

## **ENVIRONMENTAL IMPLICATIONS OF WHEAT RESIDUE BURNING -A CASE STUDY OF HARYANA STATE, INDIA**

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### **Abstract**

The menace of crop residue burning in the Indo-Gangatic plains of India, has acquired colossal proportions due to mechanized harvesting, creating environmental emergencies in the northern states of Punjab, Haryana, Uttar Pradesh and Delhi. Satellite data has been put to operational use for monitoring wheat residue burning and studying its implications. Wheat stubble burning areas in the 12 major wheat growing districts of Haryana were studied for 2017 and for all 22 districts for the year 2018 using Resourcesat AWIFS satellite data which provides information at 5 days interval. The area under crop stubble burning in 12 major growing districts for the years 2017 and 2018 was observed as 292.8 and 294.6 thousand ha., respectively, which comes to about 14.6% of wheat area in both the years. Thus there is hardly any change in the area in the two years. The total wheat stubble burning area in all the 22 districts of Haryana mapped for the year 2018, however, was 308.5 thousand ha., which is 12 % of total wheat cropped area in the state. During both the years major wheat stubble burning was observed in Jind, Fatehabad, Kaithal and Karnal districts, moderate in Rohtak, Hisar, Sonapat, Sirsa, Panipat and Kurukshetra districts and very less in rest of the districts of the state. Total biomass burnt each year in each district and potential emission of polluting gases like CO<sub>2</sub>, SO<sub>2</sub>, NO<sub>x</sub> and PM<sub>2.5</sub> etc. from the burning of this crop biomass is also being computed. Besides, the power generation potential from the burning of such huge amount of crop biomass through biomass based power plants is also being estimated.

**KEY WORDS:** Crop Burning, Resourcesat, AWiFS, Biomass, Emissions