

DAILY CURRENT AFFAIRS (DCA)

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SC FLAGS 'BRAIN DRAIN' IN LEGAL PROFESSION

Context

- The Supreme Court has directed the creation of a **'Young Lawyers' Assistance Fund'** to **support financially struggling young advocates and prevent brain drain**.

SC Observation

- The initial years of legal practice** often **impose severe financial hardships**, particularly on first-generation lawyers and those from economically disadvantaged backgrounds.
 - The legal profession **risks a "brain drain" if financially struggling young lawyers are compelled to abandon litigation** for careers offering greater financial stability.

SC Directions

- Young Lawyers' Professional Assistance Fund:** It directed the creation of a "Young Lawyers' Professional Assistance Fund" in every State and Union Territory.
 - This fund is to be placed under the control of the jurisdictional High Courts or an autonomous body constituted by the Union and State governments.
- The source of funding** can be donations by successful senior advocates and other members of the legal fraternity.
 - It also proposed that a portion of court fees and a substantial share of costs imposed in judicial proceedings be directed towards the fund.
- Duration of Funding:** Such financial assistance may be proportionately reduced over time, finally coming to an end after 7 years of practice.

Brain Drain in India

- Brain Drain** refers to the emigration of highly skilled and educated individuals from one country to another, usually in search of better opportunities.
- In India** engineers, doctors, scientists, IT professionals, and academics move to developed countries like the USA, UK, Canada, and Australia.
- Between 2015 and 2022**, 1.3 million Indians left the country, many of whom were highly educated professionals.
 - In 2022 alone, 225,000 Indians renounced their citizenship, the highest number recorded.

- Top Destinations:** The United States, Canada, and Europe remain top destinations for these skilled workers.

Reasons for Brain Drain from India

- Economic Factors:** Lower salaries compared to developed countries and limited job opportunities for highly specialized skills.
- Educational and Professional Opportunities:** Limited access to world-class research infrastructure.
 - Better training, exposure, and career growth opportunities abroad.
 - Preference for global higher education for advanced degrees.
- Lifestyle and Quality of Life:** Better healthcare, infrastructure, and living standards abroad. It offers global recognition and networking opportunities.
- Inadequate Research Funding and Infrastructure:** India's expenditure on Research and Development stands at just 0.64% of GDP, significantly lower than the global average of 1.79%.

Concerns

- Loss of Skilled Human Capital:** India invests heavily in education and training, especially in fields like IT, medicine, and engineering.
 - When highly skilled professionals emigrate, the country loses critical talent needed for innovation and economic growth.
- Slower Economic Development:** Skilled professionals are key to entrepreneurship, research, and technological advancement.
 - Brain drain reduces domestic productivity and slows the development of high-tech industries and start-ups.
- Impact on Health and Education Sectors:** India faces shortages of doctors, nurses, and educators due to migration to countries with better pay and working conditions.
- Reduced Global Competitiveness:** A consistent outflow of talent can make India less competitive in knowledge-intensive sectors.
 - Other countries benefit from India's investment in human capital without sharing the costs.

Government Initiatives

- Prime Minister's Research Fellowship (PMRF):** Launched in 2018, PMRF aims to retain top research talent by offering monthly stipends of

₹70,000-80,000 and research grants up to ₹2 lakh per year.

- **Medical Education Expansion:** Medical colleges doubled to 808 in 2025-26 from 387 in 2013-14, with undergraduate seats up 141% and postgraduate seats up 144%
- **VAJRA (Visiting Advanced Joint Research) Scheme:** Invites overseas scientists and experts to collaborate with Indian institutions.
- **Anusandhan National Research Foundation (ANRF):** Established to enhance R&D investment and strengthen the innovation ecosystem, with the Union Budget 2024 creating a ₹20,000-crore corpus for private sector R&D.
- **National Institutional Ranking Framework (NIRF):** Encourages universities to improve research and academic standards.
- **Ramanujan Fellowship & INSPIRE Faculty Scheme:** Attracts young Indian scientists back to India after overseas experience.
- **SWADES (Skilled Workers Arrival Database for Employment Support):** The initiative aims to create a database of qualified citizens returning from abroad.
 - ♦ It maps the skills of returning talent to fill vacancies in Indian and foreign companies operating within India.
- **Atal Innovation Mission (AIM):** To foster innovation at the grassroots level by providing support to students, startups, and entrepreneurs.
- **National Quantum Mission:** Allocated ₹6,003.65 crore for 2023–31, to advance quantum technologies through scientific and industrial R&D.
- **National Supercomputing Mission (NSM):** Launched in 2015, the initiative empowers universities, research institutions, and government agencies with state-of-the-art supercomputing systems connected through the National Knowledge Network.

Way Ahead

- **Trigger for Repatriation Efforts:** Policies abroad, such as the US visa and academic restrictions, have created an opportunity for India to attract its diaspora back.
- **Investments like Google's \$15 billion AI hub in Andhra Pradesh** reflect collaboration opportunities for returning talent.

- **Education and Research Funding:** India spends 3-4% of its GDP on education, below the global average of 4.9%. Increasing this to 5% would help bridge the gap.
- **Increase R&D Spending:** India must significantly boost R&D expenditure from the current 0.64% to at least 2% of GDP to match global standards.
 - ♦ Private sector participation needs to increase as seen in developed economies.
- **Freedom & Academic Openness:** Academic freedom is essential for long-term retention and innovation.
 - ♦ Incidents of scholar deportations and restrictions send discouraging signals to potential returnees.

Conclusion

- Repatriating talent is just the first step; India must create an ecosystem where brilliance can thrive, through robust institutions, academic autonomy, and funding.

Source: TH

ROLE OF AI IN CRIMINAL JUSTICE PROCESS

Context

- The Union Home Minister stressed **greater use of technology, artificial intelligence and scientific evidence in crime investigation.**

How can AI be used in Criminal Justice System (CJS)?

- **Automated Case Management:** AI-driven tools are now deployed for smart scheduling, case prioritization, and proactive backlog reduction.
- **AI in Legal Research and Documentation:** Advanced AI-powered tools assist judges and lawyers by streamlining legal research, identifying relevant case precedents, and summarizing judgments.
- **AI for User Assistance and Chatbots:** AI-driven virtual legal assistants and chatbots are available to provide litigants with real-time information on case status.
- **AI for Predictive Analysis in Case Outcomes:** AI models analyze historical judgments and case data to offer predictive insights into potential case outcomes and risk assessments.
- **Predictive Policing:** AI models analyze crime patterns, high-risk areas, and criminal behaviour, enabling law enforcement to take proactive measures.

- **AI in FIR Filing and Judicial Proceedings:** AI-driven speech-to-text tools assist in real-time FIR filing and case documentation.
 - ♦ AI is improving witness testimony analysis and courtroom evidence evaluation.

Use of AI in India's CJS

- **e-Courts Project:** Initiated by the Supreme Court of India to modernize judicial functions through digital innovation.
 - ♦ **Phase III:** Integrates advanced AI solutions to improve case management and administrative efficiency in courts.



- **AI for Legal Translation and Language Accessibility:** India's judicial system operates primarily in English, creating barriers for non-English-speaking litigants.
 - ♦ AI-driven legal translation tools are being deployed to make legal documents and judgments accessible.
- **AI in Law Enforcement and Crime Prevention:** To enhance crime detection, surveillance, and criminal investigations.
 - ♦ Automated drones for crime scene monitoring and suspect tracking.
 - ♦ Facial recognition systems integrated with national criminal databases.
 - ♦ AI-powered forensic analysis to examine evidence and digital crime trails.
 - ♦ AI-driven speech-to-text tools assist in real-time FIR filing and case documentation.
 - ♦ AI is improving witness testimony analysis and courtroom evidence evaluation.

- **Government Initiatives:** The Indian government has initiated projects like the **Crime and Criminal Tracking Network and Systems (CCTNS)** to enhance data analytics and research capabilities within the CJS.
 - ♦ This project aims to interlink all police stations under a common application software for improved investigation and citizen services.

Arguments in Favour of Use of AI in CJS in India:

- **Backlog of Cases:** India's judicial system faces a backlog of over 50 million cases, undermining public trust in timely justice. AI can streamline case management, reduce backlog, and speed up judicial processes.
- **Overcrowding in Prisons:** Indian prisons have been **housing more inmates than their capacity** for decades now and this problem of overcrowded prisons is only getting worse.
 - ♦ AI can streamline the complaint registration process, track investigations, flag necessary actions, and assess investigation quality.
- **Predictive Models for Operations:** AI can analyze crime location data, patrolling patterns, and offender routes to guide police operations effectively.
- **Resource Optimization:** AI can handle administrative tasks, freeing up police personnel for more public-facing work, such as investigations, law enforcement, and traffic management.
- **Enhanced Accuracy:** AI can prevent neglect of crucial evidence and ensure a more meticulous and reliable criminal justice process.
- **Cost-Effective Solution:** AI offers a more feasible solution to case backlogs than expanding courts and personnel, increasing court efficiency without the financial burden.

Arguments Against the of Use of AI in CJS in India

- **Privacy Concerns:** AI could lead to surveillance overreach and violations of individual privacy rights.
- **Bias and Discrimination:** AI systems may perpetuate biases in decision-making, affecting marginalized communities unfairly.
- **Lack of Transparency:** AI algorithms are often opaque, making it difficult to understand how decisions are made, potentially undermining accountability.
- **Dependence on Technology:** Over-reliance on AI could lead to the erosion of human judgment and discretion in the criminal justice system.

- **Data Security:** Storing and processing sensitive criminal justice data using AI raises risks of data breaches and misuse.
- **Ethical Concerns:** The use of AI in sensitive areas like sentencing and parole decisions raises moral and ethical questions about fairness and justice.
 - ♦ The opaqueness can go against the principles of open justice, due process and the rule of law.
- **Exclusion of Human Insight:** AI may overlook nuanced factors in cases that require human empathy and judgment.

Way Ahead

- A dedicated task force can be appointed to **study and recommend** the use of AI in public service and justice administration.
- A balanced approach must be taken to ensure AI tools respect privacy, civil liberties, and ethical standards, while preventing misuse.
- By leveraging AI, India's criminal justice system can become more efficient, accessible, and just, while ensuring safeguards are in place to address any challenges.

Source: IE

SMART WAREHOUSING SYSTEM FOR FOODGRAIN STORAGE

Context

- The Ministry of Consumer Affairs, Food and Public Distribution, launched the Smart Warehousing System for foodgrain storage in New Delhi.

About

- The system represents the world's largest deployment of **Artificial Intelligence (AI) and Internet of Things (IoT) based technologies** in public sector foodgrain warehousing.
- The Smart Warehousing System integrates advanced technologies such as;
 - ♦ FASTag and ANPR-based gate automation,
 - ♦ Intelligent access control through geo-tagged smart locks,
 - ♦ AI-enabled bag counting, face recognition systems, object detection, IoT-based monitoring of environmental parameters, and
 - ♦ AI-powered surveillance for fire, smoke and rodent detection.

- This platform also supports **ERP integration, automated record generation and advanced analytics** for warehouse operations.

Importance of Food Grain Storage

- **Reducing Post-Harvest Losses:** Proper storage, including cold storage and modern warehouses, significantly reduces the wastage of agricultural produce.
- **Ensuring Food Security:** Maintaining a buffer stock of food grains is essential for national food security and for distribution under programmes like the National Food Security Act (NFSA).
- **Preventing Distress Sales:** Access to storage facilities allows farmers to hold their produce and sell it at an optimal time, avoiding distress sales and helping them realise better prices.
- **Price Stabilisation:** Maintaining strategic buffer stocks helps protect consumers from extreme price volatility in essential commodities.
- **Maintaining Quality:** Scientific storage ensures that food grains remain fit for human consumption by controlling factors like moisture and pests.

Food Grain Storage Systems in India

- **Centralized storage**, handled mainly by agencies like the Food Corporation of India (FCI).
- **Cold storage**, which caters to perishable items such as fruits, vegetables, dairy products, and meat.
- **Decentralized storage**, carried out through rural godowns, Primary Agricultural Credit Societies (PACS), and on-farm storage by farmers.

Centralized Storage of Food Grains

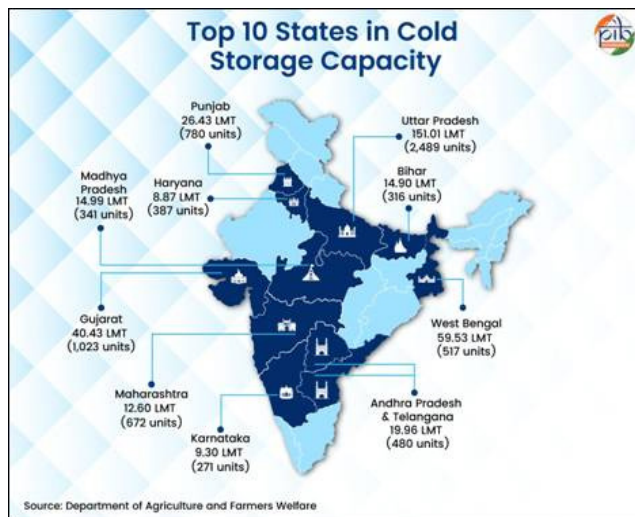
- The procurement of food grains in Central Pool is undertaken either by FCI directly or by **State Govt. Agencies (SGA)**.
- Quantity procured by SGAs is **handed over to FCI for storage** and the cost of the food grains procured by State agencies is reimbursed by FCI.
- The FCI manages this stock, storing it and subsequently issuing it for distribution through the **Public Distribution System (PDS)**.
- **As of July 2025**, the Total Covered and CAP Storage Capacity available with FCI and State agencies for the storage of Central Pool foodgrains stood at **917.83 Lakh Metric Tonnes (LMT)**.

Covered storage capacity

- Covered storage capacity refers to the **total quantity of foodgrains** that can be stored in **fully roofed and walled structures**, such as godowns, warehouses, or silos. Foodgrains in **‘Cover and Plinth’ (CAP) storage** are stored on elevated plinths and wooden crates are used as dunnage material.

Cold Storage Infrastructure

- Cold chain infrastructure includes facilities for pre-cooling, weighing, sorting, grading, packaging, Controlled Atmosphere (CA) storage, blast freezing, and refrigerated transport like reefer vans.



Government Initiatives to Improve Storage Infrastructure

- Agriculture Infrastructure Fund (AIF):** AIF was launched in 2020 to strengthen agricultural infrastructure across India. The scheme focuses on the creation of farm-gate storage and logistics facilities to help farmers store their produce effectively.
- Agricultural Marketing Infrastructure (AMI):** AMI scheme is a key component of the Integrated Scheme for Agricultural Marketing (ISAM).
 - The objective is to strengthen **agricultural marketing infrastructure** across rural India by providing financial assistance for the construction and renovation of godowns and warehouses.
- Pradhan Mantri Kisan SAMPADA Yojana (PMKSY):** It is a comprehensive scheme designed to build modern infrastructure for the food processing sector, creating a smooth and efficient supply chain from the farm gate to retail.

- Private Entrepreneurs Guarantee (PEG) Scheme:** It was implemented in 2008, to augment the covered storage capacity through private entrepreneurs, Central Warehousing Corporation (CWC) and State Warehousing Corporations (SWCs).
- Digital initiatives** such as **Depot Darpan, Anna Chakra** and **SMART PDS** are helping improve monitoring, storage and distribution of foodgrains.

Concluding remarks

- Agriculture remains the lifeline of India, feeding millions while sustaining livelihoods and driving economic growth.
- While record foodgrain production reflects India's agricultural strength, efficient storage and distribution ensure that every grain reaches the consumer.
- With a growing population and changing climate, maintaining sufficient stocks is essential to ensure year-round availability and price stability.

Source: PIB

DIRECT TAX COLLECTIONS SHOW STRENGTHENING ECONOMIC ACTIVITY

Context

- India's net direct tax collections rose **14.64% to over Rs 5.21 lakh crore** from April 1 to June 17 of the current financial year (FY 2026-27), according to data released by the Income Tax Department.

Key Highlights of the Data

- Net corporate tax collections** increased 22% to Rs 2.08 lakh crore during the period, while **net non-corporate tax (NCT) collections**, which include taxes paid by individuals, HUFs and firms, rose 8% to about Rs 2.94 lakh crore.
- Collections from Securities Transaction Tax (STT)** rose to 45% to Rs 18,856 crore.
- Advance tax collections**, seen as a key indicator of business performance, grew **15.30%** to more than Rs 1.78 lakh crore.
 - Corporate advance tax payments** rose 16% to over Rs 1.40 lakh crore, while **advance tax collections** from non-corporate taxpayers increased 13% to Rs 37,620 crore.
- The government has budgeted **direct tax collections of Rs 26.97 lakh crore** in FY27, implying a growth of **15%** over the **Rs 23.40 lakh crore** collected in FY26.

Reasons for Rise in Direct Tax Collections

- **Corporate Profitability:** Higher corporate tax receipts indicate that companies are earning more profits. The fact that companies are paying more in advance tax shows that they are confident about their future earnings.
- **Strong financial market activity:** STT collections grew rapidly by **45%**. Higher trading volumes in equity and derivatives markets have helped in higher tax revenues.
- **Enhanced Tax Compliance:** Better tax administration through more digitization and data analytics have widened the tax base.
- **Economic Growth Beat:** The increase in tax revenues has been a consequence of the increase in business activity and income creation. Revenue mobilisation has been supported by growth in the services and manufacturing sectors.

Direct Taxes

- A Direct tax is a kind of charge, which is **imposed directly on the taxpayer and paid directly** to the government by the persons (juristic or natural) on whom it is imposed.
- A direct tax is one that cannot be shifted by the taxpayer to someone else.

Types of Direct Tax

- **Income Tax:** Income Tax Act imposes tax on the income of the individuals or Hindu undivided families or firms or co-operative societies (other than companies) and trusts (identified as bodies of individuals associations of persons) or every artificial juridical person.
 - ♦ **All residents** are taxable for all their income, including income outside India.
 - ♦ **Non residents are taxable only for the income received in India or Income accrued in India.**
 - ♦ **Not ordinarily residents** are taxable in relation to income received in India or income accrued in India and income from business or profession controlled from India.
- **Corporation Tax:** The companies and business organizations in India are taxed on the income from their worldwide transactions.
 - ♦ A corporation is deemed to be resident in India if it is incorporated in India or if its control and management is situated entirely in India.

- **Securities Transaction Tax (STT):** STT is a tax being levied on all transactions done on the stock exchanges. STT is applicable on purchase or sale of equity shares, derivatives, equity oriented funds and equity oriented Mutual Funds.

What is Advance Tax?

- Advance tax refers to the payment of income tax in installments during the financial year instead of paying the entire amount at the end of the year.

Source: MOSPI, TOI, TH, BS, Money Control

NEWS IN SHORT

ABHIGYAN APP

Context

- The Union Home Minister launched the **Abhigyan app** developed by the **National Crime Records Bureau (NCRB)**.

About

- The app links to the National Automated Fingerprint Identification System (NAFIS) to store fingerprint scans of accused, convicts, and those in prisons on a centralized platform.
 - ♦ The **prints can be matched with the NAFIS database in 35 seconds.**
- During routine vehicle checks on the streets, biometric scans of any suspicious individual can be conducted to identify persons wanted in connection with crimes.

Legal Concerns

- **The Criminal Procedure Identification Act, 2022** provides the legal basis for such checks.
- However, **Section 3** of the Act limits the mandatory recording of measurements, including fingerprints, to people who have been convicted or arrested and those ordered to give security for good behaviour or maintaining peace under the **Code of Criminal Procedure, 1973.**
- The Act does not mention the possibility of random testing of individuals without any evidence linking them to a punishable offence.

Source: TH

RIGHT TO WALK ON FOOTPATH IS A FUNDAMENTAL RIGHT: SC

Context

- In a landmark judgment, the Supreme Court has held that the right to walk on safe and demarcated footpaths is a fundamental right.

About

- The right to walk flows from **Article 19(1)(d)** (freedom of movement) and **Article 21** (right to life and personal liberty).
- According to the Court, the right to walk also supports freedom of expression, assembly, and association under **Article 19(1)(a), 19(1)(b), and 19(1)(c)**.
- The judgment places a duty on municipal corporations, urban development authorities, municipalities, and even panchayats to build, maintain, and protect pedestrian infrastructure.
- The Court emphasized that **pedestrian rights must be prioritized** over motorised vehicles in urban planning, and citizens can seek **legal remedies** if safe and accessible footpaths are not provided.

Source: TH

ENERGY TRANSITION INDEX (ETI) 2026

Context

- According to the **Energy Transition Index (ETI) 2026**, the global energy transition has effectively stalled despite total energy investments touching \$3.3 trillion in 2025.

About Energy Transition Index (ETI)

- The Energy Transition Index (ETI) is an **annual index published by the World Economic Forum** that measures **how effectively countries are transitioning toward secure, sustainable, equitable, and affordable energy systems**.
- Evaluation Criteria:** The index is based on two broad dimensions:
 - System Performance:** Energy security, sustainability, and equity.
 - Transition Readiness:** Policies, regulations, investment, infrastructure, innovation, education, and institutional support.
- Significance:** It helps governments identify strengths and weaknesses in their energy transition efforts and guides policy reforms.

Major Findings of Energy Transition Index (ETI) 2026

- Sweden, Finland and Denmark** retained their top three positions globally.
- India advanced two places to rank 70th.**



India

ETI 2026 score: 54.9

India advanced two places through stronger readiness and broad-based system gains, driven by a sharp rise in infrastructure, alongside improvements in equity, sustainability and financial investment.

+1.9% Overall ETI score

System performance: +0.8%

Transition readiness: +4.1%

Key highlight

The proportion of low-carbon jobs increased by 24% in 2024. Renewable energy jobs reached 1.3 million¹ (up 25% over 2023), with hydropower being the largest employment source.

Key improvement areas

Infrastructure +12.3%

Education and human capital +12.8%

Finance and investment +4.5%

Planned strategic priorities

Scaling renewable capacity, grid expansion and green hydrogen under its infrastructure-led clean-energy strategy²

- Global electricity demand grew by 3%** driven by electrification, cooling, digital infrastructure and AI, and was seen as emerging as a defining constraint on the transition.
- Emerging economies accounted for around 80%** of demand growth but continued to face higher financing costs and infrastructure gaps
- The WEF identifies three priorities:** embedding resilience and security into energy system design, accelerating grid and infrastructure development, and creating stable policy environments that attract long-term investment, particularly in emerging markets.

Source: BT

FINANCIAL ACTION TASK FORCE (FATF)

Context

- The **Financial Action Task Force (FATF)** Plenary has appointed **Culture Ministry Secretary Vivek Aggarwal** as the next vice-president.

About

- This is the **first time that India** will hold the **Vice-Presidency of the FATF**.
- He will serve as vice president **from July 2026 to June 2027**.
- The Vice-President of the FATF is **elected by the FATF Plenary** from among its **members and assists the President** in steering the organisation's work.

The Financial Action Task Force

- The FATF is the **global money-laundering and terror financing watchdog**.
- It is an **inter-governmental organisation with 40 members**, India became a member in 2010.

- The body researches **how money is laundered** and terrorism is funded, **promotes global standards** to mitigate the risks, and assesses whether countries are taking **effective action**.
- **The FATF Presidency** runs on a **two-year term**, and the Vice-President assists the President in carrying out the organisation's mandate.

What FATF's grey/black lists entail?

- The FATF **identifies jurisdictions with weak measures to combat money laundering and terrorist financing** (AML/CFT regimes) in two public documents that are issued **three times a year** — in **February, June and October**.
- **The grey list**, officially “**Jurisdictions under Increased Monitoring**”, comprises countries that have **significant deficiencies in their AML/CFT regimes** but are **actively working** with the FATF to address these **within agreed timeframes**.
 - ♦ Countries in the grey list are **subject to increased monitoring** by the FATF. Currently, there are **22 countries in this list (as of June 2026)**.
 - ♦ It carries **adverse economic and reputational impacts**, which affect the **inflow of foreign investment and international aid**.
- **The black list**, officially “**High-Risk Jurisdictions subject to a Call for Action**”, comprises countries with “**serious strategic deficiencies**” in their AML/CFT regimes.
 - ♦ The FATF urges all other jurisdictions to **apply enhanced due diligence while dealing with such countries** and also apply **counter-measures to protect the international financial system** from the risks emanating from the country.
 - ♦ Three countries are in the black list at the moment — **North Korea, Myanmar, and Iran**.

Source: FATF

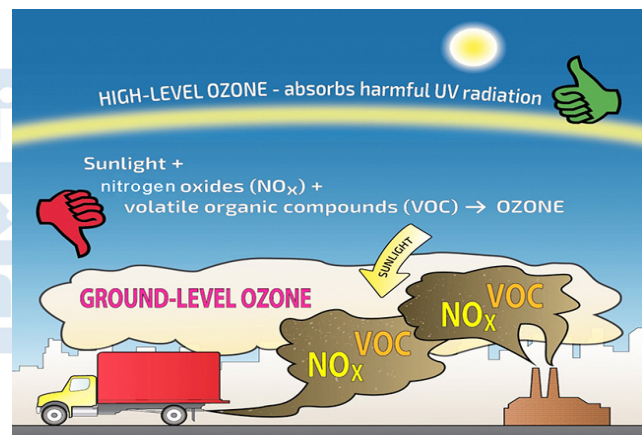
HEATWAVES LEADING TO INCREASED CONCENTRATIONS OF GROUND-LEVEL OZONE

Context

- According to a study by the IIT Kharagpur, heatwaves in India may have intensified ground-level ozone exposure linked to more than 26,500 deaths in 2024.

What is Ozone?

- **Ozone (O_3)** is a gas composed of three oxygen atoms.
 - ♦ It occurs both in the Earth's upper atmosphere (**stratosphere**) and at ground level (**troposphere**).
- **Stratospheric ozone** is beneficial as it forms the ozone layer that **shields the Earth** from the sun's harmful ultraviolet radiation.
- **Tropospheric ozone**, however, is a **harmful air pollutant** and greenhouse gas.
 - ♦ It is not emitted directly but is formed by chemical reactions between **oxides of nitrogen (NO_x)** and **volatile organic compounds (VOCs)** in the presence of sunlight.
- **The World Health Organization (WHO)** recommends a maximum ozone level of **100 micrograms per cubic meter ($\mu g/m^3$)**, measured as an 8-hour maximum moving average within a day.



Why Do Heatwaves Increase Ozone Levels?

- During a heatwave, **temperature becomes high and there is strong sunlight**. These conditions help pollutants like **nitrogen oxides (NO_x)** and **volatile organic compounds (VOCs)** react faster and produce more ozone.
- Heatwaves are accompanied by **calm weather and low wind speed**. Because of this, **pollutants stay trapped** near the ground instead of getting dispersed.
- In hot weather, people **use more electricity for cooling**, leading to higher burning of fossil fuels, releasing more ozone-forming pollutants into the air.
- Even after the heatwave ends, ozone levels remain high for a few days and continue to affect air quality and human health.

Source: DTE

SMART SEED COATING TECHNOLOGY TO BOOST CROP YIELDS

Context

- The Indian Council of Agricultural Research's Indian Institute of Oilseeds Research (ICAR-IIOR), Hyderabad, has developed **Smart Seed Coating Technology** that improves seed quality.

About

- The **Smart Seed Coating Technology** developed by ICAR-IIOR utilizes biodegradable biopolymeric materials to create a **multifunctional protective layer** around seeds.
- The coating acts as a **carrier system for beneficial microorganisms**, nutrients, micronutrients, crop

protection agents, and plant growth-promoting compounds, delivering them directly at the seed-soil interface.

- This protective microenvironment **promotes rapid germination, vigorous seedling growth, enhanced root development, and improved tolerance** to environmental stresses during the critical crop establishment phase.
- The innovation is particularly valuable for rainfed agriculture, which accounts for a significant share of India's cultivated area and remains highly vulnerable to delayed monsoons.

Source: PIB

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