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INDEX

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GENERAL STUDIES 1

1.1. SOCIETY

1.1.1. CASTE CENSUS AND THE DEBATE ON A CASTELESS SOCIETY

Context

- The **Supreme Court recently** dismissed a petition seeking to stop the caste census planned under Census 2027.
- The Court observed that the government must know how many backward communities exist and who requires welfare support.
- In April 2025, the Union Government announced that caste enumeration would be included in the Census for the first time since 1931.

What is Caste Census?

- A caste census is the systematic collection of population data based on **caste identity** as part of the national Census. Unlike a conventional census, which records details such as **population, literacy, occupation, and housing**, a caste census specifically identifies the caste of individuals and households.
- This helps generate **caste-wise demographic and socioeconomic data** related to **education, employment, income, and regional distribution**. Such data is important for **evidence-based policymaking, welfare targeting, affirmative action, and reservation policies**.

Historical Evolution of Caste Enumeration in India

1. **The Colonial Era**
    - **1881 to 1931:** Every decennial **Census** conducted under British rule included detailed **caste enumeration**. The **1931 Census**, which recorded nearly **4,147 caste groups**, became the primary database for later **backward class policies** in India.
    - **1941 Census:** Although caste data was collected, it was never fully published due to **World War II** and the circumstances surrounding **Partition**, resulting in a major **data gap** that continues even today.
2. **Independent India's Decision to Stop Caste Enumeration**
    - **1951 Census:** After Independence, the government decided to exclude caste enumeration for all communities except **Scheduled Castes (SCs)** and **Scheduled Tribes (STs)**. This reflected the constitutional vision of creating a **casteless society**.
    - As a result, data regarding **Other Backward Classes (OBCs)** remained frozen at the **1931 Census figures**, and later backward class policies relied mainly on estimates and extrapolations.

3. **Important Commissions Highlighting the Data Gap**
    - **Kaka Kalelkar Commission (1953):** The first **Backward Classes Commission** established under **Article 340** identified around **2,399 backward communities**, but depended entirely on **1931 Census data**.
    - **Mandal Commission (1978–80):** Estimated the **OBC population at 52%** using 1931 data, sample surveys, and state-level information. It recommended **27% reservation** for OBCs in Central government jobs and educational institutions.
    - **Indra Sawhney Case (1992):** The Supreme Court upheld **27% OBC reservation**, introduced the concept of the **creamy layer**, and imposed a **50% ceiling on total reservations**.
4. **SECC 2011 and Bihar Caste Survey 2023**
    - **Socio-Economic and Caste Census (SECC) 2011:** The first major attempt at caste enumeration after Independence covered nearly **24 crore households**. However, the absence of a standardised caste list led to over **46 lakh caste entries** and nearly **8 crore data errors**, making much of the data unreliable and unpublished.
    - **Bihar Caste Survey 2023: Bihar became the first major State** to publish a detailed caste survey. The survey reported **OBCs at 27.13%** and **Extremely Backward Classes (EBCs) at 36%**, together constituting **63.13% of the State's population**, significantly higher than earlier national estimates and renewing the demand for a nationwide caste census.

Constitutional Paradox in the Caste Census Debate

- India's constitutional framework reflects a complex and dual approach toward caste. While the Constitution aspires to create a society based on equality and social justice, the State also continues to rely on caste identities for welfare and representation policies. This contradiction forms the core of the caste census debate.

1. **On one side: Constitutional Vision of a Casteless Society:** The Constitution seeks to build a society based on the principles of **equality, dignity, fraternity, and social harmony**. The larger constitutional objective has been to gradually eliminate caste-based discrimination and move towards a **casteless social order**.
    - The Constitution guarantees **equality before law** and prohibits discrimination on social grounds.
    - The idea of the **"annihilation of caste"** emphasises the need to remove caste hierarchies and social exclusion.
    - The long-term vision of the Indian State is to promote social transformation beyond traditional caste divisions.
2. **On the Other Side: Caste-Based Welfare and Representation:** At the same time, caste remains an important basis for implementing policies related to **affirmative action and welfare**.
    - Reservations in **education, public employment, and legislatures** are provided to historically disadvantaged communities.
    - Welfare schemes often target **Scheduled Castes (SCs), Scheduled Tribes (STs), and Other Backward Classes (OBCs)**.

- Political representation and social justice policies require the identification.

Understanding Caste Census 2027

Census 2027 is set to be a landmark event as the **16th decennial census** and the **first truly comprehensive caste count** in independent India.

- **Transition to Digital:** This will be the **first fully digital census**, utilizing mobile applications and specialized portals to ensure **real-time data entry** and minimize the **8 crore data errors** that plagued the **SECC 2011**.
- **Two Phase Operation:** The census will be conducted in two parts. **Phase 1** focuses on **house listing and assets**, while **Phase 2** involves **population enumeration**. It is in this second phase that every individual will **self declare** their caste identity.
- **Methodology Challenge:** Unlike **previous years** where **only SC/ST status** was ticked, the **2027 exercise** requires **recording specific caste names**. The government is currently developing a **master list** to classify the thousands of sub castes that exist across different states.

Importance of Caste Census

- **Constitutional Compliance (Articles 15 & 16):** It provides the **quantifiable empirical data** mandated by the **Supreme Court (SC)** in landmark cases like **M. Nagaraj** and **Jarnail Singh**. Under **Article 16(4)**, the state must prove **"inadequacy of representation"** to justify reservations; a census provides the necessary population **denominator (the total population of a specific group needed to prove "inadequacy of representation" in public services)** to make these policies legally sustainable.
- **Scientific Welfare Targeting:** Under **Articles 15(4) and 15(5)**, the state must identify **Socially and Educationally Backward Classes (SEBCs)** using objective criteria. A census identifies marginalized sub-groups, enabling **sub-categorization** (as recommended by the **Justice Rohini Commission**). This ensures benefits reach the most deprived rather than being cornered by dominant groups.
- **Rationalizing the 50% Cap:** In the **Indra Sawhney (1992)** judgment, the **Supreme Court** established a **50% reservation ceiling**, allowing exceptions only in "extraordinary circumstances." Accurate caste data provides the **factual foundation** required to defend or adjust these limits based on the actual demographic weight of backward communities.
- **Social Audit of Development:** It serves as a comprehensive **performance review** of 75 years of affirmative action. By mapping caste identity against **socio-economic indices** (literacy, assets, and income), the state can conduct a "**social audit**" to see which communities have achieved mobility and which remain trapped in **inter-generational poverty**.
- **Evidence-Based Policy Planning:** Accurate data acts as a **scientific baseline** for all state interventions. Whether it is allocating scholarships or designing housing schemes, a census ensures that resources are distributed based on **proportional need** rather than outdated 1931 estimates, making governance **non-arbitrary**.

- **Institutional & Federal Accountability:** Since the **Seventh Schedule (Entry 69, Union List)** places the Census exclusively under the **Union Government**, a national exercise ensures **data uniformity**. It provides statutory bodies like the **National Commission for Backward Classes (NCBC)**, **National Commission for Scheduled Castes (NCSC)** and **National Commission for Scheduled Tribes (NCST)** with an authoritative dataset to monitor constitutional safeguards effectively.

Key Challenges in Conducting a Caste Census

- **Risk of political misuse:** Critics argue that **caste data** may intensify **vote-bank politics**, encourage caste-based mobilisation, and deepen identity-driven electoral strategies instead of promoting social integration.
- **Data quality and classification issues:** India has thousands of castes and sub-castes with regional variations. Problems related to **self-declaration, spelling differences, and overlapping identities** may produce **unreliable data,** as witnessed during **SECC 2011**.
- **Reinforcing caste identity:** Opponents believe that officially asking citizens to identify by caste may strengthen caste consciousness and contradict the constitutional goal of a **casteless society**.
- **Privacy and misuse concerns:** Combining **caste information with economic and personal details** may lead to **discrimination, profiling, targeted violence, or misuse of sensitive data** if safeguards are inadequate.
- **Methodological challenges:** Issues such as **sub-caste disputes, inter-caste marriages, caste mobility claims, and mixed heritage identities** make classification **highly complex and politically sensitive.**

Way Forward

- **Strict Statutory Confidentiality:** The government must rigorously enforce **Section 15 of the Census Act, 1948**, ensuring individual data remains **strictly confidential**. This prevents the misuse of personal information for **political profiling** or commercial gain, which is essential for maintaining **public trust** and privacy.
- **Standardized Master List:** To prevent the millions of classification errors seen in **SECC 2011**, the **Office of the Registrar General of India (ORGI)** must proactively publish a comprehensive **Master List of Castes**. This transparency allows for the resolution of **regional naming anomalies** before final enumeration begins.
- **Integrated Socio-Economic Correlation:** Caste data should be scientifically mapped against **socio-economic indices** like **literacy**, **land ownership**, and **occupational status**. This provides a **multi-dimensional view of backwardness**, shifting the focus from mere population counts to **evidence-based welfare targeting**.
- **Digital Integrity & Social Audits:** As India's first **fully digital census**, the state must leverage technology for **real-time data validation**. Post-enumeration, aggregate data should undergo **social audits** by independent experts to ensure the findings are robust enough to withstand **judicial scrutiny**.

- **Institutionalizing the "Casteless" Identity:** The state should actively promote the option for citizens to register as **"Casteless."** Tracking this category provides a vital **metric of modernization**, fulfilling the **Ambedkarite goal** of the **Annihilation of Caste** by ensuring measurement today leads to the eventual irrelevance of caste labels.

Conclusion

The caste census is not a celebration of caste but a reckoning with its unfinished consequences, and India cannot build a fair welfare state on nine-decade-old estimates. Counting caste communities accurately, while ensuring every citizen retains the freedom to declare themselves casteless, is the only honest path toward a welfare system that serves all and an equal society that eventually renders such counting unnecessary.

Q. *The demand for a caste census reflects the tension between the constitutional vision of a casteless society and the practical need for caste-based welfare policies. Critically examine. 15 Marks*

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2.1. POLITY & GOVERNANCE

2.1.1 JUDICIAL SCRUTINY OF THE SHANTI ACT, 2025

Context

- The **Supreme Court of India** is currently examining the constitutional validity of the **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025**, which introduces **private participation in the nuclear sector**.
- The legal challenge centers on whether the **financial liability caps** and **supplier exemptions** provided in the **new law** violate the **Fundamental Right to Life** guaranteed under **Article 21** of the Constitution.

About India's Existing and Historical Nuclear Liability Landscape

Before the introduction of the **SHANTI Act**, India followed a more restrictive regime that primarily prioritized state control and rigorous accountability.

- **Atomic Energy Act of 1962**: This historical framework ensured that **nuclear energy remained an exclusive state monopoly**, managed by **public sector undertakings** like the **Nuclear Power Corporation of India Limited (NPCIL).**
- **Civil Liability for Nuclear Damage Act (CLNDA Act) of 2010**: Previous regulations, such as the **Civil Liability for Nuclear Damage Act of 2010,** included a **"Right of Recourse"** that allowed **operators to sue suppliers for defective equipment**, a provision now heavily diluted.
- **Shift to Private Markets**: The transition under the SHANTI Act signals a move from **publicly funded energy security** to a **market-driven approach involving global private capital.**

Overview of the SHANTI Act, 2025

The **SHANTI Act** represents a paradigm shift in India's atomic energy governance, effectively repealing the **Atomic Energy Act of 1962** and the **Civil Liability for Nuclear Damage Act of 2010**. It seeks to modernize the legal framework to meet India's goal of achieving **net-zero emissions** by significantly **scaling up nuclear power capacity**.

- **End of State Monopoly:** For the first time, the law permits **private sector companies** and **foreign corporations** to build, own, and operate nuclear power plants in India.
- **Tiered Liability Structure:** The Shanti Act introduces **a graduated liability system** based on the **thermal capacity of the reactor**. Large reactors (**above 3,000 Megawatts thermal**) have a **liability cap** of approximately **₹ 3,000 crore to ₹ 4,000 crore**.
- **Supplier Indemnity:** A major departure from the 2010 law is the removal of the **"Right of Recourse"** against suppliers. Under the new regime, e**quipment suppliers are generally exempt from liability** unless there is an express written contract or proven intent to cause harm.

- **Consolidated Regulation:** The Shanti Act grants **statutory status** to the **Atomic Energy Regulatory Board** and establishes a **Nuclear Liability Fund** to address damages that exceed the operator's financial cap.

Why Strategic Support Has Been Extended by the Government to the SHANTI Act?

- **Energy Security and Rising Electricity Demand**: India's **growing economy, industrial expansion, and rising electricity** needs have made continuous expansion of power generation necessary. **Nuclear energy** has therefore been promoted as a stable and long term source of electricity capable of **reducing dependence on imported fossil fuels** and protecting **India from global fuel price instability and geopolitical tensions.**
- **Climate Commitments and Clean Energy Transition**: India's commitment to achieving **Net Zero emissions by 2070**, has strengthened support for nuclear power expansion. Since **nuclear energy produces relatively low greenhouse gas emissions**, it has been considered an important part of **India's clean energy and sustainable development strategy.**
- **Need for Foreign Investment and Advanced Technology**: Large nuclear projects require **advanced technology, massive investment, and sophisticated safety systems**. Through **foreign participation, access to modern reactors, technical expertise, and improved safety mechanisms has been expected.**
- **Global Experience and Strategic Competitiveness**: Countries such as **France, United States, Russia, and China** have successfully **expanded nuclear energy through international collaboration and private investment** and therefore, it has been viewed as necessary for strengthening India's future **energy security, technological capacity, and strategic competitiveness.**

Key Challenges Emerging from the SHANTI Act, 2025

The enactment of the **Sustainable Harnessing and Advancement of Nuclear Energy for Transforming India (SHANTI) Act, 2025** has introduced several deep-rooted structural and legal challenges.

1. **Dilution of the Constitutional "Absolute Liability" Standard**

   A major challenge is the Act's departure from the landmark **Absolute Liability** doctrine established in the **1986 Oleum Gas Leak Case**.

   - **The 1986 Oleum Gas Precedent (M.C. Mehta versus Union of India)**: Following the **Bhopal gas tragedy of 1984**, the Supreme Court formulated the progressive doctrine of **Absolute Liability,** ruling that an enterprise engaged in an inherently dangerous or **hazardous** industrial activity owes an **absolute, non-delegable duty** to the **community to ensure that no civilian harm occurs, and must provide unconditional compensation if a failure takes place**.
   - **The SHANTI Act Conflict**: By capping liability at less than ₹ **4,000 crore**, the new law effectively replaces this "**absolute**" duty with a limited one, **potentially allowing massive corporations to escape the full financial weight of a disaster.**
   - **The Deep Pocket Principle**: Historical jurisprudence mandates that the **larger and more prosperous** an enterprise is, the higher the compensation must be; however, the Act's flat liability cap of less than ₹ **4,000 crore** at treats all large-scale operators the same, regardless of their wealth.

2. **Fiscal Risks and the "Socialization of Losses"**

   The Act creates a significant fiscal challenge by potentially shifting the financial burden of a nuclear disaster from private polluters to the public exchequer.

   - **Taxpayer Vulnerability**: If **a catastrophic accident occurs** (similar in scale to **Chernobyl or Fukushima**), the costs will likely exceed the **₹ 4,000 crore** limit.
   - **Residual Burden**: Because the private operator's liability is capped, any additional billions required for cleanup and victim relief must be provided by the **Indian government and its taxpayers**.
   - **Subversion of Polluter Pays**: A major systemic challenge is the explicit subversion of the globally accepted **Polluter Pays Principle,** which is an integral part of **environmental jurisprudence** under Article 21 because **the entity responsible for the risk is not held accountable for the full extent of the potential damage.**

3. **Supplier Immunity and the Moral Hazard Challenge**

   The complete exemption of technology and equipment suppliers under the SHANTI Act poses a severe risk to long-term safety standards.

   - **Removal of Recourse**: Under previous laws, an operator could sue a supplier for **defective equipment**; however, the new Act shields these vendors from such claims.
   - **Lack of Incentive**: This exemption creates a **moral hazard**, as foreign or domestic manufacturers may be less motivated to ensure the highest possible safety grades if they face no legal or financial consequences for design flaws.
   - **Safety Blind Spots**: Without supplier accountability, the legal system fails to address the root cause of accidents that stem from faulty industrial components.

4. **The "Race to the Bottom" for Foreign Direct Investment (FDI)**

   The Act reflects a difficult challenge in balancing the need for advanced technology with the protection of public safety.

   - **Minimizing Risk to Attract Capital**: The low liability caps were specifically designed as **interconnected strategies** to attract foreign private investors who were previously hesitant to enter the Indian market.
   - **Global Double Standards**: This creates a situation where international firms enjoy **capped liability in India** while being subject to much higher accountability standards in their home countries.
   - **Prioritizing Policy over Safety**: Critics argue that this approach sacrifices the **Right to Life (Article 21)** on the "altar of policy" to secure foreign technological collaboration.

5. **Erosion of Institutional and Regulatory Oversight**

   The shift to a private-driven nuclear sector raises challenges regarding the independence and transparency of safety regulators.

   - **Regulatory Capture**: There is a heightened risk that the pressure to maintain a **"business-friendly" environment** could lead to weakened safety inspections or "softer" oversight of private operators.

- **Accountability of Private Entities**: Since these firms perform vital **state functions**, the lack of a strong mechanism to treat them as **"State" agents under Article 12** limits the **ability of citizens to hold them directly accountable for fundamental rights violations**.
- **Opaque Decision Making**: The "**sensitive**" nature of nuclear policy can lead to a lack of **public transparency**, making it harder for communities living near plants to assess the true risks they face.

Way Forward

- **Revision of the Liability Cap:** The liability ceiling under the SHANTI Act must be **reviewed and significantly raised** in consultation with independent nuclear safety experts, legal scholars, and civil society groups, so that it reflects the realistic scale of damage that a nuclear accident in India could cause.
- **Restoration of Supplier Liability:** A proportionate and defined level of **supplier liability must be restored** into the legal framework to ensure that equipment and technology providers have a commercial and legal incentive to maintain the highest possible safety standards.
- **Establishing an Independent Nuclear Regulatory Authority:** India must create a **fully autonomous, well-resourced, and technically capable regulatory body** to oversee the licensing, operations, and safety audits of all nuclear plants, including those operated by private and foreign entities.
- **Multi-Party Insurance and Compensation Pool:** A **dedicated national nuclear compensation fund**, contributed to by operators, suppliers, and the Government of India, must be established on the lines of international best practices to ensure that adequate resources are available for victims without delay in the event of an accident.
- **Parliamentary Review:** The SHANTI Act should be referred to a **Parliamentary Standing Committee** for a comprehensive review involving independent nuclear scientists, constitutional lawyers, environmentalists, and representatives of communities living near proposed nuclear plant sites.
- **Joining International Liability Conventions:** India should consider ratifying the **Convention on Supplementary Compensation for Nuclear Damage**, which would bring it into alignment with global standards and provide an additional layer of internationally pooled compensation for victims.

Conclusion

The debate surrounding the **SHANTI Act, 2025** highlights that while expansion of **nuclear energy** may be important for India's energy security and climate goals, **public safety, environmental protection, constitutional rights, and strong corporate accountability** must remain the core principles guiding India's nuclear governance framework.

Q. *Balancing nuclear energy expansion with public safety remains one of the biggest governance challenges for India. In the light of the SHANTI Act, 2025, analyse the key challenges and suggest suitable reforms. 15 Marks*

2.1.2. JUDICIAL ACCOUNTABILITY AND THE LIMITS OF CONTEMPT POWER IN INDIA

Context:

In a democracy, **courts derive their legitimacy not only from constitutional authority** but also from **public trust**, and **such trust can be sustained only when institutions remain open to scrutiny**. While the **power to punish for contempt is a constitutional safeguard** meant to protect the dignity of the judiciary, **recent rhetorical excesses and administrative actions have raised concerns** about a potential **chilling effect on free speech**.

Recent Judicial Controversies

A "**chilling effect**" occurs when people become afraid to speak their minds because they fear **institutional punishment**.

- **Use of Harsh Language:** In a recent court hearing about a **lawyer's career elevation**, **CJI Surya Kant** used certain words to describe **certain individuals and young lawyers** using the **Right to Information (RTI) Act**. Even if these words were meant for people with **fake degrees**, using such labels from the highest chair in the land creates an atmosphere of **fear and disrespect**.
- **NCERT Textbook Controversy:** Following a controversy over **NCERT school textbooks**, the **Supreme Court** showed strong anger toward **three academics** who helped draft the chapters. They were effectively removed from future work on public school books without being given a **fair hearing**, which goes against the basic principle of natural justice.
    - This raised the issue of the Court being both the **aggrieved party and the arbiter**, which directly violates the principle of **nemo judex in causa sua** (no one shall be a judge in their own cause). This is a problem because **justice must not only be done but must also be seen to be done by an unbiased party.**
- **Gag Order Case:** In cases like the **Ali Khan Mahmudabad** matter, the Court provided legal protection but also issued a **gag order** (a **command to stay silent**). This shows a trend where the Court tries to **control public behavior** rather than just deciding if a law was broken.
- **RTI Transparency Gap:** When a journalist asked the **Supreme Court Registry for data** on complaints against judges, the request was denied. However, the **Law Ministry** later showed that the data did exist. The Registry then called the request **"fishing and roving,"** which looks like the **Court is arguing its own case rather than following transparency laws.**

Why the Judiciary Must Remain Open to Public Criticism?

In a healthy democracy, no institution is above questioning. The judiciary is the **backbone of the democratic setup**, and its true strength lies in its ability to handle honest feedback rather than reacting defensively.

- **Judges as Public Actors Exercising State Power:** As former **CJI D.Y. Chandrachud** observed, judges are public actors who exercise immense state power. Because their decisions affect millions

of lives, the judiciary—like the executive or legislature—must remain subject to **public scrutiny and democratic accountability**.

- **The Right to Information (RTI) as a Valid Tool:** The **RTI Act, 2005** was created to bring transparency to all public institutions. Seeking data about judicial administration is a **legitimate democratic right** and should not be viewed by the courts as "**hostile activism**" or a **"fishing inquiry."**
- **Preventing a "Chilling Effect" on Dissent:** When the judiciary uses harsh language outside of formal legal proceedings, it acts as **institutional condemnation** without any due process. This creates a "**chilling effect**," where **lawyers, journalists,** and **scholars** become too afraid to raise valid concerns, effectively **silencing legitimate dissent**.
- **Upholding Judicial Neutrality:** A core principle of the rule of law is that the entity feeling wronged should not also be the judge. To maintain **institutional credibility**, the Court must separate its role as an "**aggrieved party**" from its role as an "arbiter" to avoid the **perception of bias.**
- **Social Audit and Quality Control:** Criticism acts as a **social audit** that prevents the **judiciary** from becoming an isolated "**ivory tower**." Scholarly analysis and investigative journalism force the legal system to think deeper, often leading to the correction of **outdated or incorrect judgments**.
- **Freedom of Speech is Universal:** The **Constitution of India** under Article **19(1)(a)** protects the right to speak. This right includes the freedom to express **dissatisfaction** with any wing of the government, including the courts, as long as it is done decently

Challenges in Balancing Contempt Powers and Judicial Accountability

1. **Accountability Gap:** The judiciary enjoys significant **constitutional authority** as the guardian of fundamental rights and the Constitution, but the absence of a strong external accountability mechanism creates challenges in ensuring **judicial accountability** without affecting **judicial independence**.
2. **Conflict Between Contempt Law and Freedom of Speech:** The broad and vague use of terms such as "**scandalising the court**" under the **Contempt of Courts Act, 1971** often creates tension with the **fundamental right to free speech under Article 19(1)(a)**, making it difficult to clearly separate **fair criticism from actual obstruction of justice**.
3. **Lack of Independent Oversight Mechanisms:** The **absence of an independent mechanism to examine complaints against judges**, along with **limited transparency in judicial administration and in-house inquiry procedures**, weakens public confidence and raises concerns regarding **institutional accountability**.
4. **Digital Misinformation Crisis:** Courts today face **coordinated misinformation campaigns** and **abusive social media discourse**. In the **absence of a specific legal framework to handle digital-age threats**, judges sometimes resort to **informal and disproportionate reactions** that harm their own image.
6. **Declining Public Trust:** Persistent issues such as **judicial delays**, pendency of more than **5 crore cases**, and the perceived lack of transparency in the **Collegium system** have weakened public

confidence in the judiciary, leading to growing public criticism and greater scrutiny of judicial functioning.

Important Supreme Court Judgments on Free Speech and Contempt

- **Romesh Thappar v. State of Madras (1950):** This landmark judgment established that freedom of speech is the foundation of all democratic liberties and that restrictions on it must be narrowly and precisely defined by law.
- **E.M.S. Namboodiripad v. T.N. Nambiar (1970):** The Court affirmed that **bona fide criticism for public benefit is always protected speech**, while deliberate and malicious attacks on judicial authority can amount to contempt.
- **S. Mulgaokar Case (1978):** Justice Krishna Iyer laid down the **"Magnanimity Rule,"** suggesting that courts should be slow to use contempt powers and should ignore **uninformed or petty criticism**.
- **P.N. Duda vs. P. Shiv Shanker (1988):** The Court held that even if a person uses **strong language** to criticize the judicial system, it does not necessarily amount to contempt if there is no interference with the **administration of justice**.
- **Arundhati Roy Contempt Case (2002):** The Court emphasized that while the **freedom of speech** is paramount, it cannot be used to "**scandalize**" the court in a way that shakes public confidence.
- **Prashant Bhushan Contempt Case (2020):** The Supreme Court **convicted advocate Prashant Bhushan for tweets criticising the judiciary,** leading to wider national debate regarding freedom of expression and judicial accountability.

Global Best Practices

Many developed democracies have moved toward a **near-total immunity** for critics of the judiciary.

- **United Kingdom:** In 2013, the UK abolished the offense of **"scandalizing the court,"** recognizing that the reputation of judges should be sustained by their **conduct and judgments** rather than the threat of prosecution.
- **United States:** The **"Clear and Present Danger"** test is applied, where speech is only punished if it poses an immediate and serious threat to the **fairness of a trial**.
- **European Court of Human Rights (ECHR):** The ECHR allows for a very wide margin of **academic and journalistic criticism**, asserting that the judiciary must tolerate more criticism than private citizen.

Way Forward for Building a Confident and Transparent Judiciary

To regain the high ground, the Indian judiciary must adopt a strategy of **transparency and restraint**.

- **Revise the Contempt of Courts Act:** Parliament and the judiciary must together work to amend the **Contempt of Courts Act, 1971** and clearly distinguish between speech that genuinely obstructs justice and speech that merely criticises judicial decisions or the conduct of judges.
- **Strengthen the RTI Framework for Courts:** The Supreme Court and High Courts must fully embrace the **Right to Information Act** and proactively disclose information about complaints received, administrative decisions, and judicial vacancies to promote transparency and public trust.

- **Establish an Independent Accountability Body:** A transparent and independent mechanism, similar to the **Judicial Conduct Investigations Office in the United Kingdom**, must be created in India to receive and investigate complaints against judges in an impartial and credible manner.
- **Exercise Restraint in Oral Observations:** Judges must remain mindful that even informal remarks made from the Bench carry immense institutional authority and can have a wide **chilling effect** on lawyers, academics, and journalists without any formal legal proceeding having been initiated.
- **Strictly Uphold Natural Justice:** The Court must rigorously follow the principle that **no one shall be a judge in their own cause**, especially in all matters where the judiciary's own functioning, conduct, or reputation is directly under examination.
- **Adopting the 'Public Actor Model':** The judiciary should return to the mindset that it is a **public actor** subject to scrutiny, which fosters a healthier relationship with the **Bar, the press, and the academy.**

Conclusion

The true measure of a great judiciary is not its power to silence criticism, but its willingness to engage with it openly and fearlessly, for an institution that cannot bear scrutiny will eventually lose the **public confidence** that is its only true foundation. Therefore, by embracing transparency and upholding the **freedom of speech**, the **judiciary** can ensure that it remains the ultimate **custodian of the Constitution** in the eyes of the people.

Q. *Judicial dignity and democratic accountability must coexist in a constitutional democracy. Examine the challenges in balancing contempt powers with freedom of speech in India. 15 Marks*

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3.1. ECONOMY

3.1.1. IMPROVING FERTILIZER USE EFFICIENCY FOR SUSTAINABLE AGRICULTURE IN INDIA

Context:

- The ongoing tensions in **West Asia** and rising fuel and fertilizer prices have exposed India's dependence on imported inputs for fertilizer production. Although India meets nearly **80% of its urea demand domestically**, the sector remains dependent on imported fuel, while **phosphatic fertilizers** are largely imported due to the absence of sufficient **rock phosphate reserves** in the country.
- Moreover, **green ammonia**, produced through the electrolysis of water using solar energy, is emerging as an alternative for fertilizer production, but its sustainability remains limited in **water stressed regions.**
- At the same time, **nitrogen and phosphorus fertilizers** remain crucial for India's **food security**. However, despite spending nearly **₹2 lakh crore annually on fertilizer subsidies**, more than **two thirds of the subsidy amount** is lost through inefficiency and pollution rather than contributing effectively to agricultural output.

Understanding Chemical Fertilizers

Chemical fertilizers are **synthetic, industrially manufactured substances** containing high concentrations of **essential plant nutrients**, produced through processes like the **Haber-Bosch Process**, which combines **atmospheric nitrogen** with **hydrogen** derived from **natural gas under high pressure.**

- **Three Big Nutrients: NPK**
  - **Nitrogen (N):** Essential for **leaf** and **shoot growth**. The **most common form** used in India is **Urea**, which accounts for the **largest share of fertilizer consumption**.**Phosphorus (P):** Critical for **root development**, **flowering,** and **seed formation**. The common form is **DAP (Di-ammonium Phosphate)**, which **India imports** almost entirely **due to the absence of domestic rock phosphate reserves**.
  - **Potassium (K):** Supports **plant health, disease resistance,** and **water regulation**, usually applied as **MOP (Muriate of Potash)**.
  - The **Nitrogen, Phosphorus, and Potassium ratio** in some regions has reached an alarming **34:10:1 against the ideal of 4:2:1**, reflecting severe and dangerous nutrient imbalance in Indian soils.

Importance of Fertilizers for Improving Agricultural Productivity and Economic Stability in India

A. Role in Agricultural Productivity

- **High-yielding variety (HYV) seeds** are completely dependent on **chemical fertilizers** to realize their genetic potential. Without adequate NPK supply, HYV crops cannot produce optimal yields.

- Fertilizers enable **multiple cropping cycles** per year across **Rabi, Kharif, and Zaid** seasons by quickly **replenishing soil nutrients** between consecutive harvests on limited arable land.
- Beyond foodgrains, fertilizers are critical for **oilseeds, pulses, and fodder crops** that support India's **dairy sector**, the largest in the world.

B. Macroeconomic Significance

- **Agriculture employs 42% of India's workforce** and contributes **17 to 18% of GDP**. Fertilizer availability and affordability directly determine rural income, consumption, and broader economic growth.
- Adequate fertilizer use maintains surplus production of **rice and wheat** essential for the **Public Distribution System (PDS)**, which underpins India's food security architecture.
- Stable agricultural productivity helps control **food inflation** and keeps the **Consumer Price Index (CPI)** predictable, supporting sound monetary policy and macro stability.
- **For Kharif 2026**, the Union Cabinet approved **Rs. 41,534 crore in subsidies** for **Phosphatic and Potassic fertilizers** alone, an increase of over **Rs. 4,300 crore** from the previous year.

Major Challenges Associated with Chemical Fertilizer Use in India

- **Import Dependence and Supply Vulnerability:** India lacks sufficient reserves of **rock phosphate, potash, and sulphur**, making it heavily dependent on fertilizer imports. Geopolitical tensions in **West Asia** and possible disruptions in the **Strait of Hormuz**, through which nearly **30% of global fertilizer trade** passes, threaten fertilizer availability and price stability. Rising fuel prices also increase production costs for the **urea industry**, which relies heavily on imported natural gas.
- **Rising Subsidy Burden and Policy Distortion:** India spends nearly **₹2 lakh crore annually** on fertilizer subsidies. For **Kharif 2026**, the government approved **₹41,534 crore** subsidy for **P and K fertilizers**, increasing fiscal pressure. Moreover, **Urea** remains outside the **Nutrient Based Subsidy, NBS** framework, making it cheaper than other fertilizers and encouraging excessive nitrogen use.
- **Imbalanced Fertilizer Use and Low Efficiency:** In several regions, the **NPK ratio** has become highly distorted at **34:10:1** against the ideal **4:2:1**. The **Nitrogen Use Efficiency, NUE** of urea remains very low, with **only about one third absorbed by crops,** while the rest is lost through volatilisation, runoff, and leaching.
- **Soil Degradation and Fertilizer Trap:** Excessive fertilizer use depletes **soil organic matter** and weakens water and nutrient retention capacity. This creates a **fertilizer trap**, where **declining soil fertility forces farmers to use more fertilizers** without proportionate yield increases, especially in States like **Punjab and Bihar**.
- **Environmental and Health Concerns:** Excessive fertilizer application causes **groundwater contamination, air pollution, biodiversity loss, eutrophication, and greenhouse gas emissions**. Continuous chemical use has also created deficiencies of **Zinc, Boron, and Sulphur**, reducing long term soil health.

- **Weak Adoption of Sustainable Alternatives:** Traditional practices such as **green manuring, crop rotation, composting, and biofertilizers** remain limited. At the same time, challenges related to **Nano Urea and Nano DAP**, including **inconsistent performance, lack of awareness, and limited access to drone** based spraying technologies, hinder the transition towards sustainable nutrient management.

Government Initiatives Improving Fertilizer Efficiency and Reduce Dependence

- **PM-PRANAM Scheme:** Promotes **balanced and responsible use of fertilizers** by **incentivising states** that reduce fertilizer consumption below the baseline, linking financial rewards to efficiency outcomes.
- **Nano Urea and Nano DAP:** These next-generation fertilizers enhance **Nutrient Use Efficiency (NUE)** by delivering nutrients directly in liquid nano form, reducing physical volumes, logistics costs, and foreign exchange outflow on imports.
- **Neem Coated Urea (NCU):** Introduced to slow the release of nitrogen and reduce ammonia losses to the atmosphere, though it has not been sufficient to fully address nitrogen use inefficiency.
- **Paramparagat Krishi Vikas Yojana (PKVY):** Promotes **organic and natural farming** as an alternative to chemical-intensive agriculture across identified clusters.
- **GOBARdhan Scheme:** Converts cattle waste into **Bio-CNG and Bio-slurry**, providing farmers with high-quality organic nutrient sources as a substitute for chemical fertilizers.
- **Soil Health Card (SHC) Scheme:** Provides crop-wise nutrient recommendations based on farm-specific soil testing, helping farmers avoid unnecessary fertilizer application.
- **Dalhan Aatmanirbharta Mission (October 2025):** Committed to **100% MSP procurement of Tur, Urad, and Masoor** for four years, with an allocation of **Rs. 11,440 crore** to scale up pulse production to **350 lakh tonnes per year** in five years. However, as per April 2026 data, pulse sowing area grew by only a **negligible 1.26%** over the previous year, indicating poor implementation.

Way Forward for Improving Fertilizer Use Efficiency in India

- **Shift from Fertilizer Supply Expansion to Nutrient Use Efficiency:** India must move beyond a subsidy driven supply approach and focus on improving **Fertilizer Use Efficiency** by producing more crop output with lower fertilizer application. Reviving the **Interministerial National Nitrogen Steering Committee** is essential to ensure coordinated action across agriculture, fertilizer, water, food, and environment sectors.
- **Reform Cropping Patterns and Procurement Policies:** Expanding government procurement beyond **rice and wheat** to include **pulses, oilseeds, and millets** can reduce excessive urea consumption and encourage crop diversification. Promoting **pulse and legume based crop rotations** is crucial, as legumes naturally fix atmospheric nitrogen and require minimal urea use. Shifting even **20% of rice cultivation area towards pulses** can save fertilizers, conserve water, and improve nutritional security.
- **Promote Organic and Biological Nutrient Sources:** India must significantly expand the use of **manure, compost, biochar, green manure, and biofertilizers** to restore soil organic carbon and

reduce chemical fertilizer dependence. Fertilizer recommendations should prioritise organic inputs as the basal dose, while chemical fertilizers should only supplement nutrient deficiencies. A balanced transition towards **40% organic sources, 30% biofertilizers, and 30% chemical fertilizers** can improve long term sustainability.

- **Expand Precision Agriculture and Efficient Nutrient Delivery:** Precision farming techniques such as **site specific soil testing, drip fertigation, and drone based foliar spraying** should be scaled up to minimise nutrient losses and improve **Nutrient Use Efficiency, NUE**. These technologies ensure targeted fertilizer application and reduce pollution caused by runoff and volatilisation.
- **Strengthen Research and Climate Resilient Crop Varieties:** Greater investment is needed in developing and promoting crop varieties with **higher nutrient efficiency and lower fertilizer requirements**. Indian research shows that improved **rice germplasm** can significantly increase nitrogen use efficiency while maintaining crop yields.
- **Undertake Structural Fertilizer Policy Reforms:** Bringing **Urea** under the **Nutrient Based Subsidy, NBS** framework is necessary to correct pricing distortions and reduce excessive nitrogen use. Expanding **Direct Benefit Transfer, DBT** and strengthening the **Integrated Fertilizer Management System, iFMS** can improve subsidy targeting, prevent diversion of subsidised fertilizers, and promote balanced nutrient application.

Conclusion

- India's fertilizer challenge is fundamentally a **systemic failure** rooted in policy distortions, procurement imbalances, and poor inter ministerial coordination, and resolving it demands a transformation of the entire **farming systems approach** rather than isolated interventions.
- Therefore, with bold reforms in crop procurement, genuine incentives for **pulse and legume cultivation**, investment in soil health, and structural pricing corrections, India can break free from the fertilizer trap and secure **food security, fiscal sustainability, and environmental resilience** simultaneously.

Q. *India's fertilizer crisis is not merely a supply issue, but a structural challenge linked to cropping patterns, subsidy distortions, and declining soil health. Examine. 15 Marks*

3.1.2. INDIA'S EXPORT DIVERSIFICATION AND GLOBAL TRADE COMPETITIVENESS

Context:

- **India's export sector** has shown **significant resilience** despite global trade disruptions, geopolitical tensions, and slowing world demand. **Merchandise exports** grew by nearly **14% in April 2026** to **$43.6 billion**, while **non-oil exports** also increased by around **9%**, reflecting India's growing diversification and supply chain strength.
- However, India still faces major challenges related to **cost competitiveness, logistics efficiency, quality standards, and global market integration**.

Emerging Growth Drivers in India's Export Economy

A. Electronics and Premium Smartphone Manufacturing

- **Shift to High-Value Manufacturing:** India has rapidly moved from being a basic assembly destination to a **sophisticated global manufacturing hub**, riding the **'China Plus One'** supply chain realignment that has pushed multinational companies to diversify away from China.
- **PLI-Driven Transformation:** The **Production Linked Incentive (PLI) scheme** has actively incentivised component manufacturing, pushing the sector towards high-value premium devices. **Smartphone exports reached a record $30 billion in the Calendar Year 2025**, driven heavily by Apple, pushing total electronics exports past the **₹4 trillion milestone**.

B. Services Sector and Global Capability Centres

- **Services as the Primary Trade Anchor:** India's services sector has become the most resilient pillar of external trade, effectively cushioning merchandise trade deficits. The **share of services in total exports has risen to 49%** in 2026, compared to just 39% in 2014.
- **Beyond Basic IT Outsourcing:** The explosive growth of **Global Capability Centres (GCCs)** delivering high-end research and development, Artificial Intelligence, and financial solutions has elevated India's knowledge exports globally. **Services exports touched an all-time high of $387.6 billion in the Financial Year 2024–25**, with January 2026 alone contributing an estimated **$43.90 billion**.

C. Defence Indigenisation and Strategic Export Pivot

- **From Importer to Exporter:** India has orchestrated a profound strategic reversal — shifting from historical dependence on defence imports to emerging as a **credible net exporter of advanced military hardware**, underpinned by the **Atmanirbhar Bharat** mandate and negative import lists.
- **Record Defence Exports:** Defence exports surged to a record **₹23,622 crore ($2.8 billion) in Financial Year 2024–25**. India now exports to over **100 nations**, including the United States, France and Armenia, and is pursuing significant export deals for **BrahMos missiles** with countries like Vietnam and Indonesia.

D. Strategic Trade Diversification and Free Trade Agreements

- **New Destinations, New Pathways:** The government data shows that at least **20 exporting sectors have added 17 or more new destinations** in the last year. For example, **handloom products are now exported to 29 more countries** than in 2024–25, reflecting the real-world impact of India's diversification push.
- **Free Trade Agreements Bearing Fruit:** The **India–EFTA Trade and Economic Partnership Agreement (TEPA)** guarantees a landmark, legally binding Foreign Direct Investment commitment of **$100 billion over 15 years**. New agreements with the European Union and New Zealand provide tariff elimination on key Indian exports. The United Nations Conference on Trade and Development (UNCTAD) currently ranks India **third in the Global South** for trade diversification.

E. Pharmaceuticals and Engineering Goods

- **Pharma Beyond Generics:** India's pharmaceutical sector is evolving from basic generics to producing advanced **biologicals and complex formulations** for highly regulated global markets. **Overall pharmaceutical exports rose 9.4% to $30.47 billion in Financial Year 2024–25**, crossing the $30 billion milestone.
- **Engineering Goods Resilience:** Engineering goods — one of India's key export sectors — exported more in April 2026 than in the same month last year, demonstrating resilience in supply chains. **Engineering goods exports surpassed $10.40 billion in January 2026**, driven by upgradation towards high-tech automotive, aviation, and infrastructure supply chains.

F. Agricultural Exports and Clean Energy Manufacturing

- **Stable Agricultural Exports:** India's **agricultural exports** maintained a formidable **$51.9 billion milestone in 2025**, with a **deliberate shift from volatile raw commodity exports towards climate-resilient, value-added processed foods** such as ready-to-eat meals and organic millets, supported by **Mega Food Parks** and **Agricultural and Processed Food Products Export Development Authority (APEDA)** market intelligence.
- **Solar Module Exports Surging:** India is capitalising on global energy transition realignments, with **solar module exports rising 30.7% in April–October 2025**, with the United States accounting for almost the entire increase. This conversion from import dependency to export strength has been powered by **multi-billion-dollar PLI allocations** for domestic solar photovoltaic manufacturing.

Major Challenges Limiting India's Export Competitiveness

A. Structural Logistics Constraints

- **High Logistics Costs:** Despite the push under **PM GatiShakti**, India's logistics costs remain high due to over-reliance on road transport. **Roads dominate with about 71% of freight movement**, railways carry **around 18%,** and **Inland Water Transport** remains **marginal at just 2%,** inflating the final landed cost of Indian goods.
- **West Asia Trade Disruption:** The **West Asia crisis** has caused exports to the region to fall by **28% in April 2026**. Imports from the region fell 32%, exposing India's vulnerability to geopolitical disruptions.

B. Carbon Border Adjustment Mechanism and Green Compliance

- **CBAM as a New Trade Barrier:** The European Union's **Carbon Border Adjustment Mechanism (CBAM)**, which entered its financial phase in January 2026, poses a severe threat to **India's carbon-intensive exports** like **steel, aluminium, and cement**. Indian steel exporters may face an additional tax burden of **20–35%**, potentially wiping out the price advantage of Indian-made metals in Europe.
- **MSME Compliance Gap:** Many Indian **Micro, Small and Medium Enterprises (MSMEs)** lack the sophisticated carbon accounting infrastructure required for CBAM compliance, risking either high carbon taxes or total exclusion from the lucrative European Union market.

C. Credit Gap and Low Free Trade Agreement Utilisation

- **MSME Credit Gap:** The current credit gap for MSMEs is estimated at a staggering **₹30 lakh crore**, with export credit interest rates often **2–4% higher** than those available to global competitors, making it **difficult for small exporters** to scale up to international quality standards.
- **Low Free Trade Agreement Utilisation:** Despite several high-**profile Free Trade Agreements**, the **actual utilisation rate among domestic exporters** remains below **25% for older agreements**, compared to 70–80% in advanced trading nations. **Complex Rules of Origin** requirements and lack of awareness are the primary barriers.

D. Inverted Duty Structures, Non-Tariff Barriers and Concentration Risk

- **Inverted Duty Structure:** A persistent inverted duty structure, where **raw materials** are taxed at a **higher rate than finished products**, disincentivises domestic value addition in critical sectors like **electronics** and **chemicals**.
  - India's historical dependence on **China** for over **70% of its Active Pharmaceutical Ingredient (API)** requirements also exposes pharmaceutical exports to critical supply disruptions.
- **Non-Tariff Barriers and Concentration Risk:** Indian exporters increasingly face stringent **Sanitary and Phytosanitary (SPS) measures** in the **United States** and **European Union**.
  - Under the **Harmonised System code HS04**, India faced **344 shipment rejections** between **2010 and 2024**.
  - Additionally, the export basket remains heavily concentrated in petroleum products and gems and jewellery, **high sensitivity to commodity price swings** makes the trade balance structurally vulnerable.

Way Forward to Strengthen India's Export Competitiveness

- **Unified Digital Trade Architecture:** India must operationalise an AI-driven **Single Window 2.0** merging customs, shipping, and quality certification bodies, automating **Rules of Origin** verification and offering **Trusted Supplier green-channel** clearances to eliminate friction for MSMEs.
- **Strategic Component Manufacturing and PLI 3.0:** Policy must pivot from final assembly to **deep-tier component manufacturing** through **PLI 3.0** for **rare earth processing, semiconductor materials**, and **chemical intermediates**, reducing import dependency.
- **Green Export Credit and Carbon Accounting Framework:** A **Green Export Credit facility** must subsidise decarbonisation in **steel and textiles**, while indigenous carbon accounting frameworks help exporters navigate CBAM compliance proactively.
- **Port-Led Industrialisation and Modal Rebalancing:** Integrating **Dedicated Freight Corridors** directly into automated **Mega Ports**, and shifting freight from roads to coastal shipping and inland waterways, can structurally deflate landed costs by **20–30%** and sharpen India's price competitiveness.
- **Free Trade Agreement Facilitation Centres and Trade Attaches:** The government should establish **FTA Facilitation Centres** at the district level providing commodity-specific tariff intelligence, and deploy dedicated Trade Attaches in emerging markets like the **Gulf Cooperation Council** and **Africa**, ensuring India harvests the benefits of its signed trade deals.

- **Diversified Trade Finance and Export Factoring:** Integrating the **Trade Receivables Discounting System (TReDS)** with international trade platforms and establishing a **Sovereign Export Insurance Fund** will unlock **collateral-free working capital for MSMEs** and open high-growth non-traditional markets.
- **Quality Harmonisation and Mutual Recognition Agreements:** India must pursue **Mutual Recognition Agreements (MRAs)** with major trading partners so that Indian laboratory certifications are accepted globally, while investing in **National Quality Infrastructure** and state-of-the-art testing clusters to prevent repeated rejection of agricultural and pharmaceutical exports.

Conclusion

India's strong export performance reflects the early success of diversification efforts, but sustaining this momentum will require deep structural reforms in logistics, finance, quality standards, and manufacturing capabilities so that the country can emerge as a globally competitive export driven economy.

Q. *India's export diversification strategy has improved resilience against global trade disruptions, but structural bottlenecks continue to limit export competitiveness. Examine. 15 Marks*

3.2. INTERNAL SECURITY

3.2.1. CYBER WARFARE AND THE CRISIS OF GLOBAL LEGAL ACCOUNTABILITY

Context

- Recent tensions involving **the United States, Israel, and Iran** have exposed how modern warfare is no longer limited to physical battlefields alone.
- Alongside **conventional military strikes**, these conflicts have witnessed the active use of **cyber operations** to hack news websites, disrupt communication applications, and manipulate the information environment.
- This shift marks a decisive moment in global security, where **digital disruption** has become an integral part of military strategy, targeting civilian infrastructure, defence networks, and governmental systems simultaneously.

Understanding the Modern Landscape of Cyber Warfare and Digital Disruption

- **About Cyber Warfare**: Cyber warfare refers to the use of **hacking, digital disruption, and information manipulation** by states or non-state actors to weaken adversaries, often before or alongside physical military action.
- **Targeting Critical Infrastructure:** Cyber operations frequently target **critical infrastructure, defence networks, communication systems, financial institutions, and digital platforms**, expanding conflict beyond traditional physical battlefields.

- **Growing Role of Non-State Actors:** Several **non-state cyber groups**, such as the **Handala Hack Team**, have reportedly conducted attacks on foreign organisations, including a **U.S.-based medical technology company**, highlighting the growing influence of cyber actors in global conflicts.
- **Impact on Civilian and Commercial Sectors:** Cyber operations target **critical infrastructure** such as power grids, banking systems, water supply networks, and defence communication systems, making their impact on civilian life potentially catastrophic.
- **Challenges of Regulation and Accountability**: Unlike conventional warfare, cyberattacks can occur **across borders without direct military confrontation**, making them far harder to detect, attribute, and regulate under existing international legal frameworks.

Why Drawing the Legal Line in Cyberspace is So Difficult?

- International law does provide some relevant principles. **Article 2(4) of the United Nations Charter** prohibits the use of force by one state against another, and the doctrine of **state responsibility** holds states accountable for internationally wrongful acts, both of which apply in principle to cyberspace.
- However, the critical challenge lies in determining when a cyber operation becomes **sufficiently serious** to qualify as a prohibited use of force or an internationally wrongful act.
- **Grey Zone of Cyber Harm:**
  - Cyberattacks often cause **indirect, temporary, or non-physical damage** that is far harder to measure than the destruction caused by conventional weapons.
  - Disrupting an election database, **slowing down a hospital network, or interfering with financial markets** may cause immense harm, but it remains legally unclear whether such acts cross the **threshold of an act of war.**
  - The **Tallinn Manual**, a **non-binding academic document** prepared by **NATO** cyber experts, attempts to clarify when cyber operations violate international law, but it lacks legal enforceability and universal acceptance.
- This creates a deeply problematic situation where significant and deliberate harm can be caused in cyberspace **without triggering any formal legal response,** leaving victims without meaningful recourse.

Major Challenges Preventing Legal Accountability in Cyber Conflicts

1. **Attribution Problem: Knowing Without Proving**
   - Cyber operations are typically conducted through **hidden networks, proxy servers, and multiple jurisdictions**, making it extremely difficult to identify the actual perpetrator with the standard of evidence required by a court of law.
   - Governments may possess strong **intelligence based certainty** about who carried out an attack, but translating that intelligence into **legally admissible evidence** is an entirely different challenge.
   - This creates a serious divide between **political certainty and legal proof**, and without reliable attribution, holding a state accountable under international law becomes nearly impossible.

2. **Forum Problem: Nowhere to Go for Justice**
    - The **International Court of Justice (ICJ)** can only hear disputes between states that give their **consent** to be subject to its jurisdiction, which states involved in cyber operations rarely provide.
    - Domestic courts face the barrier of **sovereign immunity**, which protects foreign governments from being sued in another country's legal system.
    - As a result, victims of state sponsored cyberattacks have **very limited legal forums** where they can effectively seek justice or compensation.
3. **Political and Strategic Calculations That Override Legal Action**
    - States often avoid initiating legal proceedings because doing so may **escalate inter-state tensions**, invite diplomatic retaliation, or require the public disclosure of sensitive intelligence capabilities.
    - For this reason, most cyber incidents are resolved through **back-channel diplomacy and political negotiations** rather than through courts or formal legal mechanisms, further weakening the culture of accountability.
4. **Evidence Challenge: Complex, Classified, and Hard to Present**
    - Cyber litigation involves highly **technical data, classified intelligence, and complex chains of causation** that courts are often ill-equipped to evaluate.
    - Establishing who carried out an attack, how much damage it caused, and exactly how the harm occurred requires a level of **technical and evidentiary precision** that is extremely difficult to achieve in legal proceedings.

International Efforts So Far and Why they Fall Short

- The **Budapest Convention on Cybercrime (2001)** is the most widely referenced international treaty on cybercrime, with over **68 state parties**. It promotes cooperation in investigating and prosecuting cybercrime across borders.
- The **United Nations Convention against Cybercrime**, adopted in **2024**, seeks to build a **broader global framework for international cooperation** in addressing cyber threats.
- The **UN Group of Governmental Experts (UN GGE)** and the **Open-Ended Working Group (OEWG)** have been working to build consensus on norms of **responsible state behaviour in cyberspace**, though no binding agreement has been reached.
- **Critical limitation of all these frameworks:** They primarily focus on **cybercrime and law enforcement cooperation** and fall significantly short when it comes to addressing **state-sponsored cyber warfare** as part of geopolitical conflict. There is still **no binding international treaty** that directly governs cyber operations during armed conflict.

India's Growing Vulnerability and Its Necessary Role in Shaping Cyber Norms

- India's **rapid digital expansion in sectors** such as **finance, governance, healthcare, and energy** has increased dependence on platforms like **UPI, Aadhaar, and power grids**, making **critical infrastructure vulnerable to cyberattacks**.

- According to **CERT-In**, India reported over **1.3 million cybersecurity incidents in 2022**, including attacks linked to **hostile state-backed actors**, highlighting the urgent need for **stronger cyber security and global cyber norms**.

What India Must Do Going Forward:

- Actively participate in **United Nations Group of Governmental Experts (UN GGE) and the Open-Ended Working Group (OEWG)** to advocate for clearer norms of responsible state behaviour and binding accountability mechanisms in cyberspace.
- Strengthen the **National Cyber Security Policy** and enhance the capacity of **Indian Computer Emergency Response Team (CERT-In)** and the **National Critical Information Infrastructure Protection Centre (NCIIPC)**
- Build robust **bilateral and multilateral cyber cooperation frameworks** with like-minded democracies to enable better attribution, information sharing, and coordinated response to cyber threats.
- Contribute to the development of a **legally binding international treaty** that specifically addresses state-sponsored cyber warfare, incorporating both **accountability mechanisms and clear attribution standards**.
- Invest heavily in **domestic cyber capacity building**, including a skilled cyber workforce, advanced threat intelligence infrastructure, and regular cross-sector resilience exercises.

Conclusion

Cyber warfare has **permanently altered the nature of modern conflict** leaving a dangerous **accountability gap** that hostile actors continue to exploit. Unless the international community builds **credible, enforceable, and inclusive mechanisms for accountability in cyberspace**, significant harm will continue to occur beyond the effective reach of law, threatening the stability of nations, the safety of civilians, and the integrity of the global order.

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