

The background of the top half of the poster features a large, golden-brown Lion Capital of Ashoka. The capital is composed of four Asiatic lions standing back-to-back on an abacus decorated with high-relief sculptures. The entire scene is set against a solid red background.

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1.1. INTERNATIONAL RELATIONS

1.1.1. AFGHANISTAN UNDER TALIBAN 2.0: FIVE YEARS ON

Context

Five years after the Taliban's return, Afghanistan reflects a paradox of **relative stability but persistent isolation, humanitarian distress and social regression**.

For India, developments in Afghanistan directly affect **counter-terrorism, regional balance and connectivity to Central Asia**.



INTRODUCTION

Afghanistan under the Taliban reflects a “**stability without inclusivity**” paradox—relative peace, territorial control and economic stabilisation coexist with political exclusion, restrictions on women and minorities, and humanitarian distress. The central challenge is to transform **de facto stability into inclusive, legitimate and sustainable governance**.

Background: From the Great Game to Taliban 2.0

Brief timeline

- **1996:** Taliban establish the Islamic Emirate of Afghanistan.
- **2001:** U.S.-led intervention following the 9/11 attacks.
- **2001–2021:** Western-backed Afghan Republic.
- **2020:** Doha Agreement provides a framework for U.S. withdrawal.
- **August 2021:** Taliban return to power following the collapse of the Afghan Republic.
- **2021 onwards:** Taliban 2.0 seek international legitimacy but resist fundamental domestic political reform.

Global normative framework

UNSC Resolution 2593 (2021) remains important because it emphasises:

- Afghan territory should not be used for terrorism;
- protection of human rights;
- rights of women, children and minorities;
- inclusive political settlement;
- rule of law.

Taliban 2.0: Stability with Regression

A. Areas of Relative Stability

1. **Reduction in Internal Conflict:** The end of large-scale fighting has brought greater internal security and reduced war-related disruption.
2. **Improved Administrative Control:** Centralised Taliban rule has established effective territorial control and a more unified administrative structure.

3. **Economic & Fiscal Discipline:** Better tax collection, reduced smuggling and corruption, stable currency and low inflation indicate limited macroeconomic stabilisation.
4. **Regional Engagement:** Despite limited recognition, neighbouring and regional countries are maintaining diplomatic, trade and logistical engagement with Kabul.

B. Democratic & Social Regression

1. **Women's Exclusion:** Restrictions on girls' education, women's employment and public participation have severely reduced their social and economic freedoms.
2. **Absence of Inclusive Governance:** Political power remains concentrated within the Taliban leadership, with limited representation of diverse social and political groups.
3. **Minority Concerns:** Ethnic and religious minorities continue to face inadequate political representation and weak institutional safeguards.
4. **Absence of Constitutionalism:** Governance remains rooted in Taliban religious interpretation rather than a codified constitution based on popular sovereignty, rights and institutional checks and balances.

Why Afghanistan Matters to India

- A. **National Security & Counter-Terrorism:** Afghanistan's instability can create a **security vacuum**, enabling terrorist networks, radicalisation and anti-India groups such as **ISKP** to expand their operational space.

India's Core Interest: Ensure **zero use of Afghan territory for terrorism against India**.

- B. **Pakistan Factor:** Pakistan's historical influence in Afghanistan makes Kabul strategically important for India, as a **sovereign and strategically autonomous Afghanistan** limits excessive external influence.
- C. **Connectivity to Central Asia:** Afghanistan is a critical geographical link for India's access to **Central Asia and Eurasia** through **Chabahar Port, INSTC and India–Central Asia initiatives**, making regional stability vital.
- D. **Balancing External Powers:** With **Pakistan, China, Russia, Iran, Türkiye and Gulf states** expanding their engagement, India needs sustained presence to protect its strategic interests in its extended neighbourhood.
- E. **Soft Power & Development Partnership:** India's humanitarian aid, scholarships, healthcare, infrastructure and capacity-building have created significant goodwill, giving it **developmental legitimacy rather than military leverage** in Afghanistan.

Why Existing Approaches Are Insufficient — India's Perspective

1. **Isolation Has Limited Leverage:** International isolation has not substantially altered Taliban policies, while prolonged exclusion can create space for **Pakistan, China and other actors** to expand influence.
2. **Fragmented Engagement:** India's bilateral engagement alone cannot address Afghanistan's complex **security, humanitarian and developmental challenges**, requiring coordinated regional action.
3. **Aid–Development Gap:** India's humanitarian assistance addresses immediate needs but cannot by itself generate **sustainable livelihoods, infrastructure and institutional capacity**.

4. **Limited Reform Incentives:** Without linking greater diplomatic and economic engagement with **measurable reforms**, India has limited leverage to encourage inclusive governance and women's rights.
5. **Security–Diplomacy Dilemma:** India must balance engagement with Kabul against concerns over **terrorism, Pakistan's influence and human rights**, making a calibrated approach essential.

WAY FORWARD: An India-Centric Roadmap

1. **Conditional Normalisation:** Move from engagement without recognition towards **reform-linked engagement**, seeking counter-terrorism guarantees, inclusive governance, minority protection and women's education.
2. **Strengthen Counter-Terrorism Cooperation:** Institutionalise security dialogue with Kabul on **terrorism, radicalisation, narcotics and intelligence-sharing**, with a clear red line—**no Afghan territory for anti-India terrorism**.
3. **Deepen Development Partnership:** Expand India's humanitarian assistance, healthcare, education, capacity-building and infrastructure support to strengthen its **people-centric strategic presence**.
4. **Promote Multilateral Diplomacy:** Work through the **UN, regional powers and international financial institutions** for a coordinated Afghanistan framework linking greater assistance and normalisation with measurable reforms.
5. **Secure Connectivity:** Strengthen **Chabahar, INSTC and India–Central Asia connectivity** to maintain India's access to Central Asia and reduce dependence on Pakistan-controlled routes.
6. **Keep the Afghan People at the Centre:** While engaging Taliban authorities pragmatically, sustain India's links with **students, professionals, women, minorities and civil society**, preserving India's long-term goodwill.

CONCLUSION

Afghanistan's future will be determined by whether the Taliban can transform military control into inclusive legitimacy; India's challenge is to engage the regime without abandoning the Afghan people or compromising its strategic and normative interests.

Q. India's engagement with Taliban-ruled Afghanistan reflects the challenge of balancing strategic pragmatism with normative concerns. Examine. 15 Marks

1.2. SOCIAL JUSTICE

1.2.1. FOR NEWBORNS, THE ANSWER IS HOSPITAL AND HOME

Context

Three newborns died in a fire at a government hospital in Amravati, highlighting a recurring concern in public neonatal units—**overcrowding, infrastructure failures and inadequate safety preparedness**. The incident raises a larger question: how can India ensure that newborns receive **safe, timely and appropriate care without overburdening specialised hospitals**.



Introduction

India has made significant progress in maternal and child health, particularly through institutional deliveries and expansion of neonatal-care facilities. Yet, neonatal mortality remains a critical public-health concern, with the **Neonatal Mortality Rate (NMR) around 17 per 1,000 live births**.

The next phase of India's newborn-health strategy therefore requires a shift from simply expanding institutional capacity to ensuring **"the right care, at the right place, at the right time."**

Why Are Newborn Deaths Clustering in Government Neonatal Units?

1. Overcrowding of Neonatal Units

The expansion of institutional deliveries and referrals has increased the demand for Special Newborn Care Units (SNCUs). Overcrowding places pressure on beds, nurses and equipment, reducing individual attention and increasing the risk of infections.

2. Increasingly Complex Case Mix

Government hospitals often serve as referral centres for **premature, low-birth-weight and critically ill newborns**. Thus, the challenge is not merely rising admissions but a growing concentration of high-risk cases requiring specialised care.

3. Infrastructure and Safety Vulnerabilities

Neonatal units depend on uninterrupted **oxygen, electricity, ventilation and functioning medical equipment**. Poor maintenance, electrical faults, inadequate fire preparedness and oxygen-related risks can turn infrastructure deficiencies into life-threatening emergencies.

4. Human-Resource and Infection-Control Gaps

Shortages of pediatricians and trained neonatal nurses can result in inadequate nurse-to-baby ratios and insufficient monitoring. In overcrowded settings, weak infection-control practices further increase the vulnerability of newborns.

India's Broader Newborn-Health Context

India has made substantial progress in reducing mortality:

- **NMR** (Neonatal Mortality Rate): around 17 per 1,000 live births
- **IMR** (Infant Mortality Rate): around 25 per 1,000 live births
- **U5MR** (Under-5 Mortality Rate): around 28 per 1,000 live births
- **MMR** (Maternal Mortality Ratio): around 80 per lakh live births

However, the persistence of neonatal mortality shows that **survival alone is not enough; the quality, safety and continuity of newborn care also matter**.

The Gadchiroli Model: Evidence for Home-Based Newborn Care

- **Proven Community-Based Impact:** The Gadchiroli model showed that **trained community health workers can deliver effective newborn care at home**, contributing to a **62.2% reduction in neonatal mortality** through breastfeeding support, thermal care and early identification of danger signs.
- **HBNC as a Complement, Not Substitute:** Home-based care is appropriate for **stable and appropriately selected newborns**, while severe prematurity, respiratory distress, sepsis, shock or birth asphyxia require **immediate hospital-based care**.

- **Strengthen India's Existing System:** India already has **Home-Based Newborn Care (HBNC) through ASHAs**. The priority is to strengthen the system through **better training, supervision, institutional support and robust referral linkages**, rather than creating a parallel system.

Challenges in Building a Hospital + Home Model

1. **Shortage of Specialists:** Referral-level facilities, particularly in underserved areas, often lack adequate paediatricians and neonatal specialists, affecting timely diagnosis and specialised care.
2. **Shortage of Trained Nurses:** Inadequate nursing personnel create poor nurse-to-baby ratios, increase workload and limit continuous monitoring of vulnerable newborns.
3. **Inadequate Public-Health Financing:** Neonatal care requires sustained investment in **specialised equipment, infrastructure, staffing, maintenance and safety systems**. Limited resources can delay capacity expansion and essential upgrades.
4. **Weak Community-Level Capacity:** ASHAs require regular training, refresher programmes, supervision and institutional support to effectively undertake newborn-care responsibilities. Expanding responsibilities without adequate support can reduce effectiveness.
5. **Weak Referral and Urban Coverage:** Home-based care cannot function effectively without **timely emergency transport and accessible referral facilities**. At the same time, HBNC needs greater adaptation for urban poor, slum and migrant populations.

Way Forward: Building an Integrated "Hospital + Home" Model

1. Strengthen Home-Based Newborn Care (HBNC)

- **Improve community-level care:** Strengthen HBNC through better ASHA training, refresher programmes, standard clinical protocols and regular postnatal visits to ensure quality newborn care at home.
- **Reduce unnecessary hospitalisation:** Stable and low-risk newborns can be managed closer to home, allowing specialised hospitals to focus on critically ill babies.

2. Strengthen Hospital-Based Neonatal Care

- **Create safe and functional neonatal units:** The focus should shift from merely increasing beds to ensuring adequate specialists, trained nurses, equipment, oxygen and electricity.
- **Improve quality of care:** Better nurse-to-baby ratios, infection control and uninterrupted services can improve survival outcomes and reduce hospital-acquired infections.

3. Make Neonatal Units Intrinsically Safe

- **Institutionalise safety standards:** Mandatory fire, electrical and oxygen safety norms should be implemented in all SNCUs and NICUs.
- **Promote preventive safety culture:** Regular maintenance, safety audits, emergency drills and equipment checks can prevent avoidable disasters.

4. Build an Integrated Referral and Reverse-Referral System

- **Ensure timely access to specialised care:** A seamless chain—**ASHA → Ambulance → Health Facility → SNCU/NICU**—can reduce delays in emergency treatment.
- **Reduce burden on tertiary hospitals:** Stabilised babies can be shifted back to lower facilities or supervised home care through an effective reverse-referral system.

5. Strengthen Human Resources and Supervision

- **Expand skilled workforce:** Increase the availability of paediatricians, neonatal nurses and trained frontline workers, especially in underserved areas.
- **Provide supportive supervision:** Cluster-level mentoring, observed visits and skill assessment can improve ASHA performance and service quality.

6. Establish a National Newborn Safety and Financing Framework

- **Create measurable standards:** National norms for staffing, infection control, equipment maintenance and safety systems should guide neonatal care.
- **Ensure adequate financing:** Dedicated funds are needed for infrastructure, workforce development and regular safety upgrades.

7. Use Data for Need-Based Capacity Planning

- **Promote evidence-based decision-making:** District-level data on occupancy, mortality, infections and staffing should guide resource allocation.
- **Focus on outcomes, not admissions:** Success should mean fewer unnecessary hospitalisations while ensuring timely care for critical newborns and continued reductions in neonatal mortality.

Conclusion

The next frontier of India's newborn-health strategy is not to place every baby in a hospital bed, but to ensure that every newborn receives the right level of care, at the right place, at the right time.

Q. In order to enhance the prospects of social development, sound and adequate health care policies are needed particularly in the fields of geriatric and maternal health care. Discuss. 10 Marks

1.2.2. STATE OF EXCEPTION: INDIA MUST NOT NORMALISE A CULTURE OF DISCRIMINATION

Context

In its first review of India since 2007, the United Nation Committee on the Elimination of Racial Discrimination (**UN CERD**) expressed "**grave concern**" over reports of discrimination and violence against **Dalits, Adivasis, minorities, refugees and other marginalised groups**, raising



Introduction

India is constitutionally committed to equality, dignity and fraternity, yet marginalised groups often face a gap between rights guaranteed in law and equality experienced in practice. A "state of exception" emerges when certain groups face selective enforcement, weaker legal protection and unequal treatment. Thus, the real challenge is not merely discrimination, but its institutional normalisation.

Background: India and the CERD Framework

A. International Commitment

India ratified the **International Convention on the Elimination of All Forms of Racial Discrimination (ICERD)** in 1968, committing itself to eliminate racial discrimination.

CERD monitors compliance by reviewing State reports and assessing measures taken to prevent and address discrimination.

B. India's Position on Caste

India argues that caste does not fall under Article 1 of ICERD because **caste is not synonymous with race**. However, CERD adopts a broader interpretation that covers discrimination based on **descent or inherited status**.

C. Why This Matters

The debate highlights the gap between the **legal classification of discrimination** and the actual experience of exclusion based on birth. The larger challenge is whether human dignity should depend on technical definitions or protection against **all entrenched forms of discrimination**.

Major Concerns Raised by CERD

A. Violence and Discriminatory Treatment by Law Enforcement

- CERD raised concerns over reports of violence, excessive force and discriminatory treatment of minorities, Dalits and non-citizens.
- Such actions undermine the rule of law, due process and equality, giving discrimination an **institutional character**.

B. Manual Scavenging and Hazardous Sewer Cleaning

- Despite legal prohibition, hazardous sewer and septic tank cleaning continues to cause deaths and injuries.
- It reflects the intersection of **caste hierarchy, occupational segregation, unsafe work and weak enforcement**.

C. Hate Speech and Targeted Social Hostility

- Hate speech can legitimise prejudice, deepen social polarisation and create conditions conducive to discrimination and violence.
- CERD also highlighted the absence of an explicit and comprehensive provision addressing **racist hate speech under the BNS**.

D. Refugees and Non-Refoulement

- CERD raised concerns over the treatment and return of **Rohingya Muslims**, invoking the principle of non-refoulement.
- The principle prohibits returning persons to places where they face persecution, even though India is not party to the **1951 Refugee Convention**.

E. Citizenship, Documentation and Disenfranchisement

- CERD expressed concerns regarding alleged mass deprivation of citizenship through the NRC and large-scale electoral roll deletions.
- Such processes require **transparency, due process and accessible remedies** to prevent arbitrary exclusion.

Constitutional Framework Against Discrimination

1. Equality and Non-Discrimination — Articles 14, 15 & 16

Guarantee equality before law, prohibit discrimination and ensure equal opportunity in public employment, while enabling **affirmative action for disadvantaged groups**.

2. Abolition of Social Exclusion — Article 17

Abolishes **untouchability** and attacks caste-based discrimination at its constitutional roots.

3. Protection of Life and Dignity — Article 21

Safeguards **life, personal liberty and human dignity**, forming the basis for substantive equality.

4. Protection of Identity and Culture — Articles 25 & 29

Protect freedom of religion, conscience, language, script and culture, thereby safeguarding **minority identities and diversity**.

5. Social Justice and Fraternity — Article 46 & Preamble

Direct the State to uplift weaker sections and uphold **Justice, Liberty, Equality and Fraternity** as the foundation of an inclusive society.

Why Discrimination Persists Despite Constitutional Guarantees

1. **Deep-Rooted Social Hierarchies** Caste, community and ethnic prejudices are deeply embedded in society and often predate the modern State. **Law can prohibit discrimination faster than society can eliminate prejudice.**
2. **Weak Implementation and Deterrence** Poor enforcement, weak investigation, low conviction rates and delayed justice reduce the effectiveness of anti-discrimination laws. When violations go unpunished, **impunity lowers the cost of discrimination and normalises it.**
3. **Institutional Bias** Historical social prejudices may influence the functioning of institutions despite their formal neutrality. Therefore, **formal equality does not automatically translate into substantive equality.**
4. **Information and Data Deficit** Marginalised groups often lack legal awareness, resources, documentation and access to effective legal remedies. Further, inadequate disaggregated data makes vulnerable communities **invisible in policy formulation.**
5. **Identity-Based Political Polarisation** Political competition may amplify social and identity divisions, converting prejudice into electoral incentives. This weakens the constitutional principle of **fraternity and equal citizenship beyond group identity.**

WAY FORWARD: FROM FORMAL EQUALITY TO SUBSTANTIVE EQUALITY

1. **Restore Institutional Independence** — Ensure autonomous, transparent and plural human-rights institutions with independent investigations and executive accountability.
2. **Comprehensive Anti-Discrimination Framework** — Enact an overarching law covering discrimination based on caste, religion, ethnicity, gender, disability and other structural disadvantages.
3. **Strengthen Hate-Speech Laws** — Clearly distinguish legitimate free speech from incitement to discrimination, hostility or violence, with effective investigation and prosecution.
4. **Eliminate Hazardous Manual Cleaning** — Ensure complete mechanisation, strict liability, compensation and rehabilitation to eliminate caste-linked hazardous sanitation work.
5. **Ensure Timely Disaggregated Data** — Conduct the Census and regularly publish reliable, disaggregated data to identify inequalities and enable evidence-based policymaking.
6. **Transparent Citizenship & Electoral Processes** — Ensure notice, reasoned decisions, accessible appeals and independent oversight to prevent arbitrary exclusion.

- Suicide has become a leading cause of death among Indian youth, with the national rate reaching 12.6 per 100,000.
- Over 60% of patients visiting primary care facilities present a diagnosable mental disorder that worsens chronic physical conditions.

Drivers of the Crisis

- High-stakes exam systems and a low tolerance for failure trigger severe psychological strain among students.
- High youth unemployment, family conflicts, and societal expectations breed chronic frustration and despair.
- Deep-rooted social stigma prevents open dialogue, causing emotional suffering to be internalized until a crisis point is reached.

Key Government Initiatives

- The Mental Healthcare Act (2017) decriminalized suicide and legally guaranteed the right to affordable psychiatric care.
- The Tele-MANAS initiative launched in 2022 provides a free 24x7 mental health counseling helpline across 20 Indian languages.
- The Ayushman Bharat scheme converts primary health centers into Arogya Mandirs to offer basic counseling at the grassroots.
- The government has established 25 Centres of Excellence and upgraded 47 PG Departments to train mental health specialists.

Significance of Integrating Mental Healthcare

- Integrating universal depression screening into primary care could generate massive net annual savings equivalent to 0.32% of the GDP.
- Proactive psychiatric care actively reduces the incidence and severity of non-communicable diseases to lower national healthcare costs.
- Addressing workplace burnout and job stress preserves the demographic dividend by preventing a projected USD 1.03 trillion economic loss by 2030.
- Transitioning mental health from isolated clinical wards to community support networks significantly fosters grassroots societal empathy.
- Mainstreaming this care fulfills the anti-discrimination mandates of the UNCRPD and protects the fundamental constitutional right to health.

Challenges in the Ecosystem

- More than 84.5% of individuals requiring care remain entirely untreated due to an absence of accessible facilities in underserved regions.
- India faces a critical human resource deficit with only 0.75 psychiatrists per 100,000 people against the WHO standard.
- Mental health receives barely 1% of the total national health budget despite an estimated policy requirement of ₹93,000 crore.

- There is a stark execution gap between the ambitious aims of the National Mental Health Policy and actual ground-level resource allocation.
- The majority of existing funds and infrastructure remain skewed toward urban tertiary institutions rather than decentralized community centers.

Way Forward

- The government must train and incentivize India's one million ASHA workers to identify and refer common disorders at the village level.
- Policymakers should systematically fund proven peer-support interventions like Atmiyata to affordably bridge the awareness-to-treatment gap.
- The State must extend robust outpatient mental health benefits under the PMJAY and enforce strict medical insurance parity.
- The health ministry needs to establish an autonomous coordinating body modeled on NACO to streamline resources and evidence-based interventions.
- The education department must integrate early intervention programs for anxiety and behavioral issues directly into school curriculums.
- The government should accelerate specialist capacity building by offering targeted scholarships in clinical psychology and psychiatric social work.

Conclusion

The Supreme Court's landmark verdict rightfully elevates mental health to an integral component of the right to life under Article 21. By prioritizing decentralized care, dismantling social stigma, and ensuring robust financial protection, India can guarantee that mental well-being serves as the resilient foundation of a truly inclusive nation.

Q. "Evaluate India's mental health crisis and its impact on human capital. Suggest systemic reforms to integrate mental healthcare into the broader public health infrastructure." 15 Marks

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Prelims Test Series

2.1. ENVIRONMENT

2.1.1. FROM HAZARDOUS SCRAP TO STRATEGIC ASSET

Context

- **Rapid Digital Transformation:** Frequent IT hardware upgrades have severely accelerated the generation of **electronic waste (e-waste)**.
- **The Dual Challenge:** Discarded electronics pose severe **hazardous risks** if mismanaged, while simultaneously offering a massive, untapped domestic reserve of **strategic critical minerals**.



Introduction

- **Concept of Urban Mining:** It involves recovering valuable secondary raw materials from end-of-life electronics, serving as a sustainable alternative to extracting virgin ores from the earth.
- **Required Paradigm Shift:** Realising this potential requires moving public and private decision-making away from the short-term **lowest-price principle** toward comprehensive **life-cycle costing**.

Significance of Urban Mining and E-Waste Recycling

1. Secures Strategic Raw Materials

- Recovers high-value elements including **copper, gold, silver, palladium**, and rare **critical minerals**.
- Transforms mountains of discarded electronics into a dependable domestic raw material reserve for the digital economy.

2. Reduces Virgin Mining and Import Dependence

- Minimises ecological degradation and carbon emissions caused by traditional, resource-intensive **virgin mining**.
- Strengthens domestic supply chains, directly insulating the nation from volatile global markets and **import dependence**.

3. Mitigates Environmental and Public Health Hazards

- Ensures certified and environmentally sound containment of toxic, heavy metal **hazardous components**.
- Prevents environmental contamination that eventually re-emerges as expensive public **health-care expenditures**.

4. Prevents Cybersecurity and Data Breaches

- Integrates certified and verifiable **secure data destruction** into the core recycling protocol.
- Eliminates vulnerabilities where discarded storage devices cause severe **cybersecurity risks** and reputational harm.

5. **Fosters Long-Term Industrial Competitiveness**

- Builds early domestic capabilities in high-tech recycling and **advanced manufacturing ecosystems**.
- Yields long-term economic advantages and scale efficiency, mirroring early strategic investments in **solar power**.

Challenges in Implementing Advanced Urban Mining

1. **Lowest Visible Cost Bias in Procurement**

- Public and corporate procurement overwhelmingly favours the **lowest visible cost**, prioritising quick resale margins and minimal disposal fees.
- Strategic imperatives such as **critical mineral recovery** and ecological safety are omitted because they do not appear on immediate invoices.

2. **High Upfront Infrastructure and Technology Costs**

- Establishing compliant processing facilities, advanced material recovery plants, and **traceable supply chains** requires high capital outlay.
- Entities often mistake lower upfront disposal bids for actual savings, overlooking the superior durability of advanced recycling.

3. **Superficial Extended Producer Responsibility (EPR) Markets**

- Compliance markets frequently incentivise producers to buy the cheapest available paper certificates rather than funding physical recycling.
- This framework rewards low-cost informal aggregators instead of incentivising recyclers with high **recovery efficiency**.

4. **Cybersecurity Vulnerabilities from Substandard Disposal**

- Selecting recyclers solely based on maximum salvage value compromises **data sanitisation** protocols.
- Improperly handled data storage units cause permanent leakage of sensitive organisational assets and national security data.

5. **Externalised and Delayed Economic Costs**

- Pollution, resource depletion, and lost domestic capability do not hit immediate corporate balance sheets.
- These deferred liabilities ultimately shift heavy fiscal burdens onto citizens via remedial taxes and lower economic productivity.

Way Forward

1. **Adopt Life-Cycle Costing Frameworks**

- Replace the rigid lowest-acquisition-cost model with **life-cycle costing** across all public procurement policies.
- Evaluate bids by factoring in avoided import costs, secondary material yields, and long-term public value.

2. **Implement Value-Based Public Procurement**

- Utilise state purchasing power as an explicit tool of **industrial policy** to scale domestic advanced recycling industries.

- Prioritise technology vendors that guarantee certified circular take-back loops and **traceable supply pipelines**.
- 3. **Overhaul Extended Producer Responsibility (EPR) Standards**
 - Restructure EPR guidelines to penalise paper trading and actively reward **traceability** and material recovery rates.
 - Provide tax incentives and preferential market access to recyclers investing in deep **critical mineral extraction**.
- 4. **Institutionalise Dual Balance Sheet Accounting**
 - Mandate organisations to evaluate major asset retirements on both an immediate **financial balance sheet** and an open-ended **strategic balance sheet**.
 - Track organisational contributions to resource resilience, carbon mitigation, and **domestic mineral security**.
- 5. **Enforce Mandatory Secure Data Sanitisation Standards**
 - Institute strict statutory mandates that require certified, irreversible **data destruction** prior to physical dismantling.
 - Treat end-of-life IT disposal as a matter of national **cybersecurity governance** rather than simple scrap liquidation.
- 6. **Build Domestic Scale through Targeted Industrial Support**
 - Replicate the scale-driven policy interventions deployed successfully in the **renewable energy sector**.
 - Provide capital subsidies and viability gap funding for high-tech **urban mining hubs** to lower unit processing costs.

Conclusion

- Transitioning to **urban mining** through **life-cycle costing** ensures discarded electronics become resilient **strategic assets** rather than hazardous liabilities.
- This approach secures India's technological autonomy with the smallest unpaid economic and environmental bill.

Q. "Examine the role of **urban mining** and **life-cycle costing** in managing India's **e-waste** and securing **critical minerals**." 10 Marks

2.1.2. THE CHANGING PARADIGM OF VULTURE CONSERVATION IN INDIA

Context

India's vulture population crashed by **99.5%** due to the toxic veterinary drug **diclofenac**. While strict drug bans succeeded in containing this chemical crisis, **lethal avian electrocution** from rapidly expanding **power grids** has emerged as a severe new threat, forcing vultures to abandon their historical nesting sites.



Introduction

Vultures are ecologically indispensable **apex scavengers** acting as nature's primary sanitation engine. Their near-extinction in the 1990s triggered a severe **public health crisis** by causing **feral dog populations** and **rabies** to proliferate. Today, their **wide wingspans** make them highly vulnerable to uninsulated power lines, making **infrastructural mitigation** an urgent ecological and economic imperative.

Features of Vulture

India hosts nine species of vultures, including the White-rumped, Slender-billed, Red-headed, Egyptian, Himalayan, Bearded, Griffon, Cinereous, and the **Indian Vulture**.

1. About Indian Vulture

- **Scientific Identity:** Scientifically known as *Gyps indicus*, it is an **Old World vulture** closely related to the Griffon vulture.
- **Historical Decline:** Its population crashed abruptly in the late 1990s due to **renal failure** caused by consuming livestock treated with toxic painkillers.

2. Indian Vulture Habitat and Distribution

- **Geographic Range:** Primarily endemic to **India, Pakistan, and Nepal**, highly concentrated in the Central and Peninsular regions.
- **Nesting Preferences:** They predominantly nest on **craggs, high rocky cliffs**, and ruined monuments.
- **Current Shift:** Due to infrastructural disturbances, they now nest at only **50% of their historical sites**, increasingly restricting themselves to **Protected Areas**.

3. Indian Vulture Features

- **Physical Traits:** A medium-sized bird with a pale body and contrasting **dark flight feathers**.
- **Anatomy:** Characterized by a bald head and **very broad wings** adapted for soaring on thermal currents.
- **Foraging Mechanism:** They rely heavily on **exceptional eyesight** rather than a sense of smell to locate carrion.

4. Indian Vulture Conservation Status

- **IUCN Red List:** Listed globally as **Critically Endangered (CR)**.
- **Wildlife Protection Act (WPA), 1972:** Listed under **Schedule I**, granting the highest degree of legal protection.
- **CITES:** Placed in **Appendix II** to regulate international trade.

Significance of Vultures in the Ecosystem

1. **Zoonotic Disease Buffers:** Their highly acidic gastric juices safely digest virulent pathogens like **Anthrax** and **Cholera**, halting environmental contamination.
2. **Competitive Exclusion of Pests:** Rapid consumption of carcasses denies a food base to **opportunistic scavengers** (feral dogs), minimizing **human-wildlife conflict**.
3. **Nutrient Cycling Catalyst:** They act as **biological incinerators**, accelerating the return of critical minerals into the soil to sustain the **terrestrial food web**.

4. **Economic Savings:** Their natural disposal services save billions of dollars annually in **carcass incineration** and **public health management**.
5. **Landscape Bio-indicators:** The demographic health of these scavengers serves as an **early-warning system** for the toxicological safety of a habitat.

What are the Vulture Conservation Efforts Taken by India?

1. **Action Plan for Vulture Conservation (2020-2025):** Launched by the **MoEFCC**, mandating regular population monitoring and strict regulation of veterinary **NSAIDs**.
2. **Veterinary Drug Bans:** Following the ban on Diclofenac (2006), the government banned **Aceclofenac** and **Ketoprofen** in 2023, promoting safer alternatives like **Meloxicam**.
3. **Vulture Conservation Breeding Centres (VCBCs):** Established alongside the **Bombay Natural History Society (BNHS)**, including the world's largest facility in Pinjore.
4. **Vulture Safe Zones (VSZs):** Demarcating **100 km radius areas** free from toxic drugs to provide safe natural habitats for wild populations.
5. **International Collaboration:** Active participation in **SAVE (Saving Asia's Vultures from Extinction)** for transboundary conservation.

Challenges in Mitigating the Threat

1. **Incompatible Grid Architecture:** Narrow phase-to-phase gaps on modern pylons fail to account for the **large wingspans** of raptors, causing simultaneous **wire bridging** and electrocution.
2. **Habitat Overlap:** In landscapes depleted of tall trees, electrical towers serve as fatal, artificial substitutes for **roosting and scanning**.
3. **Unplanned Waste Geographies:** Unregulated dumping of livestock carcasses directly beneath transmission lines pulls flocks into **immediate high-risk zones**.
4. **The Medium-Voltage Blind Spot:** Conservation focus ignores ubiquitous **11kV and 33kV distribution lines**, which are equally lethal and vastly more widespread.
5. **Data Deficit:** The true scale of avian electrocution remains obscured because dead birds are swiftly consumed by **ground scavengers** before official recording.

Way Forward

1. **Spatial Segregation of Dumps:** Enforce strict **municipal zoning** to relocate livestock dumps at least **2.4 km away** from high-tension lines.
2. **Mandatory Conductor Insulation:** The MoEFCC must mandate the insulation of all overhead conductors passing through identified **vulture corridors**.
3. **Re-engineering Physical Grid Gaps:** Redesign future pylons to ensure the distance between energized components safely exceeds the **maximum raptor wingspan**.
4. **Avian-Safe Perches:** Retrofit existing towers with **non-conductive perching platforms** above live wires to safely accommodate natural roosting instincts.
5. **Inter-ministerial Synergy:** Establish a joint task force to conduct mandatory **Avian Impact Assessments** before approving new transmission lines.

Conclusion

- Preserving India's vultures requires a decisive shift from regulating **veterinary chemicals** to enforcing **avian-safe grid engineering**. Aligning rapid **infrastructure expansion** with strict **ecological preservation** is vital to ensure these keystone species can safely continue sanitizing our environment.

Q. The primary threat to India's vultures has transitioned from **veterinary drugs** to **power infrastructure**. Discuss the significance of vultures in the ecosystem and the challenges in mitigating this infrastructural menace. 15 Marks

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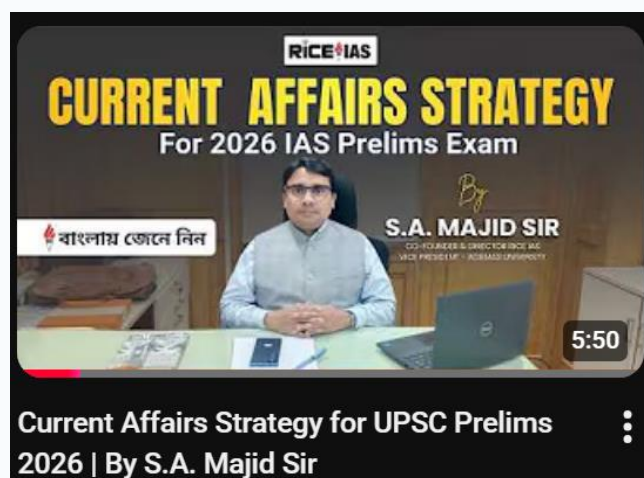
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