Viable Solution for Stubble Burning

Why in news?

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- Paddy stubble burning is found to be a major contributor to Delhi’s air pollution.
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- Bans and fines are unlikely to be effective.
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- To devise a policy with a chance to succeed, one needs to understand the reasons why farmers prefer burning.
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Why stubble burning is bad?

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- It causes smoke and particulate pollution that can move over long distance.
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- It also implies loss of nutrients in soil.
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- One tonne of straw when burnt releases 3 kg of particulate matter, 60 kg of carbon monoxide, 1,460 kg of carbon dioxide, 199 kg of ash and 2 kg of sulphur dioxide.
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- In Punjab alone, 15 million tonnes of paddy straw is burnt every year, generating 45 million tonnes of particulates.
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- Even after a stiff fine by Punjab and Haryana farmers still chose the option stubble burning.
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Why farmers choose stubble burning?

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- When manually harvested, the crops can be cut at the bottom and the stalks could be sent for other uses such as paper mills, animal bedding, etc.
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- But manual harvesting has become very expensive as labourers charge around Rs 4,000/acre and take three to four days.
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- So at present, paddy harvesting is done by combine harvester machine, which finishes it in half an hour and charges Rs 1,200/acre.
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- But it leaves two thirds of the stalks on the ground.
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- So stubble burning is the cheapest and quickest way to get their fields ready in time for the sowing of next crop.
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- It kills weeds including those resistant to herbicides.
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- It also kills slugs and other pests.
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What are the alternate uses of stubble?

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- Properly cut Stubble can be used to make bio-char or cellulosic ethanol, burn in a power plant or plant the next crop without tillage.
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- Bio-char is a fine-grained, carbon-rich, porous product remaining after straw has been subjected to pyrolysis at low temperatures in an environment with little or no oxygen.
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- Bio-char can improve water retention and increased soil surface area when used with other fertilisers.
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What can be a viable solution?

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- A farmer’s economic compulsions dominate his decision to burn stubble.
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- Incentives from power generators and ethanol manufactures to farmers

bringing stubble will provide solution for this.
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- Super SMS (straw management system) is an attachment that fits onto the combine harvesters for paddy, spreads residue evenly over the field.
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- It should be deployed while cutting the stubbles.
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- Initiatives should be taken to market biochar as a nutrient and private players should be involved for the infrastructures required.
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Source: Indian Express

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