



## Stubble Burning

**For Prelims:** Stubble Burning, Turbo Happy Seeder (THS) machine, CAQM, Air Pollution.

**For Mains:** Impacts on Stubble Burning.

### Why in News?

According to the [Commission for Air Quality Management \(CAQM\)](#), fire count from [Stubble Burning](#) in Delhi and the **NCR (National Capital Region)** has reduced by 31.5% in 2022 as compared to 2021.

- As compared to 2021, stubble burning decreased in Punjab, Haryana, and Uttar Pradesh by 30%, 47.60%, and 21.435% respectively in 2022. The fire counts are based on information from [NASA \(National Aeronautics and Space Administration\)](#) Satellites.

### What caused the Reduction in Stubble Burning?

- State governments went **for both in-situ and ex-situ management and a special campaign** was started to honour the farmers **who did not burn stubble**.
  - **In-Situ Treatment of Stubble:** For example, crop residue management by zero-tiller machine and Use of bio-decomposers (e.g., [Pusa bio-decomposer](#)).
  - **Ex-Situ (off-site) Treatment:** For example, Use of rice straw as cattle fodder.
- About **10 million tonnes of straw had been managed through in-situ management**, which is about 25% more than last year in Punjab.
  - Similarly, 1.8 million tonnes of straw had been managed through the ex-situ method, which is more than 33% over the previous year.
- Punjab had chalked out an **action plan for three years**, which has been shared with the central government.

### What is Stubble Burning?

- **About:**
  - Stubble (parali) burning is a **method of removing paddy crop residues** from the field to sow wheat from the last week of September to November, coinciding with the withdrawal of [southwest monsoon](#).
  - Stubble burning is a **process of setting on fire the straw stubble**, left after the harvesting of grains, like paddy, wheat, etc. It is usually required in areas that use the combined harvesting method which leaves crop residue behind.
  - It is a **common practice in October and November across North West India**, but primarily in Punjab, Haryana, and Uttar Pradesh.
- **Effects of Stubble Burning:**
  - **Pollution:**
    - Emits large amounts of toxic **pollutants in the atmosphere which contain harmful gases like methane (CH<sub>4</sub>), Carbon Monoxide (CO), Volatile Organic compounds (VOC) and carcinogenic polycyclic aromatic hydrocarbons.**

- These pollutants disperse in the surroundings, may undergo a physical and chemical transformation and eventually adversely affect human health by causing a thick blanket of smog.
- **Soil Fertility:**
  - Burning husk on **the ground destroys the nutrients** in the soil, making it less fertile.
- **Heat Penetration:**
  - The heat generated by stubble burning **penetrates into the soil, leading to the loss of moisture** and useful microbes.
- **Alternatives to Stubble Burning:**
  - **Use of Technology-** For example Turbo Happy Seeder (THS) machine, which can uproot the stubble and also sow seeds in the area cleared. The stubble can then be used as mulch for the field.

## What is Other Related Initiative?

- The State Governments of Punjab, National Capital Region (NCR) States and the Government of National Capital Territory of Delhi (GNCTD) have developed [detailed monitorable action plans](#) based on the framework by the CAQM to tackle the problem of air pollution.

## What is CAQM?

- CAQM is a **statutory body** formed under the **Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021**.
  - Earlier, the commission was formed through the promulgation of the Commission for Air Quality Management in National Capital Region and Adjoining Areas Ordinance, 2021.
- The Commission for Air Quality Management in the **National Capital Region and Adjoining Areas, Act 2021** also dissolved the Environment Pollution Prevention and Control Authority (EPCA) established in the NCR in 1998.
- It has been set up for **Air Quality Management in National Capital Region and Adjoining Areas** for better co-ordination, research, identification and resolution of problems surrounding the air quality index and for matters connected therewith or incidental thereto.

## Way Forward

- As we know, burning stubble destroys a helpful raw material, pollutes the air, causes respiratory diseases and worsens greenhouse gas emissions. Therefore, the need of the hour is to make **constructive use of stubble as animal feed and further utilise technology** by enabling various alternatives like Turbo-Happy Seeder Machine and Bio-Decomposer etc.
- Stubble can be **recycled to make products** including paper and cardboard.
- Also, it can be used **as a manure**. For example, in Palla village outside Delhi, the Nandi Foundation purchased 800 MT of paddy residue from farmers to turn it into manure.
- Crop residue can also be used for various purposes like **charcoal gasification, power generation, as industrial raw material** for production of bio-ethanol.

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

**Q.** Mumbai, Delhi and Kolkata are the three mega cities of the country but the air pollution is much more serious problem in Delhi as compared to the other two. Why is this so? **(2015)**

