



Stubble Burning

Why in News

Recently, some experts advised that the government should speed up implementation of **alternatives to stubble burning**.

- The centre, facing criticism from [farmers protesting against the farm laws](#), had committed to **removing a clause in the [Air Commission Bill, 2021](#)** that would penalise farmers for burning stubble, an important contributor to noxious air quality.

Key Points

▪ About:

- Stubble (parali) burning is the **act of setting fire to crop residue** to remove them from the field to sow the next crop.
- In order to plant the next winter crop (Rabi crop), farmers in **Haryana and Punjab** have to move in a very short interval and if they are late, due to short winters these days, they might face considerable losses. Therefore, **burning is the cheapest and fastest way to get rid of the stubble**.
 - If parali is left in the field, **pests like termites may attack the upcoming crop**.
 - The precarious **economic condition of farmers doesn't allow them to use expensive mechanised methods** to remove stubble.
- **It begins around October and peaks in November**, coinciding with the withdrawal of [southwest monsoon](#).

▪ Major Causes:

◦ Technology:

- The problem arises due to the **use of mechanised harvesting** which leaves several inches of stubble in the fields.
- Earlier, this excess crop was used by farmers for cooking, as hay to keep their animals warm or even as extra insulation for homes.
- But, now the stubble use for such purposes has become outdated.

◦ Adverse Impact of Laws:

- Implementation of the **Punjab Preservation of Subsoil Water Act (2009)** made the time period of stubble burning coincident with the onset of winter in Northern India.
- **Late transplanting of paddy** during Kharif season to prevent water loss as directed by PPSW Act (2009) had left farmers with little time between harvesting and preparing the field for the next crop and hence farmers are resorting to the burning of stubble.

◦ High Silica Content:

- Rice straw is **considered useless as fodder** in the case of non-basmati rice,

because of its high silica content.

▪ **Effects of Stubble Burning:**

◦ **Pollution:**

- Open stubble burning emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like **methane (CH₄), Carbon Monoxide (CO), Volatile organic compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons.**
- After the release in the atmosphere, 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:**

- Heat generated by stubble burning penetrates into the soil, leading to the **loss of moisture and useful microbes.**

▪ **Alternatives to Stubble Burning:**

- **In-Situ Treatment of Stubble-** For example crop residue management by zero-tiller machine and Use of bio-decomposers.
- **Ex-Situ (off site) Treatment-** For example use of rice straw as cattle fodder.
- **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.
- **Changing Cropping Pattern-** It is the deeper and more fundamental solution.

Way Forward

- Imposing a **fine is not going to work in our socio-economic conditions** for curbing stubble burning. We need to **focus on alternative solutions.**
- Although the government is distributing but **everyone is not getting the machines for in-situ management.** The government should ensure their availability to everyone.
- Similarly, in ex-situ management, some companies have started collecting stubble for their use, **but more effort on this front is needed.**
- **Small and marginal farmers, especially, need support for adoption of in-situ strategies,** to mulch the straw into the soil and not burn it. **Penalty without access to solutions does not work.**

[Source: TH](#)

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