



PadhAI



# Down to *Earth*

MAGAZINE

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1-15 MARCH 2026

Welcome to PadhAI—

# Down to Earth Magazine Coverage

You're here because you understand a core truth of UPSC preparation—success doesn't come from reading everything, but from reading what actually matters.

*Down to Earth* is one of the most valuable sources for environment, ecology, and sustainable development. However, reading it cover to cover can be time-consuming and often difficult to align directly with exam demands. PadhAI's Down to Earth coverage is designed to simplify that process—by filtering, structuring, and converting important content into exam-ready insights.

## Why PadhAI's Down to Earth Coverage

Many aspirants struggle with Down to Earth because of:

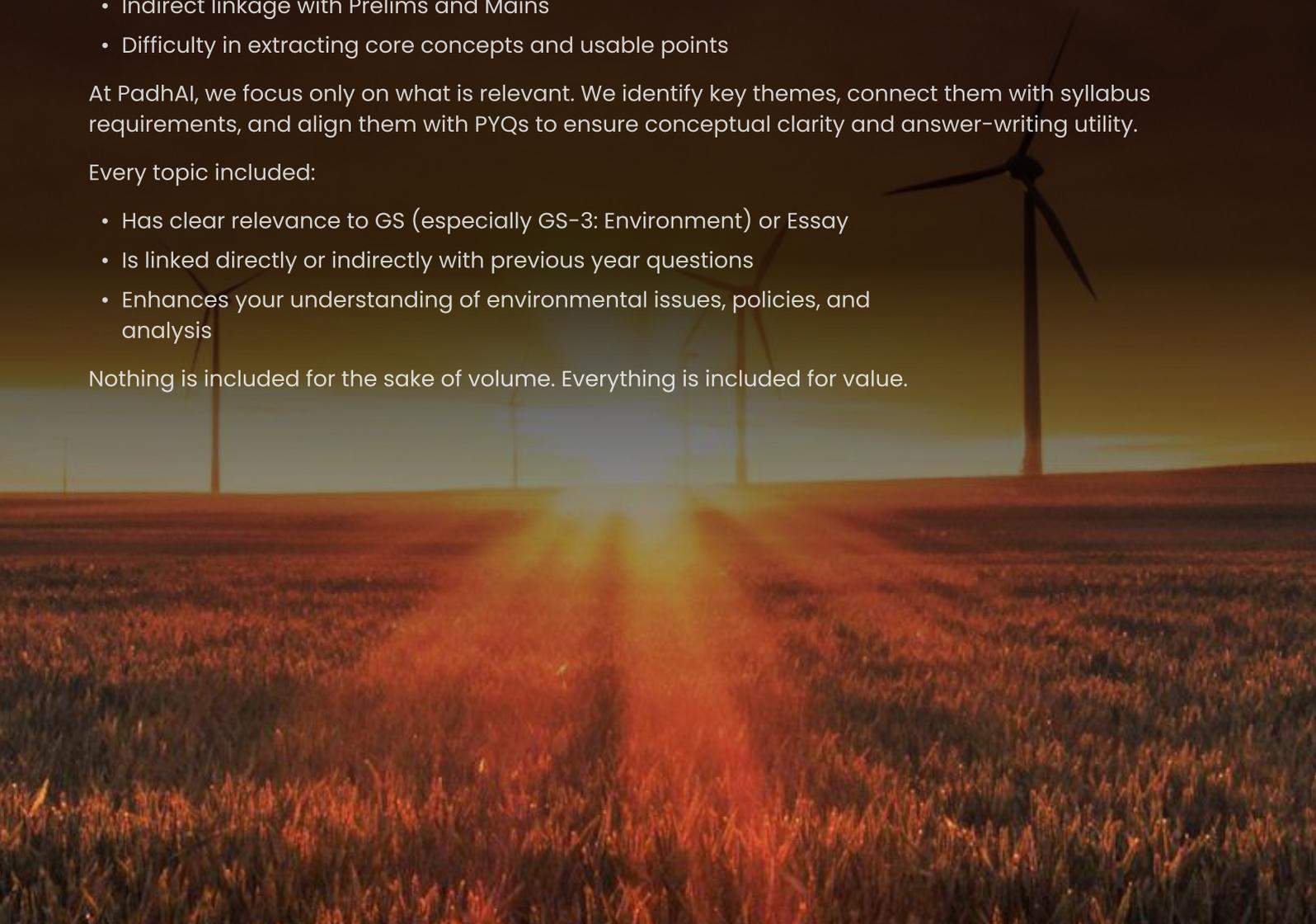
- Detailed and lengthy articles
- Indirect linkage with Prelims and Mains
- Difficulty in extracting core concepts and usable points

At PadhAI, we focus only on what is relevant. We identify key themes, connect them with syllabus requirements, and align them with PYQs to ensure conceptual clarity and answer-writing utility.

Every topic included:

- Has clear relevance to GS (especially GS-3: Environment) or Essay
- Is linked directly or indirectly with previous year questions
- Enhances your understanding of environmental issues, policies, and analysis

Nothing is included for the sake of volume. Everything is included for value.



## Part of the PadhAI Preparation Ecosystem

This Down to Earth coverage is integrated with a broader system that includes:

- **Fast and concise magazines (published early)**
- **Daily PIB summaries (filtered and exam-focused)**
- **Monthly compliance coverage**
- **Complete Prelims & Mains PYQs with structured answers**
- **News summaries from relevant sources**
- **Personal tutor chat support for continuous guidance**

The goal is simple:

One reliable system instead of multiple scattered sources.

## Our Guiding Philosophy

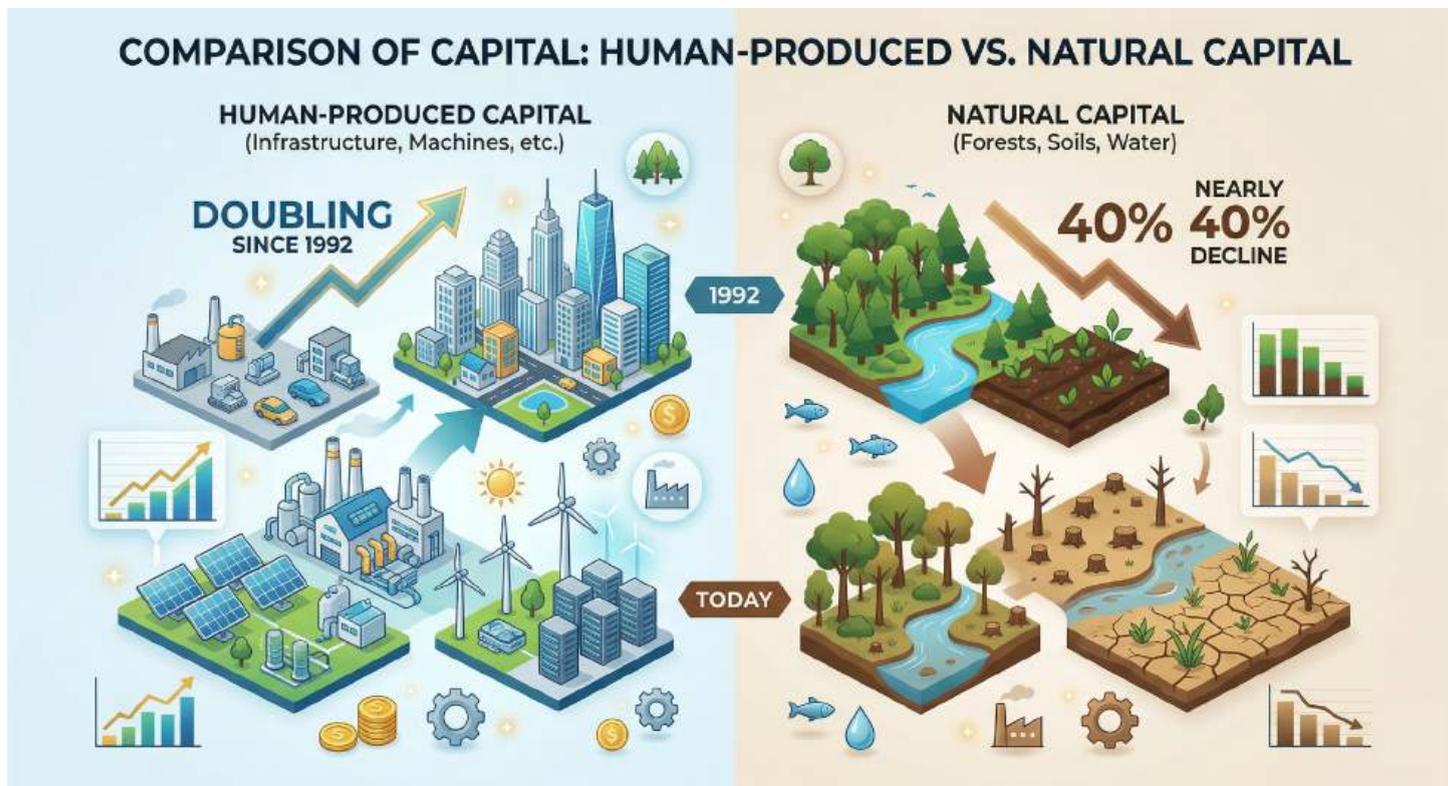
At PadhAI, everything is built on three principles:

- **Learn only what matters**
- **Learn it the right way**
- **Learn it at the right time**

That's how preparation becomes focused, efficient, and effective.



## Topic 1: IPBES Business and Biodiversity Assessment



**Summary:** The 2025 IPBES assessment warns that businesses are creating **systemic risks** by undermining the ecosystems they depend on for services like pollination and water regulation. It reveals a massive financing gap, where **\$7.3 trillion** harms nature while only \$220 billion supports it.

**Background:** Biodiversity is the foundation for economic stability, providing essential services like climate regulation and soil fertility. However, high-impact sectors like agriculture and mining are driving species loss and ecosystem degradation globally.

### Key Points:

- **Finance Imbalance:** For every \$1 spent protecting nature, nearly **\$33 finances activities that damage it**.
- **Business Drivers:** Corporate activities contribute to all five main drivers of loss, including **land-use change** and **invasive species**.
- **Indigenous Protection:** While 60% of Indigenous lands face industrial pressure, their territories remain critical for global conservation.

### Prelims Facts (One Liners):

- Human-produced capital has doubled per person since 1992, while natural capital has declined by 40%.



- Over 730 organisations have adopted the **Taskforce on Nature-related Financial Disclosures (TNFD)**.

**MCQ Practice:** Q. According to IPBES 2025, what is the ratio of nature-harming finance to conservation finance? A) 10:1 B) 20:1 C) 33:1 D) 50:1 **Answer: C**

## Topic 2: Breast Milk and Environmental Contaminants

### Uranium in Bihar: A Silent Threat in the Gangetic Plains

**100% Detection Rate in Tested Samples**  
Every sample from 40 lactating mothers across six districts contained uranium (U238).

**District Hotspots Identified**  
Katihar recorded the highest individual levels, while Khagaria had the highest average contamination.

**MAPPING THE CONTAMINATION**  
KATIHAR, KHAGARIA, BEGUSARAI, BHAGALPUR, PATNA, MUNGER

**INFANT HEALTH RISKS & RECOMMENDATIONS**  
**70%** of Infants at Potential Risk  
Most infants showed a Hazard Quotient > 1, indicating possible non-carcinogenic health risks.

**Developmental Vulnerabilities**  
Long-term exposure may impair kidney development, neurological health, and cognitive outcomes like IQ.

**Safe Breastfeeding Practices**  
Mothers should consume pure mineral water and fresh produce to mitigate contamination levels.

**Groundwater Connection**  
Mining, Coal Burning, Phosphate Fertilizers  
Uranium naturally contaminates groundwater through these sources.

**Comparing International and Local Uranium Safety Thresholds in Water**

Authority	Uranium Limit in Water
World Health Organization (WHO)	30 ug/L
Germany (Stricter Limit)	10 ug/L
Bihar Groundwater Samples	1.7% exceed safety limits

**Summary:** Studies have detected over **100 environmental pollutants** in breast milk across India, including uranium and heavy metals. Despite these findings, health experts maintain that **breastfeeding remains safer** and more beneficial than alternatives.

**Background:** Contaminants enter the body through polluted groundwater and agricultural inputs like **phosphate fertilisers**, which contain uranium impurities.

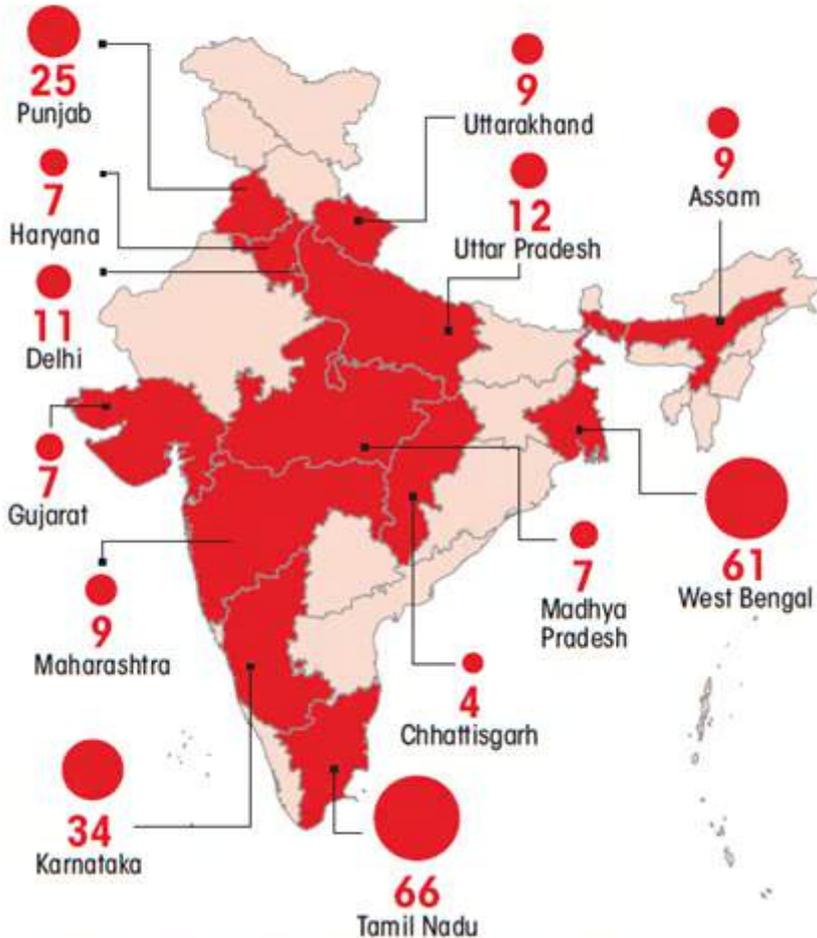


**Key Points:**

**Quite a threat**

Studies have detected at least 101 contaminants in breast milk samples from across India. Several of the contaminants are potential carcinogens, endocrine disruptors and neurotoxins

● No. of contaminants found in breast milk samples studied



Source: ExHuMId Database, accessible online at: <https://cb.imsc.res.in/exhumid/>

- **Health Risks:** Model-based assessments in Bihar suggest 70% of infants may face non-carcinogenic risks like **kidney damage**.
- **Diverse Toxins:** Beyond uranium, persistent organic pollutants (POPs) like **DDT** and heavy metals like Lead and Mercury have been identified.
- **Scientific Database:** The **ExHuMId database** has documented a wide range of carcinogens and neurotoxins in human milk.

**Prelims Facts (One Liners):**

- **Katihar district** recorded the highest levels of uranium in the Bihar breast milk study.

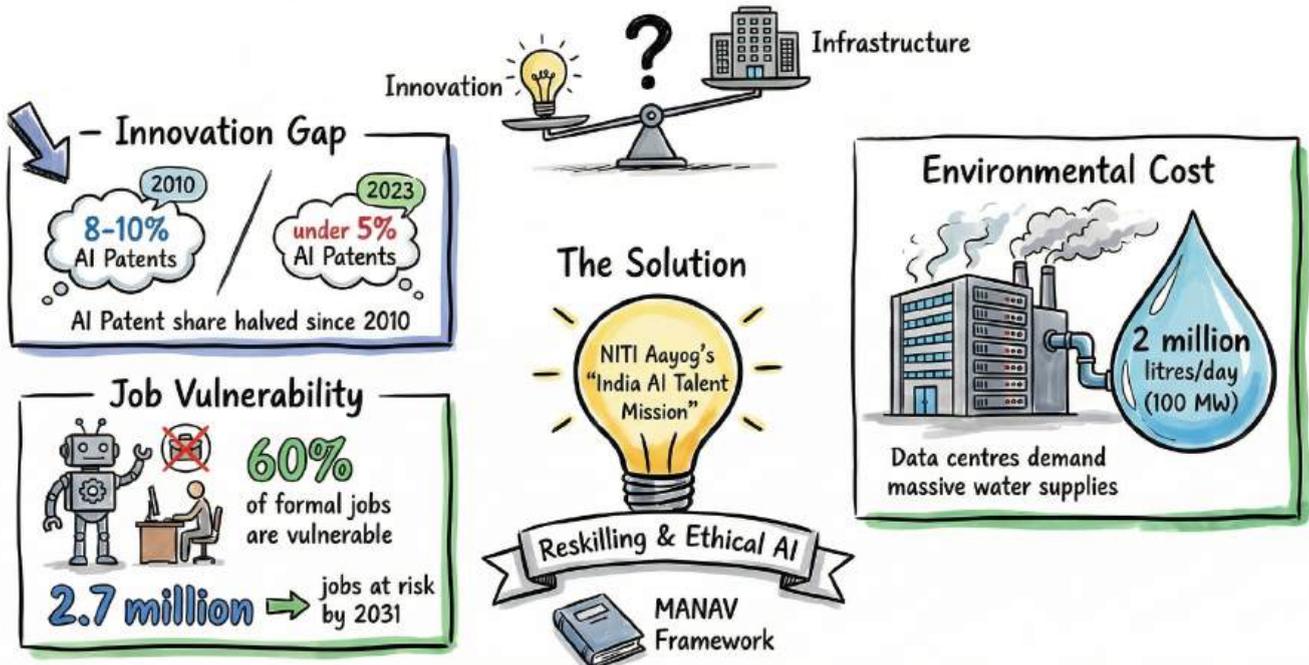


- The Lancet Global Health (2015) found breastfeeding is associated with higher adult income and intelligence.

**MCQ Practice:** Q. Which database has documented over 100 environmental pollutants in breast milk across India? A) RMNCAH B) ExHuMId C) POSHAN D) eSanjeevani **Answer: B**

### Topic 3: India's AI Challenge and Data Centre Strategy

## India's AI Paradox: Innovation vs. Infrastructure



**Summary:** India faces an **innovation deficit** in AI, marked by a decline in global patent share and a shortage of advanced researchers. While the government is promoting a **\$200 billion data centre strategy**, critics cite high environmental costs and limited technology transfer.

**Background:** India's tech sector is vulnerable to AI automation, with an estimated **2.7 million jobs** at risk by 2031.

#### Key Points:

- **Innovation Gap:** India's share of AI patents dropped from 8-10% in 2010 to **under 5% in 2023**.
- **Environmental Strain:** A 100 MW data centre can consume over **2 million litres of water per day** for cooling.
- **Proposed Mission:** NITI Aayog has recommended the **India AI Talent Mission** to coordinate large-scale reskilling and education reform.



**Prelims Facts (One Liners):**

- The **MANAV Framework** stands for Moral, Accountable, National, Accessible, and Valid AI.
- Over 60% of India's formal sector jobs are vulnerable to AI automation by 2030.

**MCQ Practice:** Q. What is a primary environmental concern for the 1 GW Google data centre in Visakhapatnam? A) Soil erosion B) Massive water and energy consumption C) Noise pollution D) Solar radiation **Answer: B**

**Topic 4: China's Energy Transition and Lessons for India**

**THE GREAT COAL PIVOT: CHINA'S BLUEPRINT FOR INDIA**  
Coal: From Baseload to Flexible 'Peaker'

**POINT 1: CHINA'S SHIFT**  
China is retrofitting plants to provide stability for renewables rather than constant power.

**POINT 2: 30% FLEXIBILITY TARGET**  
China aims to lower the minimum stable load of coal plants to below 30% for better integration.

**POINT 3: PAYING FOR BACKUP**  
The Capacity Payment Mechanism covers fixed costs for coal plants when they aren't running.

**POINT 4: INDIA'S GAP**  
India's non-fossil sources make up 50% of capacity but only 33% of actual generation.

**POINT 5: INDIA'S 2030 GOAL**  
India must move from pilot phases to large-scale coal flexibilisation to bridge the energy gap.

**200 GW**

**Summary:** China is successfully transitioning coal from a baseload provider to a **peaker/balancing source**. India faces a "capacity-generation gap," where non-fossil sources make up half of installed capacity but only **one-third of generation**.

**Background:** China's 14th Five-Year Plan prioritises **retrofitting coal plants** for flexibility to support a renewable-heavy "new-type power system".

**Key Points:**

- **Operational Flexibility:** China aims to lower the minimum stable load of coal plants to **below 30%**.
- **Economic Viability:** A **Capacity Payment Mechanism** was introduced in 2024 to cover fixed costs of coal plants during low utilisation.



- **Indian Progress:** India is still in the pilot phase of coal flexibilisation, aiming to retrofit 200 GW by 2030.

**Prelims Facts (One Liners):**

- China recorded a **1.6% decline in CO2 emissions** in early 2025.
- India's non-fossil sources contribute roughly one-third of total electricity generation.

**MCQ Practice:** Q. What mechanism does China use to ensure the financial viability of coal plants that provide grid stability? A) Carbon Tax B) Capacity Payment Mechanism C) Green Bonds D) Export Subsidies **Answer:** B

**Topic 5: Climate Anxiety and Youth Behaviour**

## CLIMATE ANXIETY & YOUTH: TURNING WORRY INTO RESILIENCE

**Summary:** Environmental degradation is triggering **eco-anxiety and solastalgia** among youth, sometimes manifesting as frustration or aggression. Studies suggest that **constructive engagement** in conservation can transform this anxiety into resilience.

**Background:** Adolescents are developmentally more sensitive to the uncertainty of long-term climate threats because their emotional regulation systems are still maturing.

**Key Points:**



- **Direct Stressors:** Extreme events like floods disrupt schooling and family stability, impairing a child's emotional control.
- **Eco-Anxiety:** Persistent worry about the planet's future often makes youth feel helpless compared to adults.
- **Agency through Action:** Environmental restoration activities are shown to improve youth mental health by building a sense of **hope and agency**.

**Prelims Facts (One Liners):**

- **Solastalgia** is emotional distress caused by environmental changes in one's home.
- Most climate psychology research currently lacks standardised measurement tools for adolescents in the **Global South**.

**MCQ Practice:** Q. What term describes emotional distress caused by environmental changes to one's own home environment? A) Solastalgia B) Eutrophication C) Anthropocentrism D) Biophilia **Answer: A**

**Topic 6: Measuring Poverty: The 'Average Poverty' Approach**

## POVERTY AS TIME: The Average Poverty Approach

**Moving Beyond Binary "Starvation Lines."**

Traditional measures exclude "near-poor", miss seasonal fluctuations.

**POVERTY =  
= DAYS PER DOLLAR**

**The Reciprocal of Income**

If **INCOME = DOLLARS / DAY**,  
then **POVERTY = DAYS / DOLLAR**

**POOREST WEALTHIER**

Priority for the Poorest.

Small income gains for the poorest reduce this measure **MOST**.

**Focus on Entire Income Distribution**

Proposed by economist Olivier Sterck: looks at **WHOLE** population, not just "in or out".

**Summary:** Traditional poverty lines are criticised for excluding the "near-poor" and suffering from **seasonal bias**. Economist Olivier Sterck proposes '**Average Poverty**,' a measure that considers the entire income distribution rather than a binary line.

**Background:** In India, poverty measurement relies on **consumption expenditure surveys**, which can show misleading results if conducted during post-harvest or lean seasons.



**Key Points:**

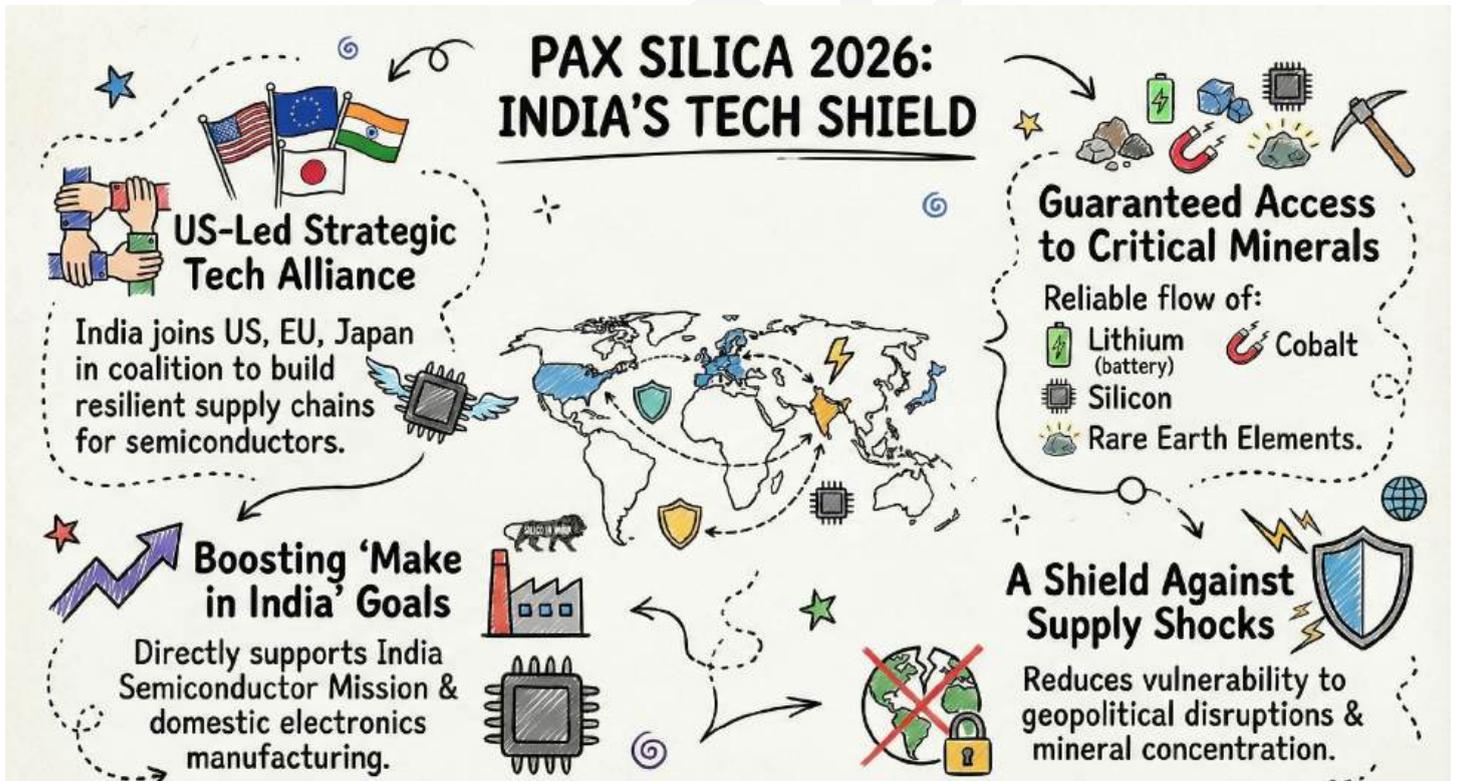
- **Distribution Sensitive:** Average Poverty measures the **average time** it takes for a population to earn one dollar.
- **Impact focus:** Small income gains for the poorest reduce this poverty measure more significantly than gains for the relatively rich.
- **Reciprocal Method:** If income is dollars/day, poverty is measured in **days/dollar**.

**Prelims Facts (One Liners):**

- **Olivier Sterck** is the economist who proposed the 'Average Poverty' measure.
- India's traditional poverty line is often criticised as a "starvation line".

**MCQ Practice:** Q. How does the 'Average Poverty' measure define poverty? A) Calories per day B) Reciprocal of income C) Ownership of assets D) Distance to healthcare **Answer: B**

**Topic 7: India Joins Pax Silica Coalition (2026)**



**Summary:** At the 2026 AI Impact Summit, India joined the **US-led Pax Silica coalition** to build resilient supply chains for semiconductors and critical minerals. This move aligns with India's goal for **technological self-reliance** in digital and clean energy sectors.

**Background:** Global supply chains for minerals essential for batteries and AI hardware are currently **geopolitically concentrated**, creating risks of disruption.

**Key Points:**

- **Critical Access:** The coalition ensures reliable access to **Lithium, Cobalt, Rare Earth Elements, and Silicon**.
- **Policy Alignment:** This partnership supports the **India Semiconductor Mission** and "Make in India" initiatives.
- **Strategic Shield:** It reduces India's vulnerability to supply chain shocks in the electronics manufacturing sector.

**Prelims Facts (One Liners):**

- **Pax Silica** is a strategic technology coalition led by the United States.
- Critical minerals like lithium and cobalt are vital for renewable technologies and AI hardware.

**MCQ Practice:** Q. Which coalition did India join in 2026 to strengthen its semiconductor and critical mineral supply chains? A) BRICS B) Pax Silica C) OPEC D) G20 **Answer: B**

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## Topic 8: Repeal of the US 'Endangerment Finding'

### The Great Climate U-Turn: Repealing the "Endangerment Finding"

US removes legal mandate to regulate emissions, pivoting toward fossil fuels.



#### Killing the Legal Root of Regulation

Repealing the 2009 "Endangerment Finding" removes the EPA's authority to regulate CO2 and Methane.





#### A \$1.3 Trillion Economic Gamble

The administration claims the repeal will lower vehicle prices and save taxpayers trillions.



#### Doubling Down on Fossil Fuels

The policy shift cuts support for Electric Vehicles (EVs) while expanding oil and gas drilling licenses.



#### Global Retreat vs. Local Resistance

While the move may trigger global climate delays, states like California are maintaining their own ambitious policies.

**Summary:** The US has overturned the **2009 'Endangerment Finding,'** which legally empowered the EPA to regulate greenhouse gases as threats to public health. This move marks a deliberate shift toward **fossil fuel expansion** and away from federal climate commitments.

**Background:** The finding was a cornerstone of US climate policy, enabling emission standards for vehicles and power plants for over a decade.

### Key Points:

- **Economic Claim:** The administration claims the repeal will save taxpayers **\$1.3 trillion** and lower vehicle prices.
- **Climate Backtrack:** The shift includes reduced support for **Electric Vehicles (EVs)** and expanded drilling licenses for oil and gas.
- **Global Impact:** Other nations may use the US withdrawal as justification to delay their own climate actions under the **Paris Agreement**.

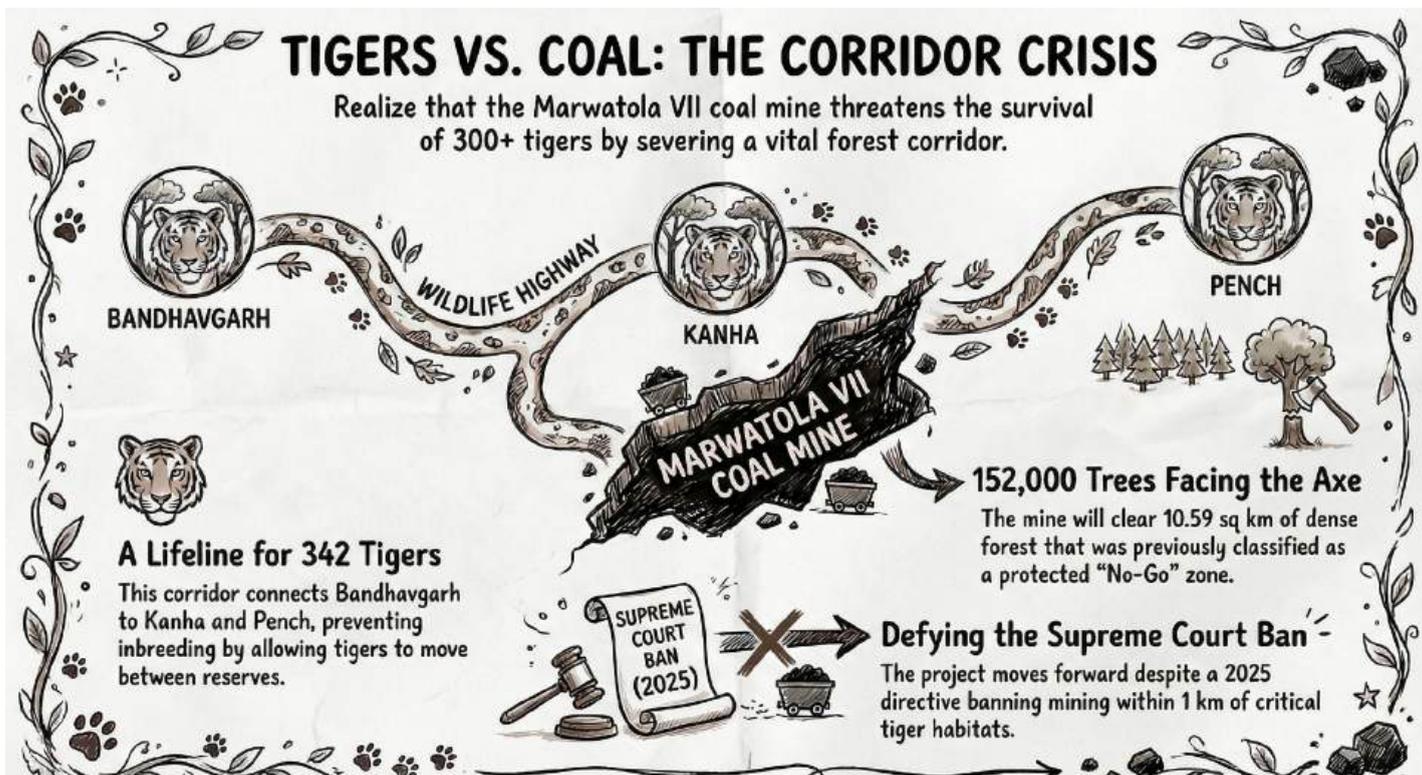
### Prelims Facts (One Liners):

- The **Endangerment Finding (2009)** was the legal basis for regulating CO2 and Methane under the Clean Air Act.
- **California** and other progressive states continue to pursue ambitious climate policies despite the federal repeal.



**MCQ Practice:** Q. The repeal of which 2009 finding removed the legal basis for the US EPA to regulate greenhouse gas emissions? A) Kyoto Protocol B) Endangerment Finding C) Paris Accord D) Clean Water Act  
**Answer: B**

## Topic 9: Coal Mining Near Bandhavgarh–Achanakmar Corridor



**Summary:** A proposal for **open-cast coal mining** in Umaria, MP, threatens a critical wildlife corridor used by roughly **342 tigers**. Fragmentation of this landscape could lead to inbreeding and population decline by blocking genetic exchange between reserves.

**Background:** The Marwatola VII block was on the **2010 'No-Go' list** of dense forests unsuitable for mining. However, the project is being pursued for its 82 million tonnes of economically viable coal.

### Key Points:

- **Habitat Loss:** The project would involve felling over **152,000 trees** across 10.59 sq km of forest land.
- **Legal Conflict:** A 2025 Supreme Court directive mandated a **complete ban on mining within 1 km** of critical tiger habitats.
- **Tiger Nurseries:** The corridor connects Bandhavgarh (134 tigers) with Kanha, Pench, and other vital reserves.

### Prelims Facts (One Liners):

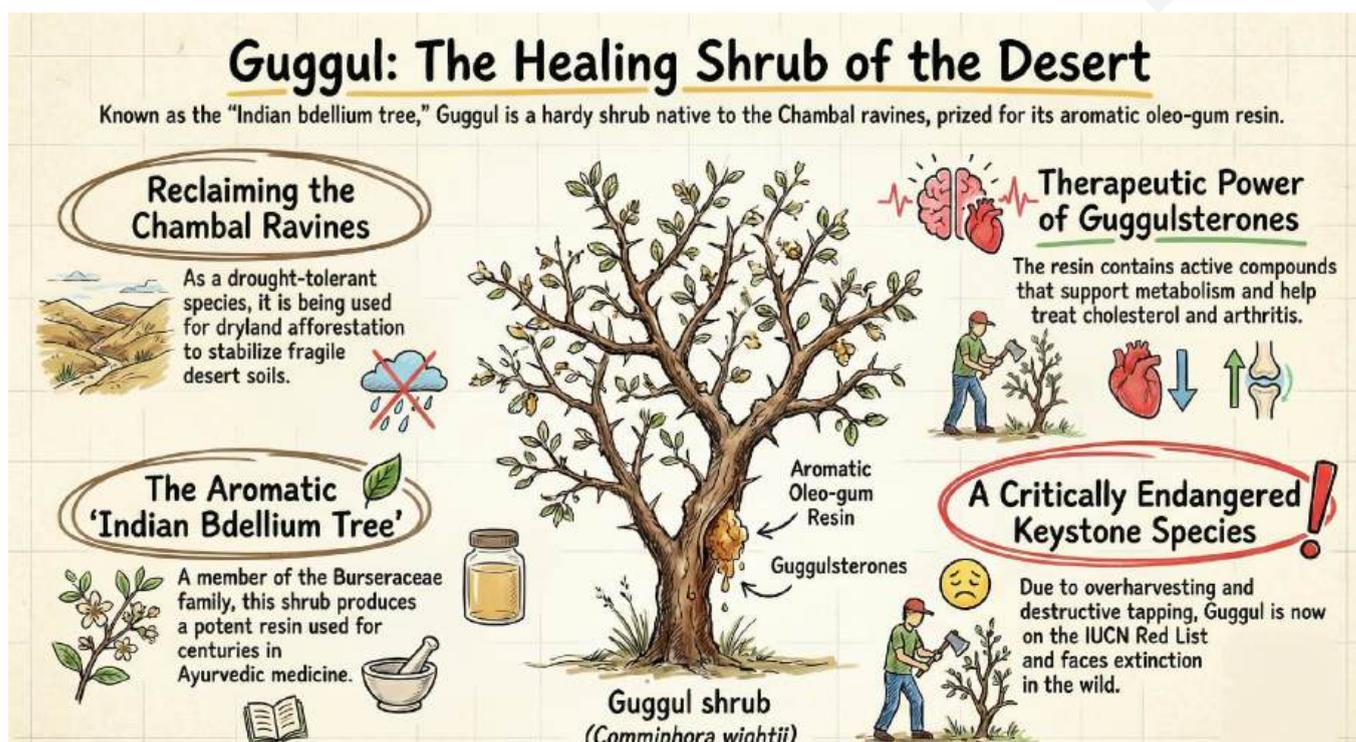
- **Marwatola VII** is a coal block in the Sohagpur coalfield of Madhya Pradesh.



- The **National Tiger Conservation Authority (NTCA)** recommended wildlife clearance for this project due to its location.

**MCQ Practice:** Q. Which coal project in Madhya Pradesh is currently being criticised for its proximity to the Bandhavgarh–Achanakmar tiger corridor? A) Singrauli B) Marwatola VII C) Jharia D) Talcher **Answer: B**

## Topic 10: Guggul (Commiphora Wightii)



**Summary:** Cultivation of **Guggul** is being promoted to reclaim the **Chambal ravines** and alleviate rural poverty. This drought-tolerant plant produces a resin with pharmacological effects for treating cholesterol and arthritis.

**Background:** Guggul is a keystone species for arid ecosystems but faces threats from **destructive tapping techniques** and overharvesting.

### Key Points:

- **Therapeutic Value:** The resin contains **guggulsterones**, which support weight loss and metabolism.
- **Ecological Benefit:** As a drought-tolerant species, it helps stabilise **fragile desert soils** and is used for dryland afforestation.
- **Conservation:** It is listed as **Critically Endangered in India** and is on the IUCN Red List.

### Prelims Facts (One Liners):

- Guggul belongs to the **Burseraceae family** and is often called the "Indian bdellium tree".



- The **Chambal ravines** of Madhya Pradesh are a primary natural habitat for this medicinal shrub.

**MCQ Practice:** Q. What is the conservation status of the Guggul (*Commiphora wightii*) plant in India? A) Vulnerable B) Endangered C) Critically Endangered D) Extinct in the Wild **Answer: C**

## Topic 11: China's Zero-Tariff Policy for African Nations



**Summary:** China has extended **zero-tariff treatment** to imports from all African partners with which it has diplomatic ties. This move, part of **South-South cooperation**, aims to boost African exports in agriculture and minerals.

**Background:** Previously, duty-free access was limited mainly to least-developed countries; the new policy now includes middle-income nations like **Nigeria and Kenya**.

### Key Points:

- **Eswatini Exclusion:** Eswatini remains excluded as it recognises **Taiwan** diplomatically instead of Beijing.
- **Green Channel:** A new mechanism ensures **fast-track administrative approvals** for African trade.
- **Imbalance Risks:** Critics warn that trade remains "resource-heavy and manufacturing-light," which may limit long-term industrial gains for Africa.

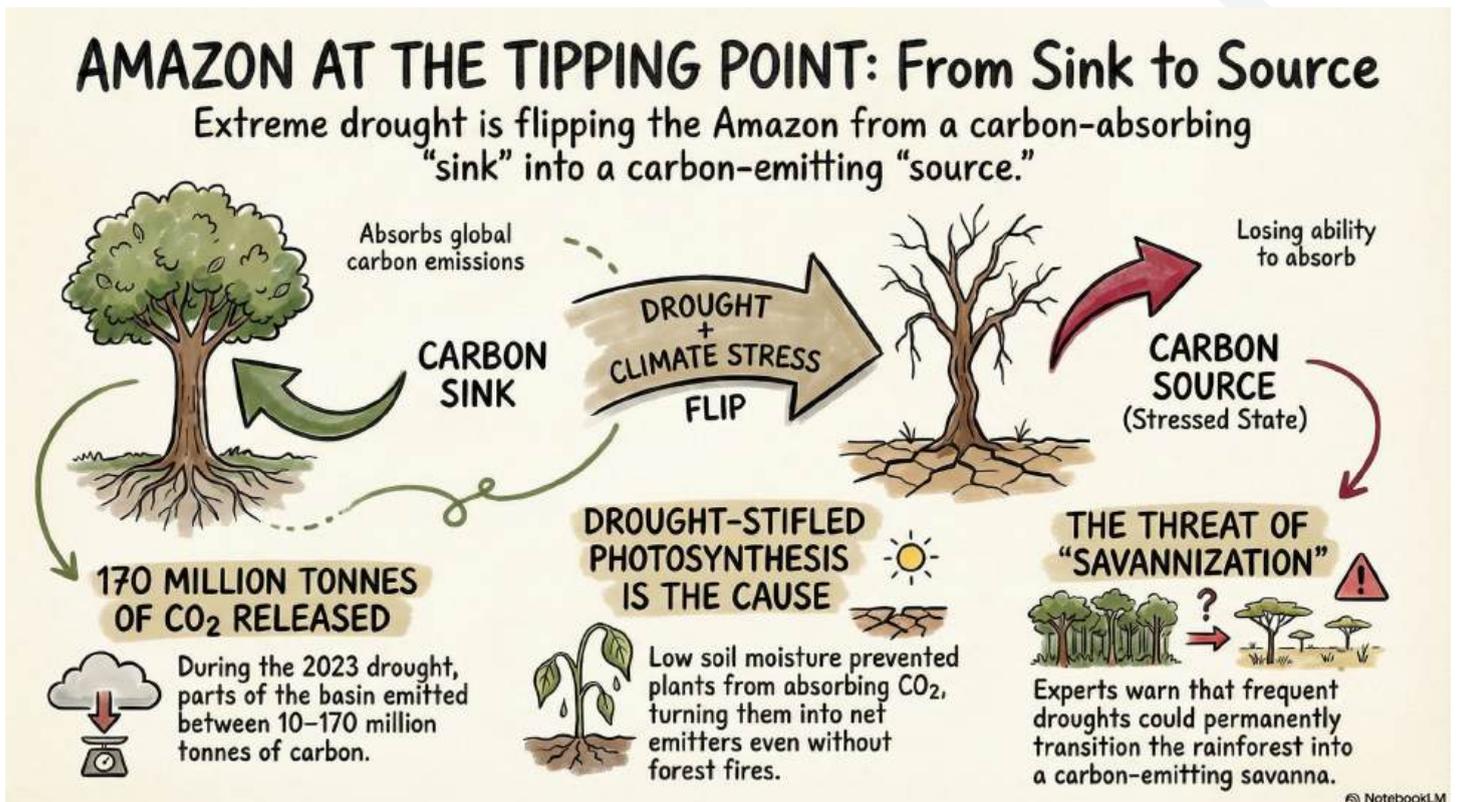


**Prelims Facts (One Liners):**

- The **Forum on China–Africa Cooperation (FOCAC)** is the framework for this partnership. **Eswatini** is the only African country without diplomatic ties to China.

**MCQ Practice:** Q. Why is Eswatini excluded from China's zero-tariff policy for African nations? A) High debt levels B) Lack of minerals C) Diplomatic recognition of Taiwan D) Poor quality standards **Answer: C**

**Topic 12: Amazon Rainforest Turning into a Carbon Source**



**Summary:** Extreme heat and drought in 2023 caused parts of the Amazon to act as a **net carbon source** for three months. The shift was driven by **reduced photosynthesis** in vegetation rather than forest fires.

**Background:** The Amazon is traditionally a global carbon sink, but **El Niño events** are making the basin warmer and drier.

**Key Points:**

- **Vegetation uptake:** Severe drought leads to reduced soil moisture, causing plants to absorb less CO<sub>2</sub>.
- **Early-year Offset:** Strong growth from January to April 2023 partially mitigated the total annual carbon loss.
- **Tipping Point:** Experts warn frequent droughts could lead to "savannization," where the rainforest permanently transitions into a carbon source.



**Prelims Facts (One Liners):**

- The 2023 Amazon drought was intensified by a strong **El Niño event**.
- Estimated CO2 released during the drought period was between **10–170 million tonnes**.

**MCQ Practice:** Q. What was the primary cause for parts of the Amazon becoming a carbon source in 2023?

A) Massive forest fires B) Reduced photosynthesis due to drought C) Increased logging D) Volcanic activity

**Answer: B**

**Topic 13: US Supreme Court Strikes Down Reciprocal Tariffs**

# SCOTUS Blocks Presidential Tariffs



**Executive Overreach Halted**

The Court ruled the President cannot use “emergency economic powers” to unilaterally dictate trade policy.



**\$100 Billion Refund Owed**

The US government may be required to return over \$100 billion in collected revenue to domestic importers.



**Checks and Balances Restored**

This decision reinforces the constitutional separation of powers regarding global trade and national taxes.

US Constitution grants Congress primary power to regulate foreign commerce & set tariffs.

**Summary:** In 2025, the US Supreme Court ruled that the president **exceeded executive power** by imposing blanket global reciprocal tariffs. The decision reaffirmed that **Congress retains primary authority** over foreign commerce.

**Background:** The tariffs were introduced to counter perceived trade imbalances but functioned as a tax on domestic American importers.

**Key Points:**

- **Financial Impact:** The US government may have to **refund over \$100 billion** collected as tariff revenue.

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- **Legal Precedent:** The ruling limits the use of "emergency economic powers" to unilaterally set trade policy.
- **Importers' Relief:** American firms that paid the duties will be the primary beneficiaries of the refunds.

**Prelims Facts (One Liners):**

- The US Constitution grants Congress the primary authority over **tariffs and foreign commerce**.
- The Supreme Court decision rollback could reduce trade tensions with international partners.

**MCQ Practice:** Q. According to the 2025 US Supreme Court ruling, who has the primary authority over tariffs?  
A) The President B) The Supreme Court C) The Congress D) State Governors **Answer: C**

**Topic 14: Kashiwazaki–Kariwa Nuclear Power Plant (Japan)**

**Japan's Nuclear Giant Reawakens**  
Offline since 2011, restarting to power clean energy goals.

- World's Largest Installed Nuclear Capacity**  
**7.9 GW**  
Massive capacity across Advanced Boiling Water Reactors.
- Meeting the World's Strictest Safety Standards**  
Resumed only after satisfying rigorous NRA regulations.  
NRA (Japan)
- Driving Toward 2050 Carbon Neutrality**  
2050 Reduces heavy reliance on expensive imported fossil fuels like LNG.  
LNG
- TEPCO Managed Energy Security**  
A central pillar of Japan's national energy strategy.  
Niigata Prefecture  
Kashiwazaki-Kariwa plant.

**Summary:** Japan has restarted the **Kashiwazaki–Kariwa Nuclear Power Plant**, the world's largest by installed capacity. This move is central to Japan's goals of **energy security** and reaching carbon neutrality by 2050.

**Background:** The plant had been offline since the **2011 Fukushima disaster**, which led to a nationwide shutdown of nuclear reactors.

**Key Points:**



- **Operational Scale:** Operated by TEPCO, the facility uses **Advanced Boiling Water Reactors (ABWR)**.
- **Energy Mix:** Nuclear power is being reintegrated to reduce reliance on expensive imported fossil fuels like LNG.
- **Safety Regime:** Restart was permitted only after meeting the world's **strictest safety regulations** set by the NRA.

**Prelims Facts (One Liners):**

- The **Kashiwazaki–Kariwa** plant is located in the Niigata Prefecture of Japan.
- Japan aims for **carbon neutrality by 2050** using a mix of nuclear and renewables.

**MCQ Practice:** Q. Which is the largest nuclear power station in the world by installed capacity? A) Fukushima Daiichi B) Kashiwazaki–Kariwa C) Kudankulam D) Chernobyl **Answer: B**

**Topic 15: Measles Outbreak in Mexico**

**Mexico's Measles Alert: A Status at Risk**

**95% VACCINATION COVERAGE IS THE ONLY WAY TO RESTORE HERD IMMUNITY & PROTECT THE REGION.**

**9,000 CASES REPORTED BY FEBRUARY 2026**

**Rapid surge endangers Mexico's measles-free standing.**

**HIGH CONTAGION VIA RESPIRATORY DROPLETS**

Spreads easily, leading to severe complications like pneumonia & encephalitis in children.

**TARGET 95% VACCINATION FOR HERD IMMUNITY**

Intensified immunization campaigns are critical to stop endemic transmission.

**Summary:** Mexico is experiencing a major resurgence of **measles**, a highly contagious viral disease. This outbreak threatens the "measles-free" status the Americas region achieved in 2016.

**Background:** Measles spread through **respiratory droplets** and requires a 95% vaccination coverage to maintain "herd immunity".



### Key Points:

- **Symptoms:** Severe cases can lead to **pneumonia and encephalitis**, particularly in children.
- **Elimination History:** The PAHO-led programme significantly reduced endemic transmission in the 1990s.
- **Policy Urgency:** The resurgence highlights the critical need for **intensified immunisation campaigns** and surveillance.

### Prelims Facts (One Liners):

- The **Region of the Americas** was declared measles-free in 2016 by the WHO.
- **Herd immunity** for measles is achieved at approximately **95% vaccination coverage**.

**MCQ Practice:** Q. What percentage of vaccination coverage is generally required to maintain herd immunity against measles? A) 75% B) 85% C) 95% D) 100% **Answer: C**

## Topic 16: Tightening Industrial Emission Standards in Delhi-NCR

# Delhi-NCR: 3x Stricter Air Standards

Context: Threefold tightening of industrial emission standards to combat severe pollution.



~~150 mg/Nm<sup>3</sup>~~

Limits Slashed from **150** to **50**



50 mg/Nm<sup>3</sup>



**17 High-Pollution Industries Targeted**



Applies to: boilers, furnaces, and thermic fluid heaters.



**Strict Compliance by October 2026**

Industries **MUST** upgrade systems.



**Mandated Monitoring and Filtration**

- Adopt Continuous Emission Monitoring Systems (CEMS)
- Install bag filters.

**Summary:** The **CAQM** has introduced a threefold tightening of particulate matter emission standards for 17 highly polluting industries. The new norms cover units operating **boilers, furnaces, and thermic fluid heaters**.



**Background:** Industrial combustion is a major source of **PM2.5** and **PM10**, which contribute to severe pollution episodes and respiratory illnesses in the NCR.

**Key Points:**

- **Revised Limit:** Permissible emission is now set at **50 mg/Nm<sup>3</sup>**.
- **Deadline:** Industries must comply with these stricter standards by **October of the same year**.
- **Monitoring:** The measure encourages the use of **Continuous Emission Monitoring Systems (CEMS)** and bag filters.

**Prelims Facts (One Liners):**

- The **CAQM** is the Commission for Air Quality Management in Delhi-NCR.
- Permissible industrial emission limits for PM in Delhi-NCR have been tightened by **three times**.

**MCQ Practice:** Q. What is the new particulate matter emission limit for highly polluting industries in Delhi-NCR? A) 150 mg/Nm<sup>3</sup> B) 100 mg/Nm<sup>3</sup> C) 50 mg/Nm<sup>3</sup> D) 25 mg/Nm<sup>3</sup> **Answer: C**

**Topic 17: Water Contamination and Illness Outbreak in Haryana**

## CRISIS IN CHHAINSA: THE FATAL COST OF DIRTY WATER

**SYSTEMIC FAILURE IN WATER SANITATION**

**Sewage Leaks Poison Village Drinking Water**

Outbreak in Chhainsa triggered by sewage mixing into local water supply.

**12 Deaths Linked to Contamination**

Severe symptoms: Fever, vomiting, body aches.

**Hepatitis B and C Detected**

Viral infections found among population, complicating health crisis.

**ACTION\_ITEM: Strengthen Rural Sanitation and Disease Surveillance**

Incident exposes critical weaknesses in rural healthcare access and infrastructure monitoring.

**Summary:** A cluster of deaths in Palwal district has been linked to **contaminated drinking water** and sewage mixing. Health officials also detected **Hepatitis B and C** infections among the affected population.



**Background:** Rural water systems face high risks of microbial contamination due to **inadequate treatment** and poor sanitation infrastructure.

**Key Points:**

- **Symptoms:** Patients experienced fever, cough, body ache, and vomiting.
- **Viral Presence:** The detection of Hepatitis B and C requires further investigation into pre-existing co-morbidities.
- **Systemic Failure:** The incident highlights weak **disease surveillance** and limited healthcare access in rural villages.

**Prelims Facts (One Liners):**

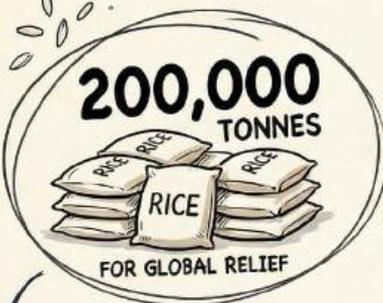
- **Chhainsa village** in Palwal district was the site of the 2026 waterborne illness outbreak.
- Microbial contamination of water is a major driver of disease outbreaks in regions with poor sanitation.

**MCQ Practice:** Q. Which district in Haryana reported a serious public health incident linked to water contamination in early 2026? A) Gurgaon B) Palwal C) Rohtak D) Ambala **Answer: B**

**Topic 18: India–WFP Rice Supply Agreement (2026)**

## INDIA'S GLOBAL RICE MISSION (2026)

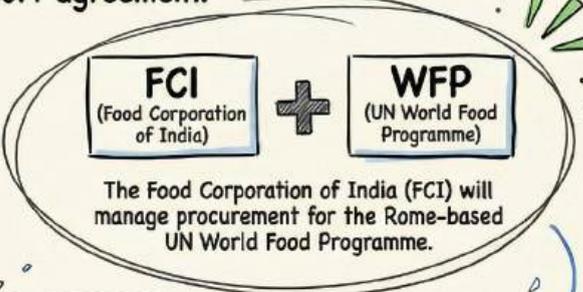
India reinforces its role as a reliable global food supplier through a major rice export agreement.



**200,000 TONNES**  
FOR GLOBAL RELIEF



India will provide this massive quantity of rice specifically for international humanitarian aid operations.



**FCI** (Food Corporation of India) + **WFP** (UN World Food Programme)  
The Food Corporation of India (FCI) will manage procurement for the Rome-based UN World Food Programme.



**MARCH 2026**  
**₹2,800 PER QUINTAL**  
**Fixed Pricing Until March 2026**  
The agreement locks in a price to ensure budget stability for relief efforts.



**NATIONAL BUFFER STOCKS**  
**LEVERAGING INTERNAL RESERVES**  
India uses its internal food security reserves to support the WFP's mandate of emergency food assistance.



**Summary:** The **FCI** has signed a five-year MoU with the **UN World Food Programme** to supply 200,000 tonnes of rice for global hunger relief. This agreement reinforces India's role as a reliable global supplier of food grains.

**Background:** India maintains large public buffer stocks under its food security system, which can be utilised for international humanitarian aid.

**Key Points:**

- **Quantity & Price:** India will provide **200,000 tonnes of rice** at a fixed price of **₹2,800 per quintal** until March 2026.
- **Implementing Agency:** The Food Corporation of India (FCI) will manage the procurement and supply.
- **WFP Mandate:** The WFP, headquartered in Rome, provides emergency food assistance and won the **Nobel Peace Prize in 2020**.

**Prelims Facts (One Liners):**

- The **Food Corporation of India (FCI)** was established under the Food Corporations Act, 1964.
- The **World Food Programme (WFP)** was established in 1961 by the UN and FAO.

**MCQ Practice:** Q. Under the 2026 agreement, how much rice will India supply to the WFP for global humanitarian assistance? A) 50,000 tonnes B) 100,000 tonnes C) 200,000 tonnes D) 500,000 tonnes **Answer:** C

## Topic 19: Solar Expansion vs Khejri Trees and Orans



**Summary:** The rapid growth of solar infrastructure in Rajasthan is leading to the **indiscriminate felling of Khejri trees** and encroachment on **Orans**. This highlights a policy conflict where renewable energy goals may undermine local ecosystems and community rights.

**Background:** Khejri is a keystone, nitrogen-fixing species vital for soil fertility, while Orans are **community-conserved sacred groves** used for grazing and water.

#### Key Points:

- **State Tree:** Khejri (*Prosopis cineraria*) is the state tree of Rajasthan and is highly revered by the **Bishnoi community**.
- **Ecological Loss:** Felling these trees disrupts the **fragile desert agroforestry systems** where millets and pulses grow.
- **Grazing Rights:** Allocating Orans to solar companies deprives local pastoralists of their traditional common grazing lands.

#### Prelims Facts (One Liners):

- **Orans** are traditional sacred groves in Rajasthan protected by local communities.
- The **1730 Khejarli movement** was a historical sacrifice by the Bishnoi community to protect Khejri trees.

**MCQ Practice:** Q. What is the ecological significance of the Khejri tree in the Thar Desert? A) It is a water-intensive invasive species B) It is a nitrogen-fixing keystone species C) It is only used for timber D) it inhibits crop growth **Answer: B**

## Topic 20: Conservation of Ruddy Shelduck in Ladakh



**Summary:** Residents of **Mudh village** in eastern Ladakh have protected the **Ruddy Shelduck** for over 20 years through the **Cha Tsogspa (Bird Association)**. This community initiative has helped roughly 300 fledglings survive.

**Background:** Ladakh provides a critical high-altitude breeding habitat for migratory birds along the **Central Asian Flyway**.

**Key Points:**

- **Cha muru:** The local name for the Ruddy Shelduck, which is listed as "**Least Concern**" by the IUCN.
- **Predator Threat:** Increased food waste from army deployment has attracted **stray dogs**, which pose a major threat to the birds.
- **Bar-headed Goose:** The community also monitors this species, known as the **world's highest-flying migratory bird**.

**Prelims Facts (One Liners):**

- **Cha Tsogspa** is a community-based conservation initiative in Ladakh founded in 2003.
- The **Ruddy Shelduck** is also known as the "Brahminy duck".

**MCQ Practice:** Q. Which community-based association in Ladakh is dedicated to protecting the Ruddy Shelduck? A) ASMITA B) Cha Tsogspa C) KIRTI D) MANAV **Answer: B**

