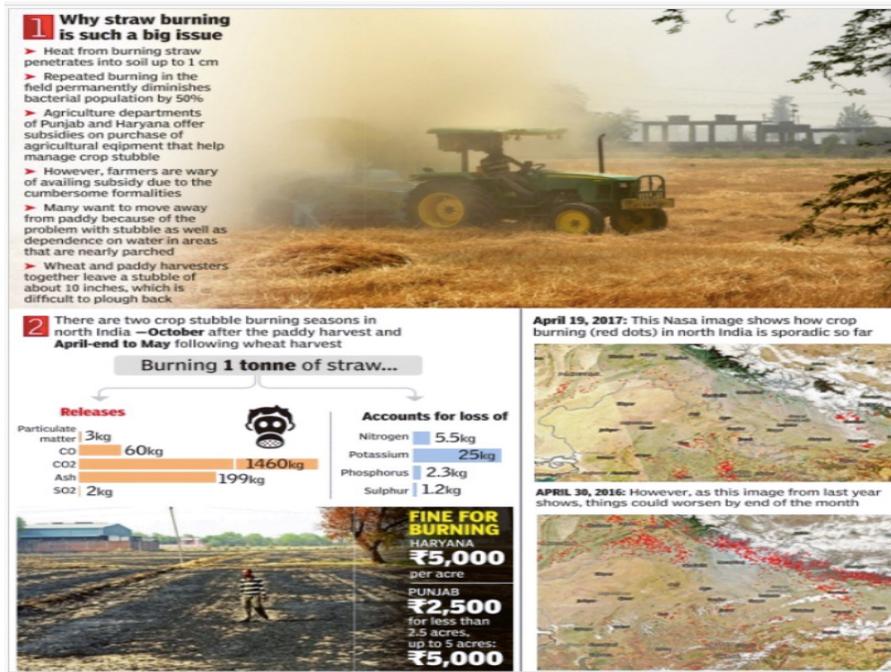


## Up in the air — on stubble burning



The onset of the winter season has come to be associated with toxic atmospheric pollution in north India.

Crop stubble burning, which pushes up air pollution, is likely to rise this winter after rains delayed harvesting and shrank the time available for management of stubble before the start of Rabi season sowing.

Open-field burning of agricultural remains is a major source of air pollution in northern India. The drive against it has also been dampened by the damage caused to crops in Punjab and Haryana due to recent rains.

The damages are likely to crimp farmers' earnings and effect take-off of machinery for management of crop residue.

While road dust and pollution from heavy vehicles are primarily responsible for the noxious pall that sets on Delhi and other urban centres, the burning of paddy stubble by farmers to clear their fields for the next crop is considered to be responsible for 20% of the smog.

### **Concern of the Farmers: Why stubble burning?**

Stubble burning is a common practice followed by farmers to prepare the field for sowing of wheat in November as there is little time left between the harvesting of paddy and sowing of wheat.

Burning of Rice straw and wheat residue is not necessary for the farmers because of the **availability of technology** and its **higher economic value** as dry fodder.

Even though farmers are aware that the burning of straw is harmful to health, they do not have alternatives for utilising them effectively.

The farmers are **ill-equipped to deal with waste** because they cannot afford the **new technology** that is available to handle the waste material.

Experts say that with **less income due to crop damage**, farmers are likely to be inclined to light up their fields to cut costs and not spend on scientific ways of stubble management.

It costs Rs 1,500-3,000 per acre for stubble management, depending on the equipment and method.

#### **Punjab to post officers to curb stubble burning:**

Paddy is grown on **65 lakh acres in Punjab**. After harvesting, **about 20 million tonnes of straw is left on the fields**.

It is estimated that 15 million tonnes of straw is burnt by farmers for to clear the fields and make them ready for the next crop.

With **paddy ready for harvest**, the Punjab government has directed the procurement agencies to ensure prompt lifting of the crop from markets.

Also, to curb the **menace of stubble burning**, the State has decided to appoint nodal officers in 8,000 paddy growing villages.

Over the past week, at least 61 cases of stubble burning have been detected in **Haryana, and in Punjab**, confirmed members of the state pollution control boards of the two states.

They both said that **satellite monitoring of burning stubble**, a post-monsoon phenomenon in which farmers set fire to their paddy fields in order to get them ready for wheat sowing in November.

#### **Alternative solutions that can avoid Stubble Burning:**

The **available paddy straw** can be effectively used for power generation, which will go a long way towards overcoming the problem of disposal of crop residues and power deficit in the region.

Suitable machinery for **collection, chopping** and in situ incorporation of straw is required.

There is great potential for making **investments in paddy straw-based power plants** which can help avoid stubble burning to a large extent and also create **employment opportunities**.

**Incorporation of crop residues in the soil** can improve soil moisture and help activate the growth of soil microorganisms for better plant growth.

Convert the removed residues into **enriched organic manure through composting**.

New opportunities for industrial use such as **extraction of yeast protein** can be explored **through scientific research**.

The **2014 national policy** envisages adoption of technical measures, including diversified uses of crop residue, capacity building and training along with **formulation of suitable legislation**, to deal with the issue of disposing of stubble.

Unless Financial assistance is to be provided by the Centre for boosting farm mechanisation, it is difficult to completely stop stubble burning.

States needs to make **alternative arrangements** for consumption of paddy straw into the soil as per the directions of the NGT.

## **Conclusion:**

Crop residue fires in Punjab and Haryana are enhancing concentrations of toxic gases like benzene and toluene, according to research from Indian Institute of Science Education and Research (IISER).

The cancer risk would be even higher for farmers and villagers closest to the fields, the study said, adding that mitigating crop fires could reduce these risks.

Blaming only the farmers may not solve the problem of air pollution and there is a need to find sustainable technological solutions

It is important to diagnose and address the fundamental problems that force the farmers to burn the paddy straw on the field and not utilise it for any productive purpose.

## **Way Forward:**

There is also a **need to develop rice varieties** that are both rich in grain yield and high in straw quality. Use of such **dual-purpose rice varieties** will help to maintain food security, farm income and improve environmental sustainability.

There needs to be a **proactive engagement** to both persuade and reassure farmers.

The **greater availability of machines** and the **zero-tolerance policy** need to be seen as works in progress to derive lessons on how to **refine the crop-clearing process in an ecologically sound manner.**

Promoting indigenous research and science, incentivising pulses production, and rationalising pricing more broadly. **Converting crises into opportunities is the hallmark of good public policy**