



## **DAILY CURRENT AFFAIRS 08-08-2024**

### **GS-1**

1. **Pyro cumulonimbus clouds: when wildfire spit storms, lightning**

### **GS-2**

2. **The Oilfields (Regulation and Development) Amendment Bill, 2024**

### **GS-3**

3. **Antitrust complaint against Google**
4. **Methane Mitigator**
5. **NDMA**

## **Pyro cumulonimbus clouds: when wildfire spit storms, lightning**

**Syllabus: GS-1; Physical Geography, GS-3: Environmental issues.**

### **Context:**

- *The wildfires currently raging in the **United States and Canada** are so intense that they have created ‘**pyrocumulonimbus**’ clouds, which have the potential to spit out thunder and spark more fires.*

### **Pyrocumulonimbus Clouds and Wildfires**

#### **What are Pyrocumulonimbus Clouds?**

- *Pyrocumulonimbus clouds are intense storm clouds formed due to extreme heat from wildfires or volcanic eruptions.*

#### **Characteristics:**

- *Can produce lightning.*
- *Generate their own thunderstorms.*
- *Reach heights of up to 50,000 feet.*
- *Produce minimal rainfall, leading to the risk of new wildfires.*

### **Formation of Pyrocumulonimbus Clouds**

#### **Extreme Heat Requirement:**

- *Not all wildfires lead to pyrocumulonimbus formation; they require extremely hot conditions.*
- *Example: Australian bushfires (2019-2020) where temperatures exceeded 800°C.*

#### **Process:**

##### **Heat and Upward Movement:**

- *Intense heat from the fire causes the surrounding air to rise.*
- *This air, carrying water vapour, smoke, and ash, ascends into the atmosphere.*

##### **Cooling and Condensation:**

- *As the air rises, it expands and cools.*
- *Water vapour condenses on ash particles, forming a grey or brown pyrocumululus cloud (fire cloud).*

### **Evolution to Pyrocumulonimbus:**

- *If sufficient water vapour is present and the upward movement intensifies, the pyrocumululus cloud evolves into a pyrocumulonimbus cloud.*

### **Impact of Pyrocumulonimbus Clouds**

#### **New Wildfires:**

- *The lightning produced can ignite new fires far from the original blaze.*

#### **Unpredictable Fire Spread:**

- *Strong winds triggered by these clouds can accelerate and alter the fire's spread.*

### **Increasing Frequency of Pyrocumulonimbus Events**

#### **Recent Observations:**

- *Before 2023, an average of 102 pyrocumulonimbus events were recorded globally per year, with 50 occurring in Canada.*
- *In 2023, Canada alone recorded 140 such events, indicating a significant increase.*

#### **Potential Causes:**

- **Climate Change:** *Rising global temperatures contribute to more frequent and intense wildfires, increasing the likelihood of pyrocumulonimbus formation.*
- **Atmospheric Conditions:** *The occurrence also depends on specific atmospheric conditions that favor the development of these clouds.*

### **Conclusion**

#### **Uncertainty and Ongoing Research:**

- *While the exact reasons for the increase in pyrocumulonimbus events remain unclear, ongoing research points to a potential link with climate change and rising wildfire incidents.*

## The Oilfields (Regulation and Development) Amendment Bill, 2024

**Syllabus: GS-2; Government policies and Interventions, GS-3: Indian Economy – Industrial Policies.**

### Context:

- **The Oilfields (Regulation and Development) Amendment Bill, 2024**, introduced in the Rajya Sabha, aims to amend the *Oilfields (Regulation and Development) Act, 1948*.
- The original regulation of oilfields, mines, and minerals under the **Mines and Minerals (Regulation and Development) Act, 1948**, was split in 1957 by the *Mines and Minerals (Development and Regulation) Act*.
- This Bill focuses on the exploration and extraction of **natural gas and petroleum**.

### Objectives

- **Ensure Policy Stability:** Stabilize the terms of petroleum leases to protect lessees from unfavourable changes.
- **Enable International Arbitration:** Allow dispute resolution through international arbitration.
- **Boost Investor Confidence:** Create an investor-friendly environment to attract investments.
- **Facilitate Efficient Development:** Encourage joint development of connected fields and shared infrastructure.

### Major Provisions of the Bill

Aspect	Current Provisions	Amended Provisions
<b>Definition of Mineral Oils</b>	Includes petroleum and natural gas.	Expands to include: (i) naturally occurring hydrocarbons, (ii) coal bed methane, (iii) shale gas/oil. Excludes coal, lignite, and helium.
<b>Petroleum Lease</b>	Mining lease for exploration, prospecting, production, and disposal of mineral oils.	Replaces mining lease with petroleum lease, covering similar activities. Existing leases remain valid.
<b>Rule-Making Powers</b>	Regulates lease grant, terms, conservation, production	Adds rules for (i) merger/combination of leases, (ii) sharing facilities, (iii)

Aspect	Current Provisions	Amended Provisions
	<i>methods, and royalty collection.</i>	<i>environmental protection, and (iv) dispute resolution.</i>
<b>Decriminalisation of Offences</b>	<i>Violations are punishable by up to six months imprisonment or a Rs 1,000 fine.</i>	<i>Penalties increased to Rs 25 lakh; new offences include operating without a lease and non-payment of royalties. Continued violations attract up to Rs 10 lakh per day.</i>
<b>Adjudication of Penalties</b>	<i>Adjudication by an officer of Joint Secretary rank; appeals to Appellate Tribunal under the Petroleum and Natural Gas Board Regulatory Board Act, 2006.</i>	<i>Appeals to the Appellate Tribunal for Electricity under the Electricity Act, 2003.</i>

### Conclusion

The amendment is significant as it ensures:

- **Energy Access, Security, and Affordability:** Ensures stable and affordable energy supply.
- **Reduced Import Dependence:** Boosts domestic oil and gas production to reduce reliance on imports.
- **Investment Attraction:** Creates an investor-friendly environment to attract necessary capital and technological advancements.
- **Support for Energy Transition:** Facilitates the transition to cleaner fuels.
- **Robust Enforcement Mechanism:** Establishes strong enforcement mechanisms for compliance with the law.

## Antitrust complaint against Google

## Syllabus: GS-3: Basic economic concepts –Monopoly

### Context:

- **Google has lost the antitrust case** filed against it by the U.S. Department of Justice that focused on the company's search engine dominance, and expensive partnerships to push its product.

### Google's Monopolistic Practices

- **Strategy:** Google secured its dominance through exclusive distribution agreements and default distribution practices.
  - **Contracts:** Google entered into lucrative contracts with browser developers, mobile device manufacturers, and wireless carriers to ensure it was the default search engine.
  - **Financial Investment:** Google spent over \$26 billion in 2021 alone on these agreements.
- **Monopoly Power:** The court found that Google exercised monopoly power in two key markets:
  - **General Search Services:** The primary market where users perform search queries.
  - **General Search Text Ads:** The advertisements that appear in search results.
- **Pricing:** By charging supra-competitive prices for general search text ads, Google was able to earn substantial monopoly profits.

### Criticisms:

- **Preservation of Evidence:** Google failed to preserve employee correspondence, which could have served as evidence.
- **Product Quality:** Google's internal study in 2020 indicated that it could reduce the quality of its search product without losing revenue, a sign of monopoly power.

### Impact on Consumers

- **Monopoly Harm:**
  - **Reduced Competition:** Monopolies can force rivals out of the market, leaving consumers with fewer choices.
  - **Customer Abuse:** Companies with monopoly power can exploit customers due to the lack of alternatives.

- **Quality Degradation:** *Monopolies may lose the incentive to improve their products. Google's internal study suggested it could lower its search quality without losing users, which is only possible for a monopolist.*

### What is Monopoly?

- *A market structure where a single firm or entity is the sole producer or seller of a product or service, giving it significant control over the market. This lack of competition allows the firm to influence prices and output levels.*

### Antitrust Law in India

#### Overview

- **Definition:** *Antitrust law, also known as Competition law, is designed to protect trade and commerce from unfair restraints, monopolies, and price-fixing.*
- **Objective:** *To ensure fair competition in an open-market economy.*

#### The Competition Act, 2002

- **Introduction:** *The Competition Act, 2002 is the primary antitrust law in India.*
- **Replaced Act:** *It repealed and replaced the Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act).*
- **Recommendation:** *The change was based on the recommendations of the Raghavan committee.*

#### Key Features of the Competition Act, 2002

- **Prohibition of Anti-Competitive Agreements:** *Agreements that adversely affect competition within India are prohibited.*
- **Abuse of Dominant Position:** *Any conduct that results in the abuse of a dominant market position is prohibited.*
- **Regulation of Combinations:** *Mergers and acquisitions that have the potential to cause an appreciable adverse effect on competition within India are regulated.*

#### Enforcement

- **Regulatory Authority:** *The Competition Commission of India (CCI) is responsible for enforcing the Competition Act, 2002.*
- **Powers of CCI:** *The CCI can investigate, adjudicate, and impose penalties on entities found violating the Act.*

#### Objectives of the Competition Act, 2002

- **Promote and Sustain Competition:** *To maintain and promote competition in markets.*
- **Protect Interests of Consumers:** *To ensure that consumers benefit from fair competition.*
- **Ensure Freedom of Trade:** *To ensure freedom of trade carried out by other participants in markets in India.*

## **Methane Mitigator**

### **Syllabus: GS-3: Methane Pollution.**

#### **Context:**

- *The first cultures of **indigenous methane-mitigating agents**, discovered in rice fields and wetlands primarily in Western India, offer a potent solution to climate challenges.*

#### **Methane and Climate Impact:**

- *Methane: Potent greenhouse gas, 26 times more impactful than CO<sub>2</sub>.*
- *Methanotrophs: **Methane-eating bacteria** that oxidize methane into CO<sub>2</sub> and H<sub>2</sub>O, reducing its atmospheric levels.*

#### **Discovery of Indigenous Methanotrophs**

- **Research Initiative:**
  - *Conducted by **Dr. Monali Rahalkar** and her team at MACS Agharkar Research Institute, under the Department of Science and Technology.*
  - *First indigenous methanotroph cultures isolated and described in India.*

#### **Methylocucumis oryzae: A Novel Genus and Species**

- **Key Characteristics:**
  - *Novel genus and species discovered in rice fields and wetlands.*
  - *Named **Methylocucumis oryzae** due to its cucumber-like shape.*
  - *Demonstrates significant methane mitigation potential.*
- **Unique Habitat:**



- *Discovered in rice fields, wetlands, and a stone quarry at VetalTekdi Hill, Pune.*
- *Phylogenetically unique with no other strains reported or cultured globally.*

### **Agricultural Impact**

#### ➤ **Benefits to Rice Cultivation:**

- *Promotes rice plant growth, early flowering, and increased grain yield.*
- *Demonstrated effectiveness in pot experiments with the Indrayani rice variety.*

### **Challenges and Future Applications**

#### ➤ **Growth and Cultivation:**

- *Slow growth limits potential for large-scale biotechnological applications.*
- *Despite this, its natural abundance ensures a role in methane mitigation.*

#### ➤ **Further Research:**

- *Insights published in the Indian Journal of Microbiology.*
- *Importance of improving culture conditions for broader use in climate change mitigation efforts.*

### **Conclusion**

- *The discovery of *Methylococcus oryzae* offers a promising solution to methane-related climate challenges and opens avenues for future research and practical applications in agriculture and environmental protection.*

## **NDMA**

### **Syllabus: GS-3: Disaster Management.**

#### **Context:**

- *Recently, the government introduced a Bill in Parliament seeking to amend the **Disaster Management Act, 2005.***

## Introduction

- **Purpose:** *Enhance operational efficiencies in disaster response.*
- **Main Focus:** *Expand roles and responsibilities of the National Disaster Management Authority (NDMA).*

## Key Proposals of the Bill

- **Urban Disaster Management Authorities**
  - **Implementation:** *For large metropolitan cities, including state capitals and cities with a municipal corporation.*
  - **Leadership:** *Headed by the municipal commissioner.*
  - **Objective:** *Unified and coordinated approach to city-level disasters (e.g., urban flooding).*
- **State Disaster Response Forces (SDRF)**
  - **Current Status:** *States have SDRFs, but not mandated by the 2005 Act.*
  - **Proposal:** *Mandate for every state to raise and maintain an SDRF.*
  - **Variation:** *Size and capacity of SDRFs vary significantly across states.*
- **National Crisis Management Committee (NCMC)**
  - **Current Status:** *Already functional, headed by the Cabinet Secretary.*
  - **Proposal:** *Grant legal status, making it the nodal body for disasters with serious or national ramifications.*
- **Enhanced Role of NDMA**
  - **Periodic Assessment:** *Evaluate disaster risks, including emerging threats.*
  - **National Disaster Database:** *Maintain data on disaster assessment, fund allocation, expenditure, preparedness, and mitigation plans.*
  - **State-Level Databases:** *SDMAs to create and maintain corresponding state-level disaster databases.*
- **Compensations**
  - **Guidelines:** *NDMA to recommend minimum standards of relief.*
  - **Coverage:** *Loss of lives, damage to homes and property, and loss of livelihoods.*
- **Clarification on Man-Made Disasters**

- **Definition:** *Excludes law-and-order situations.*
- **Implication:** *Riots and similar incidents do not invoke the Act's provisions.*
- **Day-to-Day Functioning of NDMA**
  - **Leadership:** *Prime Minister as chairperson; Vice-chairperson (vacant for a decade).*
  - **Proposal:** *Day-to-day functioning by any Member designated by the chairperson or the vice-chairperson.*

### Significance of the Disaster Management Act, 2005

- **Background:** *Enacted post-2004 tsunami; conceptualized after the 1998 Odisha super cyclone.*
- **Institutions Created:**
  - *National Disaster Management Authority (NDMA)*
  - *State Disaster Management Authorities (SDMAs)*
  - *National Disaster Response Force (NDRF)*
  - *National Institute of Disaster Management (NIDM)*
- **Impact:** *Effective in saving lives and providing relief, rescue, and rehabilitation services.*
- **Adaptation:** *Increased importance due to climate change and growing natural disasters.*

### Unaddressed Issues in the Bill

- **Institutional Status of NDMA**
  - **Current Status:** *Not a government department or ministry.*
  - **Proposal:** *Elevate to a government department or full-fledged ministry.*
- **Administrative and Financial Powers**
  - **Current Situation:** *Lacks administrative financial powers.*
  - **Proposal:** *Empower NDMA for better efficiency and quicker decision-making.*
- **Staffing Issues**
  - **Current Situation:** *Severely short-staffed, only three members currently.*

- **Past Configuration:** *Used to have six to seven members.*
- **Specialization:** *Each member to handle specific types of disasters.*
- **Coordination Challenges**
  - **Current Process:** *Coordinated through the Home Ministry.*
  - **Proposal:** *Direct coordination and more autonomy for NDMA.*

### **Potential Opposition**

- **State-Level Changes:** *Some provisions may face resistance at the state level.*

### **Practice Question**

*Q. Discuss the proposed amendments to the Disaster Management Act, 2005, and evaluate their effectiveness in enhancing India's disaster response capabilities and institutional frameworks. (10 marks, 150 words)*