



## Bulletin No. 6

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# MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2021



Prepared by:

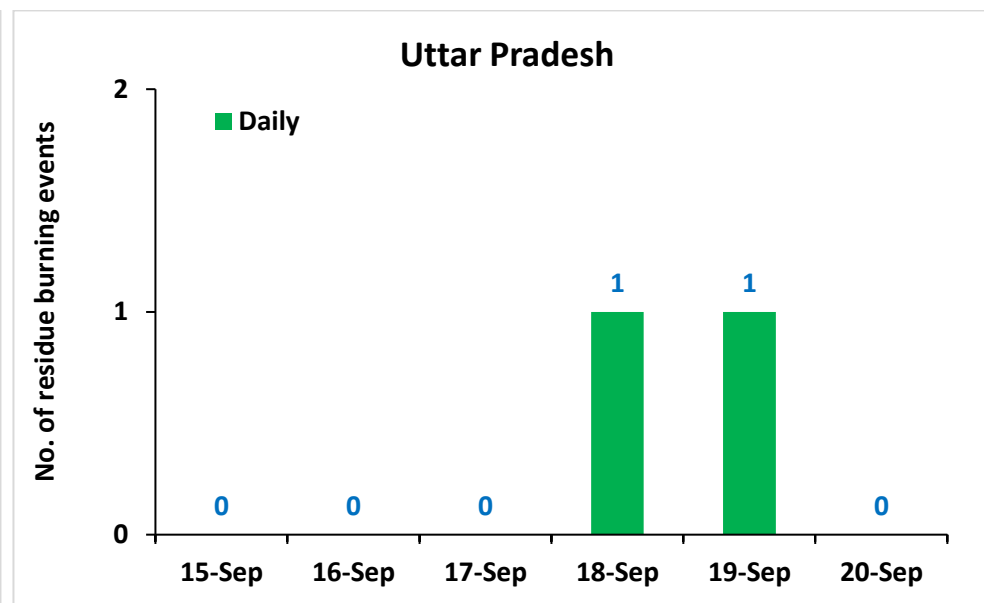
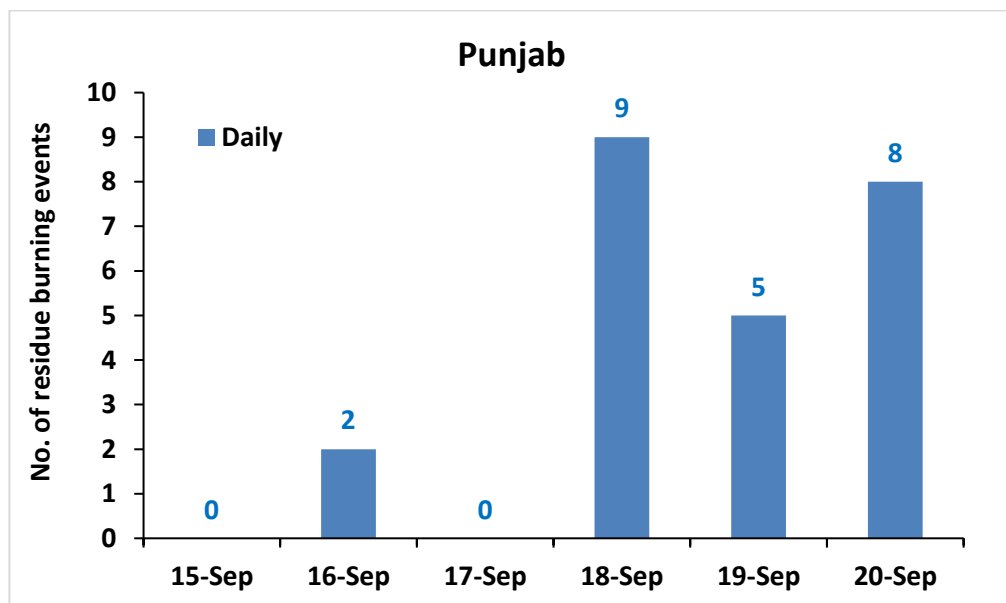
Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
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<http://creams.iari.res.in>

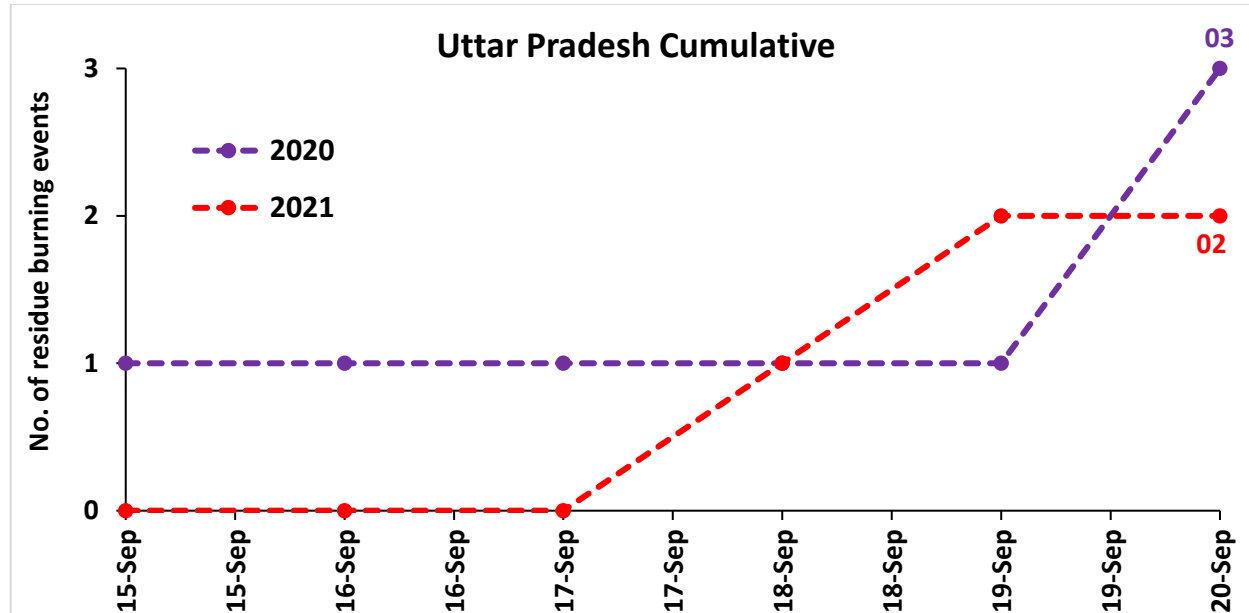
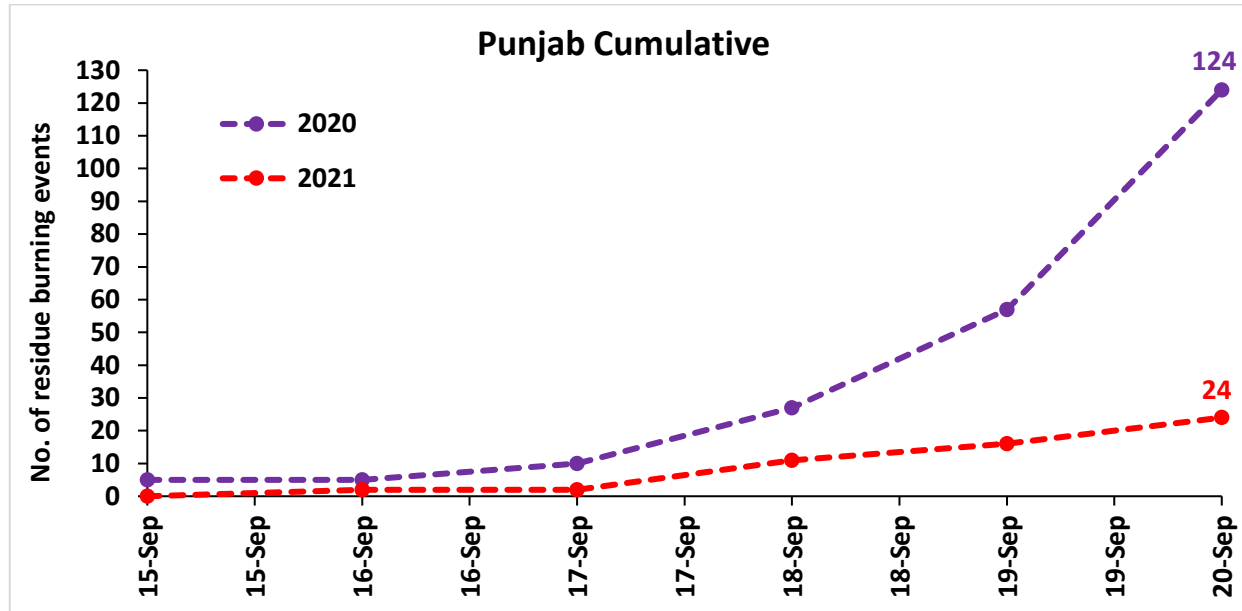
## Highlights for 20-September-2021

- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the new "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **08** residue burning events in the six study States on 20-Sep-2021.
- The state wise events detected on 20-Sep-2021 were **8** in Punjab, **0** in Haryana, **0** in UP, **0** in Delhi, **0** in Rajasthan and **0** in MP.
- Detection of burning events by satellites was hampered due to cloud cover over Western Madhya Pradesh, and Eastern Rajasthan.

### Temporal distribution of rice residue burning events for the study States in 2021

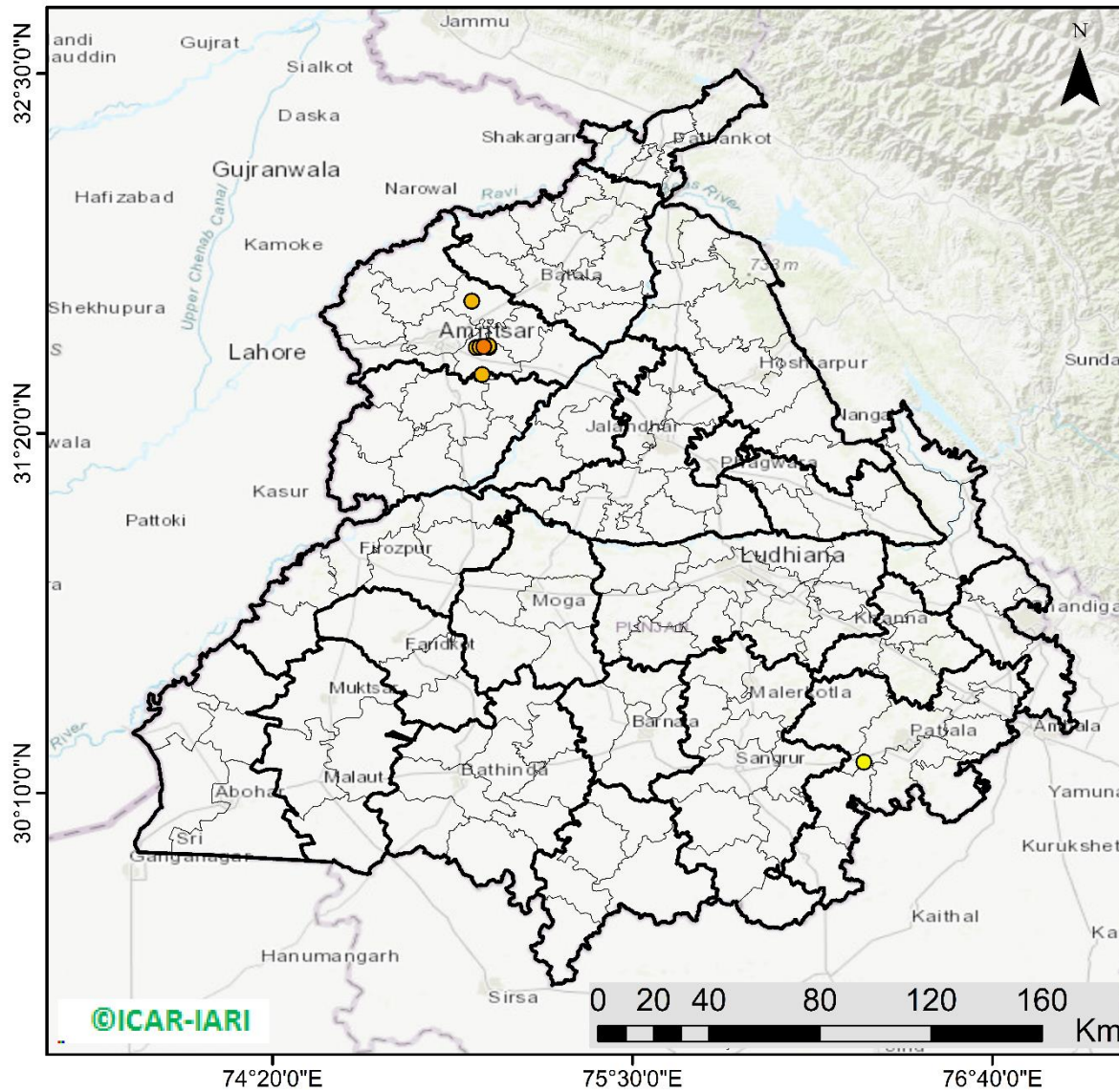


**Comparison of residue burning events in current year (2021) with previous year (2020) for the study States**



(a) Punjab

RICE RESIDUE BURNING IN PUNJAB



**08** burning events detected in Punjab on 20th September 2021

Fire Intensity (W/m<sup>2</sup>)

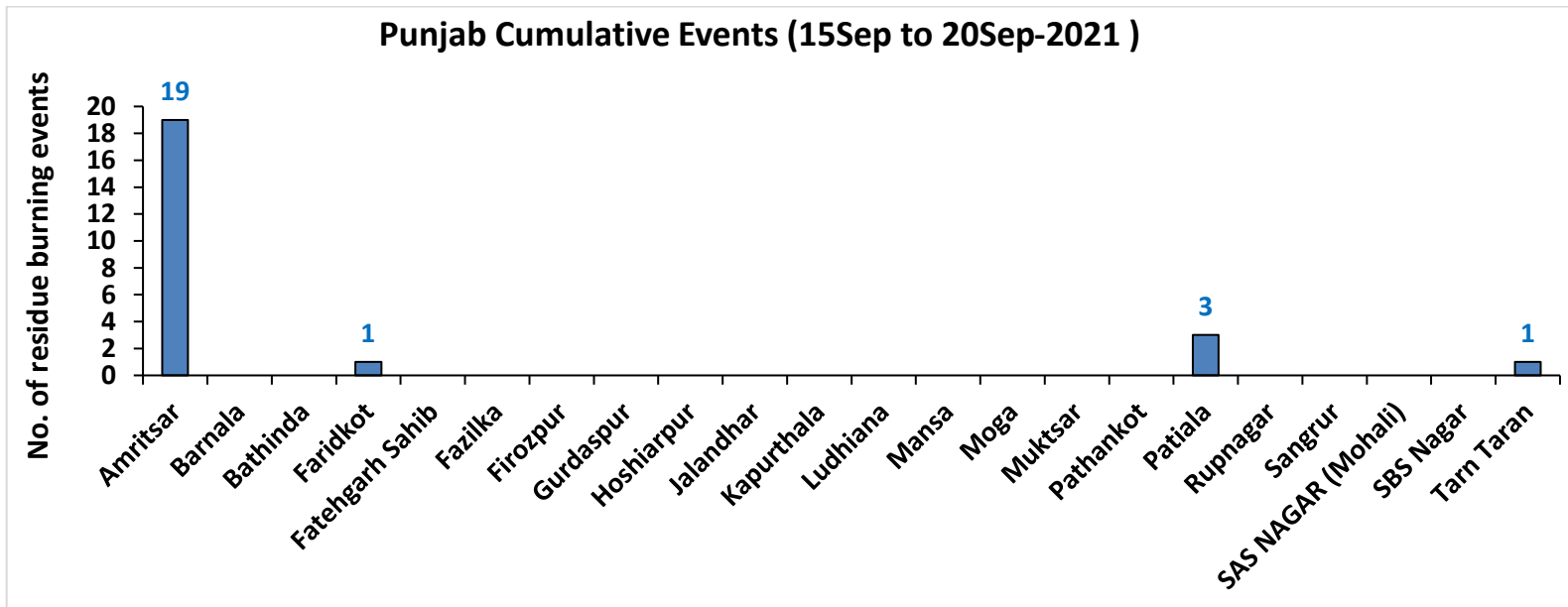
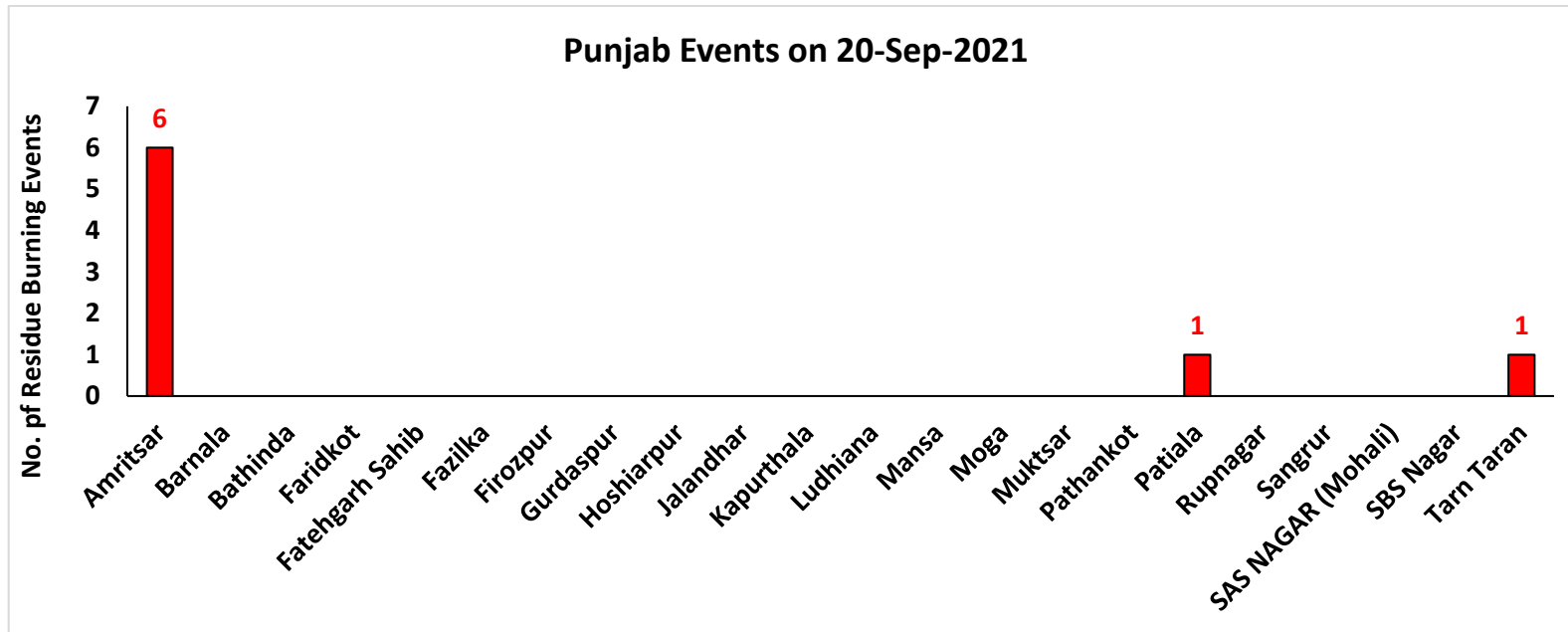
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20

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<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

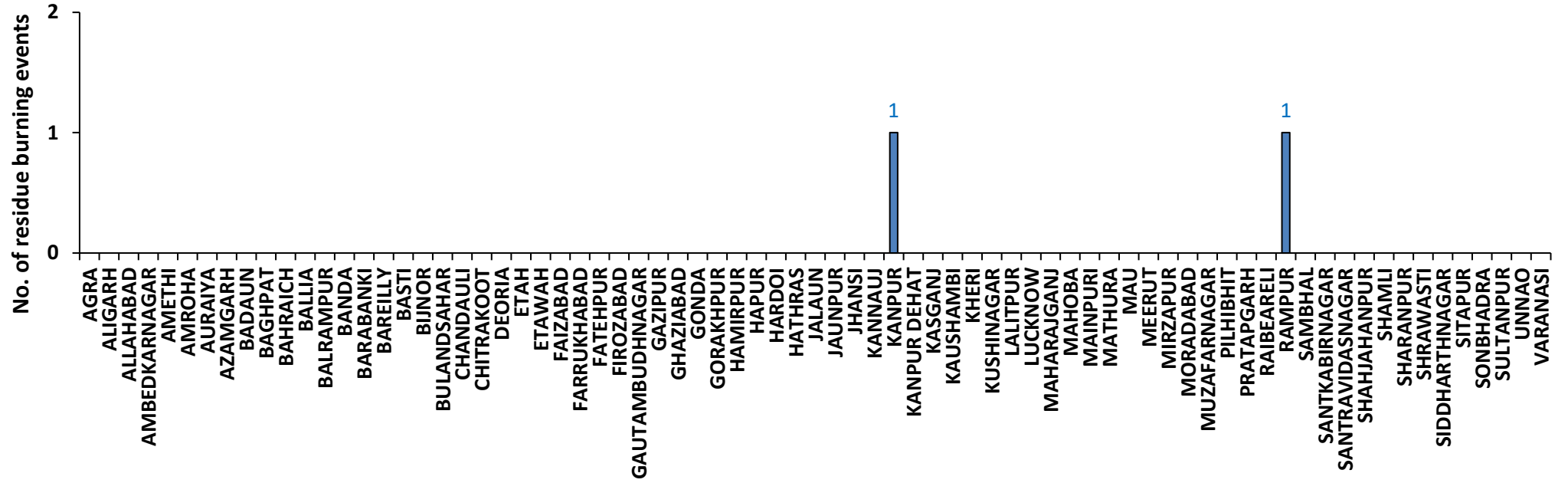
## District-wise number of residue burning events in Punjab (20-Sep-2021)





## District-wise number of residues burning events in Uttar Pradesh (20-Sep-2021)

Uttar Pradesh Cumulative Events (15Sep to 20Sep-2021 )



State-wise and date-wise number of paddy residue burning events detected in 2020 and 2021

(Period: 15 - 20 September)

Number of Paddy Residue Burning Events Detected												
	Punjab		Haryana		Uttar Pradesh		Delhi		Rajasthan		Madhya Pradesh	
	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
<b>15-Sep</b>	5	0	2	0	1	0	0	0	1	0	2	0
<b>16-Sep</b>	0	2	1	0	0	0	0	0	0	0	0	0
<b>17-Sep</b>	5	0	3	0	0	0	0	0	0	0	0	0
<b>18-Sep</b>	17	9	0	0	0	1	0	0	0	0	0	0
<b>19-Sep</b>	30	5	2	0	0	1	0	0	0	0	0	0
<b>20-Sep</b>	67	8	6	0	2	0	0	0	0	0	0	0
<b>Total</b>	<b>124</b>	<b>24</b>	<b>14</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>2</b>	<b>0</b>

**Details of residue burning events in Punjab on 20-Sep-2021**

S. No.	District	Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day/Night	Fire Power (W/m2)
1	AMRITSAR	JANDIALA GURU	S-NPP	30.26670	76.25040	9/20/2021	12:51:57	D	3.30
2	AMRITSAR	JANDIALA GURU	S-NPP	31.52330	75.01290	9/20/2021	14:32:14	D	7.30
3	AMRITSAR	JANDIALA GURU	S-NPP	31.61200	75.03490	9/20/2021	12:51:57	D	6.40
4	AMRITSAR	JANDIALA GURU	S-NPP	31.61620	75.03390	9/20/2021	12:51:57	D	6.40
5	AMRITSAR	JANDIALA GURU	S-NPP	31.76160	74.97930	9/20/2021	12:51:57	D	7.30
6	AMRITSAR	MAJITHA	AQUA	31.61100	74.99400	9/20/2021	13:50:31	D	7.50
7	PATIALA	PATIALA	AQUA	31.61300	75.00600	9/20/2021	13:50:31	D	9.50
8	TARN TARAN	TARN TARAN	AQUA	31.61400	75.01800	9/20/2021	13:50:31	D	15.00



## The study used data received from following Satellites at NRSC Ground Station

S. No.	Satellite Name	Sensor	Resolution (meter)	Day / Night Passes
1.	Suomi NPP	VIIRS	375 / 750	Both
2.	Terra	MODIS	1000	Both
3.	Aqua	MODIS	1000	Both

The rice mask for the Punjab and Haryana were provided by MNCFC, MoA&FW, Govt of India  
The kharif crop mask for Delhi, Uttar Pradesh, Rajasthan and Madhya Pradesh were provided by NRSC

### Study Team

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GIS Maps of fire events can be visualized online on ICAR KRISHI Geoportal website: <http://geoportal.icar.gov.in:8080/geoexplorer/composer/>  
(Part of KRISHI Portal: <https://krishi.icar.gov.in> initiative)

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