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INDEX

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GENERAL STUDIES 2

1.1. POLITY & GOVERNANCE

1.1.1. REFORMING HEALTHCARE DATA THROUGH A UNIFIED NATIONAL NURSING REGISTRY

Context

The **Nurses Registration and Tracking System (NRTS)** has enrolled only **14.24 lakh out of 46.02 lakh** registered nurses in India. This **31-lakh data deficit** highlights severe implementation bottlenecks driven by **jurisdictional friction** between the Centre and State Nursing Councils, leaving a critical void in national healthcare planning.

Introduction

In a country with a suboptimal **patient-to-professional ratio**, precise healthcare workforce mapping is a critical policy imperative. The **Indian Nursing Council (INC)** launched the **NRTS** to build a unified **'live' register** of nurses. However, its sluggish adoption underscores systemic challenges in **cooperative digital federalism**, requiring a strategic shift to ensure optimal resource deployment and national health security.

What is Nurses Registration and Tracking System (NRTS)?

- It is a centralized, computerized system designed to bring individual **State Nursing Registration Councils** onto a single integrated platform.
- It aims to build a **"live" register**, issuing a **National Unique Identity card** and passbook to verified nurses.
- It shifts the focus from a historical **"stock"** of ever-registered personnel to tracking the **active workforce**, accounting for retirements, deaths, and career exits.

Federal and Administrative Basis

- **Healthcare** is primarily a **State subject**, while nursing education standards require **Union and INC coordination**.
- **Primary registration** and licensing remain the legal mandate of individual **State Nursing Registration Councils**.
- The massive data gap is not indicative of illegal practice; rather, it reflects a failure to digitally migrate legacy **State records** to the national database.

Significance of a Unified National Registry

1. **Evidence-Based Policymaking**
    - A live registry eliminates **artificial surpluses or deficits** on paper.
    - It enables accurate mapping and the **equitable nationwide deployment** of human resources.
2. **Crisis Mobilization and Disaster Management**
    - During **public health emergencies**, it allows state and central agencies to mobilize resources rapidly.

- Specialized nursing personnel can be efficiently deployed to **high-alert zones**.

3. **Ensuring Patient Safety**
    - A unified, **deduplicated database** prevents unverified individuals or impersonators from operating in the healthcare ecosystem.
    - It stops personnel with **revoked licenses** from practicing using fraudulent credentials.
4. **Empowering the Workforce**
    - A centralized digital system expedites **inter-State transfer requests**.
    - It streamlines rigorous **credential verification** for nurses seeking overseas employment.
5. **Strengthening Cooperative Federalism**
    - Successful integration of the NRTS serves as a scalable template for **national e-governance**.
    - It demonstrates how to seamlessly merge diverse **State-level data** into a cohesive national framework.

Challenges Associated with NRTS

1. **Jurisdictional Resistance and Autonomy**
    - **State Nursing Councils** are hesitant to cede data control to the Centre.
    - They view the central portal as an infringement on their **statutory licensing authority** and prefer operating parallel systems.
2. **Stark Regional Disparities**
    - States with robust healthcare infrastructure (e.g., **Tamil Nadu, Karnataka, Andhra Pradesh**) are surprisingly lagging in enrollment.
    - Conversely, states like **Bihar, Jharkhand, and Odisha** show high enrollment rates, heavily skewing national data representation.
3. **Limitations of Aadhaar Linkage**
    - While Aadhaar verification prevents **identity duplication**, it has functional limits.
    - It fails to validate a nurse's active **license status**, updated qualifications, or current workplace availability.
4. **Data Fragmentation and Obsolescence**
    - The absence of a **synchronized census** means state registries carry outdated reference dates.
    - This severely weakens the reliability of any **national estimates** derived from fragmented state data.
5. **Technological Inertia**
    - Legacy digital systems at the state level often lack the **technical capability** or **API infrastructure**.
    - State councils face a shortage of **administrative bandwidth** to integrate smoothly with the central NRTS framework.

Way Forward

1. **Promoting Consensus-Driven Federalism**
    - The **Union Ministry of Health** must institutionalize active dialogue with State Nursing Councils.

- Clear **data-sharing protocols** must be established to alleviate jurisdictional insecurities.

2. **Transitioning to Dynamic Auditing**
   - The registry must shift from a static database to a **dynamic tracking model**.
   - Mandating periodic digital **license renewals** will actively account for workforce attrition.
3. **Incentivizing State Integration**
   - The Central government should provide targeted **financial grants** to lagging State councils.
   - **Technical handholding** is required to help them modernize their IT infrastructure.
4. **Mandatory Linkage for Professional Benefits**
   - Policymakers should make NRTS registration a **mandatory prerequisite** for availing government schemes.
   - It should be linked to **public sector promotions** and international **No Objection Certificates (NOCs)**.
5. **Establishing Interoperable APIs**
   - The government must develop seamless **digital bridges** between State and Central portals.
   - **Primary registration** at the state level must automatically synchronize with the national register without duplicate efforts.
6. **Integrating Continuous Professional Development (CPD)**
   - Upgrade the NRTS portal to track real-time **skill upgrades** and **CPD credits**.
   - This moves the system beyond basic identity checks to measure the actual **competency** of the workforce.

Conclusion

A robust, real-time national nursing registry is a fundamental pillar of India's **health security**. Bridging the current **31-lakh enrollment deficit** requires moving past federal friction and embracing **cooperative digital integration**. Accurate, dynamic workforce data is essential to safeguard **patient well-being** and build a resilient healthcare system for future contingencies.

Q. *The Nurses Registration and Tracking System (NRTS) seeks to resolve the healthcare workforce data deficit but is hindered by federal friction. Discuss its significance and the associated challenges in its implementation. 15 Marks*

1.1.2. DECODING THE NATIONAL TRIBUNALS COMMISSION FRAMEWORK

Context

Parliament recently passed the **Tribunals Reforms Bill, 2026**, proposing an overarching **National Tribunals Commission (NTC)** to oversee tribunal recruitment and administration. This legislation responds to the Supreme Court's mandate in ***Madras Bar Association (2025)***, which invalidated the executive-heavy **2021 framework** to protect **judicial independence**.

Introduction

The **Tribunals Reforms Bill, 2026** introduced the **National Tribunals Commission (NTC)** to streamline the administration of **quasi-judicial bodies** and reduce court pendency. By unifying tribunal oversight, it aims to enhance **specialized adjudication** while upholding the **doctrine of separation of powers**. However, leaving critical rulemaking powers and grievance screening with the executive raises concerns regarding **institutional autonomy**.

What is National Tribunals Commission (NTC)?

- The **NTC** is a proposed statutory body designed to supervise **recruitment, administration, and performance** across **16 major tribunals**.
- It consists of a **Chairperson, two judicial members, and two technical members** to balance legal and domain expertise.
- It is mandated to maintain a centralized **National Tribunals Data Grid** to track case information and institutional performance.

Legislative and Constitutional Basis

- **Part XIV-A (Articles 323A & 323B)** was inserted by the **42nd Amendment Act, 1976** to enable tribunal creation for administrative and specialized disputes.
- **Article 50** mandates the separation of the **judiciary from the executive**, while **Articles 226/227 and 136** preserve **judicial review** as part of the **Basic Structure** (*L. Chandra Kumar, 1997*).
- The **2026 Bill** repeals the **Tribunals Reforms Act, 2021**, fulfilling the Supreme Court mandate in ***Rojer Mathew (2019)*** and ***Madras Bar Association (2025)***.

Significance of National Tribunals Commission (NTC)

1. **Institutional Decoupling**
    - It separates tribunal management from **parent ministries**, eliminating inherent **conflicts of interest**.
    - This protects adjudicators from administrative leverage exercised by **executive departments**.
2. **Standardized Service Conditions**
    - It restores **five-year tenure terms**, providing essential **security of tenure** to tribunal members.
    - Harmonized service rules prevent arbitrary post-retirement benefits and varied appointment terms.
3. **Data-Driven Governance**
    - The **National Tribunals Data Grid** enables real-time tracking of **pendency, disposal rates, and vacancies**.
    - Transparent digital records enhance overall **institutional performance** and judicial accountability.
4. **Reduced Burden on Constitutional Courts**
    - Specialized adjudication diverts technical tax, corporate, and environmental cases away from **High Courts**.
    - Speedy dispute resolution improves **ease of doing business** and strengthens the **investment climate**.

5. **Alignment with Judicial Directives**
    - It directly implements long-standing apex court mandates from ***Rojer Mathew*** and ***Madras Bar Association***.
    - The framework preserves **High Court superintendence** while streamlining **quasi-judicial administration**.

Challenges Associated with NTC

1. **Excessive Executive Delegation**
    - **Section 14** leaves member qualifications, selection methods, and salaries to subordinate **executive rulemaking**.
    - This delegates **essential legislative functions**, contradicting the judicial principles affirmed in ***Rojer Mathew***.
2. **Executive Control Over Disciplinary Screening**
    - Under **Section 16**, parent ministries screen complaints before forwarding them to the **NTC** for inquiry.
    - Giving the executive gateway control over grievances severely compromises **disciplinary independence**.
3. **Diluted Appointment Autonomy**
    - The Central Government retains primary authority over appointing **NTC members**, merely consulting the **CJI**.
    - The absence of a **judicially dominated selection panel** leaves the commission vulnerable to political influence.
4. **Financial and Administrative Dependence**
    - The **NTC** relies on executive sanction for its **budgetary allocations** and administrative staffing.
    - Financial dependency on executive ministries undermines the core objective of **insulating tribunals**.
5. **Lack of Legislative Deliberation**
    - The **2026 Bill** was passed rapidly through Parliament without substantive **committee scrutiny or debate**.
    - Bypassing thorough legislative review risks leaving **procedural ambiguities** unaddressed.

Way Forward

1. **Statutory Anchoring of Member Qualifications**
    - Inscribe eligibility criteria, selection procedures, and tenures directly into **primary legislation**.
    - Eliminate subordinate rulemaking under **Section 14** to prevent executive modification of **qualifications**.
2. **Independent Disciplinary Mechanism**
    - Remove executive pre-screening of complaints under **Section 16** to ensure direct intake by the **NTC**.

- Vest full disciplinary oversight within a **judicially-led commission** to safeguard adjudicator integrity.

3. **Judicial Majority in Selection Panels**
   - Ensure the **Chief Justice of India (CJI)** or a judicial nominee leads the NTC selection panel with a **binding vote**.
   - Restrict unilateral executive powers regarding the **appointment or removal** of commission members.
4. **Financial Autonomy via Consolidated Fund**
   - Charge the operational expenses of the **NTC** directly on the **Consolidated Fund of India**.
   - Independent financial sanctioning eliminates administrative leverage previously held by **parent ministries**.
5. **Operationalizing the Data Grid**
   - Expedite deployment of the **National Tribunals Data Grid** for transparent **vacancy and pendency management**.
   - Publicly publishing performance metrics fosters **institutional credibility** and public trust.
6. **Decentralization and Geographic Accessibility**
   - Establish regional benches for major tribunals to democratize **access to justice** across states.
   - Expanding physical and digital access lowers litigation costs for **small litigants and individual citizens**.

Conclusion

The establishment of the **National Tribunals Commission (NTC)** marks a vital step toward reforming India's **tribunal system**. However, leaving rulemaking, appointments, and discipline under executive influence undermines its purpose. Securing complete **institutional autonomy** and aligning with the **separation of powers** is essential to safeguard **judicial independence** and ensure effective administrative justice.

Q. *Comment on the need of administrative tribunals as compared to the court system. Assess the impact of the recent tribunal reforms through rationalization of tribunals made in 2021.*

1.2. INTERNATIONAL RELATIONS

1.2.1 MECCA DEFENCE AGREEMENT

Context

On **7 August 2026**, Pakistan, Saudi Arabia and Türkiye signed a **collective defence pact in Mecca**, pledging mutual security and deterrence. It reflects **West Asia's shifting security order**, as regional powers seek greater strategic autonomy amid conflicts and uncertainty over U.S. security commitments.

What is Driving the Agreement?

1. **Changing West Asian Security Architecture**
    - Traditional West Asian security has largely depended on the **U.S. security umbrella**.
    - Regional conflicts and questions over the future U.S. role have encouraged countries to seek **alternative security partnerships**.
    - The Iran-Israel conflict and attacks involving U.S. bases have increased Gulf states' perception of vulnerability.
2. **Saudi Arabia's Security Concerns**
    - Vulnerability to **Iranian missiles and drones**.
    - Desire to reduce excessive dependence on external security guarantees.
    - Saudi Arabia's economic power gives it the financial capacity to support regional defence initiatives.
3. **Türkiye's Strategic Ambition**
    - Türkiye seeks a larger role in **West Asian geopolitics**.
    - Its growing defence-industrial capacity, particularly in **drones and military technology**, strengthens its strategic relevance.
4. **Pakistan's Search for Strategic Space**
    - Pakistan seeks to expand its role beyond South Asia.
    - It can potentially position itself as a **security partner and mediator** in West Asia.
    - Defence ties with Saudi Arabia also have longstanding historical foundations.

Strategic Significance

1. **Emergence of Regional Security Partnerships**
    - Signals a shift from dependence on the **U.S. security umbrella** towards regional balancing and minilateral cooperation.
    - Reflects growing **strategic autonomy** among West Asian powers amid regional instability.
2. **Collective Defence**
    - The principle of **"attack on one = attack on all"** aims to create collective deterrence against external threats.
    - However, its credibility depends on actual military commitments and willingness to respond collectively.
3. **Defence Interoperability**
    - Can promote **joint exercises, intelligence sharing, defence technology and military coordination**.
    - Cooperation in **drones, counter-drone systems and surveillance** could strengthen regional capabilities.
4. **Türkiye–Saudi Rapprochement**
    - Shows former strategic competitors moving towards cooperation based on **common security interests**.
    - Indicates that shared regional threats can encourage **pragmatic geopolitical realignment**.

5. **Pakistan's Expanding West Asian Role**
    - Provides Pakistan an opportunity to project itself as a **regional security partner beyond South Asia**.
    - Could enhance its diplomatic influence and strategic relevance in the **Muslim world and Gulf region**.

Why the Agreement May Struggle to Become a Credible Deterrent

1. **Lack of Strategic Convergence**
    - The three countries face different threats: **Saudi Arabia—Iran/Gulf security; Türkiye—regional conflicts; Pakistan—India-centric security**.
    - Hence, a common defence pledge may not necessarily translate into **collective military action**.
2. **Different Strategic Priorities**
    - Their strategic theatres differ: **Saudi Arabia—Persian Gulf; Türkiye—West Asia / Mediterranean; Pakistan—South Asia**.
    - Different geographical interests may limit sustained **strategic and operational coordination**.
3. **Existing Conflicts Test Credibility**
    - The pact comes amid ongoing regional conflicts, raising doubts about whether partners would actually **fight together during a crisis**.
    - Lack of clarity on **command, force deployment, rules of engagement and decision-making** weakens its credibility.
4. **The Iran Factor**
    - If perceived as an **anti-Iran coalition**, the pact could intensify regional strategic competition.
    - It may provoke **Iranian counter-balancing and greater instability in the Persian Gulf**.
5. **Alliance ≠ Deterrence**
    - A formal alliance alone cannot guarantee deterrence; it requires **capability, credibility and clear communication**.
    - The agreement shows political commitment, but its **actual military credibility remains untested**.

Opportunities for India (INDIA'S PERSPECTIVE)

1. **Strategic Autonomy**
    - A more **multipolar West Asia** gives India greater diplomatic space and reduces dependence on any single external power.
    - It strengthens India's **multi-alignment and strategic autonomy**.
2. **Stronger India–Saudi Arabia Relations**
    - India can deepen cooperation with Saudi Arabia in **energy, investment, defence, infrastructure and counter-terrorism**.
    - The partnership can support India's broader **West Asia strategy**.

3. **India–Türkiye Engagement**
    - India should maintain **pragmatic diplomatic and economic engagement** with Türkiye despite differences.
    - This can prevent Pakistan from gaining disproportionate strategic influence in Ankara.
4. **Protection of Diaspora and Energy Interests**
    - Gulf stability is crucial for India's **energy supplies, trade, remittances and large diaspora**.
    - Regional conflict can therefore directly affect India's **economic and human security**.
5. **Connectivity**
    - A stable West Asia is essential for India's connectivity ambitions, particularly the **India–Middle East–Europe Economic Corridor (IMEC)**.
    - Regional instability could disrupt trade routes and connectivity investments.

Concerns for India (INDIA'S PERSPECTIVE)

1. **Pakistan's Strategic Expansion**
    - The pact could enhance Pakistan's image as a **regional and Islamic-world security actor**.
    - This may increase India's strategic and diplomatic challenges.
2. **Possibility of Anti-India Spillover**
    - Pakistan could potentially gain **military, technological or diplomatic advantages** from deeper regional defence cooperation.
    - These benefits may indirectly affect India's security environment.
3. **Regional Polarisation**
    - An explicitly **anti-Iran or anti-U.S. bloc** could complicate India's relations with Saudi Arabia, Iran, Israel, Türkiye and the U.S.
    - India would face greater difficulty in maintaining its **balanced multi-alignment**.
4. **Impact on Energy Security**
    - Escalation in the Gulf could disrupt **oil supplies, shipping and the Strait of Hormuz**, affecting India.
    - Higher energy prices could increase India's **import bill and inflationary pressures**.
5. **Maritime Security**
    - Instability in the Persian Gulf and Arabian Sea can threaten India's **Sea Lines of Communication (SLOCs)**.
    - This makes **maritime surveillance, naval preparedness and protection of commercial shipping** increasingly important.

India's Strategic Approach

1. **Deepen Bilateral Partnerships**
    - Strengthen independent partnerships with **Saudi Arabia, UAE, Iran, Israel and Türkiye** based on India's national interests.
    - Avoid exclusive blocs and preserve India's **strategic flexibility and diplomatic space**.

2. **Maintain Strategic Autonomy**
   - India should not become part of competing West Asian security blocs or take sides in regional rivalries.
   - Follow a **multi-alignment approach**, engaging all major regional powers.
3. **Strengthen Maritime Security**
   - Enhance **maritime domain awareness, naval cooperation and surveillance** across the Arabian Sea and Indian Ocean.
   - Secure India's **SLOCs and commercial shipping** against conflict-related disruptions.
4. **Energy Diversification**
   - Reduce vulnerability by diversifying **crude suppliers, expanding Strategic Petroleum Reserves and promoting renewables**.
   - This can shield India from supply disruptions and **volatile global energy prices**.
5. **Diplomatic Balancing**
   - Use India's relationships with competing regional actors to promote **dialogue, de-escalation and conflict resolution**.
   - India's role should be that of a **balancing and constructive partner**, rather than a bloc participant.
6. **Protect the Diaspora**
   - Strengthen **early-warning, evacuation and crisis-response mechanisms** for Indians living in conflict-prone regions.
   - Ensure continuity of **remittances, consular assistance and citizen protection** during regional crises.

Conclusion

The Mecca Agreement reflects the shift towards a **more multipolar West Asian security order**. For India, **strategic autonomy, multi-alignment and regional balancing** remain crucial. India should protect its **energy, diaspora, connectivity and maritime interests** while avoiding bloc politics.

Q. *The Mecca Defence Agreement reflects the emergence of a more multipolar and regionally driven security architecture in West Asia. Examine its implications for India and suggest an appropriate strategic response. 15 marks*

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2.1. ECONOMY

2.1.1. UPI CHARGES DEBATE: BALANCING DIGITAL INCLUSION WITH FINANCIAL SUSTAINABILITY

Context

UPI's rapid expansion as India's **Digital Public Infrastructure (DPI)** has raised concerns over its **zero-MDR model** and ecosystem sustainability. The debate regarding application of charges on financial transaction through UPI centres debate on recent legislative changes on balancing **financial sustainability, consumer affordability, MSME protection and financial inclusion** without weakening UPI's network effects.

Introduction

- The **Unified Payments Interface (UPI)** has transformed India's payment ecosystem by providing a fast, interoperable and low-cost digital payment infrastructure.
- With **55.49 crore users** onboarded by June 2026 and UPI transactions reaching **24,162 crore in volume and ₹314 lakh crore in value in FY 2025–26**, UPI has become a critical component of India's Digital Public Infrastructure (DPI).

What is the recent development?

- The **Lok Sabha has passed the Taxation and Other Laws (Amendment) Bill, 2026**, which amends the Payment and Settlement Systems Act, 2007 and creates a legal framework through which the government can permit charges on specified digital payment modes.
- **Important clarification:** this does **not automatically mean that consumers will start paying for UPI**. The actual fee structure would require subsequent government notification/regulation.
- Current proposals reportedly focus on **MDR on large merchant transactions**, particularly transactions above **₹2,000**, rather than imposing a universal charge.
- One reported model envisages an MDR of around **0.3–0.5%** for large merchants, with different turnover thresholds being considered. **No final fee structure has been announced.**
- The recent clarification from the Payments Council of India indicates that **consumers and small merchants are intended to remain protected from such charges**.

Significance of UPI for the Indian Economy

1. **Financial Inclusion**
   - Enables low-cost digital payments even for small businesses and individuals.
   - Reduces dependence on cash and expands formal financial participation.
2. **Formalisation of Economy**
   - Creates digital transaction trails.
   - Helps improve transparency in economic activity and can support tax compliance.
3. **Digital Public Infrastructure**
   - UPI demonstrates India's ability to build **population-scale, interoperable digital infrastructure**.

- Its international expansion has also strengthened India's **digital diplomacy**; UPI-linked systems are now operational in several countries.

4. **Ease of Doing Business**
    - Instant settlement and QR-based payments reduce transaction costs for businesses.

Why has the government reconsidered the Zero-MDR model?

1. **Financial sustainability of UPI**
    - UPI transactions are free to users and merchants under the existing model, but **banks, payment service providers and technology platforms still incur infrastructure and operational costs**.
    - Rapid growth in transaction volumes has increased the need for investment in
        - payment infrastructure,
        - cybersecurity,
        - fraud prevention,
        - server capacity and
2. **Fiscal burden of maintaining zero-MDR**
    - The government has been supporting the ecosystem through incentive schemes for low-value UPI transactions.
    - For FY 2024–25, the Cabinet approved an incentive scheme with an estimated outlay of **₹1,500 crore**, providing incentives for eligible small-merchant UPI transactions up to ₹2,000.
3. **Large-value transactions can potentially bear some cost**
    - A major argument behind the proposal is that **large merchants and high-value transactions have greater capacity to absorb a small MDR**.
    - Reuters reported that transactions above ₹2,000 represented only around **4% of UPI transaction volume but about 67% of transaction value**, making them a potential target for a calibrated levy.

Major Challenges of Introducing UPI Charges

- **Risk of burden shifting to consumers:** Merchants may **pass MDR costs to consumers** through higher prices or explicit payment charges, reducing UPI's affordability and potentially encouraging a shift back to cash.
- **Threat to UPI's network effect:** UPI's success rests on **simplicity, interoperability and low cost**. Higher charges may reduce merchant acceptance and weaken the **network effect**, wherein greater participation increases the system's overall value.
- **Impact on MSMEs and small merchants:** Small businesses operate on **thin profit margins**; indiscriminate charges could increase transaction costs, discourage digital adoption and incentivise cash-based transactions. Hence, **turnover-based exemptions** are essential.
- **Digital divide:** Unequal access to **smartphones, internet connectivity and digital literacy**, particularly among elderly and digitally vulnerable groups, may make additional payment costs regressive and deepen existing digital inequalities.
- **Cybersecurity and fraud risks:** Growing UPI dependence increases exposure to **phishing, social engineering, fake QR codes, identity theft and payment fraud**. Any revenue generated should partly support **cybersecurity, fraud detection and payment-system resilience**.

Way Forward

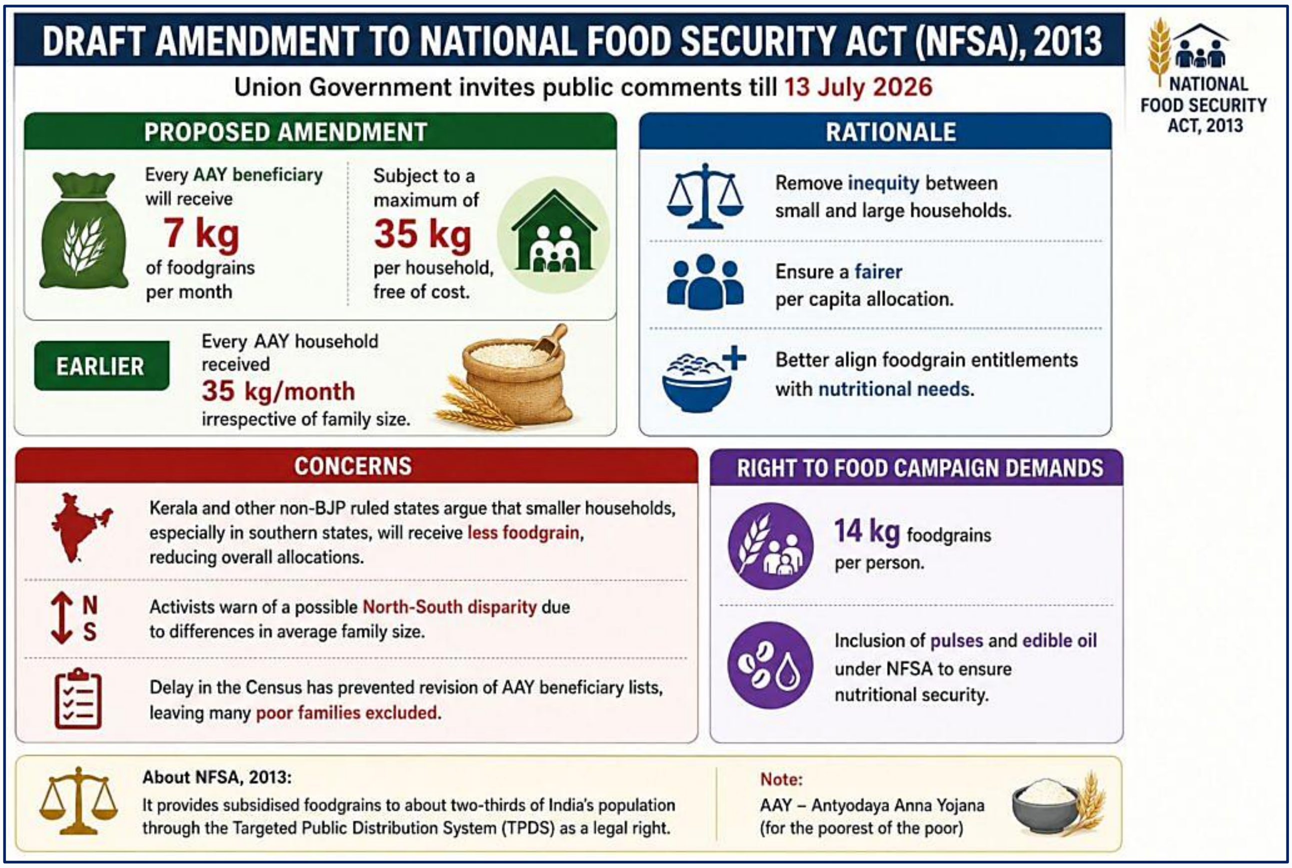
1. **Adopt a calibrated MDR rather than universal charges**
   - **Selective pricing:** Apply MDR only to **large merchants, high-value transactions and commercially capable entities**.
   - **Protect small-value payments:** Keep **P2P transactions and low-value merchant payments** free or minimally charged.
2. **Protect MSMEs and small merchants**
   - **Turnover-based exemptions:** Establish clear thresholds below which merchants remain exempt from MDR.
   - **Safeguard micro-enterprises:** Protect **kirana stores, street vendors and small businesses** from additional transaction costs.
3. **Prevent cost pass-through to consumers**
   - **Clear liability framework:** Explicitly define **who bears the MDR** to prevent arbitrary cost shifting.
   - **Transparency:** Require merchants to clearly disclose any additional payment-related charges.
4. **Shift towards a sustainable financing model**
   - **Reduce subsidy dependence:** Gradually reduce excessive reliance on **government incentives** for sustaining UPI.
   - **Revenue-sharing mechanism:** Develop a predictable framework for distributing revenues among **banks, PSPs and other ecosystem participants**.
   - **Improve efficiency:** Promote technological and operational efficiency to reduce payment-processing costs.
5. **Reinvest UPI revenues in the digital ecosystem**
   - **Cybersecurity:** Allocate resources towards stronger **fraud detection, cyber protection and payment-system resilience**.
   - **Infrastructure:** Invest in scalable payment infrastructure to handle rising transaction volumes.
   - **DPI sustainability:** Thus, MDR revenue can be transformed from merely a **transactional cost into an investment in Digital Public Infrastructure**.
6. **Strengthen competition and ecosystem resilience**
   - **Maintain interoperability:** Preserve UPI's core principle of **interoperability across banks and payment applications**.
   - **Strengthen NPCI:** Enhance the **technical, regulatory and risk-management capabilities** of the National Payments Corporation of India.

Conclusion

- UPI represents one of India's most successful examples of **Digital Public Infrastructure**, combining technological innovation with financial inclusion and formalisation. The present debate should therefore not be framed as **"free UPI versus paid UPI"**
- A calibrated, evidence-based MDR regime focused on large commercial users, coupled with protection for small merchants and consumers, can achieve the right balance between **innovation, affordability, competition and sustainability**.

***Q.** The zero-MDR model has played a crucial role in making UPI an inclusive Digital Public Infrastructure, but its long-term financial sustainability remains a concern. Discuss the challenges associated with introducing charges on UPI transactions and suggest a balanced way forward. 15 Marks*

2.1.2. DECODING THE NFSA AMENDMENT 2026



Context

The draft National Food Security (Amendment) Bill, 2026 proposes shifting the Antyodaya Anna Yojana (AAY) from a flat 35 kg per household quota to an individual allocation of 7 kg per person, subject to a maximum ceiling of 35 kg per household.

Introduction

India is shifting its welfare focus from basic **caloric access** to comprehensive **nutrition security**. The **draft NFSA (Amendment) Bill, 2026** aligns **AAY entitlements** with family size to rationalize distribution. However, balancing **per-capita equity** without penalizing smaller, highly vulnerable households remains a critical policy challenge.

What is the Proposed Reform?

- The draft Bill restructures **AAY entitlements** from a flat **35 kg per household** to **7 kg per person monthly**, capped at **35 kg**.
- It aims to eliminate per-capita disparity between **AAY families** and **Priority Households (PHH)**, who currently receive **5 kg per person monthly**.

- It seeks to align distribution with demographic needs while integrating last-mile health services through **Fair Price Shops**.

Legislative and Demographic Basis

- Enacted under the **National Food Security Act (NFSA), 2013**, which guarantees subsidized foodgrains to **75% of rural** and **50% of urban** populations.
- Statutory coverage remains capped at **81.35 crore beneficiaries** based on **Census 2011**, covering only **55.6%** of India's estimated **146.4 crore population in 2025**.
- The reform responds to **ICMR-NIN 2024 guidelines** and **NFHS-6 data**, addressing the dual challenge of persistent child undernutrition and rising **type-2 diabetes**.

Significance of NFSA Entitlement Reforms

1. **Rationalizing Per-Capita Equity**
   - Links foodgrain distribution directly to **household size**, eliminating disparities where large AAY families received less per-person support than PHH beneficiaries.
   - Ensures larger vulnerable households receive equitable **per-capita caloric support**.
2. **Addressing the Double Burden of Malnutrition**
   - Realigns public food distribution with **ICMR-NIN guidelines** that recommend limiting cereal energy contribution to **45%**.
   - Helps curb high carbohydrate intake (**62.3% of daily energy**), directly addressing rising **lifestyle diseases and prediabetes**.
3. **Leveraging Technology for Transparent Delivery**
   - Capitalizes on near-universal ePoS coverage across **5.50 lakh Fair Price Shops** and the **One Nation One Ration Card (ONORC)** platform.
   - Ensures nationwide **ration portability** and seamless real-time tracking of foodgrain off-take.
4. **Incentivizing Agricultural Diversification**
   - Incorporating **pulses, millets, and edible oils** into welfare baskets creates stable demand signals via **Minimum Support Price (MSP)** procurement.
   - Promotes sustainable crop rotation and supports **pulse and oilseed farmers**.
5. **Integrating Health and Welfare Systems**
   - Transforms **Fair Price Shops** into informational hubs linking beneficiaries to **Ayushman Arogya Mandirs** for voluntary NCD screenings.
   - Strengthens convergence between the **Public Distribution System (PDS)**, **Anganwadi services**, and **PM POSHAN**.

Challenges Associated with the Proposed Bill

1. **Reduced Support for Small Vulnerable Households**
   - The **7 kg per person cap** slashes grain allocations for 1- to 4-member AAY families by **20% to 80%**.
   - Disproportionately affects single **elderly individuals, widows, and persons with disabilities**.
2. **Asymmetric Regional and Federal Impact**

- States with smaller average household sizes face steep allocation cuts, such as **Tamil Nadu**, where **84.5%** of AAY families have fewer than five members.
- Leads to a projected **35.6% drop in state grain quota**, creating **Centre-State federal friction**.

3. **Exclusion due to Outdated Census Data**
    - Beneficiary coverage remains locked to **Census 2011 figures**, excluding millions of deserving poor added over the last decade.
    - Leaves a large demographic segment without access to subsidized **food security safety nets**.
4. **Fiscal Costs of Dietary Diversification**
    - Providing non-cereal items like **pulses, milk, and eggs** requires massive additional budgeting beyond the **₹2,27,629 crore food subsidy**.
    - Perishable items create complex **cold-chain logistics and supply chain bottlenecks**.
5. **Risk of Digital and Biometric Exclusion**
    - Over-reliance on **ePoS devices** and biometric authentication risks excluding vulnerable populations during technical glitches.
    - Lack of robust **offline fallback mechanisms** can lead to the denial of constitutional entitlements.

Way Forward

1. **Institute an Explicit No-Loss Safeguard**
    - Protect small vulnerable families by guaranteeing a **35 kg monthly floor** for all existing AAY households.
    - Ensure no household experiences a reduction in **baseline foodgrain allocations**.
2. **Expand Coverage Ceilings Post-Census**
    - Recalculate NFSA population coverage benchmarks immediately upon release of **Census 2027 figures**.
    - Adjust state-level quotas to reflect current **demographic realities and deprivation criteria**.
3. **Separate Budgetary Allocation for Nutrition**
    - Fund **dietary diversification** (pulses, millets, edible oils) through dedicated, independent budget lines.
    - Avoid financing non-cereal foods by cutting existing **cereal entitlements**.
4. **Execute Phased State Pilots**
    - Conduct state-level pilot projects to assess **consumption patterns, glycemic impacts, and supply feasibility**.
    - Use empirical pilot evidence to guide **fiscally sustainable nationwide expansion**.
5. **Guarantee Offline Fallback Protocols**
    - Institutionalize mandatory **offline authentication pathways** and assisted access for persons with limited mobility.
    - Ensure that **biometric or technical failure** never results in the denial of entitled rations.

6. **Strengthen Last-Mile Health Referrals**
    - Train **Fair Price Shop operators** to disseminate voluntary, multilingual nutrition awareness materials.
    - Facilitate confidential referrals to **Ayushman Arogya Mandirs** without tying health checks to ration eligibility.

Conclusion

The **draft NFSA (Amendment) Bill, 2026** marks a critical shift toward **nutrition security**. By implementing a **no-loss safeguard**, updating **Census coverage**, and funding **dietary diversification**, India can successfully combat malnutrition and ensure equitable **food security with dignity**.

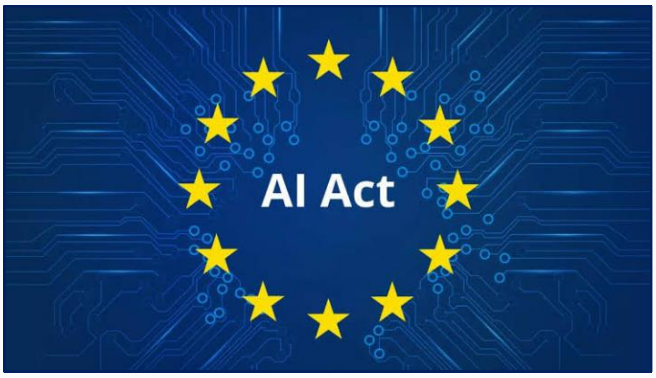
Q. *What are the salient features of the National Food Security Act, 2013? How has the Food Security Bill helped in eliminating hunger and malnutrition in India? 15 Marks*

2.2. SCIENCE & TECHNOLOGY

2.2.1. EU AI ACT: A STRATEGIC OPPORTUNITY FOR INDIA'S AI AND DIGITAL ECONOMY

Context

The **EU AI Act** is the world's first comprehensive, **risk-based AI regulatory framework**, imposing stricter norms on high-risk AI and GPAI. For India, these compliance requirements offer opportunities in **AI auditing, certification, cybersecurity, legal services and AI governance**.



Introduction

- Artificial Intelligence is transforming economies and governance, but its deployment also raises concerns regarding **privacy, discrimination, misinformation, cybersecurity, accountability and fundamental rights**.
- The EU AI Act seeks to address these concerns through a **risk-based regulatory model**.For India, it can be seen as an opportunity to develop an **AI assurance, testing, certification and regulatory-services industry.**

What is the EU AI Act?

1. **Risk-Based Regulation**
    - The Act categorises AI systems based on their **potential harm**, with stricter rules applying to systems carrying greater risks.
    - **High-risk and unacceptable-risk AI** therefore face significantly stronger regulatory requirements than low-risk applications.

2. **High-Risk AI Regulation**
   - AI used in **employment, education, healthcare, essential services, law enforcement, critical infrastructure and certain biometric applications** is subject to enhanced safeguards.
   - These systems must ensure **risk management, data quality, transparency, traceability, human oversight, accuracy and cybersecurity**.
3. **Conformity Assessment**
   - Before deploying certain high-risk AI systems, providers must demonstrate that they comply with the Act's prescribed standards.
   - **Independent conformity-assessment bodies** may be involved, making AI compliance more systematic and verifiable.
4. **General-Purpose AI (GPAI)**
   - Providers of GPAI models must fulfil obligations relating to **technical documentation, downstream information, copyright compliance and transparency regarding training content**.
   - More stringent requirements apply to GPAI models presenting **systemic risks**.

Why is the EU AI Act Relevant to India? — Opportunities for India

A. Economic opportunities

1. Large EU Market → Demand for Indian AI Services

- The EU is a major global technology and business market, and Indian IT companies serving European clients will increasingly need to meet AI compliance requirements.
- This can generate demand for **AI auditors, legal experts, technical assessors and compliance professionals**.

2. Emergence of an AI-Compliance Industry

- Stringent regulation creates an entirely new service chain: **AI development → risk assessment → testing → auditing → certification → monitoring → compliance.**
- Indian firms can specialise in **algorithmic auditing, bias testing, model validation, risk assessment and regulatory documentation**.

3. Leverages India's Existing IT Advantage

- India already has a large pool of **software engineers, IT professionals, consultants, lawyers and AI specialists**.
- Its experience in servicing global clients and meeting international regulatory requirements provides an existing foundation.

4. Employment and Skill Creation

- AI regulation will create demand for emerging professions such as **AI auditors, AI ethicists, data-governance specialists, AI risk managers, cybersecurity experts and technology lawyers**.

5. Startup and MSME Opportunities

- Indian startups can develop solutions for **AI testing, explainability, bias detection, model monitoring, synthetic data and privacy-enhancing technologies**.

- This can democratise India's AI ecosystem beyond large IT companies.

B. Strategic & Geopolitical Opportunities

1. Strengthening India–EU Strategic Partnership

- AI can become a new pillar of India–EU cooperation alongside **trade, technology, digital connectivity, climate and security**.
- India's ability to provide trusted AI-compliance services can deepen technological interdependence.

2. Global South Leadership

- India's experience with digital public infrastructure and its position in the Global South can help it advocate for **inclusive AI governance**.
- Key concerns include **digital divide, affordable AI infrastructure, capacity building, technology access and technology transfer**.
- **Opportunity:** India can become a voice for developing countries in emerging global AI-governance debates.

C. Legal & Governance Opportunities

1. Building a Comprehensive AI Governance Framework

- The EU framework demonstrates that AI governance requires more than generic technology regulation.
- India can develop an integrated framework covering:
  Data → Algorithm → Deployment → Human Oversight → Liability → Redressal.
- This is particularly important for AI used in **healthcare, recruitment, credit, education, welfare delivery, policing and public administration**. .

2. Protection of Fundamental Rights

- AI can affect **Article 14 through algorithmic discrimination**, **Article 19 through manipulation and surveillance**, and **Article 21 through threats to privacy, dignity and autonomy**.
- The **Puttaswamy judgment** recognising privacy as a fundamental right strengthens the case for responsible AI and data governance.

D. Ethical Opportunities

1. Promoting Accountable AI

- AI systems affecting people's lives must have identifiable responsibility for harmful outcomes.

2. Ensuring Transparency and Explainability

- Citizens should not be subjected to consequential decisions based entirely on opaque **"black-box" algorithms**.

E. Cybersecurity Opportunities

1. AI-Based Cybersecurity

- AI can simultaneously become a tool for cyberattacks and a tool for detecting them.
- India can develop solutions for **AI-generated attack detection, automated threat monitoring and incident response**.

Challenges for India in Leveraging the EU AI Act

1. Lack of a Mature AI Regulatory Ecosystem

- Although India has rapidly expanding **AI capabilities**, its institutional ecosystem for **independent AI audits, algorithmic testing, certification, liability determination and regulatory compliance** is still evolving.
- The absence of well-established **AI assurance institutions and standardised assessment mechanisms** may limit India's ability to immediately capture the opportunities created by the EU AI Act.

2. High Compliance Costs for MSMEs and Startups

- Compliance with stringent AI regulations may require significant expenditure on **documentation, testing, certification, cybersecurity, legal consultation and continuous monitoring**.
- Large technology companies may have the financial and technical capacity to absorb these costs, but **MSMEs and startups may find them disproportionately burdensome**.

3. Shortage of Interdisciplinary AI-Governance Talent

- Effective AI governance requires expertise across **technology, law, ethics, economics, cybersecurity and public policy**.
- India's conventional education and training systems often produce specialists in individual disciplines rather than professionals capable of integrating these domains.

4. Risk of Regulatory Fragmentation

- Different countries may adopt divergent standards regarding **AI safety, data protection, algorithmic accountability and certification**.
- Indian companies operating globally could consequently face multiple compliance requirements, increasing costs and administrative complexity.

5. Rapid Technological Change and Regulatory Uncertainty

- AI technologies are evolving much faster than traditional regulatory cycles, making it difficult for governments to formulate rules that remain relevant for long periods.
- A highly rigid regulatory framework could become **technologically outdated**, while excessive uncertainty could discourage private investment.

Way Forward — India's AI Regulatory Framework

1. Adopt a Risk-Based Regulatory Architecture

- India should classify AI systems according to their **potential impact and degree of harm**, with regulatory requirements increasing proportionately with the associated risk.
- This would prevent both **over-regulation of low-risk innovation and under-regulation of high-risk applications**.

2. Ensure Transparency for Moderate-Risk AI

- AI systems that may influence users but do not pose severe risks should be subject to **transparency, disclosure and appropriate user-information requirements**.
- Users should know when they are interacting with AI or when AI significantly contributes to a decision affecting them.

3. Strict Oversight of High-Risk AI

- AI used in sensitive sectors such as **healthcare, employment, education, credit, essential services and law enforcement** should undergo mandatory **risk assessment, testing, auditing and documentation**.
- Such systems should also incorporate **human oversight, data-quality safeguards, cybersecurity and mechanisms for grievance redressal**.

4. Establish an AI Assurance Ecosystem

- India should develop accredited institutions for **AI testing, algorithmic auditing, certification, conformity assessment and model evaluation**.
- This would help Indian companies comply with international standards and enable India to emerge as a **global AI assurance hub**.

5. Build Interdisciplinary AI-Governance Capacity

- India should develop specialised professionals combining **technology, law, ethics, cybersecurity, economics and public policy**.
- Universities, IITs, law schools and public-policy institutions can introduce interdisciplinary programmes focused on **AI governance and responsible innovation**.

6. Support MSMEs and Startups

- Compliance requirements should be designed proportionately so that smaller firms are not burdened with the same costs as large technology companies.
- The government can provide **regulatory sandboxes, shared testing infrastructure, certification support and technical guidance** to encourage responsible innovation.

7. Promote Global Regulatory Interoperability

- India should work with the **EU, G20, GPAI and international standard-setting bodies** to develop common and interoperable AI standards.
- Harmonised standards can reduce **multiple compliance regimes**, lower costs for Indian exporters and strengthen India's role in global AI governance.

Conclusion

- The EU AI Act should be viewed not merely as a **regulatory challenge but as a strategic economic opportunity** for India.
- By developing strong **AI governance, testing, auditing and conformity-assessment capabilities**, India can convert compliance burdens into a new exportable service industry.

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