Crop Stubble Burning Challenge in Punjab

Centre and Punjab government are working to ensure that there are enough machines to tackle the problem of stubble burning which is a major source of air pollution in the National Capital Region.

What is Stubble Burning?

- Stubble burning is the act of setting fire crop residue to remove them from the field to sow the next crop. It is practised in areas which use 'combine harvesting method'.
- Combines are machines that harvest, thresh i.e separate the grain, and also clean the seperated grain, all at once.
- The problem is that the machine doesn't cut close enough to the ground, leaving stubble behind which is of no use for farmers.
- There is pressure on farmers to sow the next crop in time for it to achieve a full yield. So, the quickest and cheapest solution is to clear the field by burning the stubble.

Why do farmers practice stubble burning?

- Even after being discouraged by the government, farmers prefer stubble burning because it’s very cheap.
- Lack of financial and technological means to opt for alternatives to stubble burning, such as ploughing the stubble or investing it for other purposes, also plays a role in the continuation of this practice.
- Uprooting the stubble, cutting, burying and watering it takes two days. It then takes 45 days to turn into manure.The element of time is crucial for farmer as the plantation for the next crop (Rabi crop) is due in November-end.
- Also, this process costs a farmer Rs 500-700 per acre per day while setting fire to the stubble barely costs them anything.

Effects of Stubble Burning

- Stubble burning in Punjab, Rajasthan and Haryana is blamed for causing a thick blanket of smog in Delhi during winter, which is a serious health hazard.
- Open stubble burning emits large amount of toxic pollutants in the atmosphere which contain harmful gases like Methane (CH_4), Carbon Monoxide (CO), Volatile organic compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
- After release in the atmosphere, these pollutants disperse in the surroundings, may undergo physical and chemical transformation and eventually adversely affect the human health.
- Burning husk on ground destroys the nutrients in the soil, making it less fertile.
- Heat generated by stubble burning penetrates into the soil, leading to the loss of the moisture and useful microbes.
- It kills natural nutrients and bacteria that helps rejuvenate soil.

Alternatives of Burning Stubble

- The most efficient technology to counter crop burning at the moment is Turbo Happy Seeder(THS) which is a machine mounted on a tractor that not only cuts and uproots the stubble, but can also

drill wheat seeds on the soil that has just been cleared up. The straw is simultaneously thrown over the sown seeds to form a mulch cover.

- Punjab and Haryana together produce around 32 million tonnes of stubble and straw. Of this, only 1.5 million is going into energy generation and only from Punjab. If more of this stubble can be utilised in the waste-to-energy and biomass based power generation plants, it will help the farmer as well as the government.
- Decomposing stubble in the farm field and turning it into the useful manure.
- Making fodder for livestock out of collected stubble.
- Setting up Bio-mass fuel plants to generate fuel using paddy husk.
- Government should involve or invite benefiting industries like cement industry to collaborate in stubble collection to use it proficiently.
- Inviting packaging industries to collect stubble to make packaging boxes which are more environment friendly than other non-disposable materials like thermocole and plastic.

Government Initiatives

- In November 2015, the National Green Tribunal directed authorities in Delhi and its neighboring states to stop this practice. But the directive had little effect.
- The Centre had, in March, approved a Rs 1,151-crore scheme to promote in-situ management of crop residue by providing subsidized THS machines. Under the scheme, the users are supposed to deposit the subsidised price amount with the agriculture department once their applications are cleared.
- Punjab has planned 30 paddy stubble-based power plants, mostly in paddy-growing areas of the state. These plants will consume 44 lakh tonnes of paddy stubble; seven such plants are operational with a total generation capacity of 62.5 megawatt.

Challenges

- Punjab government has set the target of delivering 25000 THS machines but only about 500 machines were actually delivered to end-users who have paid the applicable subsidised rates on these. The deliveries are happening at a slow place because the buyers, especially farmers, are not depositing even subsidised price money.
- With manufacturers not getting their monies — whether the upfront share from buyers or government subsidy, delivering the machines even by September 30 (the earlier deadline was August 31) is looking to be a herculean task.

Way forward

- The timely implementation of Goverment schemes of providing the subsidized THS machine will help to tackle the situation.
- Further the governments need a combination of incentives and prosecution. Give incentives to farmers who use green methods and penalise the ones who don’t. Haryana is already following this approach.