

Curbing Stubble Burning

Examining Possible Policy Interventions

DEVINDER SHARMA

The root cause of stubble burning and the lapses on the part of the central and state governments in controlling it are examined. The injustice done to farmers in the past is analysed, and possible policy interventions are suggested.

A few days before Diwali, New Delhi had been left choking with polluted air, foul and poisonous, leading to a health emergency. If air pollution during the three-week period around Diwali in 2017 was bad, 2019 was still worse. The spike in air pollution, measured through the worsening air quality index (AQI), was blamed on the burning of paddy stubbles in the fields of North India. There is no denying that paddy harvesting season in Punjab, Haryana and parts of western Uttar Pradesh (UP) does aggravate the bad air quality in New Delhi, and also causes severe air pollution in the Indo-Gangetic plains itself, but a continuous media howl had projected farmers as the culprit, as if they were doing it deliberately.

Facing flak from various agencies, including the National Green Tribunal (NGT), a large number of farmers who indulged in burning the stubble left in the fields were hounded, imposed with fines, threatened with withdrawals of subsidies. With first information reports (FIRs) lodged against them and the fire incidents treated as a cognisable offence, farmers have been treated like petty criminals. While state governments were using satellite data to pin down farmers who resorted to crop residue burning, there is no denying that a lot of initiatives were taken by farmers, including mulching and composting, in an effort to look for alternatives. The Prime Minister himself had mentioned in his radio talk “Mann ki baat” on 28 October 2018 at least two initiatives by Punjab farmers who had vowed not to resort to stubble burning. But, a large section of farmers had remained defiant, more so as an expression of indignation, at the refusal of the policymakers to understand the difficulties they faced.

Knowing that coercive methods against farmers will not work, and realising that farmers have little choice but to put the paddy stubbles on fire, given the short window before the wheat sowing season begins, Punjab Chief Minister Amarinder Singh had written to the Prime Minister, seeking an incentive of ₹100 per quintal to be given to farmers, which comes to roughly ₹2,500 per acre, so as to offset the additional cost that farmers are expected to incur, to manage the paddy stubbles without resorting to burning.

No Heed Paid by the Government

The year 2017 was the third year in a row when the Punjab chief minister had literally pleaded for an incentive to be given to farmers to stamp out stubble burning. While his plea was summarily turned down, a senior official of the Ministry of Agriculture had even told the NGT in October that the government was not at all considering any incentive to be provided to farmers. It clearly showed that the thrust of controlling stubble burning was not directly engaging farmers, but more pushing machines as the answer. Citing the lack of resources, not only the chief minister’s request for an economic stimulus package of ₹2,000 crore (Government of Punjab 2017), but a joint proposal two years back by the NITI Aayog and the Confederation of Indian Industry (CII) seeking ₹3,000 crore to tide over the air pollution crisis emanating from the burning of paddy straw was also turned down (*Financial Express* 2017).

It becomes pertinent to mention here that in 2017, ₹3,000 crore was required by Punjab, Haryana, Rajasthan and UP to combat the air pollution problem, out of which ₹1,500 crore was needed by Punjab alone. But, the requirement could not be fulfilled as both the central and the state governments said that there was lack of funds. If only the government had put on hold the 1% increase in the dearness allowance (DA) for employees in 2017, and diverted the resources to find an amicable solution for *in situ* management of paddy stubble, probably New Delhi would have escaped the fury

Devinder Sharma (hunger55@gmail.com) is an author, writer, and researcher specialising in food and agricultural policy.

of deadly smog in 2019. This would have also brought relief to people living in the farming belt of the north-west region. If only wiser sense had prevailed in 2019, and the centre had allocated ₹3,000 crore from the prescribed outlay of ₹16,000 crore for the DA instalment announced before Diwali to tackle stubble burning, New Delhi would have been saved from substantial healthcare costs (*Economic Times* 2019). More so at a time when farmer unions had been demanding an incentive of ₹200 per quintal to cover the cost of managing paddy stubbles without burning, and had promised not to put the paddy straw on fire, there appears to be no plausible reason for denying them the stimulus. Instead, farmers were chased, and FIRs filed against them (Khanna 2019).

Supreme Court's Directive

A few weeks ago, the Supreme Court saw merit in the argument and directed the Punjab, Haryana and UP governments to provide a bonus of ₹100 per quintal to paddy growers (*Business Standard* 2019). Coming a little late in the season, when almost 90% of the standing crop had been harvested, the Supreme Court's directive has not had any visible impact. The damage in 2019 had already been done. But, if implemented in the right earnest, after careful strategic planning and scrutiny, the incentive that Supreme Court has provided for the farmers can truly serve as the motivating factor to put an end to stubble burning in the future.

Let the farmer use manual labour, or machines, or a combination of both to clear the stubble. A beginning can be made by, first, withdrawing the FIRs filed against farmers to build up their confidence, and then, engage with them to find ways and means to successfully dispose the huge biomass generated. Farmers do realise that putting the crop fields on fire is, first and foremost, bad for the health of their families, and adversely affects the soil microbial structure and the environment, but they find it uneconomical to take care of the paddy stubble. After the paddy has been harvested by combine harvesters and the grain taken to the mandis, clearing the field for the next sowing of wheat or

potato, all in a short period of two to three weeks, adds to the farmer's input costs. With or without straw management machines, what has not been acknowledged is that there is an additional cost that the farmers have to incur. Considering that farm incomes are very low, and agriculture is already in the throes of a severe crisis, putting the harvested fields on fire is, therefore, the cheapest and easiest way of clearing the crop fields.

Need for Working with Farmers

Knowing the tremendous role farmers play in producing food for the country, here was an opportunity for the society, government and the private sector to come together and find a workable solution. Let us not forget that Punjab alone produces more than 20 million tonnes of paddy straw every year (*Outlook* 2019), and it is not that easy to manage the huge volume generated. The only possible way to manage the huge biomass is to work with farmers. According to the MGNREGA website, considering that Punjab has 10.78 lakh active MGNREGA job cards, here was an opportunity to use farm labour judiciously in combating the crisis. To address the recurring problem, agricultural scientists and farm officials had suggested a set of machines as a "fitting solution" to curb stubble burning. In the past two years, more than 50,000 crop residue management machines have been made available to farmers in Punjab at 50% subsidy if purchased individually, or at 80% subsidy for cooperative societies or farm clubs (Chhaba 2019).

Of the nearly ₹1,152 crore allocated as subsidy for machines in the north-west region by the centre, about ₹669 crore have been spent by Punjab on subsidising the machines in the past two years. Machines like happy seeder, chopper, cutter, mulcher, mould board plough, shrub cutter, etc, come attached with super straw management equipment that cut and spread the biomass in the field. For machines, which are used barely for a few days during the season, farmers find it uneconomical to spend an astronomical amount initially and then see these machines lying idle for the rest of the year. Already, in Punjab, there are

about 4.5 lakh tractors (Singh et al 2008), against the requirement of 1 lakh tractors. In addition, there are numerous other machines, including heavy machinery, that are used on the farm.

Dangers of Over-mechanisation

The addition of a newer set of machines to manage paddy crop residue will certainly lead to over-mechanisation, which is increasingly being seen as a significant factor behind the agrarian distress. The way the machines were pushed, with the government more than willing to provide subsidy, stubble burning seems to have come as a bonanza for farm equipment manufacturers. The lobbies had worked overtime, with many newspapers suggesting that these machines should be made available at 90% subsidy to individual farmers. At this suggested rate of mechanisation, many fear that Punjab will, sooner than later, turn into a junkyard for farm machinery. Instead of playing the blame game and building up public hysteria against farmers, the effort should be to first understand and ascertain the root cause that has led to the crisis. The intensive wheat-paddy crop rotation that Punjab was pushed into was based on a calculated decision taken by policymakers at a time when India was living in a "ship-to-mouth" existence, when food would come directly from the ship into the hungry mouths.

After the remarkable turnaround in wheat production, following the planting of dwarf wheat varieties in the mid-1960s, rice was added to the crop rotation. Punjab was traditionally not a paddy-growing area, but the country needed to be food secure. With assured prices by way of a minimum support price (MSP) to farmers and an assured procurement system, wherein the Food Corporation of India (FCI) was set up to mop the huge crop harvest, Punjab (including regions that now form Haryana) became the food bowl of the country.

Over the years, as wheat-rice crop rotation stabilised, efforts were to push for increased crop productivity. The resulting second-generation environmental impacts, essentially from the depletion of soil nutrients from an exhaustive crop rotation, and the fall in groundwater

table at an alarming rate, became clearly visible in the early 1980s. The policy response was to diversify the cropping pattern, moving away from water-guzzling paddy to other crops, including maize. Two reports on crop diversification by noted economist S S Johl had spelled out a number of measures to diversify the cropping pattern. Punjab did try for pushing in sunflower and maize to replace paddy, but in a half-hearted manner, and the experiments failed. Unless there was a guaranteed price and added procurement benefits, farmers found it unreasonable to make a shift from paddy, and rightly so. Although the MSP for paddy (and, for that matter, any other crop) does not even cover the cost of production, farmers still prefer to grow paddy as the minimum price announced is at least guaranteed. At the same time, while a lot of blame is being shifted to the policy of providing free power in agriculture, the fact remains that with MSP being deliberately kept low to provide cheaper food to the consumer, free power was a political answer to partly offset the losses farmers were incurring.

Subsidy for Farmers or Consumers?

Farmer unions had, time and again, said that if they were provided with the legitimate output prices, there would have been no need for free electricity. In other words, the point that has been completely missed from public debates is that what seems to be a subsidy for farmers was, in reality, a subsidy for consumers. Free electricity certainly led to an increased withdrawal of groundwater. With 5,337 litres of water required to produce one kilogram of rice (Nibber 2016), Punjab is literally mining groundwater. But, then, farmers cannot be blamed entirely (some savings could have been made) for pulling out precious groundwater. They did what was expected from them, to increase production. For the state government, knowing that the water table was getting depleted, one plausible policy response to reduce the over-exploitation of groundwater was to do away with the short-duration sathi crop, cultivated in April–May, and to delay the sowing of paddy. In view of the urgent need to save water, it enacted the Punjab Preservation of

Subsoil Water Act, 2009, which shifted the date of paddy transplanting from 1 June to 20 June (and after the Congress government was sworn in, it was advanced to 13 June). The shift in paddy transplanting by a fortnight surely delayed the harvest, which meant that stubble burning coincided with the period when movement of air over Delhi NCR remains subdued.

Saving Groundwater

The delay in transplanting paddy therefore came in for a lot of criticism. But, as a senior Punjab government official explained, a delay in transplanting by seven days saves 1,000 billion litres of water (Vasdev 2019). In other words, the delay in transplanting by roughly a fortnight—by shifting transplanting period from 1 June to 13 June—would save Punjab 2,000 billion litres of water (Vasdev 2019). Considering the studies that say Punjab will run out of water in another 25 years, any effort to save groundwater should be lauded. This assumes importance, given the findings of a study by the Centre for International Projects Trust (CIPT), a non-profit organisation backed by the Columbia University, which has, on the basis of elaborate simulation studies, concluded that crop diversification may not eventually help in checking the groundwater balance in the long term. The shift to maize, which is considered to be less water-guzzling, may, therefore, not make much of a difference to groundwater balance eventually, but because it does not leave any stubble to be burnt, may still be a better option. But, this has to be accompanied with a guaranteed price support system supported by the centre.

To say at a time when India ranks 102 in the Global Hunger Index spanning 117 countries, that paddy production is in surplus and the granaries are overflowing, is a reflection on gross food mismanagement. When the country needed food, farmers were applauded for turning the country self-sufficient. They were the country's heroes. Instead of painting them now as villains and blaming them squarely for the unmanageable food surpluses as well as the resulting environmental damages, the need is to examine where and how policies went wrong, and

what appropriate policy corrections could have been made. Policymakers will now have to visualise the kind of policy mix required in the short term, medium term and beyond. While shifting from paddy cultivation may take some time, the immediate focus should be on how to curtail stubble burning. With Punjab agreeing to provide farmers with an incentive of ₹2,500 per acre for *in situ* management of paddy stubble (Krar 2019), and hoping that Haryana and UP will follow suit, stamping out crop residue burning will require a combination of approaches, including looking for alternatives like power generation. But, more importantly, knowing the ill-will that has been generated over the years, it will require deft handling, involving the farming community, various stakeholders and, more importantly, the society at large. The bigger question, however, is whether the centre and the state governments are willing to prioritise the urgent need to reduce stubble burning.

REFERENCES

- Business Standard* (2019): "SC Orders Incentives for Punjab, Haryana and UP Farmers Who Shun Stubble-Burning," 6 November, https://www.business-standard.com/article/news-ani/sc-orders-incentives-for-punjab-haryana-and-up-farmers-who-shun-stubble-burning-119110601535_1.html.
- Chhaba, Anju Agnihotri (2019): "Crop Residue Burning: Why Happy Seeder Isn't a Happy Proposition," *Indian Express*, 31 October, <https://indianexpress.com/article/india/punjab-crop-residue-burning-gurdaspur-why-happy-seeder-isnt-a-happy-proposition-stubble-burning-air-pollution-6095159/>.
- Economic Times* (2019): "Govt Hikes Dearness Allowance by 5% for Employees and Pensioners," 11 October, https://economictimes.indiatimes.com/news/politics-and-nation/govt-announces-5-percent-hike-in-dearness-allowance-for-employees/articleshow/71502166.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.
- Financial Express* (2019): "Delhi Pollution: Crop Burning in Punjab, Haryana Could Not Stop as Centre, States Fought over Money," 13 November, <https://www.financialexpress.com/india-news/delhi-pollution-crop-burning-in-punjab-haryana-could-not-stop-as-centre-states-fought-over-money/930394/>.
- Government of Punjab (2017): "Captain Amarinder Writes to PM for Bonus on Paddy to Check Stubble Burning," 6 July, http://punjab.gov.in/key-initiative?view=show&pp_id=18515.
- Khanna, Rajeev (2019): "Farmers in Punjab Are Burning Stubble as an Act of Rebellion," *Down to Earth*, 8 November, <https://www.downtoearth.org.in/news/agriculture/farmers-in-punjab-are-burning-stubble-as-an-act-of-rebellion-67669>.
- Krar, Prashant (2019): "Punjab Announces Rs 2500 Per Acre for Not Burning Stubble," *Economic Times*, 13 November, https://economictimes.indiatimes.com/news/economy/agriculture/punjab-announces-rs-2500-per-acre-for-not-burning-stubble/articleshow/72044065.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst.

