



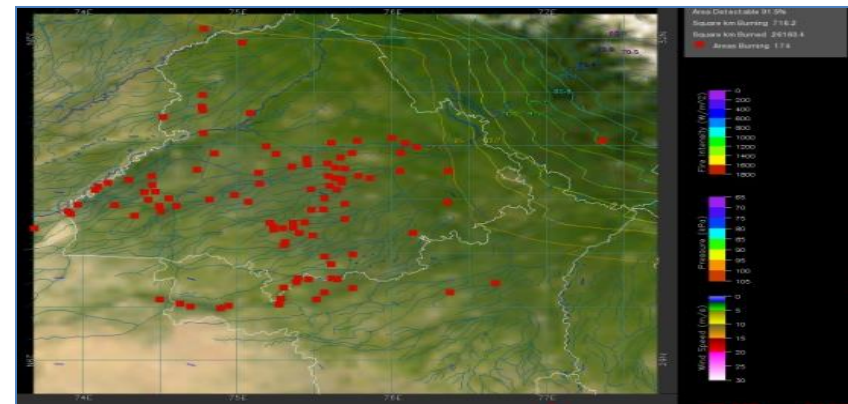
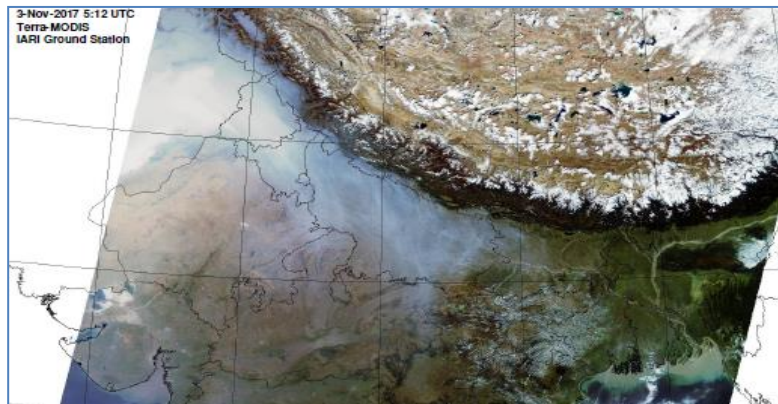
**Bulletin  
No. 35**

**Events Date:  
19-Oct-2023**

**Issued on:  
20-Oct-2023**



# **MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2023**



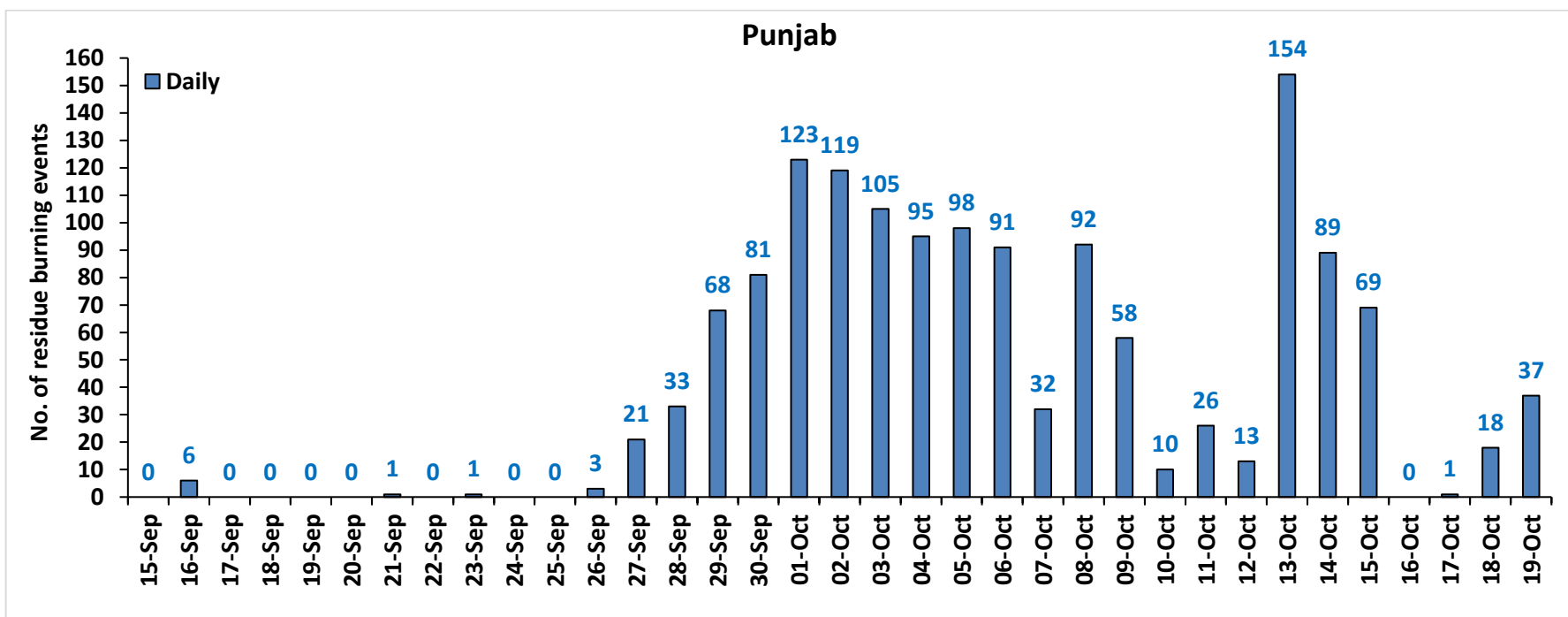
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,  
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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

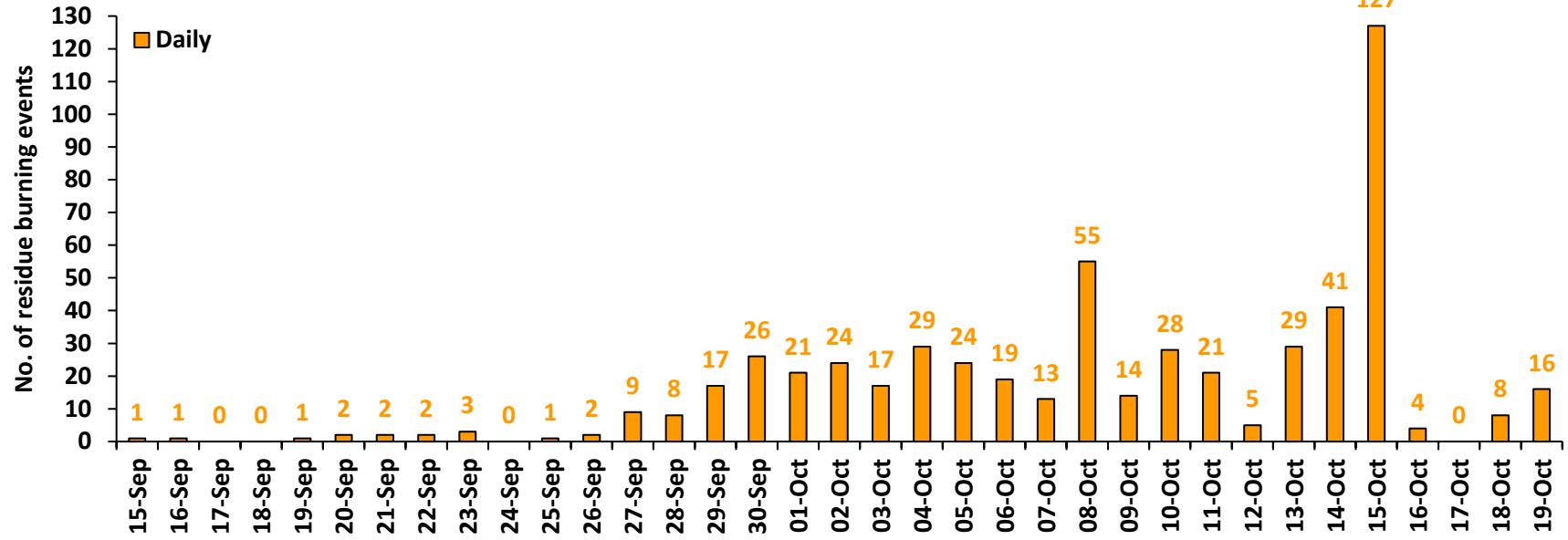
## Highlights for 19-Oct-2023

- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol for Estimation of Crop Residue Burning Fire Events using Satellite Data".
- Satellites detected **160** residue burning events in the six study States on 19-Oct-2023.
- The state wise events detected on 19-Oct-2023 were **37** in Punjab, **16** in Haryana, **11** in UP, **00** in Delhi, **31** in Rajasthan and **65** in MP.
- Total **3134** burning events were detected in the six states between 15-Sept-2023 and 19-Oct-2023, which are distributed as **1444**, **570**, **339**, **02**, **295** and **484** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of residue burning events was hampered by the presence of clouds over eastern Madhya Pradesh state.

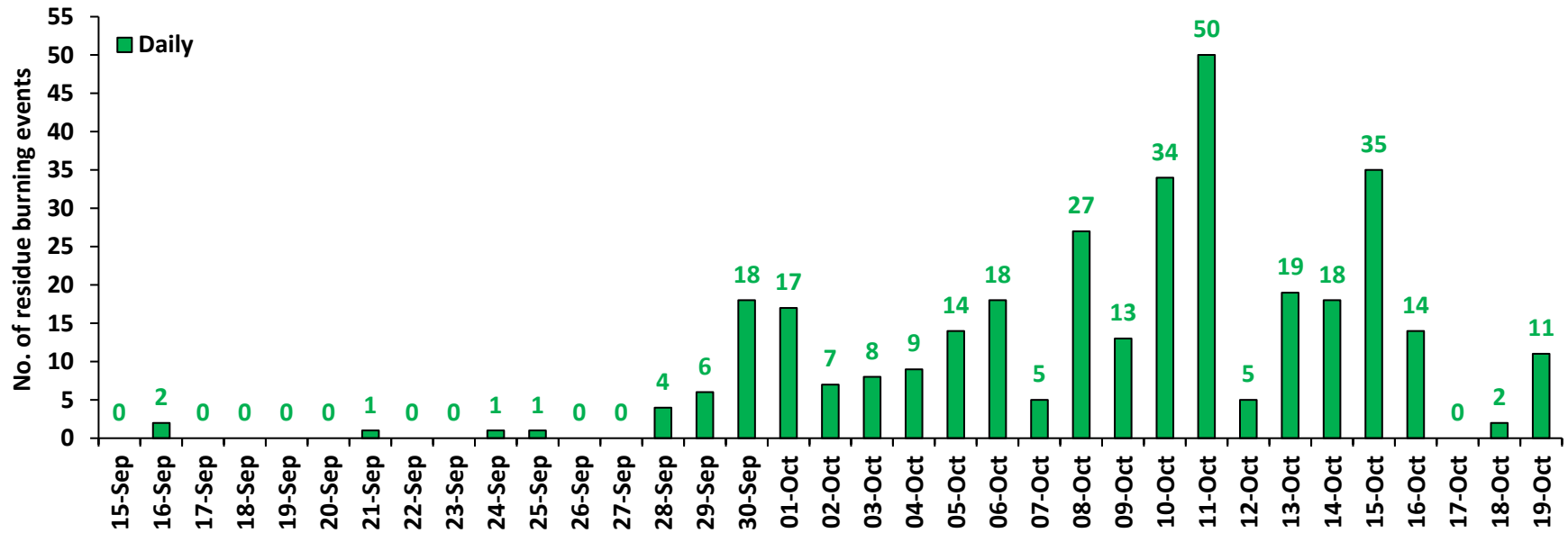
### Temporal distribution of rice residue burning events for the study States in 2023



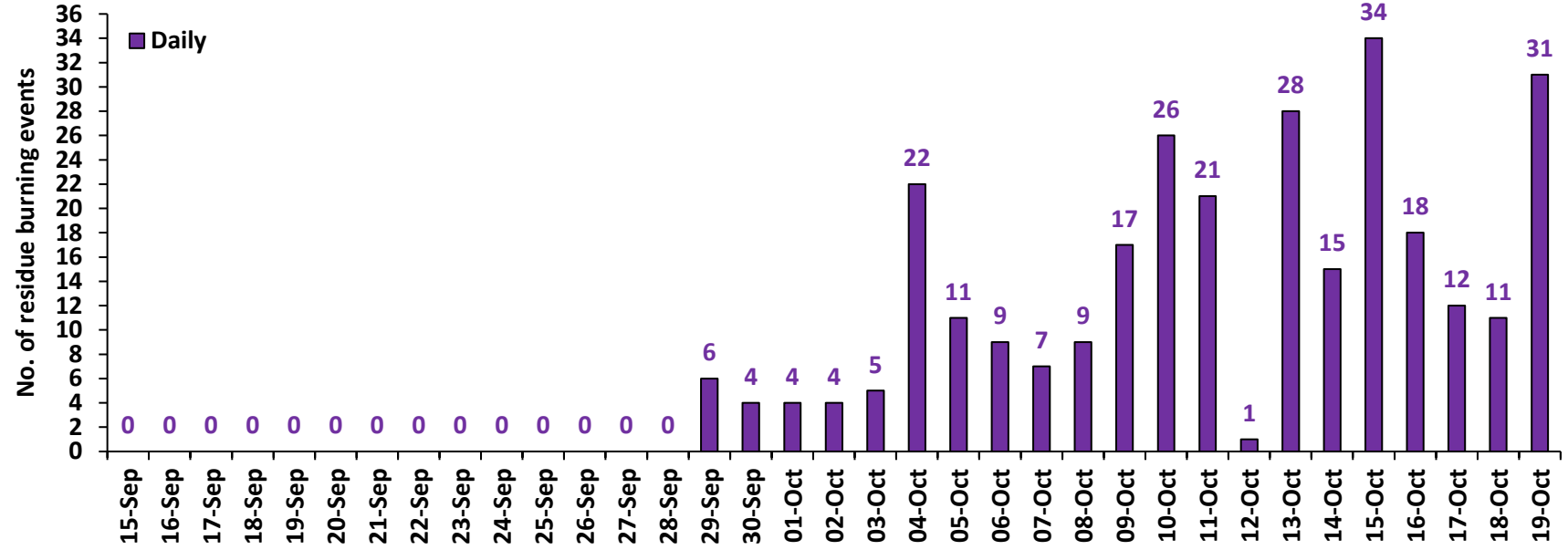
### Haryana



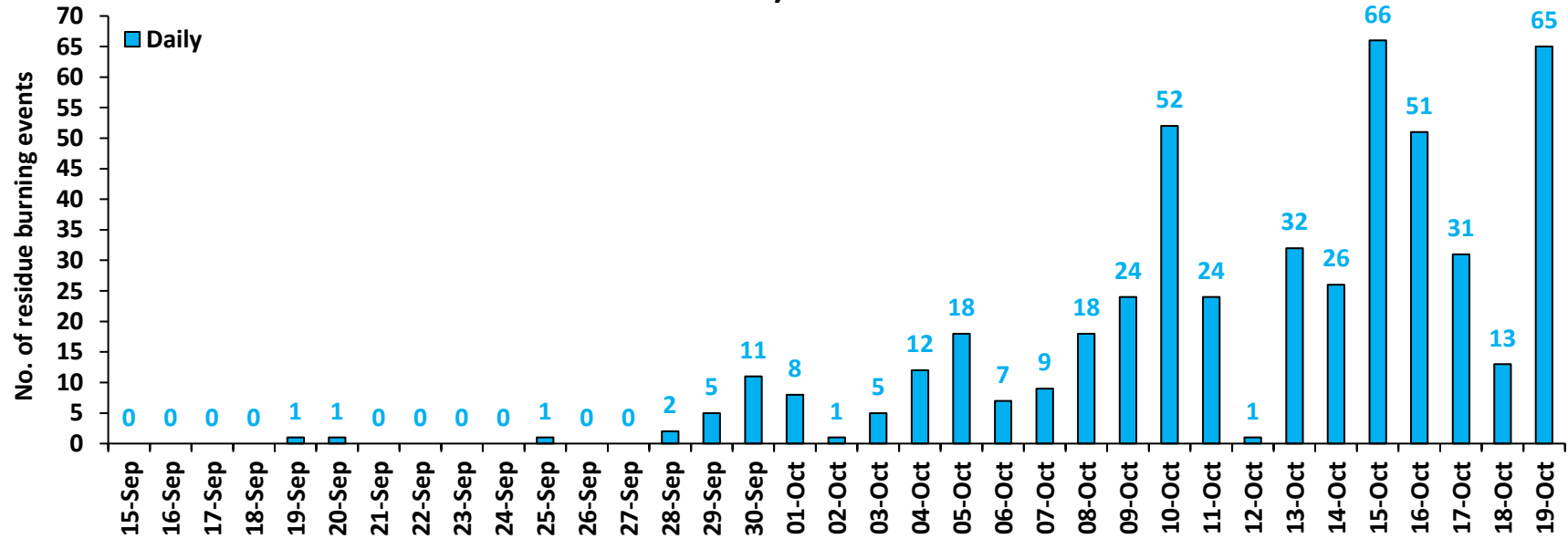
### Uttar Pradesh



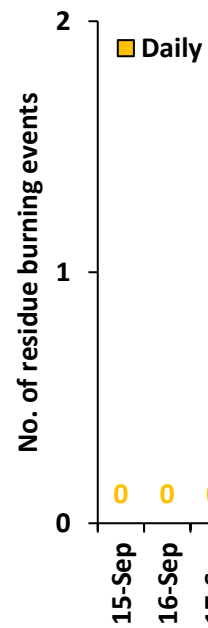
### Rajasthan



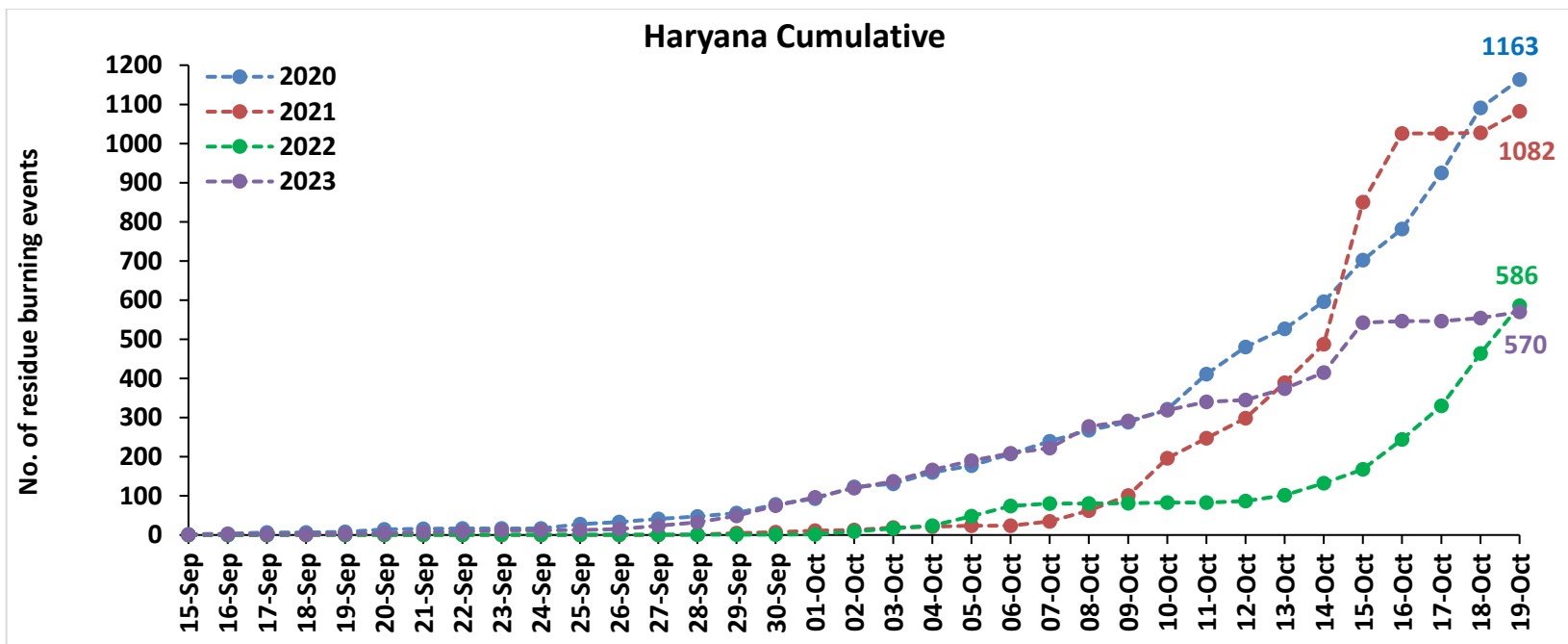
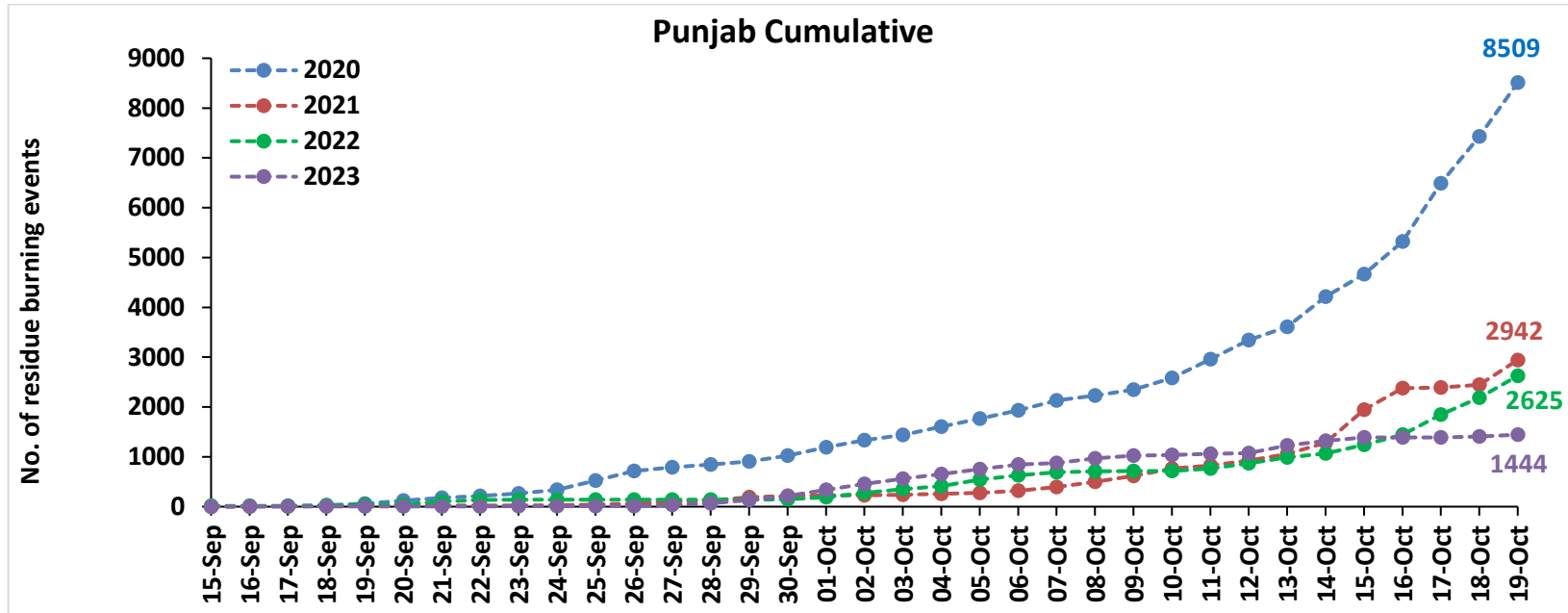
### Madhya Pradesh

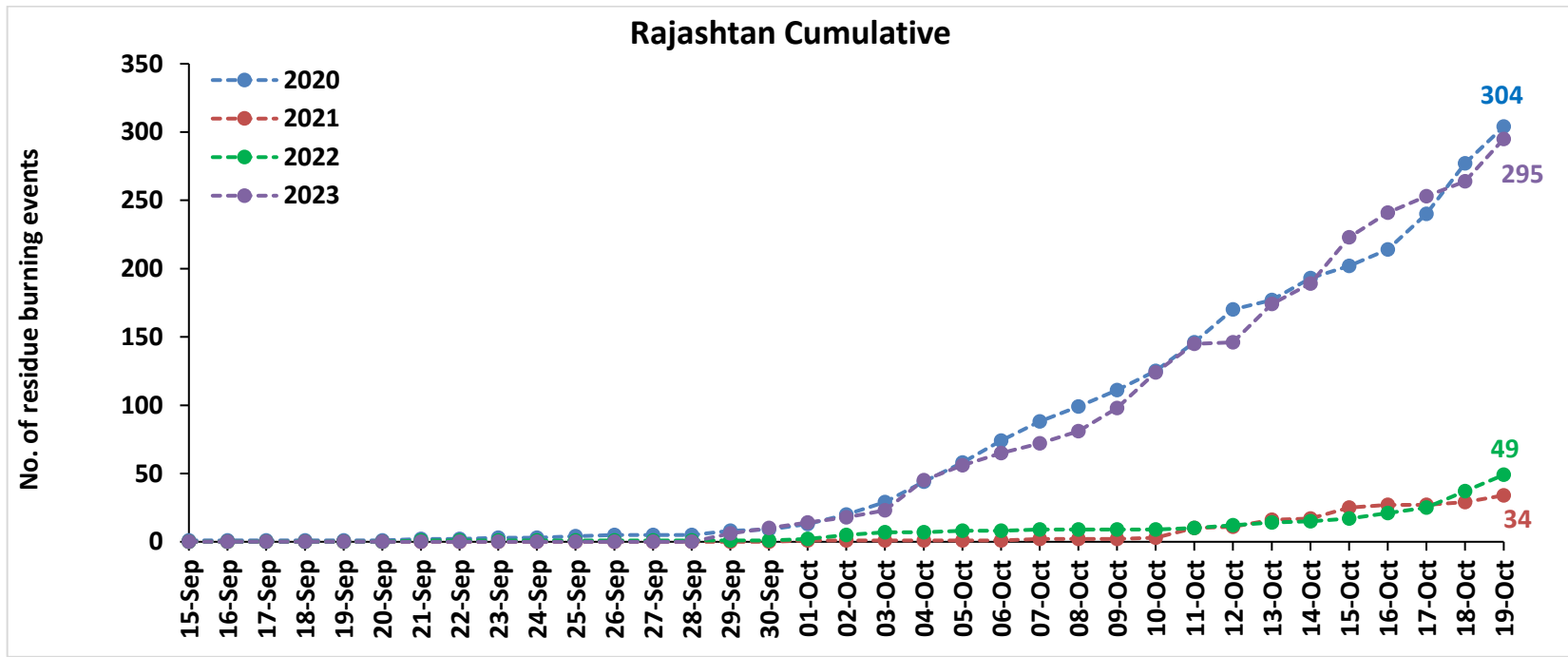
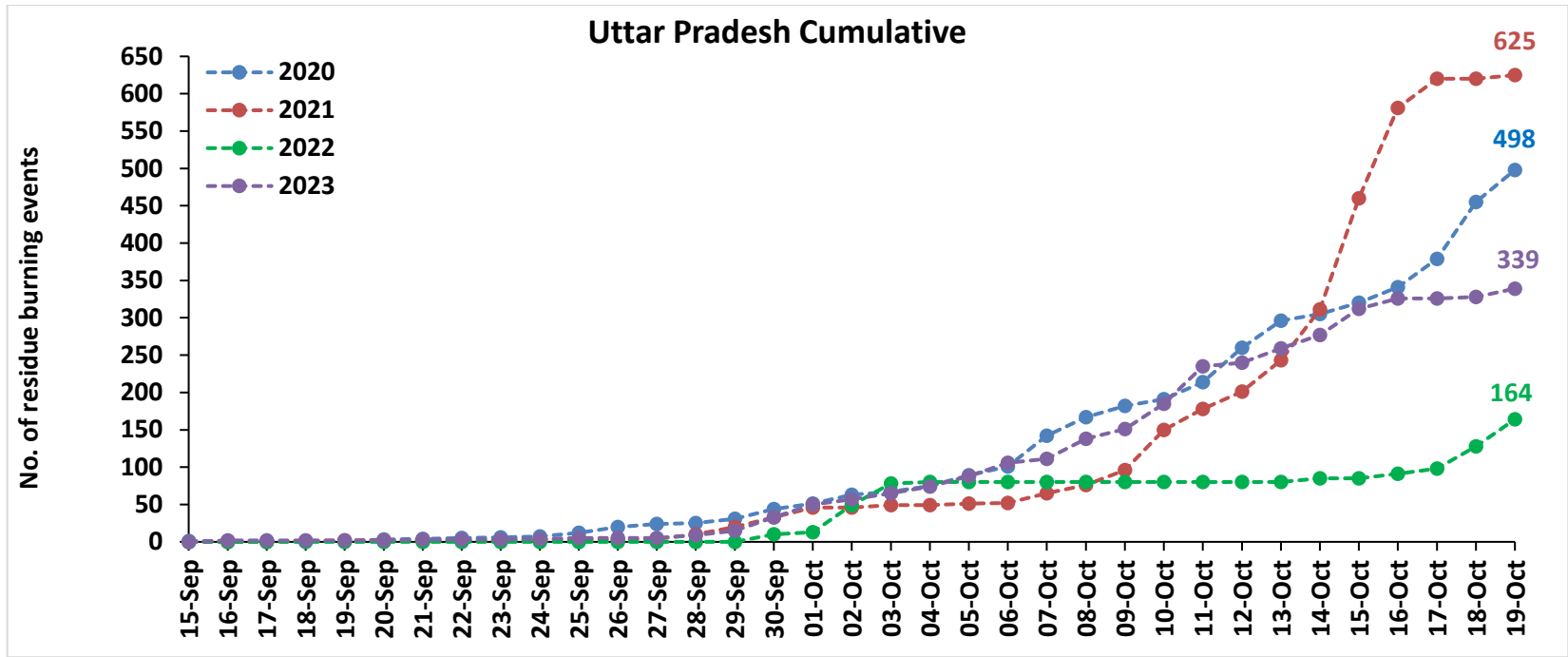


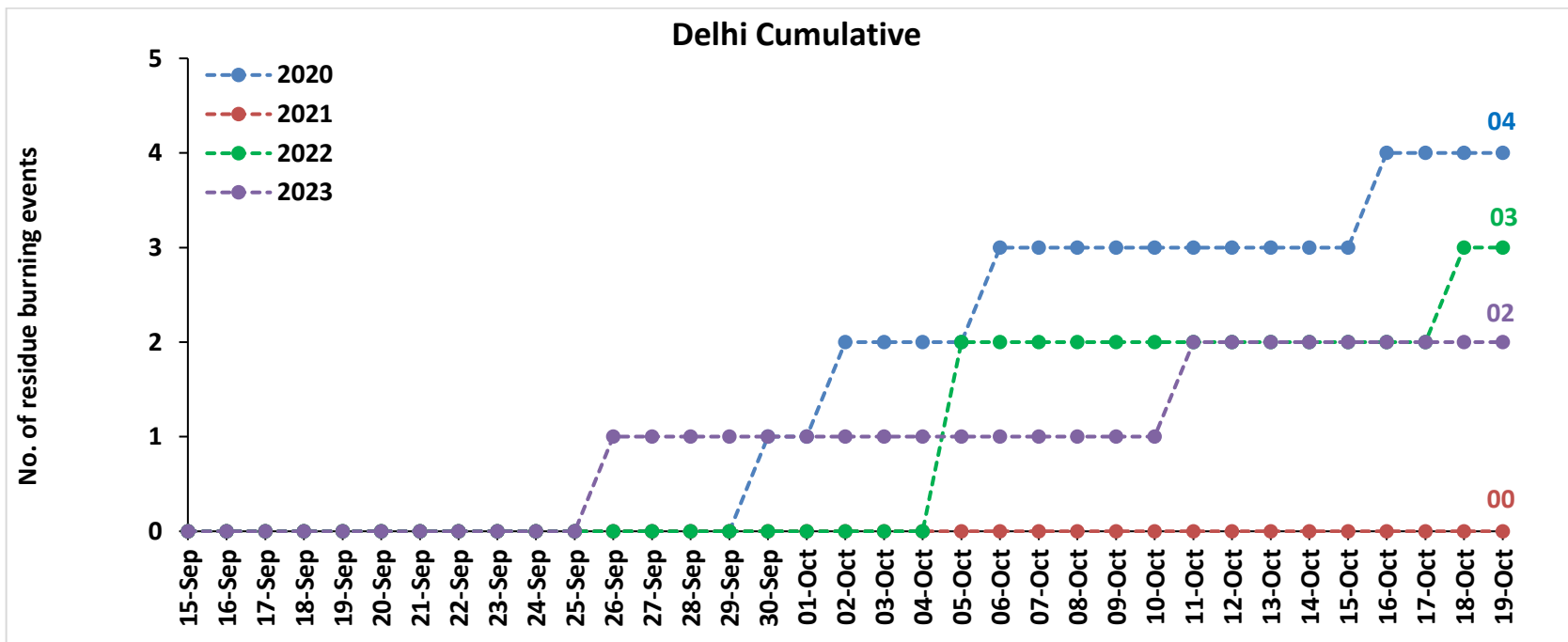
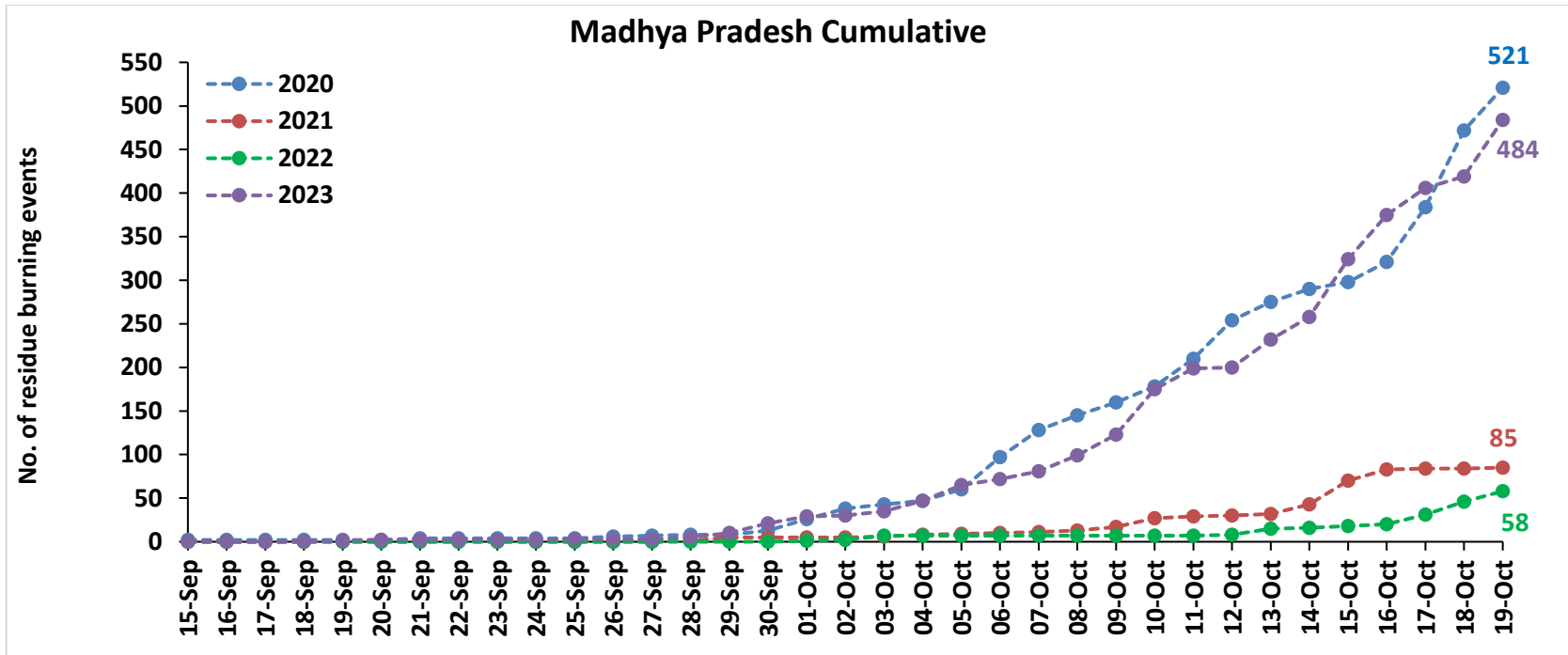
# Delhi



**Comparison of residue burning events in current year (2023) with previous years (2020, 2021 and 2022) for the study State**

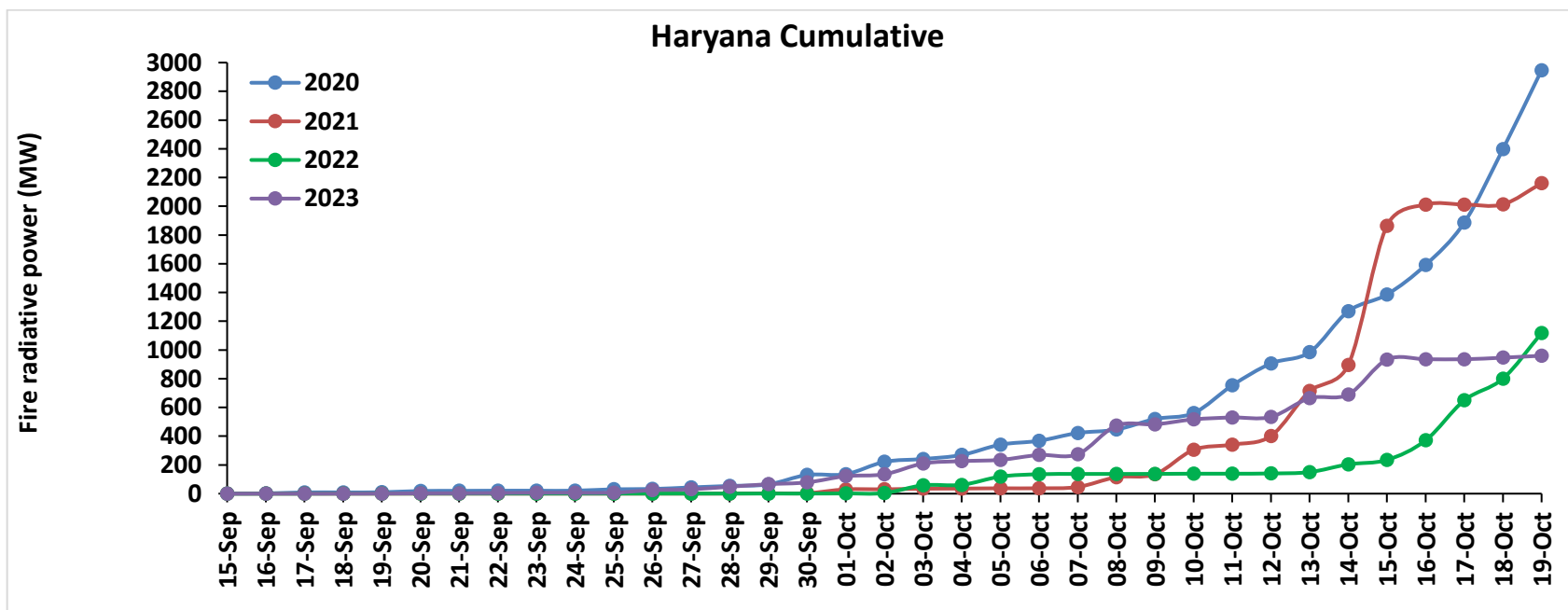
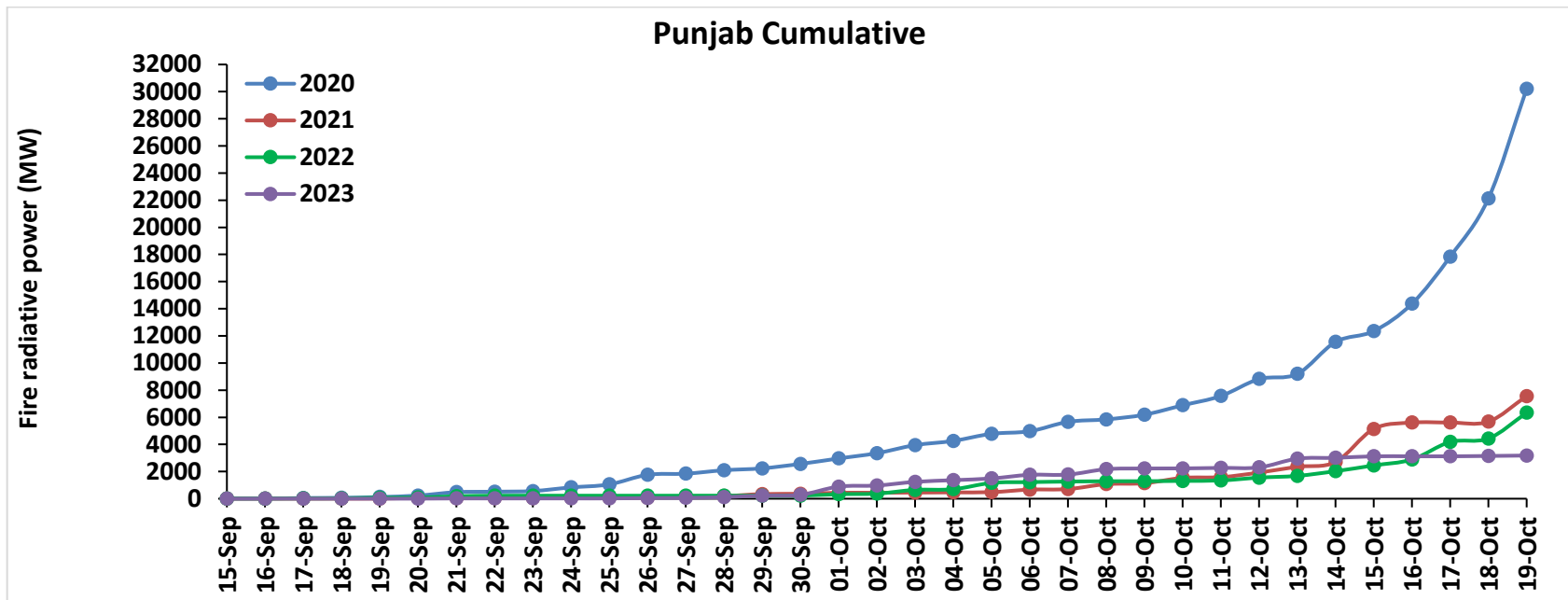


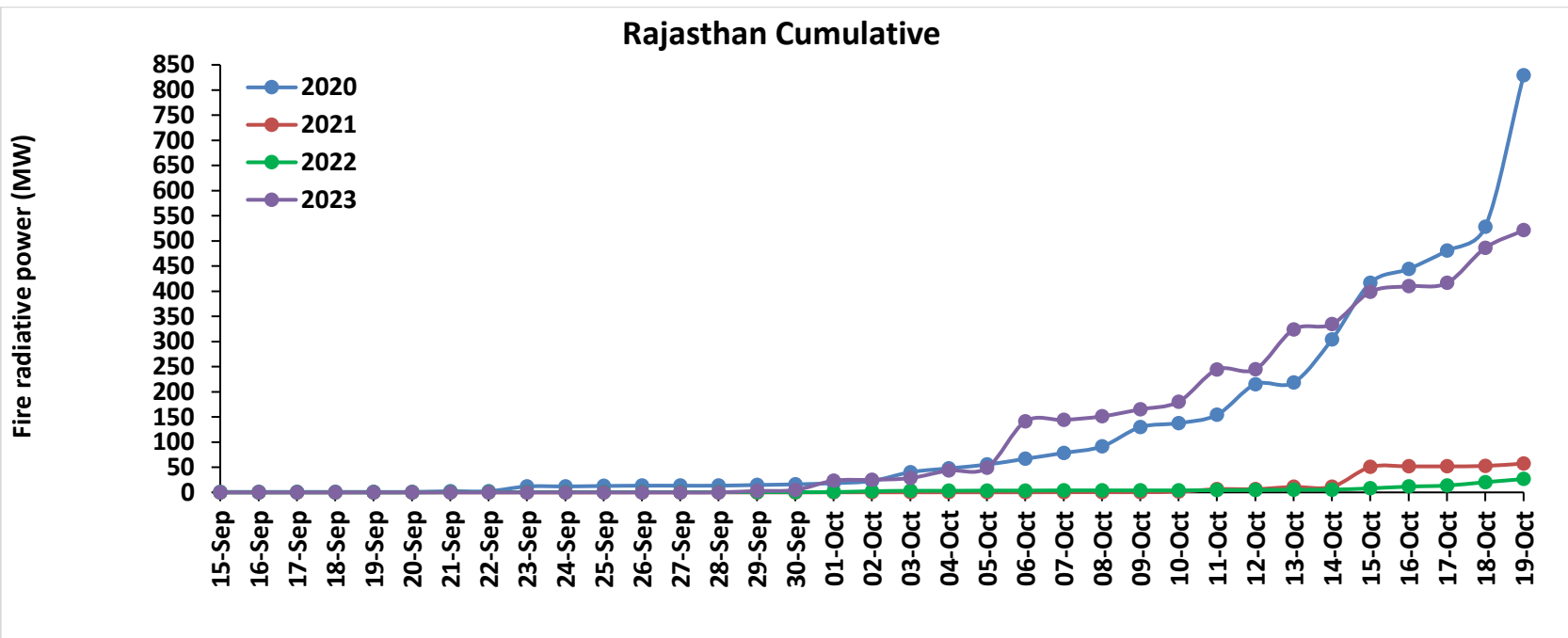
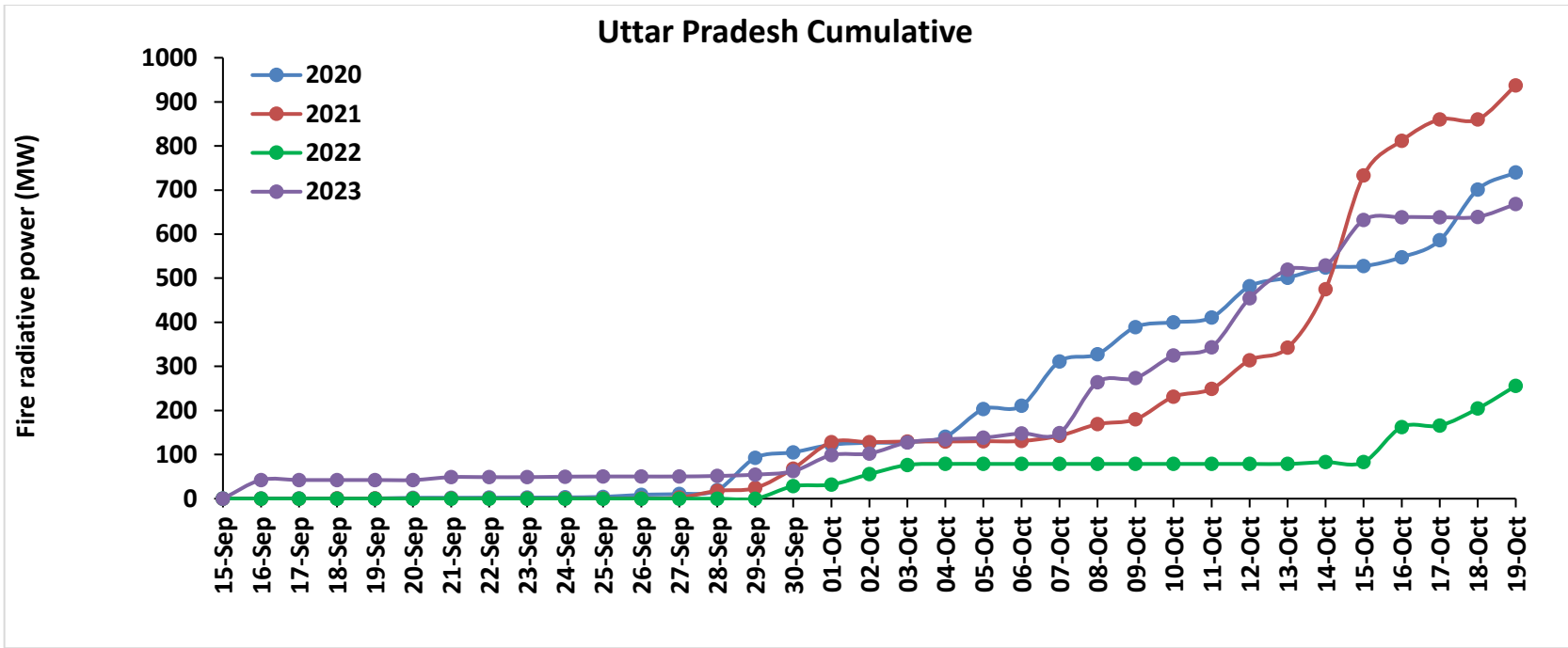


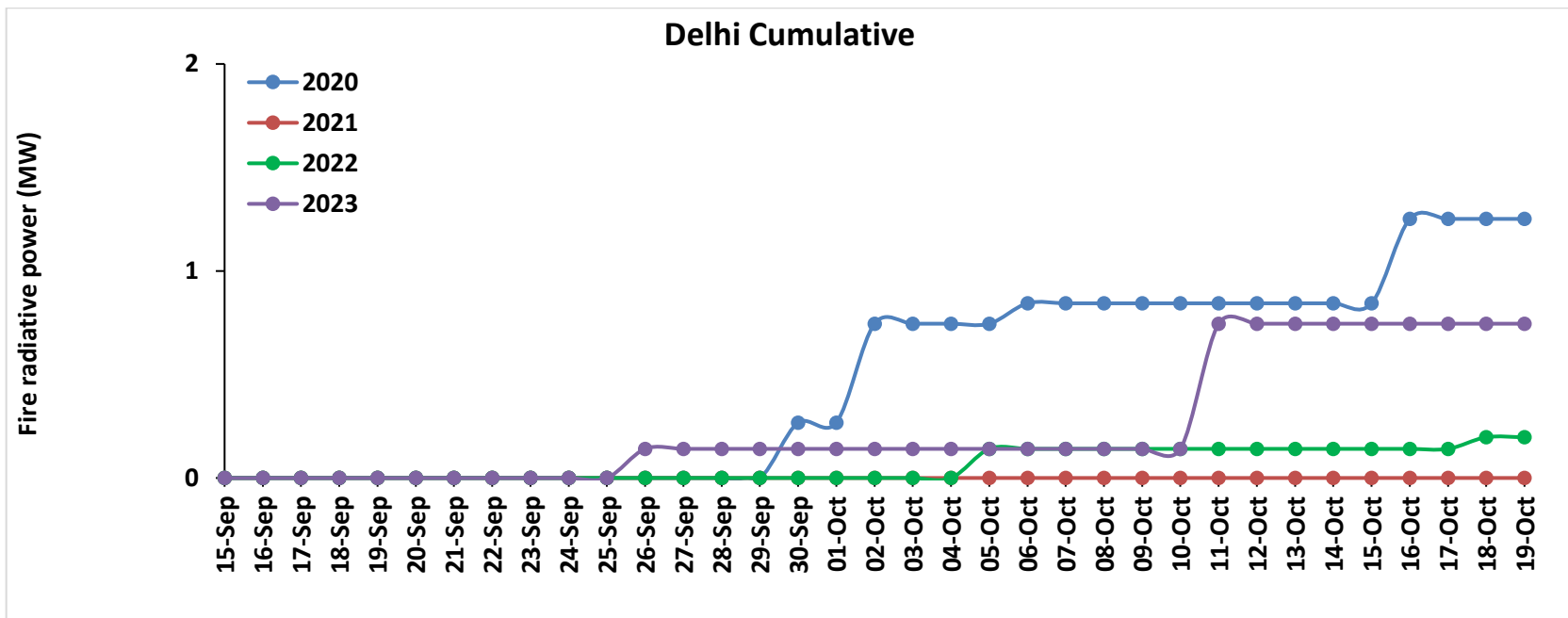
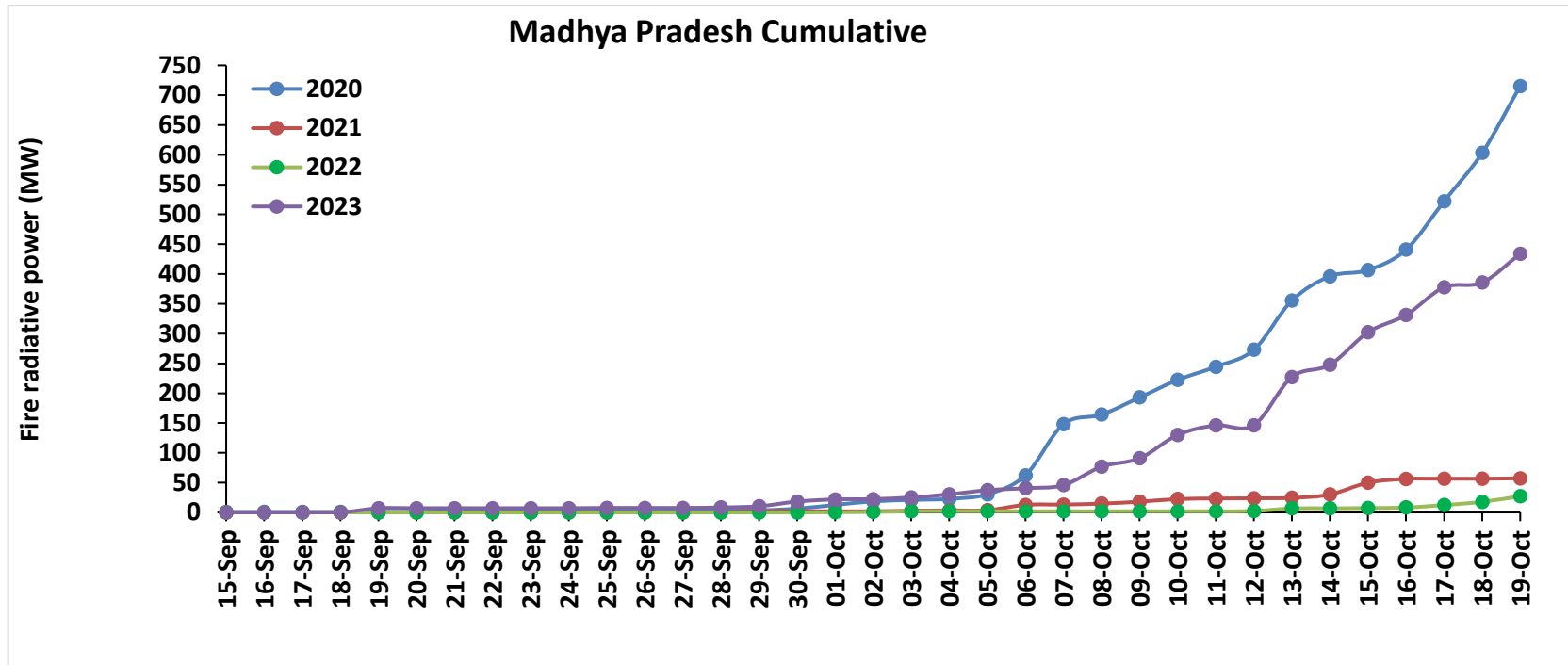




**Comparison of residue burning fire power in current year (2023) with previous years (2020, 2021 and 2022) for the study States**

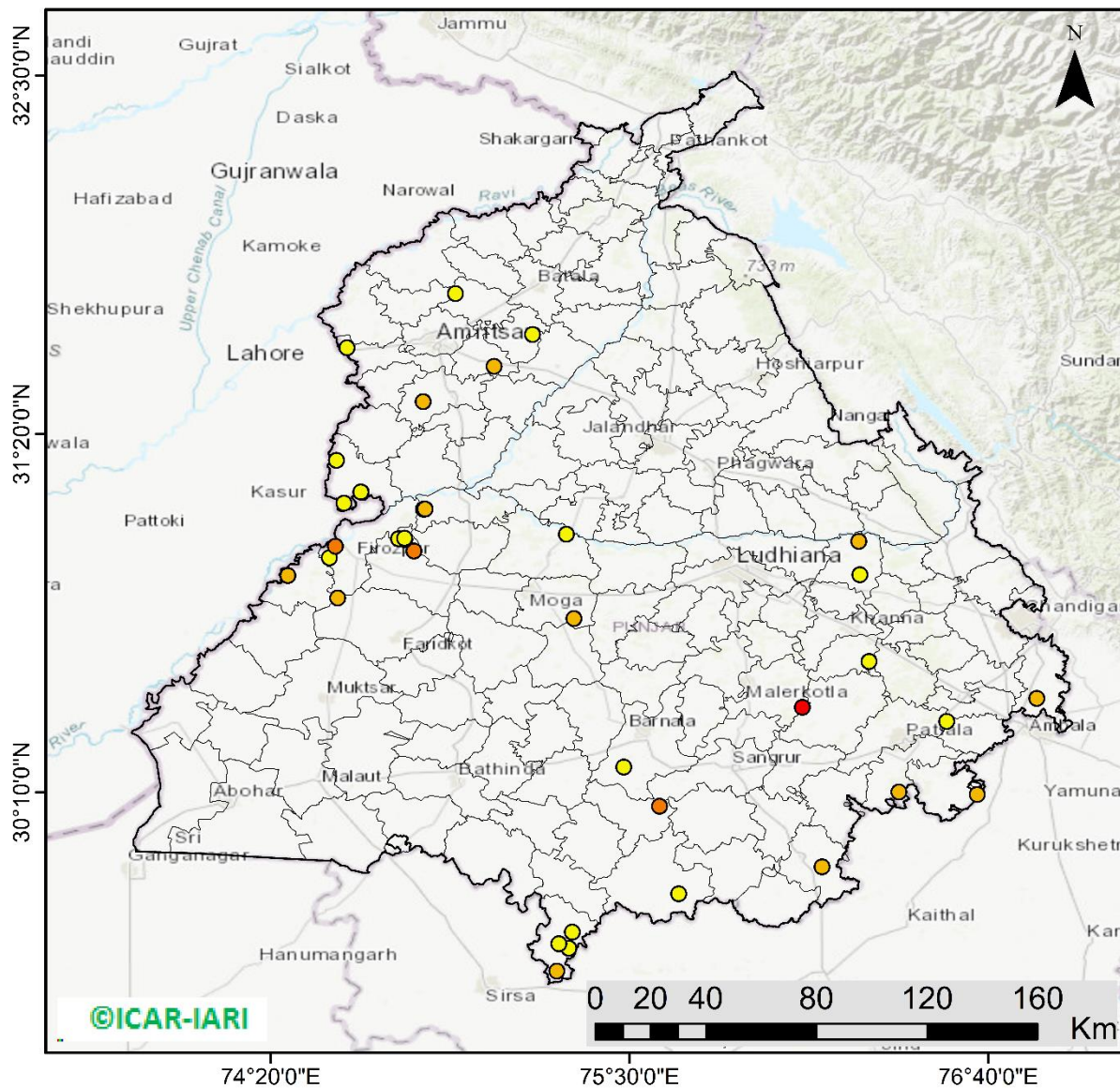






# Punjab

## RICE RESIDUE BURNING IN PUNJAB



**37** burning events detected in Punjab during (19th Oct 2023)

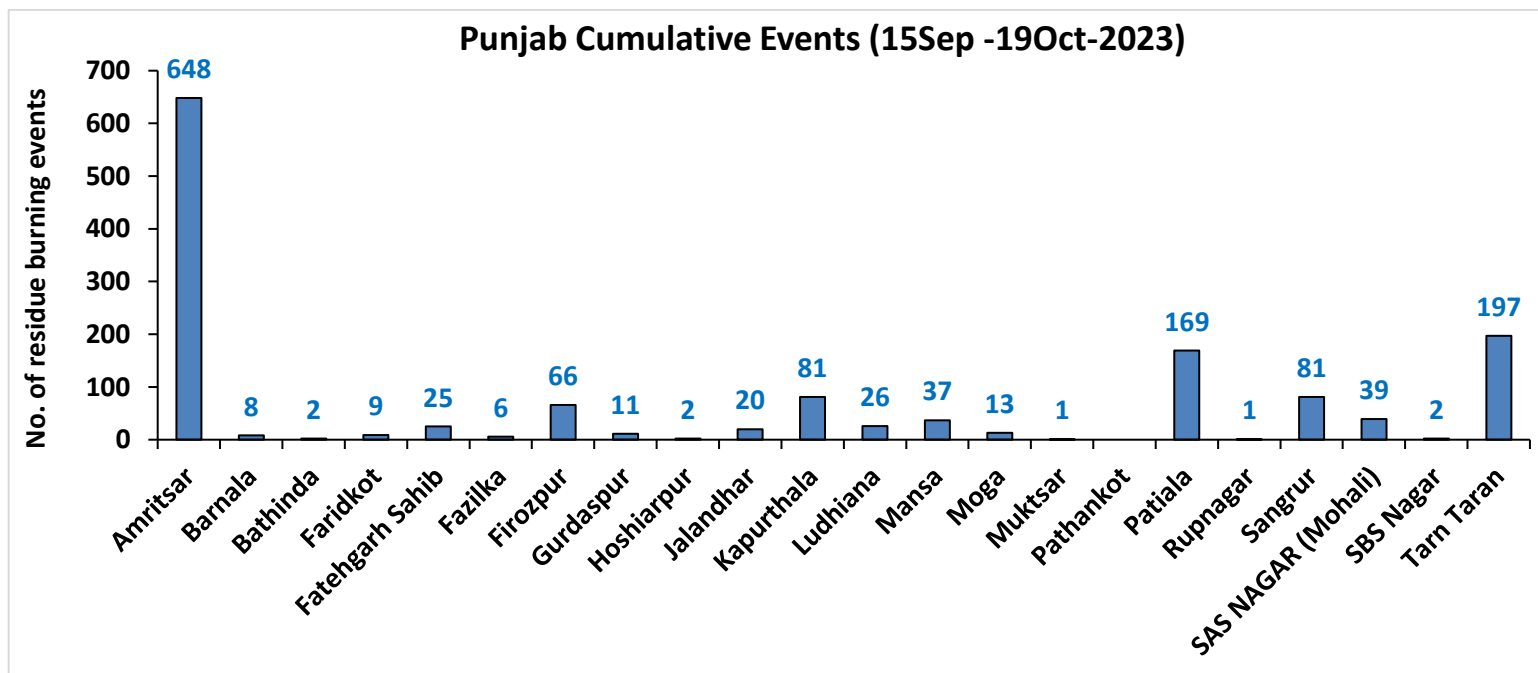
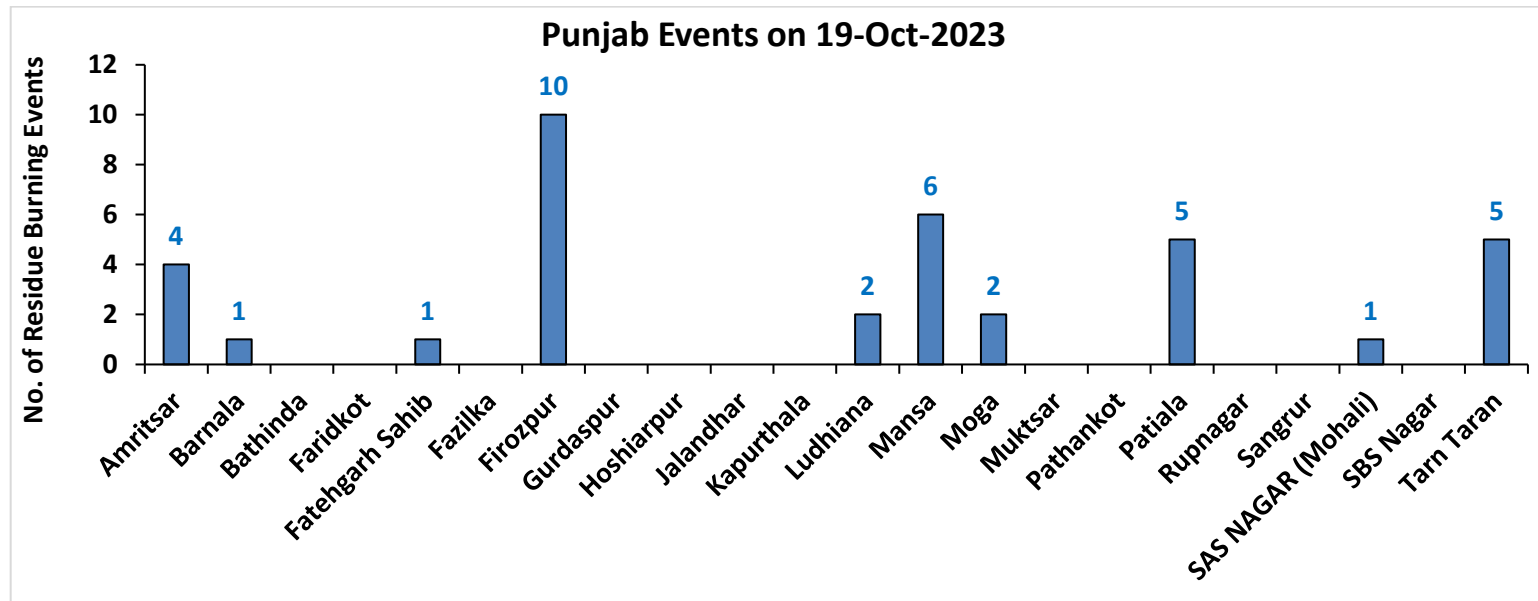
### Fire Intensity (W/m<sup>2</sup>)

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



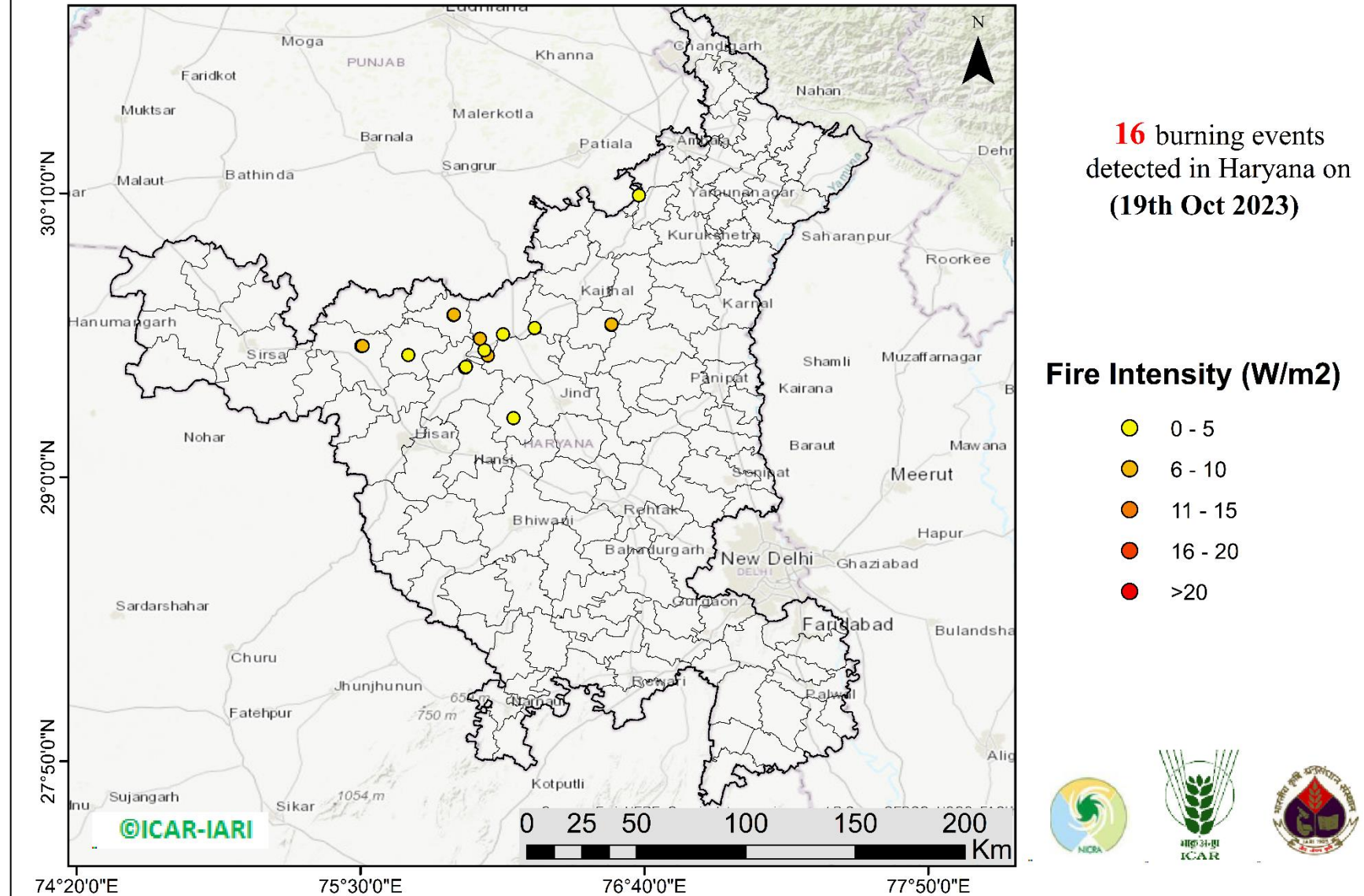
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Punjab (15Sep- 19Oct-2023)



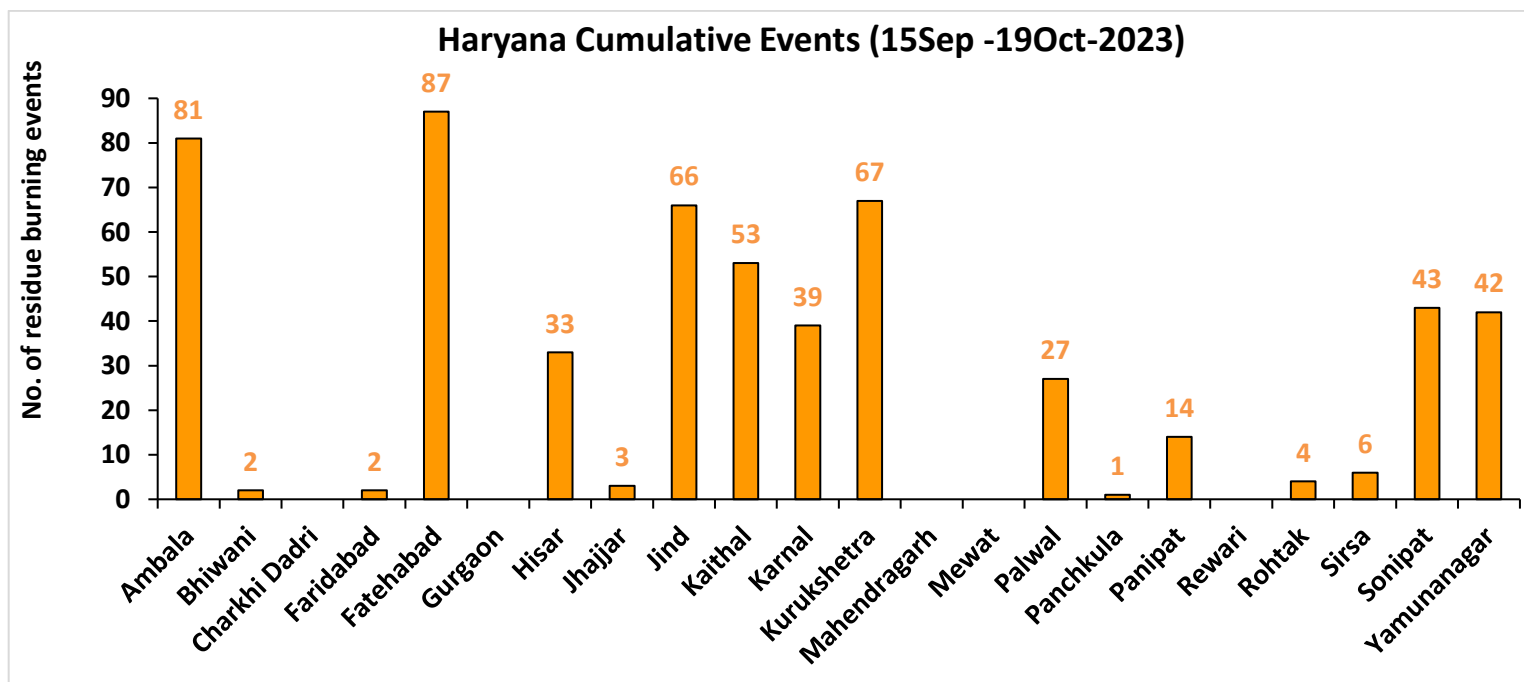
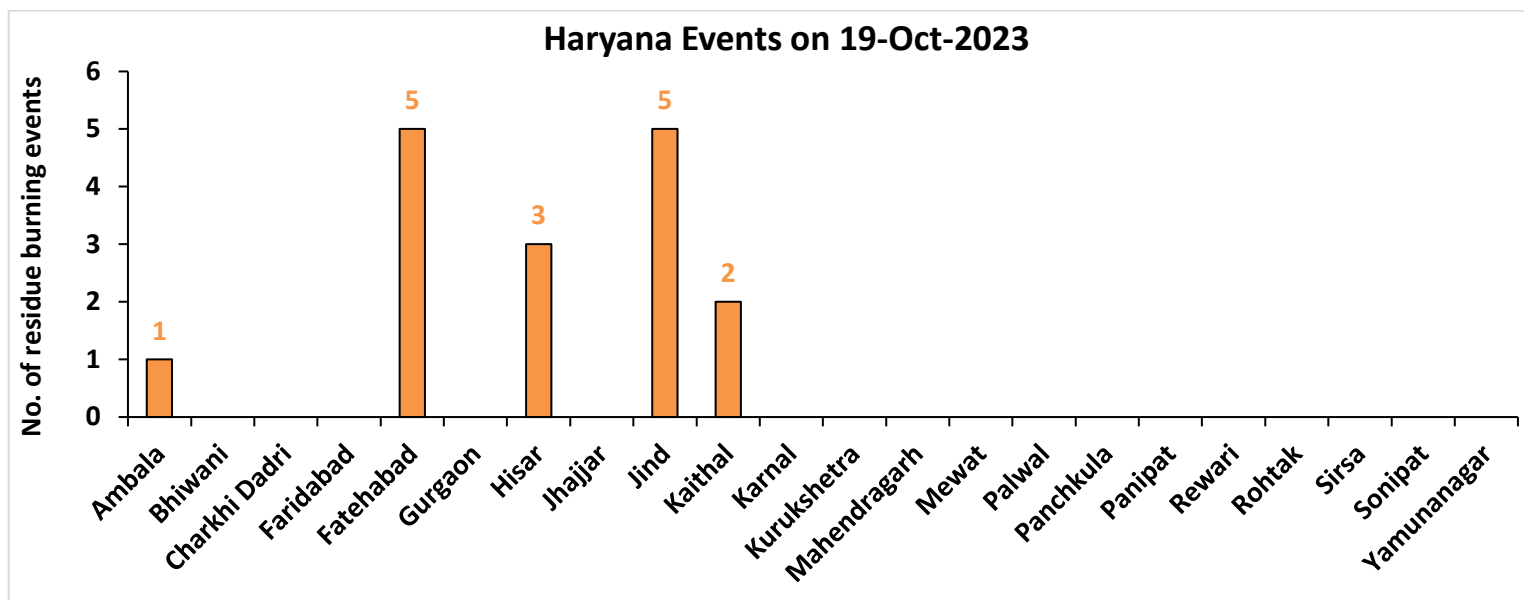
# Haryana

## RICE RESIDUE BURNING IN HARYANA



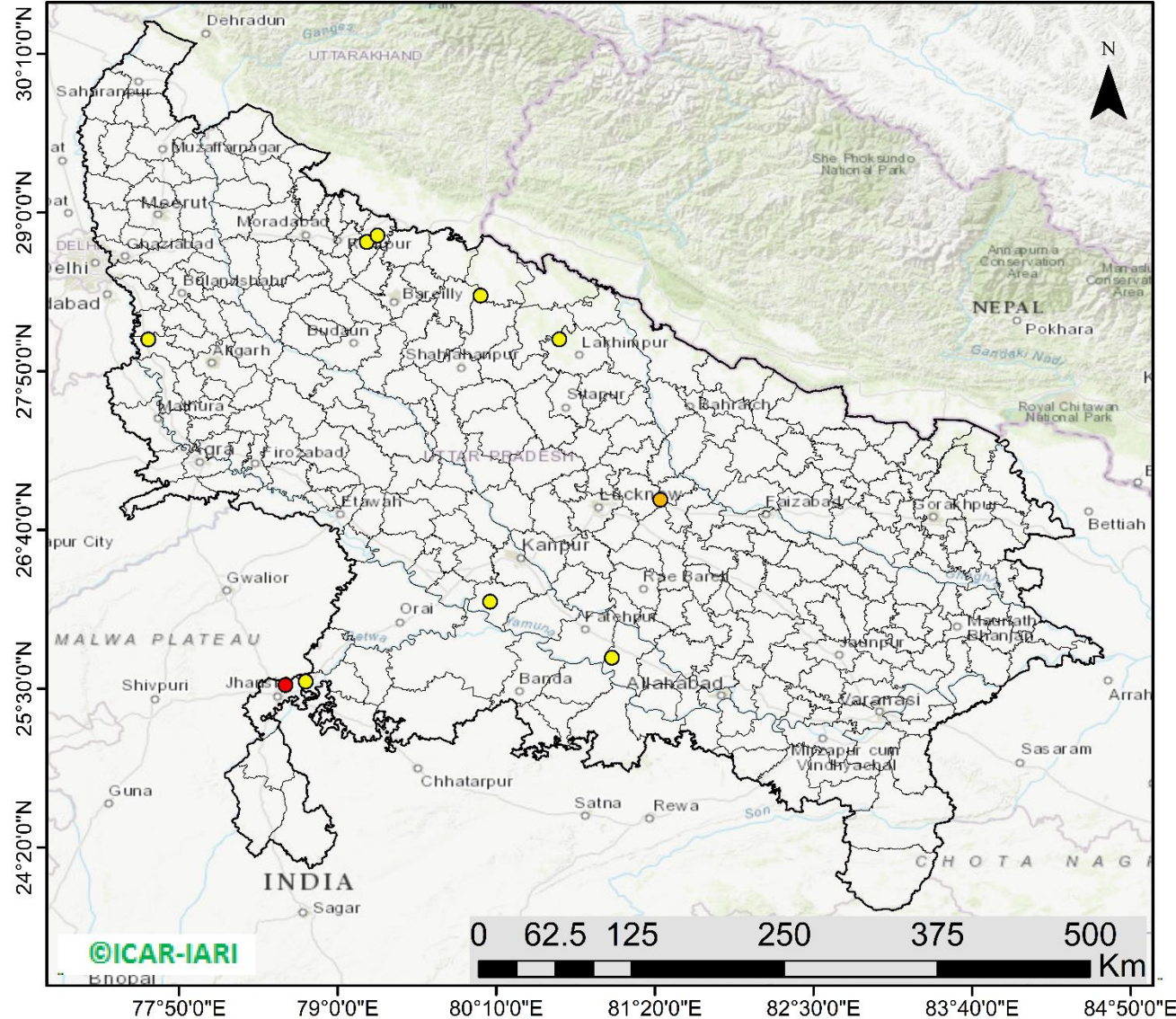
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Haryana (15Sep-19Oct -2023)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



11 burning events detected in Uttar Pradesh on (19th Oct 2023)

Fire Intensity (W/m2)

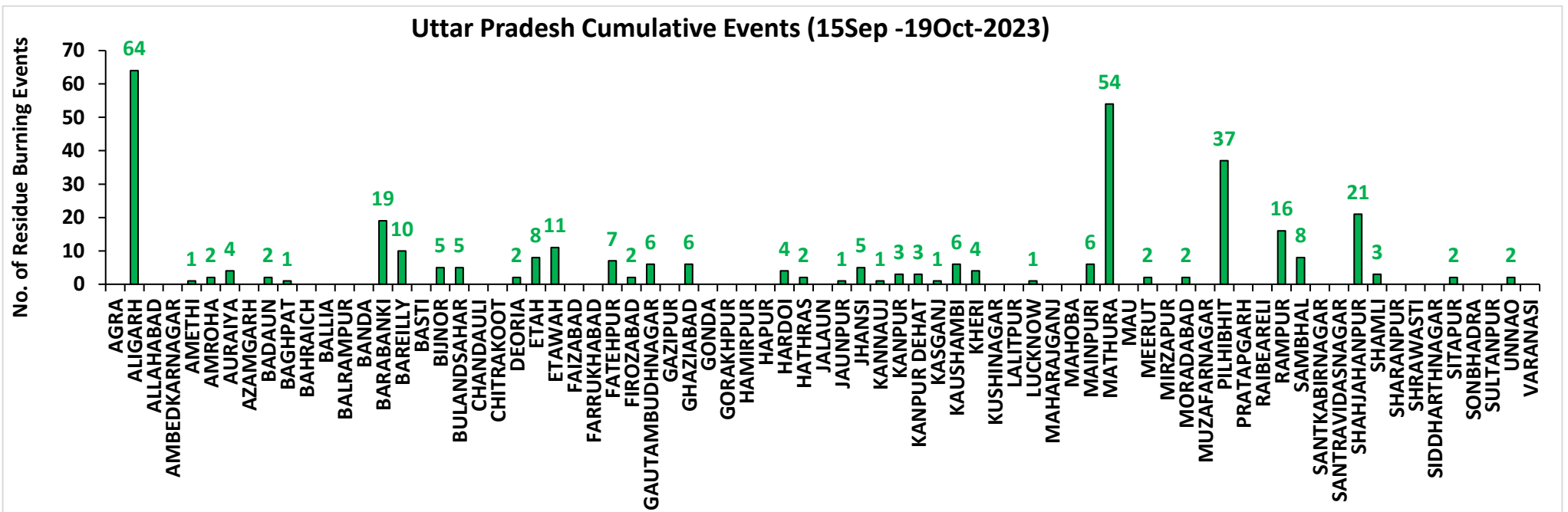
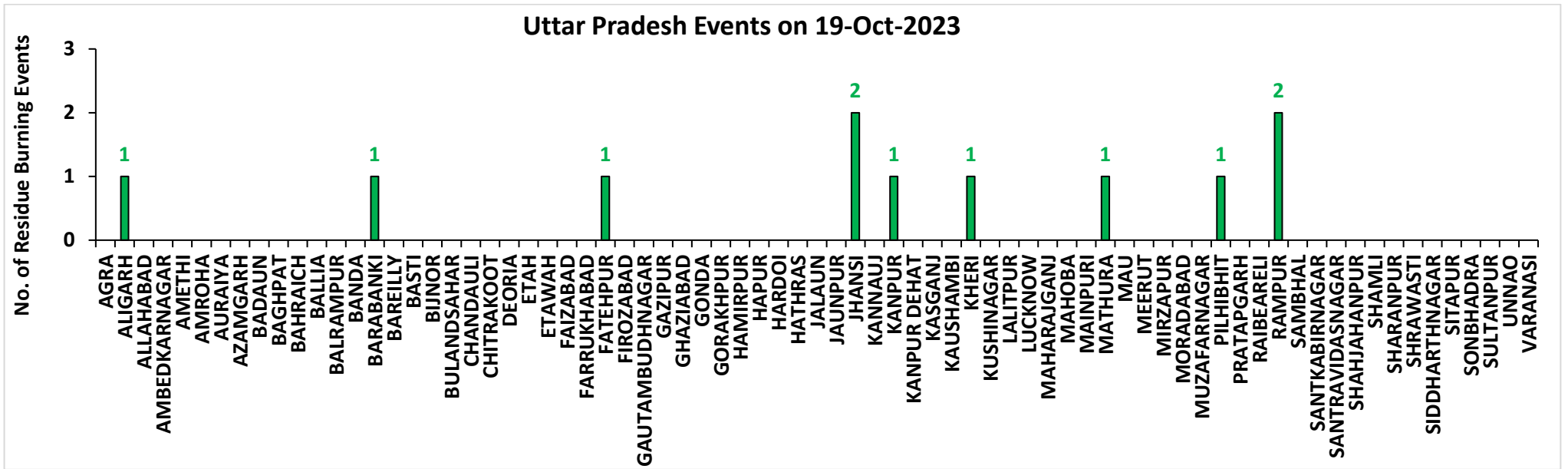
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



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

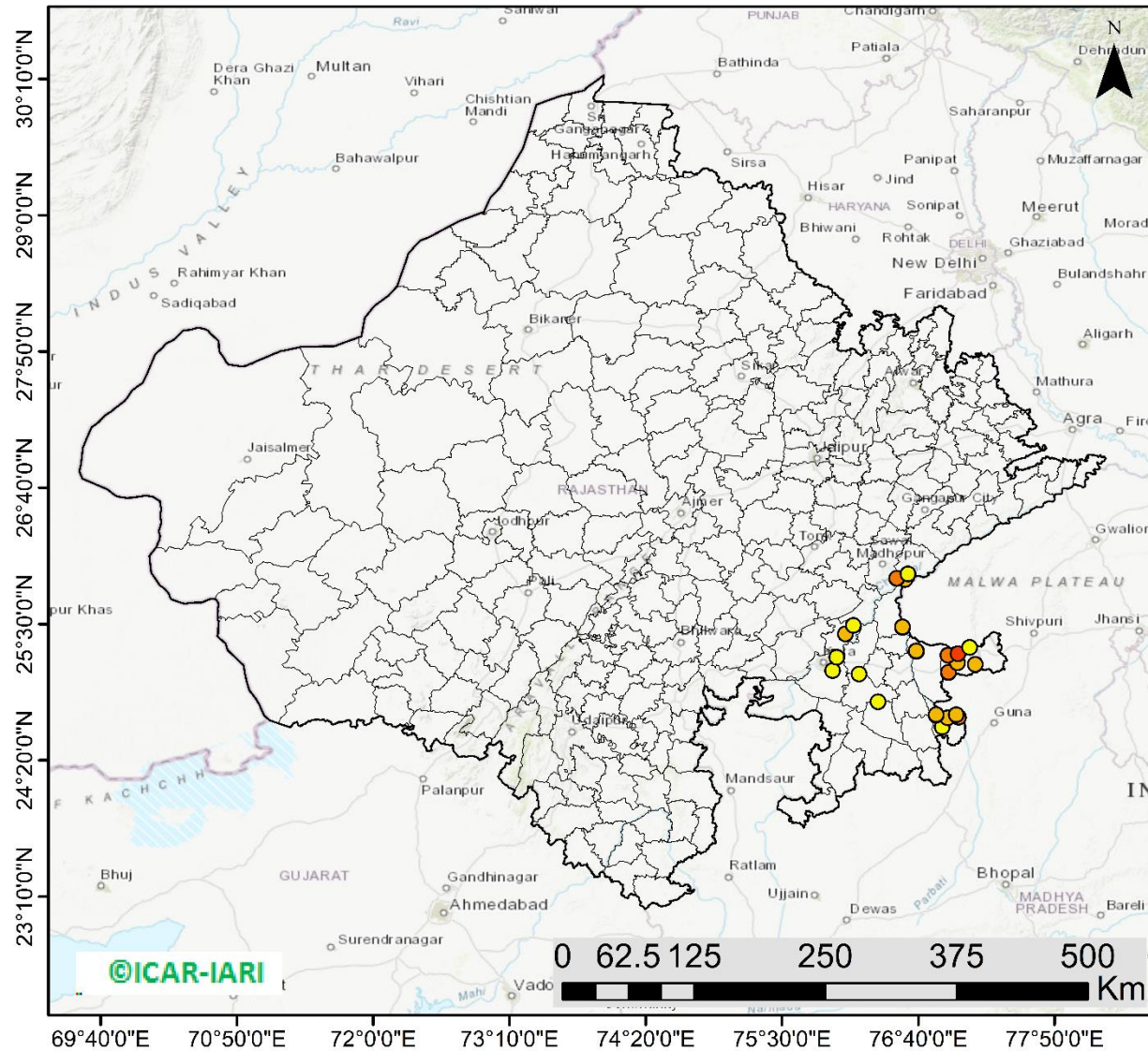


## District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-19Oct -2023)



# Rajasthan

## RICE RESIDUE BURNING IN RAJASTHAN



**31** burning events  
detected in Rajasthan on  
(19th Oct 2023)

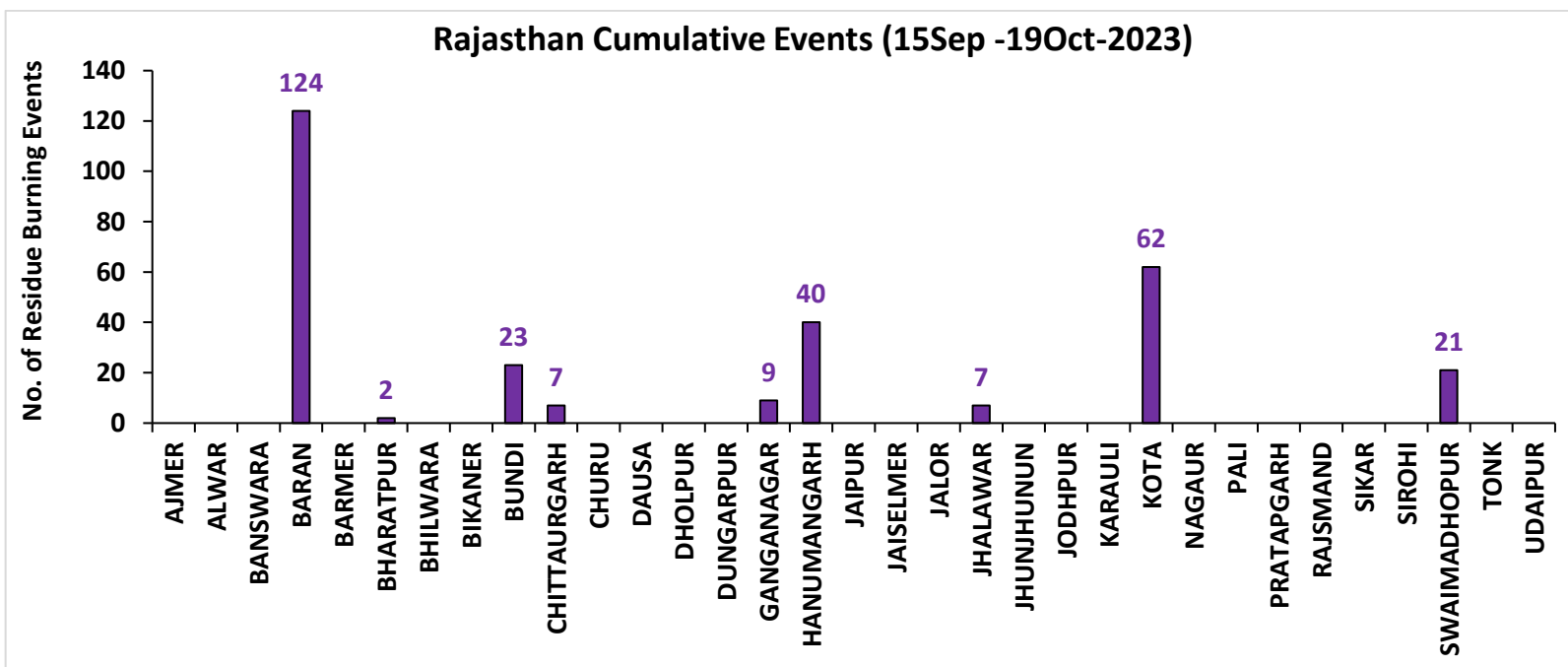
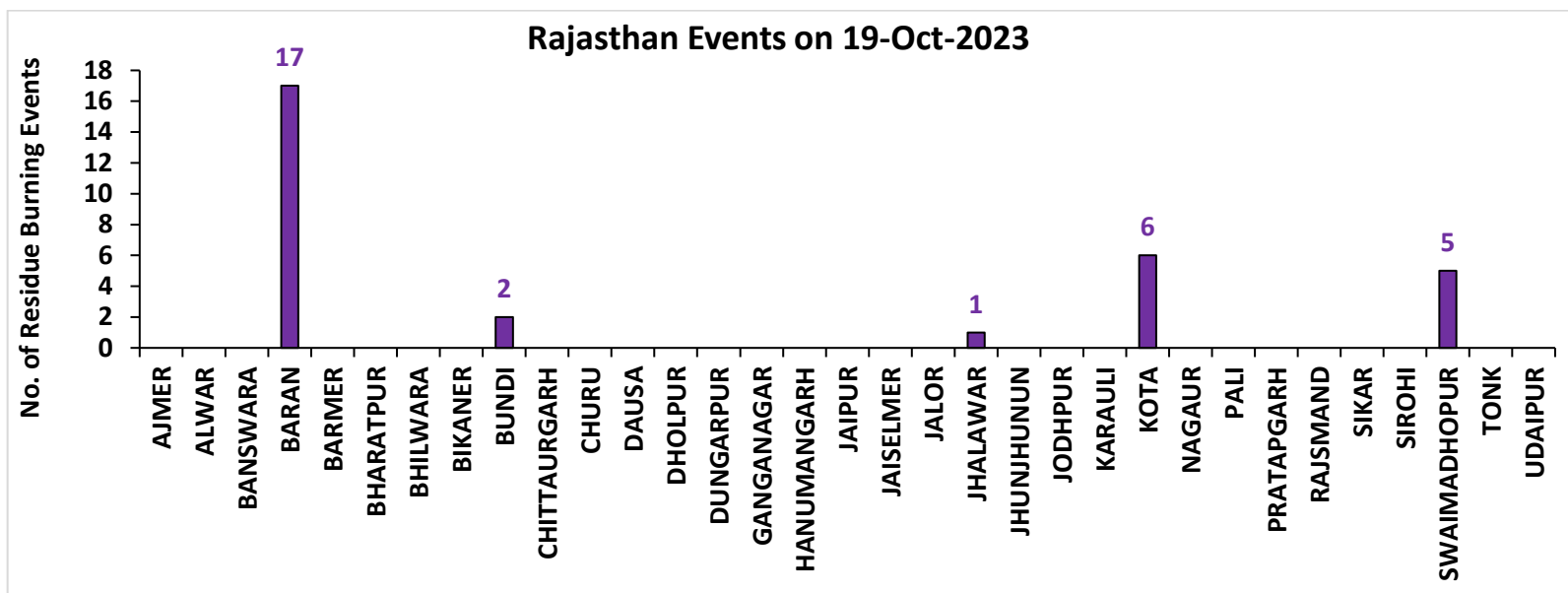
### Fire Intensity (W/m<sup>2</sup>)

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



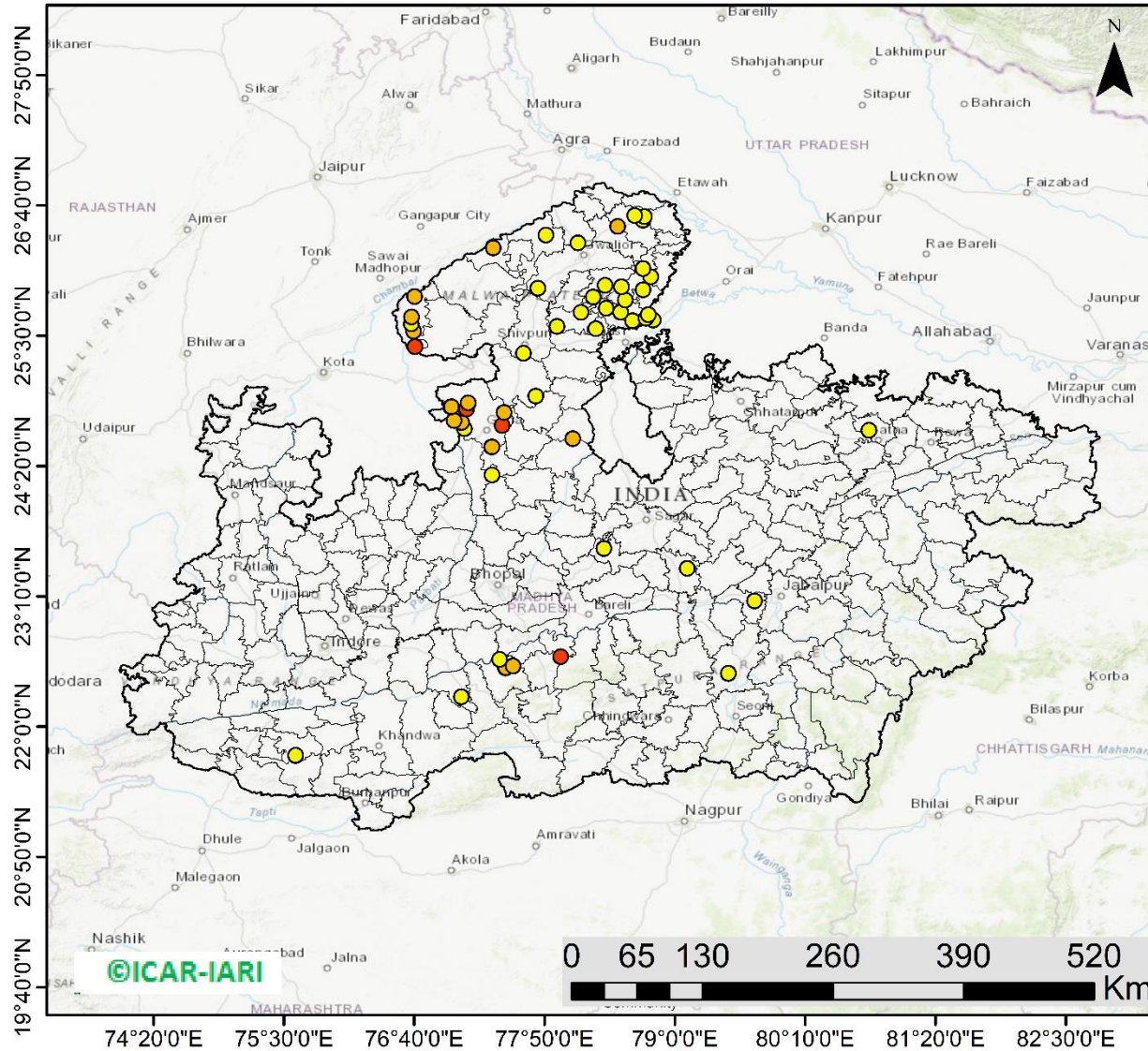
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

## District-wise cumulative number of residues burning events in Rajasthan (15Sep-19Oct -2023)



# Madhya Pradesh

## RICE RESIDUE BURNING IN MADHYA PRADESH



**65** burning events detected in MP on (19th Oct 2023)

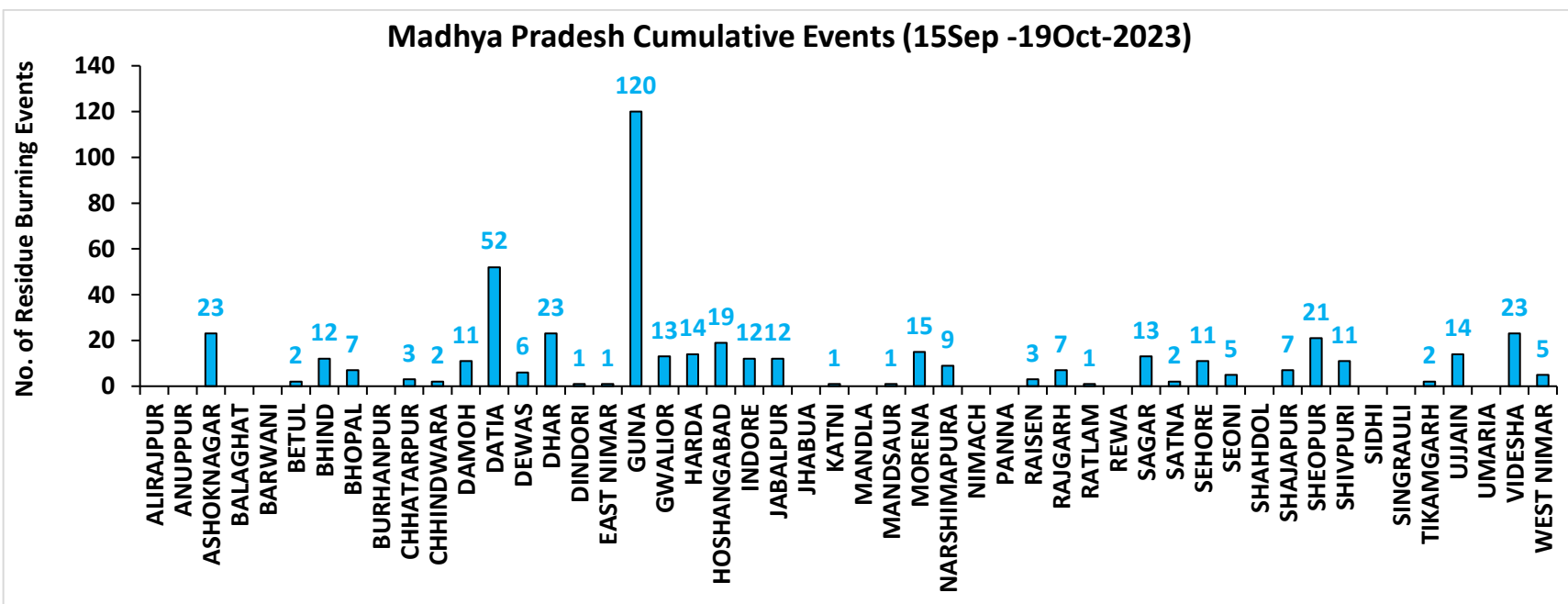
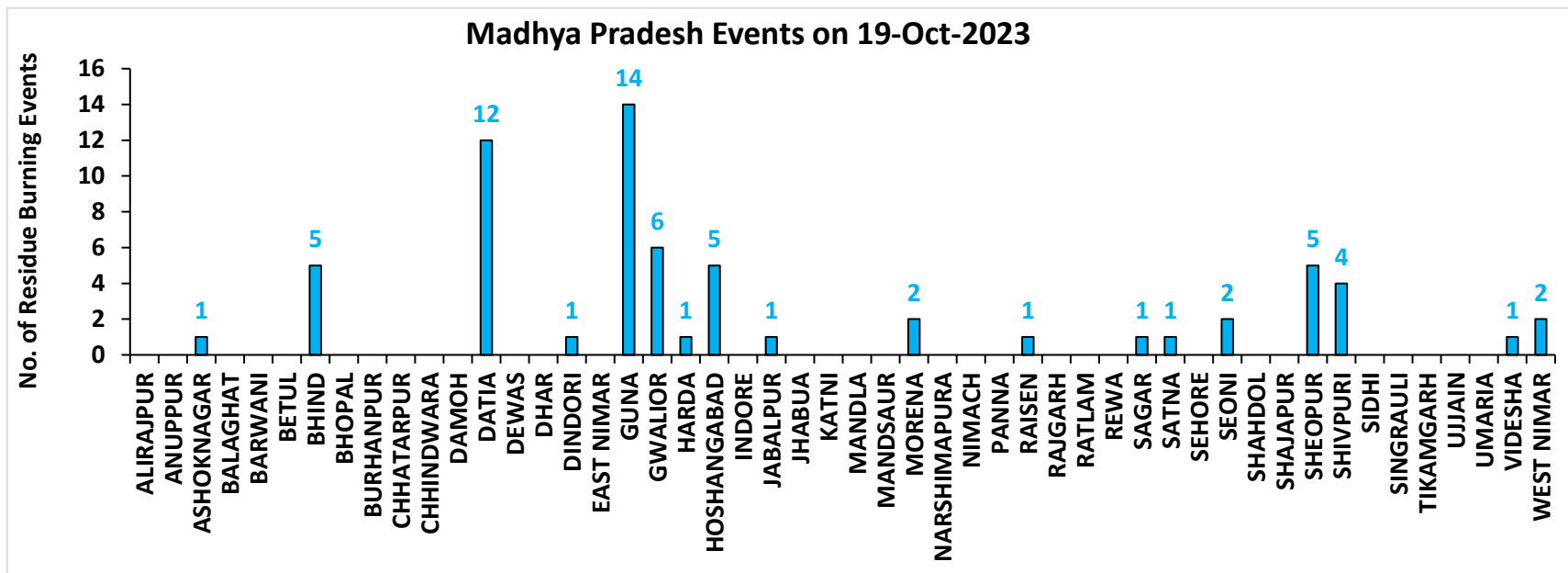
### Fire Intensity (W/m<sup>2</sup>)

- 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 (15Sep-19Oct -2023)



**District-wise cumulative number of residues burning events detected in 2020, 2021, 2022 and 2023**  
**(Period: 15 September-19 October)**

**(a) Punjab**

District	15 Sep-19 Oct			
	2020	2021	2022	2023
Amritsar	2055	665	788	648
Barnala	27	24	13	8
Bathinda	107	18	8	2
Faridkot	397	106	14	9
Fatehgarh Sahib	217	113	47	25
Fazilka	95	45	20	6
Firozpur	843	142	120	66
Gurdaspur	588	158	228	11
Hoshiarpur	72	19	3	2
Jalandhar	154	102	103	20
Kapurthala	360	123	138	81
Ludhiana	197	186	57	26
Mansa	71	8	14	37
Moga	109	62	51	13
Muktsar	70	39	5	1
Pathankot	3	0	0	0
Patiala	704	284	117	169
Rupnagar	46	21	6	1
Sangrur	179	57	73	81
SAS NAGAR (Mohali)	52	28	11	39
SBS Nagar	17	14	2	2
Tarn Taran	2146	728	807	197
<b>Total</b>	<b>8509</b>	<b>2942</b>	<b>2625</b>	<b>1444</b>

**(b) Haryana**

District	15 Sep-19 Oct			
	2020	2021	2022	2023
AMBALA	130	54	35	81
BHIWANI	0	0	0	2
CHARKHI DADRI	0	0	0	0
FARIDABAD	0	1	1	2
FATEHABAD	67	57	49	87
GURGAON	0	0	0	0
HISAR	9	1	8	33
JHAJJAR	1	0	0	3
JIND	33	33	50	66
KAITHAL	215	287	162	53
KARNAL	326	350	102	39
KURUKSHETRA	254	205	126	67
MAHENDRAGARH	0	0	0	0
MEWAT	0	0	0	0
PALWAL	19	25	0	27
PANCHKULA	0	0	0	1
PANIPAT	9	15	8	14
REWARI	0	0	0	0
ROHTAK	1	0	0	4
SIRSA	18	4	7	6
SONIPAT	11	5	6	43
YAMUNANAGAR	70	45	32	42
<b>Total</b>	<b>1163</b>	<b>1082</b>	<b>586</b>	<b>570</b>

(c) Uttar Pradesh

District	15 Sep-19 Oct													
	2020	2021	2022	2023	GAUTAMBUDHNAGAR	2	7	2	6	MUZAFARNAGAR	3	2	1	0
AGRA	2	0	0	0	GAZIPUR	0	0	0	0	PILHIBHIT	8	108	16	37
ALIGARH	35	21	4	64	GHAZIABAD	3	2	1	6	PRATAPGARH	1	0	0	0
ALLAHABAD	0	1	0	0	GONDA	0	0	0	0	RAIBEARELI	1	0	0	0
AMBEDKARNAGAR	0	0	0	0	GORAKHPUR	1	0	0	0	RAMPUR	35	50	6	16
AMETHI	0	1	4	1	HAMIRPUR	1	0	0	0	SAMBHAL	7	7	4	8
AMROHA	1	0	0	2	HAPUR	3	1	0	0	SANTKABIRNAGAR	0	0	0	0
AURAIYA	17	6	4	4	HARDOI	12	6	2	4	SANTRAVIDASNAGAR	0	0	0	0
AZAMGARH	0	0	0	0	HATHRAS	0	0	0	2	SHAHJAHANPUR	44	181	74	21
BADAUN	1	6	0	2	JALAUN	0	0	0	0	SHAMLI	20	11	3	3
BAGHPAT	3	1	1	1	JAUNPUR	0	0	0	1	SHARANPUR	32	17	2	0
BAHRAICH	8	2	4	0	JHANSI	10	6	0	5	SHRAWASTI	7	0	0	0
BALLIA	0	0	0	0	KANNAUJ	3	1	0	1	SIDDHARTHANAGAR	0	0	0	0
BALRAMPUR	1	1	1	0	KANPUR	3	7	10	3	SITAPUR	14	9	0	2
BANDA	0	0	0	0	KANPUR DEHAT	11	1	0	3	SONBHADRA	0	0	0	0
BARABANKI	14	20	0	19	KASGANJ	1	2	0	1	SULTANPUR	0	0	0	0
BAREILLY	18	15	2	10	KAUSHAMBI	9	3	0	6	UNNAO	5	0	0	2
BASTI	3	1	0	0	KHERI	41	54	9	4	VARANASI	1	0	0	0
BIJNOR	6	3	1	5	KUSHINAGAR	0	0	0	0	<b>Total</b>	<b>498</b>	<b>625</b>	<b>164</b>	<b>339</b>
BULANDSAHAR	14	2	2	5	LALITPUR	0	1	2	0					
CHANDAULI	0	0	0	0	LUCKNOW	2	0	0	1					
CHITRAKOOT	0	0	1	0	MAHARAJGANJ	0	0	0	0					
DEORIA	0	0	0	2	MAHOBA	3	0	0	0					
ETAH	6	6	0	8	MAINPURI	10	7	3	6					
ETAWAH	4	7	0	11	MATHURA	26	27	1	54					
FAIZABAD	1	0	0	0	MAU	0	0	0	0					
FARRUKHABAD	0	0	0	0	MEERUT	12	4	1	2					
FATEHPUR	18	6	1	7	MIRZAPUR	6	5	2	0					
FIROZABAD	4	4	0	2	MORADABAD	5	3	0	2					

**(d) Delhi**

District	15 Sep-19 Oct			
	2020	2021	2022	2023
CENTRAL	0	0	0	0
EAST	0	0	0	0
NEW DELHI	0	0	0	0
NORTH	2	0	3	2
NORTH EAST	0	0	0	0
NORTH WEST DELHI	1	0	0	0
SHAHADRA	0	0	0	0
SOUTH	1	0	0	0
SOUTH EAST	0	0	0	0
SOUTH WEST DELHI	0	0	0	0
WEST DELHI	0	0	0	0
<b>Total</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>2</b>

**(e) Rajasthan**

District	15 Sep-19 Oct			
	2020	2021	2022	2023
AJMER	0	0	0	0
ALWAR	1	0	0	0
BANSWARA	0	0	0	0
BARAN	88	0	7	124
BARMER	2	0	0	0
BHARATPUR	1	0	0	2
BHILWARA	2	0	0	0
BIKANER	1	0	0	0
BUNDI	10	0	18	23
CHITTAURGARH	0	2	2	7
CHURU	0	0	0	0
DAUSA	0	0	0	0
DHOLPUR	0	0	0	0
DUNGARPUR	0	0	0	0
GANGANAGAR	3	0	1	9
HANUMANGARH	148	31	8	40
JAIPUR	1	0	0	0
JAISELMER	2	0	0	0
JALOR	0	0	0	0
JHALAWAR	1	0	1	7
JHUNJHUNUN	1	0	0	0
JODHPUR	1	0	0	0
KARAULI	1	0	0	0
KOTA	27	1	9	62
NAGAU	0	0	0	0
PALI	1	0	0	0
PRATAPGARH	4	0	0	0
RAJSMAND	0	0	0	0
SIKAR	0	0	0	0
SIROHI	1	0	0	0
SWAIMADHOPUR	7	0	3	21
TONK	1	0	0	0
UDAIPUR	0	0	0	0
<b>Total</b>	<b>304</b>	<b>34</b>	<b>49</b>	<b>295</b>



**(f) Madhya Pradesh**

District	15 Sep-19 Oct								
	2020	2021	2022	2023					
					PANNA	3	0	0	0
ALIRAJPUR	0	0	0	0	RAISEN	18	1	1	3
ANUPPUR	0	0	0	0	RAJGARH	7	1	3	7
ASHOKNAGAR	19	1	2	23	RATLAM	0	0	0	1
BALAGHAT	0	0	0	0	REWA	4	0	1	0
BARWANI	0	0	0	0	SAGAR	15	7	4	13
BETUL	1	0	0	2	SATNA	11	6	0	2
BHIND	9	1	0	12	SEHORE	9	3	7	11
BHOPAL	6	5	2	7	SEONI	35	5	1	5
BURHANPUR	0	0	0	0	SHAHDOL	0	0	0	0
CHHATARPUR	4	0	0	3	SHAJAPUR	5	0	0	7
CHHINDWARA	4	3	0	2	SHEOPUR	15	0	1	21
DAMOH	20	4	5	11	SHIVPURI	9	0	7	11
DATIA	76	8	0	52	SIDHI	0	0	0	0
DEWAS	3	0	0	6	SINGRAULI	0	0	0	0
DHAR	20	0	0	23	TIKAMGARH	1	0	0	2
DINDORI	0	0	0	1	UJJAIN	5	0	0	14
EAST NIMAR	2	1	3	1	UMARIA	0	0	0	0
GUNA	16	1	4	120	VIDESHA	60	8	7	23
GWALIOR	46	0	1	13	WEST NIMAR	6	0	0	5
HARDA	8	9	0	14	<b>Total</b>	<b>521</b>	<b>85</b>	<b>58</b>	<b>484</b>
HOSHANGABAD	38	8	2	19					
INDORE	2	0	0	12					
JABALPUR	12	4	3	12					
JHABUA	0	0	0	0					
KATNI	3	0	0	1					
MANDLA	1	0	0	0					
MANDSAUR	3	0	0	1					
MORENA	17	5	0	15					
NARSHIMAPURA	8	4	4	9					
NIMACH	0	0	0	0					

**State-wise and date-wise number of paddy residue burning events detected in 2020, 2021, 2022 and 2023**  
**(Period: 15 September-19 October)**

**Number of Paddy Residue Burning Events Detected**

Date	Punjab				Haryana				Uttar Pradesh			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
15-Sep	5	0	14	0	2	0	0	1	1	0	0	0
16-Sep	0	2	0	6	1	0	0	1	0	0	0	2
17-Sep	5	0	1	0	3	0	0	0	0	0	0	0
18-Sep	17	9	7	0	0	0	1	0	0	1	0	0
19-Sep	30	5	18	0	2	0	0	1	0	1	0	0
20-Sep	67	8	10	0	6	0	0	2	2	0	0	0
21-Sep	54	0	56	1	2	0	0	2	1	0	0	1
22-Sep	34	0	30	0	1	0	0	2	1	0	0	0
23-Sep	49	0	3	1	0	0	0	3	1	0	0	0
24-Sep	78	5	0	0	0	0	0	0	1	1	0	1
25-Sep	184	11	0	0	11	0	0	1	5	0	0	1
26-Sep	190	19	0	3	5	0	0	2	8	0	0	0
27-Sep	78	37	0	21	8	0	0	9	4	1	0	0
28-Sep	55	28	0	33	6	1	0	8	1	6	0	4
29-Sep	63	64	0	68	9	4	0	17	6	10	0	6
30-Sep	116	27	8	81	22	2	0	26	13	13	10	18
01-Oct	165	13	45	123	15	4	1	21	7	13	3	17
02-Oct	141	0	83	119	30	2	7	24	12	0	36	7
03-Oct	110	9	75	105	8	6	8	17	4	3	29	8
04-Oct	162	23	65	95	29	2	7	29	8	0	2	9
05-Oct	161	18	130	98	17	3	24	24	14	2	0	14
06-Oct	171	42	85	91	30	0	26	19	12	1	0	18
07-Oct	197	72	62	32	32	11	6	13	41	13	0	5
08-Oct	95	108	19	92	29	27	0	55	25	11	0	27
09-Oct	121	114	3	58	20	39	1	14	15	20	0	13
10-Oct	232	150	4	10	33	95	2	28	9	54	0	34
11-Oct	377	64	45	26	90	51	0	21	23	28	0	50

<b>12-Oct</b>	388	97	104	13	69	51	4	5	46	23	0	5
<b>13-Oct</b>	266	132	120	154	47	91	15	29	36	42	0	19
<b>14-Oct</b>	605	229	82	89	69	98	30	41	9	68	5	18
<b>15-Oct</b>	449	660	169	69	106	363	36	127	15	149	0	35
<b>16-Oct</b>	654	429	206	0	80	176	76	4	21	121	6	14
<b>17-Oct</b>	1172	14	403	1	143	0	86	0	38	39	7	0
<b>18-Oct</b>	938	57	342	18	166	1	134	8	76	0	30	2
<b>19-Oct</b>	1080	496	436	37	72	55	122	16	43	5	36	11
<b>Total</b>	<b>8509</b>	<b>2942</b>	<b>2625</b>	<b>1444</b>	<b>1163</b>	<b>1082</b>	<b>586</b>	<b>570</b>	<b>498</b>	<b>625</b>	<b>164</b>	<b>339</b>

### Number of Paddy Residue Burning Events Detected

Date	Delhi				Rajasthan				Madhya Pradesh			
	2020	2021	2022	2023	2020	2021	2022	2023	2020	2021	2022	2023
15-Sep	0	0	0	0	1	0	0	0	2	0	0	0
16-Sep	0	0	0	0	0	0	0	0	0	0	0	0
17-Sep	0	0	0	0	0	0	0	0	0	0	0	0
18-Sep	0	0	0	0	0	0	0	0	0	0	0	0
19-Sep	0	0	0	0	0	0	0	0	0	0	0	1
20-Sep	0	0	0	0	0	0	0	0	0	0	0	1
21-Sep	0	0	0	0	1	0	1	0	2	0	0	0
22-Sep	0	0	0	0	0	0	0	0	0	0	0	0
23-Sep	0	0	0	0	1	0	0	0	0	0	0	0
24-Sep	0	0	0	0	0	0	0	0	0	0	0	0
25-Sep	0	0	0	0	1	0	0	0	0	0	0	1
26-Sep	0	0	0	1	1	0	0	0	2	0	0	0
27-Sep	0	0	0	0	0	0	0	0	1	0	0	0
28-Sep	0	0	0	0	0	0	0	0	1	1	0	2
29-Sep	0	0	0	0	3	0	0	6	0	4	0	5
30-Sep	1	0	0	0	1	0	0	4	5	0	0	11
01-Oct	0	0	0	0	4	1	1	4	13	0	1	8
02-Oct	1	0	0	0	7	0	3	4	12	0	1	1
03-Oct	0	0	0	0	9	0	2	5	5	1	5	5
04-Oct	0	0	0	0	15	0	0	22	4	2	0	12

<b>05-Oct</b>	0	0	2	0	14	0	1	11	13	1	0	18
<b>06-Oct</b>	1	0	0	0	16	0	0	9	37	1	0	7
<b>07-Oct</b>	0	0	0	0	14	1	1	7	31	1	0	9
<b>08-Oct</b>	0	0	0	0	11	0	0	9	17	2	0	18
<b>09-Oct</b>	0	0	0	0	12	0	0	17	15	4	0	24
<b>10-Oct</b>	0	0	0	0	14	1	0	26	18	10	0	52
<b>11-Oct</b>	0	0	0	1	21	7	1	21	32	2	0	24
<b>12-Oct</b>	0	0	0	0	24	1	2	1	44	1	1	1
<b>13-Oct</b>	0	0	0	0	7	5	2	28	21	2	7	32
<b>14-Oct</b>	0	0	0	0	16	1	1	15	15	11	1	26
<b>15-Oct</b>	0	0	0	0	9	8	2	34	8	27	2	66
<b>16-Oct</b>	1	0	0	0	12	2	4	18	23	13	2	51
<b>17-Oct</b>	0	0	0	0	26	0	4	12	63	1	11	31
<b>18-Oct</b>	0	0	1	0	37	2	12	11	88	0	15	13
<b>19-Oct</b>	0	0	0	0	27	5	12	31	49	1	12	65
<b>Total</b>	<b>4</b>	<b>0</b>	<b>3</b>	<b>2</b>	<b>304</b>	<b>34</b>	<b>49</b>	<b>295</b>	<b>521</b>	<b>85</b>	<b>58</b>	<b>484</b>

### Details of residue burning events in Punjab on 19-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMRITSAR	ATTARI	S-NPP	31.61340	74.58166	14:05	D	2.26
2	AMRITSAR	JANDIALA GURU	S-NPP	31.55257	75.05992	14:05	D	7.06
3	AMRITSAR	MAJITHA	S-NPP	31.78981	74.93437	14:05	D	3.00
4	AMRITSAR	TARSIKKA	S-NPP	31.65623	75.18503	14:05	D	4.84
5	BARNALA	BARNALA	S-NPP	30.24797	75.48173	14:05	D	4.47
6	FATEHGARH SAHIB	AMLOH	S-NPP	30.59177	76.27925	14:05	D	4.04
7	FIROZPUR	FIROZPUR	S-NPP	30.92959	74.52396	14:05	D	2.25
8	FIROZPUR	FIROZPUR	S-NPP	30.96679	74.54356	14:05	D	10.12
9	FIROZPUR	GHALL KHURD	S-NPP	30.95136	74.79936	14:05	D	12.95
10	FIROZPUR	GHALL KHURD	S-NPP	30.98880	74.76933	14:05	D	2.20
11	FIROZPUR	GHALL KHURD	S-NPP	30.99129	74.74886	14:05	D	2.64
12	FIROZPUR	GHALL KHURD	S-NPP	30.99322	74.76875	14:05	D	2.80
13	FIROZPUR	MAKHU	S-NPP	31.08777	74.83022	14:05	D	4.27
14	FIROZPUR	MAKHU	S-NPP	31.08825	74.83525	14:05	D	5.79
15	FIROZPUR	MAMDOT	S-NPP	30.79872	74.55117	14:05	D	6.08
16	FIROZPUR	MAMDOT	S-NPP	30.87143	74.38911	14:05	D	5.30
17	LUDHIANA	MACHHIWARA	S-NPP	30.87420	76.24976	14:05	D	3.79
18	LUDHIANA	MACHHIWARA	S-NPP	30.98315	76.24588	14:05	D	9.98
19	MANSA	BHIKHI	S-NPP	30.12051	75.59782	14:05	D	10.74
20	MANSA	BUDHLADA	S-NPP	29.83545	75.66026	14:05	D	2.54
21	MANSA	SARDULGARH	S-NPP	29.58393	75.26385	14:05	D	6.70
22	MANSA	SARDULGARH	S-NPP	29.65812	75.30322	14:05	D	2.57
23	MANSA	SARDULGARH	S-NPP	29.67310	75.27049	14:05	D	2.31
24	MANSA	SARDULGARH	S-NPP	29.71064	75.31418	14:05	D	2.46
25	MOGA	KOT ISE KHAN AT DHARAMKOT	S-NPP	31.00620	75.29511	14:05	D	4.41
26	MOGA	MOGA-1	S-NPP	30.73162	75.31947	14:05	D	6.64
27	PATIALA	BHUNARHERI	S-NPP	30.15897	76.63145	14:05	D	5.49
28	PATIALA	GHANAUR	S-NPP	30.39686	76.53219	14:05	D	2.67
29	PATIALA	NABHA	S-NPP	30.44269	76.06269	14:05	D	36.28
30	PATIALA	PATRAN	S-NPP	29.92348	76.12674	14:05	D	5.48
31	PATIALA	SANAUR	S-NPP	30.16689	76.37638	14:05	D	5.99

32	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.47165	76.82523	14:05	D	5.73
33	TARN TARAN	TARN TARAN	S-NPP	31.43794	74.82938	14:05	D	5.69
34	TARN TARAN	VALTOHA	S-NPP	31.10723	74.57157	14:05	D	1.98
35	TARN TARAN	VALTOHA	S-NPP	31.14343	74.62802	14:05	D	4.94
36	TARN TARAN	VALTOHA	S-NPP	31.14380	74.62634	14:05	D	4.96
37	TARN TARAN	VALTOHA	S-NPP	31.24675	74.54724	14:05	D	4.48

**Details of residue burning events in Haryana on 19-Oct-2023**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMBALA	AMBALA-II	S-NPP	30.15801	76.64420	14:05	D	3.52
2	FATEHABAD	BHUNA	S-NPP	29.50178	75.69663	14:05	D	2.60
3	FATEHABAD	FATEHABAD	S-NPP	29.53864	75.50331	14:05	D	7.20
4	FATEHABAD	FATEHABAD	S-NPP	29.53913	75.50854	14:05	D	9.32
5	FATEHABAD	TOHANA	S-NPP	29.66584	75.88203	14:05	D	6.69
6	FATEHABAD	TOHANA	S-NPP	29.66791	75.88410	14:05	D	8.25
7	HISAR	BARWALA	S-NPP	29.45058	75.93034	14:05	D	2.12
8	HISAR	BARWALA	S-NPP	29.45353	75.93324	14:05	D	3.76
9	HISAR	NARNAUND	S-NPP	29.24293	76.12874	14:05	D	3.09
10	JIND	NARWANA	S-NPP	29.49949	76.02344	14:05	D	8.57
11	JIND	NARWANA	S-NPP	29.52189	76.00948	14:05	D	4.62
12	JIND	NARWANA	S-NPP	29.56926	75.99121	14:05	D	8.00
13	JIND	NARWANA	S-NPP	29.58718	76.08589	14:05	D	3.70
14	JIND	NARWANA	S-NPP	29.61309	76.21596	14:05	D	4.49
15	KAITHAL	RAJOUND	S-NPP	29.62602	76.53092	14:05	D	11.35
16	KAITHAL	RAJOUND	S-NPP	29.62806	76.53168	14:05	D	9.25

**Details of residue burning events in Uttar Pradesh on 19-Oct-2023**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	ALIGARH	KHAIR	S-NPP	28.06571	77.60809	14:05	D	3.29
2	BARABANKI	NAWABGANJ	S-NPP	26.88676	81.37402	12:22	D	5.23
3	FATEHPUR	KHAGA	S-NPP	25.72685	81.01720	01:08	N	0.52
4	JHANSI	JHANSI	AQUA	25.52500	78.61700	13:21	D	24.80
5	JHANSI	TAHRAULI	S-NPP	25.55142	78.76550	14:03	D	2.08
6	KANPUR	GHATAMPUR	S-NPP	26.13764	80.12141	14:03	D	4.51
7	KHERI	LAKHIMPUR	S-NPP	28.06629	80.63110	12:22	D	4.08
8	MATHURA	MATHURA	S-NPP	27.29687	77.66367	01:08	N	0.31
9	PILHIBHIT	PURANPUR	S-NPP	28.38811	80.05137	14:05	D	3.26
10	RAMPUR	BILASPUR	S-NPP	28.78225	79.21539	14:05	D	2.19
11	RAMPUR	BILASPUR	S-NPP	28.82999	79.29368	14:05	D	4.02

### Details of residue burning events in Rajasthan on 19-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	BARAN	CHHABRA	S-NPP	24.61757	76.87285	14:03	D	4.52
2	BARAN	CHHABRA	S-NPP	24.69583	76.92008	14:03	D	8.33
3	BARAN	CHHABRA	S-NPP	24.70025	77.01184	14:03	D	12.34
4	BARAN	CHHABRA	S-NPP	24.71879	76.82111	14:03	D	8.48
5	BARAN	CHHABRA	S-NPP	24.72214	76.99287	14:03	D	5.29
6	BARAN	CHHABRA	S-NPP	24.72344	76.82056	14:03	D	8.48
7	BARAN	KISHANGUNJ	S-NPP	25.26452	76.65078	14:03	D	9.36
8	BARAN	KISHANGUNJ	S-NPP	25.26534	76.64803	14:03	D	8.12
9	BARAN	KISHANGUNJ	S-NPP	25.26589	76.65327	14:03	D	8.12
10	BARAN	KISHANGUNJ	S-NPP	25.26915	76.65025	14:03	D	9.36
11	BARAN	SHAHBAD	S-NPP	25.08326	76.92455	14:03	D	10.63
12	BARAN	SHAHBAD	S-NPP	25.08637	76.92656	14:03	D	12.53
13	BARAN	SHAHBAD	S-NPP	25.15362	77.15521	14:03	D	6.52
14	BARAN	SHAHBAD	S-NPP	25.16729	77.00272	14:03	D	5.17
15	BARAN	SHAHBAD	S-NPP	25.23171	76.92083	14:03	D	14.98
16	BARAN	SHAHBAD	S-NPP	25.24503	77.00735	14:03	D	17.16
17	BARAN	SHAHBAD	S-NPP	25.29826	77.10733	14:03	D	2.48
18	BUNDI	KESHORAIPATAN	S-NPP	25.41421	76.04358	14:03	D	5.29
19	BUNDI	KESHORAIPATAN	S-NPP	25.48744	76.11150	14:03	D	4.39
20	JHALAWAR	KHANPUR	S-NPP	24.83391	76.32249	14:03	D	3.75
21	KOTA	LADPURA	S-NPP	25.10032	75.93353	14:03	D	3.64
22	KOTA	LADPURA	S-NPP	25.21447	75.97011	14:03	D	2.48
23	KOTA	PIPALDA	S-NPP	25.47022	76.53198	14:03	D	5.21
24	KOTA	PIPALDA	S-NPP	25.47099	76.53333	14:03	D	11.17
25	KOTA	PIPALDA	S-NPP	25.47482	76.53143	14:03	D	6.07
26	KOTA	SANGOD	S-NPP	25.07080	76.15969	14:03	D	2.18
27	SWAIMADHOPUR	KHANDAR	S-NPP	25.87996	76.55383	14:03	D	9.48
28	SWAIMADHOPUR	KHANDAR	S-NPP	25.89039	76.48207	14:03	D	12.86
29	SWAIMADHOPUR	KHANDAR	S-NPP	25.89090	76.48731	14:03	D	15.60
30	SWAIMADHOPUR	KHANDAR	S-NPP	25.89140	76.48324	14:03	D	11.64
31	SWAIMADHOPUR	KHANDAR	S-NPP	25.92797	76.57910	14:03	D	3.62



### Details of residue burning events in Madhya Pradesh on 19-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	ASHOKNAGAR	CHANDERI	S-NPP	24.57691	78.08662	14:03	D	6.08
2	BHIND	BHIND	S-NPP	26.53247	78.71577	14:03	D	1.21
3	BHIND	BHIND	S-NPP	26.53464	78.71423	14:03	D	1.81
4	BHIND	BHIND	S-NPP	26.56586	78.72744	14:03	D	1.93
5	BHIND	BHIND	S-NPP	26.57481	78.64080	14:03	D	1.12
6	BHIND	GOHAD	S-NPP	26.47734	78.48848	14:03	D	5.30
7	DATIA	BHANDER	S-NPP	25.63893	78.80653	14:03	D	3.37
8	DATIA	BHANDER	S-NPP	25.65485	78.74287	14:03	D	3.58
9	DATIA	BHANDER	S-NPP	25.68724	78.76260	14:03	D	2.65
10	DATIA	BHANDER	S-NPP	25.91038	78.71637	14:03	D	2.18
11	DATIA	DATIA	S-NPP	25.56237	78.29402	14:03	D	0.91
12	DATIA	DATIA	S-NPP	25.63346	78.62183	14:03	D	3.03
13	DATIA	DATIA	S-NPP	25.70878	78.51554	14:03	D	1.38
14	DATIA	DATIA	S-NPP	25.74463	78.38599	14:03	D	1.99
15	DATIA	SEONDHA	S-NPP	25.81762	78.55637	14:03	D	2.36
16	DATIA	SEONDHA	S-NPP	25.93641	78.52209	14:03	D	2.49
17	DATIA	SEONDHA	S-NPP	26.02676	78.78457	14:03	D	2.90
18	DATIA	SEONDHA	S-NPP	26.09985	78.71558	14:03	D	2.06
19	DINDORI	DINDORI	S-NPP	22.92262	81.08863	01:08	N	0.25
20	GUNA	GUNA	S-NPP	24.50297	77.36152	14:03	D	5.66
21	GUNA	GUNA	S-NPP	24.50359	77.36374	14:03	D	7.02
22	GUNA	GUNA	S-NPP	24.66652	77.11708	14:03	D	4.49
23	GUNA	GUNA	S-NPP	24.69598	77.45405	14:03	D	18.23
24	GUNA	GUNA	S-NPP	24.72197	77.08611	14:03	D	8.39
25	GUNA	GUNA	S-NPP	24.72251	77.09158	14:03	D	8.39
26	GUNA	GUNA	S-NPP	24.73954	77.02358	14:03	D	6.96
27	GUNA	GUNA	S-NPP	24.81184	77.47159	14:03	D	7.51
28	GUNA	GUNA	S-NPP	24.84193	77.12999	14:03	D	19.89
29	GUNA	GUNA	S-NPP	24.84248	77.13549	14:03	D	19.89
30	GUNA	GUNA	S-NPP	24.86175	76.99509	14:03	D	6.49

31	GUNA	GUNA	S-NPP	24.86231	77.00053	14:03	D	6.49
32	GUNA	GUNA	S-NPP	24.89703	77.15164	14:03	D	8.34
33	GUNA	GUNA	S-NPP	24.89738	77.14928	14:03	D	7.92
34	GWALIOR	DABRA	S-NPP	25.84467	78.27044	14:03	D	3.97
35	GWALIOR	DABRA	S-NPP	25.84613	78.26920	14:03	D	3.73
36	GWALIOR	DABRA	S-NPP	25.94982	78.37603	14:03	D	2.97
37	GWALIOR	GWALIOR	S-NPP	25.92380	77.77312	14:03	D	3.82
38	GWALIOR	GWALIOR	S-NPP	25.92466	77.77532	14:03	D	4.37
39	GWALIOR	GWALIOR	S-NPP	26.33006	78.13287	14:03	D	3.91
40	HARDA	HARDA	S-NPP	22.26609	77.08980	14:03	D	4.28
41	HOSHANGABAD	BABAI	S-NPP	22.62531	77.97839	14:03	D	16.53
42	HOSHANGABAD	SEONI MALWA	S-NPP	22.52513	77.48302	14:03	D	5.33
43	HOSHANGABAD	SEONI MALWA	S-NPP	22.52569	77.48837	14:03	D	8.77
44	HOSHANGABAD	SEONI MALWA	S-NPP	22.54188	77.55189	14:03	D	5.22
45	HOSHANGABAD	SEONI MALWA	S-NPP	22.60069	77.43097	14:03	D	1.44
46	JABALPUR	SAHPURA	S-NPP	23.12504	79.71317	14:03	D	3.24
47	MORENA	JORA	S-NPP	26.39950	77.84610	14:03	D	4.89
48	MORENA	SABALGARH	S-NPP	26.28521	77.37495	14:03	D	7.81
49	RAISEN	BAGAMGANJ	S-NPP	23.59428	78.36466	14:03	D	2.07
50	SAGAR	DEVRI	S-NPP	23.41604	79.11104	14:03	D	3.46
51	SATNA	RAGUR>JNAGAR	S-NPP	24.65230	80.73803	14:03	D	1.63
52	SEONI	LAKHNADOU	S-NPP	22.47426	79.47941	14:03	D	4.03
53	SEONI	LAKHNADOU	S-NPP	22.47672	79.47969	14:03	D	3.44
54	SHEOPUR	SHEOPUR	S-NPP	25.40107	76.67410	14:03	D	16.59
55	SHEOPUR	SHEOPUR	S-NPP	25.53929	76.66167	14:03	D	5.78
56	SHEOPUR	SHEOPUR	S-NPP	25.60547	76.63994	14:03	D	4.67
57	SHEOPUR	SHEOPUR	S-NPP	25.66698	76.64345	14:03	D	6.40
58	SHEOPUR	SHEOPUR	S-NPP	25.84934	76.67062	14:03	D	5.51
59	SHIVPURI	KOLARAS	S-NPP	24.95814	77.75597	14:03	D	2.99
60	SHIVPURI	NARWAR	S-NPP	25.58216	77.94501	14:03	D	4.88
61	SHIVPURI	NARWAR	S-NPP	25.70837	78.16123	14:03	D	3.89
62	SHIVPURI	SHIVPURI	S-NPP	25.34155	77.64556	14:03	D	2.26
63	VIDESHA	LETERI	S-NPP	24.25220	77.36333	14:03	D	3.35
64	WEST NIMAR	KHARGON	S-NPP	21.73969	75.60571	14:03	D	4.66
65	WEST NIMAR	KHARGON	S-NPP	21.74194	75.60566	14:03	D	4.94

**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 (ISRO)**

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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)

The DASHBOARD for paddy residue burning events is available at weblink: [CREAMS Fire Dashboard](#)

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