China has been expanding its economic and military presence in the Indian Ocean, including in Seychelles, Madagascar, and Djibouti. Strengthening ties with Mauritius allows India to safeguard its maritime interests and regional influence.

Conclusion

Mauritius is a pivotal partner in India's Indian Ocean strategy, offering both security and economic advantages. India's proactive engagement—ranging from maritime security cooperation to economic development—not only strengthens bilateral ties but also reinforces India's role as a key player in the evolving geopolitics of the Indian Ocean.

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The plight of deserted women in India highlights the gaps in existing legal and social welfare mechanisms. Discuss the major challenges faced by deserted women and suggest policy measures to address their concerns.

Introduction: Contextual Introduction
Body: Highlight challenges faced by deserted women and suggest policy measures to address their concerns.
Conclusion: Way forward

Marriage, as a foundational institution in society, plays a crucial role in shaping social and economic relationships. However, the phenomenon of desertion—where a husband abandons his wife without formal divorce—creates a severe crisis for women, leaving them in a legal and social vacuum.

Challenges Faced by Deserted Women

- **Legal Ambiguity and Lack of Recognition**: Deserted women do not have a distinct legal status, making it difficult for them to claim maintenance, property rights, or access welfare schemes. The absence of a national registry or official data on deserted women limits the formulation of effective policy responses.
- **Economic Hardships and Employment Barriers**: Deserted women often lack financial independence, facing exclusion from government welfare schemes that primarily cater to widows and divorced women.
- **Social Stigma and Psychological Trauma**: Deserted women frequently face ostracization from families and communities, particularly in rural areas where patriarchal norms are deeply entrenched. The stigma associated with being abandoned leads to social isolation, low self-esteem, anxiety, and depression.
- **Limited Access to Welfare and Legal Support**: Strict eligibility criteria and documentation requirements make it difficult for deserted women to access essential welfare benefits like food security, healthcare, and pensions. Free legal aid exists, but the complex and lengthy judicial process discourages many from seeking redress.

Policy Measures to Address These Concerns

- **Legal Reforms and Recognition**: The government should legally define "deserted women" and formally recognize them in policy frameworks. Fast-track family courts must be established to expedite maintenance claims and ensure enforcement of court orders.
- **Economic and Social Security Interventions**: A nationwide pension scheme for single women should explicitly include deserted women. Expanding microfinance, skill development, and employment opportunities through self-help groups (SHGs) can promote financial independence.
- **Simplification of Documentation and Welfare Access**: Deserted women should be made eligible for widow pension schemes and food security programs, with relaxed documentation requirements. A centralized national database should be created to track deserted women and facilitate targeted welfare support.
- **Awareness, Legal Aid, and Community Support**: Legal literacy programs should be expanded to empower women to claim their rights. Dedicated legal aid centers and helplines should be set up to provide free legal support and guidance.

Conclusion

A multi-pronged strategy encompassing legal recognition, economic empowerment, and community support is essential to addressing their needs. Recognizing and integrating deserted women into social welfare programs is not just a matter of justice but a crucial step toward achieving true gender equality in India.

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Discuss the need for a transboundary approach to tackling air pollution in Delhi. What measures should be taken to ensure effective cooperation between neighboring states?

Introduction: Contextual Introduction
Body: Highlight need for a transboundary approach to tackling air pollution & measures to deal with it.
Conclusion: Way forward

Delhi has been ranked the world's most polluted capital for the sixth consecutive year in IQAir's 2024 World Air Quality Report. The persistent air pollution crisis highlights the limitations of short-term measures like the Graded Response Action Plan (GRAP) and ineffective geoengineering solutions such as smog towers and cloud seeding.

Need for a Transboundary Approach

- **Airshed Dynamics and Cross-Border Pollution:** Pollution does not recognize political boundaries, and the Delhi airshed spans six states. Sources of pollution include stubble burning in Punjab and Haryana, industrial emissions from Uttar Pradesh and Rajasthan, and vehicular pollution from NCR towns.
- **Limitations of Localized Measures:** Short-term policies like GRAP provide only temporary relief. Cloud seeding is ineffective in Delhi's winter months due to a lack of suitable cloud formations.
- **Impact of the 15-Year-Old Vehicle Ban:** If fully implemented, removing 5.7 million old vehicles could reduce PM 2.5 pollution by ~28%. However, 30% of vehicles operating in Delhi originate from other states, necessitating regional enforcement.
- **Health and Economic Benefits of a Regional Strategy:** The 15-year-old vehicle ban could lead to Rs 1,740 crore in annual healthcare savings and per capita savings of Rs 1,202. A regional approach would ensure uniform emissions reductions across the entire airshed, maximizing benefits.

Measures for Effective Regional Cooperation

- **Institutional Coordination and Policy Harmonization:** Strengthen the Commission for Air Quality Management (CAQM) with enforcement powers. Implement the National Air Quality Resource Framework of India (NARFI) to map and regulate 16 airsheds, including Delhi's. Extend the 15-year vehicle ban to the entire Delhi airshed, ensuring uniform enforcement.
- **Interstate Emission Control Measures:** Common fuel and emission standards across states, mandating BS-VI or EV adoption. Expand stubble management schemes in Punjab and Haryana through mechanized alternatives and bio-decomposers.
- **Infrastructure and Public Transport Integration:** Establish a unified NCR-wide electric public transport system. Strengthen EV charging infrastructure to facilitate a transition from phased-out vehicles.
- **Technology-Driven Monitoring and Enforcement:** Use AI-based vehicle tracking and automated pollution checks for real-time enforcement. Expand SAFAR's high-resolution air quality forecasting for proactive decision-making.
- **Financial and Legal Support:** Implement a polluter-pays principle, with fines on industries and vehicles exceeding emissions limits. Allocate central funding for sustainable alternatives to pollution-intensive practices.

Conclusion

A transboundary approach is imperative to effectively combat Delhi's air pollution crisis. Implementing region-wide interventions targeting emissions at the source, coupled with institutional cooperation and technological advancements, can ensure sustainable air quality improvement.

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India and Mauritius share a deep historical and strategic relationship. In the context of India's SAGAR (Security and Growth for All in the Region) vision and the evolving Indo-Mauritian ties, discuss the significance of this partnership. What steps can be taken to further strengthen bilateral cooperation?

Introduction: Contextual Introduction
Body: Highlight significance of the India-Mauritius Partnership & strengthen bilateral cooperation.
Conclusion: Way forward

India and Mauritius share a deep-rooted historical, cultural, and strategic relationship. As a key partner in India's Security and Growth for All in the Region (SAGAR) vision, Mauritius plays a central role in India's Indian Ocean strategy. Prime Minister Narendra Modi's recent visit to Mauritius and the announcement of the MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions) initiative highlight the evolving nature of this partnership.

Significance of the India-Mauritius Partnership

- **Strategic and Maritime Security Cooperation:** India remains the primary security provider for Mauritius, strengthening its maritime capabilities. The development of Agalega Island's infrastructure, including a jetty and airstrip, enhances Mauritius's ability to monitor its Exclusive Economic Zone (EEZ) and contributes to regional security. Mauritius is now engaged in IORA, the Indian Ocean Commission, and the Colombo Security Conclave, increasing regional cooperation.
- **Economic and Developmental Partnership:** India has provided $1.1 billion in development assistance, including $750 million in lines of credit and grants for infrastructure. The Mauritius Metro Project, Supreme Court building, and Civil Service College are among India's key contributions.
- **Cultural and People-to-People Ties:** The historical and cultural ties between India and Mauritius are strong, with over 68% of Mauritians of Indian origin. Initiatives like education grants, cultural exchanges, and support for diaspora initiatives reinforce these bonds.

Steps to Strengthen Bilateral Cooperation

- **Enhancing Maritime and Security Collaboration:** Deepening joint military exercises, intelligence sharing, and cybersecurity cooperation. Strengthening Mauritius's coast guard and providing further assistance in monitoring its EEZ and blue economy development.
- **Boosting Economic and Investment Ties:** Expanding trade under the India-Mauritius Comprehensive Economic Cooperation and Partnership Agreement (CECPA). Encouraging Indian businesses to invest in Mauritius's ICT and financial services sector, making it a gateway to Africa.
- **Expanding Infrastructure and Connectivity:** Supporting further port development, renewable energy projects, and smart city initiatives. Enhancing air and maritime connectivity to integrate Mauritius more closely with India's regional trade network.
- **Strengthening Cultural and Educational Exchanges:** Expanding ITEC scholarships, skill development programs, and knowledge partnerships in emerging technologies. Promoting Ayurveda, yoga, and traditional Indian culture in Mauritius as part of India's soft power diplomacy.
- **Deepening Defence and Strategic Engagement:** Upgrading defence cooperation with technology transfer and equipment support. Expanding India's role in regional disaster relief and humanitarian assistance missions.

Conclusion

The India-Mauritius relationship is a cornerstone of India's Indo-Pacific and Indian Ocean strategy. By enhancing security, trade, and cultural exchanges, India can ensure that Mauritius remains a trusted partner, contributing to regional stability and prosperity.

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Discuss the challenges posed by the India-Sri Lanka fishing dispute and suggest measures for a sustainable resolution.

Introduction: Contextual Introduction **Body:** Challenges posed by the India-Sri Lanka fishing dispute and measures for a sustainable resolution. **Conclusion:** Way forward

The India-Sri Lanka fishing dispute, primarily concerning the Palk Bay region, remains a contentious issue affecting the livelihoods of fishermen on both sides.

Challenges in the Dispute

- **Ecological and Economic Impact of Bottom Trawling:** Indian fishermen use bottom trawling, which is highly destructive to marine ecosystems, leading to depletion of fish stocks and disrupting breeding cycles. Sri Lankan fishermen, who rely on traditional fishing methods, are unable to compete with the mechanized trawlers, leading to economic distress.
- **Asymmetric Economic Relationship:** Tamil Nadu's fishing community is wealthier and more industrialized, whereas Sri Lankan Tamil fishermen are still recovering from the impact of the civil war. This disparity fuels resentment and calls for stricter enforcement of fishing regulations.
- **Legal and Sovereignty Issues:** The 1974 Indo-Sri Lankan Maritime Boundary Agreement ceded Katchatheevu Island to Sri Lanka, restricting Indian fishing rights. Indian fishermen frequently cross the International Maritime Boundary Line (IMBL) due to the limited fishing area in Indian waters, resulting in frequent arrests and boat seizures by the Sri Lankan Navy.
- **Challenges in Transitioning to Deep-Sea Fishing:** The alternative of deep-sea fishing requires voyages lasting up to three weeks, significantly increasing operational costs and labor requirements.

Measures for a Sustainable Resolution

- **Reviving Bilateral Fishermen Talks:** Fishermen's associations from both sides should resume discussions, ideally before India's annual two-month fishing ban begins in April. Sri Lanka should take the initiative to host these negotiations, creating a platform for mutually acceptable agreements.
- **Phasing Out Bottom Trawling:** Strict enforcement of bans on bottom trawling in Tamil Nadu with financial and technical support for alternative fishing methods. Merging the Palk Bay deep-sea fishing scheme with the ₹20,050-crore Pradhan Mantri Matsya Sampada Yojana (PMMSY) to increase funding and participation.
- **Strengthening Alternative Livelihoods:** Promoting seaweed cultivation, open sea cage farming, and ocean ranching as viable sources of income for Indian fishermen. Providing subsidies and training to encourage fishermen to shift away from trawling.
- **Maritime Law Enforcement and Surveillance:** Establishing a joint patrol mechanism between the Indian and Sri Lankan Coast Guards to prevent illegal fishing. Implementing vessel monitoring systems (VMS) to track fishing activity and prevent inadvertent border crossings.
- **Sustainable Fisheries Management:** Conducting joint marine resource assessments to ensure sustainable fishing practices and equitable resource sharing. Exploring the possibility of designating cooperative fishing zones where fishermen from both nations can operate under agreed regulations.

Conclusion

The India-Sri Lanka fishing dispute requires a multi-pronged approach balancing ecological sustainability, economic viability, and diplomatic pragmatism. While Sri Lanka seeks stringent action against Indian fishermen, a cooperative resolution—combining bilateral talks, sustainable fishing reforms, and livelihood support—is essential.

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A comprehensive nutrition agenda, rather than targeted interventions, is necessary to address malnutrition in India. Discuss.

Introduction: Contextual Introduction
Body: Why comprehensive nutrition is necessary rather than targeted interventions to address malnutrition?
Conclusion: Way forward

Malnutrition in India is not just about food insecurity but also about dietary habits shaped by culture, caste, and gender relations. While government initiatives like Saksham Anganwadi and Poshan 2.0 focus on targeted interventions for women and children, a broader nutrition agenda must consider the entire population, including men, senior citizens, and those suffering from non-communicable diseases (NCDs) like diabetes and hypertension.

Limitations of Targeted Interventions

- **Narrow Focus:** Most nutrition programs cater primarily to pregnant women, lactating mothers, and young children, neglecting the broader population.
- **Regional and Societal Gaps**: Policies reinforce the notion that malnutrition is limited to specific districts or marginalized groups, ignoring its widespread nature.
- **Limited Scope of Solutions**: Current interventions rely heavily on supplementary nutrition (e.g., iron-folic acid tablets, take-home rations) but do not emphasize dietary diversity and long-term behavioral change.
- **Insufficient Institutional Support**: Health and Wellness Centres (HWCs), which could play a crucial role, have uneven distribution and lack specialized nutrition personnel.

Need for a Comprehensive Nutrition Agenda

- **Expanding Nutrition Services Beyond Maternal and Child Health**: Addressing malnutrition in men, senior citizens, and people with NCDs. Systematically integrating nutrition services in Health and Wellness Centres (HWCs) with a focus on community-based solutions.
- **Local Food-Based Solutions**: Promoting low-cost, nutrient-rich local foods instead of relying on ultra-processed packaged goods. Integrating nutrition education with local cuisines and community food habits to ensure better acceptability.
- **Strengthening Institutional Implementation**: Ensuring every HWC has a dedicated nutrition workforce and standardized services covering all population groups. Expanding coverage of HWCs in urban areas, where nutrition-related NCDs are rising.
- **Engaging Local Elites for Social Acceptance**: Research shows that successful public health interventions, such as smallpox vaccination, gained traction when local influencers championed them. Local leaders, religious institutions, and community organizations should be engaged to promote nutrition awareness and behavioral change.

Way Forward

- Strengthening HWCs with dedicated nutrition professionals.
- Expanding the scope of nutrition programs to include all age groups.
- Encouraging local food-based solutions and behavioral change campaigns.
- Involving local elites to improve social acceptance and adoption of better nutrition practices.

Conclusion

A locally owned, inclusive, and sustainable nutrition strategy is the key to tackling India's malnutrition crisis effectively.

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Examine the challenges faced by public health education in India and suggest measures to address the mismatch between supply and demand in the public health job market.

Introduction: Contextual Introduction
Body: What are the challenges faced by public health education in India and suggest measures to address the mismatch between supply and demand in the public health job market?
Conclusion: Way forward

Public health plays a crucial role in ensuring national well-being, as emphasized in Article 47 of the Indian Constitution. However, India's public health education system faces significant challenges, primarily due to a mismatch between the increasing number of public health graduates and the limited availability of employment opportunities.

Challenges in Public Health Education and Employment

- **Mismatch Between Supply and Demand** – While over 100 institutions now offer Master of Public Health (MPH) courses, public sector job opportunities have stagnated, leading to intense competition for limited positions.
- **Lack of Standardization –** The absence of a regulatory framework under the National Medical Commission (NMC) or University Grants Commission (UGC) has led to variations in curricula, impacting the quality of graduates.
- **Dominance of the Private Sector –** The growing privatization of healthcare prioritizes hospital management over public health professionals, restricting employment opportunities.
- **Funding Constraints –** The reduction in international aid, such as the U.S. withdrawal from WHO and USAID cuts, has further diminished public health research and development funding.
- **Uneven Institutional Distribution –** Many populous states like Bihar and Jharkhand lack sufficient public health education facilities, affecting access to training.

Way Forward

- **Creation of Public Health Cadres –** State governments should establish dedicated public health management cadres to enhance employment and service delivery.
- **Regulatory Oversight –** A dedicated public health education division within the NMC or UGC should standardize curricula and ensure minimum training requirements.
- **Integration with Practical Learning –** Stronger linkages between academic institutions and government health programs can enhance graduates' employability.
- **Strengthening Domestic Funding –** Increased national investment in public health research can reduce dependence on foreign grants.
- **Equitable Expansion of Institutions –** Establishing public health training centers in underserved states can promote regional balance in workforce distribution.

Conclusion

Addressing these challenges requires a multi-pronged approach involving regulatory reforms, job creation, and enhanced funding. A robust public health education system, aligned with employment opportunities, is vital for strengthening India's healthcare system and achieving universal health coverage.

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The rising prevalence of obesity in India necessitates a multi-pronged approach that includes policy interventions, public awareness, and structural changes in food and lifestyle choices. Discuss the key strategies that can be adopted to create an enabling environment for healthy behavior.

Introduction: Contextual Introduction
Body: Key strategies that can be adopted to create an enabling environment for healthy behavior.
Conclusion: Way forward

The growing obesity crisis in India is a significant public health concern, driven by dietary shifts, sedentary lifestyles, and structural factors limiting access to healthy food.

Key Strategies for Creating an Enabling Environment for Healthy Behavior

1. Policy and Regulatory Interventions

- **Food Regulation:** Strict limits on sugar, salt, and trans fats in processed foods, coupled with mandatory front-of-pack warning labels to inform consumers.
- **Advertisement Restrictions:** Banning misleading health claims and celebrity endorsements of unhealthy foods, especially targeting children.
- **Taxation and Subsidies:** Imposing higher taxes on ultra-processed foods (UPF) and sugar-sweetened beverages, while subsidizing nutrient-rich crops like millet.

2. Promoting Healthy Diets through Agricultural and Food Policies

- **Crop Diversification:** Encouraging millets and fibre-rich crops over starchy cereals to improve dietary diversity.
- **Reduction in Processing:** Policies should promote less processing of foods to retain natural nutrients.
- **Affordable Healthy Foods:** Government procurement and public distribution systems (PDS) should focus on nutritious foods for schools, anganwadis, and other public institutions.

3. Encouraging Physical Activity

- **Urban Infrastructure:** Creating safe pedestrian paths, cycling lanes, and recreational green spaces to promote active living.
- **Workplace Wellness:** Encouraging standing desks, structured exercise breaks, and corporate wellness programs to reduce sedentary behavior.
- **Physical Education in Schools:** Integrating dynamic exercises and resistance training into school curricula to counteract childhood obesity.

4. Public Awareness and Behavioral Change

- **Nutrition Literacy Campaigns:** Strengthening initiatives like Eat Right India and Fit India Movement to educate people about balanced diets.
- **Community-Based Health Promotion:** Involving schools, workplaces, and local communities in creating environments that naturally encourage healthier choices.
- **Digital Outreach:** Using social media and technology-driven interventions to promote personalized nutrition and fitness guidance.

Conclusion

A comprehensive strategy tackling obesity requires coordinated efforts across public policy, agriculture, urban planning, and healthcare. By making healthy choices affordable, accessible, and integrated into daily life, India can curb the obesity epidemic and promote long-term well-being for its population.

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The growing geopolitical rivalry between the United States and China is often described as a new Cold War, representing a contest between two models of capitalism—authoritarian and democratic. Analyze the key ideological, economic, and strategic dimensions of this competition and its implications for the global order.

Introduction: Contextual Introduction
Body: Key ideological, economic, strategic dimensions of this competition and implications for global order.
Conclusion: Way forward

The growing geopolitical competition between the United States and China is often described as a new Cold War, reflecting a contest between two models of capitalism—authoritarian and democratic.

Ideological Dimensions

- **China's Model:** China promotes a form of State-led authoritarian capitalism, which prioritizes centralized economic planning, mass surveillance, and political control. It exports this model through economic aid, technology partnerships, and strategic investments.
- **US Model:** The US, on the other hand, champions liberal democracy and free-market capitalism, advocating for human rights, democratic governance, and open economies.

Economic Dimensions

- **Globalization vs. Protectionism:** China has deeply integrated itself into global supply chains, challenging the US-led liberal economic order. The US, in response, has pursued policies of de-risking and selective decoupling, trying to shift critical supply chains away from China.
- **Technology Wars:** The two powers are locked in competition over semiconductors, artificial intelligence, and cybersecurity, with the US imposing export restrictions on China's access to advanced technology.
- **Competing Trade Blocs:** The Belt and Road Initiative (BRI) and the US-led Indo-Pacific Economic Framework (IPEF) reflect rival economic visions, with China focusing on infrastructure diplomacy and the US promoting regional economic cooperation.

Strategic and Geopolitical Dimensions

- **Military Posturing:** The Indo-Pacific region has become the main theater of contestation, with the US strengthening military alliances (e.g., QUAD, AUKUS) to counter China's assertiveness in the South China Sea and Taiwan Strait.
- **Influence in the Global South**: While China has gained traction in Africa, Latin America, and parts of Asia through economic investments and strategic partnerships, the US is attempting to regain influence by promoting democratic governance and development initiatives.
- **Fragmentation of the West**: The internal ideological divide within Western democracies, as seen in the rise of far-right populism, weakens the coherence of the US-led alliance against China.

Implications for the Global Order

- **Erosion of Liberal Hegemony**: The post-Cold War liberal order is under stress due to the dual forces of China's rise and growing far-right populism in the West.
- **Multipolarity vs. Bipolarity:** Unlike the Cold War, today's world is not strictly bipolar. Other actors like India, the EU, and regional powers seek strategic autonomy rather than strict alignment with either the US or China.

Conclusion

The long-term trajectory of this competition will depend on both the internal political dynamics of the US and China and the choices made by rising powers in the Global South.

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India must act as a unifier in the Indian Ocean Region. Apart from its "soft power" and humanitarian aspects, maritime diplomacy can help contain, resolve, and prevent conflict. Discuss.

Introduction: Contextual Introduction
Body: Highlight how maritime diplomacy can as a conflict-prevention and resolution tool.
Conclusion: Way forward

K.M. Panikkar, a noted Indian diplomat and strategist, emphasized that while the Indian Ocean may be just another maritime region for other nations, it is a "vital sea" for India. However, despite its geographical centrality, India has historically struggled to forge a cohesive Indian Ocean identity.

Maritime Diplomacy as a Conflict-Prevention and Resolution Tool

- **Naval Diplomacy and Capacity Building**: India has enhanced Maritime Domain Awareness (MDA) through partnerships with Seychelles, Mauritius, Sri Lanka, and Maldives. Indian Navy assists in EEZ surveillance and anti-smuggling operations for island nations.
- **Multilateral Naval Exercises and Cooperation**: Exercises like MALABAR, VARUNA, and MILAN foster interoperability and trust among regional navies. Participation in Quad's Indo-Pacific initiatives strengthens deterrence against unilateral assertions in the region.
- **Countering Emerging Security Threats**: India has played a leading role in anti-piracy operations off the Somali coast and in countering drug trafficking. The Houthi threat to international shipping underscores the need for collective maritime security mechanisms.

Challenges in India's Maritime Diplomacy

- **Lack of Institutional Coordination:** Bureaucratic hurdles between the Ministry of Defence (MoD) and the Ministry of External Affairs (MEA) hinder rapid security and HADR responses.
- **China's Expanding Influence in the IOR**: The String of Pearls strategy and China's increasing presence in ports like Hambantota and Gwadar challenge India's maritime influence.
- **Fragmented Regional Architecture**: Acronym-heavy organizations like IORA, SAARC, BIMSTEC, and IONS suffer from a lack of coherence and strategic alignment.

Way Forward: Strengthening India's Maritime Diplomacy

- **Institutionalizing a "Whole-of-Government" Approach:** Improved coordination between the Navy, diplomats, and bureaucracies is needed to craft a comprehensive maritime security strategy.
- **Investing in Maritime Infrastructure and Capabilities**: Building amphibious heavy-lift capability and a hospital ship will enhance India's ability to act as a first responder.
- **Enhancing Multilateral Engagements**: India must take a leadership role in reforming IORA and BIMSTEC to make them more effective in crisis response. Strengthening the IOC as a regional security dialogue akin to ASEAN's Shangri-La Dialogue.

Conclusion

India's aspirations of being a regional leader in the Indian Ocean must be backed by a cohesive maritime strategy that goes beyond soft power. While HADR and naval exercises have solidified India's position, there remains a gap in institutional coordination and regional security mechanisms. By strengthening its maritime diplomacy through a whole-of-government approach, India can emerge as the unifying force in the Indian Ocean Region, ensuring stability, security, and shared prosperity.

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Discuss the role of women in India's transition to green energy. How can skill development programs like Skill India be leveraged to enhance women's participation in the green workforce?

Introduction: Contextual Introduction **Body:** How skill programs can be leveraged to enhance women's participation in the green workforce? **Conclusion:** Way forward

India is expanding its renewable energy sector rapidly, with new capacity expected to surpass that of many major economies by 2026. However, a key challenge remains: the shortage of skilled manpower. Women can play a crucial role in bridging this gap, ensuring both workforce expansion and gender inclusion. Currently, women make up only 11% of India's clean energy workforce, significantly lower than the global average of 32%.

Role of Women in India's Green Energy Transition

- **Workforce Expansion & Economic Inclusion**: Women's participation in green jobs will help meet the estimated demand of 3.5 million skilled workers in renewable energy by 2030 while also reducing gender disparity in employment.
- **Grassroots-Level Impact:** Women are already engaged in resource management and local sustainability efforts. Initiatives like vidyut sakhis in Uttar Pradesh, who support electricity bill collection, demonstrate their potential in integrating green energy solutions with community engagement.
- **Innovation & Leadership:** Studies suggest that women in leadership roles drive more sustainable solutions. Entrepreneurs like Nidhi Pant, who developed a solar dryer-based food processing startup, showcase how women's innovations can aid both environmental sustainability and rural livelihoods.

Challenges in Green Energy Employment:

- **Lack of education & technical skills**: Many women lack the required education for solar equipment installation and maintenance.
- **Inadequate workplace facilities:** Remote locations, unsafe transportation, and lack of infrastructure deter women from joining green jobs.
- **Gender Sensitivity Issues:** Workplaces in green industries often lack gender-friendly policies and support systems.

Leveraging Skill India to Enhance Women's Participation

- **Targeted Skill Development:** Introduce specialized training in solar panel installation, wind energy maintenance, and EV servicing for women. Promote entrepreneurial skill-building programs to support women-led renewable energy startups.
- **Policy & Infrastructure Support:** Ensure safe transportation and housing for women in remote job locations. Implement gender-sensitive policies in workplaces to encourage retention.
- **Data Collection & Awareness:** Establish reliable databases to track women's participation in green jobs. Conduct awareness programs to increase women's interest in renewable energy careers.
- **Community-Based Workforce Model:** Develop a women-centric green workforce similar to ASHA workers in healthcare. Expand community-led initiatives like Powering Livelihoods, which has successfully engaged women in decentralized renewable energy solutions.

Conclusion

Women's active participation in the green energy sector is not just a matter of inclusion but a necessity for India's renewable energy ambitions. By integrating gender-responsive skill development into Skill India,

and creating enabling conditions at training centers and workplaces, India can ensure a just and sustainable energy transition.

Discuss the role of trade liberalization, including tariff and non-tariff barrier reduction, in attracting foreign investment to India. How can these measures strengthen the 'Make in India' initiative?

Introduction: Contextual Introduction
Body: Role of trade liberalization, including tariff and non-tariff barrier reduction, in attracting foreign investment to India.
Conclusion: Way forward

Trade liberalization, through the reduction of tariffs and non-tariff barriers, is a key strategy to attract foreign investment and boost India's manufacturing sector. In a competitive global investment environment, India must undertake targeted reforms to enhance its appeal to foreign businesses and strengthen the 'Make in India' initiative.

Role of Trade Liberalization in Attracting Foreign Investment

- **Cost Competitiveness**: High tariffs on manufacturing inputs increase production costs, making Indian goods less competitive. Reducing such barriers can attract companies seeking cost-effective production hubs.
- **Supply Chain Integration**: Manufacturing today relies on cross-border supply chains. Lower import duties on critical inputs, as seen in the lithium-ion battery sector, can enhance India's participation in global value chains.
- **Regulatory Streamlining**: Reducing bureaucratic hurdles in land acquisition, dispute resolution, and taxation can improve investor confidence and encourage reinvestment rather than profit repatriation.
- **Competing with Emerging Markets**: Countries like Vietnam have made greater strides in attracting export-oriented manufacturing. A liberalized trade regime can help India regain its competitive edge.

Strengthening the 'Make in India' Initiative

- **Boosting Manufacturing Exports**: Encouraging imports of high-quality raw materials and machinery enables domestic firms to produce world-class goods for global markets.
- **Job Creation and Upskilling**: Increased FDI in manufacturing will generate employment and lead to skill development, addressing India's job deficit.
- **Encouraging MSME Growth**: Simplified taxation and regulatory frameworks will help small and medium enterprises integrate into larger industrial supply chains.
- **Building a Global Hub**: With a supportive policy environment, India can emerge as an alternative to China for global manufacturers seeking to diversify their production bases.

Conclusion

India must implement decisive trade liberalization measures to reduce input costs, ease regulatory burdens, and attract greater FDI. These reforms will enhance the 'Make in India' initiative, positioning India as a global manufacturing leader and driving economic growth.

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Discuss the need for reforms in the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) in light of evolving data protection concerns. How can these reforms strengthen India's digital governance framework?

> **Introduction**: Contextual Introduction
> **Body**: Highlight the need for reforms in the Telecom Disputes Settlement and Appellate Tribunal (TDSAT).
> **Conclusion**: Way forward

The Telecom Disputes Settlement and Appellate Tribunal (TDSAT) plays a key role in resolving disputes in the telecom, broadcasting, and information technology sectors. With the enactment of the Digital Personal Data Protection (DPDP) Act, 2023, TDSAT has been designated as the appellate authority for decisions made by the Data Protection Board (DPB).

Need for Reforms in TDSAT

- **Appointment of a Technical Member with Data Protection Expertise**
    - The TDSAT currently lacks a specialized member with expertise in data protection and privacy laws. Under Section 14C of the TRAI Act, 1997, members are required to have experience in technology, telecom, industry, commerce, or administration.
    - To address this gap, an amendment to the TRAI Act is necessary to ensure that at least one member has expertise in data protection and digital rights.
- **Addressing the Caseload and Expanding Tribunal Capacity**
    - TDSAT is already overburdened with 3,448 pending cases between 2020 and 2025. The newly enacted Telecommunications Act, of 2023 will further increase its workload, making it unrealistic to dispose of data protection appeals within six months, as mandated by the DPDP Act.
    - The absence of a judicial member is also a significant concern, as the Supreme Court has emphasized the need for judicial members in tribunals to uphold fairness in adjudication.
    - Proposed reforms:
        - Increased budget allocation for establishing new TDSAT benches to handle data protection cases separately.
        - Appointment of additional judicial members to ensure fair and legally sound decision-making.
- **Upgrading Digital Infrastructure for Efficient Appeals Processing**
    - The draft DPDP Rules mandate that all appeals be filed digitally, but TDSAT's current digital infrastructure is inadequate for smooth online case management.
    - The TRAI Annual Report 2023 mentions a "legal case management system," but its implementation status is unclear.
    - Proposed reforms:
        - Implement a robust case management system for seamless digital filings, tracking of appeals, and real-time case updates.
        - Improve public access to case records and tribunal decisions to enhance transparency and accountability.

Strengthening India's Digital Governance Framework

- **Ensuring Consumer Protection –** A well-functioning tribunal will provide timely redressal for individuals facing data privacy violations.
- **Strengthening Legal Enforcement –** Faster adjudication will ensure compliance with data protection laws and create a deterrent effect against violations.
- **Boosting Investor Confidence –** A specialized and efficient appellate system will encourage digital businesses to invest in India, knowing there is a strong dispute resolution mechanism.

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o **Alignment with Global Standards –** Strengthening TDSAT's data protection capacity will bring India's regulatory framework in line with international best practices like GDPR.

Conclusion

TDSAT requires urgent institutional reforms to effectively handle data protection appeals. These changes will enhance India's digital governance, protect individual privacy rights, and ensure effective enforcement of the DPDP Act, of 2023.

The declaration of the World Day for Glaciers on May 21 is a recognition of their critical role in Earth's water system. Discuss the significance of glaciers for global ecology and human sustenance. Also, examine the threats they face and suggest measures for their conservation.

Introduction: Contextual Introduction
Body: Significance of Glaciers, threats they face and suggest measures for their conservation.
Conclusion: Way forward

The declaration of World Day for Glaciers on May 21 by the United Nations recognizes the indispensable role glaciers play in sustaining life on Earth.

Significance of Glaciers for Global Ecology and Human Sustenance

- **Freshwater Reservoirs** – Glaciers act as natural storage units, gradually releasing water to sustain rivers that provide drinking water, support agriculture, and generate hydroelectric power. Major rivers like the Ganges, Yangtze, and Amazon rely on glacial melt.
- **Climate Regulation** – Glaciers influence weather patterns by reflecting solar radiation and stabilizing temperatures. Their loss disrupts regional and global climate systems.
- **Ecosystem Stability** – Many fragile ecosystems, such as those in the Hindu Kush Himalayas, depend on glacial meltwater. Their retreat endangers unique flora and fauna, leading to biodiversity loss.
- **Economic and Social Dependence** – Glacier-fed water sources support millions of people, particularly in high-altitude regions. Cities like Lima, La Paz, and Kathmandu rely heavily on glaciers for water supply.

Threats to Glaciers

- **Global Warming** – Rising temperatures have accelerated glacial melt, with the IPCC reporting a loss of approximately 273 billion tonnes of ice annually since 2000. In 2023, glaciers experienced their highest water loss in 50 years.
- **Glacial Lake Outburst Floods (GLOFs)** – Retreating glaciers leave behind unstable lakes, which can burst and cause catastrophic floods. The 2023 South Lhonak Lake flood in Sikkim exemplifies this growing threat.
- **Sea-Level Rise** – Melting glaciers contribute significantly to rising sea levels, threatening coastal communities and increasing the frequency of extreme weather events.
- **Impact on Indigenous Communities** – Communities dependent on glacial ecosystems face disruptions in water supply, agriculture, and cultural practices. The loss of glaciers threatens traditional ways of life.

Measures for Glacial Conservation

- **Climate Change Mitigation** – Governments must implement stringent policies to curb greenhouse gas emissions, transition to renewable energy, and promote sustainable practices.
- **Glacier Monitoring and Early Warning Systems** – Investing in satellite and ground-based monitoring can help track glacial changes and predict GLOFs, minimizing disaster risks.

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- **Sustainable Water Management** – Adaptation strategies, such as artificial reservoirs and improved irrigation techniques, can help manage declining water availability.
- **Climate Literacy and Awareness** – UNESCO-led initiatives like the Climate Science Literacy exhibition aim to bridge knowledge gaps and empower individuals to advocate for climate action.

Conclusion

Glaciers are not just frozen landscapes but lifelines for billions. Their rapid decline signals an urgent crisis that demands coordinated global efforts. On the World Day for Glaciers, the world must commit to preserving these vital resources—because safeguarding glaciers means safeguarding our future.

Discuss the role of private schools in transforming education in India. Examine the challenges they face and suggest measures to ensure their contribution aligns with equity and quality in the education sector.

> **Introduction:** Contextual Introduction
> **Body:** Role of private schools in transforming education in India & challenges they face in the education sector
> **Conclusion:** Way forward

India's education system is a blend of public and private institutions, with private schools accounting for nearly 40% of total student enrollment.

Role of Private Schools in Educational Transformation

- **Expanding Access & Innovation** – With the state gradually stepping back, private institutions now educate over 50% of students in several states. Many private schools have introduced multilingual education, international curricula, and global exposure, preparing students for an interconnected world.
- **Technology Integration** – Collaborations with EdTech companies have revolutionized classrooms, making learning personalized, engaging, and AI-driven. Such innovations can help scale quality education nationwide.
- **Data-Driven Assessments** – Unlike government schools, some private institutions adopt competency-based learning and AI-driven assessments to improve learning outcomes.
- **Catalysts for Systemic Change** – Private schools, despite being social enterprises, have the resources and flexibility to drive systemic reform, shaping the broader ecosystem rather than just improving individual institutions.

Challenges Faced by Private Schools

- **Unequal Access & Affordability** – The high cost of private education makes quality schooling inaccessible to a vast majority, deepening social inequalities.
- **Regulatory Constraints** – Strict fee regulations and operational guidelines often stifle innovation and scalability. A trust deficit exists between private schools and policymakers.
- **Fragmentation of Innovation** – Unlike global education models, successful private schools in India operate in silos, limiting widespread adoption of best practices.
- **Over-commercialization** – Private schools are often perceived as profit-driven entities, leading to skepticism and reluctance in policy collaboration.

Measures to Align Private Education with Equity & Quality

- **Defining a Higher Purpose & Responsibility** – Private schools must see themselves as partners in nation-building, taking responsibility beyond individual institutions to drive systemic reform.

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- **Strengthening Public-Private Partnerships (PPPs)** – The state should facilitate structured data-driven collaboration between government schools, private institutions, and EdTech firms, promoting shared accountability.
- **Encouraging AI & Adaptive Learning** – Private schools should scale AI-driven assessments and personalized learning to bridge learning gaps across economic backgrounds.
- **Transparent & Balanced Regulation** – Policies should ensure quality without excessive control, fostering an enabling environment rather than a restrictive one.

Conclusion

The role of private schools must evolve beyond commercial institutions to hubs of innovation, trust, and data-driven transformation. For India to achieve the Viksit Bharat 2047 vision, school education must be reimagined, with private schools playing a transformative role in shaping the future of learning.

India's budgetary process has increasingly diminished the role of elected representatives, thereby undermining democratic accountability. Critically analyze.

Introduction: Contextual Introduction
Body: How has role of Parliament declined in budgetary process and ways to strengthen this?
Conclusion: Way forward

The Budget is more than just a financial statement; it is a reflection of a nation's economic vision, governance philosophy, and fiscal priorities.

How Parliamentary Influence Has Declined in Budgetary Matters

- **Executive Monopoly Over Budget Formulation:** The Finance Ministry solely crafts the Budget with minimal consultation, often keeping even Cabinet Ministers uninformed until its presentation.
- **Lack of Pre-Budget Consultations:** India lacks mechanism like, pre-Budget discussions, preventing legislators from proactively influencing budgetary decisions. Indian MPs lack institutional support for budgetary research and economic forecasts.
- **Declining Quality of Parliamentary Scrutiny:** Parliamentary debates on the Budget are often fragmented and superficial, with many demands for grants passed without discussion.
- **Ineffectiveness of Parliamentary Committees:** The Departmentally Related Standing Committees (DRSCs) review budgetary allocations, but their recommendations are not binding.
- **Absence of Budgetary Bicameralism:** The Rajya Sabha, despite being a house of senior statesmen, has no substantive role in Budget discussions.

Impact on Democratic Accountability

- **Weakening of Representative Democracy –** By sidelining elected representatives, the budgetary process becomes an executive-driven exercise rather than a collective decision-making process.
- **Reduced Fiscal Transparency –** Off-budget borrowings and discretionary fund allocations escape proper parliamentary scrutiny.
- **Inequitable Resource Allocation –** Without pre-Budget deliberations, budgetary priorities may not adequately reflect public needs.
- **Undermining Federalism –** The lack of Rajya Sabha involvement sidelines state interests in financial matters.

Way Forward: Strengthening Parliamentary Oversight

- **Institutionalizing Pre-Budget Discussions:** A dedicated 5-7 day discussion period during the Monsoon Session to assess fiscal priorities and enable legislators to provide inputs.
- **Establishing a Parliamentary Budget Office (PBO):** Modeled on international best practices, a PBO would offer independent fiscal analysis, revenue projections, and economic impact

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assessments to MPs. It would enhance informed decision-making and strengthen legislative oversight.

- **Enhancing Committee Effectiveness:** Strengthening DRSCs by making their recommendations more binding and ensuring they review all budgetary allocations before approval.
- **Revisiting Budgetary Bicameralism:** Allowing the Rajya Sabha to have a consultative role in budget discussions would ensure broader representation in financial decision-making.

Conclusion

Strengthening legislative engagement in budgetary matters would not only enhance democratic accountability but also ensure that financial governance is more transparent, equitable, and responsive to public needs.

As the chair of the Indian Ocean Rim Association (IORA), India has an opportunity to enhance regional cooperation and governance. Critically analyze how India can strengthen the foundation for meaningful and ground-level governance in the IORA region.

Introduction: Contextual Introduction
Body: How India can strengthen the foundation for meaningful governance in the IORA region?
Conclusion: Way forward

The Indian Ocean Rim Association (IORA) is an apex regional organization that promotes open regionalism among Asian, African, and Australian nations connected by the Indian Ocean.

Significance of IORA and India's Strategic Interests

- **Economic Importance** – The Indian Ocean facilitates 75% of global trade and 50% of daily oil transport, with intra-IORA trade reaching $800 billion in 2023. The blue economy generates over $1 trillion annually.
- **Maritime Security –** Threats like piracy, terrorism, and illegal fishing endanger regional stability. India's SAGAR vision aligns with IORA's goal of ensuring secure sea lanes.
- **Climate Resilience –** Rising sea levels and cyclones threaten coastal regions. IORA plays a key role in disaster preparedness and mitigation.
- **Geopolitical Significance –** While free from major power rivalry, China's growing presence makes India's leadership crucial for balancing external influences and strengthening cooperation.

Challenges Faced by IORA

- **Financial Constraints** – IORA's budget depends on member contributions and remains inadequate for its expanding role, especially compared to the $1.3 billion budget of the smaller Indian Ocean Commission.
- **Institutional Weaknesses** – The understaffed Secretariat in Mauritius struggles with governance and implementation, while slow decision-making and the lack of an enforcement mechanism limit policy effectiveness.
- **Technological Gaps** – Inefficient data management and outdated systems hamper evidence-based policymaking, leading to delays and inaccuracies in governance.
- **Limited Private Sector Involvement –** Key maritime industries like shipping and marine tourism are not integrated into policymaking, missing opportunities for funding and expertise in sustainable development.

India's Strategy to Strengthen IORA's Governance

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- **Enhancing Financial Resources** – Establishing an IORA Fund with contributions from member states, private players, and global institutions while encouraging private-sector involvement in maritime policymaking.
- **Institutional Strengthening –** Expanding the IORA Secretariat's capacity, digitizing processes, and integrating advanced marine technologies with support from Australia, France, and Singapore.
- **Capacity Building –** Developing marine-ready courses, interdisciplinary programs like marine accounting, and fostering scholar-practitioner collaborations to strengthen the blue economy.
- **Disaster Management and Climate Resilience –** Creating a Disaster Response Fund, improving early warning systems, and utilizing traditional knowledge from coastal nations for sustainable governance.

Conclusion

India's IORA chairship is an opportunity to address financial, institutional, and technological gaps while fostering regional cooperation. Success will depend on securing funding, leveraging technology, strengthening disaster resilience, and balancing geopolitical interests for a more effective and inclusive IORA.

Five years after COVID-19, migration patterns in India have shifted, with rural-to-urban movement resuming and international emigration diversifying. Examine the socio-economic impacts of these trends and suggest measures for improving migration governance to ensure inclusive growth.

> **Introduction:** Contextual Introduction
> **Body:** Socio-economic impacts of migration and measures for improving migration governance
> **Conclusion:** Way forward

Migration in India has undergone significant shifts five years after the COVID-19 pandemic. The initial phase saw reverse migration from urban to rural areas, causing economic distress. However, with limited rural employment opportunities, rural-to-urban migration has resumed.

Socio-Economic Impacts of Migration Trends

- **Urban Employment & Informal Economy:** Rural distress and urban aspirations have driven migrants back to cities, fueling economic activity in construction, manufacturing, and services. However, job security remains low, with many migrants engaged in informal, low-wage jobs.
- **Rural Economy & Agriculture:** The rural economy struggled to absorb reverse migrants post-pandemic, with MGNREGA providing only temporary relief. Climate change is further accelerating rural out-migration, particularly in states like Odisha.
- **International Remittances & Economic Development**: Remittances remained resilient despite pandemic-induced job losses abroad, supporting families and local economies. New migration trends towards Europe, Africa, and emerging economies signal economic diversification but also expose migrants to new risks.
- **Human Capital & Brain Drain:** The rise in student migration post-pandemic, as seen in Kerala's doubling of student emigrants from 2018 to 2023, reflects India's growing global workforce. However, it also raises concerns about brain drain and financial outflows, with outward remittances for studies abroad peaking at $3,171 million in 2021.

Measures for Improving Migration Governance

- **Strengthening Migrant Data Collection:** The 2021 Census delay has hampered data-driven policymaking. Expanding state-level migration surveys (like Kerala's model) nationwide would provide better insights.

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- **Enhancing Social Security & Welfare Measures:** The e-Shram Portal requires targeted awareness campaigns and simplified registration to overcome digital access barriers. ONORC must address documentation gaps, expand coverage, and ensure efficient last-mile delivery to benefit all migrants.
- **Urban Planning & Livelihood Support:** Investments in affordable housing, healthcare, and skill development for migrants are needed to reduce urban vulnerabilities. Rural employment schemes should be enhanced to reduce distress migration.
- **International Migration Governance:** Expanding bilateral labor agreements with emerging destination countries in Europe and Africa will help ensure migrant protection. Strengthening pre-departure training and diplomatic support can mitigate risks faced by Indian workers abroad.

Conclusion

Migration has resumed post-pandemic, with urbanization and international emigration shaping India's workforce. However, ensuring inclusive growth requires better migration governance, data-driven policies, and strengthened social security measures to protect migrant workers and harness their economic contributions effectively.

Groundwater depletion is a growing concern in many regions in India due to over-extraction for agriculture, industry, and urbanization. Analyze the socio-economic and environmental implications of groundwater scarcity and suggest sustainable strategies to ensure long-term water security.

> **Introduction:** Contextual Introduction
> **Body:** Socio-economic and environmental implications of groundwater scarcity and suggest sustainable strategies to ensure long-term water security
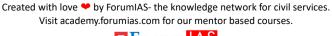> **Conclusion:** Way forward

Groundwater is a vital resource for agriculture, industry, and domestic consumption in India. However, excessive extraction due to irrigation, rapid urbanization, and industrial growth has led to severe groundwater depletion in many regions.

Socio-Economic Implications of Groundwater Scarcity

- **Agricultural Impact:** The over-extraction of groundwater for water-intensive crops like paddy and wheat is depleting water tables, increasing farming costs, and threatening food security.
- **Urban and Industrial Challenges:** Rapid urbanization and industrial dependence on groundwater are straining municipal supplies, disrupting production, and causing land subsidence.
- **Health and Social Issues:** Falling water levels increase contamination risks, leading to health hazards, while growing scarcity fuels conflicts over access and distribution.

Sustainable Strategies for Groundwater Conservation

- **Regulatory Strengthening –** Establish strict groundwater monitoring and extraction limits through state water authorities. Implement pricing mechanisms to discourage overuse, ensuring industries, agriculture, and urban users adhere to sustainable usage policies. Strengthen legal frameworks for enforcement and compliance.
- **Water Conservation Initiatives –** Promote large-scale rainwater harvesting in both urban and rural areas. Construct check dams, percolation ponds, and recharge wells to improve groundwater replenishment. Revive traditional water conservation structures like stepwells and community ponds to enhance local water security.
- **Agricultural Reforms –** Encourage farmers to adopt water-efficient irrigation techniques such as drip and sprinkler systems. Promote the cultivation of less water-intensive crops like millets and

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pulses instead of paddy. Strengthen policies like *Mera Pani, Meri Virasat* by providing better financial incentives and technological support to farmers shifting towards sustainable agriculture.

- **Wastewater Management –** Expand wastewater treatment infrastructure to enable large-scale reuse of treated water for industrial and agricultural purposes. Implement strict regulations requiring industries to use treated wastewater instead of fresh groundwater. Develop a water trading mechanism that facilitates the exchange of treated wastewater between urban areas, industries, and farmers.
- **Community Engagement and Awareness** – Conduct mass awareness campaigns on water conservation through social media, educational institutions, and local governance bodies. Strengthen the role of panchayats in groundwater management by involving them in monitoring and conservation efforts. Integrate water conservation principles into school curricula to foster a long-term behavioral change towards sustainable water use.

Conclusion

A multi-pronged approach that includes stricter regulations, efficient irrigation practices, wastewater reuse, and community-driven conservation efforts is essential.

Food wastage poses a significant challenge to food security, environmental sustainability, and economic efficiency. Analyze the key reasons behind large-scale food wastage in India and suggest policy measures to promote efficient food management and responsible consumption.

> **Introduction:** Contextual Introduction
> **Body:** Highlight reasons behind large-scale food wastage in India and suggest policy measures to promote efficient food management and responsible consumption
> **Conclusion:** Way forward

Food wastage is a significant challenge in India, impacting food security, environmental sustainability, and economic efficiency. According to the UNEP Food Waste Index Report 2024, India ranks among the top contributors to global food waste, with 78 million tonnes discarded annually, despite widespread hunger. Addressing this issue is crucial for achieving Sustainable Development Goals (SDGs) 2 (Zero Hunger) and 12.3 (Reducing Food Waste).

Causes of Large-Scale Food Wastage in India

- **Supply Chain Inefficiencies –** Poor storage, transport, and handling lead to food loss before reaching consumers. Inadequate cold storage facilities exacerbate spoilage.
- **Household-Level Waste –** Over-purchasing, improper meal planning, limited storage, and cultural habits of excess food preparation contribute to high wastage.
- **Retail and Hospitality Waste –** Supermarkets discard unsold food due to aesthetic standards, and restaurants frequently overproduce meals.
- **Municipal Waste Contribution –** 10%-12% of municipal waste in India consists of food, leading to increased methane emissions, a potent greenhouse gas**.**
- **Climate Change Impact –** Rising temperatures, erratic monsoons, and extreme weather events further strain food availability, increasing losses in supply chains.

Measures to Promote Efficient Food Management

- **Strengthening Infrastructure –** Expanding cold storage, efficient transportation, and food processing facilities can reduce post-harvest losses.
- **Consumer Awareness –** Encouraging smart meal planning, proper storage, creative use of leftovers, and composting can minimize household waste.

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- **Food Redistribution Initiatives –** Scaling up programs like "Save Food Share Food" and digital platforms connecting surplus food to those in need can enhance food security.
- **Business and Policy Interventions –**
  - Retail and hospitality sectors should redistribute unsold food rather than discard it.
  - Policymakers should subsidize cold storage for farmers and support food-sharing networks.
  - Educational institutions can promote awareness of responsible consumption.

Conclusion

India must prioritize waste reduction over mere food production expansion to ensure food security and environmental sustainability. Governments, businesses, and individuals must collaborate to develop a robust food management system that optimizes resources and fosters responsible consumption. By valuing and conserving food, India can move toward a future where waste is minimized, hunger is eradicated, and sustainability is upheld.

Discuss the potential of flex-fuel vehicles (FFVs) in reducing air pollution in Delhi. Analyze the challenges associated with their adoption and suggest policy measures to promote their widespread use.

> **Introduction:** Contextual Introduction
> **Body:** Highlight the potential of flex-fuel vehicles (FFVs) in reducing air pollution in Delhi. Also, analyze the challenges associated with their adoption and suggest policy measures to promote their widespread use.
> **Conclusion:** Way forward

Delhi ranked as the third-most polluted city globally in the World Air Quality Report 2023, faces severe air pollution challenges, with vehicular emissions contributing 39% of the total pollution. Flex-fuel vehicles (FFVs), which can switch between petrol and ethanol, offer a viable solution for cleaner mobility. By leveraging its strong policy framework and growing ethanol infrastructure, Delhi NCR has the potential to become a leader in alternative fuel technology.
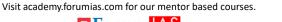
Potential of FFVs in Reducing Air Pollution

FFVs can significantly lower emissions by reducing particulate matter, carbon monoxide, and greenhouse gases. Petrol-powered vehicles release about 2.31 kg of CO_2 per litre of fuel, whereas FFVs running on E100 (100% ethanol) can cut carbon emissions by up to 40%. If half of Delhi's petrol vehicles transition to FFVs, overall emissions could decrease by 16.5%. Additionally, adopting ethanol-based FFVs can help reduce Delhi's economic losses due to air pollution, which range between 1.06% and 5.8% of its annual GDP.

Challenges in FFV Adoption

- **Infrastructure Limitations**: While India has made progress in ethanol production, Delhi lacks sufficient E100 refueling stations.
- **High Vehicle Costs:** FFVs are costlier than conventional vehicles, and modifications to existing vehicles require investment.
- **Policy Gaps:** The current tax structure places FFVs under the 28% GST slab, making them less competitive than electric vehicles (EVs), which are taxed at 5%.
- **Consumer Awareness:** Many vehicle owners are unaware of FFV benefits, slowing demand and adoption.

Policy Measures for Widespread Adoption

- **Incentives and Tax Reforms:** Reducing GST on FFVs from 28% to 5% to match EV incentives.

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- **Infrastructure Development:** Expanding ethanol refueling stations across Delhi NCR to ensure supply chain readiness.
- **Public Awareness Campaigns**: Educating consumers through targeted initiatives to encourage FFV adoption.
- **Industry Collaboration:** Leveraging Delhi NCR's strong automotive ecosystem to promote local manufacturing and research on FFVs.

Conclusion

Delhi has a history of implementing bold environmental policies, such as the successful adoption of CNG in public transport in the 1990s. Learning from Brazil's ethanol adoption model, Delhi can lead India's transition towards ethanol-based FFVs. By addressing infrastructure gaps, providing financial incentives, and raising consumer awareness, FFVs can be a game-changer in improving Delhi's air quality and public health.

Discuss the mechanism of Water Green Credits and analyze their effectiveness in addressing India's water crisis. What challenges might hinder their implementation? Suggest policy measures to enhance their impact.

> **Introduction:** Contextual Introduction
> **Body:** Highlight the Mechanism of Water Green Credits and the challenges and measures associated with it.
> **Conclusion**: Way forward

India, with 18% of the global population but only 4% of the world's freshwater resources, faces a severe water crisis. Groundwater extraction is unsustainable, with per capita availability declining by 25% over the past 70 years. The Water Green Credit (WGC) system, introduced under Mission LiFE, aims to incentivize conservation efforts by enabling individuals and entities to earn tradable credits for sustainable water management.
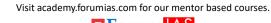
Mechanism of Water Green Credits

- **Baseline Assessment:** Entities (farmers, industries, households) establish their water footprint based on consumption patterns.
- **Credit Generation**: Water savings through conservation activities—such as rainwater harvesting, micro-irrigation, and wastewater treatment—are converted into tradable green credits.
- **Credit Trading**: Water-intensive sectors purchase credits from those who conserve water, creating a market-driven approach similar to carbon credit trading.
- **Verification and Compliance**: Digital platforms, smart meters, and remote sensing technologies monitor and verify conservation efforts.

Challenges in Implementation

- **Regulatory and Institutional Gaps**: The absence of a national water policy and clear regulations may hinder large-scale adoption.
- **Data and Monitoring Issues**: Establishing accurate water baselines and measuring conservation efforts requires advanced digital infrastructure.
- **Market Viability:** Ensuring fair pricing mechanisms and active participation from industries and farmers is crucial for a functional credit system.
- **Small Farmer Inclusion**: Many farmers lack the awareness and financial capacity to adopt efficient irrigation technologies.

Policy Measures to Enhance Impact

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- **Legislative Framework**: A National Water Green Credit Policy should define credit issuance, trading rules, and enforcement mechanisms.
- **Capacity Building for Farmers**: Training programs on soil moisture monitoring, optimal irrigation, and credit trading can ensure equitable participation.
- Integration with Government Schemes: Aligning WGC with Jal Shakti Abhiyan, PM-KUSUM, and AMRUT can enhance conservation efforts.
- **Technology Adoption**: The use of IoT-enabled smart meters, remote sensing, and blockchain-based credit tracking can improve transparency.

Conclusion

Water Green Credits offer a market-based solution to India's escalating water crisis. While challenges remain, a well-regulated system—supported by policy interventions, technological advancements, and stakeholder engagement—can drive sustainable water management. A holistic approach integrating agriculture, industry, and urban conservation is essential to secure water for future generations.

Melting glaciers are not just an environmental crisis but a humanitarian one. Discuss the socio-economic and geopolitical implications of glacier retreat, particularly for India. Suggest adaptive strategies to mitigate its impact.

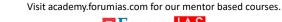| |
|---|
| **Introduction:** Contextual Introduction
Body: Highlight socio-economic and geopolitical implications of glacier retreat & adaptive strategies to mitigate its impact.
Conclusion: Way forward |

Glaciers are more than frozen masses of ice; they are vital freshwater reservoirs, sustaining billions of people by feeding rivers, supporting agriculture, and regulating climate. A 2023 ICIMOD report highlights that glaciers in the Hindu Kush Himalayas (HKH) are melting 65% faster from 2011 to 2020 than the previous decade, endangering the freshwater needs of 1.65 billion downstream people.

Socio-Economic & Geopolitical Implications of Glacier Retreat

- **Water Insecurity and Agricultural Crisis**: Retreating glaciers reduces water supply for irrigation, affecting agricultural productivity in regions like the Indo-Gangetic plains. Hydropower generation declines, exacerbating energy insecurity.
- **Increasing Climate-Related Disasters:** Glacier melt contributes to Glacial Lake Outburst Floods (GLOFs), flash floods, and landslides, devastating Himalayan communities (e.g., Chamoli disaster, 2021). Rising sea levels from glacial melt threaten coastal cities like Mumbai and Kolkata.
- **Food Security Challenges:** Reduced glacial-fed water flow disrupts agriculture in arid and semi-arid regions. Unpredictable weather patterns harm crop yields, impacting global food supply chains.
- **Indo-China Border Tensions:** Changing glacial landscapes alter natural boundaries, impacting military logistics in Ladakh and Arunachal Pradesh. Chinese dam projects on the Brahmaputra heighten geopolitical strains.
- **Climate-Induced Migration and Internal Security Risks:** Glacial melt-driven water shortages may trigger mass displacement in Himalayan states, overwhelming urban areas. Competition over dwindling water resources could fuel local conflicts and unrest.
- **Biodiversity Loss and Livelihood Disruptions:** Melting glaciers destroy fragile mountain ecosystems, leading to species extinction. Communities dependent on mountain tourism and pastoralism face severe economic distress.

Adaptive Strategies to Mitigate the Impact

- **Strengthening Water Conservation and Management**: Rainwater harvesting and irrigation efficiency (e.g., drip irrigation) to reduce dependence on glacier-fed water. Artificial ice reservoirs (e.g., Ladakh's Ice Stupas) to store seasonal meltwater.
- **Climate-Resilient Infrastructure**: Development of GLOF early warning systems and climate-resilient hydroelectric projects. Investing in disaster-resistant settlements for vulnerable Himalayan communities.
- **Regional and Global Cooperation**: Revise transboundary water-sharing treaties to account for climate-induced changes. Enhance India-China collaboration on glacial monitoring and flood control.
- **Community-Based Climate Adaptation**: Local water conservation programs (e.g., Peruvian cloud seeding techniques). Empower Himalayan farmers with climate-resilient agricultural practices.

Conclusion

Glacier retreat is a global challenge with profound humanitarian implications. Urgent policy interventions, international cooperation, and community-driven adaptation strategies are essential to mitigate climate-induced risks and ensure resilience for future generations.

Examine the challenges affecting the quality of scientific publications in India. Discuss the measures that can be taken to enhance research integrity and global competitiveness.

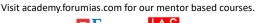| **Introduction:** Contextual Introduction |
| :--- |
| **Body:** Highlight challenges affecting the quality of scientific publications & measures to improve. |
| **Conclusion:** Way forward |

Scientific research plays a crucial role in a nation's development, yet India's research output, despite growing in quantity, often struggles with quality.

Challenges Affecting the Quality of Scientific Publications in India

- **Low Research Funding:** India spends only 0.67% of its GDP on civilian research, significantly lower than countries like Israel (6.3%), South Korea (4.9%), and China (2.4%). Lack of sustained investment in scientific infrastructure hampers innovation and quality research.
- **Ethical Concerns and Predatory Publishing**: Fake journals and predatory publications undermine India's scientific credibility. Studies estimate that 62% of all standalone fake journals worldwide originate from India.
- **Institutional Weaknesses**: Compared to China's top-tier universities like Peking, Tsinghua, and Fudan, India's leading institutions, including IITs and CSIR labs, produce far fewer high-impact papers.
- **Lack of Industry-Academia Collaboration:** Unlike China, where research institutions align with national priorities, India's fragmented ecosystem fails to integrate academia with industry needs.

Measures to Enhance Research Integrity and Global Competitiveness

- **Increased Investment in R&D:** Raising R&D spending to at least 2% of GDP (similar to China) is crucial for research infrastructure, lab facilities, and faculty recruitment.
- **Stringent Quality Control Mechanisms**: Strengthening peer review and publication ethics to curb predatory journals. Implementing stricter academic integrity policies with severe penalties for fraudulent research.
- **Encouraging High-Impact Research:** Incentivizing researchers to publish in top-tier journals (Nature, JACS, Science, Angewandte Chemie). Promoting collaborative research with leading global institutions to enhance credibility and visibility.

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- **Institutional Reforms and Autonomy:** Reducing bureaucratic control and granting greater autonomy to research institutions. Strengthening universities with better faculty recruitment, mentorship programs, and modern research facilities.
- **Industry-Academia Partnerships:** Creating research clusters and innovation hubs where universities and industries collaborate. Providing tax incentives for private sector investment in research to boost applied science and patents.

Conclusion

India's ambition to lead in scientific research requires a paradigm shift from quantity to quality. The focus should be on enhancing research credibility, industry collaboration, and global recognition to truly establish India as a scientific powerhouse.

Water policies should centre communities' voices in the decision-making process. Examine the role of communities in conserving water and suggest measures to enhance their participation.

Introduction: Contextual Introduction
Body: Highlight the role of communities in conserving water and suggest measures to enhance their participation.
Conclusion: Way forward

Water conservation is crucial for India's long-term sustainability, especially in the face of climate change, population growth, and overexploitation of resources.

Role of Communities in Water Conservation

- **Traditional Water Management Practices**: Indigenous communities have developed sustainable water conservation techniques over centuries. Examples include Johads in Rajasthan, Eris (tank systems) in Tamil Nadu, and Orans (sacred forests) in western India.
- **Resilience of Marginalized Communities**: Socially and economically weaker sections are disproportionately affected by water crises. Ensuring their participation in water conservation enhances their resilience while making policies more inclusive and responsive to local needs.
- **More-Than-Human Perspective in Water Policies**: Many local communities prioritize environmental sustainability, ensuring sufficient water availability for animals and ecosystems before human use.
- **Climate Resilience in Water Conservation**: Rising global temperatures are widening India's water gap, making climate-adaptive water conservation strategies essential. Community-led initiatives can help build climate-resilient water systems by integrating traditional knowledge with modern technologies.

Measures to Enhance Community Participation

- **Decentralized Governance**: Strengthening Gram Panchayats and Village Water and Sanitation Committees (VWSCs) can give communities greater decision-making power.
- **Capacity Building and Awareness**: Training programs that blend scientific techniques with indigenous knowledge can enhance local conservation efforts.
- **Financial and Institutional Support**: Schemes like MGNREGA can be leveraged for water conservation projects, ensuring financial support for community-led initiatives.
- **Technology Integration**: Geospatial mapping, water audits, and digital platforms can make water data accessible to local communities, enabling informed decision-making.
- **Legal and Policy Reforms**: Policies should explicitly mandate community participation beyond implementation, ensuring their voices are heard in planning and governance.

Conclusion

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Effective water conservation requires moving beyond mere rhetoric and centering communities' voices in decision-making. By integrating traditional wisdom with modern technology, adopting an ecosystem-based approach, and ensuring participatory governance, India can achieve sustainable water management while strengthening local communities' resilience against water crises.

Discuss the growing concern about spurious and substandard drugs in India and their implications for public health and governance. Suggest measures that state governments should take to address this issue.

Introduction: Contextual Introduction
Body: Highlight Implications for Public Health and Governance & measures for governments.
Conclusion: Way forward

India, often called the 'pharmacy of the world,' is grappling with a growing crisis of spurious and substandard (NSQ) drugs. Recent incidents in Karnataka and West Bengal, where contaminated ringer lactate solution caused multiple deaths, highlight systemic failures in drug regulation. Despite the severe public health risks and political fallout, states have not taken adequate steps to reform their drug regulatory mechanisms.

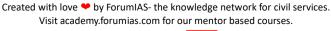**Implications for Public Health and Governance**

- **Public Health Risks:** Spurious drugs lead to prolonged illness, treatment failures, and fatalities. Contaminated injectables pose immediate life-threatening risks. Antimicrobial resistance is exacerbated by substandard antibiotics.
- **Regulatory and Legal Failures:** The fragmented regulatory framework under the Drugs & Cosmetics Act, of 1940, creates inefficiencies, as 37 different state regulators lack coordination. The absence of a national mandatory recall system delays the removal of dangerous drugs from the market. The Jan Vishwas Act (2023) weakens deterrence by making NSQ drug sales a compoundable offense, allowing offenders to escape with a meager ₹20,000 fine.
- **Political and Economic Fallout:** Deaths due to contaminated drugs lead to public outrage and political backlash. India's reputation as a global pharmaceutical hub is at risk, impacting exports.

Measures for State Governments

- **Mandatory Drug Recalls and Regulatory Action:** Impose recall duties on drug inspectors, leveraging Sections 18A, 18B, and 22(c) of the Drugs & Cosmetics Act. Conduct surprise inspections and enforce stricter penalties on violators.
- **Improving Transparency and Public Awareness:** Publish recall details, including batch numbers, in newspapers and electronic media. Require senior health officials to provide public updates on recall actions.
- **Enhanced Market Surveillance and Testing:** Increase drug sample testing, prioritizing high-risk medicines like injectables and antibiotics. Adopt a targeted sampling strategy, similar to Tamil Nadu's model.
- **Legal and Policy Reforms:** Demand a national recall law to ensure faster removal of NSQ drugs. Strengthen inter-state data sharing to prevent drugs failing in one state from circulating in another.

Conclusion

State governments must act decisively to eliminate substandard drugs through rigorous recalls, increased transparency, and stricter enforcement. Without urgent reforms, public health risks will persist, eroding trust in India's healthcare system and pharmaceutical industry.

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Discuss the factors contributing to the growth of the Indian aviation sector and the challenges it faces. Suggest measures to ensure sustainable expansion.

| **Introduction:** Contextual Introduction |
| **Body:** Factors contributing to the growth of the aviation sector & measures for expansion. |
| **Conclusion:** Way forward |

India's aviation sector is undergoing rapid expansion, marked by record aircraft orders, infrastructure growth, and policy reforms. Currently the fourth-largest aviation market, India is projected to become the third-largest within this decade.

Factors Driving Growth

- **Expanding Infrastructure:** New airports in Delhi, Mumbai, Bangalore, and Hyderabad to ease congestion. Growth in Maintenance, Repair, and Overhaul (MRO) facilities for self-reliance.
- **Strong Airline Market:** Air India's revival under private ownership is enhancing fleet and service quality. Greater competition is improving service quality and affordability.
- **Policy and Regulatory Support:** Clarification on aircraft lessors' rights improves business confidence. Goods and Services Tax (GST) exemptions for airline operations reduce financial burdens.
- **Skilled Workforce and Inclusivity:** India has the highest proportion of female commercial pilots in the world. Aviation is emerging as a viable career sector, creating new job opportunities.

Challenges Facing the Sector

- **High Operational Costs:** Aviation Turbine Fuel (ATF) prices in India are among the highest globally. Regulatory complexities and tax burdens increase airline expenses.
- **Airspace Congestion and Inefficiency:** Rapid fleet expansion requires modernized air traffic management. Oceanic and continental airspace need investment to avoid delays and inefficiencies.
- **Sustainability Concerns:** Achieving net-zero emissions by 2050 requires major sustainability investments. India has an opportunity to become a leader in Sustainable Aviation Fuel (SAF).

Measures for Sustainable Growth

- **Cost Rationalization:** Reduce ATF taxes and simplify regulatory processes. Strengthen AERA's oversight to prevent monopolistic pricing. Encourage domestic MRO industry development to cut maintenance costs.
- **Airspace Modernization:** Invest in air traffic control (ATC) technology for better efficiency. Implement better route optimization to reduce congestion. Enhance coordination between civil and defense aviation authorities.
- **Sustainability and Innovation:** Provide incentives for SAF production and R&D. Encourage airlines to adopt fuel-efficient aircraft. Implement carbon offset policies to align with global emission goals.

Conclusion

India's aviation industry is on a strong growth trajectory, backed by policy support, infrastructure expansion, and private sector investment. However, ensuring cost efficiency, airspace modernization, and environmental sustainability is crucial for maintaining long-term competitiveness.

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