

# Enhancing Community Participation in Protecting the Environment from the Harmful Effects Caused by the Burning of Paddy Stubble in Northern India

Angad Singh Lehal

Modern School, Barakhambha Road, Delhi, India

## 1. Introduction

Punjab is termed the 'Food Granary' of the country, as it contributes over 45% wheat and nearly 30% rice to the central pool of public distribution system. Punjab switched to the current rice-wheat cultivation cycle after the green revolution. The burning of paddy stubble on a large scale has received flak over the past few years after smoke clouds engulfed the northern part of the country during the early winter months. The farmers are being held liable for the deteriorating air quality and the resultant exacerbation of respiratory diseases and reduction in visibility. The burning of stubble was banned in Punjab by the National Green Tribunal when a layer of smog enveloped the NCR-Delhi region. Since, the last few years it has become a recurring problem. Meanwhile, due to various factors farmers continue to violate the ban orders even if they are aware that the burning increases local pollution and results in the loss of soil nutrients.

## 2. Aim of the Research

- 1) To understand the cause and impact of stubble burning on the environment
- 2) To explore various laws and provisions regarding the ban on stubble burning and its implications.
- 3) To explore the alternatives to stubble burning.
- 4) To meet the farmers and create awareness among them and to involve them in protecting the environment.
- 5) To interact with various stakeholders and explore the best means to protect the environment as well as protect the interests of the farmers.

### Key Stake Holders

Farmers, Government, Government officials, Law Enforcement Agencies, Environmentalists/ Academicians

## 3. Methodology

The methodology used were field visits, case studies and interactions with various stakeholders - the Law Enforcement agencies, State pollution board officers, Agriculture officers, Tehsildars, Patwari and Sarpanches.

## 4. Limitation of the Research

The study was confined to Bhatinda, Mansa and Sangrur district of Punjab.

## 5. Findings of the Research

- The farmers shared that burning of stubble was their only option. They burn the paddy residue every year as it is economical. Most of them complained that restrictions were imposed on them and fines were levied.
- Many farmers shared their experiences and problems about the delay in getting subsidy.
- Some farmers faced difficulty in irrigating their fields and there was some crop damage due to his lack of information in irrigating the fields which were sown with the help of the happy seeder machine.
- The case study of the progressive farmers gave an insight into the innovative methods of farming. They utilised the paddy straw in packaging of fruits and for other farm uses. They used advanced technology of Happy Seeder and Mulcher for handling the paddy stubble.

### Key Points of Interaction with the Government Officials

The Tehsildar and the Agriculture department officials apprised me of the ground realities of the problem. The enforcement officer is authorized to fine and charge sheet the defaulting farmers who burn the paddy residue. With advanced technology stubble burning can be detected through the satellite images and the patwari confirms the incident with field visit and then police FIR is registered and fine is imposed. The officer expressed his inability that the government official cannot take extreme steps as the issues related to the farmers are sensitive. The farmer associations enjoy political patronage. At times, it leads to social unrest and in extreme cases riots.

Diversification: The Way Out- The green revolution resulted in food sufficiency for the country but it also sowed the seeds of ecological imbalance and health hazards in Punjab which are now affecting the whole of North India. To divert the impending ecological disaster the solution has to be rooted in diversification of agricultural land-use and cropping pattern of the state in the midst of farm distress which is taking over 1,000 lives every year. Most recently, the state's 2013 Agricultural Policy strongly suggested shifting at least 1.2 million hectares away from paddy cultivation. In reality, the area under paddy cultivation is increasing each successive year. This is simply because the farmers have absolutely no incentive to diversify their cropping pattern. Recent studies in this field argue that the Centre is strategically opposed to diversification in Punjab because of the critical reliance on the state's production of paddy to feed the nation. Empirical research suggests a supply gap of more than 3.5 million tonnes of rice by 2020.

**My Take**

The paddy stubble burning problem was at its peak in 2016-2017. Across North India there was a blanket of smoke. Schools were shut down. It is a very precarious situation. It was analyzed that there are two types of stubble burning (sums up 95% of the stubble burning cases)

- 1) Worst Category - 100% burning of the paddy stubble . After harvesting the crop, the whole field is set up on fire.
- 2) Partial burning - After using the machines like happy seeder and rotavator there are bundles of loose paddy which are burned after every 30 feet. 25-30% of the total residue is burned in this manner.

Eco friendly insects which keep the crop healthy are also burned along with the residue. With burning of one tonne of paddy straw, four Quintals of organic carbon, 25 kg potash, 5.5 kg nitrogen, 2.3 kg phosphorus and 1.25 kg of sulphur are released into the air due to the burning of paddy stubble.

NGT has imposed a complete ban on burning of paddy stubble. A lot of fines have been imposed on farmers for stubble burning in 2017-2018 cycle. A total of 59,000 farmers have been fined in Punjab. The policy is under challenge in the high court of Punjab. The enforcement agencies tried taking some extreme steps but later dropped due to an increased tension in the farmer community. There is subsidized agriculture machinery to manage the crop residue which includes happy seeder, mulcher, cutter cum spreader, mould plough and super straw management system (SMS). Most of the farmers are lay men and do not know how to use this technology. Department of Agriculture and Punjab Agricultural University have conducted district, block and village level awareness campaigns and training. There is an overall 20-25% decrease in stubble burning. But, still a lot needs to be done. The total cost of not burning the paddy residue is high. As a fellow villager in one of the awareness camps in Phaguwala village district Sangrur mentioned "Its a matter of Rs 2 or Rs 7000." Farmers are still not fully assured about the success of the alternate methods and there is a mindset debate too. Farmer unions are misleading the farmers for their own political gains and influence the farmers to burn paddy stubble and interfering in the government work for their own political gains.

*Awareness and education is the key area which still needs to be worked on about the technical knowhow. There has to be a farmer scientist interface to advice the farmers on how to manage the crop. The farmers should be given a minimum support price for the agricultural products and it should not be limited to wheat and rice only. There should be checks and control on the fertilizer companies which fleece the farmers. If the farmers are facilitated to overcome the distress and are economically sound they will definitely work together for the environmental issues. If the farmer is dying of financial distress how can we expect them to invest in taking care of the environment.*

In such circumstances, policy intervention which focuses on good price remuneration and assured procurement market will encourage the farmers to diversify their cropping patterns. Until such timely and supportive measures are not taken, not only will the state's ecological

survival continue to hang in balance it will be threat to the environment.

**References**

- [1] What is the Solution to Punjab's Paddy Stubble Burning Problem? Retrieved from <https://thewire.in/agriculture>
- [2] K.Ganesh et al ( 2012). ' Demand and Supply of Cereals in India- 2010-2025' in IFPRI Discussion Paper Jan,2012. Retrieved from <https://www.academia.edu>
- [3] 'Why stubble burning in Haryana and Punjab has intensified in last 10 years' Newspaper article retrieved from <https://www.hindustantimes.com/india-news>
- [4] Kumar P., Kumar S., Joshi L. (2015) *Alternative Uses of Crop Stubble. In: Socioeconomic and Environmental Implications of Agricultural Residue Burning.* SpringerBriefs in Environmental Science. Springer, New Delhi
- [5] Ministry of Agriculture and Farmer Welfare. <http://agriculture.gov.in/>
- [6] Agriculture Department, Govt. of Punjab. <http://punjab.gov.in/agriculture-department>