# Current Affairs 05-07-2025

## Credit - Drishti Ias

## NITI Aayog Report on Chemical Industry

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**For Prelims: NITI Aayog** , **Global Value Chains** , **Chemical Industry** , **Viability Gap Funding (VGF)** , **Free Trade Agreements (FTAs)** , **PLI Scheme** , **Extended Producer Responsibility (EPR)** , **Anti-dumping** , **Carbon Border Adjustment Mechanism (CBAM)** , **MSME** .

**For Mains** : Status and challenges associated with the chemical industry in India, NITI Aayog proposed policy interventions to promote chemical industry.

**Source: PIB**

## Why in News?

**NITI Aayog released** its report titled **‘ Chemical Industry : Powering India’s Participation in Global Value Chains ’** , outlining an **ambitious roadmap** for India to become a **global chemical manufacturing powerhouse.**

- The report envisions India achieving a **12% share in global chemical value chains (GVC** ) and a **USD 1 trillion output by 2040.**

## What is the Status of the Chemical Industry in India?

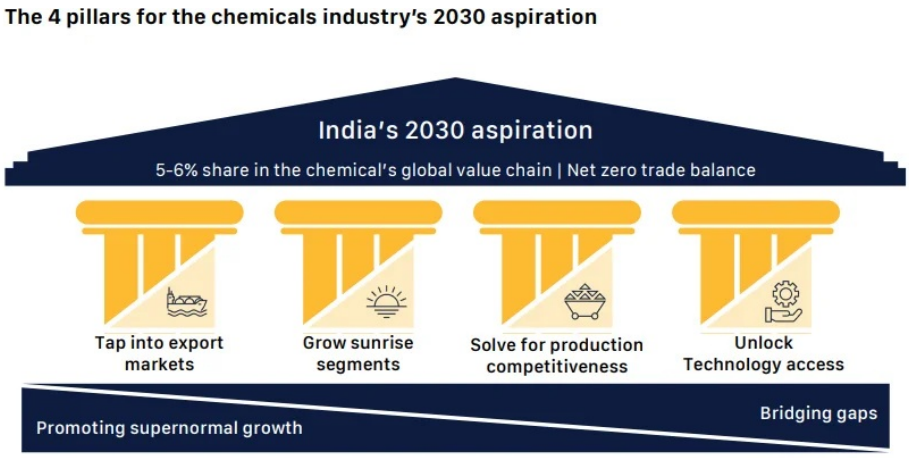
- **Global Standing:** India ranks as the **6th largest chemical producer globally** , contributing over **7% to the manufacturing GDP.**
  - The chemical sector supports critical industries such as **pharma, textiles, agriculture, and construction.**
- **Feedstock Utilization:** India shows **over-concentration in bulk chemical production** , with **87% of benzene** used for **alkylbenzene, chlorobenzene, and cumene** , unlike the **global trend** where only **25%** is used similarly and more goes to **complex derivatives.**
- **Low Share in Global Value Chains (GVC):** India holds only a **3.5% share in global chemical value chains** , with a **USD 31 billion trade deficit (2023)** .
  - The sector remains **fragmented** , dominated by **MSMEs** , with growth concentrated in **Gujarat** , **Maharashtra** , and **Tamil Nadu.**
- **Skill and Innovation Gaps:** There is a **30% shortage of skilled professionals** , especially in **green chemistry** , **nanotechnology** , and **process safety** .

- **R&D investment** is just **0.7% of industry revenue** , well below the **global average of 2.3%** , limiting innovation in **high-value** and **sustainable chemicals.**

- **Import Dependence:** The sector is heavily **import-dependent** , sourcing over **60% of critical Active Pharmaceutical Ingredients (APIs)** from **China** , and other feedstocks from **Gulf countries** .
- **Regulatory Bottlenecks:** clearances and regulatory delays add to operational costs, with delays of up to **12-18 months for approvals.**

## What are the Opportunities in India's Chemical Industry?

- **Rising Domestic Demand:** India's **consumer and industrial growth** is fueling demand in **agrochemicals** (4th-largest producer), **pharmaceuticals** (3rd-largest drug producer), and **construction & automotive** ( **paints, adhesives, polymers** ).
  - **Refinery expansions** (e.g., Reliance, Nayara, BPCL) will further **boost petrochemical** production.
- **Job Creation:** The sector is expected to generate **7 lakh skilled jobs by 2030** , particularly in areas such as **petrochemicals, research, and logistics** .
- **Global Supply Chain Shift:** India can capture the **shifting global chemical trade from China** , especially in **dyes & pigments** , **surfactants** , **textile chemicals** , and **electronic chemicals** used in **semiconductor** and **EV battery manufacturing** .
- **Green & Sustainable Chemicals:** The global shift toward **bio-based and green chemicals** is creating demand for **bio-plastics** , and **bio-lubricants** where **India's sugar and biomass resources** can support the production of **bio-based chemicals.**




## What are the Proposed Policy Interventions by NITI Aayog to Promote Chemical Industry?

- **World-Class Chemicals Hubs** : Establish hubs by forming an **Empowered Committee** with a **dedicated Chemical Fund** for **shared infrastructure** and **Viability Gap Funding (VGF)** .
- **Port Infrastructure** : Set up a **Chemical Committee for ports** and develop **8 high-potential chemical clusters** near ports to enhance **logistics** and **export capabilities** .
- **OPEX Subsidy Scheme** : Introduce an **OPEX Subsidy Scheme** to incentivize **incremental production** based on **import reduction** , **export potential** , **single-source dependency** , and **end-market criticality** .

- **Develop & Access Technologies** : Promote **self-sufficiency and innovation** by disbursing **R&D funds** for **industry-academia collaboration** via **DCPC** and partnering with **MNCs** to bridge **technological gaps** .
- **Fast-Track Environmental Clearances** : Simplify and expedite **Environmental Clearances (EC)** through an **audit committee under DPIIT** to ensure **compliance** .
- **Secure FTAs** : Pursue **targeted FTAs** with **tariff quotas** and **duty exemptions** on **critical raw materials** and **feedstocks** ; improve **FTA awareness** , **origin proof procedures** , and **export competitiveness** .
- **Talent & Skill Upgradation** : Expand **ITIs** and **specialized training institutes** to meet the growing demand for **skilled labor** , and strengthen **industry-academia partnerships** for courses in **petrochemicals** , **polymer science** , and **industrial safety** .

### India’s Initiatives to Support the Chemical Industry

- **Production linked incentive (PLI) Scheme:** **PLI Scheme** **for Promotion of Domestic Manufacturing of Critical Key Starting Materials (KSMs), Drug Intermediates** and **APIs** aims to boost domestic production by encouraging the establishment of **Greenfield plants.**
- **PCPIR:** The **Petroleum, Chemicals and Petrochemicals Investment Region (PCPIR)** set up at **Paradip** has attracted investments worth **USD 8.84 billion** , resulting in **employment of about 40,000 people.**
- **Jan Aushadhi Kendras:** The **Government** aims to open **25,000** **Jan Aushadhi Kendras** to ensure **affordable access to medicines.**

## What Steps are Needed to Strengthen the Chemical Industry?

- **Global Integration:** Sign **Mutual Recognition Agreements (MRAs)** to align **Indian chemical standards** with **global norms** , and establish a **dedicated chemical export promotion council** for **market access** and **brand building** .
- **Strengthen Safety Standards:** Enforce **strict safety norms** and implement **real-time monitoring systems** in **chemical clusters** to enhance safety and compliance.
  - Promote **green and sustainable chemistry** through **waste recycling** , **low-emission processes** , and incentivize adoption of **zero liquid discharge (ZLD)** and **clean production technologies.**
- **Financial & Investment Support: Ease access to capital** by offering **lower interest loans** to **MSME** **chemical manufacturers** and promoting **venture capital funding** for **specialty chemical startups** , while ensuring **risk mitigation** through **subsidized insurance.**
- **Skill Development: Upskill the workforce** through **industry-aligned chemical engineering courses** focusing on **process safety** and **green technology** .
  - **Enhance safety protocols** by mandating **Process Safety Management (PSM) audits** and enforcing the **Chemical Accidents Rules, 1996** more strictly.

## Conclusion

India’s **chemical industry** , a **GDP growth driver** , aims to become a **global manufacturing hub by 2030** through policy interventions like **chemical hubs** , **OPEX subsidies** , **FTAs** , and an **R&D push** . Overcoming **import dependency** , **regulatory hurdles** , and **sustainability challenges** requires **global integration** , **safety enforcement** , **green chemistry** , and **skill development** to achieve **USD 1 trillion market potential** .

***Drishti Mains Question:***

**Q** . Discuss the status, challenges, and policy measures required to make India a global leader in the chemical industry.

[Watch Video on YouTube: ▶ **https://www.youtube.com/embed/QxoSoWmdylc** ]

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### *Prelims*

**Q. In India, ‘extend producer responsibility’ was introduced as an important feature in which of the following? (2019)**

(a) The Bio-medical Waste (Management and Handling) Rules, 1998

(b) The Recycled Plastic (Manufacturing and Usage) Rules, 1999

(c) The e-Waste (Management and Handling) Rules, 2011

(d) The Food Safety and Standard Regulations, 2011

**Ans: (c)**

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# Reforming the Global Sovereign Credit Rating System and MDBs

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**For Prelims** : **Foreign Direct Investment (FDI)** , **GDP** , **Fiscal Deficit** , **Inflation** , **Balance of Payments (BoP)** , **Foreign Reserves** , **GST** , **Insolvency and Bankruptcy Code (IBC)** , **Debt-to-GDP** , **BRICS** , **G20** , **IMF** .

**For Mains** : Concerns associated with the global sovereign credit rating system and MDBs and steps needed to reform them.

**Source: FE**

## Why in News?

At the **4 th International Conference on Financing for Development (FFD4)** held in **Seville, Spain** , India’s **Finance Minister** advocated for **reforming the global sovereign credit rating systems** and **multilateral development banks (MDBs)** to promote **equity, inclusivity** , and **sustainable development.**

## What are Multilateral Development Banks?

**Click Here to Read: Multilateral Development Banks**

# What is the Sovereign Credit Rating System?

- **About:** A **Sovereign Credit Rating** is an independent evaluation of a country's **creditworthiness** , providing investors with insights into the **risk level** of investing in its debt, including **political risks** .
  - Beyond accessing **external debt markets** , countries seek such ratings to help **attract Foreign Direct Investment (FDI)** .
- **Credit Rating Agencies:** The **Big Three global rating agencies** are **Standard & Poor's (S&P)** , **Moody's** , and **Fitch Ratings** , all of which are **based in the United States** .
  - Other notable agencies include **DBRS** (Canada), **JCR** (Japan), and **Dagong** (China).
- **Rating Scales** : Credit ratings range from **AAA (highest)** to **D (default)** .
  - Ratings from **AAA to BBB-** (S&P/Fitch) or **Aaa to Baa3** (Moody's) are considered **investment grade** ; anything lower is **speculative or junk grade** .

| S&P | Moody's | Fitch | Score |
|---|---|---|---|
| | *Investment grade* | | |
| AAA | Aaa | AAA | 1 |
| AA+ | Aa1 | AA+ | 2 |
| AA | Aa2 | AA | 3 |
| AA- | Aa3 | AA- | 4 |
| A+ | A1 | A+ | 5 |
| A | A2 | A | 6 |
| A- | A3 | A- | 7 |
| BBB+ | Baa1 | BBB+ | 8 |
| BBB | Baa2 | BBB | 9 |
| BBB- | Baa3 | BBB- | 10 |

- **Parameters Used** : Sovereign credit ratings are based on key parameters such as a country's **GDP growth rate** , **fiscal deficit and public debt levels** , **inflation and monetary stability** , **political stability and governance** , **balance of payments (BoP)** , and **foreign reserves** including current account balance.
- **Impact of Ratings:** A **higher rating** lowers **borrowing costs** for governments and improves **investor confidence** .
  - A **downgrade** raises borrowing costs and may trigger **capital outflows** .
- **India's Sovereign Credit Rating** : India's **sovereign credit rating** stands at **Baa3** from **Moody's** and **BBB-** from **S&P and Fitch** , all representing the **lowest investment grade** , though **India maintains that its strong macroeconomic fundamentals warrant a higher rating.**

### Sovereign Credit Rating (SCR) in India

- In India, there are **six credit rating agencies** namely, **CRISIL, ICRA, CARE, SMERA, Fitch India and Brickwork Ratings** .
- Each **credit rating agency** uses its own methodology to assess entities like **companies, governments, non-profits** , and **securities** .
  - They evaluate factors such as **financial statements** , **debt levels** , **repayment history** , and **creditworthiness** , providing investors with insights to make **informed investment decisions.**
- The **SEBI** **(Credit Rating Agencies) Regulations, 1999** of the **Securities and Exchange Board of India Act, 1992** govern credit rating agencies in India.
- **CareEdge (parent company CARE Ratings Ltd)** became the **first Indian credit rating agency** to enter the **global scale ratings space** , including sovereign ratings.

## Why does India Want Reforms in the Current Sovereign Credit Rating System?

- **Bias Against Developing Economies:** Despite having **strong macroeconomic fundamentals** , **India holds a BBB- rating** (just above junk status), whereas countries like **Italy and Spain** , with **weaker growth** and **higher debt levels** , receive **better credit ratings** .
  - For instance, **Italy's debt-to-GDP ratio is averaged 118%** , yet it is rated **BBB by S&P** , compared to **India's BBB-** (debt-to-GDP ratio is **80%** ).
  - In December 2023, **finance ministry economists** had questioned the **three big global rating agencies** for keeping **India's rating static at the lowest investment grade for the last 15 years** despite it moving up the ladder from **12 th largest to become 5 th largest economy.**
- **Flawed Debt Assessment:** Despite India's debt being largely **domestic and low-risk** , rating agencies assess it like **foreign currency debt** and often **overlook India's high growth** , which makes its debt more **sustainable** than that of **stagnant economies** like **Japan or the USA** .
- **Overemphasis on Perceptual Factors:** Credit ratings often rely on **subjective factors** like **political stability surveys** , which may be **biased or outdated** , while **India's strong GDP growth** , **USD 600+ billion forex reserves** , and **key reforms** like **GST** **and** **Insolvency and Bankruptcy Code (IBC)** are frequently **underweighted.**
- **Pro-Cyclical Downgrades:** During economic stress (e.g., **Covid-19** ), agencies often **downgrade countries** , raising borrowing costs when funds are most needed. E.g., in **2020** , **Moody's downgraded India's rating from Baa2 to Baa3** despite **stimulus measures** .
- **Conflict of Interest:** Most global rating agencies, including **Moody's, S&P, Fitch,** are paid by the entities they rate, raising concerns about **credibility, independence** , and **developed-world bias** .
  - There is a **lack of Global South-led alternatives** , limiting **balanced perspectives** in sovereign credit assessments.
- **Failure to Predict Major Crises:** Rating agencies **failed to predict the** **2008 financial crisis** , assigning high ratings to risky assets, which **damaged their credibility** , yet their assessments still **heavily influence global capital flows** .
  - They also **lack transparency** in sovereign rating methodologies, and the absence of a **uniform global standard** affects **objectivity and fairness.**

## What are the Key Challenges Related to MDBs?

**Click Here to Read: Key Challenges Related to MDBs**

# What Steps are Needed to Reform the Sovereign Credit Rating System?

- **Greater Transparency:** Rating agencies should **disclose the weightage** assigned to key metrics like **GDP growth** , **debt-to-GDP** , and **political stability** , and undergo **independent audits** to ensure transparency and prevent bias.
  - They must also incorporate **country-specific factors** in their assessments, such as **India's domestic debt profile** and **demographic dividend** .
- **Increased Objectivity:** Replace **perception-based metrics** with **hard data** (e.g., **inflation control** , **forex reserves** , **digital infrastructure** ) and use **AI** **and** **Big Data** to integrate **real-time indicators** like **GST collections** and **UPI transactions** for more **dynamic assessments.**
- **Alternative Credit Rating Agencies (CRAs):** Encourage **emergence of rating agencies** from the **Global South** , including **India,** **BRICS** , or **G20** **nations** to counter Western dominance, while also **strengthening Indian agencies** like **CRISIL** and **ICRA** to compete globally.
- **Regulatory Oversight & Accountability:** Create a **global supervisory body** , possibly under **IMF** , or **G20** to audit and regulate rating practices.
- **Incorporate Non-Economic Indicators:** Credit ratings should **include parameters** like **climate resilience** , **digital capacity** , and **policy reforms** , broadening the focus beyond fiscal metrics to assess **long-term sustainability** and **reform orientation.**
- **Promote Peer Comparability:** Ratings should be **updated in real time** to reflect **rapid macroeconomic changes** , and **peer comparison dashboards** should be introduced to minimize **perception asymmetry** .

## What Reforms are Necessary in MDBs?

**Click Here to Read: Reforms Necessary in MDBs**

# Conclusion

**India advocates reforming** the **biased sovereign credit rating system** and outdated MDBs that **undervalues developing economies** . With **strong fundamentals** yet **stagnant ratings** and **unsustainable funding** , India seeks **transparent** , **data-driven assessments** and **alternative agencies** to counter **Western dominance** . **Reforms** must incorporate **real-time indicators** , **climate resilience** , and **regulatory oversight** to ensure **fair global financing** and reflect **true economic potential** .

***Drishti Mains Question:***

**Q.** Critically analyze the limitations of the current sovereign credit rating system and suggest reforms to make it equitable for developing countries.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### *Prelims*

**Q. Consider the following statements:**

1. In India, credit rating agencies are regulated by the Reserve Bank of India.
2. The rating agency popularly known as ICRA is a public limited company.
3. Brickwork Ratings is an Indian credit rating agency.

**Which of the statements given above are correct?**

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

**Ans (b)**

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# Plastic Waste a Public Health Threat

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**For Prelims: Microplastics , Single-Use Plastics , Virgin plastic ,** Endocrine-disrupting Chemicals

**For Mains:** Plastic Waste Management, Conservation Environmental Pollution & Degradation Government Policies & Interventions.

**Source: TH**

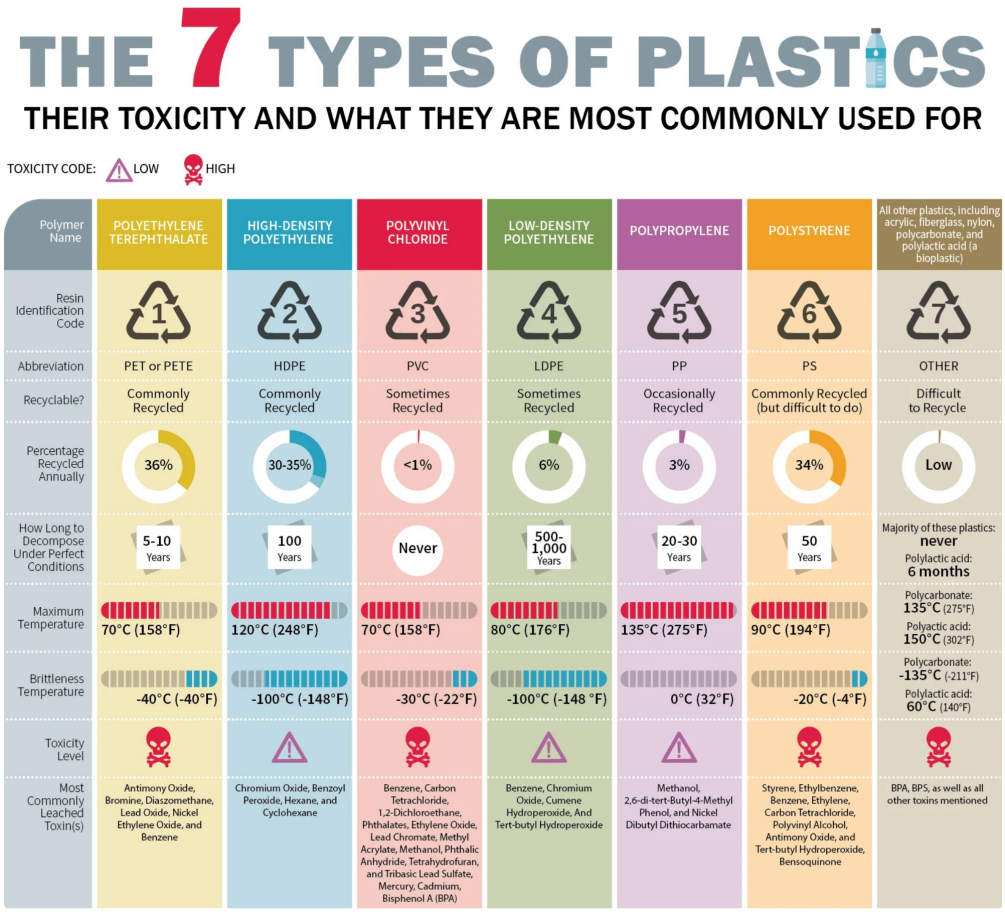
## Why in News?

Studies have found alarming levels of **microplastics and endocrine-disrupting chemicals (EDCs)** in human tissues. **India, as the world's top plastic waste generator,** faces a growing

public health crisis linked to fertility issues, cancers, and chronic diseases.

## How are Microplastics and EDC in Plastics Affecting Human Health?

- **Microplastics:** Microplastics are plastic particles **smaller than 5 mm,** formed either intentionally (primary) or through the breakdown of larger plastics (secondary).
  - **Primary microplastics** include microbeads in **cosmetics and fibres from textiles** .
  - **Secondary microplastics** result from the degradation of plastic waste due to sunlight and ocean waves.
  - Microplastics are biologically active and have been found in **blood, lungs, heart, placenta, breast milk, ovarian follicular fluid, and semen** .
  - **Affect:**
    - **Men:** Linked to lower sperm count, motility, abnormal morphology, and hormonal imbalance.
    - **Women:** Associated with poor egg quality, menstrual issues, miscarriage risk, **Polycystic Ovary Syndrome (PCOS),** and endometriosis.
- **Endocrine-disrupting Chemicals:** EDCs are **natural or human-made chemicals** that may mimic, block, or interfere with the body's hormones, which are part of the endocrine system.
  - Plastics often carry EDCs like Bisphenol A (BPA) (in water bottles, food containers), phthalates such as DEHP and DBP (in cosmetics, toys, IV tubes), and PFAS (in food packaging, non-stick cookware).
  - **Affect:** These chemicals mimic or block hormones like estrogen and testosterone, disrupting reproductive health and metabolic functions.
    - Plastic additives like DEHP, BPA, and phthalates are classified as **probable carcinogens** .
    - EDCs also contribute to obesity, type 2 diabetes, thyroid disorders, and metabolic syndrome by mimicking cortisol and disrupting insulin response.




# What are the Concerns with Plastic Pollution in India?

- **Massive and Mismanaged Plastic Waste Generation:** India contributes **9.3 million tonnes** of plastic pollution annually (burning 5.8 mt and releasing 3.5 mt into the environment) making it the **world's largest polluter,** surpassing Nigeria, Indonesia, and China, according to a 2024 Nature study.
- **Environmental and Health Hazards: Open burning** , a common disposal method, emits toxic pollutants that **degrade air quality** and **harm respiratory health** .
  - **Plastic debris clogs rivers and drains** , worsening urban flooding and threatening aquatic biodiversity.
  - Single-use plastics persist for centuries, polluting land and oceans and harming marine life. Cities like Mumbai see high microplastic exposure, while phthalate levels in drinking water exceed safe limits in Delhi, Jabalpur, and Chennai.
  - Children in polluted areas face increased risks of **early puberty, learning issues, and obesity due to EDCs.**
- **Economic and Agricultural Impact:** India could lose **USD 133 billion** in plastic packaging value by 2030 if waste continues to go uncollected.
  - **Microplastics in soil** from plastic use in agriculture and poor wastewater treatment are degrading soil fertility and threatening food safety.
  - The **e-commerce boom** has escalated plastic packaging waste, most of which is non-recyclable.
- **Weak Infrastructure and Regulatory Oversight: Insufficient sanitary landfills** , poor segregation at source, and a lack of **advanced recycling technology** hinder effective waste processing.
  - **Informal sector recyclers** , though critical, operate unregulated, leading to gaps in plastic tracking and environmental safety.
  - The enforcement of policies such as the **Plastic Waste Management (Amendment) Rules, 2024**

and **Extended Producer Responsibility (EPR)** remains inconsistent and inadequate.

- Rise in **Single-Use Plastics (SUPs),** which account for 43% of total plastic waste. Despite regulatory bans, enforcement remains poor due to the low cost and easy availability of such plastics.

- **Data and Policy Gaps:** Official collection rates (95%) are overstated; real rates are closer to 81%, hampering effective planning.
- **Global North-South Divide:** Despite lower per capita plastic use (0.12 kg/day), India's poor disposal systems result in more environmental leakage compared to high-income countries with better infrastructure.

### India's Initiatives Related to Plastic Waste Management

- **Swachh Bharat Mission**
- **India Plastics Pact**
- **Project REPLAN**
- **Un-Plastic Collective**
- **GoLitter Partnerships Project**


## How Can India Combat the Growing Threat of Plastics?

- **Microplastic Filtration Systems** : Invest in advanced water treatment technologies to **filter microplastics** to reduce plastic contamination in the environment and the food chain.
  - The **National Plastic Waste Reporting Portal** will help track and monitor waste more effectively.
- **Behavioural Change and Public Awareness:** Launch national campaigns under **Swachh Bharat Mission 2.0** and **Mission LiFE** to educate citizens about plastic hazards and encourage plastic-free lifestyles.
  - Integrate environmental education in school curricula and promote ***reduce-reuse-recycle*** values from an early age.
  - Encourage use of **eco-friendly alternatives** (glass, cloth, jute, biodegradable polymers).
- **Biomonitoring and Public Health Surveillance** : Establish national **biomonitoring programs** to

assess the levels of EDCs in blood, urine, and breast milk, and fund longitudinal studies to **track health outcomes such as fertility issues, metabolic diseases, and cancer.**

- Regular surveillance of plastic pollution and its effects on public health should be implemented to inform policymaking.

- **Fiscal Measures and Economic Incentives:** Increase eco-taxes or cess on **virgin plastic** production and packaging to limit production.
  - Provide subsidies and tax benefits for industries investing in eco-friendly packaging and plastic alternatives.
- **Stronger Regulation and Enforcement** : India must move beyond **end-of-pipe waste solutions** by revising the Plastic Waste Management Rules to address **low-dose chemical toxicity** (such as EDCs), microplastic contamination, and the heightened vulnerability of children and pregnant women.
  - Under the PWM Rules 2024, **Producers, Importers, and Brand Owners (PIBOs)** are legally obligated to collect and responsibly process the plastic packaging they introduce, including compostable and biodegradable plastics.
    - While an online submission and tracking system has been introduced to ensure compliance, its effectiveness depends on robust implementation and strict monitoring.
  - Harmful plastic additives should be classified as toxic under the **Environment Protection Act, 1986** .
    Additionally, the **EPR mechanism** must be strengthened through material-specific targets, third-party audits, and traceability via **plastic credits** to ensure accountability and circularity.
- **Collaborate on Global Plastic Initiatives:** India should align with global initiatives like the **UN Clean Seas Campaign** to share knowledge and best practices for reducing plastic waste globally.

> ***Drishti Mains Question:***
>
> India is now the world's top plastic polluter. Examine the socio-economic and health impacts of plastics. Suggest reforms to tackle this crisis.

[Watch Video on YouTube: ▶ **https://www.youtube.com/embed/cDoilCclFWY** ]

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### *Prelims*

**Q.1 In India, ‘extend producer responsibility’ was introduced as an important feature in which of the following? (2019)**

**(a)** The Bio-medical Waste (Management and Handling) Rules, 1998

**(b)** The Recycled Plastic (Manufacturing and Usage) Rules, 1999

**(c)** The e-Waste (Management and Handling) Rules, 2011

**(d)** The Food Safety and Standard Regulations, 2011

**Ans: (c)**

**Q.2 How is the National Green Tribunal (NGT) different from the Central Pollution Control Board (CPCB)? (2018)**

1. The NGT has been established by an Act whereas the CPCB has been created by an executive order of the Government.
2. The NGT provides environmental justice and helps reduce the burden of litigation in the higher courts whereas the CPCB promotes cleanliness of streams and wells, and aims to improve the quality of air in the country.

**Which of the statements given above is/are correct?**

**(a)** 1 only
**(b)** 2 only
**(c)** Both 1 and 2
**(d)** Neither 1 nor 2

**Ans: (b)**

**Q . Why is there a great concern about the ‘microbeads’ that are released into the environment? (2019)**

**(a)** They are considered harmful to marine ecosystems.

**(b)** They are considered to cause skin cancer in children.

**(c)** They are small enough to be absorbed by crop plants in irrigated fields.

**(d)** They are often found to be used as food adulterants.

**Ans: (a)**

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### *Mains*

**Q** : What are the impediments in disposing the huge quantities of discarded solid waste which are continuously being generated? How do we remove safely the toxic wastes that have been accumulating in our a habitable environment? **( 2018)**

# RECLAIM Framework for Mine Closure

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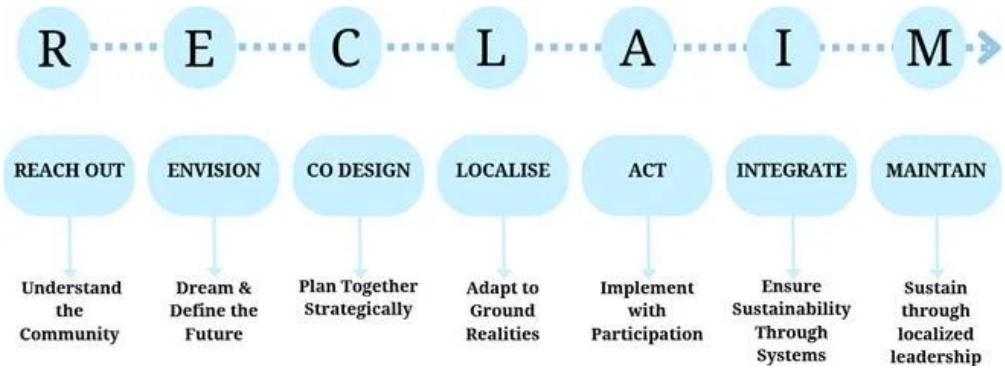
**Source: PIB**

## Why in News?

The **Ministry of Coal** launched the **RECLAIM Framework** to ensure **just and sustainable mine closures** through **inclusive community participation** .

## What is RECLAIM Framework?

- **About:** An **India-specific policy tool** developed by the **Coal Controller Organisation (Ministry of Coal)** in partnership with the **Heartfulness Institute** , aimed at **guiding inclusive and sustainable mine closures.**
- **Objective:** To ensure a **just, inclusive, and locally relevant transition** for **mining-affected communities** by promoting **community participation** , **ecological restoration** , and **long-term socio-economic recovery** .
  - **It focuses on gender inclusivity** , **vulnerable groups** , and **convergence with Panchayati Raj Institutions** to build **resilient post-mining economies** .
- **Key Features:**
  - It promotes **community-centric planning** through **local participation** , with emphasis on **gender equity** , **vulnerable groups** , and **livelihood diversification** .
  - It ensures **institutional convergence** by aligning with **Panchayati Raj Institutions** and **local governance structures** , and provides **actionable, field-tested tools and methodologies** tailored to Indian mining regions for effective implementation.
- **Phases of Implementation: Pre-Closure** (needs assessment, capacity building), **Closure** (participatory plan execution), and **Post-Closure** (monitoring, livelihood support, asset repurposing).
- **Significance:**
  - Mitigates **socio-economic and environmental impacts** of mine closures
  - Supports **SDGs** and promotes **transparency, accountability, and trust**
  - Serves as a **replicable model** for other resource-dependent sectors and states.

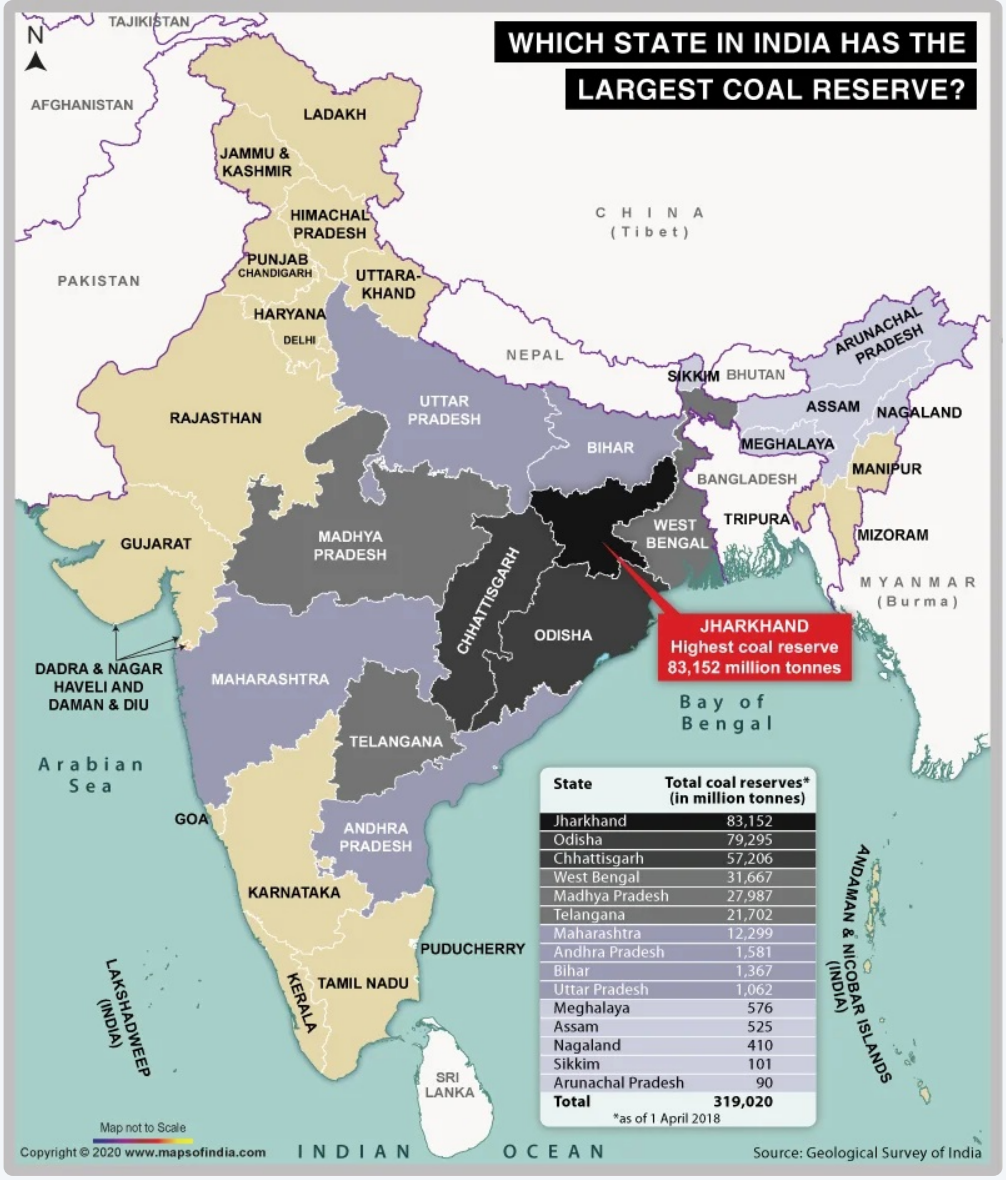


# What are the Key Challenges Related to Coal Mine Closure?

- **Gap Between Policy and Practice:** Despite **mine closure guidelines since 2009** , only **3 coal mines** have been formally closed.
  - Of the **299 non-operational mines (2024),** only **8 applied for closure,** while the rest **remain abandoned or discontinued without scientific closure** , causing ecological degradation, methane emissions, and increased risks of accidents and illegal mining.
- **Lack of Proper Rehabilitation** : Unsustainable mining and degradation of local resources have led to **unemployment** and **forced migration** , reducing **community capacity and resource availability** during mine closure. This hampers **local participation** and poses a major challenge to implementing **effective and inclusive closure** .
- **Lack of Land Return Framework:** The **lack of clear mine closure and land return policies** often results in land **being transferred to other departments or used for renewable projects without scientific closure** or community consultation, delaying just transition efforts, especially in states like Jharkhand.
  - The **2024 draft Coal Bearing Areas (CBA) Amendment Bill** proposes returning unused land to original owners, but **lacks enforcement clarity.**
- **Technological & Economic Challenges:** India's **mine closure plans** are mostly **technical** , neglecting **social, economic, and environmental justice** aspects.
  - **High escrow requirements** (Rs 14 lakh/ha for opencast mines) deter mine operators from undertaking closure activities.

## About Coal

- **About** : Coal is a **fossil fuel** formed from the **remains of ancient vegetation** , found in the form of **sedimentary rock** , and often referred to as **'Black Gold'** due to its high economic value.
  - It is a **conventional energy source** widely used for **domestic fuel** , **thermal power generation** , and in **industrial sectors** like **iron and steel** and **railway steam engines** .
- **Global Producers: As of 2025, top 5** coal-producing countries are **China** , **India, Indonesia** , **United States** and **Russia.**
- **Coal Distribution in India:**
  - **Gondwana Coal Fields: Gondwana coal contributes 98% of India’s coal reserves and 99% of its production** , providing **superior and metallurgical-grade coal** .
    - Major deposits are in the **Damodar (Jharkhand–West Bengal)** , **Mahanadi (Chhattisgarh–Odisha)** , **Godavari (Maharashtra)** , and **Narmada (Madhya Pradesh)** valleys.
  - **Tertiary CoalFields: Tertiary coal fields (15–60 million years old)** have **lower carbon content** but are **rich in moisture and sulphur** .
    - They are mainly found in **extra-peninsular regions** such as **Assam, Meghalaya, Nagaland, Arunachal Pradesh, Jammu & Kashmir, Darjeeling foothills (West Bengal), Rajasthan, Uttar Pradesh, and Kerala** .




- **Classification of Coal:**
  - **Anthracite (80–95%)** : Highest carbon content, limited presence in **Jammu & Kashmir** .
  - **Bituminous (60–80%)** : Most abundant, found in **Jharkhand** , **Odisha** , **Chhattisgarh** , **West Bengal** , and **Madhya Pradesh** .
  - **Lignite (40–55%)** : Lower grade, high moisture, found in **Tamil Nadu** , **Rajasthan** , and **Assam (Lakhimpur)** .
  - **Peat (<40%)** : Initial stage of coal formation with low heating value.

***Drishti Mains Question:***

Critically analyse the socio-economic and ecological consequences of unscientific coal mine closures in India. How does the RECLAIM Framework aim to address these issues?

## UPSC Civil Services Examination Previous Year Question (PYQ)

### *Prelims*

**Q1. Consider the following statements: (2019)**

1. The coal sector was nationalized by the Government of India under Indira Gandhi.
2. Now, coal blocks are allocated on lottery basis.
3. Till recently, India imported coal to meet the shortages of domestic supply, but now India is self-sufficient in coal production.

**Which of the statements given above is/are correct?**

(a) 1 only
(b) 2 and 3 only
(c) 3 only
(d) 1, 2 and 3

**Ans: (a)**

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### *Mains*

**Q.** Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. (2021)

**Q.** “In spite of adverse environmental impact, coal mining is still inevitable for development”. Discuss. (2017)

# SC Upholds Legislative Authority of State

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**Source: TH**

The **Supreme Court** ruling in the ***Nandini Sundar vs. State of Chhattisgarh 2012 case*** sheds light on the role of **state legislatures in passing laws** and their **relationship with judicial orders** in India's democratic framework.

## Nandini Sundar vs. State of Chhattisgarh Case, 2012

- **Background:** In **2011** , the **Supreme Court** directed the **Chhattisgarh government** to **cease the use of Special Police Officers (SPOs)** in anti-Maoist operations, citing their **inadequate training** and violations of **Articles 14 and 21** of the Constitution.
  - In response, the state enacted the **Chhattisgarh Auxiliary Armed Police Forces Act** , enabling the formation of an **auxiliary force** resembling the earlier **Salwa Judum** and **Koya Commandos** .
  - The **petitioners filed a contempt plea** , alleging that this new law **contravened the spirit** of the 2011 judgment.
- **Supreme Court Ruling:** The **Supreme Court rejected the contempt plea** , noting that **Chhattisgarh had complied** with its 2011 directions and submitted requisite reports. It held that a **state legislature has the authority to enact laws** , as long as they are **not unconstitutional or ultra vires** .
  - Reaffirming the **doctrine of separation of powers** , the Court clarified that **legislative actions** can only be challenged on grounds of **constitutional validity** or **legislative competence** .
  - It emphasized that a legislature may **enact new laws** , **remove the basis of a judgment** , or **validate laws struck down** , all within its constitutional domain.
- **Similar Judicial Pronouncements:** SC in ***Indian Aluminium Co. vs. State of Kerala (1996),*** upheld the **legislature's power to amend laws or enact retrospective legislation** to remove the basis of a judgment, **without directly overruling it.**

## Salwa Judum & Koya Commandos

- **Salwa Judum** **is** a **state-backed anti-** **Maoist movement** launched in **2005** in Chhattisgarh, involving the **mobilization of tribal youth** to counter Maoist insurgents.
- **Koya Commandos** were **tribal youths** , primarily from the **Koya tribe** , recruited as **Special Police Officers (SPOs)** in **Chhattisgarh** under the **Salwa Judum movement** to aid in **anti-Naxalite operations** .

**Read More:** **SC Verdict on Governors' Powers over State Bills**

# Mahabodhi Temple

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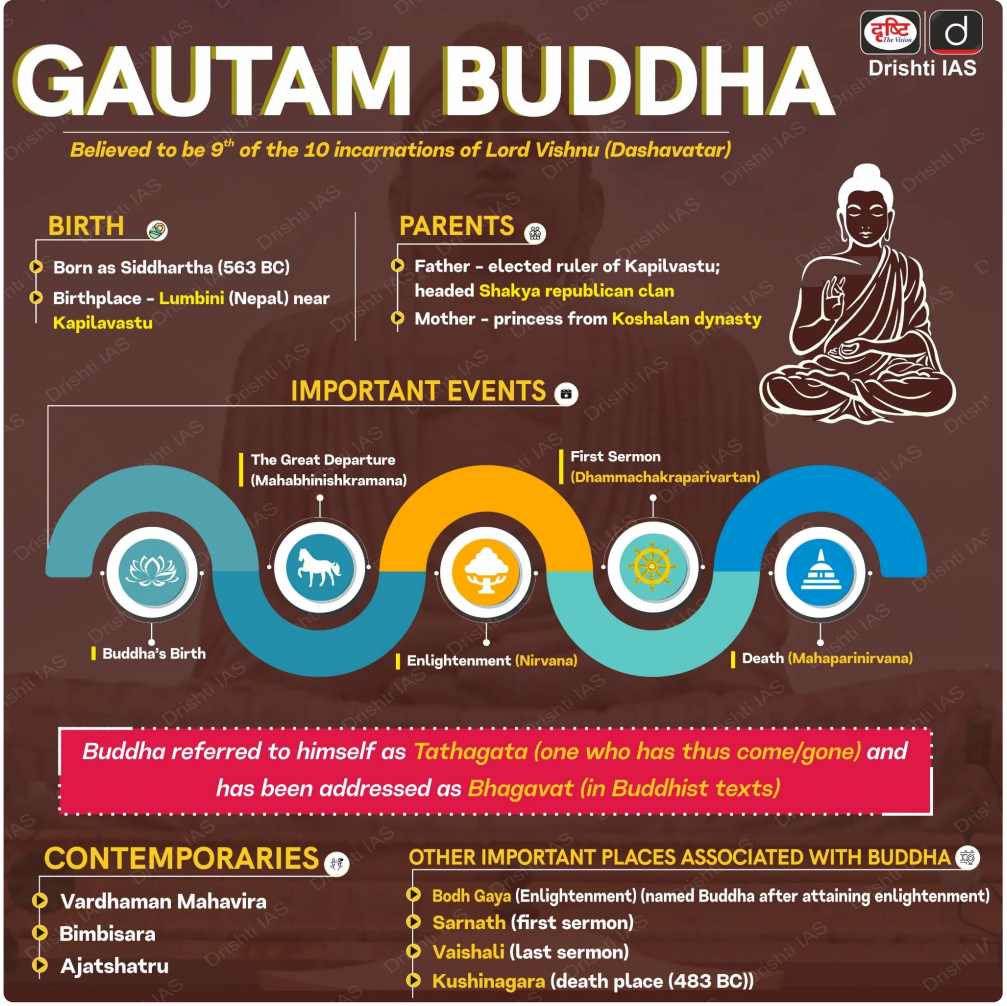
**Source: TOI**

The **Supreme Court** declined to entertain a **petition under Article 32** challenging the **Bodh Gaya Temple Act, 1949** , which sought **exclusive control of the Mahabodhi Temple** by the **Buddhist community.**

- The **Bodh Gaya Temple Act, 1949** was enacted to ensure the **better management** of the **Mahabodhi Temple** , one of **Buddhism's holiest sites.**

## Mahabodhi Temple

- **About:** It marks the site where **Gautam Buddha** **attained enlightenment** under the **Mahabodhi Tree** . The original temple was built by **Emperor Ashoka** **in the 3 rd century BC** , while the **present structure dates to the 5th–6th centuries** .
- **Architectural Features:** It includes the **50 m high grand temple (Vajrasana)** , the **sacred Bodhi Tree** , and **six other sacred sites of Buddha's** **enlightenment** , surrounded by ancient **Votive stupas.**
  - It is among the **earliest brick temples from the Gupta period** , and the **Vajrasana (Diamond Throne)** was originally installed by **Emperor Ashoka** to mark Buddha's meditation spot.
- **Sacred Sites: Bodhi Tree** (direct descendant of the tree under which Buddha attained enlightenment), **Animesh Lochan Chaitya** (Site of Buddha's meditation after attaining enlightenment), etc.
- **Recognition:** It has been a **UNESCO World Heritage Site** since 2002.




**Read More:** Corridor Projects for Vishnupad and Mahabodhi Temples

# Chemical Weapons Convention

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**Source: PIB**

India hosted the **23 rd Regional Meeting of National Authorities of States Parties in Asia** under the **Chemical Weapons Convention (CWC) .**

## Chemical Weapons Convention

- **About: CWC** is a **multilateral treaty** banning chemical weapons and requiring their **destruction** within the stipulated time.
  - It came into force in **1997** and its implementation is overseen by the **Organisation for the Prohibition of Chemical Weapons (OPCW)** with **193 member states** .
  - **OPCW was awarded the Nobel Peace Prize in 2013** for its global efforts in eliminating chemical weapons.
- **India and CWC: India is an original signatory** of the CWC and implements it through the **National Authority Chemical Weapons Convention (NACWC),** established under the **Chemical Weapons Convention Act, 2000** .
  - The **Indian Chemical Council (ICC)** , India’s oldest chemical industry association, was **awarded the OPCW-The Hague Award 2024** , becoming the **first industry body globally** to receive this honour.
- **Chemical Weapons:** A **chemical weapon** is any **toxic chemical** or device designed to **cause intentional harm or death** , including munitions and equipment for delivery.
  - It mandates the **destruction of old and abandoned chemical weapons** and requires members to **declare riot-control agents** like **tear gas.**

**Read More: Chemical Weapons Convention and Biological Weapons Convention**