



**Bulletin  
No. 25**

**Events Date:  
09-Oct-2021**

**Issued on:  
09-Oct-2021**



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



**Prepared by:**

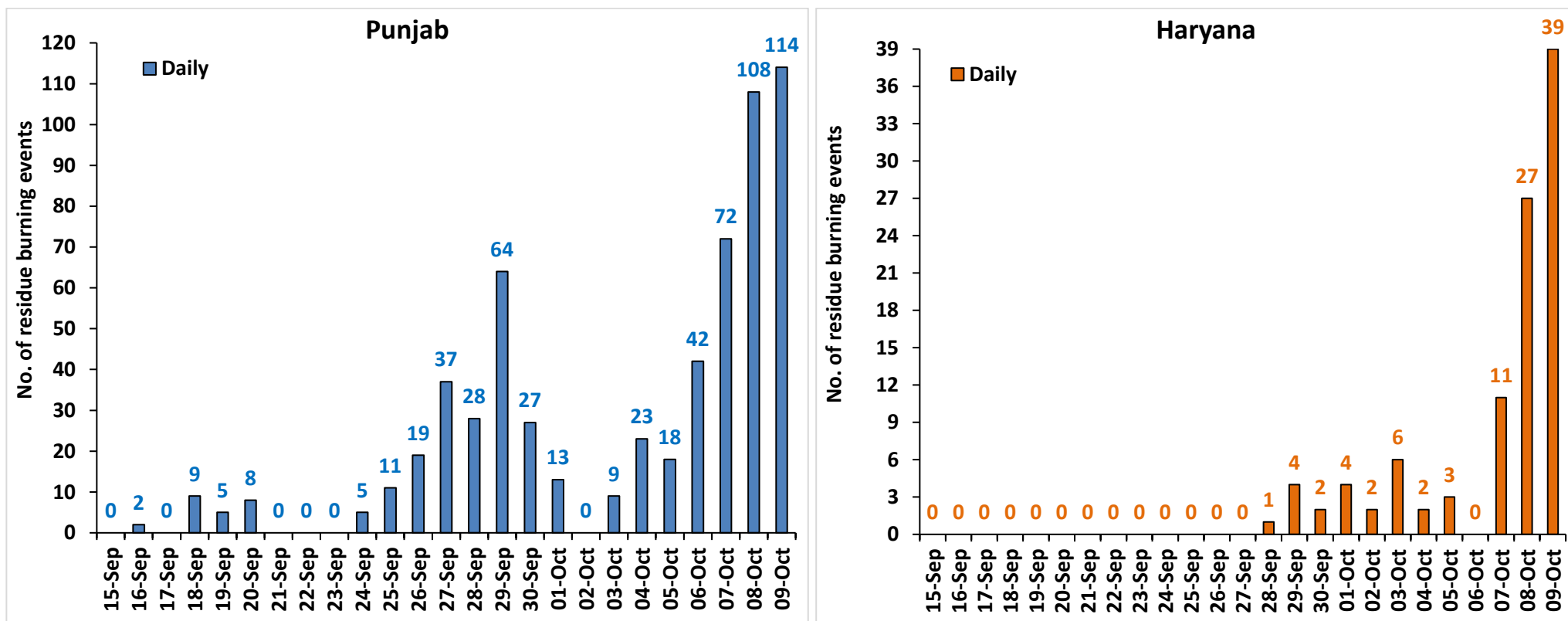
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

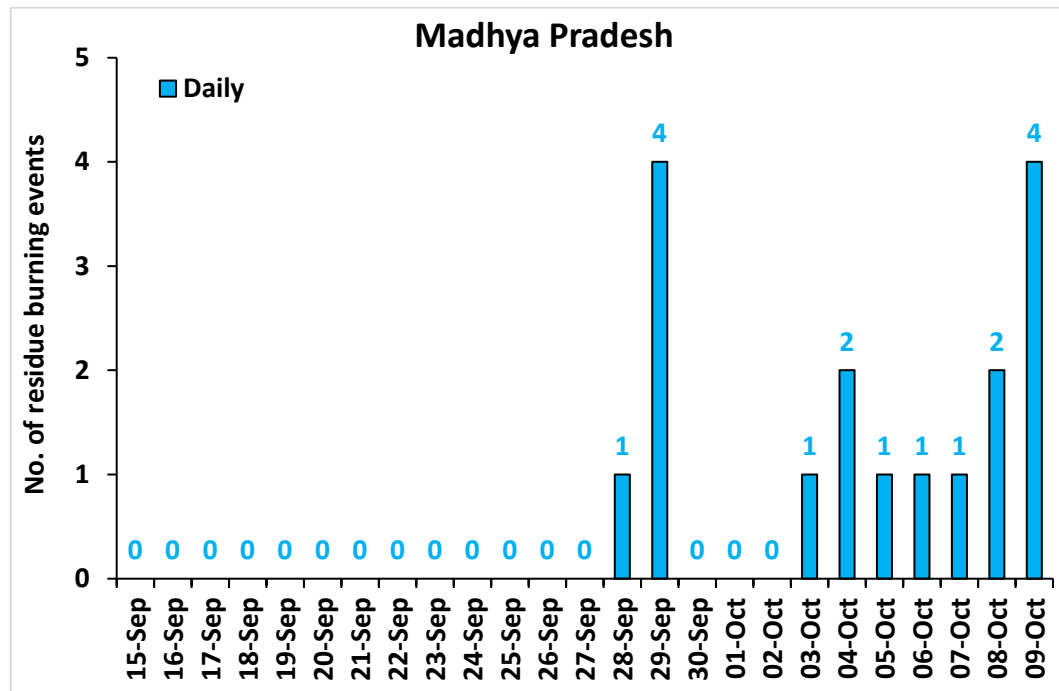
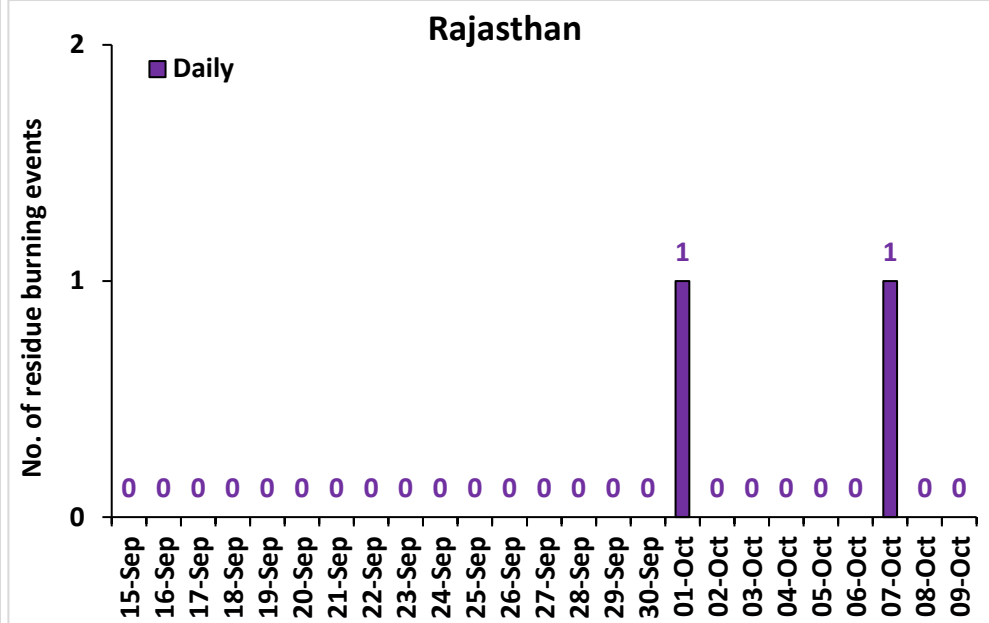
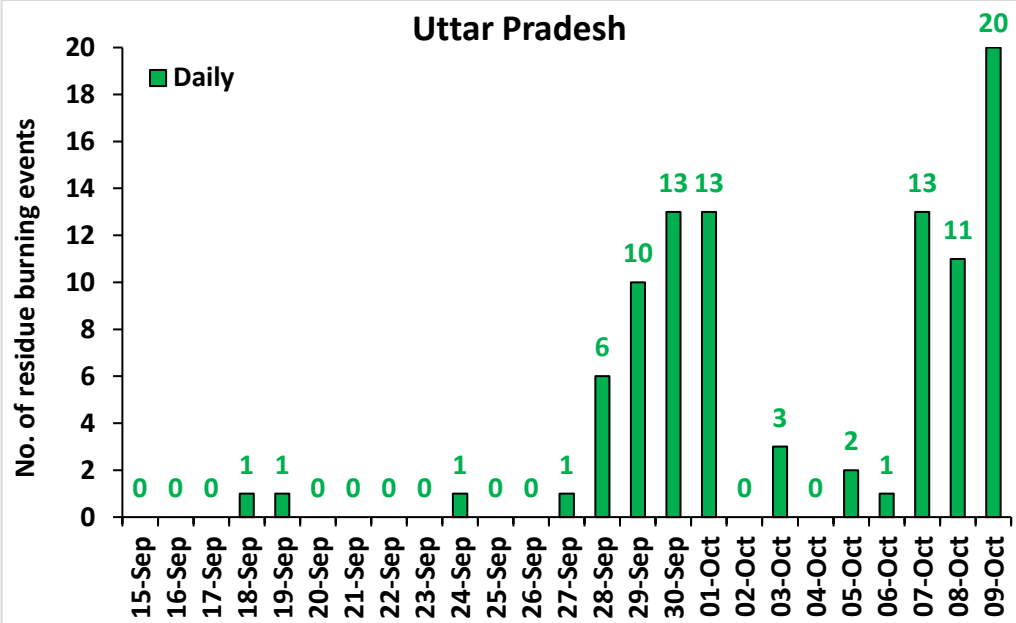
**<http://creams.iari.res.in>**

## Highlights for 09-October-2021

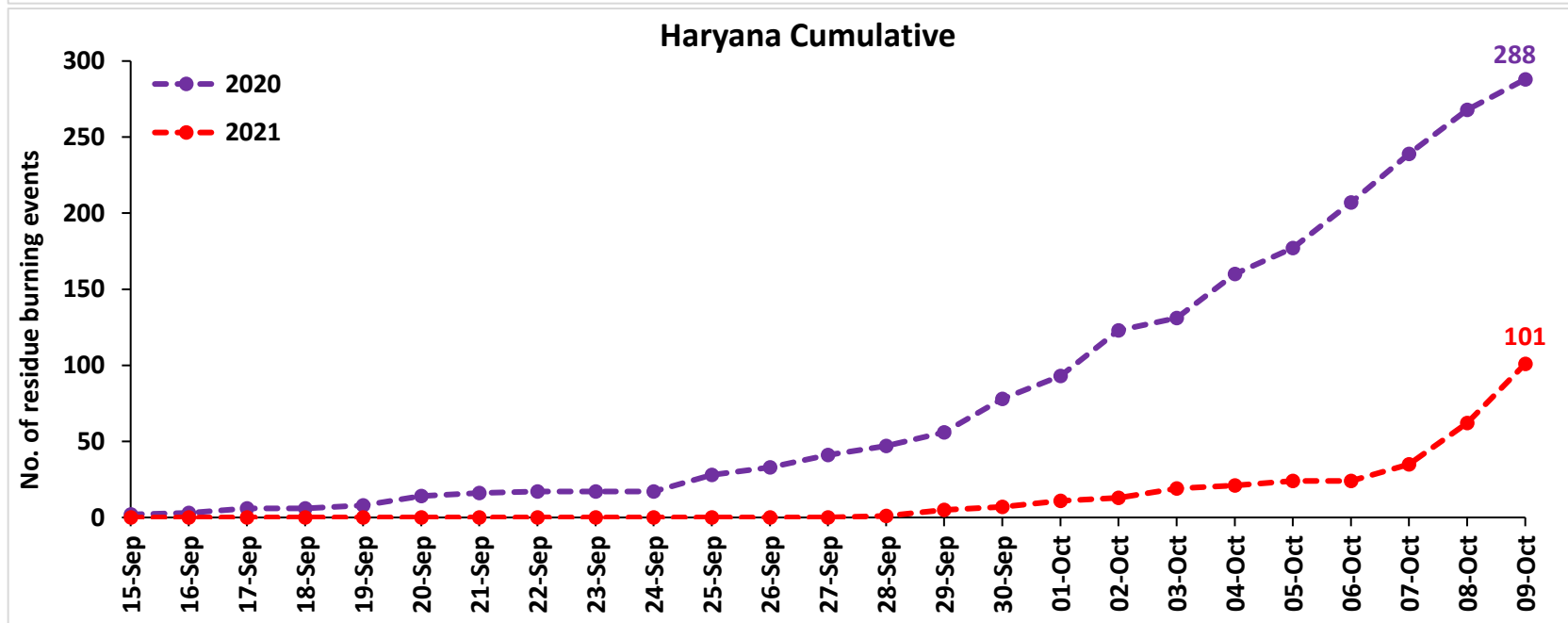
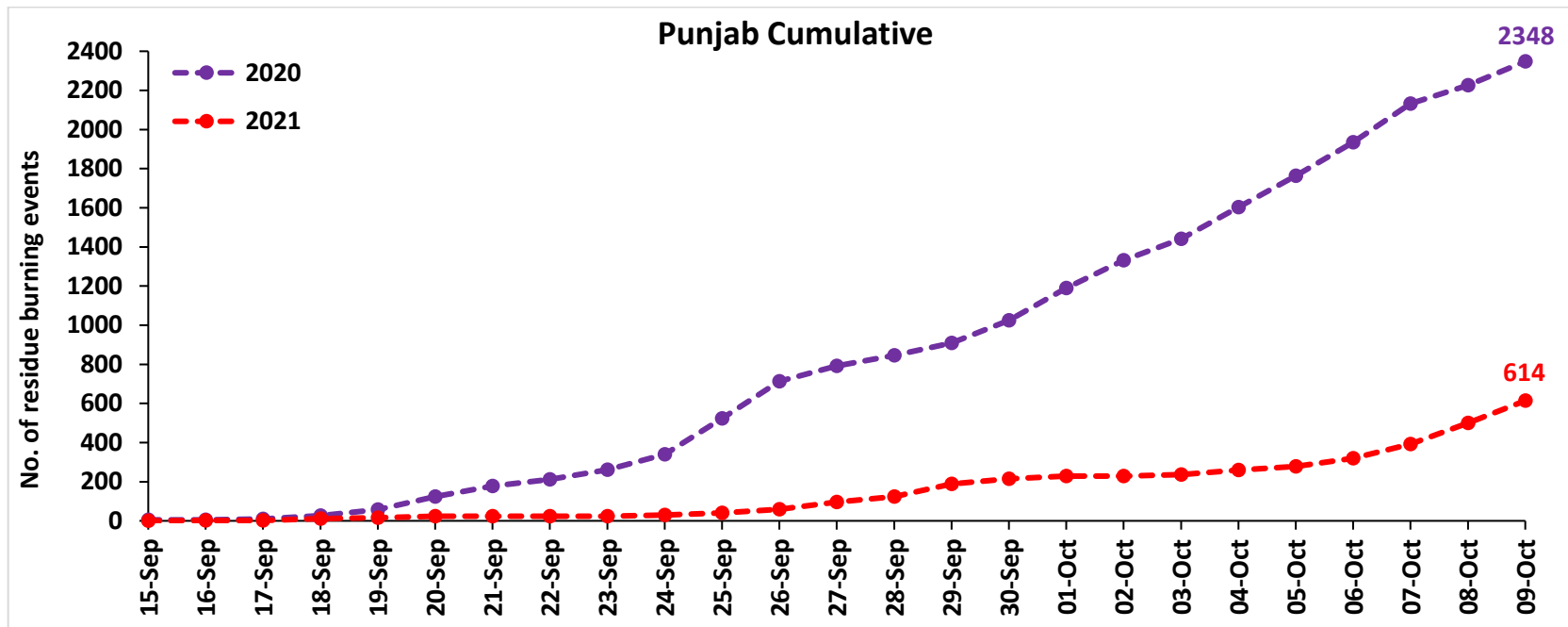
- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the new "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **177** residue burning events in the six study States on 09-Oct-2021.
- The state wise events detected on 09-Oct-2021 were **114** in Punjab, **39** in Haryana, **20** in UP, **0** in Delhi, **0** in Rajasthan and **4** in MP.
- Detection of burning events by satellites was hampered due to scattered clouds over Uttar Pradesh.

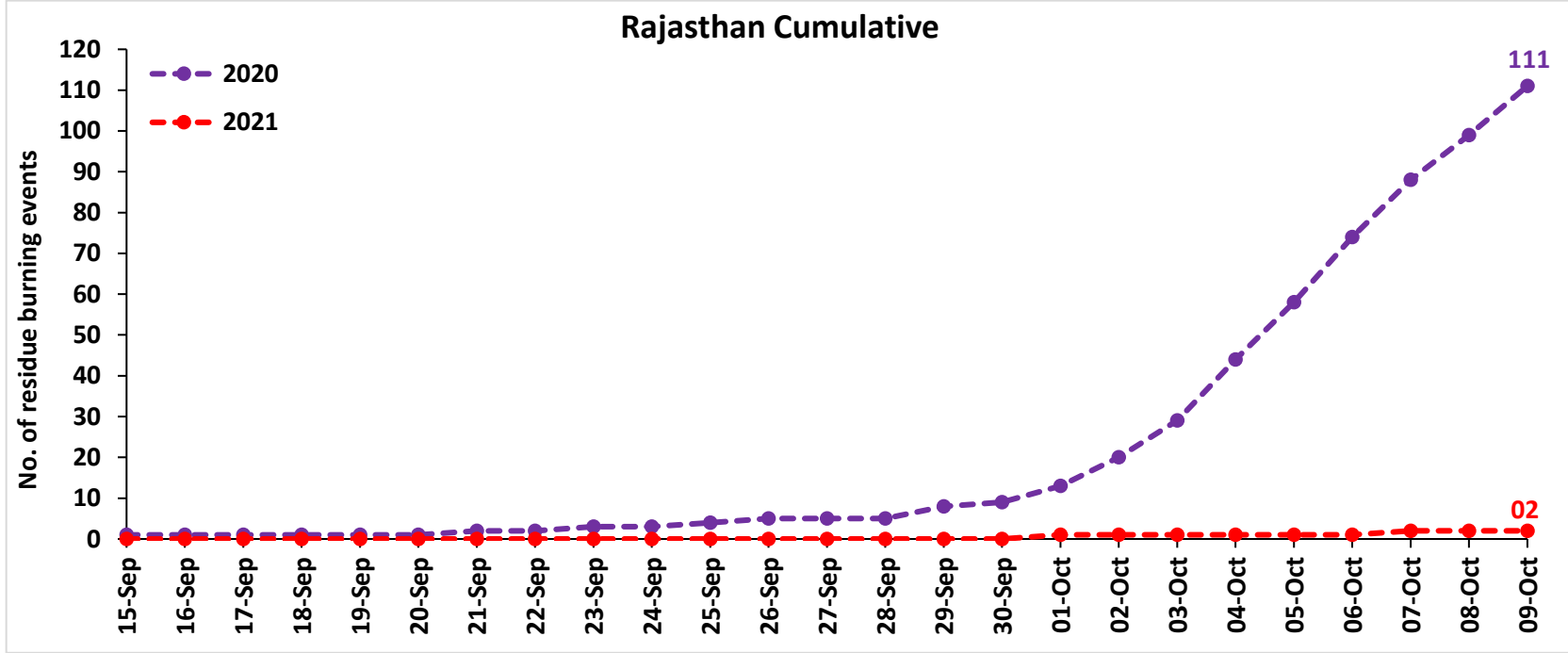
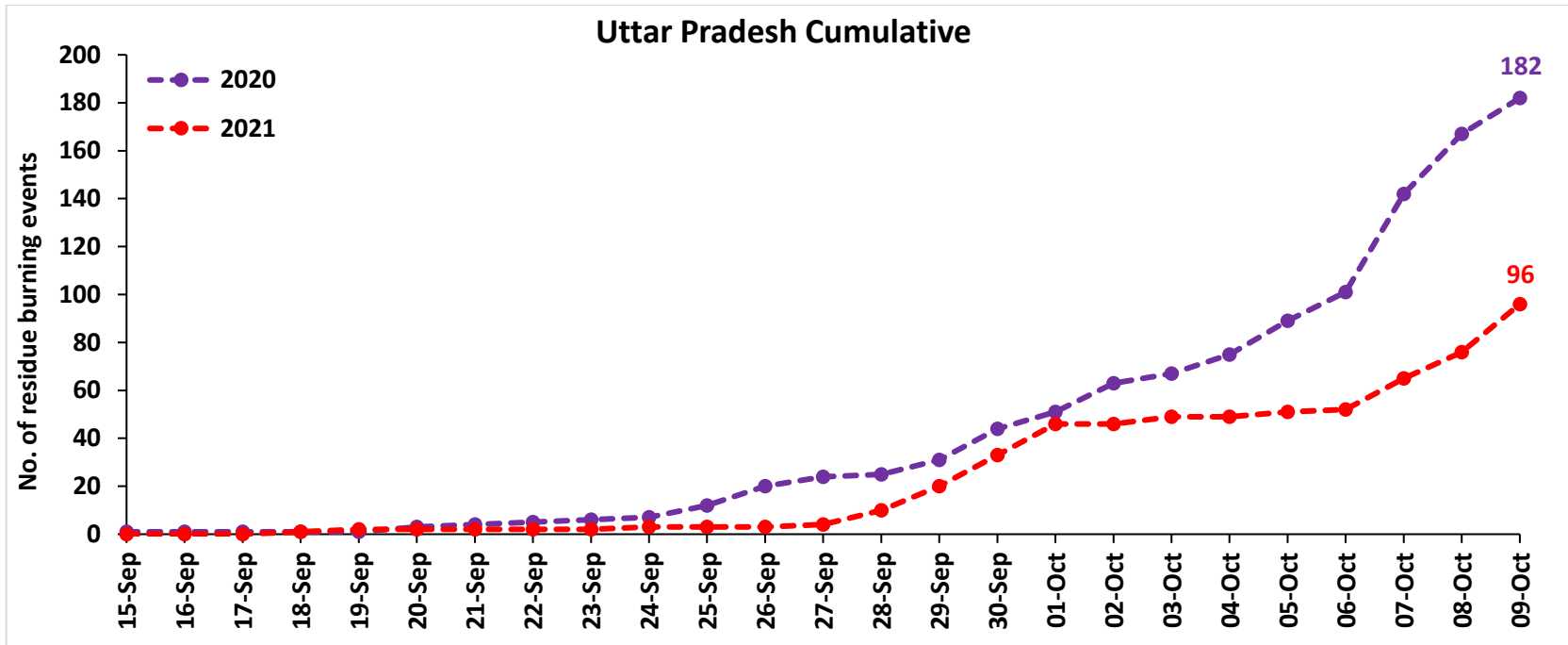
### Temporal distribution of rice residue burning events for the study States in 2021

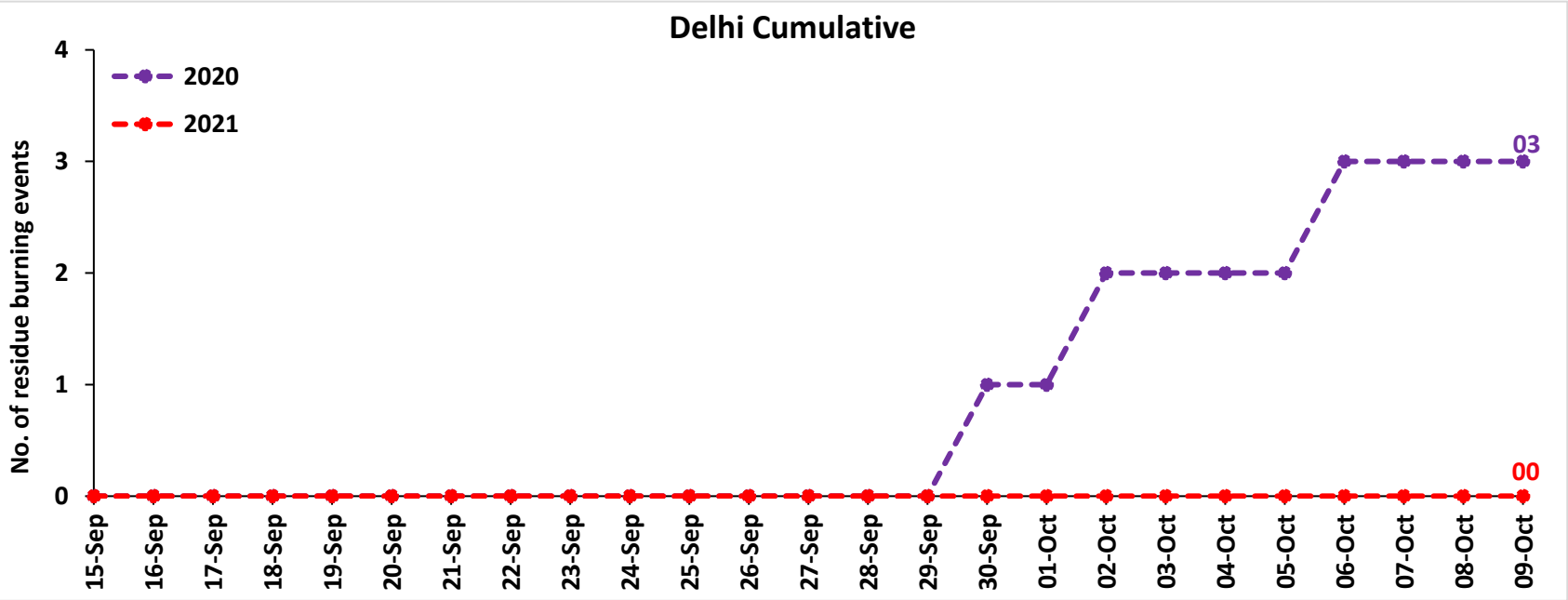
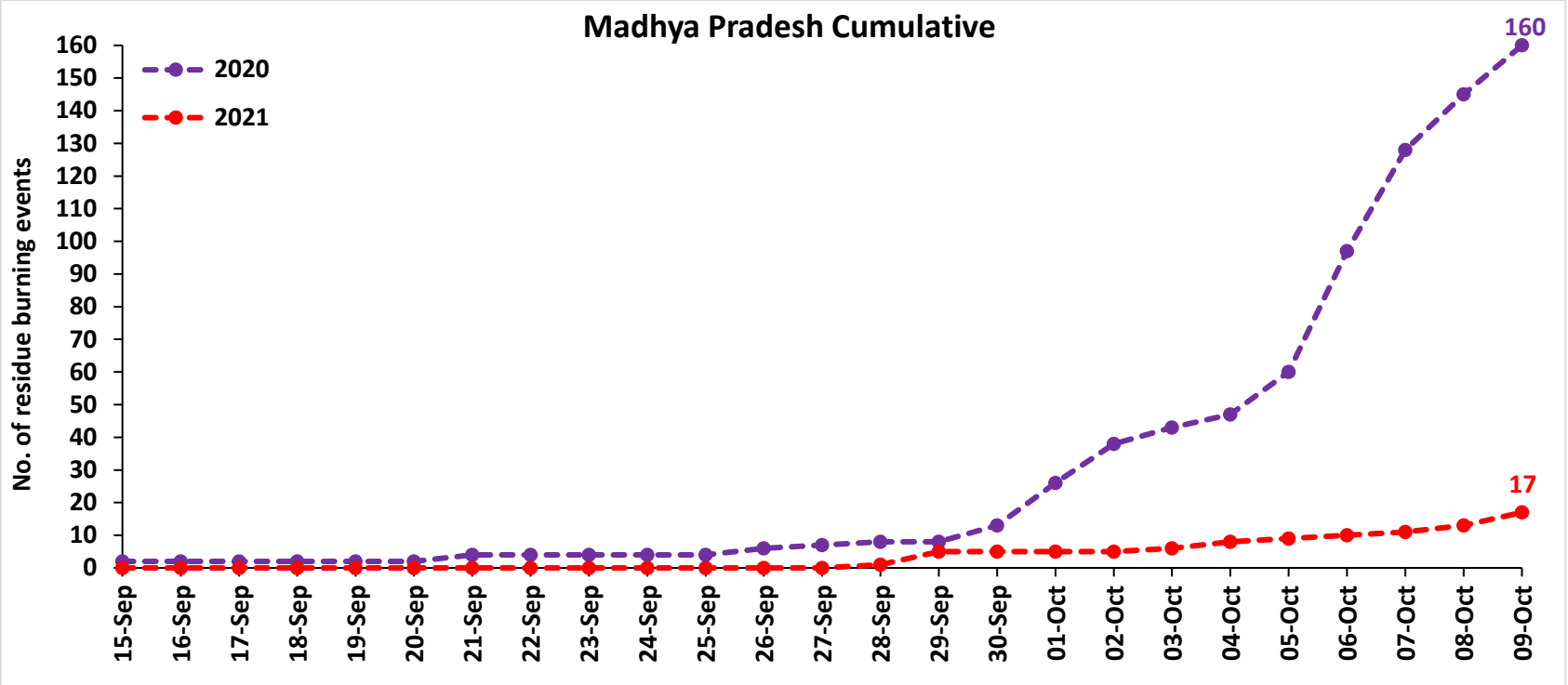




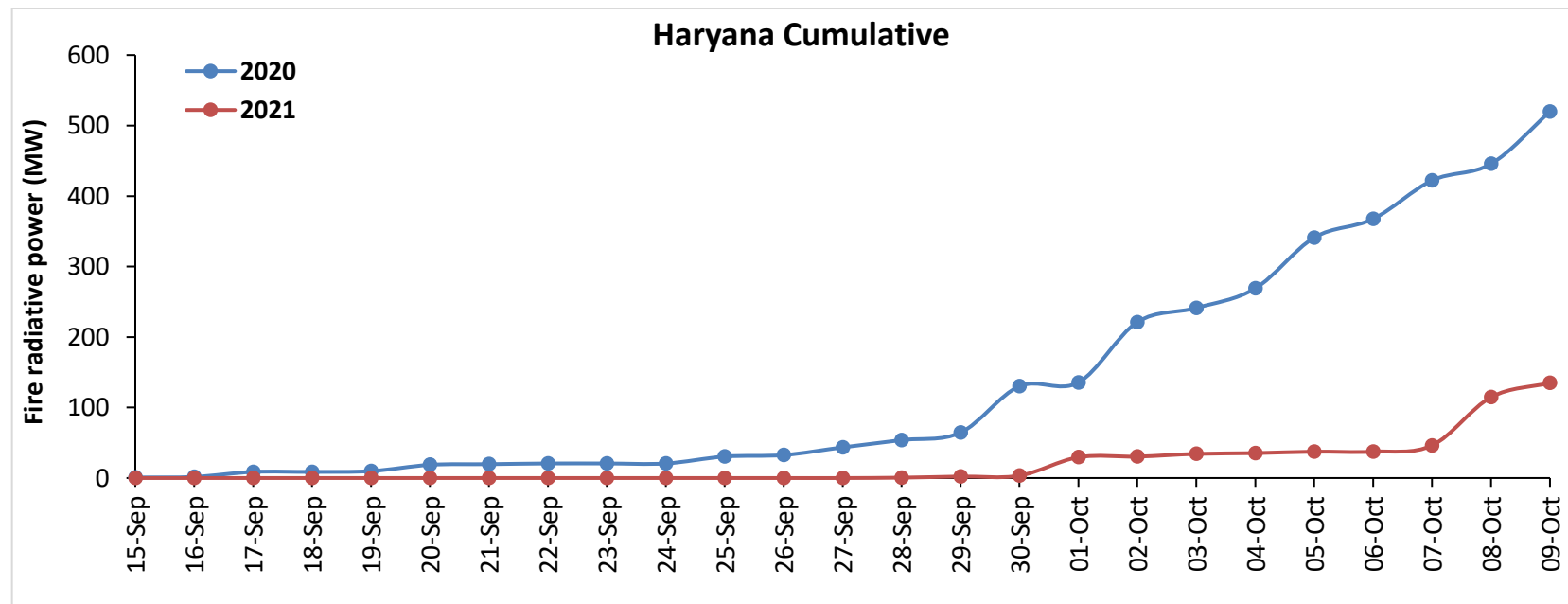
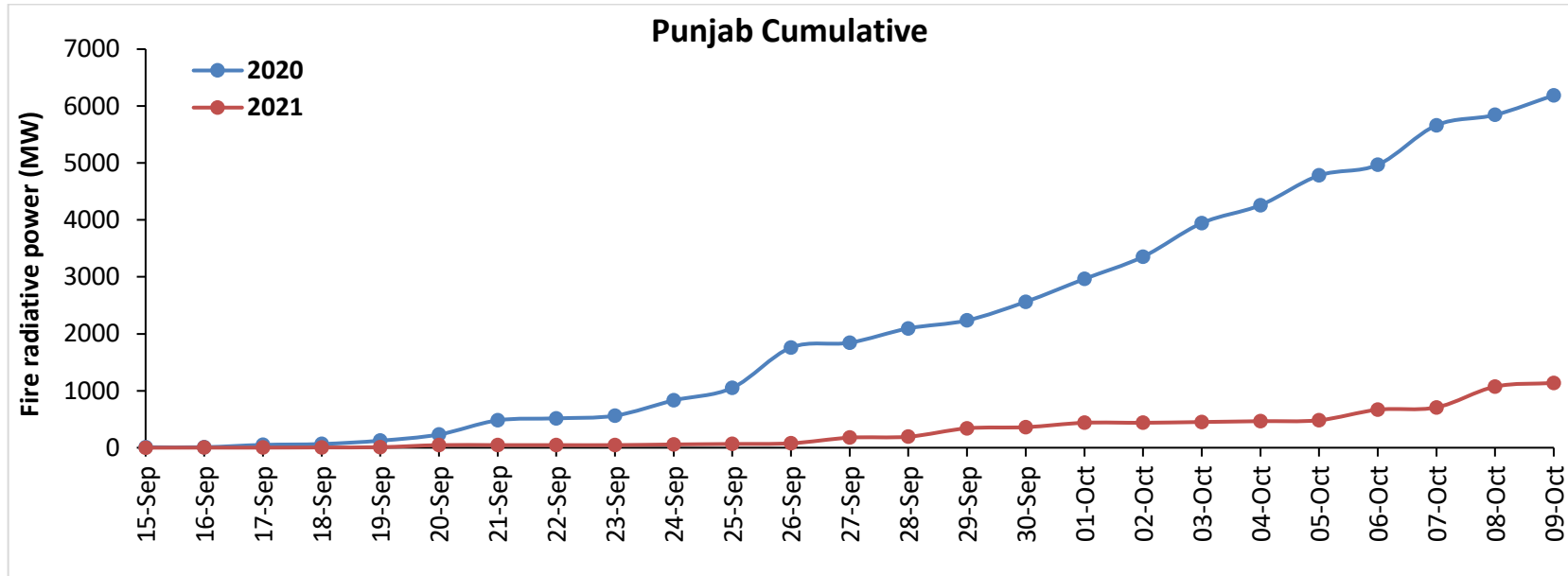
### Comparison of residue burning events in current year (2021) with previous year (2020) for the study States

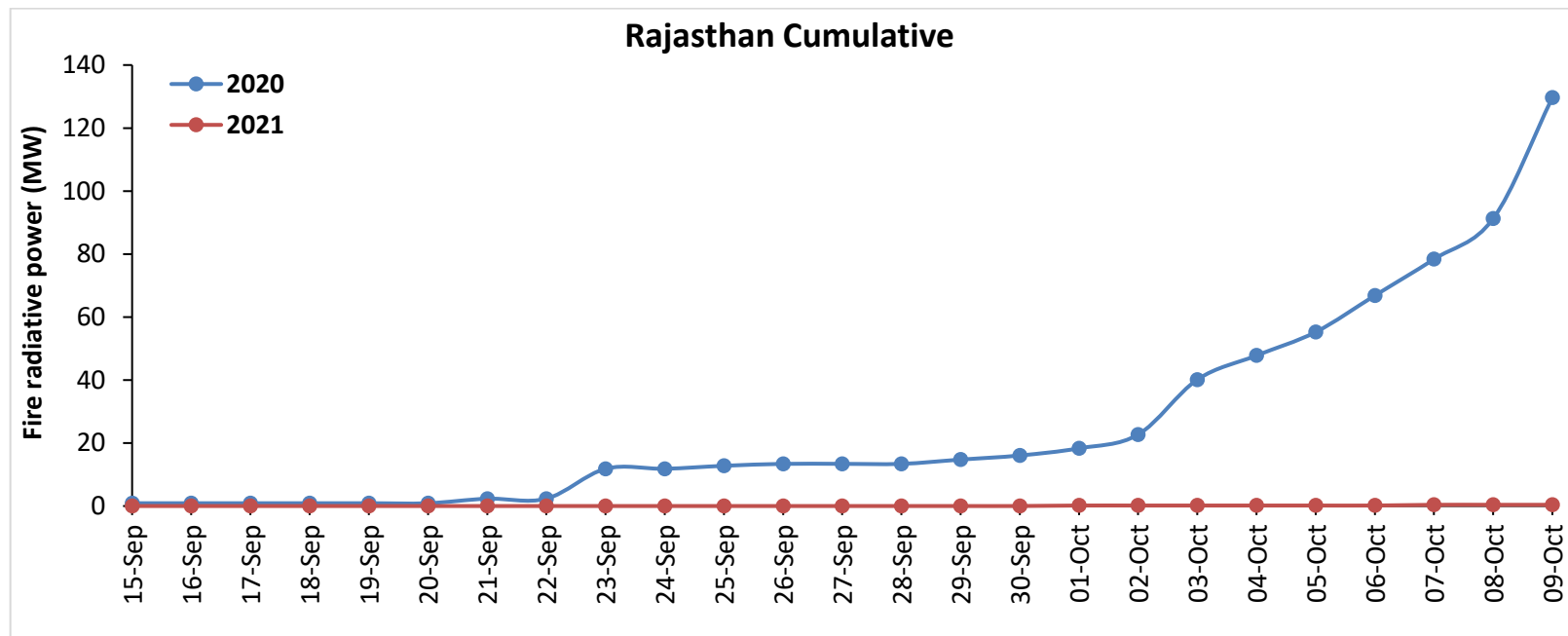
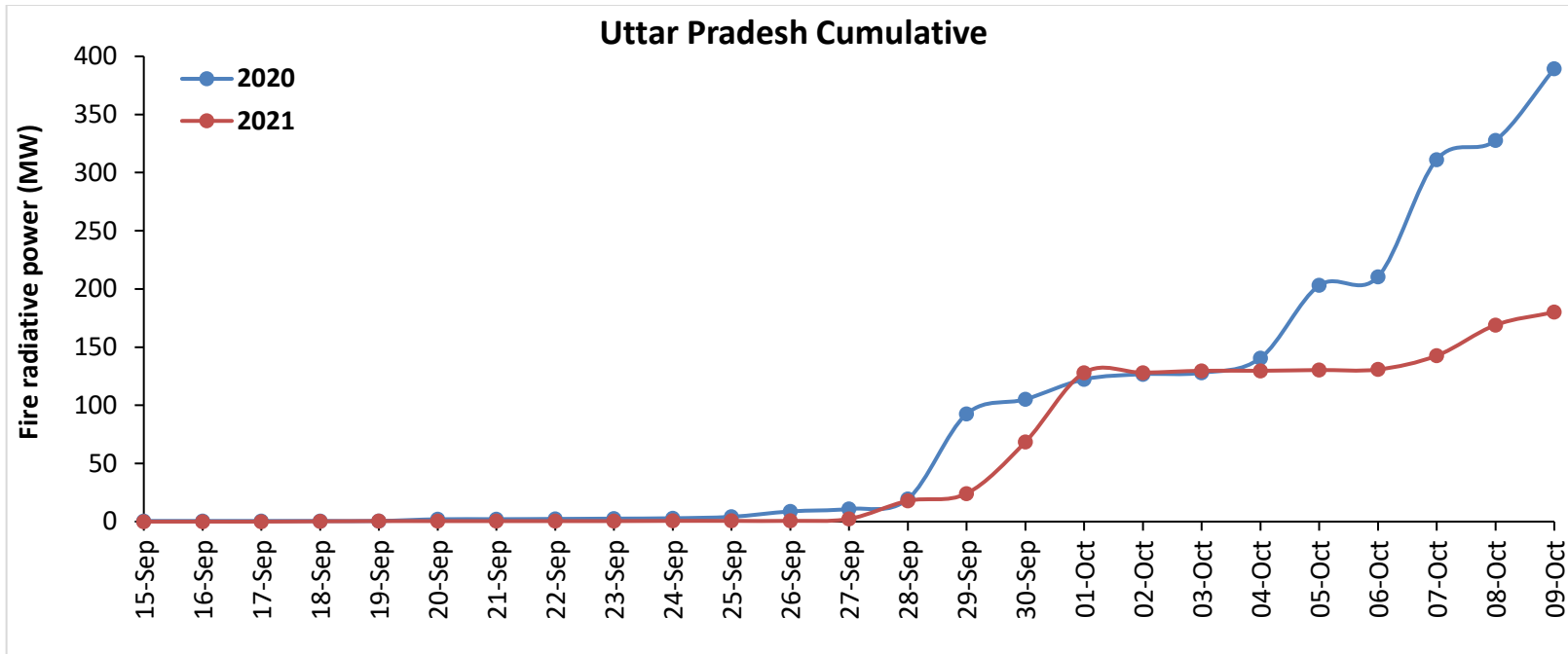




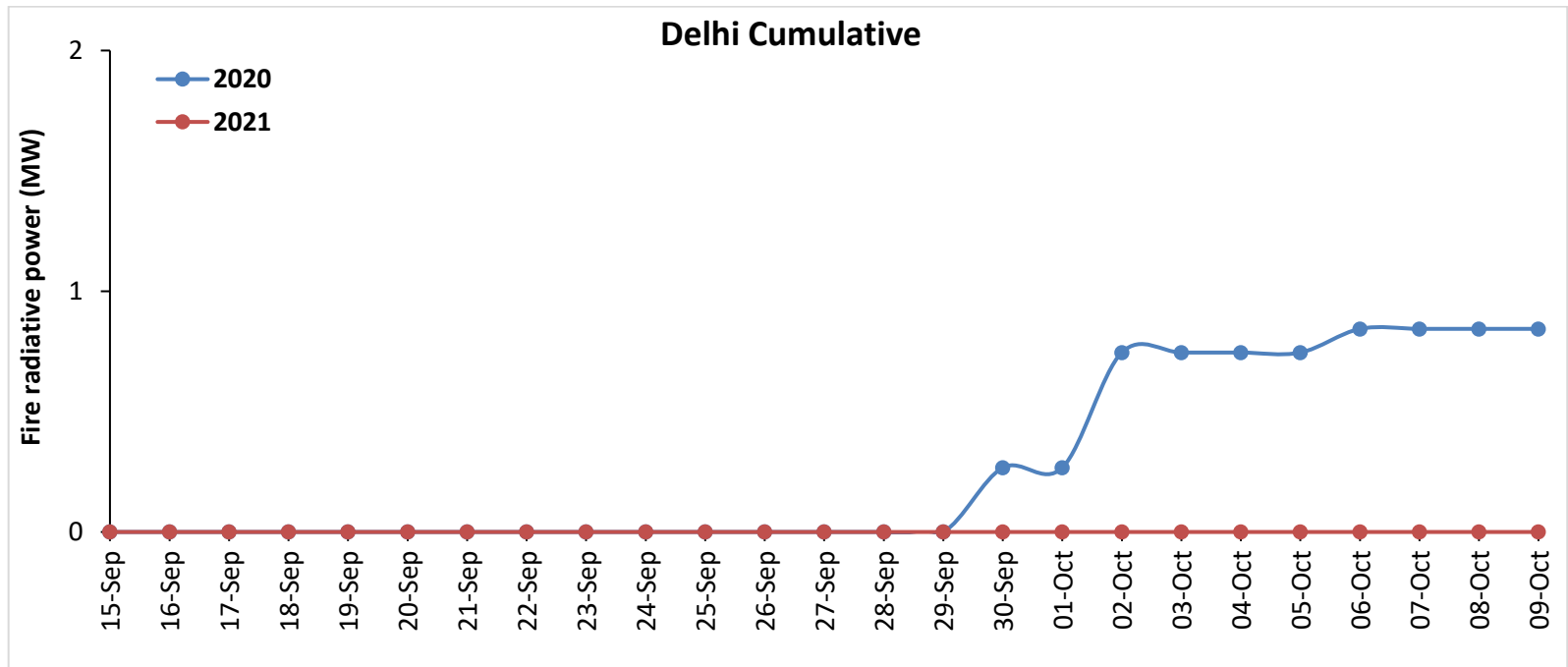
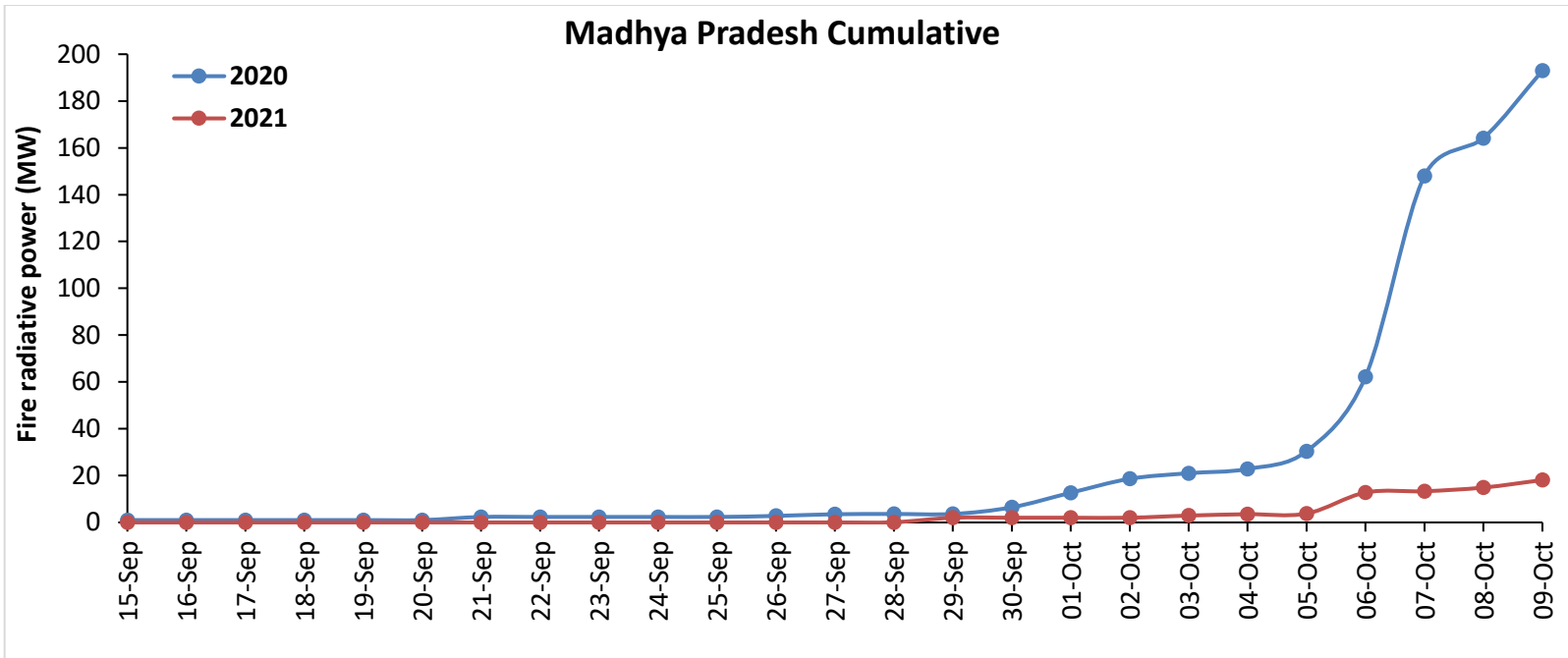


**Comparison of residue burning fire power in current year (2021) with previous year (2020) for the study States**



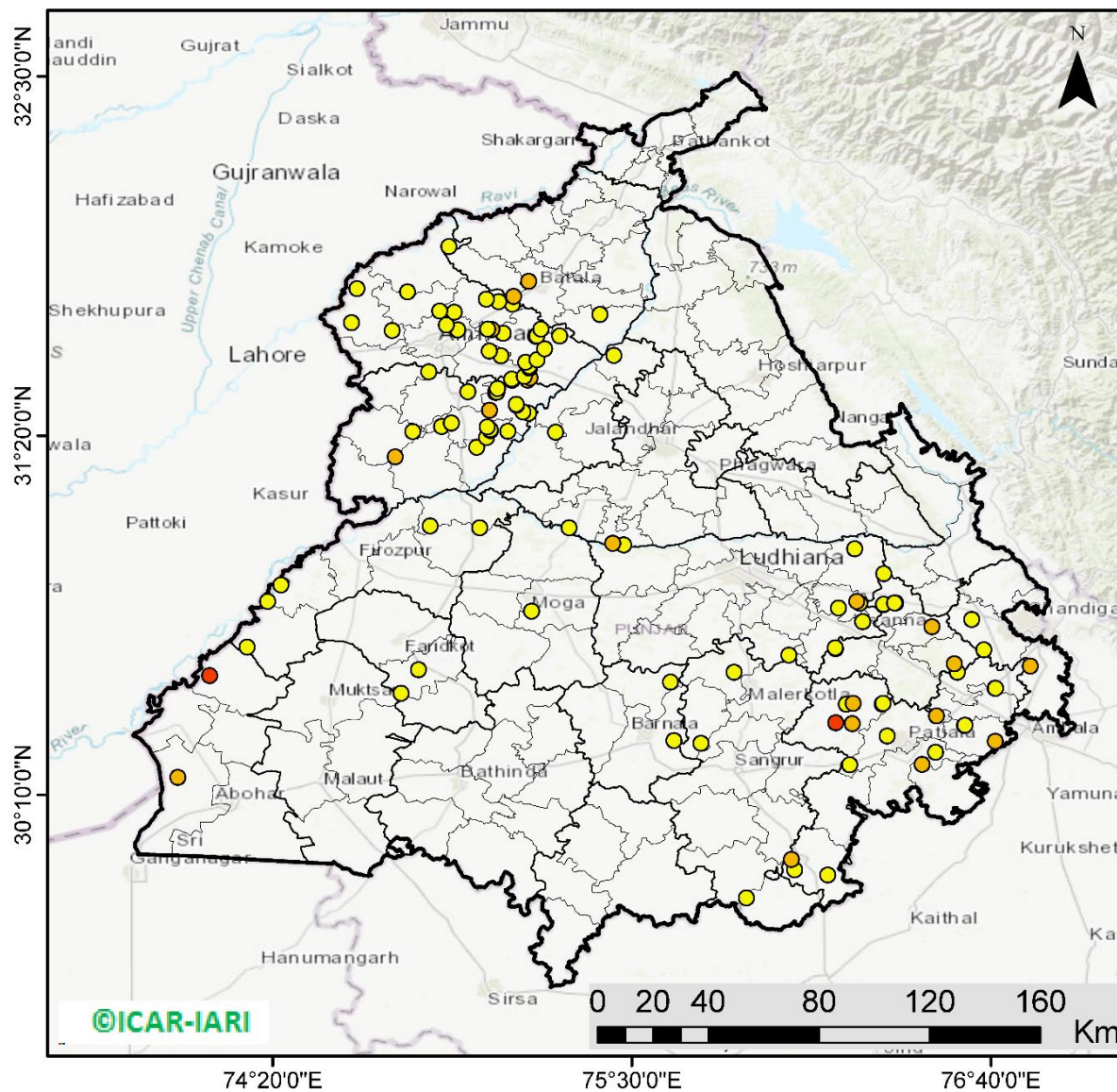






# Punjab

## RICE RESIDUE BURNING IN PUNJAB



**114** burning events detected in Punjab on **09th October 2021**

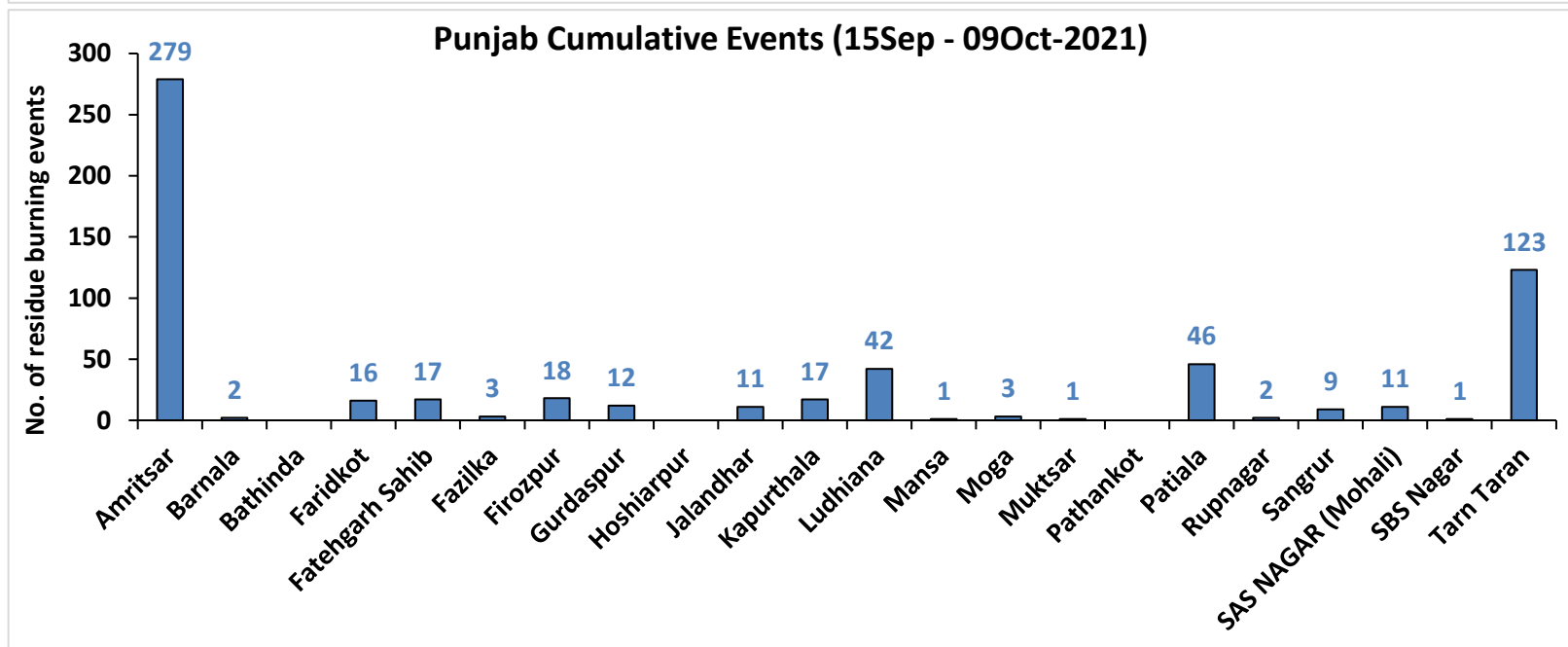
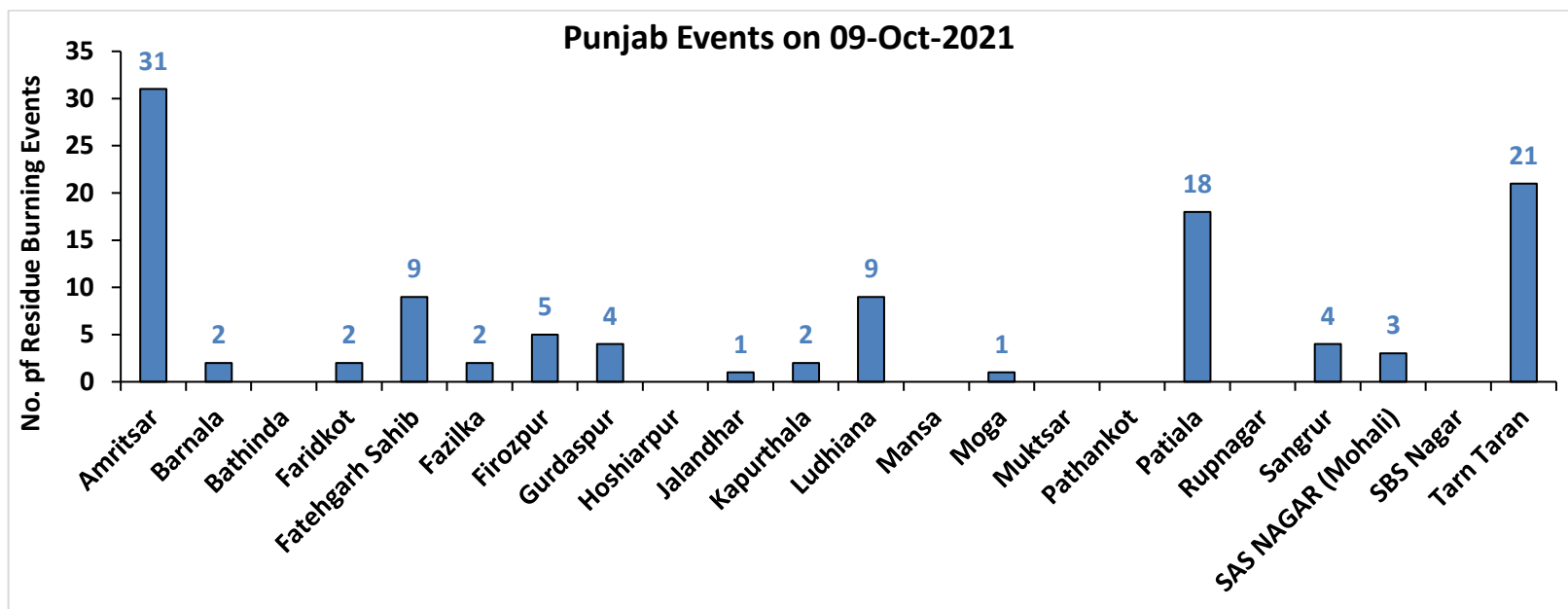
### Fire Intensity (W/m<sup>2</sup>)

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



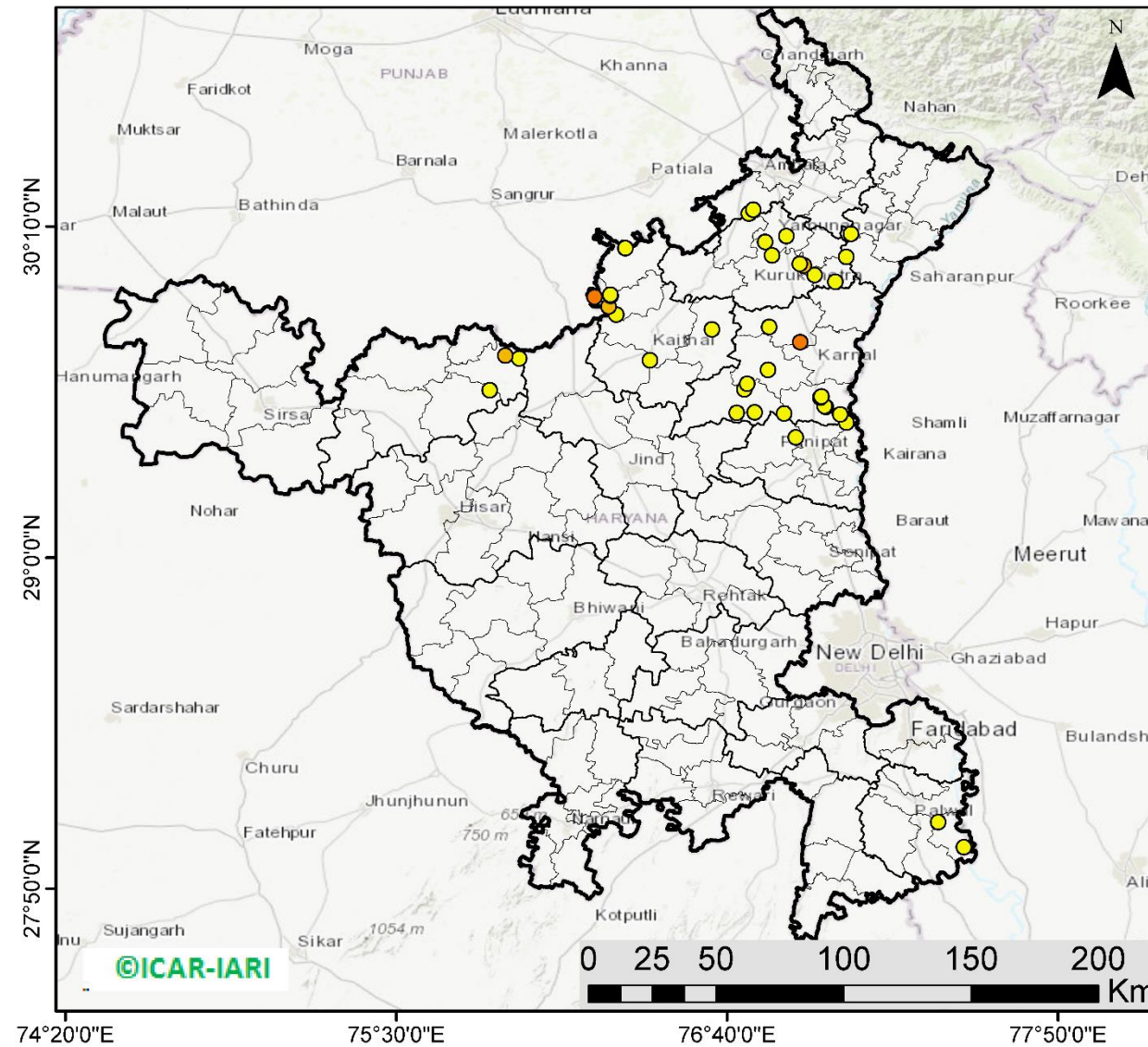
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Punjab (15Sep - 09Oct-2021)



# Haryana

## RICE RESIDUE BURNING IN HARYANA



**39** burning events detected in Haryana on **09th October 2021**

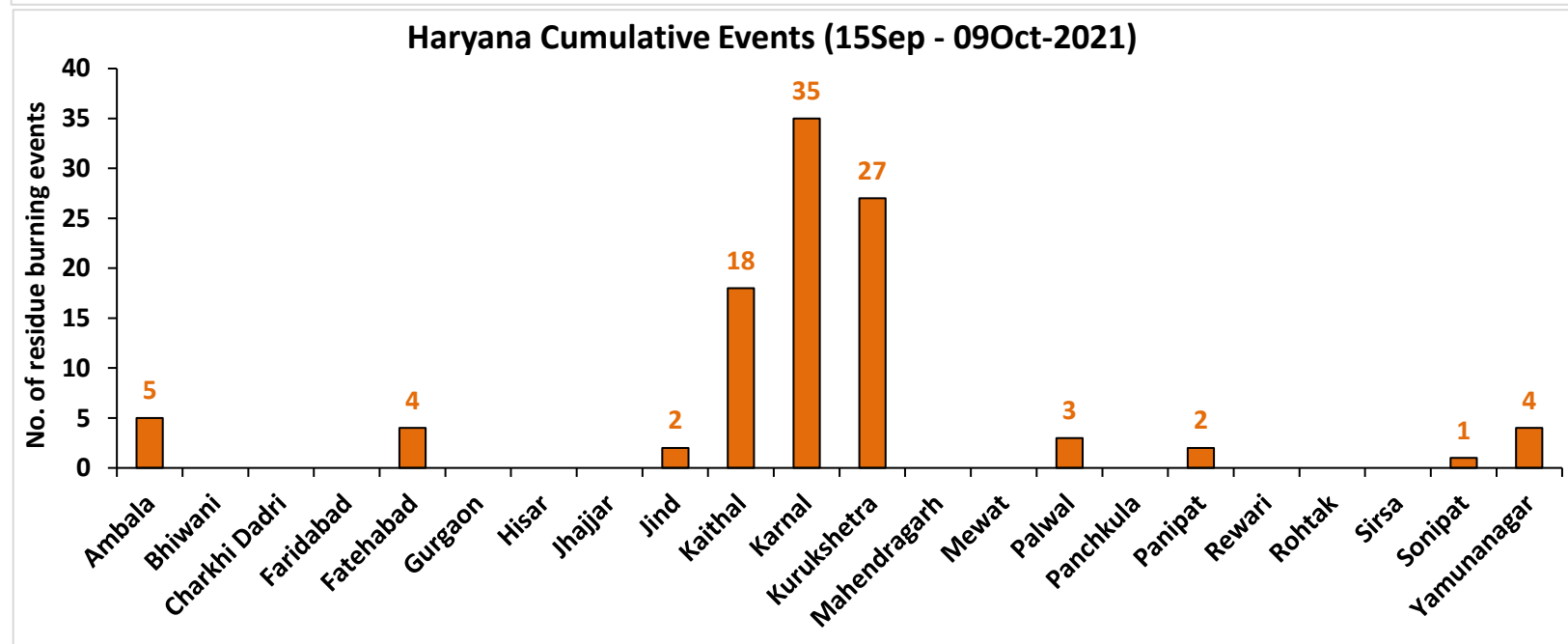
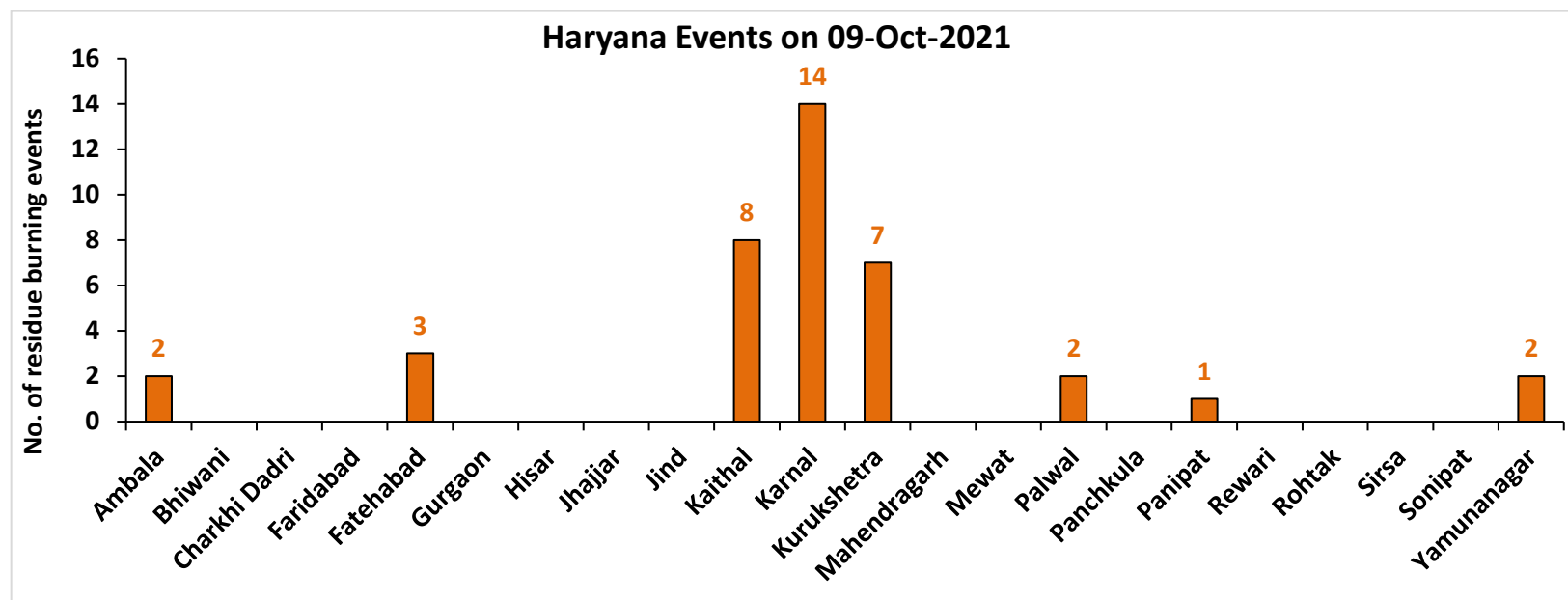
### Fire Intensity (W/m<sup>2</sup>)

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



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

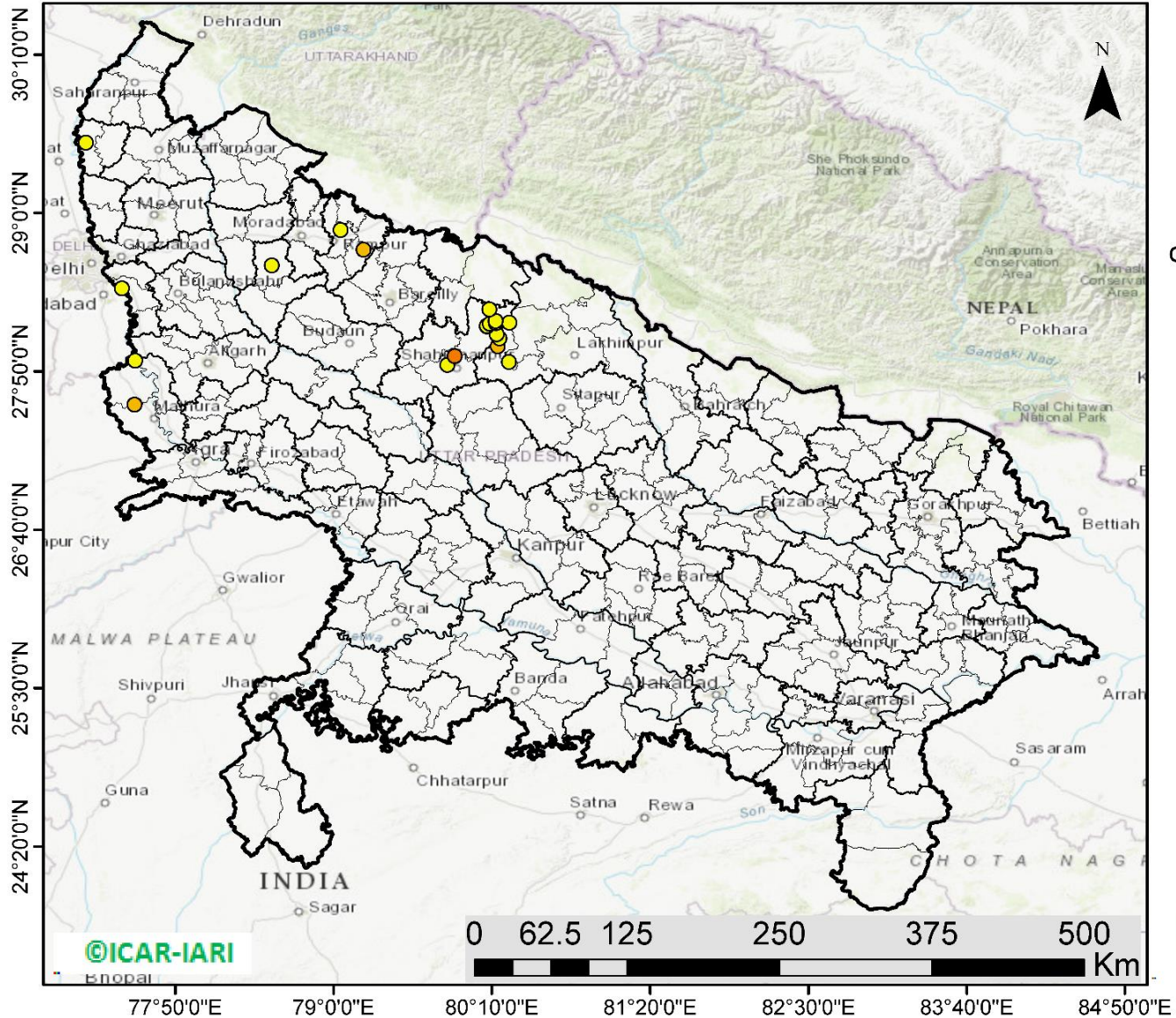
## District-wise cumulative number of residues burning events in Haryana (15Sep - 09Oct-2021)





# Uttar Pradesh

## RICE RESIDUE BURNING IN UTTAR PRADESH



**20** burning events detected in Uttar Pradesh on 09th October 2021

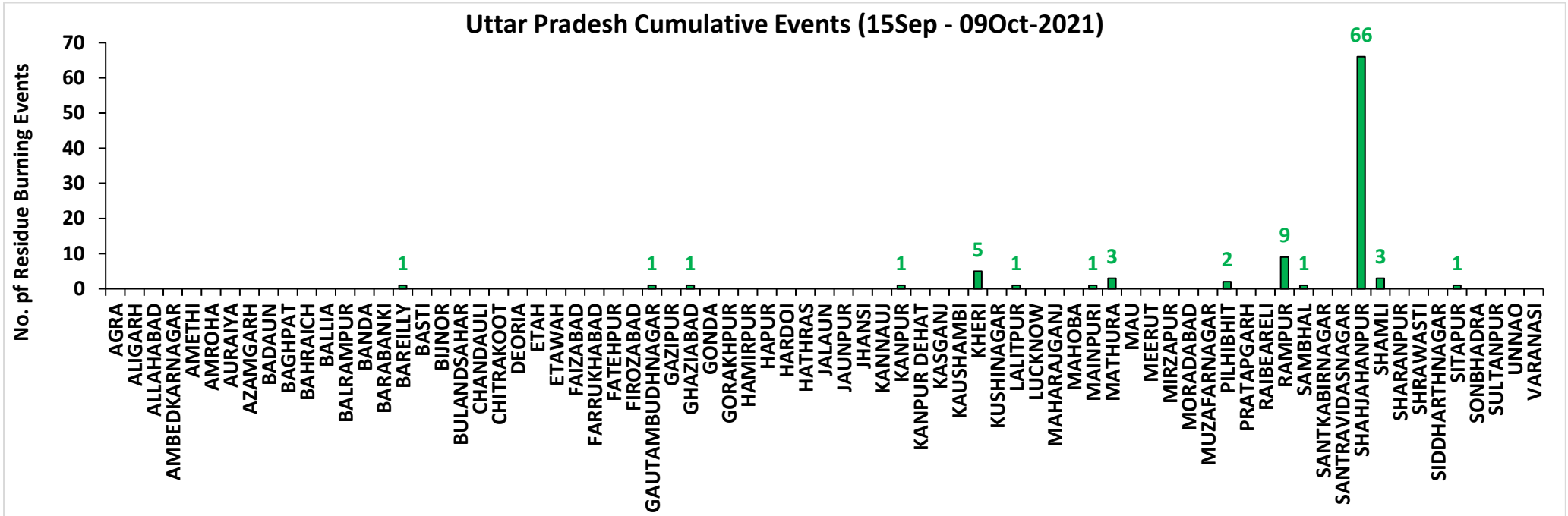
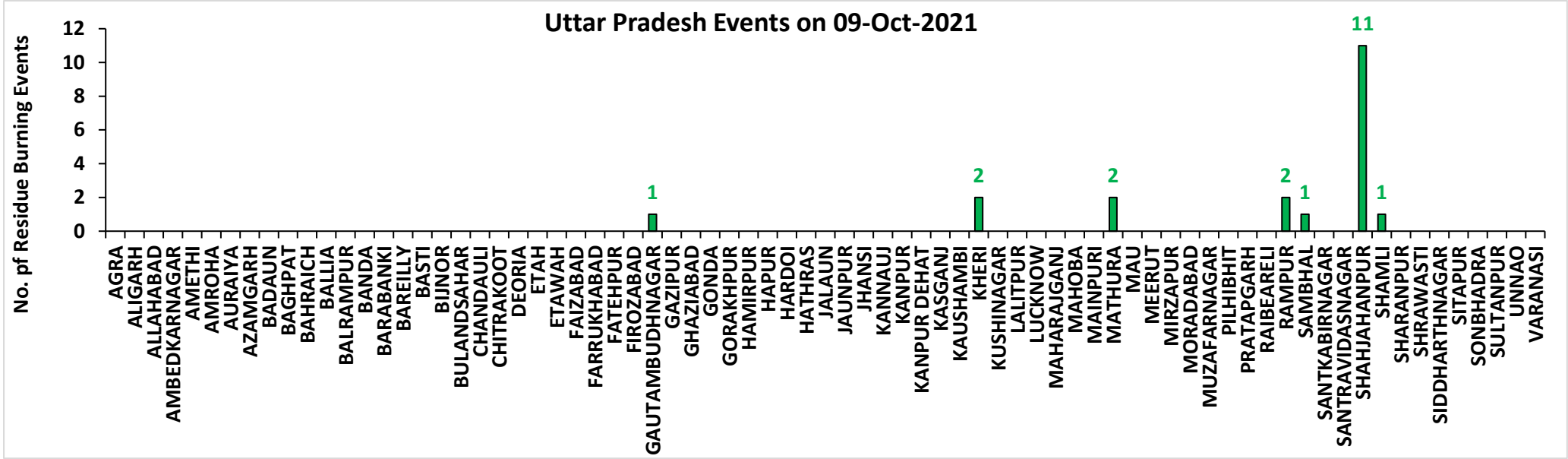
### Fire Intensity (W/m<sup>2</sup>)

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



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

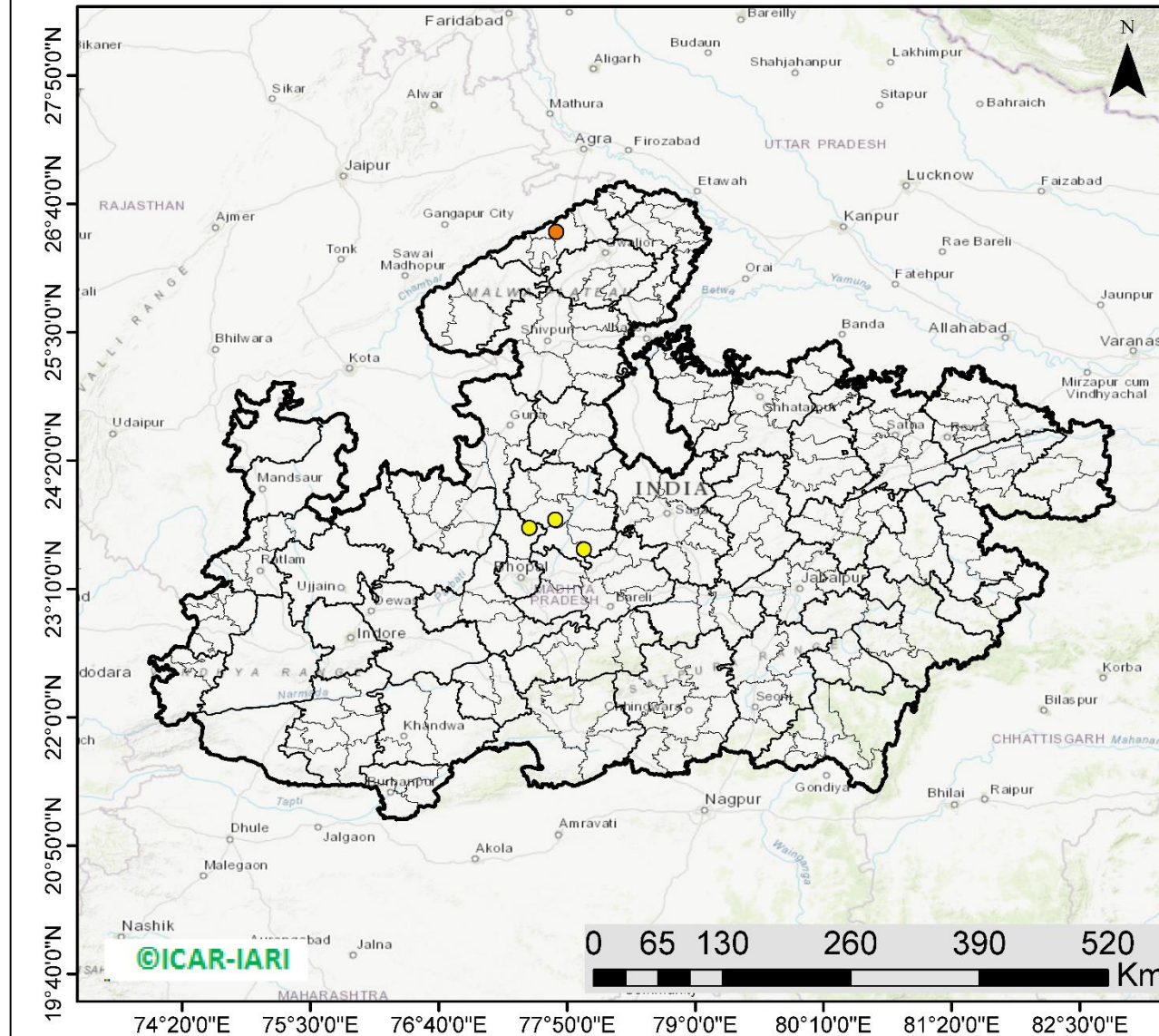
## District-wise cumulative number of residues burning events in Uttar Pradesh (15 Sep - 09 Oct-2021)





# Madhya Pradesh

## RICE RESIDUE BURNING IN MADHYA PRADESH



**04** burning events detected in MP on **09th October 2021**

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

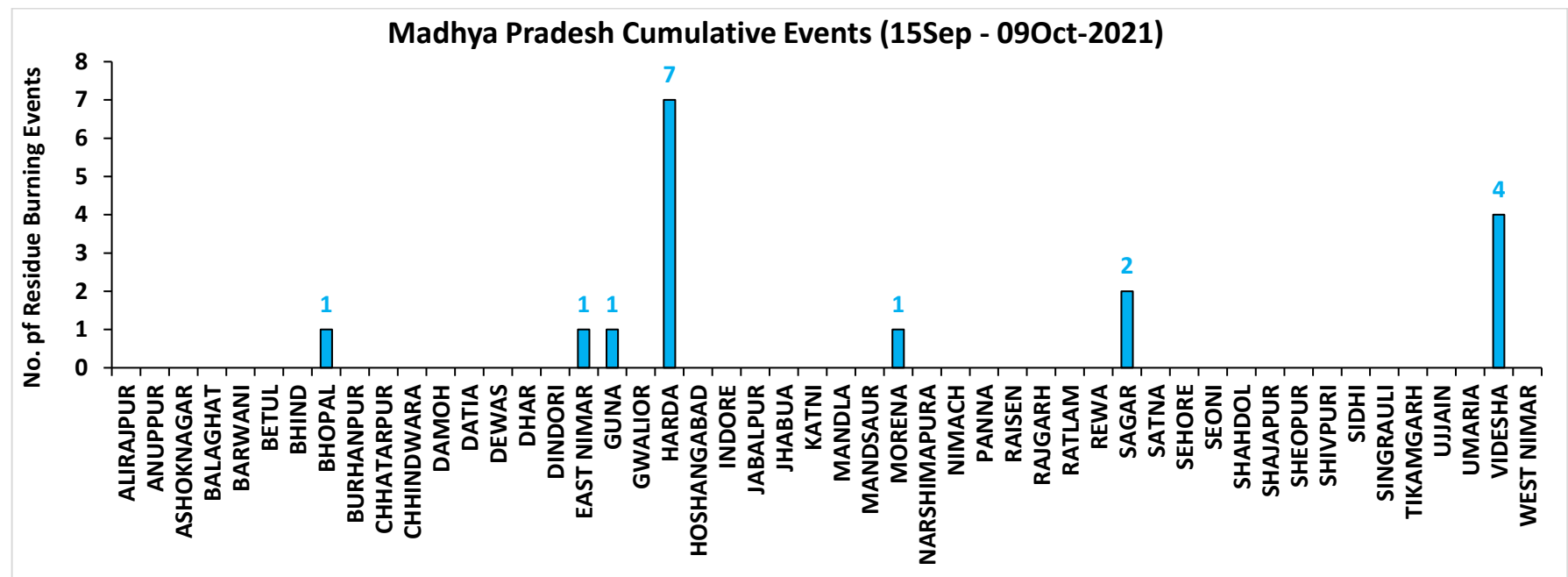
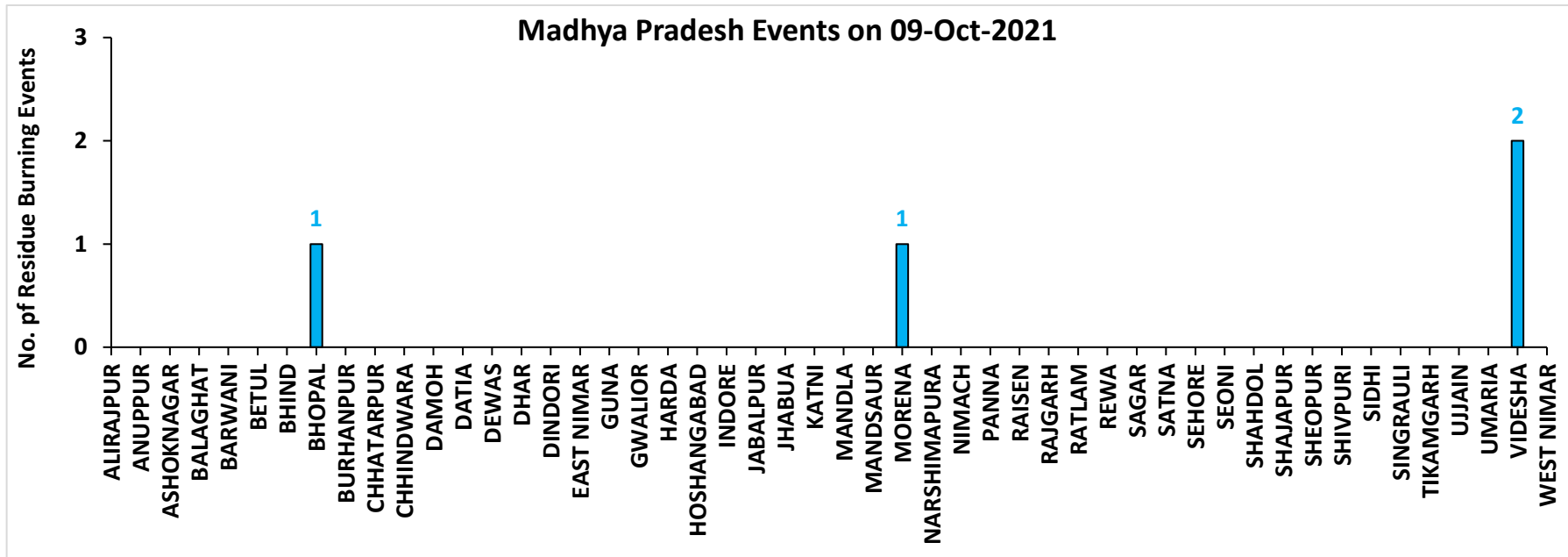
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



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



## District-wise cumulative number of residues burning events in Madhya Pradesh (15 Sep - 09 Oct-2021)



**District-wise cumulative number of residues burning events detected in 2020 and 2021**  
**(Period: 15 September - 09 October)**

**(a) Punjab**

District	15 Sep – 09 Oct	
	2020	2021
AMRITSAR	1278	279
BARNALA	5	2
BATHINDA	1	0
FARIDKOT	17	16
FATEHGARH SAHIB	30	17
FAZILKA	1	3
FIROZPUR	69	18
GURDASPUR	103	12
HOSHIARPUR	5	0
JALANDHAR	24	11
KAPURTHALA	39	17
LUDHIANA	63	42
MANSA	4	1
MOGA	15	3
MUKTSAR	1	1
PATHANKOT	0	0
PATIALA	142	46
RUPNAGAR	7	2
SANGRUR	52	9
SAS NAGAR (MOHALI)	12	11
SBS NAGAR	5	1
TARN TARAN	475	123
<b>Total</b>	<b>2348</b>	<b>614</b>

**(b) Haryana**

District	15 Sep – 09 Oct	
	2020	2021
AMBALA	41	5
BHIWANI	0	0
CHARKHI DADRI	0	0
FARIDABAD	0	0
FATEHABAD	20	4
GURGAON	0	0
HISAR	3	0
JHAJJAR	1	0
JIND	3	2
KAITHAL	42	18
KARNAL	77	35
KURUKSHETRA	63	27
MAHENDRAGARH	0	0
MEWAT	0	0
PALWAL	5	3
PANCHKULA	0	0
PANIPAT	6	2
REWARI	0	0
ROHTAK	0	0
SIRSA	2	0
SONIPAT	6	1
YAMUNANAGAR	19	4
<b>Total</b>	<b>288</b>	<b>101</b>

(c) Uttar Pradesh

District	15 Sep – 09 Oct							
	2020	2021	GAUTAMBUDHNAGAR	1	1	MUZAFARNAGAR	2	0
AGRA	0	0	GAZIPUR	0	0	PILHIBHIT	4	2
ALIGARH	15	0	GHAZIABAD	1	1	PRATAPGARH	0	0
ALLAHABAD	0	0	GONDA	0	0	RAIBEARELI	1	0
AMBEDKARNAGAR	0	0	GORAKHPUR	0	0	RAMPUR	5	9
AMETHI	0	0	HAMIRPUR	0	0	SAMBHAL	6	1
AMROHA	1	0	HAPUR	2	0	SANTKABIRNAGAR	0	0
AURAIYA	12	0	HARDOI	0	0	SANTRAVIDASNAGAR	0	0
AZAMGARH	0	0	HATHRAS	0	0	SHAHJAHANPUR	11	66
BADAUN	0	0	JALAUN	0	0	SHAMLI	17	3
BAGHPAT	1	0	JAUNPUR	0	0	SHARANPUR	13	0
BAHRAICH	2	0	JHANSI	5	0	SHRAWASTI	0	0
BALLIA	0	0	KANNAUJ	2	0	SIDDHARTHANAGAR	0	0
BALRAMPUR	0	0	KANPUR	0	1	SITAPUR	4	1
BANDA	0	0	KANPUR DEHAT	1	0	SONBHADRA	0	0
BARABANKI	7	0	KASGANJ	1	0	SULTANPUR	0	0
BAREILLY	5	1	KAUSHAMBI	6	0	UNNAO	2	0
BASTI	2	0	KHERI	14	5	VARANASI	0	0
BIJNOR	3	0	KUSHINAGAR	0	0	<b>Total</b>	<b>182</b>	<b>96</b>
BULANDSAHAR	2	0	LALITPUR	0	1			
CHANDAULI	0	0	LUCKNOW	2	0			
CHITRAKOOT	0	0	MAHARAJGANJ	0	0			
DEORIA	0	0	MAHOPA	0	0			
ETAH	4	0	MAINPURI	0	1			
ETAWAH	1	0	MATHURA	4	3			
FAIZABAD	0	0	MAU	0	0			
FARRUKHABAD	0	0	MEERUT	9	0			
FATEHPUR	7	0	MIRZAPUR	5	0			
FIROZABAD	1	0	MORADABAD	1	0			

**(d) Delhi**

District	15 Sep – 09 Oct	
	2020	2021
CENTRAL	0	0
EAST	0	0
NEW DELHI	0	0
NORTH	2	0
NORTH EAST	0	0
NORTH WEST DELHI	0	0
SHAHADRA	0	0
SOUTH	1	0
SOUTH EAST	0	0
SOUTH WEST DELHI	0	0
WEST DELHI	0	0
<b>Total</b>	<b>3</b>	<b>0</b>

**(e) Rajasthan**

District	15 Sep – 09 Oct	
	2020	2021
AJMER	0	0
ALWAR	1	0
BANSWARA	0	0
BARAN	53	0
BARMER	2	0
BHARATPUR	0	0
BHILWARA	2	0
BIKANER	0	0
BUNDI	1	0
CHITTAURGARH	0	1
CHURU	0	0
DAUSA	0	0
DHOLPUR	0	0
DUNGARPUR	0	0
GANGANAGAR	2	0
HANUMANGARH	27	1
JAIPUR	0	0
JAISELMER	2	0
JALOR	0	0
JHALAWAR	0	0
JHUNJHUNUN	1	0
JODHPUR	1	0
KARAULI	1	0
KOTA	15	0
NAGPUR	0	0
PALI	1	0
PRATAPGARH	0	0
RAJSMAND	0	0
SIKAR	0	0
SIROHI	0	0
SWAIMADHOPUR	1	0
TONK	1	0
UDAIPUR	0	0
<b>Total</b>	<b>111</b>	<b>2</b>

(f) Madhya Pradesh

District	15 Sep – 09 Oct				
	2020	2021			
			PANNA	1	0
ALIRAJPUR	0	0	RAISEN	2	0
ANUPPUR	0	0	RAJGARH	6	0
ASHOKNAGAR	7	0	RATLAM	0	0
BALAGHAT	0	0	REWA	2	0
BARWANI	0	0	SAGAR	8	2
BETUL	0	0	SATNA	3	0
BHIND	0	0	SEHORE	4	0
BHOPAL	2	1	SEONI	2	0
BURHANPUR	0	0	SHAHDOL	0	0
CHHATARPUR	2	0	SHAJAPUR	4	0
CHHINDWARA	0	0	SHEOPUR	3	0
DAMOH	6	0	SHIVPURI	3	0
DATIA	5	0	SIDHI	0	0
DEWAS	3	0	SINGRAULI	0	0
DHAR	13	0	TIKAMGARH	1	0
DINDORI	0	0	UJJAIN	5	0
EAST NIMAR	0	1	UMARIA	0	0
GUNA	8	1	VIDESHA	28	4
GWALIOR	16	0	WEST NIMAR	1	0
HARDA	8	7	<b>Total</b>	<b>160</b>	<b>17</b>
HOSHANGABAD	3	0			
INDORE	2	0			
JABALPUR	6	0			
JHABUA	0	0			
KATNI	0	0			
MANDLA	0	0			
MANDSAUR	0	0			
MORENA	5	1			
NARSHIMAPURA	1	0			
NIMACH	0	0			

**State-wise and date-wise number of paddy residue burning events detected in 2020 and 2021**  
**(Period: 15 September – 09 October)**

**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
15-Sep	5	0	2	0	1	0	0	0	1	0	2	0
16-Sep	0	2	1	0	0	0	0	0	0	0	0	0
17-Sep	5	0	3	0	0	0	0	0	0	0	0	0
18-Sep	17	9	0	0	0	1	0	0	0	0	0	0
19-Sep	30	5	2	0	0	1	0	0	0	0	0	0
20-Sep	67	8	6	0	2	0	0	0	0	0	0	0
21-Sep	54	0	2	0	1	0	0	0	1	0	2	0
22-Sep	34	0	1	0	1	0	0	0	0	0	0	0
23-Sep	49	0	0	0	1	0	0	0	1	0	0	0
24-Sep	78	5	0	0	1	1	0	0	0	0	0	0
25-Sep	184	11	11	0	5	0	0	0	1	0	0	0
26-Sep	190	19	5	0	8	0	0	0	1	0	2	0
27-Sep	78	37	8	0	4	1	0	0	0	0	1	0
28-Sep	55	28	6	1	1	6	0	0	0	0	1	1
29-Sep	63	64	9	4	6	10	0	0	3	0	0	4
30-Sep	116	27	22	2	13	13	1	0	1	0	5	0
01-Oct	165	13	15	4	7	13	0	0	4	1	13	0
02-Oct	141	0	30	2	12	0	1	0	7	0	12	0
03-Oct	110	9	8	6	4	3	0	0	9	0	5	1
04-Oct	162	23	29	2	8	0	0	0	15	0	4	2
05-Oct	161	18	17	3	14	2	0	0	14	0	13	1
06-Oct	171	42	30	0	12	1	1	0	16	0	37	1
07-Oct	197	72	32	11	41	13	0	0	14	1	31	1
08-Oct	95	108	29	27	25	11	0	0	11	0	17	2
09-Oct	121	114	20	39	15	20	0	0	12	0	15	4
<b>Total</b>	<b>2348</b>	<b>614</b>	<b>288</b>	<b>101</b>	<b>182</b>	<b>96</b>	<b>3</b>	<b>0</b>	<b>111</b>	<b>2</b>	<b>160</b>	<b>17</b>

### Details of residue burning events in Punjab on 09-Oct-2021

S. No.	District	Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	AMRITSAR	AJNALA	S-NPP	31.94750	74.90580	10/9/2021	13:35:42	D	1.60
2	AMRITSAR	ATTARI	S-NPP	31.54040	74.84000	10/9/2021	13:35:42	D	3.20
3	AMRITSAR	CHOGAWAN	S-NPP	31.67440	74.72170	10/9/2021	13:35:42	D	2.20
4	AMRITSAR	CHOGAWAN	S-NPP	31.70010	74.58950	10/9/2021	13:35:42	D	2.30
5	AMRITSAR	CHOGAWAN	S-NPP	31.81090	74.60740	10/9/2021	13:35:42	D	4.50
6	AMRITSAR	HARSHA CHHINA	S-NPP	31.80000	74.77110	10/9/2021	13:35:42	D	2.20
7	AMRITSAR	JANDIALA GURU	S-NPP	31.59220	75.07450	10/9/2021	13:35:42	D	2.20
8	AMRITSAR	JANDIALA GURU	S-NPP	31.60770	75.03720	10/9/2021	13:35:42	D	4.40
9	AMRITSAR	MAJITHA	S-NPP	31.73400	74.92350	10/9/2021	13:35:42	D	2.40
10	AMRITSAR	MAJITHA	S-NPP	31.76800	75.06740	10/9/2021	13:35:42	D	2.90
11	AMRITSAR	MAJITHA	S-NPP	31.77610	75.02710	10/9/2021	13:35:42	D	3.30
12	AMRITSAR	RAYYA	S-NPP	31.51350	75.16180	10/9/2021	13:35:42	D	1.90
13	AMRITSAR	RAYYA	S-NPP	31.52140	75.16890	10/9/2021	13:35:42	D	7.80
14	AMRITSAR	RAYYA	S-NPP	31.52570	75.15080	10/9/2021	13:35:42	D	5.00
15	AMRITSAR	RAYYA	S-NPP	31.55220	75.16740	10/9/2021	13:35:42	D	3.20
16	AMRITSAR	RAYYA	S-NPP	31.55560	75.16670	10/9/2021	13:35:42	D	2.80
17	AMRITSAR	RAYYA	S-NPP	31.55900	75.16610	10/9/2021	13:35:42	D	2.80
18	AMRITSAR	RAYYA	S-NPP	31.57990	75.19240	10/9/2021	13:35:42	D	5.00
19	AMRITSAR	RAYYA	S-NPP	31.61540	75.21680	10/9/2021	13:35:42	D	5.00
20	AMRITSAR	RAYYA	S-NPP	31.65670	75.26540	10/9/2021	13:35:42	D	1.60
21	AMRITSAR	TARSIKKA	S-NPP	31.57130	75.15510	10/9/2021	13:35:42	D	2.80
22	AMRITSAR	TARSIKKA	S-NPP	31.65630	75.18740	10/9/2021	13:35:42	D	3.50
23	AMRITSAR	TARSIKKA	S-NPP	31.65690	75.19160	10/9/2021	13:35:42	D	3.50
24	AMRITSAR	TARSIKKA	S-NPP	31.66570	75.08200	10/9/2021	13:35:42	D	3.50
25	AMRITSAR	TARSIKKA	S-NPP	31.67780	75.04530	10/9/2021	13:35:42	D	5.10
26	AMRITSAR	TARSIKKA	S-NPP	31.67940	75.03210	10/9/2021	13:35:42	D	4.80
27	AMRITSAR	TARSIKKA	S-NPP	31.67940	75.20470	10/9/2021	13:35:42	D	3.40
28	AMRITSAR	VERKA	S-NPP	31.67590	74.93410	10/9/2021	13:35:42	D	2.00
29	AMRITSAR	VERKA	S-NPP	31.67700	74.93440	10/9/2021	13:35:42	D	1.80

30	AMRITSAR	VERKA	S-NPP	31.69240	74.89720	10/9/2021	13:35:42	D	1.50
31	AMRITSAR	VERKA	S-NPP	31.73750	74.87570	10/9/2021	13:35:42	D	2.20
32	BARNALA	BARNALA	S-NPP	30.34260	75.63690	10/9/2021	13:35:42	D	3.70
33	BARNALA	MAHAL KALAN	S-NPP	30.53260	75.62540	10/9/2021	13:35:42	D	4.80
34	FARIDKOT	KOT KAPURA	S-NPP	30.49630	74.75040	10/9/2021	13:35:42	D	4.00
35	FARIDKOT	KOT KAPURA	S-NPP	30.57280	74.80650	10/9/2021	13:35:42	D	3.30
36	FATEHGARH SAHIB	AMLOH	S-NPP	30.64100	76.16190	10/9/2021	13:35:42	D	2.80
37	FATEHGARH SAHIB	AMLOH	S-NPP	30.64450	76.16130	10/9/2021	13:35:42	D	2.80
38	FATEHGARH SAHIB	BASSI PATHANAN	S-NPP	30.71270	76.47530	10/9/2021	13:35:42	D	9.20
39	FATEHGARH SAHIB	KHAMANON	S-NPP	30.78420	76.31730	10/9/2021	13:35:42	D	3.30
40	FATEHGARH SAHIB	KHAMANON	S-NPP	30.78540	76.31800	10/9/2021	13:35:42	D	2.80
41	FATEHGARH SAHIB	KHAMANON	S-NPP	30.78950	76.35710	10/9/2021	13:35:42	D	5.80
42	FATEHGARH SAHIB	KHAMANON	S-NPP	30.79010	76.35340	10/9/2021	13:35:42	D	4.90
43	FATEHGARH SAHIB	KHERA	S-NPP	30.56500	76.55760	10/9/2021	13:35:42	D	3.30
44	FATEHGARH SAHIB	KHERA	S-NPP	30.59230	76.54820	10/9/2021	13:35:42	D	7.20
45	FAZILKA	JALALABAD	S-NPP	30.55340	74.12820	10/9/2021	13:35:42	D	16.80
46	FAZILKA	KHUIAN SARWAR	S-NPP	30.22320	74.02470	10/9/2021	13:35:42	D	8.70
47	FIROZPUR	GURUHAR SAHAI	S-NPP	30.64620	74.25010	10/9/2021	13:35:42	D	4.70
48	FIROZPUR	MAKHU	S-NPP	31.03420	75.00610	10/9/2021	13:35:42	D	4.30
49	FIROZPUR	MAKHU	S-NPP	31.04020	74.84490	10/9/2021	13:35:42	D	2.50
50	FIROZPUR	MAMDOT	S-NPP	30.79470	74.31660	10/9/2021	13:35:42	D	1.60
51	FIROZPUR	MAMDOT	S-NPP	30.84830	74.36020	10/9/2021	13:35:42	D	2.80
52	GURDASPUR	BATALA	S-NPP	31.76040	75.11210	10/9/2021	13:35:42	D	1.80
53	GURDASPUR	BATALA	S-NPP	31.83440	75.16460	10/9/2021	13:35:42	D	5.10
54	GURDASPUR	FATEHGARH CHURIAN	S-NPP	31.78520	75.11600	10/9/2021	13:35:42	D	9.00
55	GURDASPUR	SRI HARGOBINDPUR	S-NPP	31.72690	75.39620	10/9/2021	13:35:42	D	1.80
56	JALANDHAR	SHAHKOT	S-NPP	31.03390	75.29580	10/9/2021	13:35:42	D	3.20
57	KAPURTHALA	NADALA	S-NPP	31.59380	75.44200	10/9/2021	13:35:42	D	2.50
58	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.34470	75.25200	10/9/2021	13:35:42	D	3.40
59	LUDHIANA	KHANNA	S-NPP	30.72920	76.25030	10/9/2021	13:35:42	D	3.50
60	LUDHIANA	MACHHIWARA	S-NPP	30.88480	76.31860	10/9/2021	13:35:42	D	4.40
61	LUDHIANA	MACHHIWARA	S-NPP	30.96600	76.22390	10/9/2021	13:35:42	D	2.30
62	LUDHIANA	MALoud	S-NPP	30.62040	76.01040	10/9/2021	13:35:42	D	2.80



63	LUDHIANA	SAMRALA	S-NPP	30.77330	76.17150	10/9/2021	13:35:42	D	3.40
64	LUDHIANA	SAMRALA	S-NPP	30.78940	76.24050	10/9/2021	13:35:42	D	3.90
65	LUDHIANA	SAMRALA	S-NPP	30.79520	76.23050	10/9/2021	13:35:42	D	7.00
66	LUDHIANA	SIDHWAN BET	S-NPP	30.97810	75.47320	10/9/2021	13:35:42	D	2.40
67	LUDHIANA	SIDHWAN BET	S-NPP	30.98360	75.43770	10/9/2021	13:35:42	D	6.30
68	MOGA	MOGA-1	S-NPP	30.76280	75.17440	10/9/2021	13:35:42	D	3.90
69	PATIALA	BHUNARHERI	S-NPP	30.26540	76.44310	10/9/2021	13:35:42	D	8.00
70	PATIALA	GHANAUR	S-NPP	30.34080	76.68110	10/9/2021	13:35:42	D	5.50
71	PATIALA	GHANAUR	S-NPP	30.39180	76.58080	10/9/2021	13:35:42	D	3.00
72	PATIALA	GHANAUR	S-NPP	30.39250	76.58170	10/9/2021	13:35:42	D	3.00
73	PATIALA	NABHA	S-NPP	30.39740	76.21600	10/9/2021	13:35:42	D	5.20
74	PATIALA	NABHA	S-NPP	30.40070	76.16220	10/9/2021	13:35:42	D	16.60
75	PATIALA	NABHA	S-NPP	30.46060	76.19700	10/9/2021	13:35:42	D	1.70
76	PATIALA	NABHA	S-NPP	30.46180	76.31290	10/9/2021	13:35:42	D	5.20
77	PATIALA	NABHA	S-NPP	30.46350	76.21880	10/9/2021	13:35:42	D	9.30
78	PATIALA	NABHA	S-NPP	30.46390	76.31590	10/9/2021	13:35:42	D	4.20
79	PATIALA	PATIALA	S-NPP	30.26410	76.20790	10/9/2021	13:35:42	D	2.10
80	PATIALA	PATIALA	S-NPP	30.35800	76.32930	10/9/2021	13:35:42	D	4.00
81	PATIALA	PATIALA	S-NPP	30.42330	76.48990	10/9/2021	13:35:42	D	6.40
82	PATIALA	PATRAN	S-NPP	29.90620	76.13640	10/9/2021	13:35:42	D	4.40
83	PATIALA	PATRAN	S-NPP	29.92310	76.02880	10/9/2021	13:35:42	D	3.80
84	PATIALA	RAJPURA	S-NPP	30.51260	76.68020	10/9/2021	13:35:42	D	3.90
85	PATIALA	RAJPURA	S-NPP	30.51320	76.68140	10/9/2021	13:35:42	D	2.80
86	PATIALA	SANAUR	S-NPP	30.30470	76.48700	10/9/2021	13:35:42	D	2.50
87	SANGRUR	ANDANA	S-NPP	29.83210	75.87210	10/9/2021	13:35:42	D	1.40
88	SANGRUR	DIRBA	S-NPP	29.95660	76.01850	10/9/2021	13:35:42	D	7.30
89	SANGRUR	MALERKOTLA-2	S-NPP	30.56450	75.83190	10/9/2021	13:35:42	D	1.80
90	SANGRUR	SHER PUR	S-NPP	30.33390	75.72450	10/9/2021	13:35:42	D	4.60
91	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.58520	76.79430	10/9/2021	13:35:42	D	5.60
92	SAS NAGAR (MOHALI)	KHARAR	S-NPP	30.63730	76.64330	10/9/2021	13:35:42	D	4.30
93	SAS NAGAR (MOHALI)	KHARAR	S-NPP	30.73650	76.60430	10/9/2021	13:35:42	D	2.40
94	TARN TARAN	BHIKHIWIND	S-NPP	31.26410	74.73090	10/9/2021	13:35:42	D	6.30
95	TARN TARAN	BHIKHIWIND	S-NPP	31.34630	74.78800	10/9/2021	13:35:42	D	1.80

96	TARN TARAN	CHOHLA SAHIB	S-NPP	31.29500	74.99590	10/9/2021	13:35:42	D	2.00
97	TARN TARAN	CHOHLA SAHIB	S-NPP	31.32710	75.02810	10/9/2021	13:35:42	D	4.00
98	TARN TARAN	CHOHLA SAHIB	S-NPP	31.34710	75.09690	10/9/2021	13:35:42	D	1.30
99	TARN TARAN	CHOHLA SAHIB	S-NPP	31.34960	75.04090	10/9/2021	13:35:42	D	4.60
100	TARN TARAN	CHOHLA SAHIB	S-NPP	31.35290	75.04030	10/9/2021	13:35:42	D	4.60
101	TARN TARAN	KHADUR SAHIB	S-NPP	31.40610	75.16440	10/9/2021	13:35:42	D	4.90
102	TARN TARAN	KHADUR SAHIB	S-NPP	31.41050	75.14630	10/9/2021	13:35:42	D	1.60
103	TARN TARAN	KHADUR SAHIB	S-NPP	31.41600	75.03810	10/9/2021	13:35:42	D	5.40
104	TARN TARAN	KHADUR SAHIB	S-NPP	31.43170	75.12510	10/9/2021	13:35:42	D	2.90
105	TARN TARAN	KHADUR SAHIB	S-NPP	31.43500	75.12450	10/9/2021	13:35:42	D	3.30
106	TARN TARAN	KHADUR SAHIB	S-NPP	31.47380	75.05710	10/9/2021	13:35:42	D	5.00
107	TARN TARAN	KHADUR SAHIB	S-NPP	31.47440	75.06130	10/9/2021	13:35:42	D	5.00
108	TARN TARAN	KHADUR SAHIB	S-NPP	31.48600	75.06390	10/9/2021	13:35:42	D	1.90
109	TARN TARAN	KHADUR SAHIB	S-NPP	31.51320	75.11020	10/9/2021	13:35:42	D	3.30
110	TARN TARAN	KHADUR SAHIB	S-NPP	31.51650	75.10960	10/9/2021	13:35:42	D	3.30
111	TARN TARAN	NAUSHERA PANNUAN	S-NPP	31.36180	75.03010	10/9/2021	13:35:42	D	2.70
112	TARN TARAN	NAUSHERA PANNUAN	S-NPP	31.36310	74.88220	10/9/2021	13:35:42	D	2.20
113	TARN TARAN	NAUSHERA PANNUAN	S-NPP	31.37440	74.91400	10/9/2021	13:35:42	D	2.50
114	TARN TARAN	TARN TARAN	S-NPP	31.47600	74.96740	10/9/2021	13:35:42	D	2.60

### Details of residue burning events in Haryana on 09-Oct-2021

S. No.	District	Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	AMBALA	AMBALA-II	S-NPP	30.21240	76.74320	10/9/2021	13:35:42	D	1.60
2	AMBALA	AMBALA-II	S-NPP	30.22520	76.75940	10/9/2021	13:35:42	D	2.70
3	FATEHABAD	BHUNA	S-NPP	29.58940	75.82940	10/9/2021	13:35:42	D	2.10
4	FATEHABAD	TOHANA	S-NPP	29.70120	75.93360	10/9/2021	13:35:42	D	2.00
5	FATEHABAD	TOHANA	S-NPP	29.71180	75.88450	10/9/2021	13:35:42	D	5.80
6	KAITHAL	GUHLA	S-NPP	30.09000	76.30790	10/9/2021	13:35:42	D	3.40
7	KAITHAL	KAITHAL	S-NPP	29.69500	76.39520	10/9/2021	13:35:42	D	2.10
8	KAITHAL	PUNDRI	S-NPP	29.80360	76.61320	10/9/2021	13:35:42	D	2.10
9	KAITHAL	SIWAN	S-NPP	29.85590	76.27600	10/9/2021	13:35:42	D	4.30
10	KAITHAL	SIWAN	S-NPP	29.88390	76.24910	10/9/2021	13:35:42	D	5.80
11	KAITHAL	SIWAN	S-NPP	29.91820	76.19980	10/9/2021	13:35:42	D	13.50
12	KAITHAL	SIWAN	S-NPP	29.92230	76.25620	10/9/2021	13:35:42	D	3.40
13	KAITHAL	SIWAN	S-NPP	29.92570	76.25560	10/9/2021	13:35:42	D	3.40
14	KARNAL	ASSANDH	S-NPP	29.50730	76.86830	10/9/2021	13:35:42	D	2.20
15	KARNAL	ASSANDH	S-NPP	29.51010	76.70080	10/9/2021	13:35:42	D	4.10
16	KARNAL	ASSANDH	S-NPP	29.51130	76.76350	10/9/2021	13:35:42	D	2.80
17	KARNAL	ASSANDH	S-NPP	29.59270	76.72790	10/9/2021	13:35:42	D	1.30
18	KARNAL	ASSANDH	S-NPP	29.61190	76.73810	10/9/2021	13:35:42	D	4.40
19	KARNAL	CHIRAO	S-NPP	29.66080	76.81130	10/9/2021	13:35:42	D	4.10
20	KARNAL	GHARAUNDA	S-NPP	29.47500	77.08800	10/9/2021	13:35:42	D	4.60
21	KARNAL	GHARAUNDA	S-NPP	29.50430	77.06590	10/9/2021	13:35:42	D	2.80
22	KARNAL	GHARAUNDA	S-NPP	29.53010	77.01540	10/9/2021	13:35:42	D	3.90
23	KARNAL	GHARAUNDA	S-NPP	29.53310	77.01030	10/9/2021	13:35:42	D	3.00
24	KARNAL	GHARAUNDA	S-NPP	29.56350	76.99600	10/9/2021	13:35:42	D	1.90
25	KARNAL	GHARAUNDA	S-NPP	29.56760	76.99990	10/9/2021	13:35:42	D	3.00
26	KARNAL	NILOKHERI	S-NPP	29.75860	76.92450	10/9/2021	13:35:42	D	14.60
27	KARNAL	NILOKHERI	S-NPP	29.81240	76.81550	10/9/2021	13:35:42	D	2.40
28	KURUKSHETRA	LADWA	S-NPP	29.97210	77.04860	10/9/2021	13:35:42	D	2.70
29	KURUKSHETRA	LADWA	S-NPP	29.99500	76.97480	10/9/2021	13:35:42	D	2.50

30	KURUKSHETRA	LADWA	S-NPP	30.02920	76.93760	10/9/2021	13:35:42	D	5.20
31	KURUKSHETRA	LADWA	S-NPP	30.03450	76.92280	10/9/2021	13:35:42	D	3.40
32	KURUKSHETRA	SHAHBAD	S-NPP	30.06500	76.82520	10/9/2021	13:35:42	D	3.10
33	KURUKSHETRA	SHAHBAD	S-NPP	30.11230	76.80080	10/9/2021	13:35:42	D	3.60
34	KURUKSHETRA	SHAHBAD	S-NPP	30.13280	76.87580	10/9/2021	13:35:42	D	2.80
35	PALWAL	HASSANPUR	S-NPP	27.97860	77.50170	10/9/2021	13:35:42	D	2.90
36	PALWAL	HODAL	S-NPP	28.06740	77.41080	10/9/2021	13:35:42	D	3.40
37	PANIPAT	MADLAUDA	S-NPP	29.42270	76.90890	10/9/2021	13:35:42	D	2.80
38	YAMUNANAGAR	MUSTAFABAD	S-NPP	30.14020	77.10380	10/9/2021	13:35:42	D	2.30
39	YAMUNANAGAR	RADAUR	S-NPP	30.05920	77.08680	10/9/2021	13:35:42	D	2.50

### Details of residue burning events in Uttar Pradesh on 09-Oct-2021

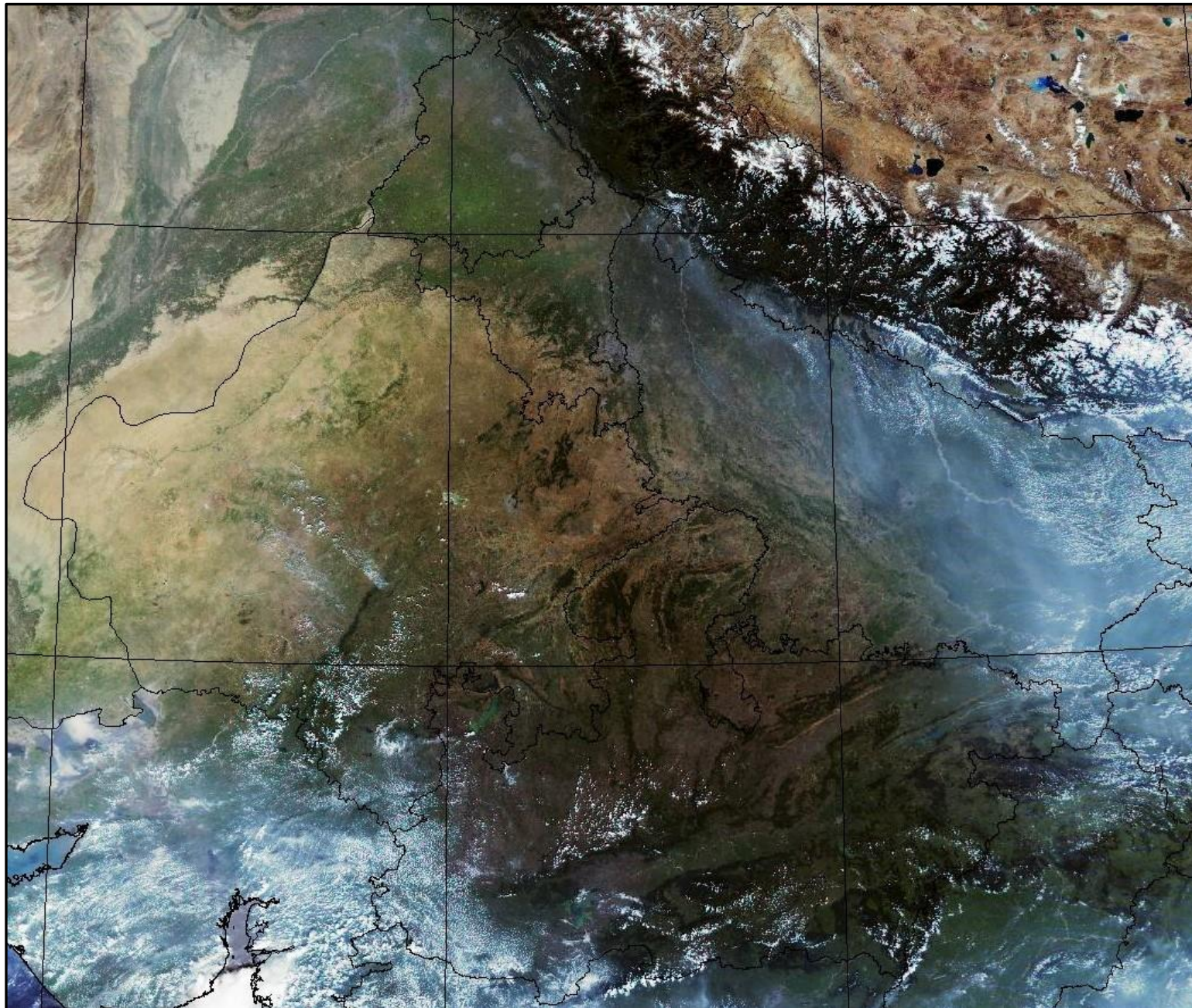
S. No.	District	Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	GAUTAMBUDHNAGAR	GAUTAMBUDHNAGAR	S-NPP	28.44460	77.43990	10/9/2021	13:35:42	D	2.20
2	KHERI	GOLA	S-NPP	27.90320	80.29240	10/9/2021	13:35:42	D	2.80
3	KHERI	MOHMADI	S-NPP	28.01780	80.21090	10/9/2021	13:35:42	D	5.30
4	MATHURA	MAT	S-NPP	27.91210	77.53910	10/9/2021	13:35:42	D	2.10
5	MATHURA	MATHURA	S-NPP	27.58800	77.53330	10/9/2021	13:35:42	D	6.00
6	RAMPUR	MILAK	S-NPP	28.72850	79.22190	10/9/2021	13:35:42	D	5.90
7	RAMPUR	RAMPUR	S-NPP	28.87430	79.05300	10/9/2021	13:35:42	D	3.70
8	SAMBHAL	SAMBHAL	S-NPP	28.61370	78.54520	10/9/2021	13:35:42	D	2.50
9	SHAHJAHANPUR	PUWANYA	S-NPP	28.07630	80.22330	10/9/2021	13:35:42	D	2.40
10	SHAHJAHANPUR	PUWANYA	S-NPP	28.10700	80.20250	10/9/2021	13:35:42	D	2.80
11	SHAHJAHANPUR	PUWANYA	S-NPP	28.16490	80.13010	10/9/2021	13:35:42	D	6.70
12	SHAHJAHANPUR	PUWANYA	S-NPP	28.16890	80.12950	10/9/2021	13:35:42	D	3.60
13	SHAHJAHANPUR	PUWANYA	S-NPP	28.18380	80.15200	10/9/2021	13:35:42	D	2.30
14	SHAHJAHANPUR	PUWANYA	S-NPP	28.18870	80.19660	10/9/2021	13:35:42	D	3.20
15	SHAHJAHANPUR	PUWANYA	S-NPP	28.19130	80.29600	10/9/2021	13:35:42	D	2.60
16	SHAHJAHANPUR	PUWANYA	S-NPP	28.20500	80.19440	10/9/2021	13:35:42	D	3.30
17	SHAHJAHANPUR	PUWANYA	S-NPP	28.29020	80.14950	10/9/2021	13:35:42	D	3.40
18	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	27.87990	79.83900	10/9/2021	13:35:42	D	3.80
19	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	27.94480	79.89240	10/9/2021	13:35:42	D	12.20
20	SHAMLI	KAIRANA	S-NPP	29.51830	77.17490	10/9/2021	13:35:42	D	2.00

### Details of residue burning events in Madhya Pradesh on 09-Oct-2021

S. No.	District	Block	Satellite	Latitude	Longitude	ACQ_DATE	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	BHOPAL	BERASIYA	S-NPP	23.72080	77.49180	10/9/2021	13:35:42	D	4.30
2	MORENA	JORA	S-NPP	26.41210	77.73460	10/9/2021	13:35:42	D	13.00
3	VIDESHA	NATERAN	S-NPP	23.79560	77.72720	10/9/2021	13:35:42	D	2.40
4	VIDESHA	VIDESHA	S-NPP	23.52500	77.98630	10/9/2021	13:35:42	D	3.10



TERRA (MODIS) Satellite image (TCC) of North and Central India Acquired on 09-Oct-2021 at 11:12:05 IST by IARI Ground Station



## 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

ICAR – HQ	Dr S.K. Chaudhari	DDG (AG. ENGG.)	<a href="mailto:ddgengg@icar.org.in">ddgengg@icar.org.in</a>
	Dr S. Bhasker	ADG (NRM)	<a href="mailto:adgagroandaf@gmail.com">adgagroandaf@gmail.com</a>
	Dr K.K. Singh	ADG (AG. ENGG.)	<a href="mailto:kanchansingh044@gmail.com">kanchansingh044@gmail.com</a>
ICAR - IARI	<b>Dr V.K. Sehgal</b>	Professor & Nodal Scientist	<a href="mailto:iaricreams@gmail.com">iaricreams@gmail.com</a>
	Dr Rajkumar Dhakar	Scientist	<a href="mailto:raidhakar.iari@gmail.com">raidhakar.iari@gmail.com</a>
	Mr Mohd Jahangir	Lab Assistant (KRISHI)	<a href="mailto:mjahangir198@gmail.com">mjahangir198@gmail.com</a>
ICAR - ATARI	Dr Rajbir Singh	Director ATARI (Zone-I) Ludhiana	<a href="mailto:rajbirsingh.zpd@gmail.com">rajbirsingh.zpd@gmail.com</a>
	Dr S.K. Singh	Director ATARI (Zone-II) Jodhpur	<a href="mailto:sushilsinghiipr@yahoo.co.in">sushilsinghiipr@yahoo.co.in</a>
	Dr Atar Singh	Director ATARI (Zone-III) Kanpur	<a href="mailto:zpdicarkanpur@gmail.com">zpdicarkanpur@gmail.com</a>
ICAR - IASRI	Dr Rajender Parsad	Director	<a href="mailto:rajender.parsad@icar.gov.in">rajender.parsad@icar.gov.in</a>

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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