

CURRENT AFFAIRS

WEEKLY



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- ❑ TACKLING FAKE NEWS
- ❑ AMU MINORITY STATUS CASE
- ❑ CUSTODIAL DEATHS (IN THE NAME OF "LAW")
- ❑ SC PUTS BRAKES ON 'BULLDOZER CULTURE'
- ❑ STATE OF FOOD AND AGRICULTURE 2024

GS-III

- ❑ CCI'S INVESTIGATION INTO ZOMATO AND SWIGGY
- ❑ THE EVOLVING DYNAMICS OF INDIA'S GIG ECONOMY
- ❑ SUSTAINABILITY IN INDIA'S AGRICULTURAL COMMODITY EXPORTS
- ❑ TAMIL NADU'S WIND ENERGY POTENTIAL AND THE CHALLENGES OF REPOWERING
- ❑ INDIA'S CARBON MARKET (BOOST FROM COP29 AGREEMENT)

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- ❑ India-Bangladesh Cooperation on Land Ports and Border Infrastructure

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- ❑ 50th CJI Chandrachud retires
- ❑ Project to Monitor Animal Health
- ❑ Lead Contamination in Turmeric

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- ❑ Shortage of DAP
- ❑ India's Retail Inflation
- ❑ SEBI's Proposed New Investment Product

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- ❑ Underwater Curtain to Stop Doomsday Glacier Melting
- ❑ Panje Wetland
- ❑ Huge Drop in African Elephants
- ❑ New Jumping Spider Species (Okinawicius tekdi)

SCIENCE & TECHNOLOGY

- ❑ Pinaka Multi-Barrel Rocket Launcher production.
- ❑ DRDO's Long Range Land Attack Cruise Missile (LRLACM)
- ❑ Uranus (Mysteries of the Gas Giant)

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DISCLAIMER

The current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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SECTION -A

MAINS ISSUES

TACKLING FAKE NEWS

CONTEXT

The issue of curbing “fake news” and misinformation on social media has once again come to the forefront in India. Following the Bombay High Court’s decision to strike down a provision in the amended **Information Technology (IT) Rules, 2021**, which granted the government the authority to identify and flag fake news, a **Parliamentary Panel on Communications and Information Technology** has called for a review of mechanisms to tackle fake news.

What is Fake News?

- “Fake news” refers to information that is deliberately fabricated or manipulated to deceive the public, often spread through social media platforms or digital news outlets.
- While “fake news” lacks a legal definition in Indian law, the **Information Technology Rules of 2021**, amended in 2022, require intermediaries to prevent “misinformation or information which is patently false and untrue or misleading in nature” on their platforms. However, “misinformation” also remains undefined in law.
- It includes misleading content, false claims, and disinformation designed to sway public opinion, create confusion, or disrupt social and political harmony.
- Forms:** Completely fabricated stories, doctored images or videos, and manipulated headlines.
- Impact:** Fake news is of particular concern due to its potential to influence elections, fuel social unrest, and challenge public trust in institutions.

Causes for the Rise in Fake News:

- Internet and Social Media:** The rise of social media platforms has made it easier for people to access news,

but also harder to determine its credibility. Social media networks amplify the reach of fake news stories, often without adequate fact-checking mechanisms in place.

- Lack of Authenticity Checking:** Many individuals share, like, or comment on news items without verifying their authenticity. This lack of scrutiny allows false or misleading information to spread quickly and widely.
- Absence of Codes of Practice for Social Media:** Traditional news sources adhered to strict editorial guidelines and journalistic standards. In contrast, the internet and social media platforms often lack regulation and editorial oversight, enabling anyone to publish and share news without accountability.
- Stratified Organization of Fake News:** Fake news is no longer an isolated issue but is increasingly organized and strategically disseminated. Political groups or influential organizations may intentionally spread fake news to manipulate public opinion, often targeting specific demographics.
- Vernacular Social Media Platforms:** The growing popularity of vernacular social media platforms in India is another factor driving the spread of fake news. These platforms often lack the checks and balances necessary to filter out misinformation, contributing to the problem.

Threats Posed by Fake News:

- Political Threat:** Fake news is often used by political parties to polarize voters, which can deepen social divisions and exacerbate tensions. This manipulation of public sentiment can disrupt the democratic process and destabilize societies.
- Economic Threat:** Fake news can divert attention from critical economic issues and development priorities. When communal issues become the focus of political debate, economic growth is sidelined, and essential problems are ignored by the government.

- **Societal Threat:** Fake news has the potential to fragment the social fabric of society. It can foster long-lasting tensions between communities, leading to violence, enmity, and a breakdown in inter-community cooperation.
 - **International Threat:** Deepfake technology, often used in misinformation campaigns, can target foreign governments or organizations to create political chaos. Countries like China and Russia have been accused of using such tactics to influence elections, disrupt political stability, or gain trade advantages.
 - **Loss of Faith in Media:** The proliferation of fake news erodes trust in traditional media, including print, broadcast, and digital outlets. This undermines the role of the media as the "fourth estate" of democracy, weakening its power to hold governments accountable and reducing the public's access to accurate information.
- ▶ Under these provisions, if the **government's Fact Check Unit (FCU)** flagged any content that was deemed to be fake, false, or misleading regarding government-related information, social media platforms would be required to take action against the content.
- **Defamation:** Defamation suit is also a legal tool available in the case of fake news. If a person finds a fake news defamatory s/he can file a civil or criminal case for defamation.
 - ▶ IPC Section 499 makes defamation a criminal offence. Section 500 provides for punishment for criminal defamation that can extend upto a jail term of two years with or without fine.

Constitutional provisions in India:

- There is no specific law in India to deal with fake news but there are statutory and self-regulatory bodies to act against dissemination of misinformation. Free publication or broadcast of news in India flows from the fundamental right to freedom of expression as enshrined under **Article 19 of the Constitution**. However, there are certain legal recourses available for people affected by fake news.
- **News Broadcasters Association (NBA):** Complaints can be lodged with the News Broadcasters Association (NBA) which represents the private television news and current affairs broadcasters. It is funded by its over 60 members.
 - ▶ The NBA is the credible voice of news broadcasters to the government.
 - ▶ It is self-regulatory in nature and probes complaints against news broadcasters in a fair manner.
- **Indian Broadcast Foundation (IBF):** IBF was created in 1999 to look into the complaints against contents aired by 24x7 channels.
 - ▶ Over 650 news channels are in operation today in the country.
 - ▶ Complaint against any broadcaster can be filed in English or Hindi to IBF online or offline for promoting smoking, abuse or any violent action.
- **Broadcasting Content Complaint Council (BCCC):** A complaint relating to objectionable TV content or fake news can be filed to the Broadcasting Content Complain Council if a broadcaster incites communal hatred, encourages violence against women or child abuse, airs contents having gory scenes of violence, promotes superstition or consumption of drugs and other contraband substances.
- **Amended IT Rules, 2021:** The **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2023**, brought significant changes to the **existing IT Rules, 2021**. A key provision in the amendment (**Rule 3(1)(b)(v)**) expanded the definition of "fake news" to include content related to "government business."

AMU MINORITY STATUS CASE

CONTEXT

The Supreme Court of India, in a 4-3 majority decision, overruled its 1967 judgment in the **Azeez Basha case**, which had denied **Aligarh Muslim University (AMU)** minority status. This is a significant turning point in the interpretation of the rights of religious minorities to establish and manage educational institutions under **Article 30 of the Indian Constitution**.

What Did the 1967 Azeez Basha Case Say (Background)?

- In 1967, the Supreme Court had ruled that **AMU** (founded in 1875 and incorporated by imperial law in 1920) was not a minority institution.
- The court argued that AMU, despite being established by Muslims, was a **statutory institution** (meaning it was created by a law of Parliament) and therefore could not be classified as an institution established and administered by a religious minority.

What Did the Supreme Court Say Now?

- ▶ The **majority opinion**, written by Chief Justice **Dhananjaya Y. Chandrachud** on his last working day as CJI, overturned the 1967 decision.
- ▶ The Court provided a **new framework** to assess whether an institution qualifies for **minority status** under **Article 30(1)** of the Constitution.

Key Points of the Judgment:

- **Minority Rights and Article 30(1):** Article 30 guarantees that religious and linguistic minorities have the right to **establish and administer** educational institutions of their choice.
 - ▶ The majority opinion emphasized that this right is both a **special privilege** for minorities and a **protection against discrimination** by the state. The judgment made it clear that laws or government actions that **discriminate against minorities** in running educational institutions are unconstitutional.

- **AMU's Minority Status Reassessed:** The Court did not immediately declare AMU a minority institution. Instead, it ordered that **AMU's minority status should be examined again**, based on a fresh set of criteria.
 - ▶ The new criteria include:
- Historical context AMU was established by Muslims, and its founders' intentions to serve the Muslim community should be considered.
 - ▶ **Administrative Structure:** Even if the university was incorporated by a statute, it can still retain its minority status if its **administration** reflects the interests of the minority community.
 - ▶ **Intent of Founders:** The Court will also look at the **original purpose** for which AMU was created, and whether it was meant to benefit the Muslim community.
- **Key Test for Minority Status:** The Court set out a **three-part test** to determine minority status:
 - ▶ **Origins:** The institution should show clear evidence that it was founded by the minority community. For AMU, this includes looking at historical documents and letters from the founders.
 - ▶ **Purpose:** The university does not need to exclusively serve the minority community, but it must primarily serve the interests of that community.
 - ▶ **Administration:** While it is not necessary for the institution to be **administered solely by the minority**, the **intention behind its administration** must align with the founding community's interests.
- **Impact of State Aid:** The Court also clarified that **receiving state aid** (e.g., grants, land) does not automatically negate an institution's minority character. This was important because AMU, like many other universities, receives government support. The presence of such aid does not mean AMU is no longer a **minority institution**.
- **Importance of National Importance vs. Minority Status:** The judgment rejected the argument that being an institution of **national importance** (as AMU is) contradicts its **minority status**. The Court said that **national character and minority status are not mutually exclusive**. AMU can still serve national interests while retaining its identity as a **minority institution**.

What Happens Next?

- The **AMU case is not fully decided yet**. The Court has ordered a fresh evaluation of AMU's minority status based on the **new framework**.
- Until then, AMU's official **minority status remains undecided** but is now open to reconsideration, based on historical facts and the Court's guidance.
- **Implications for Other Institutions:** This decision has **wider implications** for other educational institutions across India, particularly those established **before India's independence**. The Court's framework could influence how the **minority status of other institutions** is determined in the future.



FACT BOX

Minority Institutions

- According to **Section 2(g)** of the **National Commission for Minority Education Institution Act**, a minority institution means a college or institution (other than a university) established or maintained by a person or group of person from amongst the minority.
- **Constitutional provisions:** The Constitution provides for the cultural and educational rights of the minorities under Article 29 and 30.
 - ▶ **Article 29** is general protection to the minorities to conserve their language etc. It protects the rights only of the Indian citizens.
 - ▶ **Article 30** deals explicitly with the rights of the minorities to establish institutions of their choice.

CUSTODIAL DEATHS (IN THE NAME OF "LAW")

CONTEXT

The issue of **custodial deaths** has gained significant attention following the recent deaths of **Mohit Pandey** and **Aman Gautam** in police custody in Uttar Pradesh (U.P.). Both cases highlight serious allegations of police brutality, raising concerns over human rights violations and the culture of impunity within law enforcement.

What is Custodial Death?

- A **custodial death** refers to the death of an individual while they are in the custody of law enforcement authorities or in judicial custody. This can occur either during police detention or in a prison setting.
- **Custodial deaths** often result from excessive use of force, torture, or inadequate medical care, and may sometimes be caused by neglect or ill-treatment.
- These deaths are considered grave human rights violations, as individuals in custody are vulnerable and should be protected by the state.
- **Legal and Constitutional Provisions:**
 - ▶ **Article 21:** Indian constitution has granted rights to every person and under fundamental rights enshrined under **Article 21: Right to life**, it includes the person who has been detained or convicted or arrested.
 - ▶ **Article 22: Basic human rights** cannot be taken away plus under **Article 22**, rights are laid down for people who are being arrested and detained.
 - ▶ **Article 20:** The prohibitions imposed by **Article 20 of the Constitution** are directly relevant to the criminal process.

- ◆ **Article 20(1)** prohibits retrospective operation of penal legislations.
- ◆ **Article 20(2)** guards against double jeopardy for the same offence.
- **Code of Criminal Procedure (CrPC):** Under Section 46 and Section 50, the law mandates that arrests must be made with dignity and that the police must inform the arrested individual of the reasons for their detention.
- **Section 187 of the Nagarik Suraksha Sanhita,** prescribes the procedure when investigation cannot be completed in twenty-four hours.
- **National Human Rights Commission (NHRC)** constituted under the **Protection of Human Rights Act, 1935** addresses violation of human rights, including the custodial torture.
- **Supreme Court Guidelines:** In the landmark case of **Dilip K. Basu v. State of West Bengal (1997)**, the Supreme Court issued guidelines to prevent custodial torture, including ensuring proper medical care, video recording of interrogations, and prompt medical examination if a detainee is injured.
- **Other landmark cases**
 - **Arnesh Kumar v. State of Bihar**
 - **Sunil Batra v. State (UT of Delhi)**

Why the Number of Custodial Deaths is on the Rise?

Several factors contribute to the rising number of custodial deaths in India, especially in states like Uttar Pradesh:

- **Police Brutality and Torture:** A culture of impunity among law enforcement officers, where they use torture or excessive force during investigations, is a key reason for custodial deaths. In many cases, detainees are subjected to physical violence to extract confessions or punish them for minor offenses.
- **Lack of Accountability:** Police forces often act with little fear of legal consequences, as investigations into custodial deaths are infrequent, and convictions are rare. The lack of stringent enforcement of human rights laws exacerbates the problem.
- **Political Influence and Corruption:** In certain cases, local political influences and corruption may prevent accountability. The families of victims in cases like that of Mohit Pandey allege that powerful individuals were behind the custodial torture.
- **Inadequate Training and Infrastructure:** Police officers often lack proper training in human rights and conflict resolution. Additionally, many police stations suffer from poor infrastructure, with insufficient medical facilities for detainees.
- **Overburdened Prisons:** Indian jails are overcrowded, and prisoners are often subjected to inhumane conditions, which increases the likelihood of deaths in custody. The lack of adequate supervision or resources for inmates contributes to custodial deaths in prisons as well.

Required Measures

To curb the rise in custodial deaths, several measures need to be taken:

- **Strict Implementation of Existing Laws:** Ensuring adherence to existing legal provisions, such as the CrPC and Supreme Court guidelines, is essential. Police stations should be equipped with proper facilities for medical examination and monitoring of detainees.
- **Independent Oversight:** Establishing independent bodies to monitor police stations and custodial conditions can help ensure accountability. The NHRC should be empowered with more authority to take action and enforce its recommendations.
- **Reforming Police Training:** Police officers need comprehensive training on human rights, including the prohibition of torture. They must also be educated on handling arrests and interrogations with dignity and respect for the law.
- **Transparency and Accountability:** Policemen involved in custodial deaths must be held accountable through independent investigations. Transparent procedures for recording and investigating injuries sustained in custody are essential for ensuring justice.
- **Legislation Against Torture:** The **Prevention of Torture Bill** should be passed to provide a legal framework that criminalizes custodial torture and ensures that victims and their families are compensated.
- **Prison Reforms:** Overcrowded and underfunded prisons should be reformed to improve the living conditions of inmates, with adequate medical facilities and oversight to prevent deaths due to neglect.
- **Public Awareness:** Awareness campaigns about human rights and legal recourse for custodial deaths must be carried out, both for law enforcement and the general public, to build accountability and prevent such incidents.



FACT BOX

Custody

- Custody generally means the state of being kept by the police or kept in the jail, usually while waiting to go to court for trial.
- **Type of Custody:** There are two types of Custody
 - **Judicial Custody:** In this person is sent to jail and the police don't have physical custody and if they want to interrogate the accused, they have to take the permission of the magistrate.
 - **Police Custody:** In this police have the actual physical custody of the accused.
- Rights and Remedies for the accused in custody
 - He has the right to know on which grounds he is being arrested

- ▶ He has the right to get a lawyer of his own choice.
- ▶ He has the right to get bail.
- ▶ He has the right to get Medical Treatment.
- ▶ An arrested person can apply for the **Writ of the Habeas Corpus** if he thinks that his arrest is illegal and the procedure of custody is not followed according to law.

SC PUTS BRAKES ON 'BULLDOZER CULTURE'

CONTEXT

The **Supreme Court of India** recently laid down a set of guidelines to ensure that demolitions of properties by state authorities follow due process and do not serve as a form of punishment without trial. This ruling came after cases where properties were demolished for alleged involvement in criminal activities, particularly in states like **Uttar Pradesh, Madhya Pradesh, and Rajasthan**. The guidelines aim to protect **citizens' rights and ensure transparency in such actions**.

Case Background and Trigger

- The case was prompted by incidents in Udaipur (Rajasthan) and Ratlam (Madhya Pradesh) where state authorities demolished properties of individuals accused of crimes, raising concerns about due process violations.
- The Supreme Court's verdict followed a reference by Chief Justice D Y Chandrachud, who criticized such demolitions as a form of **"bulldozer justice,"** which bypasses legal procedures.
- Several petitions challenged the practice of demolishing properties as a punitive measure, particularly when no court order exists or trial has been held.

What is Bulldozer Justice?

- "Bulldozer Justice" refers to the practice where government authorities demolish the properties of individuals accused of crimes, such as rioters or protestors, often without a legal trial.
- This involves using heavy machinery like bulldozers to tear down homes or businesses, as a way to punish these individuals swiftly.
- There are **no provisions in Indian law** that allow for demolishing property as a punitive measure.
- **Why it is supported?** Supporters of "Bulldozer Justice" see it as a deterrent to discourage unlawful activities. They believe it provides **instant justice**, in contrast to the **lengthy judicial process**.

Supreme Court's Guidelines

The Supreme Court laid down a series of clear, constitutional guidelines for demolitions:

- **Notice Requirement:** The property owner or occupier must be given at least 15 days' notice before any demolition. This notice should include details of the structure, reasons for demolition, and a date for a personal hearing.
- **Transparency:** A copy of the notice must be sent to the local authorities, with an acknowledgment of receipt to prevent backdating.
- **Hearing and Final Order:** A hearing must be conducted where the property owner can present their case, and the minutes of the hearing must be recorded.
 - ▶ The **final demolition order** must include clear reasons explaining why demolition is the only option, whether the entire structure or only part of it is to be demolished, and the arguments presented by the property owner.

Post-Order Procedure

- **15-Day Grace Period:** After the final demolition order is issued, there must be a 15-day window before the demolition is carried out, allowing the owner to remove the structure or challenge the order in court.
- **Documentation:** Before demolition, authorities must record the condition of the property with video evidence. A detailed report, including the personnel involved in the demolition, must also be prepared.

SC's Reasoning and Legal Principles

Separation of Powers

- ▶ **Judiciary vs Executive:** The Supreme Court emphasized that it is the judiciary's responsibility to determine guilt, not the executive (government authorities). Demolition cannot be used as a punishment before a person has been tried and convicted in court.
- ▶ **Unconstitutional Punishment:** Demolishing property without judicial approval amounts to an unconstitutional punishment, as the executive cannot replace the judiciary's role.

Public Trust and Accountability

- ▶ **Accountability of Public Officials:** The Court stressed that officials who issue demolition orders must be held accountable. High-handed actions by the state, like demolishing properties without following due process, undermine public trust and must be corrected.
- ▶ **Transparency:** The guidelines aim to ensure transparency in government actions and prevent arbitrary decisions that could harm innocent people.

Right to Shelter

- ▶ **Protection of Innocent Lives:** The Supreme Court reinforced that the **right to life under Article 21** of the Constitution includes the **right to shelter**.

Demolishing the property of an accused person could unfairly affect other family members who are innocent.

- ▶ **Targeting Specific Properties:** The Court noted that demolitions should not appear to target specific individuals or families as a form of collective punishment. When similar violations in the area are ignored, it suggests an improper motive.

STATE OF FOOD AND AGRICULTURE 2024

Context

The **State of Food and Agriculture 2024** report by the **Food and Agriculture Organization (FAO)** of the United Nations highlights the hidden costs of agrifood systems around the world. For India, these costs are particularly significant, reaching around **USD 1.3 trillion** annually. These costs are not directly reflected in the price of food but are felt by society, impacting public health, the environment, and social well-being.

Key Findings for India

■ Dietary Risks and Health Costs:

- ▶ A large part of India's hidden costs comes from **unhealthy diets**. High consumption of **processed foods, sugars, salt, and additives**, alongside low consumption of healthy foods like **fruits, vegetables, and whole grains**, contributes to major **health problems**.
- ▶ These dietary habits are linked to **non-communicable diseases (NCDs)** like **heart disease, diabetes, and stroke**.
- ▶ Specifically, unhealthy dietary patterns in India lead to a hidden cost of **\$128 billion** due to the overconsumption of processed foods and **USD 846 billion** due to low intake of plant-based foods and healthy fats.

■ Impact of Unhealthy Diets:

- ▶ The report notes that the global trend of **unhealthy eating**—which includes high sugar and salt intake, and low consumption of healthy, plant-based foods—is responsible for **73%** of the total hidden costs in India.
 - The overall health impacts from these dietary risks are a key driver of economic loss, as they contribute to **lower labor productivity** and **increased healthcare costs**.
- **Social Costs:** India's agrifood systems also face social costs, including **poverty among food system workers**. These workers often suffer from low wages and poor working conditions, contributing to **inequality** within the agrifood sector.
- **Environmental Costs:** India's food systems also have significant **environmental costs**. These include the **emission of greenhouse gases** from food production and transport, **nitrogen runoff**, and the environmental

damage from harmful land-use practices, like deforestation for agriculture.

India's Position Globally

- India ranks as the **third highest** in the world for hidden costs, behind **China** and the **United States**. Here's how it compares:
 - ▶ **China:** USD 1.8 trillion
 - ▶ **United States:** USD 1.4 trillion
 - ▶ **India:** USD 1.3 trillion
- Globally, the total hidden costs of agrifood systems amount to about **USD 12 trillion** annually. The majority of these costs (around **70%**, or **USD 8.1 trillion**) stem from **unhealthy diets** that lead to diseases and reduced productivity.

Hidden costs

Hidden costs refer to any costs related to food production, consumption, and distribution that aren't included in the market price of food. These costs are typically paid by society as a whole, rather than individual consumers or businesses.

Key Recommendations from the Report

The report calls for **collective action** to address these hidden costs and transform food systems globally. Here are some key recommendations:

- **Incentives for Sustainable Practices:** Governments should provide **financial and regulatory incentives** to encourage sustainable food production and reduce environmental harm, such as **greenhouse gas emissions** and **nitrogen pollution**.
- **Promoting Healthier Diets:** Policymakers should create programs to make **healthy, nutritious foods** more affordable and accessible to people, especially in low-income households.
- **Environmental Protection:** Incentivize actions that reduce environmental harm, such as **certification and labeling** for sustainable food products, voluntary standards for food companies, and industry-wide initiatives to promote sustainability.
- **Consumer Empowerment:** Providing consumers with **clear, accessible information** about the **environmental, social, and health impacts** of their food choices is crucial. This would allow consumers to make more informed decisions and contribute to better food system outcomes.

About State of Food and Agriculture (SOFA)

- The **State of Food and Agriculture (SOFA)** is an **annual flagship report** published by the **Food and Agriculture Organization (FAO)** of the United Nations.

- The report provides **in-depth analysis** and **insights** into key issues affecting global **food and agriculture systems**.
- **SOFA 2024** delves into the **true cost of food**, emphasizing the need for agrifood systems to be **more inclusive, resilient, and sustainable**.
- The report stresses that food systems must consider not only market prices but also the **economic, social, and environmental** costs that are often **hidden**.

- The investigation found that the food delivery platforms' actions, such as **imposing exclusivity and price parity requirements**, harmed the overall fairness of the market and restricted competition.
- **Q-Commerce under Scrutiny:** Apart from food delivery, both Zomato and Swiggy have expanded into **quick commerce (q-commerce)**, offering grocery deliveries within 10 minutes. The retail distributors' association has also raised concerns about **predatory pricing** in this new sector, which means offering products at a loss to eliminate competition.

CCI'S INVESTIGATION INTO ZOMATO AND SWIGGY

Context

In 2022, the **National Restaurant Association of India (NRAI)** filed a complaint against Zomato and Swiggy, two of India's largest food delivery platforms, accusing them of **anti-competitive practices** that harmed other restaurants and disrupted **fair market competition**. The **Competition Commission of India (CCI)**, which monitors business practices to ensure fair competition, launched an investigation into the matter.

What are the issues?

- The NRAI's complaint highlighted two main issues:
- **Exclusivity Contracts:** Zomato and Swiggy allegedly entered into exclusive agreements with certain restaurants. In exchange for offering lower commission fees, these platforms required some restaurants to list only on their platforms, making it harder for other food delivery services to compete.
 - ▶ For example, Swiggy ran a program called "Swiggy Exclusive", where it promised business growth to restaurants that only partnered with it. Though this program was claimed to be phased out in 2023, it might return under a new name, "Swiggy Grow", targeting restaurants in smaller cities.
 - ▶ These exclusivity deals concentrated market share among a few platforms, hurting competition.
- **Price Parity Requirements:** Both Zomato and Swiggy imposed price parity clauses on restaurants. This meant that restaurants had to match their prices across platforms, preventing them from offering cheaper prices on other food delivery apps.
 - ▶ Swiggy reportedly threatened to lower the ranking of partner restaurants if they failed to maintain price parity.
 - ▶ Zomato also enforced discount restrictions and penalized restaurants that violated these conditions.

CCI's Findings:

- The **Competition Commission of India** concluded that these practices hindered competition in the food delivery market by favoring certain restaurants over others and reducing consumer choice.



FACT BOX

Competition Commission of India (CCI)

- The Competition Commission of India (CCI) is a **statutory body** of the Government of India responsible for enforcing the **Competition Act, of 2002**, it was duly constituted in March 2009.
- The **Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act)** was repealed and replaced by the Competition Act, 2002, on the recommendations of the **Raghavan committee**.
- **Composition:** The Commission consists of one Chairperson and six Members who shall be appointed by the Central Government.

The Competition Act, of 2002:

- The Competition Act, 2002, regulates competition in the Indian market and prohibits anti-competitive practices such as cartels, abuse of dominant market position, and mergers and acquisitions that may have an adverse effect on competition.
- The Act has been amended by the **Competition (Amendment) Act, 2007**.
- The **Competition Commission of India (CCI)** is responsible for implementing and enforcing the Act.
- Judicial bodies:
 - ▶ The **Competition Appellate Tribunal** is a **statutory body** created in accordance with the Competition Act, 2002 to hear and regulate on appeals against any rules made, decisions made, or orders made by the Competition Commission of India.
 - ▶ The government replaced the Competition Appellate Tribunal with the **National Company Law Appellate Tribunal (NCLAT) in 2017**.

Key-Terms

- **Predatory Pricing:** Predatory pricing occurs when a company sets prices below cost to drive competitors out of the market, with the intention of raising prices once competition is eliminated.

- **Cartels:** Cartels are illegal associations of businesses or countries that collude to fix prices, control production, or limit competition in a specific market.
- **Mergers:** Mergers involve the combination of two or more companies, which can sometimes reduce market competition, prompting regulatory scrutiny to prevent monopolistic outcomes.
- **Price Discrimination:** Price discrimination involves charging different prices to different customers for the same product or service, and while not always illegal, it can harm competition if it leads to market distortion.
- **Price Fixing Agreements:** Price fixing occurs when competitors agree to set prices at a specific level, eliminating competition and artificially inflating prices, violating antitrust laws.

THE EVOLVING DYNAMICS OF INDIA'S GIG ECONOMY

Context

India's gig economy has seen dramatic growth in recent years, driven by the **rise of digital platforms in sectors such as food delivery, ride-hailing, e-commerce, and freelance services**. This growth has brought both economic opportunities and regulatory challenges, highlighting the urgent need for labor protections and fair wages.

The Rise of Gig Work in India

- As of 2024, India has approximately 7.7 million gig workers, with projections that this number could soar to 23.5 million by 2030.
- Gig work is typically characterized by **short-term, flexible contracts**, where workers are classified as **independent contractors** rather than full-time employees.
- In India, the gig economy has been seen as a crucial component of the **informal sector**, already a significant part of the country's workforce, with **85%** of people employed in informal or casual jobs.
- **Benefits:** Flexibility, enabling individuals to work according to their own schedules; independence to work
- **Disadvantages:** However, this flexibility comes at a cost: higher work hours than regular workers; loss of work-life balance and exhaustion; **lack of labor protections**, such as **minimum wage guarantees, health benefits, and social security**, which are usually provided to formal employees.
 - **Limited progress on social security:** While the **Code on Social Security** aimed to address this by mandating benefits like life insurance and maternity support for gig workers, the progress has been slow, and the impact remains limited.
 - **Wage Fairness Debate:** Wage fairness remains one of the most contentious issues in India's gig economy. Operating on a commission-based model means payment per task rather than a fixed salary. While this model allows for high earnings during periods of peak demand, it also leaves workers vulnerable to income fluctuations

Women in the Gig Economy (Potential for Women's Empowerment)

- The gig economy offers a unique opportunity to **formalize women's participation** in the labor market.
- Women in the informal sector often face significant barriers to formal employment, including **lack of access to jobs, discriminatory practices, and unsafe working conditions**.
- Gig work, with its **flexibility and accessibility**, can help women gain **economic independence** and **social mobility**.
- However, to truly harness this potential, targeted policies are required:
 - **Safe Working Conditions:** Ensuring that women can access gig jobs without fearing for their safety.
 - **Support for Work-Life Balance:** Offering **flexible work arrangements** and enhanced **social protections** to make gig jobs more accessible and sustainable for women.

Regulatory Developments

- **Code on Social Security (2020)** marked a significant policy milestone by extending social security benefits to gig workers. The legislation mandates that platform companies contribute to schemes covering life and disability insurance, health benefits, and old-age protection.
- **Delhi High Court Ruling (2024):** In a landmark case, the Delhi High Court ruled that **Swiggy delivery executives** should be classified as **employees** and be entitled to benefits such as **health insurance** and **paid leave**. This ruling could set a precedent for how courts address the legal status of gig workers and may signal a shift toward greater **worker protection** in India's gig economy.
- **Minimum Wage Guidelines (2023):** The government introduced **minimum wage guidelines** for gig workers in 2023, but enforcement has been challenging. Platforms argue that commission-based models do not align with traditional wage structures, and sector-specific wage regulations may be needed.
- **Health insurance:** In September 2024, the Indian government launched a pilot initiative to provide health insurance for gig workers under the **Employees' State Insurance (ESI) scheme**, aiming to cover one million workers by 2025.

SUSTAINABILITY IN INDIA'S AGRICULTURAL COMMODITY EXPORTS

CONTEXT

- India has emerged as one of the **world's largest agricultural exporters**, with exports valued at USD 53.1 billion in 2022-2023, a remarkable six-fold increase from USD 8.7 billion in 2004-2005.
- However, as agricultural exports grow rapidly, there persists multiple challenges to the **'sustainability'**.

What is the status of India's agricultural export?

- India is one of the **world's largest agricultural product exporters**. The Indian agricultural export is valued at USD 53.1 billion in 2022-2023, up from USD 8.7 billion in 2004-2005, a six-fold increase in less than two decades.
- **Why it matters (Significance):** For an economically developing economy like India, exports play a significant role in strengthening the economy by increasing revenue, foreign exchange, and transactional options.
- **Challenges/Concerns:** The rapid surge in exports poses multiple challenges to the sustainability of the production, processing, and distribution systems of the respective commodities. This involves addressing ecological, economic, and social factors to promote long-term sustainability in agriculture, especially for commodities like tea, sugar, and millets.

What is Sustainability in Agriculture?

- A truly sustainable agricultural commodity is not just economically viable but also ecologically and socially responsible. It must be built on three pillars:
 - ▶ **Ecological Sustainability:** Ensuring the conservation of natural resources, preventing land degradation, and promoting biodiversity.
 - ▶ **Economic Sustainability:** Ensuring that the agricultural system is profitable and supports livelihoods without over-exploiting resources.
 - ▶ **Social Sustainability:** Promoting fair labor practices, workers' rights, and social equity in the agricultural sector.
- All of these need strong governance and policies to ensure long-term viability.

- Sustainability should not only focus on agricultural production but should also encompass the entire lifecycle, including pre-sowing, production, and post-harvest stages.
 - ▶ **For example,** sustainability challenges in tea and sugar highlight the need for more comprehensive approaches that address environmental and social issues across all stages of production and trade.

Case Studies: Sustainability Challenges in Key Commodities

▣ Tea

- ▶ **Export and Production:** India is the world's fourth-largest tea exporter and second-largest producer, with tea exports valued at over USD 793 million in 2022-2023. However, there are significant sustainability challenges within the tea industry:
 - ◆ **Human-Wildlife Conflicts:** Around 70% of tea plantations are located near forests, which are migration routes for elephants. These interactions can lead to crop damage and conflicts.
 - ◆ **Chemical Use:** Pesticides constitute up to 85% of pesticide use in tea plantations, resulting in chemical residues that pose health risks like cancer and neurotoxicity.
 - ◆ **Labor Issues:** Many tea plantation workers, especially women, face underpayment and unsafe working conditions, with poor enforcement of labor laws. These issues highlight the need for better management practices, stricter pesticide regulations, and improved labor conditions.

▣ Sugar

- ▶ **Water Usage and Environmental Impact:** India is the second-largest sugar producer globally, with sugar exports growing by 291% between 2013-2014

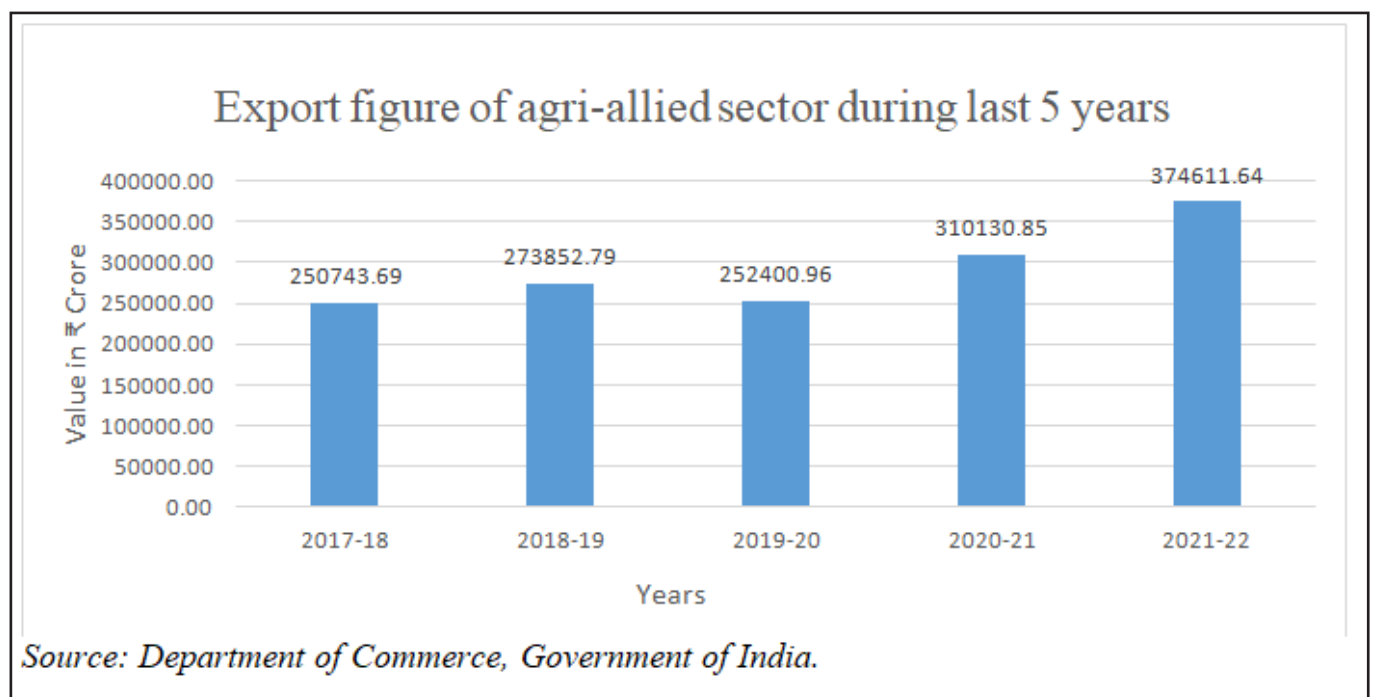


Figure No. 01

and 2021-2022. However, sugar production has severe environmental consequences:

- ◆ **Water Depletion:** Sugarcane requires vast amounts of water, with 1 kg of sugar requiring between 1,500-2,000 liters of water. This contributes to the over-extraction of groundwater, particularly in states like Maharashtra and Karnataka, leading to water shortages for other crops.
- ◆ **Biodiversity Loss:** Natural ecosystems like grasslands and savannahs have been converted into sugarcane fields, leading to biodiversity loss and increased pressure on water resources.
- ◆ **Labor Issues:** The sugar industry also faces labor challenges, with workers in harsh conditions and exposed to extreme heat, particularly in the context of rising temperatures.

■ Millets:

- ▶ **Ecological and Social Benefits:** Millets present a more sustainable option for both domestic consumption and export. Millets are resilient to drought conditions, require fewer inputs, and improve soil health. Their rise in popularity is demonstrated by a significant increase in exports from USD 26.97 million in 2020-2021 to \$75.45 million in 2022-2023.
- ◆ **Environmental Impact:** Millets use fewer water resources compared to sugarcane or rice and help preserve soil quality, making them an environmentally friendly crop.
- ◆ **Social Impact:** Millets also provide nutritional security, especially for rural communities, and are less resource-intensive, contributing to a more resilient agricultural system.

Government Initiatives to promote agriculture export

- **Agriculture Export Policy 2018 (AEP):** It is a comprehensive Agriculture Export Policy (AEP) to promote exports of agricultural products. The key objectives are to diversify export basket and destinations, to boost high value-added agricultural exports, to promote indigenous, organic, traditional, and non-traditional Agri products exports, to provide an institutional mechanism for pursuing market access and to enable farmers to get the benefit of export opportunities in overseas market.
- **Financial Assistance Scheme (FAS):** FAS is the export promotion scheme by the **Agriculture and Processed Food Products Export Development Authority (APEDA)** to assist businesses in export infrastructure development, quality development and market development.
- **Ministry of Commerce & Industry scheme:** The Department of Commerce under the Ministry of Commerce & Industry has also initiated several schemes to promote exports, including the

- ▶ Trade Infrastructure for Export Scheme (TIES)
- ▶ Market Access Initiatives (MAI) Scheme
- **Agriculture and Processed Food Products Export Development Authority (APEDA):** APEDA was formed in 1986 for the development of the exports of the agriculture industry in India. The main functions of the authority are the
 - ▶ registration of people as exporters
 - ▶ fixing standards and specifications for the scheduled products
 - ▶ carrying out inspections
 - ▶ collecting statistics and providing information
 - ▶ training and advisory services to the exporters
- **Others:** In addition, assistance to the exporters of agricultural products is also available under the Export Promotion Schemes of APEDA, Marine Products Export Development Authority (MPEDA), Tobacco Board, Tea Board, Coffee Board, Rubber Board and Spices Board. Further, to boost honey exports, India has made NMR (Nuclear Magnetic Resonance) testing mandatory for honey exported to the USA.

TAMIL NADU'S WIND ENERGY POTENTIAL AND THE CHALLENGES OF REPOWERING

CONTEXT

Tamil Nadu, one of India's pioneering states in wind energy generation, has long been a leader in installing wind turbines. However, many of its wind turbines, some over 30 years old, are becoming less efficient, prompting the state government to introduce the "**Tamil Nadu Repowering, Refurbishment and Life Extension Policy for Wind Power Projects - 2024**" to address the issue. However, the policy has faced opposition from wind energy generators, who have approached the Madras High Court, highlighting concerns that the policy does not adequately promote wind energy generation.

Wind Energy Capacity and Potential in India

- India is one of the leading countries in the world for wind energy, ranking fourth globally for installed wind energy capacity.
- According to the **National Institute of Wind Energy (NIWE)**, India has the potential to generate up to **1,163.86 GW of wind power at 150 meters above ground level.**
 - ▶ At the more typical turbine height of 120 meters, the wind energy potential stands at 695.51 GW, of which 68.75 GW is from Tamil Nadu.

- Currently, India is harnessing only **about 6.5% of its wind potential at the national level**, with Tamil Nadu utilizing around 15% of its own wind energy potential.
 - ▶ The states of Gujarat, Tamil Nadu, Karnataka, Maharashtra, Rajasthan, and Andhra Pradesh collectively contribute 93.37% of India’s installed wind energy capacity.
 - ▶ Tamil Nadu, in particular, has been a major contributor to India’s wind energy capacity.
 - ◆ With over 10,600 MW of installed wind energy capacity, it holds the second-largest installed wind power capacity in the country, behind Gujarat.
 - ◆ However, much of the state’s wind capacity consists of small turbines (less than 1 MW), some of which are over 30 years old.

What Is Repowering and Refurbishing?

- Wind turbines have a finite lifespan, and many older turbines, particularly those installed before 2000, are becoming inefficient. To address this, the wind energy sector employs two key processes:
- Repowering: This involves replacing old, small-capacity turbines with newer, larger-capacity ones. For example, turbines that are less than 2 MW in capacity can be replaced with turbines that have a capacity of 2 MW or more. Repowering can increase the power output of a site and improve efficiency.
- Refurbishing: This process involves upgrading existing turbines without replacing them entirely. Refurbishment can include replacing blades, increasing the height of the turbines, or installing more powerful gearboxes, thus enhancing the energy generated.
- Life Extension: Older turbines that are still operational but have reduced efficiency can be given a life extension by updating components or improving safety measures to extend their operational lifespan.
- The Ministry of New and Renewable Energy (MNRE) and National Institute of Wind Energy (NIWE) have estimated that repowering has the potential to generate an additional 25.4 GW if smaller, underperforming turbines (less than 2 MW) are replaced or refurbished.

INDIA’S CARBON MARKET (BOOST FROM COP29 AGREEMENT)

Context:

India’s plan to set up a national carbon market received a significant boost at the **29th Conference of the Parties (COP29)** in Baku, Azerbaijan. At this climate conference, the **United Nations Framework Convention on Climate Change (UNFCCC)** ratified key rules for a **global carbon trading mechanism** under the **Paris Agreement**.

Key-Takeaways from COP29

○ Ratification of Article 6.4 Rules

- ▶ The **COP29** conference saw a **consensus on rules** for projects to qualify for carbon credits under **Article 6.4** of the **Paris Agreement**.
- ▶ Article 6 enables countries to meet their **Nationally Determined Contributions (NDCs)**—the climate targets each country sets to reduce emissions—through **market-based mechanisms**, such as carbon credits.
- ▶ The approval of these rules ensures that **carbon credits** can now be issued, traded, and used under the UNFCCC framework to **offset emissions** and support national climate commitment.

○ Global Carbon Market and Integrity

- ▶ The ratified rules are designed to ensure that the international carbon market operates with **integrity**—meaning the emission reductions achieved are **real, additional, verified, and measurable**.
- ▶ This aims to **increase demand for carbon credits**, facilitating climate action and investment in emission-reduction projects, especially in developing countries.

○ India’s Delayed Carbon Market Launch

- ▶ India had faced delays in setting up its own carbon market due to the **non-finalisation of rules under Article 6**. Indian officials have projected that India’s **carbon market** could begin operations by **late 2025 or 2026**, three years after the government authorized the **Bureau of Energy Efficiency (BEE)** to create the necessary mechanisms.
- ▶ India has been keen on using Article 6-compliant markets to channel investments in emission-reduction projects, leveraging cost-effective mitigation strategies.

○ Article 6: Key Framework for Global Carbon Markets

- ▶ **Article 6** of the **Paris Agreement** allows countries to achieve their emission reduction targets through international cooperation, using **market-based mechanisms**.
- ▶ Article 6.4, approved at COP29, establishes a **carbon crediting mechanism** where emission reductions can be traded internationally.
- ▶ These credits will be used by countries to meet their climate goals under the **Paris Agreement**, while also allowing companies to comply with their national regulations.

What is Carbon Market?

- Carbon markets, also known as **emissions trading mechanisms**, are trading systems in which **carbon credits** are sold and bought.

- It is a mechanism that internalises the cost of **greenhouse gas (GHG) emissions** in goods and services.
- Companies or individuals can use carbon markets to compensate for their greenhouse gas emissions by purchasing carbon credits from entities that remove or reduce greenhouse gas emissions.
- There are broadly two types of carbon markets:
 - Compliance markets** are created as a result of any national, regional and/or international policy or regulatory requirement.
 - Voluntary carbon markets** (national and international) refer to the issuance, buying and selling of carbon credits, on a voluntary basis.
- Compliance Procedure:** In August 2024, the **Bureau of Energy Efficiency (BEE)**, responsible for implementing CCTS, released the scheme's compliance procedures. However, specific emission targets are still to be announced.

▣ Purpose of a Carbon Market in India

- The goal is to move towards a more efficient use of energy, switching from fossil fuels to renewable energy as power generation increases.
- Nationally Determined Contributions (NDCs):** This scheme is part of India's commitment under the Paris Agreement to reduce emissions intensity by 45% from 2005 levels by 2030.
- Net-Zero Target:** India has also pledged to become a **net-zero emitter** by 2070.
- India is the **world's third-largest carbon emitter**, contributing 3% to the global greenhouse gas emissions in 2021.

Current State of Carbon Markets in India

- Globally, there are **over 28 emission trading systems** in existence, and plans are in place for more than 21 additional national and sub-national emission trading markets. Meanwhile, India is actively developing a framework for its domestic carbon market.
- India currently operates two market-based emission reduction schemes: **the Perform, Achieve and Trade (PAT) scheme and the Renewable Energy Certificates (REC) system.**
 - PAT scheme** targets energy-intensive industries such as **aluminium, cement, chlor-alkali, fertiliser, iron and steel, paper and pulp, railways, thermal power and textile**. Under this scheme, the government sets energy reduction goals, known as **specific energy consumption (SEC)**, for companies in particular sectors. If a company uses less energy per unit of production than the established targets, it can earn certificates (ESCerts) as a reward for saving energy. The earned ESCerts can be traded on Power Exchanges and purchased by other units participating in the PAT scheme to fulfill their compliance needs.
 - REC system** operates under the **Renewable Purchase Obligation (RPO)**, which mandates electricity generators to produce a certain percentage of their total power from renewable sources like solar and wind, etc. These certificates can be traded and are intended to promote the use of renewable energy sources.

Carbon Credit Market and India's Role

- India is expected to benefit from carbon markets by attracting **climate finance**, especially in sectors like **energy, industry, and clean technology.**
- India is hoping to **reduce emissions** while promoting **economic growth** through the trade of carbon credits in the international market.
- As per the **UN Climate Change**, the climate finance needs of **98 nations** are estimated at **\$500 billion annually**, with **Article 6** potentially providing **\$250 billion** of that amount, mainly through cross-border cooperation and investments.

Global Carbon Budget (GCB)

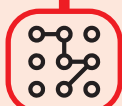
- Carbon emissions** from fossil fuels are set to rise by **0.8% in 2024** compared to 2023. This is a slower rise than in **2023**, when emissions increased by **1.2%** over 2022.
- China** (31%), the **United States** (13%), **India** (8%), and the **EU-27** (7%) contribute the largest share of global **fossil CO₂ emissions**. Together, they account for **59%** of all global emissions.
- Carbon Emissions by Region and Country**
 - China** is the largest emitter, expected to release **12 billion tonnes of CO₂** in 2024, followed by **India** with **3.2 billion tonnes**, and the **United States** with **4.9 billion tonnes**.
 - India's emissions** are expected to increase by **4.6%** by the end of 2024, while **China's** are expected to rise by just **0.2%**.
- Per-Capita Emissions:** Global **per-capita emissions** (average emissions per person) were **1.3 tonnes** of CO₂ in 2023. However, there are large differences across countries:
 - US:** 3.9 tonnes per person
 - China:** 2.3 tonnes per person
 - EU-27:** 1.5 tonnes per person
 - India:** 0.6 tonnes per person
- Impact of Fossil Fuels:** The use of **coal, oil, and gas** is expected to slightly increase in 2024, with coal emissions rising by **0.2%**, oil by **0.9%**, and gas by **2.4%**. The concentration of **CO₂** in the atmosphere is expected to reach **422.5 ppm (parts per million)** in 2024, which is **52% higher than pre-industrial levels**.
- The 1.5°C Target is in Danger**
 - The report warns that the **remaining carbon budget** (the amount of CO₂ that can be emitted without exceeding the 1.5°C global temperature rise) is rapidly depleting.
 - The global temperature has already **crossed the 1.5°C mark** (relative to pre-industrial levels) in January 2024.
 - There is now a **50% chance** that the remaining carbon budget will be exhausted in about **six years**, making it very difficult to meet the **Paris Agreement's** goal of limiting warming to **1.5°C**.

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SECTION - B

QUICK BYTES

CHAR DHAM YATRA
(UTTARAKHAND)

CONTEXT

The 192-day Char Dham Yatra in Uttarakhand, comprising Badrinath-Kedarnath-Gangotri-Yamunotri shrines located about 3,000 metres above sea level, witnessed death of 246 pilgrims this year because of health-related complications.

About

- Char Dham, is a four-part pilgrimage tour of Hindu religious sites in India.
- The Chardham Yatra Uttarakhand includes four holiest destinations of the Hindus:
- Badrinath:** Badrinath, home to the sacred Badrinarayan Temple, is dedicated to Lord Vishnu.
- Kedarnath:** Situated approximately 11758 feet (3584 metres) above sea level, it is part of Uttarakhand's Rudraprayag district. Amidst the snow-covered, towering mountains close to Chorabari Glacier, the Mandakini River flows in front of the Kedarnath shrine.
- Gangotri:** The temple of Gangotri is located close to the "Bhagirath Shila," the sacred rock where King Bhagiratha offered prayers to Lord Shiva. The Ganga river's true source is 19 kilometres from Gangotri, at Gaumukh in the Gangotri glacier, which is only reachable by trek.
- Yamunotri:** Yamunotri is situated at an altitude of 3,293 meters above sea level and is the source of the Yamuna River, one of the most important rivers in northern India. The temple dedicated to the goddess Yamuna is the main attraction of the town and is surrounded by natural hot water springs and beautiful mountain ranges.

Government Initiatives

- Char Dham Pariyojana:** The Ministry has taken up separate programme for connectivity Improvement for Char-Dham (Kedarnath, Badrinath, Yamunotri & Gangotri) in Uttarakhand.
- eSwasthya Dham portal** is a portal which helps in monitoring the Char Dham Yatra pilgrim's health parameters. As a result, it ensures the smooth journey of pilgrims visiting Yamunotri, Gangotri, Kedarnath, and Badrinath.

INDIA-BANGLADESH
COOPERATION ON LAND
PORTS AND BORDER
INFRASTRUCTURE

CONTEXT

During the **6th Subgroup meeting** of the **Land Port Authority of India (LPAI)** with the **Bangladesh Land Port Authority (BLPA)**, India and Bangladesh decided to enhance cooperation in building infrastructure and operational efficiency at the various **land ports and check-posts** located along the **4,096-km long shared international border**.

Key-highlights of the Meeting (India-Bangladesh Land Port Cooperation)

- During the recent meeting, several key initiatives were discussed to boost infrastructure at land ports and improve trade facilitation. Among the major agenda points were:

- ▶ **Development of port facilities:** Focused on the **Gede-Darshna (West Bengal-Bangladesh)** and **Bholaganj (Meghalaya)** ports to streamline trade processes.
- ▶ **Expediting cargo clearance:** The Petrapole (West Bengal) and Agartala (Tripura) ports were identified for faster clearance of Bangladesh’s export cargo to reduce delays and enhance efficiency.
- ▶ **Construction of Integrated Check Posts (ICPs):** Both countries discussed plans for the creation of new ICPs and the improvement of existing ones. This includes the proposal for a common cargo gate at Bhomra (Ghojadanga in West Bengal) to facilitate smoother trade exchanges.

■ **Special Emphasis on Regional Connectivity**

- ▶ **Facilitating transit for Bangladeshi trucks:** Discussions took place regarding the movement of Bangladeshi trucks carrying exports to Nepal and Bhutan via ports like **Burimari and Banglabandha**. This would help Bangladesh secure additional trade routes to its landlocked neighbours.
- ▶ **Operationalising new ports:** The Sabroom (Tripura) land port was discussed for quick operationalisation to handle increased cross-border traffic. Similarly, the Tegamukh (Bangladesh)-Kawrpuchhuah (Mizoram) land port was also highlighted for development to boost connectivity between India’s northeastern states and Bangladesh.
- ▶ **24x7 operations:** There was a strong push to establish certain land ports as 24x7 operational points, which would further ease the flow of goods, making trade between the two countries more efficient and timely.

- The initiatives also fall in line with broader regional connectivity goals under frameworks like the **BBIN (Bangladesh, Bhutan, India, Nepal) Initiative** and other regional trade and infrastructure cooperation agreements.



FACT BOX

Indo-Bangladesh Border

- India shares 4096.7 Km of its land border with Bangladesh.
- **West Bengal (2217 km), Assam (262 km), Meghalaya (443 km), Tripura (856) and Mizoram (318 km)** are the States which share the border with Bangladesh.
- This is based on **Radcliffe Line** that was published on 17 August 1947 as a boundary demarcation line between India and Pakistan upon the **partition of India**.

Land Port Authority of India (LPAI)

- The Land Port Authority of India (LPAI) is a **statutory body** established under **the LPAI Act, 2010**.
- It falls under the purview of the **Border Management Department** of the **Indian Ministry of Home Affairs (MoHA)**.
- The LPAI functions under the **Union home ministry**.
- It is responsible for the efficient management of the **Integrated Check-Posts (ICPs)**.



Figure No. 01

- ▶ Border checkpoints are an integral part of border management. They are usually managed by officials responsible for inspecting and facilitating the legitimate cross-border movement of people and goods, while preventing any unauthorised passage.
- It is tasked with developing, sanitising and managing the facilities for cross-border movement, at the designated points along the international border of India.

(See Figure No. 01 on previous page)

50th CJI CHANDRACHUD RETIRES

CONTEXT

D.Y. Chandrachud, officially retired, after having served a long tenure that encompassed substantial judicial reforms and historic verdicts. He is succeeded by **Justice Sanjiv Khanna**, currently the senior-most judge in the Supreme Court.

Key-Judgments Passed by D Y Chandrachud

- **Ayodhya land dispute case:** A five-judge Constitution Bench of the Supreme Court, in a unanimous verdict in November 2019, ruled that the entire disputed land be handed over to a trust to be constituted for the construction of a Ram mandir and that Muslims be given five acres of either the acquired land near the site or at a suitable prominent place in Ayodhya for building a mosque.
- **Electoral Bonds Case:** The five-judge Constitution Bench of the Supreme Court unanimously ruled against the Union government's electoral bond scheme for political funding.
- **Decriminalisation of Section 377:** A five-judge Constitution Bench struck down IPC Section 377 to the extent that it criminalised homosexuality.
- **Abortion rights for unmarried women:** Chief Justice Chandrachud expanded the rights of unmarried women by allowing them access to abortion under the Medical Termination of Pregnancy (MTP) Act up to 24 weeks, on par with married women.
- **Decriminalisation of Adultery:** In September 2018, a five-judge Constitution Bench held that adultery is not a crime and struck it off the Indian Penal Code and held that Section 497 of the IPC was unconstitutional because it violated Articles 14, 15, and 21.
- **Lifting ban on entry of women into Kerala's Sabarimala temple:** Supreme Court struck down in 2018 a rule that disallowed girls and women in the 10-50 age group from entering the Sabarimala temple in Kerala.

- **Private Property:** The constitution bench ruled that not all private property can be deemed a material resource of the community for redistribution under Article 39(b) of the Constitution.
- **Right to Privacy:** In August 2017, a nine-judge constitution bench ruled unanimously that the right to privacy is protected as an intrinsic part of the right to life and personal liberty under Article 21.
- **Delhi government vs Lieutenant Governor:** A five-judge constitution bench ruled in May 2023 that the legislature has control over bureaucrats in the administration of services, except in areas outside the legislative powers of the National Capital Territory.

Technological Changes

- ▶ **Hybrid hearings:** A hybrid hearing is a mixture of a court hearing, where the people involved (parties, lawyers, witnesses and the Judge) attend in person, and a remote hearing.
- ▶ **Listing and mentioning of cases:** He had directed listing of 10 transfer petitions every day along with 10 bail applications before each court.
- ▶ **Paperless courts:** With an aim to minimise the usage of paper, Chief Justice Chandrachud launched e-filing for advocates, including an online appearance portal for advocates. To bring in more transparency, the Supreme Court onboarded its case data on the **National Judicial Data Grid (NJDG)**.
- ▶ **New smart courtrooms:** The Supreme Court got nine futuristic courtrooms, with modern technology, transforming into a paperless court.
 - ◆ **Judges dais** now have new smart pop screens before the judges for the document reading.
 - ◆ The law books in courtrooms have been replaced with **digital libraries**. To have seamless video conferencing, a screen of 120 inches has been placed on one of the walls of the courtroom for judges.



FACT BOX

Chief Justice of India (CJI)

- The Chief Justice of India (CJI) is the head of the judiciary and the highest-ranking judge of the Supreme Court of India.
- The role of the Chief Justice of India (CJI) is central to upholding justice and safeguarding the Constitution.
- **Appointment:** The Chief Justice of India and the Judges of the Supreme Court are appointed by the President under **clause (2) of Article 124** of the Constitution, after consultation with the judges of the Supreme Court and the high courts, as the President may deem necessary.

- ▶ However, the President is bound by the recommendation of the collegium, a body of five senior-most judges of the Supreme Court, headed by the incumbent CJI.
- **Eligibility:** The Constitution of India **does not** specify any eligibility criteria for becoming the CJI. However, **Article 124 (3)** of the Constitution lays down the qualifications for becoming a judge of the Supreme Court, which are also applicable to the CJI. According to this article, a person must be:
 - ▶ A citizen of India
 - ▶ Either a judge of a high court for at least five years
 - ▶ An advocate of a high court for at least ten years
 - ▶ A distinguished jurist in the opinion of the President
- The tenure of the CJI is until they attain the age of 65 years, or until they resign or are removed by impeachment.
- **After tenure:** Once their tenure ends, CJIs and other Supreme Court judges are prohibited from practising law in any Indian court, according to **Article 124(7)** of the Constitution.

PROJECT TO MONITOR ANIMAL HEALTH

CONTEXT

The Union Government recently launched the **'Animal Health Security Strengthening in India for Pandemic Preparedness and Response'** initiative to enhance India's capacity to prevent, detect, and respond to animal health threats, thereby strengthening pandemic preparedness and response.

About the Project

- The **Animal Health Security Strengthening in India for Pandemic Preparedness and Response** project is designed to improve India's ability to prevent, detect, and respond to animal health threats, which can potentially lead to pandemics.
- The project aims to strengthen the country's **surveillance and early warning systems**, expand the **laboratory network**, and improve **data systems** for better risk analysis and communication.
- The project was approved as part of the **Pandemic Fund**, created by G20 countries in 2022 during Indonesia's presidency.
 - ▶ India's proposal received a grant of **\$25 million** out of the \$2 billion mobilized in the first round of the fund's investment.
- The project is implemented by **three agencies**: the **Asian Development Bank (ADB)**, the **World Bank**, and

the **Food and Agriculture Organisation (FAO)**.

- The project is focused on key interventions such as:
 - ▶ Strengthening **disease surveillance** and **early warning** systems
 - ▶ Upgrading **laboratories** and enhancing **vaccine manufacturing** facilities
 - ▶ Improving data systems for better **risk communication** and **analytics**
 - ▶ Enhancing **regional cooperation** on transboundary animal diseases
- The ultimate goal is to prevent the transmission of **zoonotic diseases** from animals to humans, ensuring the health and well-being of vulnerable populations, and safeguarding livelihoods and nutritional security.
- By doing so, the project aims to reduce the risk of future pandemics originating from animal health issues in India's diverse animal populations, including its **536 million livestock**.



FACT BOX

Zoonotic diseases

- Zoonotic diseases originate in animals and can spread to humans.
- Infections occur through bites or contact with the infected animal's bodily fluids.
- **Virus, bacteria, fungi, prions or parasites** cause zoonoses.
- **Rabies, Ebola**, certain strains of **Swine flu, leptospirosis, brucellosis, anthrax, Zika and Ebola viruses, rickettsioses, plague, chikungunya, dengue and Japanese encephalitis**, are the most notorious zoonotic diseases.
- **World Zoonosis Day** is observed annually on **July 6** to commemorate the first immunization against a zoonotic illness.

LEAD CONTAMINATION IN TURMERIC

CONTEXT:

A new study has found dangerously **high levels of lead in turmeric** (much higher than the permissible limits) sold in India, Nepal, and Pakistan.

Key Findings of the Study:

- Lead levels in some turmeric samples exceeded **1,000 micrograms per gram (µg/g)**.
- **Permissible Limit:**
 - ▶ The permissible limit set by India's **Food Safety and Standards Authority (FSSAI)** is **10 µg/g**.
 - ▶ The World Health Organization (WHO) maintains that

no amount of lead is safe for human consumption.

Health Risks:

- ▶ Lead is a naturally occurring toxic metal found in the Earth's crust. It is a **toxic heavy metal** that disrupts **metabolic functions**, particularly affecting brain development, intelligence, and overall health.
- ▶ Lead exposure can result in **lead poisoning**, which can cause **intelligence loss, learning difficulties, and behavioral issues**, especially in children.
- ▶ Studies show that children with **blood lead levels** as low as **3.5 µg/dL** can face cognitive and behavioral issues.
- ▶ **Lead chromate**, a yellow pigment used in paints, rubber, and plastics, is suspected to be the main source of lead contamination in turmeric. It is often used to enhance the color of turmeric and make lower-quality roots look more appealing.



FACT BOX

Turmeric

- Turmeric, also known as **Indian saffron**, is a perennial herb, native of South Asia.
- It is used as a condiment, dye and part of religious ceremonies. It is a major part of Ayurveda, Siddha medicine, traditional Chinese medicine, Unani and the animistic rituals of Austronesia peoples.
- India is **world largest producer, consumer and exporter of turmeric**.
- More than **30 varieties of Turmeric** are grown in India and it is grown in over 20 states in the country.
- **Largest producing states of Turmeric:** Maharashtra, Telangana, Karnataka and Tamil Nadu.
- **Crop Season:** Kharif season
- **Crop type:** Spice crop
- **Climate:** Turmeric cultivation can be done in diverse tropical regions with warm and humid climates. Ideally, it requires an annual rainfall between 1500 mm. It can be grown within a temperature range of 20 to 35°C. Slow emergence of the pseudostem and leaves may occur when the temperature is high, and humidity is low.
- **Soil:** It exhibits optimal growth in well-drained soils, particularly red or clay loam soils.
- The **National Turmeric Board** focuses on the development and growth of turmeric and turmeric products in the country.

SHORTAGE OF DAP

CONTEXT

As the wheat sowing season in Haryana has progressed, farmers across the state are grappling with the shortage

of **di-ammonium phosphate (DAP)**. Due to this, more and more growers are opting for complexes - mainly combinations of **nitrogen, phosphorus, potash, and sulphur (NPKS)** in various grades.

About DAP

- DAP is a fertiliser crucial for sowing of Rabi crops like wheat and mustard.
- DAP contains 46 per cent phosphorus (P), a nutrient crops need at the early growth stage of root establishment and development.
- It also fulfils the initial need for nitrogen and sulphur in the crops.
- DAP provides critical nutrients for crops such as wheat and mustard, that are usually sowed during the months of October and November.

Advantages:

- ▶ It provides a source of phosphorus in phosphate form, accompanied by a higher nitrogen content than MAP.
- ▶ Nitrogen is in ammonium form, which is readily-available for plant uptake.
- ▶ Higher solubility than MAP

Drawbacks:

- ▶ It produces a higher localized pH in the soil than MAP, which can hinder seed germination and nutrient uptake under certain soil conditions.
- ▶ There is greater potential for nitrogen loss than MAP when surface-applied
- **Alternatives to DAP** include complex fertilisers containing **nitrogen (N), P, potassium (K) and sulphur (S)** in varying proportions, such as 12:32:16:0, 10:26:26:0, 20:20:0:13 and single super phosphate or SSP (0:16:0:11).
 - ▶ These have much less P content compared to DAP.
- India primarily depends on imports for this essential fertiliser.
- The DAP imports are affected due to the Red Sea crisis going on since January, due to which fertiliser ships had to cover an additional distance of 6,500 kilometres through the Cape of Good Hope [circumnavigation Africa].

About Fertilisers

- Fertilisers are basically **food for crops**, containing nutrients necessary for plant growth and grain yields.
- **Balanced fertilisation** means supplying these following nutrients in the right proportion, based on soil type and the crop's own requirement at different growth stages.
 - ▶ **Primary** (N, phosphorus-P and potassium-K)
 - ▶ **Secondary** (sulphur-S, calcium, magnesium)

- ▶ **Micro** (iron, zinc, copper, manganese, boron, molybdenum)
- India is among the world's largest buyers of fertiliser, besides **China, Brazil, and the US**.
- India imports four types of fertilisers:
 - ▶ Urea
 - ▶ Diammonium phosphate (DAP)
 - ▶ Muriate of potash (MOP)
 - ▶ Nitrogen-phosphorous-potassium (NPK)

INDIA'S RETAIL INFLATION

CONTEXT

India's retail inflation surged to **6.21% in October 2023**, marking the highest level in 14 months. The inflation rate exceeded the **Reserve Bank of India's target range** of 2% to 6% for the first time since August 2023. This rise in inflation is being attributed primarily to sharp increases in food prices, especially **vegetables** and **edible oils**.

Key Findings

- **Overall Inflation Rate**
 - ▶ In October, India's retail inflation stood at **6.21%**, up from **5.49%** in September.
 - ▶ This marked a significant jump from earlier months: **3.65% in August** and **3.54% in July**.
- **Food Prices Drive Inflation**
 - ▶ The inflation in **food prices** surged to a **15-month high of 10.87%** in October, compared to **9.24% in September**.
 - ▶ Food inflation was notably higher in **urban areas (11.09%)** compared to **rural areas (10.69%)**.
- **Key Drivers of Food Inflation**
 - ▶ **Vegetables** saw the steepest price rise, with inflation reaching **42.18%**, up from **35.99%** in September.
 - ▶ **Edible oils** also saw a sharp increase in inflation, rising from **2.47% in September** to **9.51% in October**, largely due to a **27% rise in global prices** caused by supply disruptions.
- **Causes of Food Price Hikes**
 - ▶ The **surge in vegetable prices**, particularly tomatoes and onions, was driven by **unseasonal rains** and **extended monsoons** in certain parts of India.
 - ◆ The global rise in edible oil prices is due to **supply disruptions**, affecting inflation in the oils and fats sector.



FACT BOX

CPI-based Inflation or Retail Inflation

- CPI-based inflation or retail inflation **tracks changes in the retail prices of goods and services** that households typically purchase for daily consumption. This measure reflects the cost of living for consumers.
 - ▶ **Inflation Calculation:** Inflation is calculated as the percentage change in the CPI over a specific period, usually comparing the current price level with the price level from the same period in the previous year.
 - ▶ **Deflation:** If prices decrease, it is called deflation (negative inflation).
- **Role of CPI in the Economy**
 - ▶ **Macroeconomic Indicator:** CPI is used as a key macroeconomic indicator to measure inflation and monitor price stability.
 - ▶ **Central Bank's Focus:** The Reserve Bank of India (RBI) closely tracks CPI to maintain price stability and for inflation targeting.
 - ▶ **Economic Health:** CPI also provides insights into the purchasing power of the national currency, the real value of wages, and salaries.
- **Formula for calculating CPI:** $(\text{Price of basket in current period} / \text{Price of basket in base period}) \times 100$

SEBI'S PROPOSED NEW INVESTMENT PRODUCT

CONTEXT

The **Securities and Exchange Board of India (SEBI)**, the regulator for the securities market in India, has proposed the **introduction of a new investment product**. This product aims to cater to a specific group of investors who are looking for a product with a higher risk-return profile than traditional **Mutual Funds (MFs)** but are unable to afford the high minimum investment required by **Portfolio Management Services (PMS) or Alternative Investment Funds (AIFs)**.

About the new product

- This new product will be a regulated investment vehicle designed to fill the gap between **Mutual Funds and PMS/AIFs**, offering more flexibility for investors while maintaining necessary safeguards to manage risks.
- **Need for This New Investment Product:** Currently, investment vehicles in India are classified primarily into three categories based on the amount of investment required:
 - ▶ **Mutual Funds (MFs):** These are designed for retail investors with a low minimum ticket size, typically Rs

Key Differences Between MFs, PMS, and AIFs			
Feature	Mutual Funds (MFs)	Portfolio Management Services (PMS)	Alternative Investment Funds (AIFs)
Minimum Investment	Low (₹500 to ₹1,000)	High (₹50 lakh or more)	Very High (₹1 crore or more)
Investor Type	Retail Investors	High Net-Worth Individuals (HNIs)	High Net-Worth Individuals, Institutional Investors
Risk Profile	Low to Moderate	Moderate to High	High
Regulation	Regulated by SEBI	Regulated by SEBI, but with more flexibility	Regulated by SEBI, with different categories for risk
Liquidity	High (easily tradable)	Low (depends on the agreement, not easily liquid)	Low (varies based on the fund's structure)

Table No. 01

500. MFs are low-risk investments that are regulated by SEBI and provide relatively safer returns.

- ▶ **Portfolio Management Services (PMS):** These are targeted at High Net-Worth Individuals (HNIs) who can afford a minimum investment of Rs 50 lakh. PMS generally involves personalized investment strategies with more flexibility and higher risk.
- ▶ **Alternative Investment Funds (AIFs):** These funds require a minimum commitment of Rs 1 crore and are typically focused on providing high returns through investments in non-traditional assets such as private equity or venture capital.
- The gap between MFs and PMS/AIFs has left a group of investors who want higher returns than MFs but cannot afford the high entry threshold of Rs 50 lakh for PMS or Rs 1 crore for AIFs. To address this need, SEBI is proposing the creation of a new product that sits between these two categories in terms of risk and ticket size.

Mutual Funds (MFs), Portfolio Management Services (PMS), and Alternative Investment Funds (AIFs)

- **Mutual Funds (MFs):** Mutual Funds are investment vehicles where a pool of money from multiple investors is gathered and managed by a professional fund manager. These funds are invested in a diversified portfolio of stocks, bonds, or other securities, depending on the type of Mutual Fund (e.g., equity funds, debt funds, hybrid funds).

Types of Mutual Funds:

- ▶ **Equity Funds:** Primarily invested in stocks of companies.
- ▶ **Debt Funds:** Invest in bonds or fixed income securities.
- ▶ **Hybrid Funds:** Invest in both stocks and bonds.
- **Portfolio Management Services (PMS):** Portfolio Management Services (PMS) are tailored investment services provided by professional fund managers for individual investors.

Types of PMS:

- ▶ **Discretionary PMS:** The fund manager makes investment decisions on behalf of the investor.
- ▶ **Non-Discretionary PMS:** The investor makes the final decision on the investment choices, but the portfolio manager provides recommendations.
- ▶ **Ideal For: High-net-worth individuals (HNIs)** or investors who want personalized investment strategies and have a significant amount of capital to invest.
- **Alternative Investment Funds (AIFs):** Alternative Investment Funds (AIFs) are investment vehicles that invest in **non-traditional assets** such as private equity, venture capital, hedge funds, real estate, commodities, and other alternative assets.

Types of AIFs:

- ▶ **Category I:** Focus on investments in startups, social ventures, or infrastructure projects (e.g., venture capital funds).
- ▶ **Category II:** Funds that are not specified under Category I or III, and may include private equity or debt funds.
- ▶ **Category III:** Hedge funds that seek to generate high returns by using complex strategies like leverage, derivatives, etc.

UNDERWATER CURTAIN TO STOP DOOMSDAY GLACIER MELTING

CONTEXT

Scientists have proposed a bold and innovative solution to halt the rapid melting of Antarctica's **Thwaites Glacier**, also known as the "**Doomsday Glacier**," which has the potential to trigger catastrophic sea-level rise.

Key Findings and Proposals

- The **Thwaites Glacier**, located in West Antarctica, is melting rapidly due to the intrusion of warm ocean waters beneath it, causing significant ice loss.
- The glacier has been losing ice at an accelerated rate due to climate change, threatening to raise global sea levels by up to **10 feet**, endangering coastal cities like New York, Miami, Charleston, and Atlantic City.
- **Geoengineering Proposal:** Researchers have suggested a **radical geoengineering approach** to slow or stop the glacier’s melting.
 - ▶ One of the proposed methods involves **pumping seawater onto the glacier’s surface**, where it would freeze due to cold air temperatures, thickening the glacier over time.
 - ▶ Another idea involves installing a **giant underwater curtain** to prevent warm ocean waters from reaching the base of the glacier, helping to cool the bedrock and reduce melting.
- **Challenges and Costs:** While the idea has potential, it comes with several **risks** and **costs**:
 - ◆ The seawater’s **salinity** could harm the glacier’s structural integrity.
 - ◆ **Large-scale deployment** would require **immense amounts of energy** and **cost around USD 6 billion per year**.
 - ▶ Researchers acknowledge that such interventions would not be a permanent solution and would require continuous, large-scale efforts.

Thwaites Glacier

- The **Thwaites Glacier** is located in **West Antarctica**, and it spans an area of about **192,000 square kilometers**.
- It is part of the the West Antarctic Ice Sheet (WAIS). It is the widest glacier on Earth, at 80 miles (120 kilometers) wide.
- It is one of the **largest glaciers in Antarctica** and plays a crucial role in the dynamics of ice flow into the Southern Ocean.
- The Thwaites Glacier is often referred to as the “Doomsday Glacier” because of its potential to significantly increase sea levels and cause widespread flooding, making it one of the most critical glaciers to monitor and study in the context of climate change

(Figure No. 2 in bottom)

PANJE WETLAND

CONTEXT

The Panje wetland in Navi Mumbai, a 289-hectare site, has gone dry due to the blocked flow of intertidal waters, despite the state’s directive to maintain the tidal flow.

About Panje Wetland

- Panje wetland is a vast expanse of a **low-lying inter-tidal area** in Uran taluka of Raigad district in Maharashtra.



Figure No. 02

- It is bordered by the fishing villages of **Panje, Phunde, Bokadvira and Dongri**.
- Panje Wetland is the **largest migratory water bird congregation site** in Navi Mumbai and one of the **best birding sites** in Maharashtra.
- Panje typically draws 50 bird species, with around 30 being migratory. These birds, including **flamingos** from Thane Creek Flamingo Sanctuary, rely on Panje and similar wetlands for survival.
 - Other important species** include **Northern Pintail, Ruddy Shelduck, Bar and Black-tailed Godwits, Ruddy Turnstone, Glossy Ibis, Curlew Sandpiper, Kentish Plover, Slender-billed Gull and Pacific Golden Plover**.
- Panje wetland plays a critical role in supporting local fishing communities, who now face dwindling resources.

Wetlands in India

- India is home to a diverse array of wetlands, with a total of 1,307 across the country.
- Among these, 113 are recognized as significant wetlands due to their ecological importance and contribution to biodiversity.
- Within this group, 85 wetlands have been designated as **Ramsar sites**.
- These wetlands are protected under various national laws, including the
 - Indian Forest Act (1927)
 - Forest (Conservation) Act (1980)
 - Indian Wildlife (Protection) Act (1972)
- The wetlands are credited with several benefits to the local environment such as influencing the local hydrological cycle, climatic regime, water purification, flood control, and giving stability to the shoreline.
- Recent Developments in Wetland Conservation in India
 - Wetlands of India Portal
 - National Wetland Decadal Change Atlas
 - Centre for Wetland Conservation and Management (CWCM)
 - Wetlands Rejuvenation Programme
 - Integration with River Basin Management
 - National Plan for Conservation of Aquatic Ecosystems
 - Amrit Dharohar Scheme
 - MoEFCC's Wetlands Rejuvenation Programme
 - National Wildlife Action Plan (2017-2031)

HUGE DROP IN AFRICAN ELEPHANTS

CONTEXT

A recent study on the population of **African elephants** has made headlines due to the alarming decline in their numbers over the past five decades. The study, described as the most comprehensive of its kind, sheds light on the factors contributing to this decline, including **illegal hunting (poaching)** and the loss of natural habitats due to agricultural expansion.

Key Findings of the Study

- Savanna elephants** (the more common species) saw a **70% population decline** on average.
- Forest elephants** experienced an even steeper decline, with a **90% decrease** in their populations.
- There was a 77% population decrease on average at the various surveyed sites, spanning both species.

Responsible factor:

- Poaching:** Poaching, primarily for ivory tusks, has had a particularly devastating effect on forest elephants. The ivory trade is driven mainly by demand in Asia, especially China.
- Habitat Loss:** The primary cause of habitat loss is agricultural expansion, which has significantly reduced the natural areas where elephants live.



FACT BOX

African Elephant Species

- African elephants are the **largest land animals** on Earth, with males weighing up to **6,000 kilograms (13,200 lbs)** and reaching heights of **3-4 meters** at the shoulder.
- Two Species of African Elephants:**
 - Savanna Elephants (*Loxodonta africana*):** These are the larger of the two species and are found in **savanna** and **forest ecosystems** across much of sub-Saharan Africa. They are more widely distributed and have a population that is more resilient to conservation efforts.
 - Forest Elephants (*Loxodonta cyclotis*):** Smaller and with more rounded ears, forest elephants are found in **tropical forests** in central and West Africa. They are more endangered due to higher poaching pressures and habitat destruction.
- Elephants are **highly social** animals, living in family groups led by a matriarch. They are known for their **complex communication** and **advanced problem-solving abilities**.
- They have an excellent memory, which is essential for survival in their large territories and helps them remember locations of water sources and migration paths.

IUCN Conservation Status:

- ▶ **African Forest Elephant:** Critically Endangered
- ▶ **African Savanna Elephant:** Endangered

Elephants in India

- India harbors the **world's largest extant population** of the **endangered Asian elephant (*Elephas maximus*)**.
- The Asian elephant includes three subspecies:
 - ▶ Indian, or mainland (*E. maximus indicus*)
 - ▶ Sumatran (*E. maximus sumatranus*)
 - ▶ Sri Lankan (*E. maximus maximus*)
- **IUCN Status:** Endangered
- African elephants have much larger ears, which are used to dissipate body heat.
- Elephants are keystone species as well as the **Natural Heritage Animal of India**.
- India has the largest number of wild Asian Elephants. Karnataka has the highest elephant population in India.
- In India, **33 elephant reserves** have been established in 14 states that are major elephant habitats to promote conservation. These areas are under protection with the **Wild Life (Protection) Act, 1972, Indian Forest Act, 1927** and other local State Acts.

NEW JUMPING SPIDER SPECIES (OKINAWICIUS TEKDI)

CONTEXT:

A new species of jumping spider, *Okinawicius tekdi*, was discovered from Maharashtra, Atharva Kulkarni, on Baner hill in Pune city.

About the Species

- The species was named *Okinawicius tekdi* in reference to its geographical origin, with "tekdi" meaning "hill" in Marathi.
- *Okinawicius tekdi* belongs to the *Okinawicius* genus, first described in 2016.
- It shares similarities with *O. tokarensis*, a species discovered in 1987, but also has distinct features in the male and female genitalia that set it apart.

Key Features:

- ▶ A defining characteristic of *O. tekdi* is the unique structure of the **female genitalia**, with **membranous coils of copulatory ducts** lying parallel to the surface.
- ▶ The male *O. tekdi* also exhibits similarities with species from the *Afraflacilla* genus, such as *A. kurichiadensis* and *A. avadavathurensis*.

- ▶ The findings indicate the importance of studying female counterparts in related species, as few female *Afraflacilla* spiders have been documented.

PINAKA MULTI-BARREL ROCKET LAUNCHER

CONTEXT

India has been rapidly scaling up its defence manufacturing capabilities, emerging as a growing player in the global defence market. One of the most notable successes in this area has been the **Pinaka Multi-Barrel Rocket Launcher (MBRL)**, a sophisticated weapon system developed by the **Defence Research and Development Organisation (DRDO)**.

What is Pinaka MBRL?

- The Pinaka MBRL is a powerful artillery weapon system designed to deliver a large volume of fire in a short time, targeting critical enemy positions with high accuracy.
- Developed by the DRDO, this rocket system is produced by a consortium of Indian companies, including Solar Industries, Larsen & Toubro, Tata, and Ordnance Factory Board.
- The system is capable of hitting targets up to 75 kilometers and beyond, with various variants catering to different battlefield requirements.
- The Pinaka system's impressive range, firepower, and precision have earned it the nickname "India's HIMARS" (High Mobility Artillery Rocket System), drawing comparisons to the advanced artillery systems used by the U.S. Army.

Key Features of the Pinaka System

- ▶ **Battle-Proven Accuracy:** The Pinaka system offers precision, delivering heavy firepower with high positioning accuracy. It maintains one milliradian accuracy in both azimuth and elevation, allowing for pinpoint strikes on time-sensitive targets.
- ▶ **Speed and Efficiency:** The system's "shoot and scoot" capability enables it to quickly move after launching rockets, thus minimizing the risk of counter-battery fire. In just 44 seconds, it can fire 12 rockets, making it an effective tool for saturating enemy positions in a short time.
- ▶ **Advanced Features:** The Pinaka rocket launcher is equipped with auto-levelling and stabilization mechanisms, ensuring it remains steady during firing. Its inertial navigation system allows for rapid and accurate targeting, programming all 12 rockets within 20 seconds.
- ▶ **Indigenous Components:** One of the key strengths of the Pinaka system is its reliance on indigenous subsystems, developed within India. This not only enhances the system's operational reliability but also supports the country's strategic goals of self-reliance in defence manufacturing.

▫ The Pinaka System vs. HIMARS

- ▶ The Pinaka system is often compared to the High Mobility Artillery Rocket System (HIMARS), a similar weapon used by the U.S. Army.
- ▶ While both systems are designed for long-range artillery fire, the Pinaka's key differentiators lie in its cost-effectiveness and indigenous design, which make it an attractive option for countries seeking to modernize their artillery capabilities without incurring exorbitant costs.

▫ Comparative Features:

- ▶ **Range:** Both systems offer long-range capabilities, but the Pinaka can strike targets up to 75 kilometers, while HIMARS can target areas even farther, depending on the specific ammunition used.
- ▶ **Flexibility:** HIMARS is known for its modular design, capable of launching multiple types of rockets and missiles, including ATACMS (Army Tactical Missile System). The Pinaka, while highly versatile in its own right, focuses on multiple variants of rocket-based artillery for different battlefield needs.
- ▶ **Indigenous Development:** While HIMARS is manufactured by Lockheed Martin, the Pinaka is 100% indigenous, developed by DRDO and produced by several Indian private sector companies, demonstrating India's growing capabilities in high-tech defence production.

DRDO'S LONG RANGE LAND ATTACK CRUISE MISSILE (LRLACM)

CONTEXT:

The Defence Research and Development Organisation (DRDO) successfully conducted the maiden flight test of the **Long-Range Land Attack Cruise Missile (LRLACM)**.

About LRLACM

- The **Long Range Land Attack Cruise Missile (LRLACM)** is designed to enhance India's capabilities in strategic defence and long-range precision strikes.
- **Developed by:** Defence Research and Development Organisation's (DRDO) **Aeronautical Development Establishment (ADE)** in Bengaluru, with contributions from several DRDO laboratories and Indian industries.
 - ▶ **Bharat Dynamics Limited (BDL)** in Hyderabad and **Bharat Electronics Limited (BEL)** in Bengaluru were the Development-Cum-Production Partners involved in the missile's development and integration.
- **Mission Mode Project:** LRLACM is a **Defence Acquisition Council (DAC)-approved** project, sanctioned under the **Acceptance of Necessity (AoN)** procedure.
 - ▶ The project is considered a **Mission Mode Project**, which is typically used for critical defence capabilities requiring immediate operational readiness.

▫ Key Features of LRLACM

- ▶ **Launch Flexibility:** The missile is designed to be launched from **mobile ground-based systems** and **frontline ships**, offering enhanced operational flexibility. It uses a **universal vertical launch module** system, allowing for easy integration with different launch platforms.
- ▶ **Missile Design:** LRLACM is configured to be launched both from **mobile articulated launchers** on land and **naval vessels**, making it adaptable to various operational environments.

URANUS (MYSTERIES OF THE GAS GIANT)

CONTEXT:

Uranus has long been a subject of curiosity. Despite being a gas giant, it remains one of the **least explored planets**. The only spacecraft to visit it was **NASA's Voyager 2**, which flew past Uranus in 1986. However, new research suggests that the data collected by Voyager 2 might have been skewed due to unusual conditions during the flyby.

Key Findings of the Study

- This recent study published in the *journal Nature Astronomy* challenges the previous findings, suggesting that our understanding of Uranus, particularly its **magnetosphere and moon activity**, might need to be revisited.
- **Voyager 2's Flyby and Solar Wind Effects**
 - ▶ **Voyager 2's Flyby:** In 1986, Voyager 2 passed by Uranus at a distance of about **81,500 km**. During this pass, the spacecraft observed the planet's **magnetosphere**, the protective magnetic field around Uranus.
 - ▶ **Effect of Solar Wind:** However, during this flyby, Uranus was affected by a **powerful solar wind**, which caused significant changes to its magnetosphere. This weakened its typical properties, making it look quite different from the magnetospheres of other gas giants like Jupiter and Saturn.
- **Impact on Findings:** Scientists believe that if the spacecraft had passed a week earlier or later, the data could have shown a very different picture of Uranus' magnetic field.

▫ Magnetosphere of Uranus: New Insights

- ▶ **Asymmetry and Radiation:** Uranus' magnetosphere is highly **asymmetric** and has intense **radiation belts**. Unlike other gas giants, Uranus has a unique magnetic field that scientists are still trying to understand fully.
- ▶ **Revised Understanding:** The findings suggest that Voyager 2 might not have captured the true nature of Uranus' magnetic field due to the specific timing of its flyby.

Uranus research shows impact of solar storm

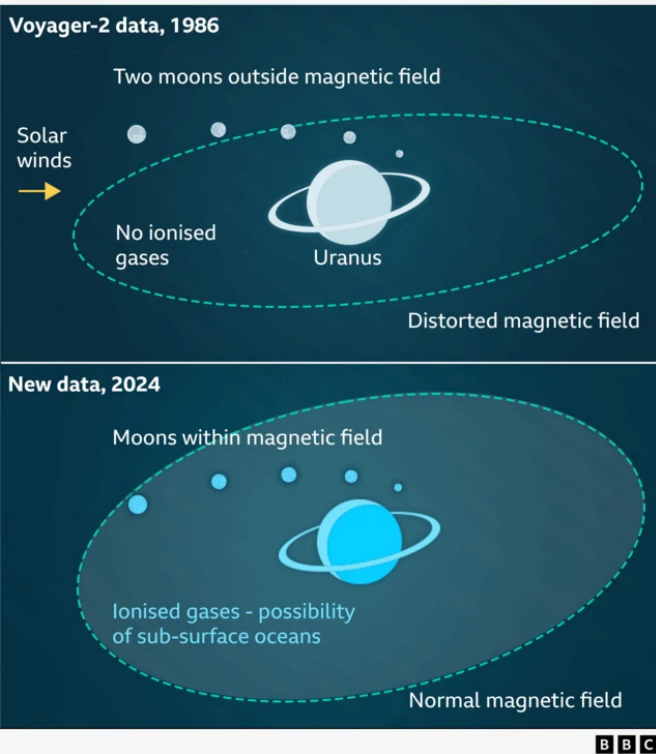


Figure No. 03

► **Implications for Uranus' Moons**

► **Moons of Uranus:** Uranus has **five major moons**, and they were previously thought to be

geologically **inactive**. The lack of plasma (charged particles) in Voyager 2's data was once seen as an indication that the planet was in a state of "quiescence" (calm and inactive).

► **New Possibilities:** However, new analysis suggests that Uranus' moons might not be as inactive as once believed. There is now speculation that some of the moons could be **geologically active**, meaning they may have ongoing internal processes like volcanoes or tectonic activity.



FACT BOX

Uranus

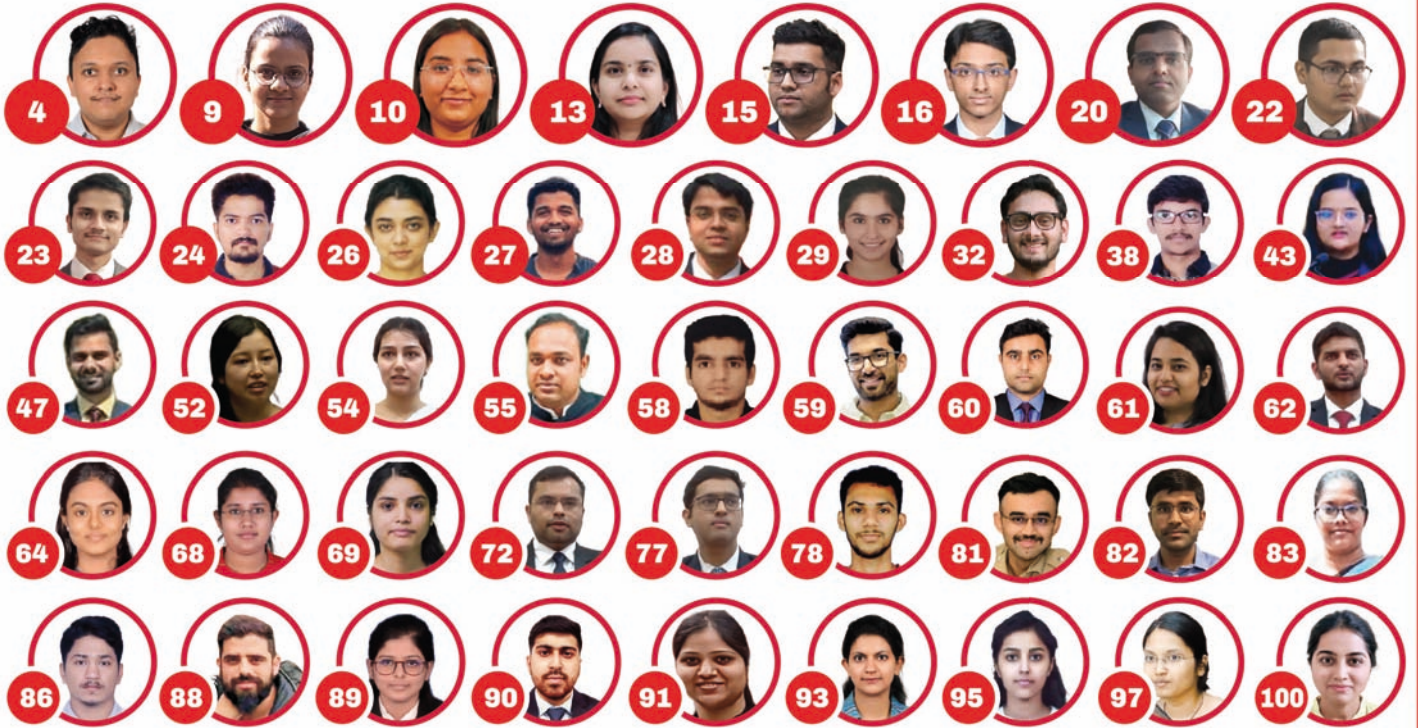
- Uranus is the **seventh planet from the Sun**, and it has the **third largest diameter** of planets in our solar system. Uranus appears to spin sideways (due to its unique tilt- 90-degree angle).
- Its dramatic tilt, which causes its axis to point nearly directly at the sun.
- The ice giant is surrounded by 13 faint rings and 28 small moons.
- The only spacecraft ever to visit Uranus was Voyager 2 in 1986, which launched in 1977 and used a rare planetary alignment that only happens every 175 years to visit all four outer planets.



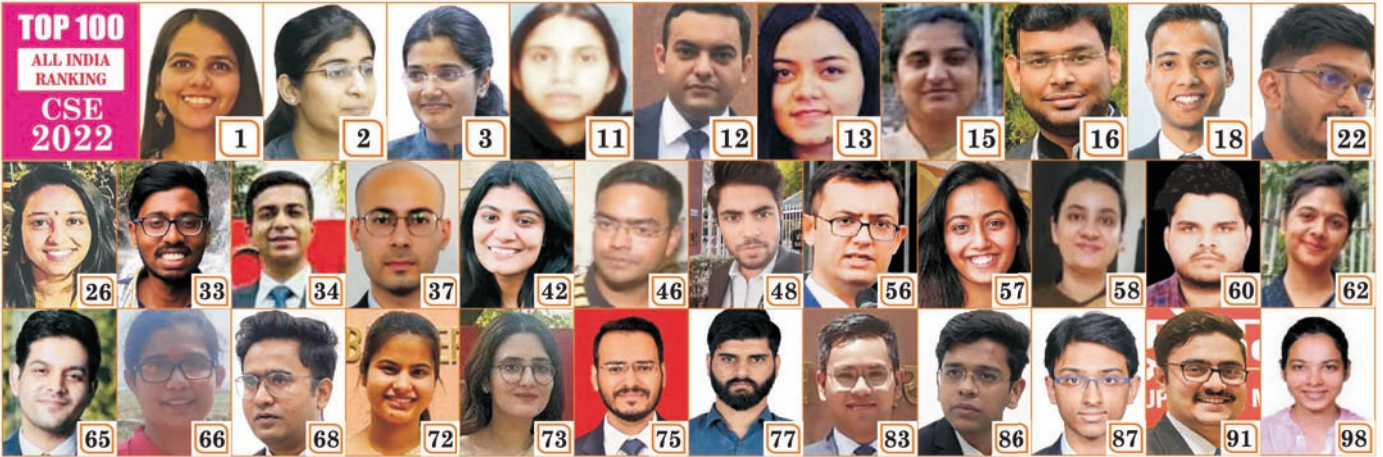


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