



STUBBLE BURNING CRISIS IN PUNJAB AND HARYANA – ENVIRONMENT

NEWS: Despite the reduction in stubble burning over the years, farmers say the lack of incentive, plus the high cost of machines, pushes them to set fields on fire after harvesting paddy at the start of every winter.

WHAT'S IN THE NEWS?

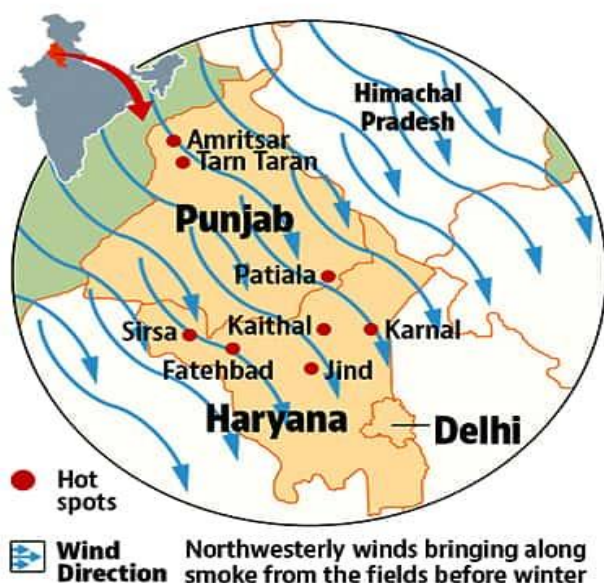
- **Location and Atmosphere:** Villages in Punjab, engulfed in smoke and haze, exemplifies widespread stubble burning. The air quality worsens, especially in November, affecting nearby regions including Delhi.
- **Farmer's Perspective:** Farmers set fields on fire to clear crop residue due to the high costs of alternative methods. The resulting smoke adds to the already poor air quality in northern India.

Health and Environmental Impact

- **Air Quality Concerns:** Smoke from 4,755 fires in Punjab has elevated Delhi's AQI to 382, far beyond safe limits. Patiala, closer to the fields, also suffers, impacting residents' respiratory health.
- **Hazardous Pollutants:** PM2.5 particles from stubble burning exceed WHO's safety limits by over 10 times, raising long-term health risks, including respiratory diseases and cancer.

SMOKED OUT EVERY YEAR

Burning of crop residue by farmers in northern India every October triggers heavy pollution in Delhi-NCR before winter



Why harmful for air

One ton of stubble on burning releases

2 kg of SO₂
3 kg of PM
60 kg of CO
1,460 kg of CO₂
199 kg of ash

Loss of valuable nutrients

Paddy straw contains (per hectare)

339 kg Nitrogen
6 kg Phosphorous
140 kg Potassium
11 kg Sulphur

Present scenario

PUNJAB

72

Cases detected

₹1,75,000

Penalty collected

HARYANA

105

Cases detected

₹52,000

Penalty collected



Government Policies and Subsidies

- **Subsidies and Machinery:** Despite government subsidies (50-80%) and over 2.5 lakh machines for crop residue management, stubble burning persists due to limited effectiveness and high operational costs.
- **Cultivation Window Constraints:** The short window between paddy harvest and wheat sowing restricts the use of alternatives, making stubble burning a quick and low-cost option.

Farmer Incentive Debate

- **Demand for Direct Incentives:** Punjab has urged for a ₹2,500 per acre incentive to discourage burning, proposing a shared contribution from the central and state governments. Many farmers believe this would reduce burning.
- **Legal Enforcement and Resistance:** Fines, FIRs, and restrictions are in place, but strong farmer unions have limited the enforcement of anti-burning measures.

Historical and Economic Drivers of Paddy Cultivation

- **Green Revolution Legacy:** Encouraged to grow high-yielding paddy for national food security, Punjab's water-intensive rice cultivation led to increased stubble and environmental strain.
- **Mechanization and Water Act:** Mechanized harvesting leaves longer stubble, which is harder to manage. The Punjab Preservation of Subsoil Water Act of 2009 delayed sowing, further shortening the timeframe for residue management.

Alternatives and Implementation Gaps

- **Crop Diversification Issues:** Farmers face challenges in shifting from paddy due to the lack of support for alternative crops with a guaranteed MSP, making paddy the default choice.
- **Power Generation from Biomass:** Some power plants and biomass factories utilize stubble, but the reach is limited, and small farmers struggle with logistics and costs.

Case of Haryana's Stubble Management

- **Incentive Scheme Success:** Haryana's policy of incentivizing stubble collection has seen fewer fires in districts like Kaithal, with farmers receiving payments for selling stubble to contractors.



- **Sustainable Energy Production:** Biomass plants produce electricity from stubble, yet large amounts remain unused due to logistical challenges.

What is fog?

- Fog is like a low-lying cloud and is made up of suspended water droplets which have condensed due to low temperatures and calm winds.
- Fog typically appears as a white layer in satellite images.
- Its formation requires humidity of 75% or more.
- Experts only call it "fog" if visibility drops to less than 1,000 metres.



How it differs from smog

- Smog is a combination of smoke and fog. Hence, smog is formed under similar conditions as fog, but also comprises pollutants and smoke, which mix with condensed moisture in the air.
- It appears as a grey layer in satellite images.
- Does not require humidity levels of 75%.
- Experts only call it "smog" if visibility drops to less than 1,000 metres.



Increased Fines for Stubble Burning

- **Supreme Court Pressure:** Following repeated admonitions by the Supreme Court, the Commission for Air Quality Management (CAQM) has doubled the fines for stubble burning.
- **Revised Fine Structure:** Farmers with less than two acres now face fines of ₹5,000 per incident, those with 2-5 acres are fined ₹10,000, and those with more than five acres will pay ₹30,000.

Future Prospects and Farmer Challenges

- **Push for Crop Diversification:** Calls for crop diversification, particularly away from paddy, emphasize sustainable agriculture, yet limited support for other crops persists.



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- **Economic Setbacks:** Farmers recount failed diversification attempts, citing unreliable buyers and lack of government assistance as reasons for reverting to paddy.

Source: <https://www.thehindu.com/news/national/stubble-burning-in-punjab-haryana-caught-in-the-cross-farm-fire/article68838126.ece>



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