Stubble Burning

Why in news?

Recently, Supreme Court asked the Punjab government why it could not fund the costs of crop residue management machines for marginal farmers.

Why stubble burning is practised?

- Also called as ***parali burning,*** stubble burning is a method of removing paddy crop residues from the field to sow wheat.
- It is usually done in the last week of *September to November*.
- It is usually required in areas that use the combined harvesting method which leaves crop residue behind.
- It is practised by the farmers to prepare the land for the next cultivation.
- It is practised mainly in the *Indo-Gangetic plains* of Punjab, Haryana, and UP to clear the fields for rabi crop sowing.

Stubble burning	High prevalence
Rice	Punjab and Haryana
Wheat	Uttar Pradesh

Why stubble burning is practised?

- **Limited duration**- Multiple cropping and shortened intervals between crops give a very short window of about 10–15 days during which the field needs to be prepared for the next crop.
- There is only short time available between rice harvesting and sowing of wheat as delay in sowing wheat affects the wheat crop.
- **Cheap**- It is considered one of the cheapest methods to clean the field after the harvesting season.
- **Labour shortage**- Use of expensive labour for stubble extraction is not feasible, especially in Punjab and Haryana where farm sizes are large.
- **Clears all stubble**- The use of mechanized harvesters leaves stubble of 10– 30 cm in the field, depending on the type of crop, which was not the case earlier with manual harvesting.
- **Low crop residue**- The low commercial and economic value of crop residue, coupled with the high costs of processing, reduces its value for farmers.

What are the impacts of stubble burning?

- **Air pollution**- It emits toxic pollutants in the atmosphere containing harmful gases like carbon monoxide (CO), methane (CH_4), carcinogenic polycyclic aromatic hydrocarbons, volatile organic compounds (VOC).

- The combustion of agricultural residue is a prominent contributor to air pollution in certain regions of northern India.
- **Soil fertility-** Soil becomes less fertile and its nutrients are destroyed when the husk is burnt on the ground.
- **Heat penetration**- Stubble burning generates heat that penetrates into the soil, causing an increase in erosion, loss of useful microbes and moisture.
- **Climate change**- The release of toxic gases from stubble burning will increase global warming, further aggravating the climate change.
- **Uncontrolled firing**- Risk of fires spreading out of control, could turn into huge pit of flames.

Supreme Court's Remarks on Stubble Burning
• The court asked the Punjab government why it could not fund the costs of crop residue management machines for marginal farmers. • Punjab responded that the *issue of manpower and fuel* for the machines was a challenge. • The court warned that paddy cultivation would deplete the water table in Punjab and suggested switching to crops other than paddy to save water and reduce pollution.

What are the strategies to reduce stubble burning?

- **Promote agri-implements**- Punjab has rolled out schemes for providing subsidy for mechanical implements that can mix the crop residue with soil to improve fertility.
- Promote *co-ownership models* for the agri-implements which can make such implements accessible to farmers.
- **Foster awareness**- Farmers should understand the value of crop residues and use of agri implements in extraction and packaging.
- **Power generation**- State governments need to incentivise establishment of biomass-based power plants through fiscal interventions and prioritization. Example- Biomass co-firing
- **Promote R&D-** *Punjab Agricultural University* is developing a variant of paddy straw that has *lower silica content*, thereby making it suitable for utilisation in biomass-based power plants.
- **Biofuel production**- The State governments, along with appropriate policy interventions from the Central government need to incentivise utilisation of biofuels.
- **Industrial application**- Biomass pellets can be sold commercially as the main fuel for industrial boilers and replace coal. Micro-pelletization should be incentivised and its local usage promoted.
- **Crop residue collection mechanism**- Create a uniform decentralised mechanism for the collection, storage and commercial sale of crop residue.

Chhattisgarh model

References

1. Indian Express- Tackling stubble burning
2. Down To Earth- Strategies to reduce crop residue burning