

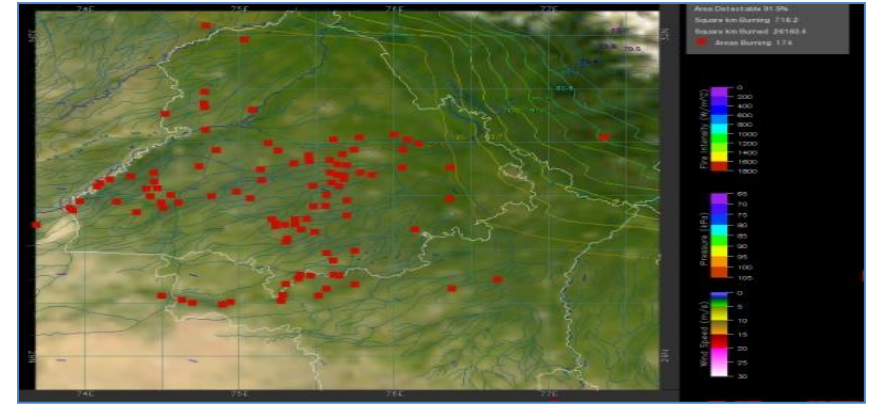
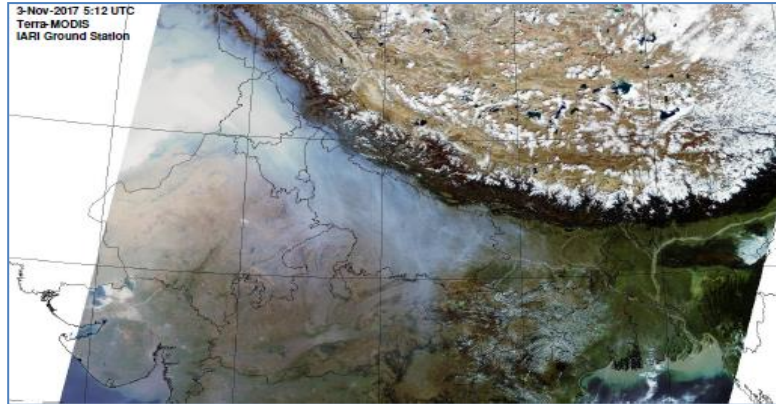


# MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2024

Bulletin  
No. 40

Events Date:  
24-Oct-2024

Issued on:  
24-Oct-2024



Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS)  
Laboratory,

Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012

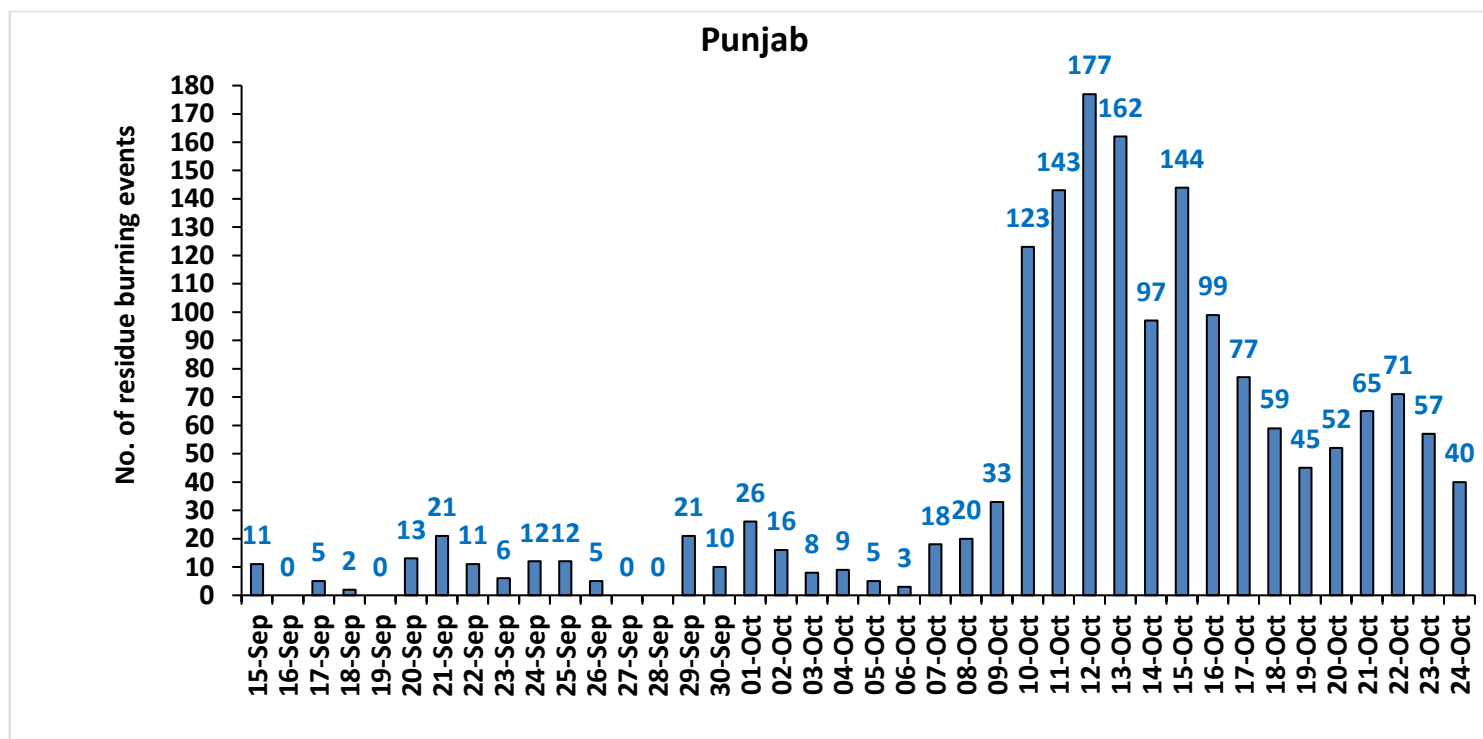
<https://creams.iari.res.in>



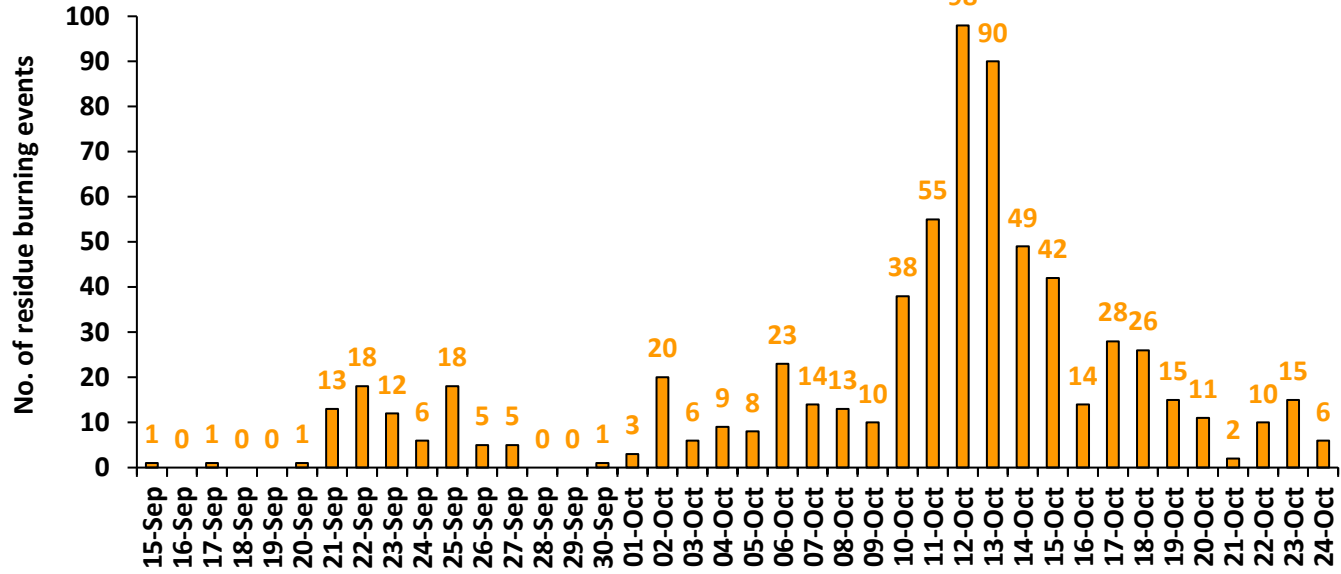
## Highlights for 24-Oct-2024

- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol " recommended by CAQM. The day-time S-NPP data was not received today from NRSC.
- Satellites detected **107** residue burning events in the six study States on **24-Oct-2024**.
- The state wise events detected on **24-Oct-2024** were **40** in Punjab, **06** in Haryana, **18** in UP, **00** in Delhi, **11** in Rajasthan and **32** in MP.
- Total **4369** burning events were detected in the six states between **15-Sept-2024** and **24-Oct-2024**, which are distributed as **1678**, **686**, **826**, **11**, **393** and **775** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of burning events was hampered by the presence of scattered clouds over eastern Madhya Pradesh state.

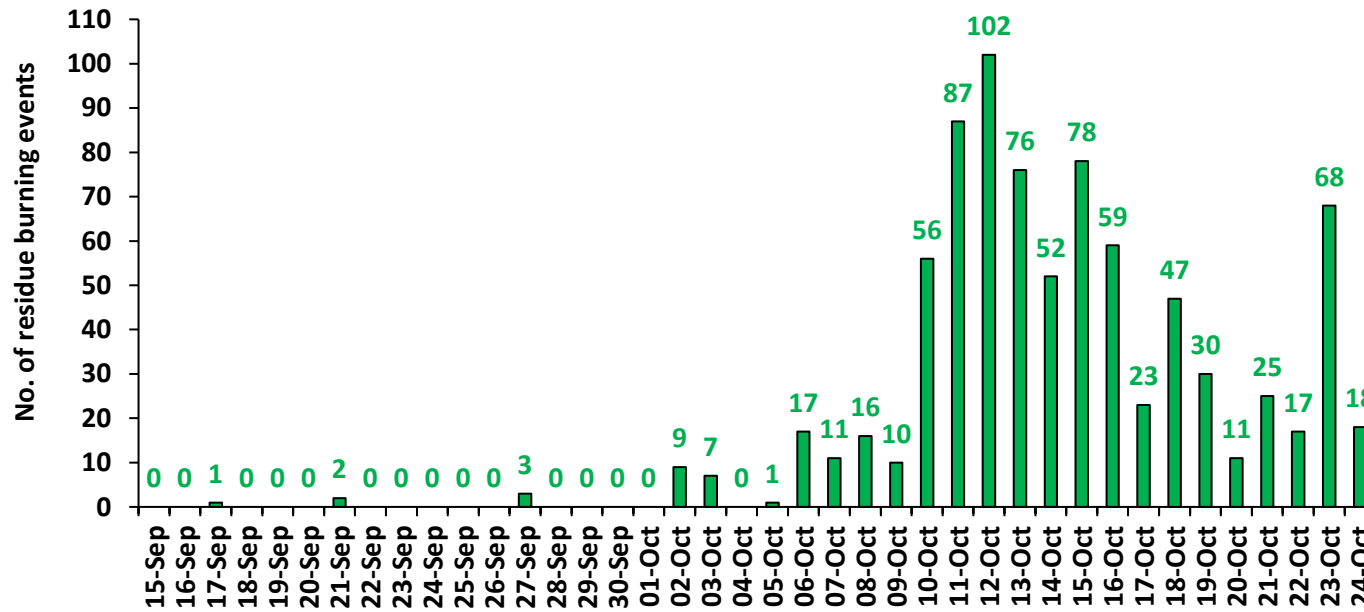
### Temporal distribution of rice residue burning events for the study States in 2024



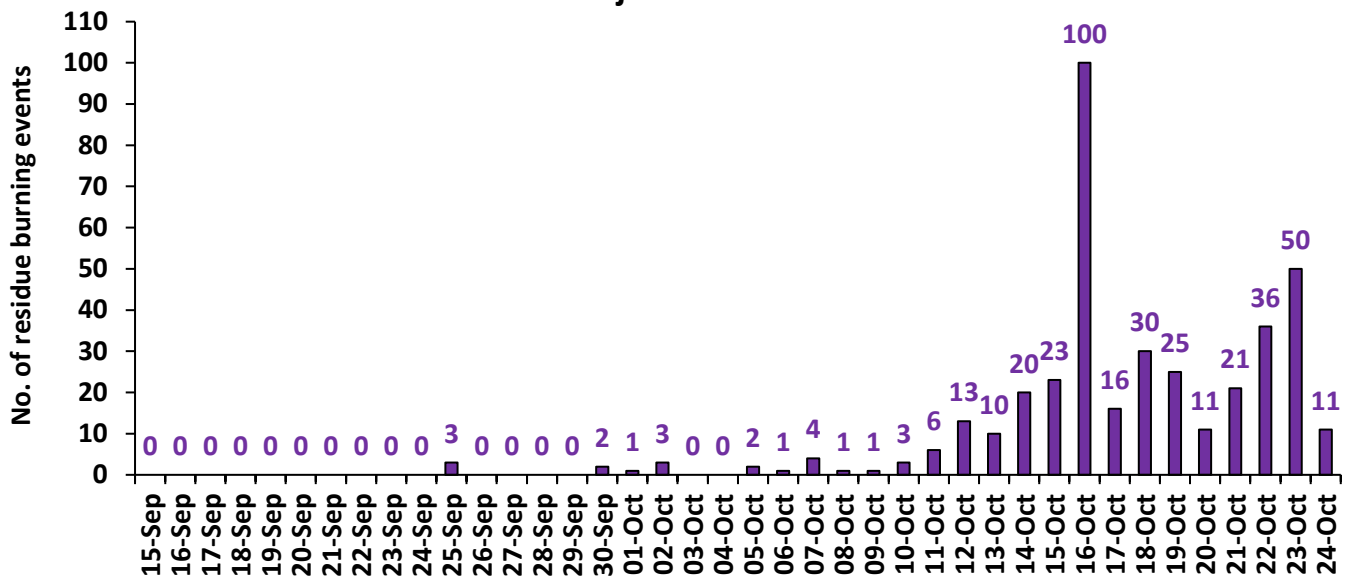
### Haryana



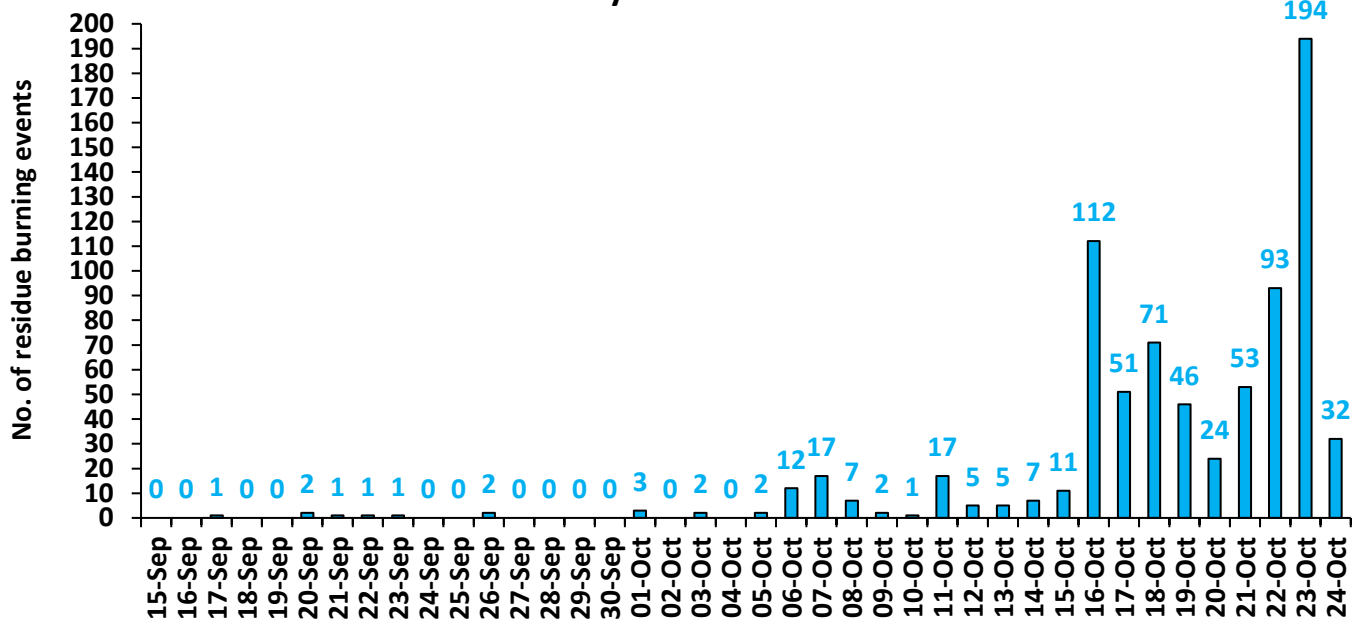
### Uttar Pradesh



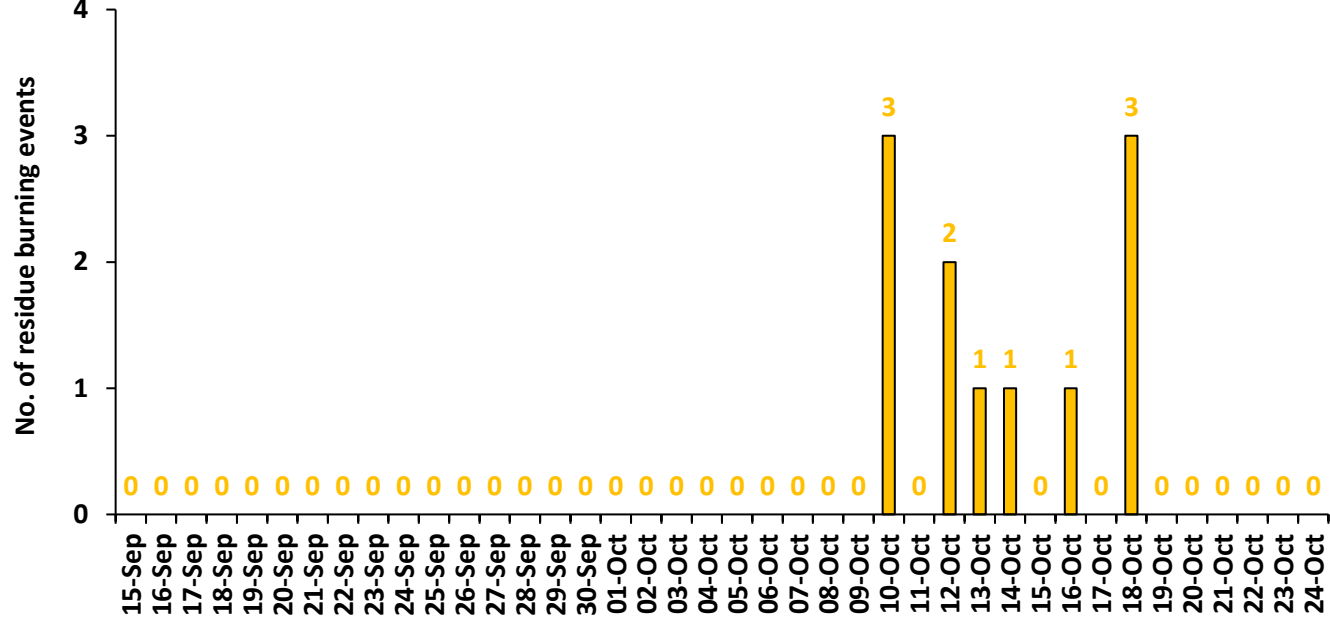
### Rajasthan



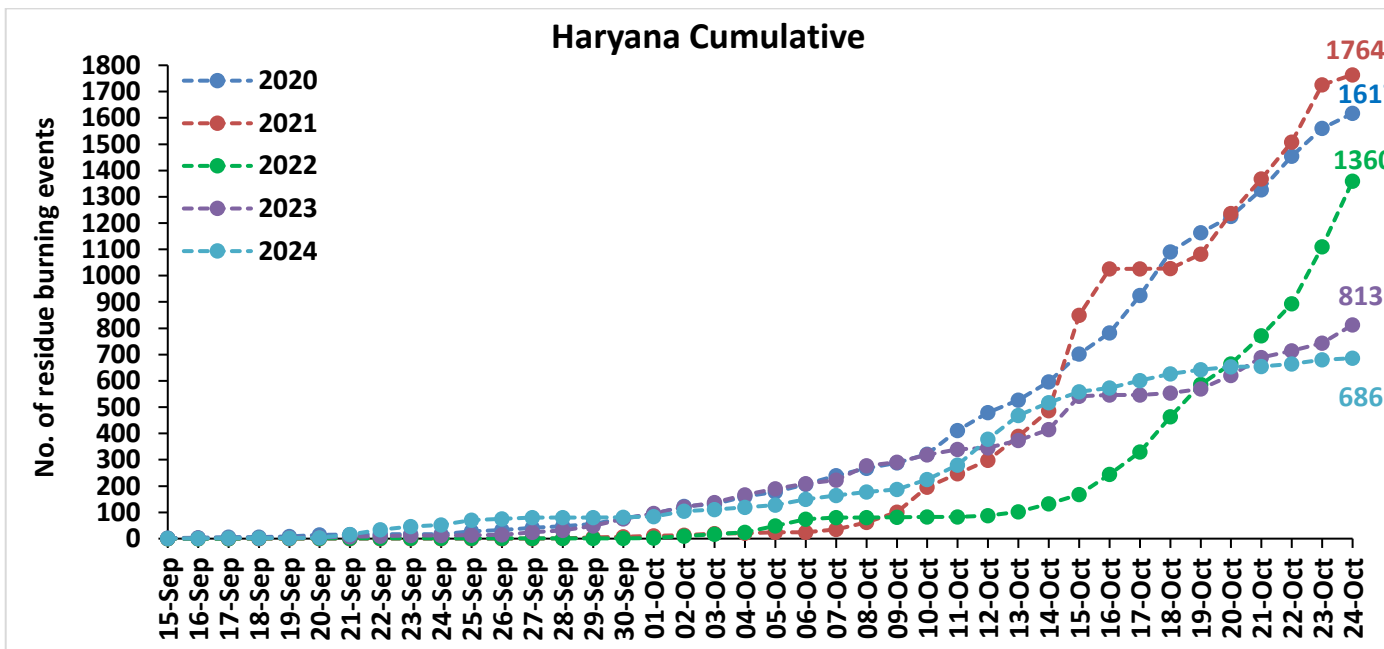
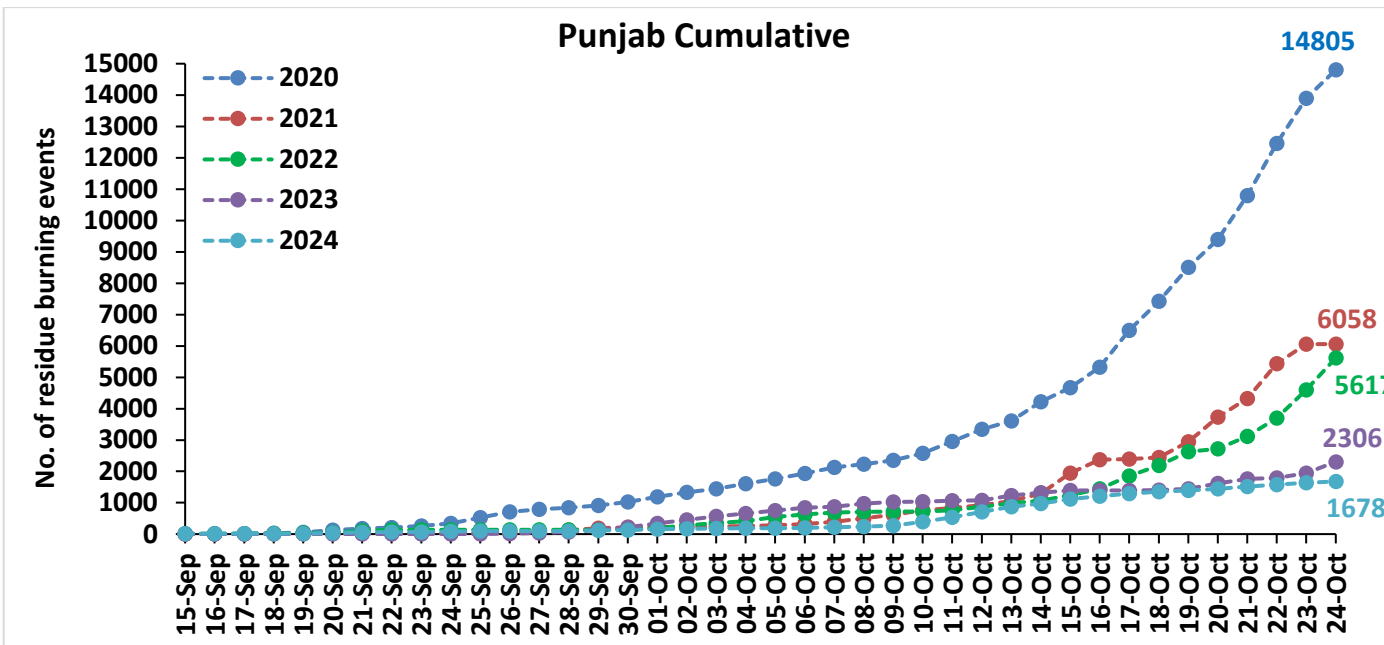
### Madhya Pradesh

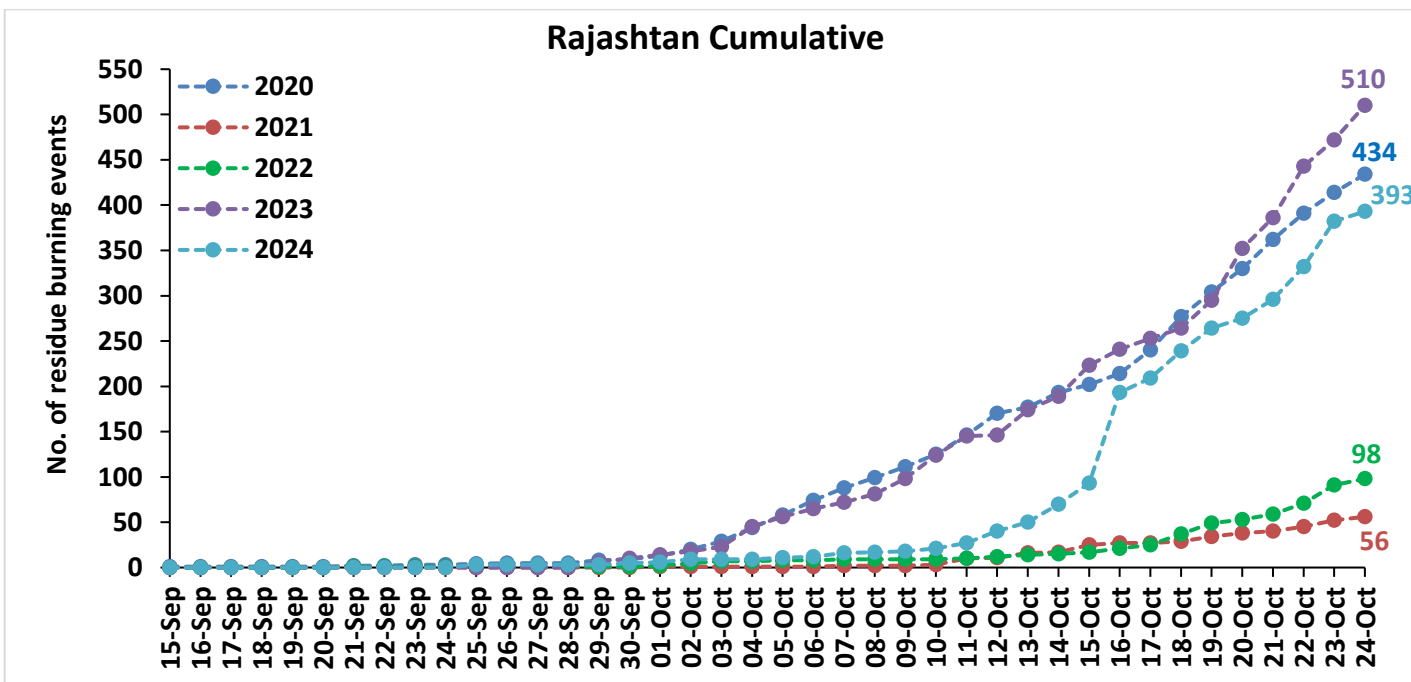
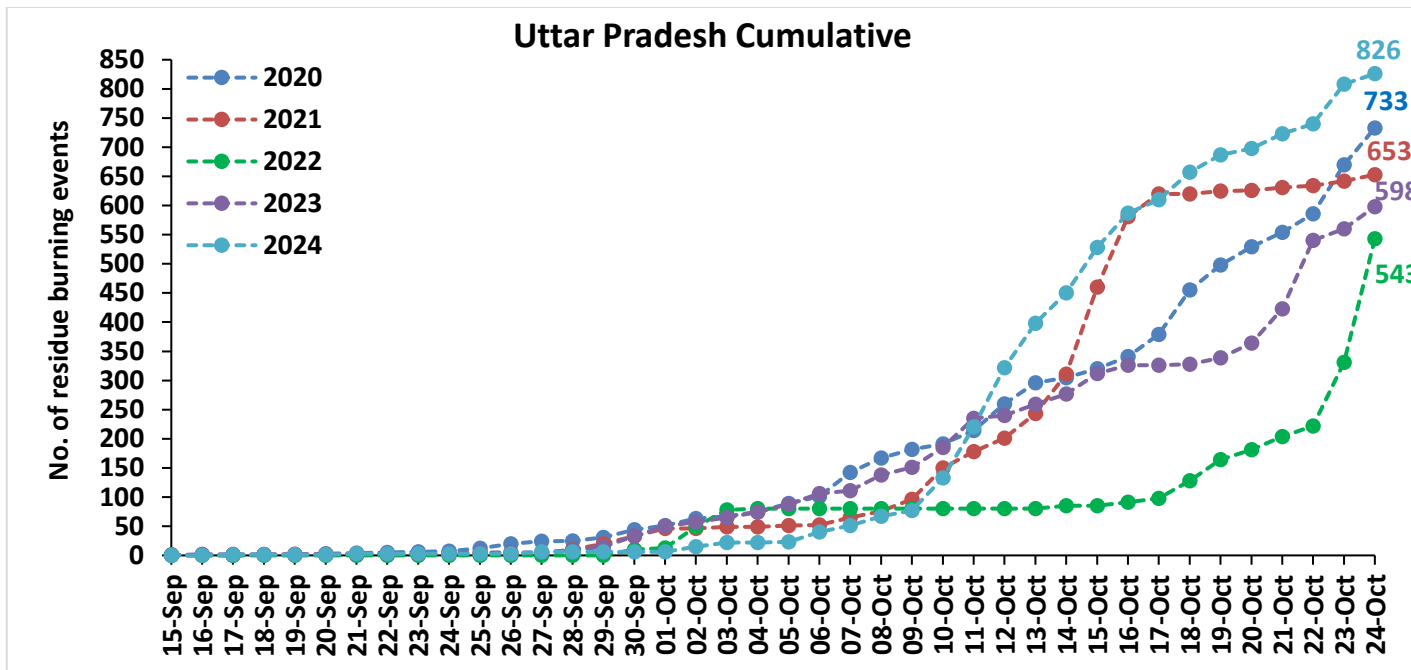


# Delhi

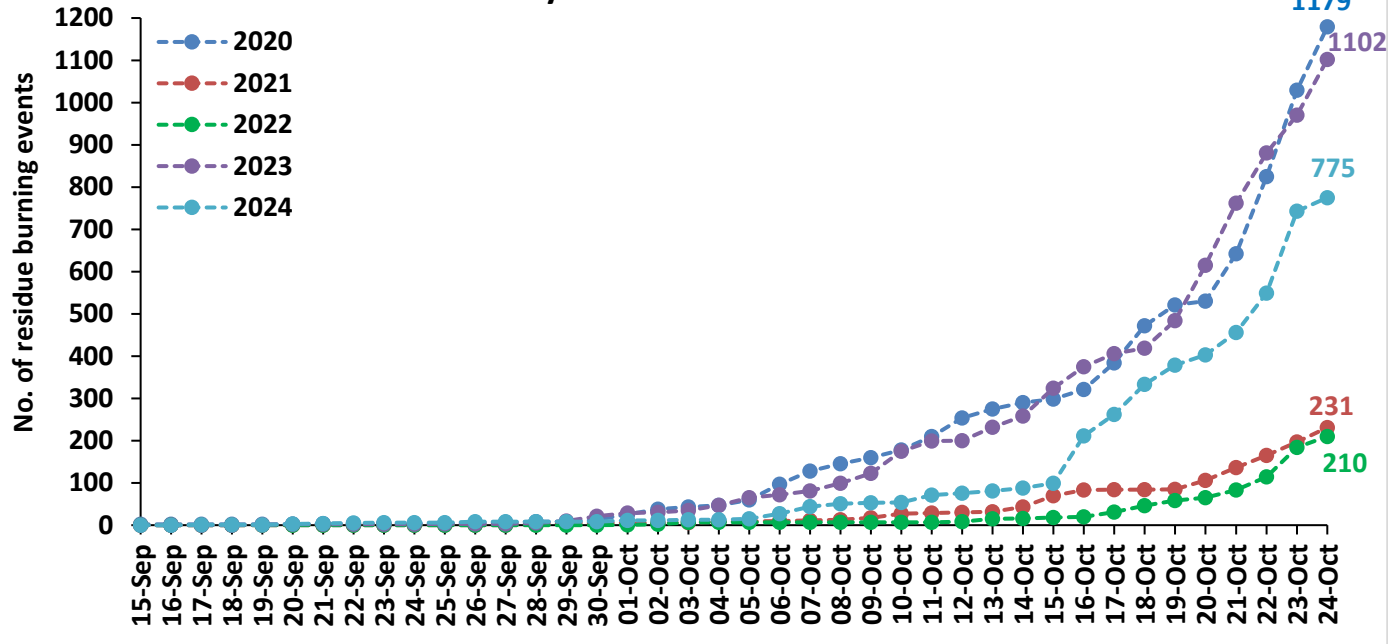


**Comparison of residue burning events in current year (2024) with previous years (2020, 2021, 2022 and 2023) for the study States**

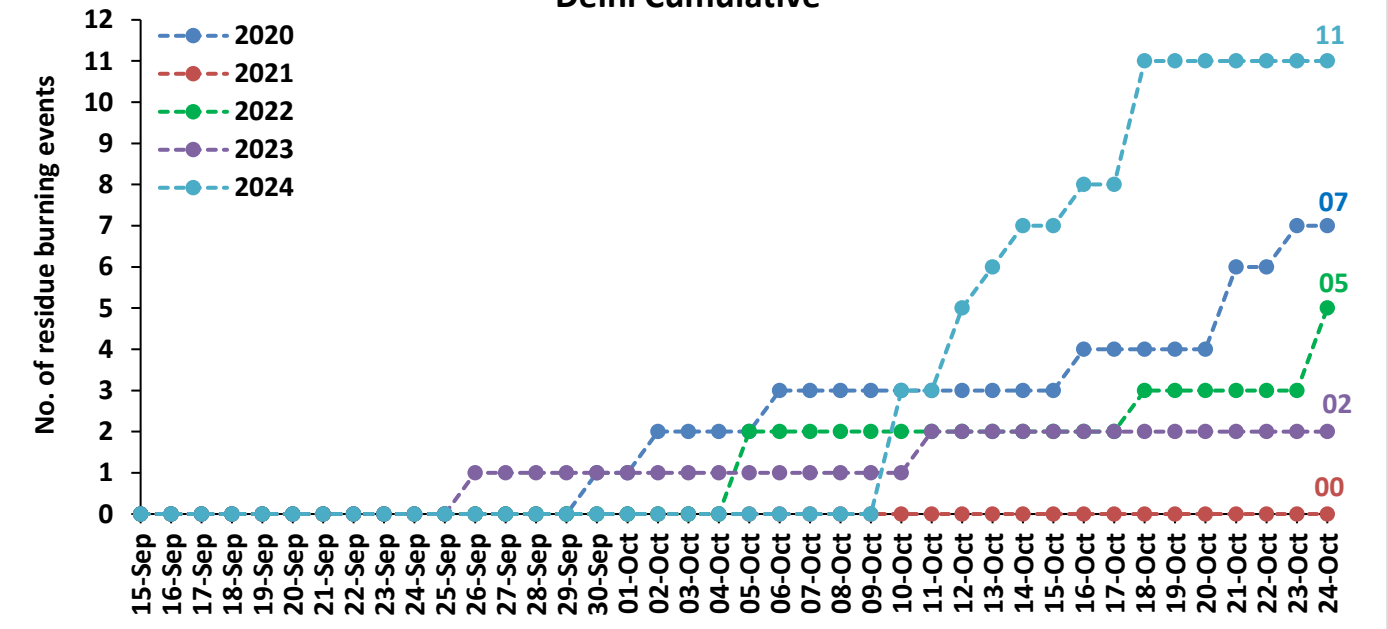




### Madhya Pradesh Cumulative

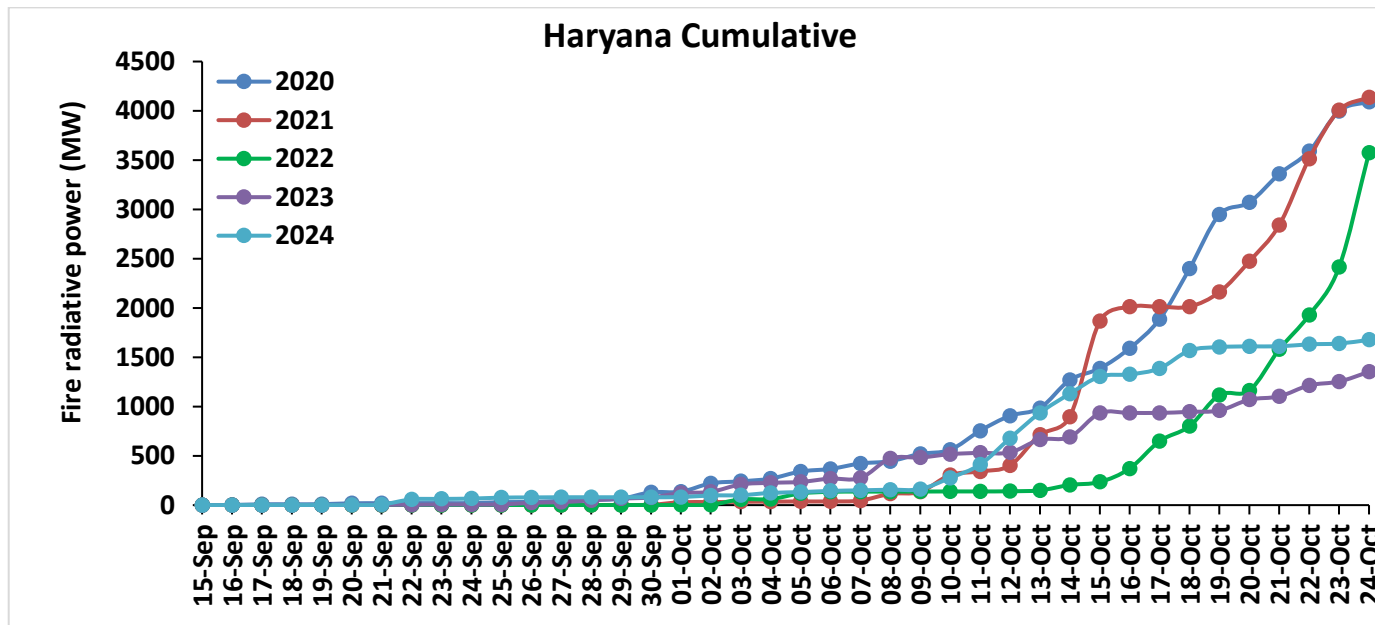
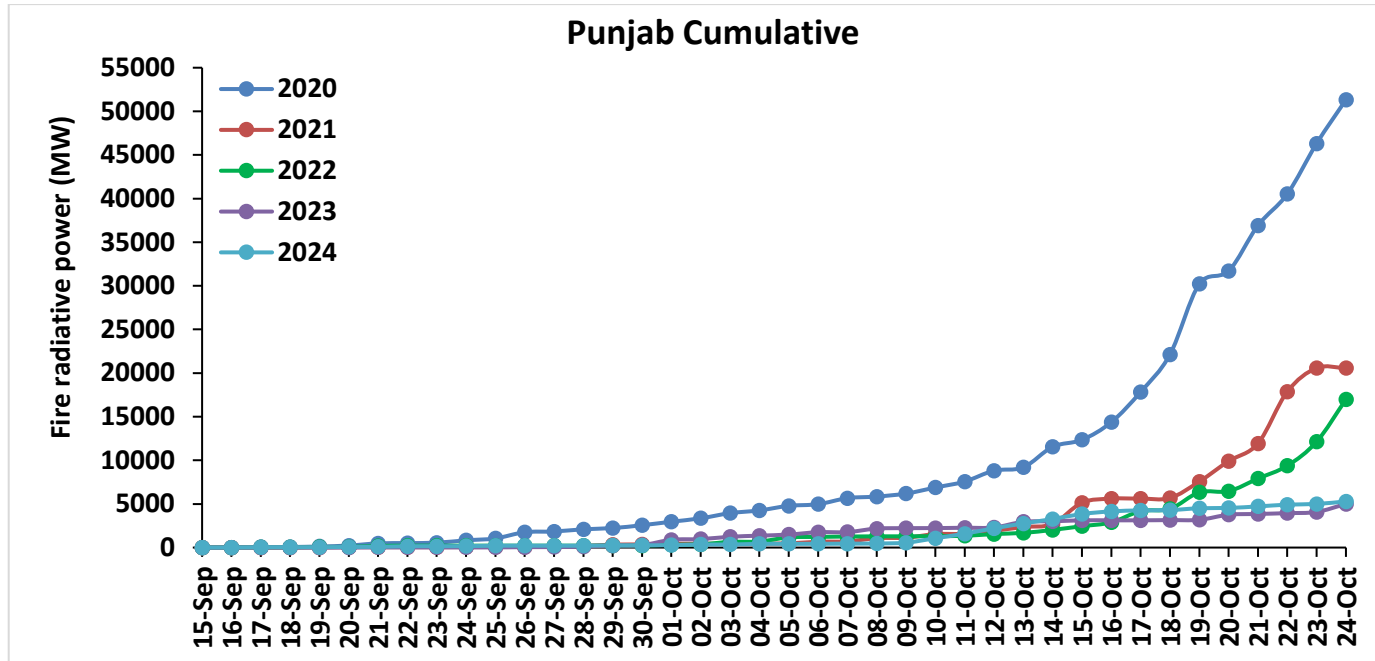


### Delhi Cumulative

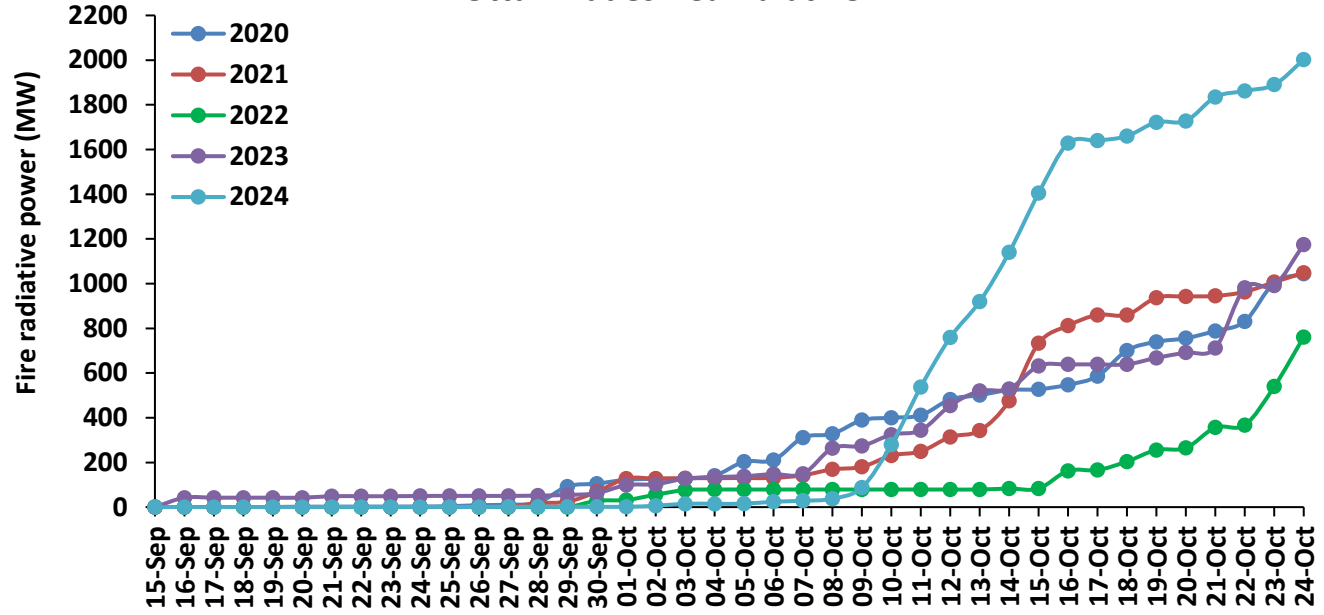




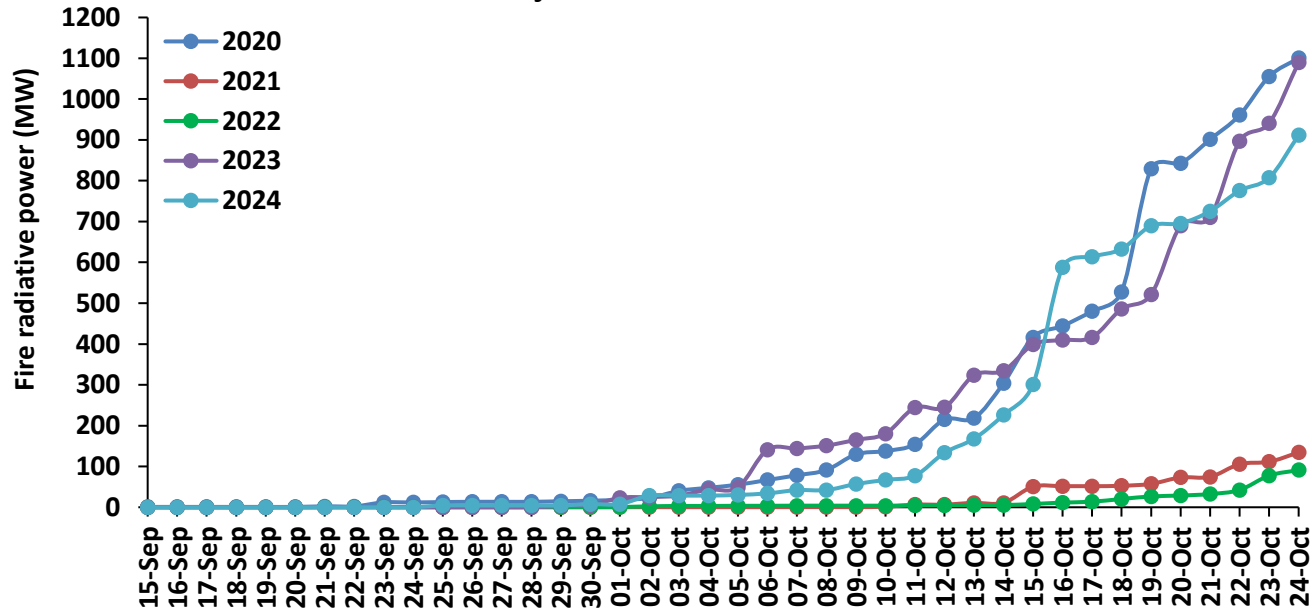
**Comparison of residue burning fire power in current year (2024) with previous years (2020,2021,2022 and 2023) for the study States**



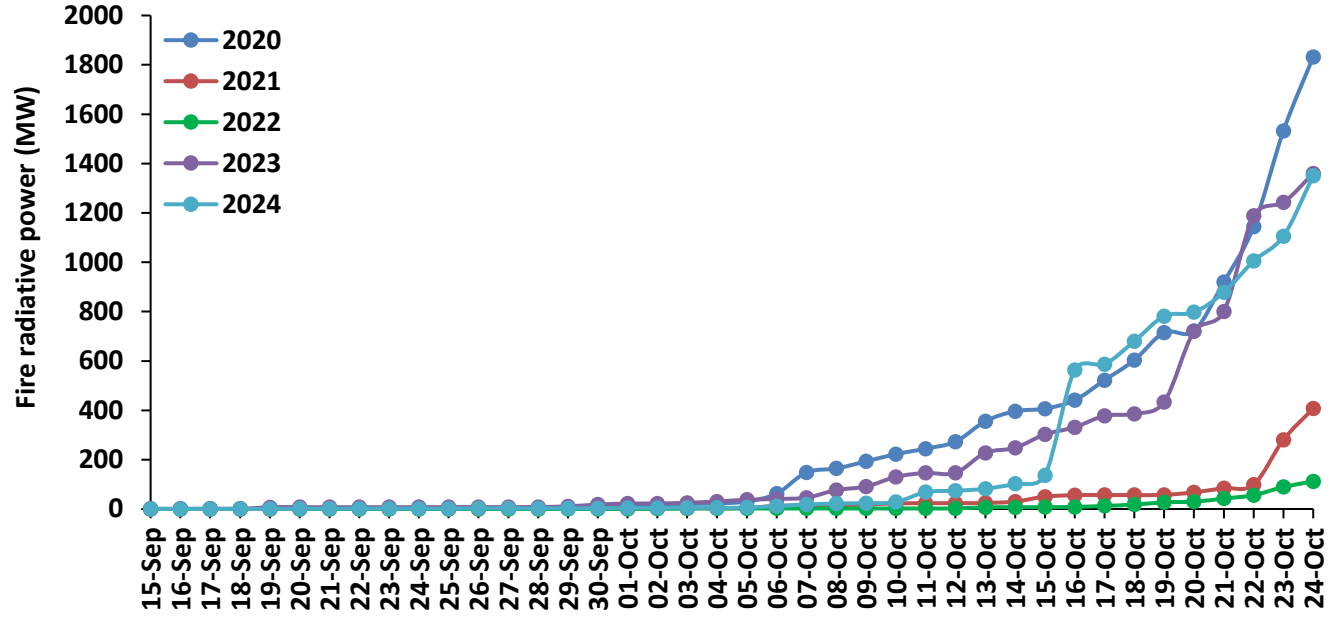
### Uttar Pradesh Cumulative



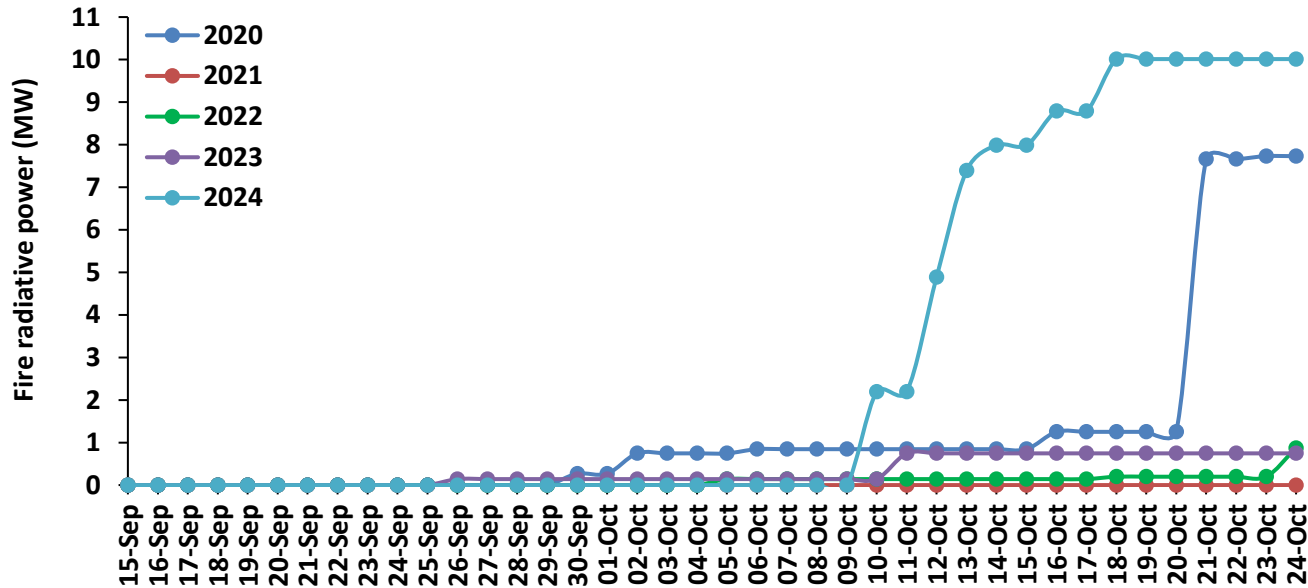
### Rajasthan Cumulative



### Madhya Pradesh Cumulative

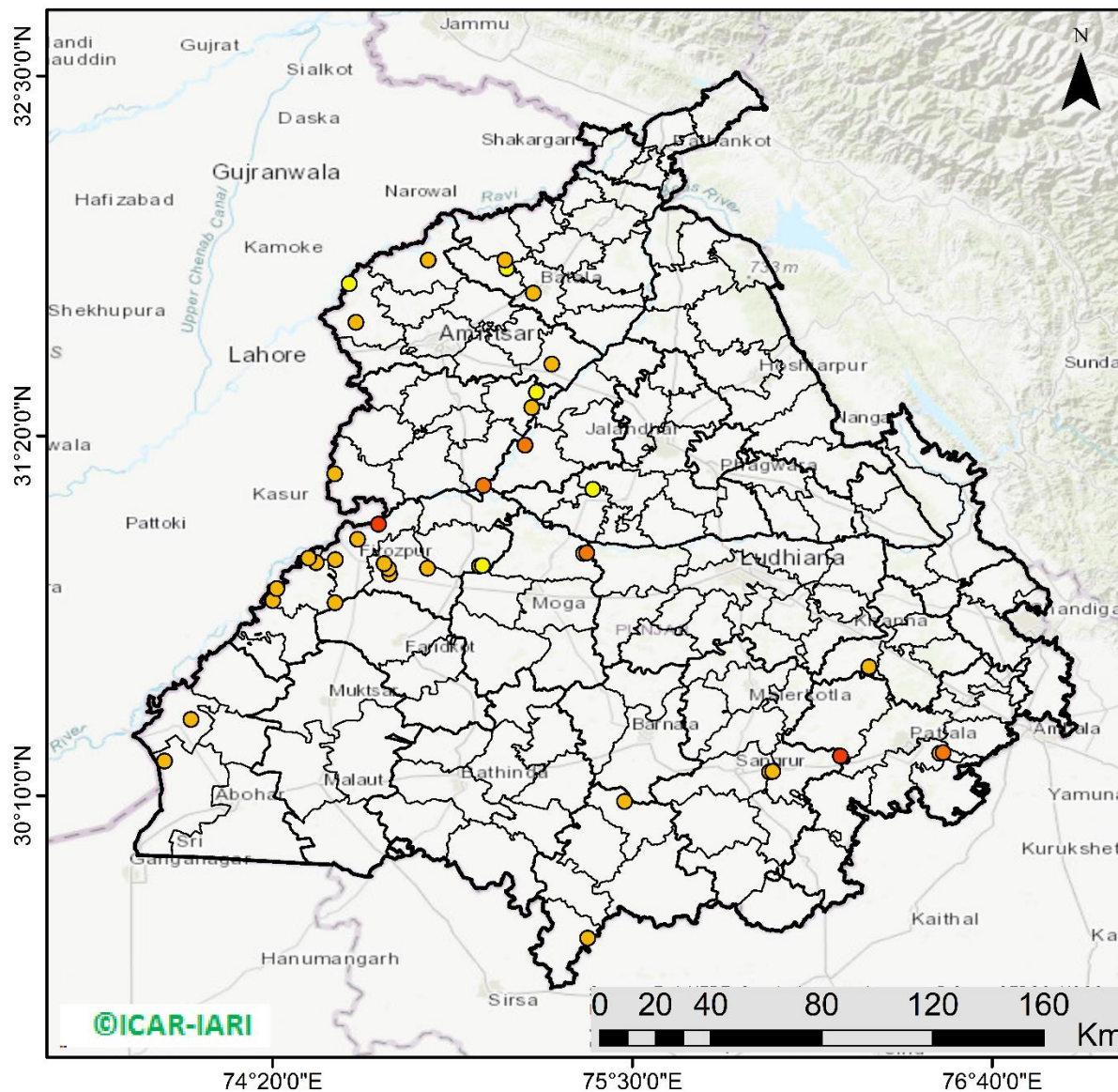


### Delhi Cumulative



# Punjab

## RICE RESIDUE BURNING IN PUNJAB



**40** burning events detected in Punjab during (24th Oct 2024)

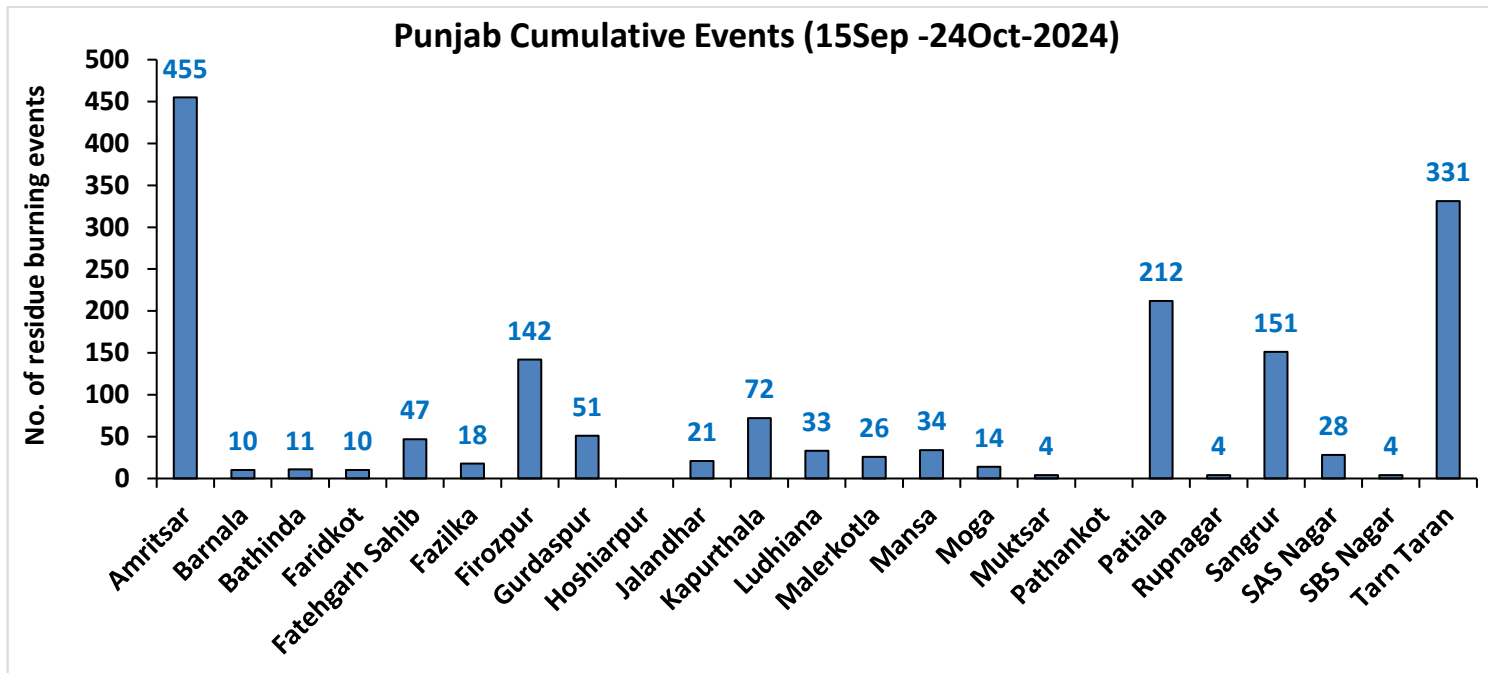
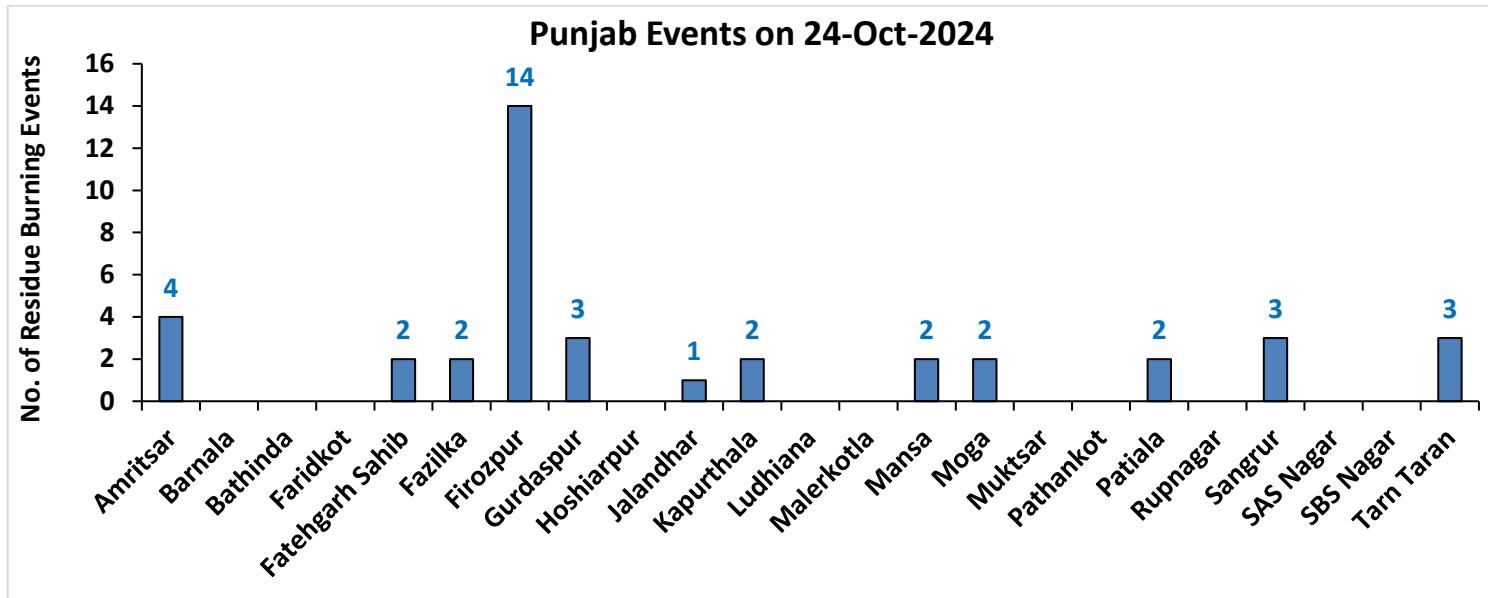
### Fire Intensity (W/m<sup>2</sup>)

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



[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

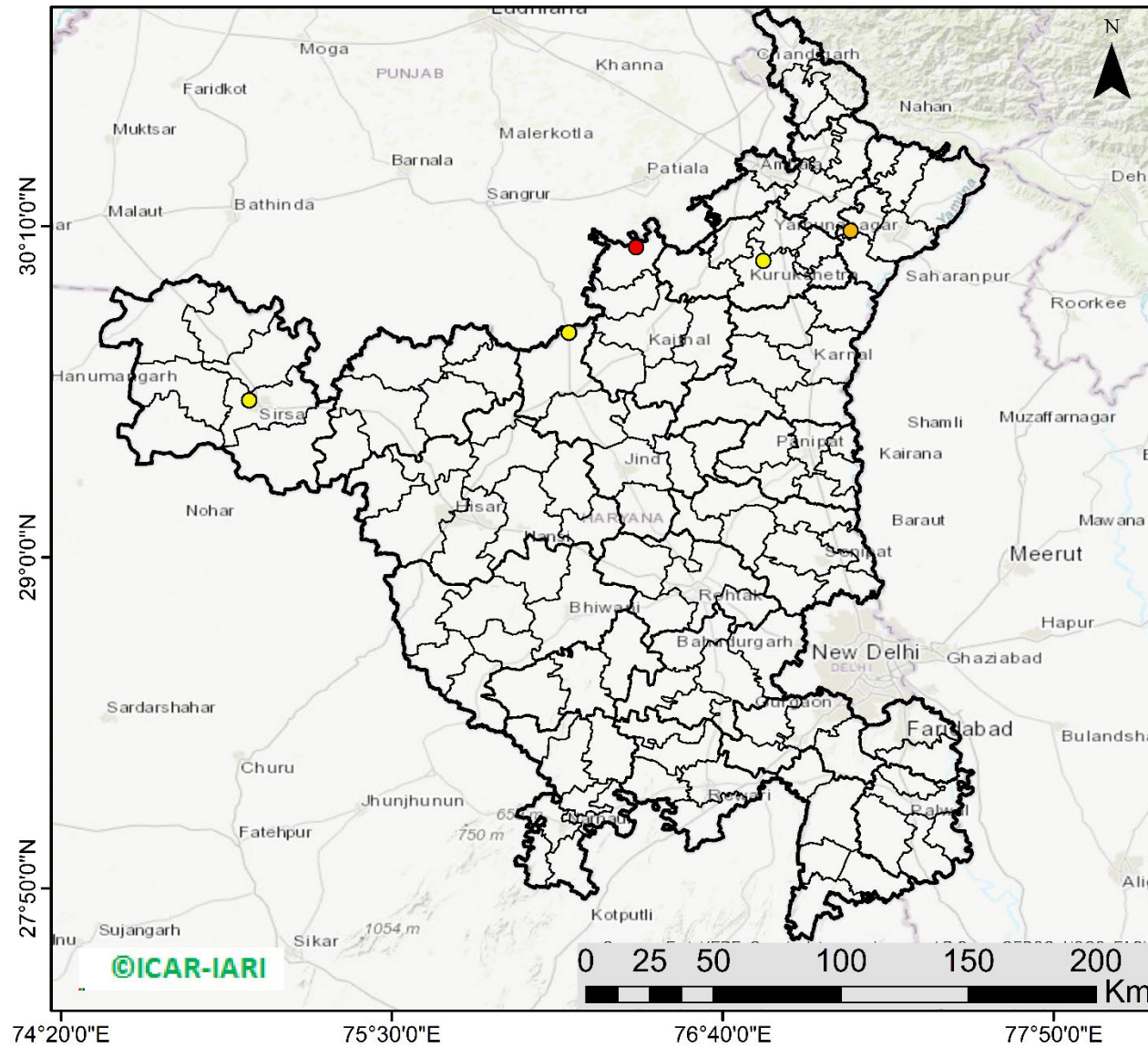
## District-wise cumulative number of residues burning events in Punjab (15Sep-24Oct-2024)





# Haryana

## RICE RESIDUE BURNING IN HARYANA



**06** burning events detected in Haryana on (24th Oct 2024)

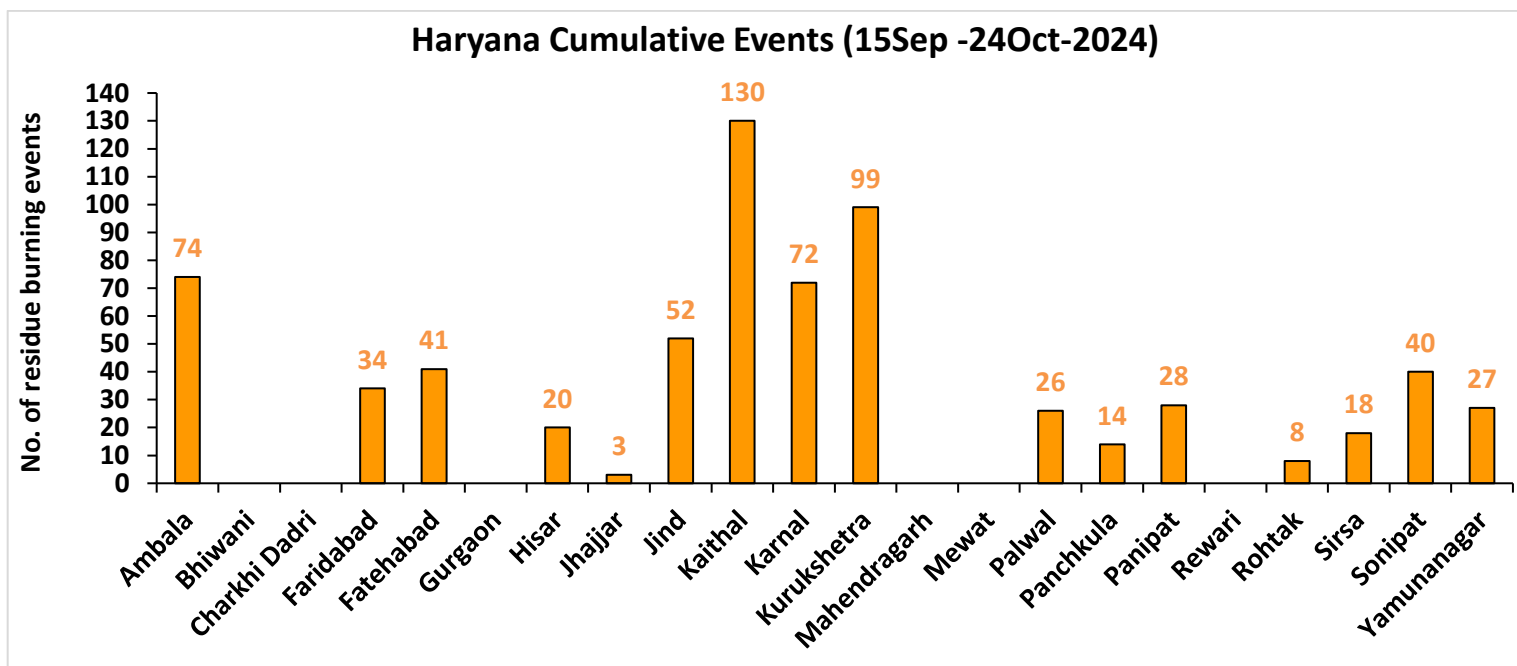
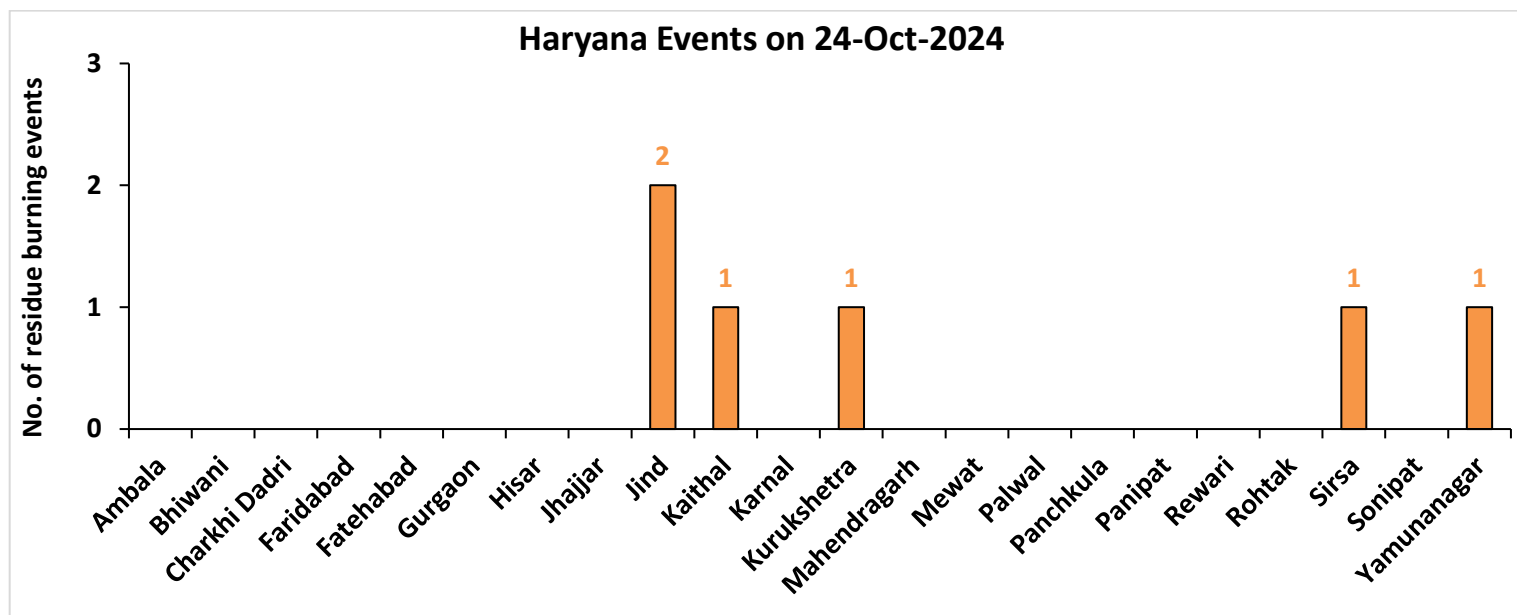
### Fire Intensity (W/m<sup>2</sup>)

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



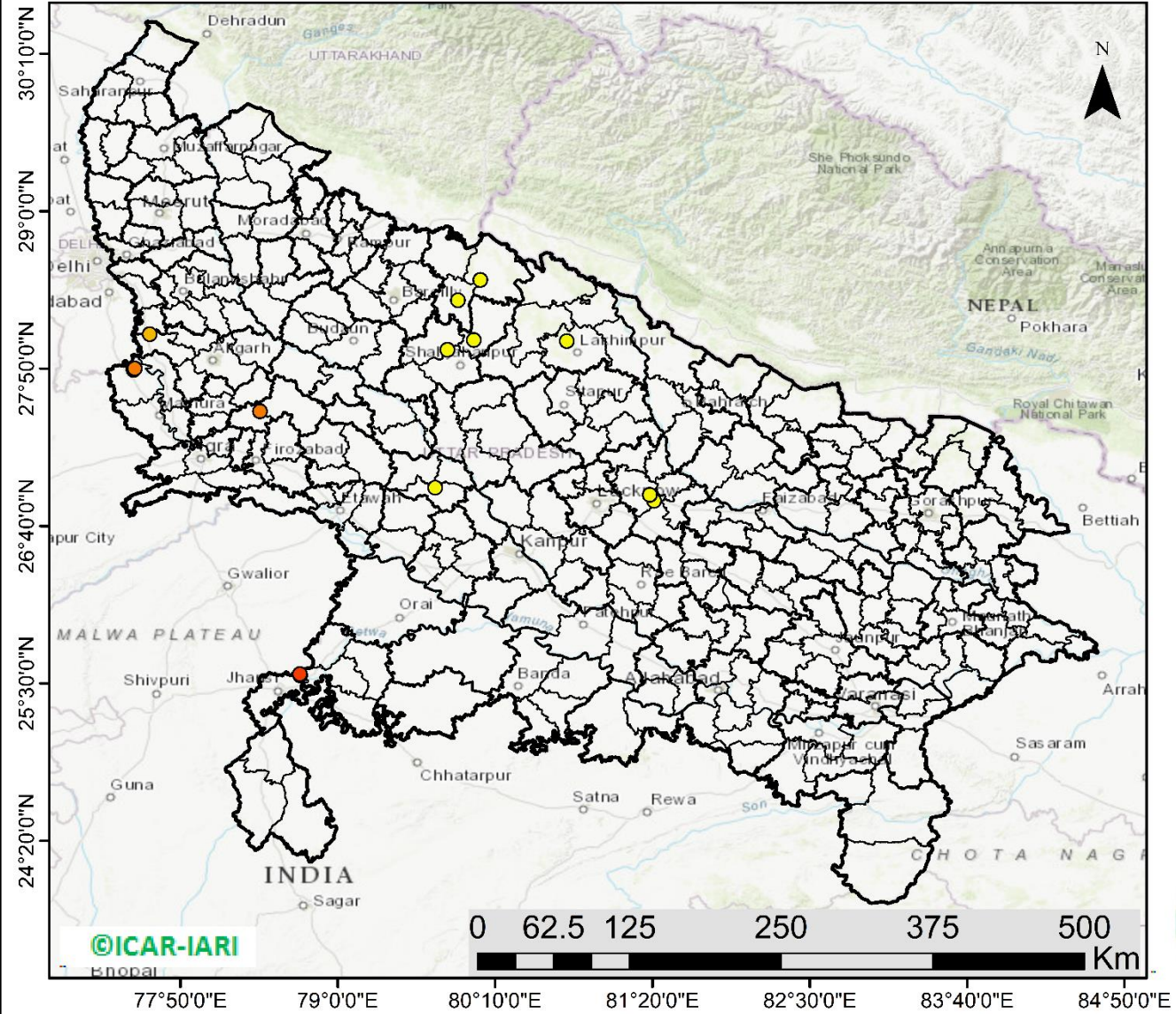
[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

## District-wise cumulative number of residues burning events in Haryana (15Sep-24Oct-2024)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



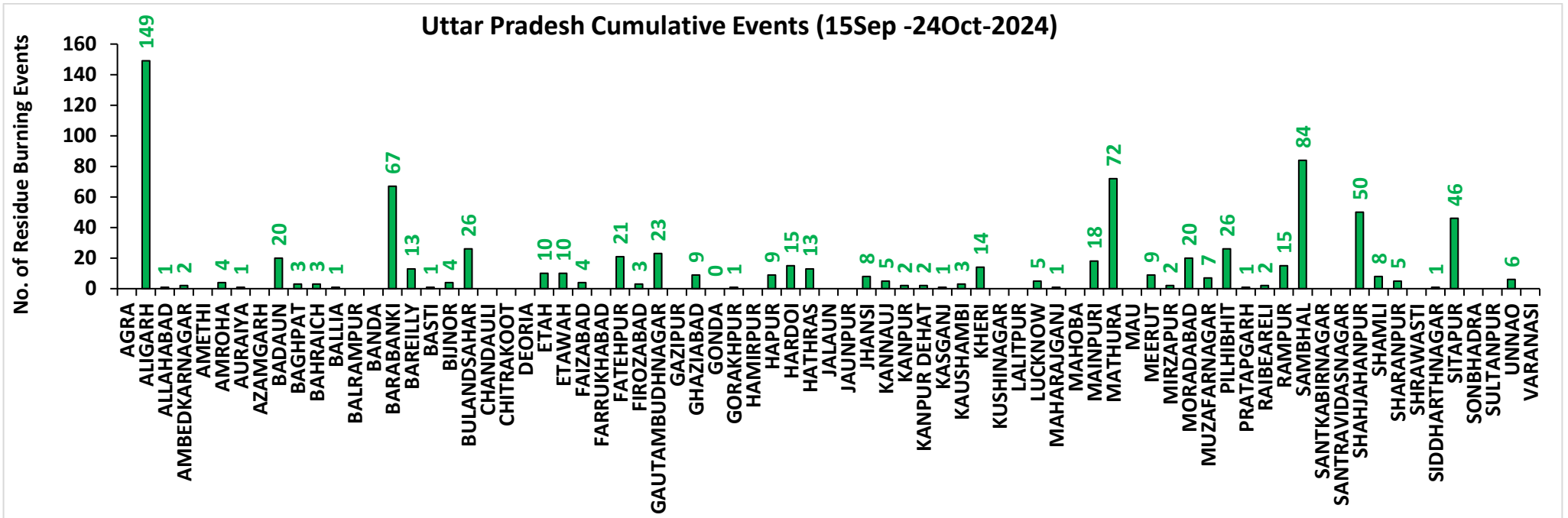
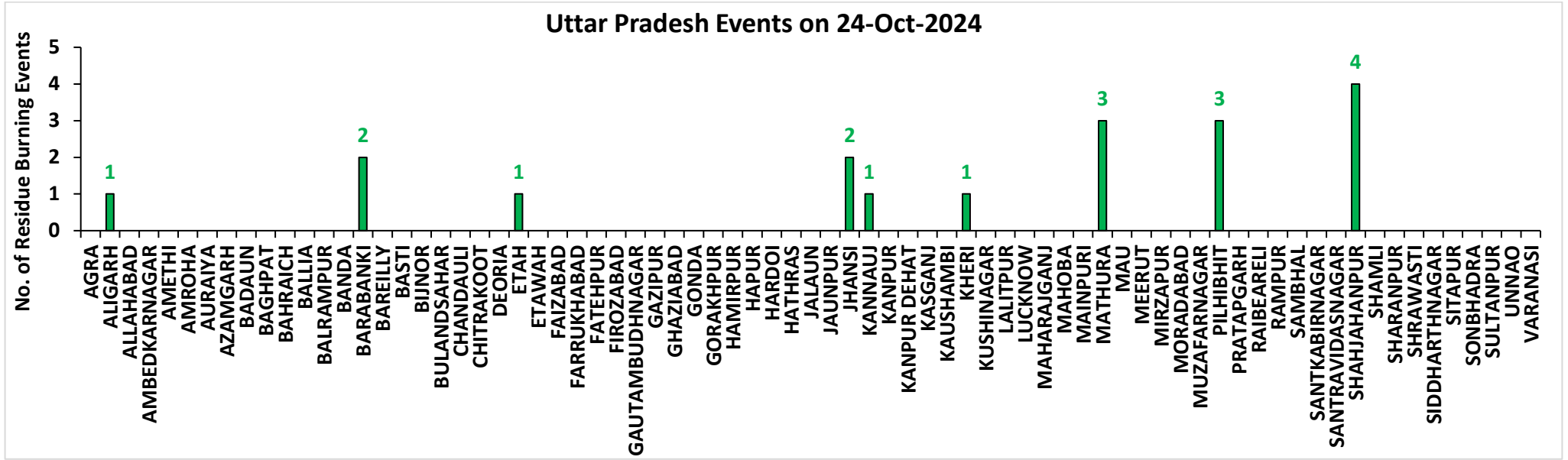
18 burning events detected in Uttar Pradesh on (24th Oct 2024)

Fire Intensity (W/m2)

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

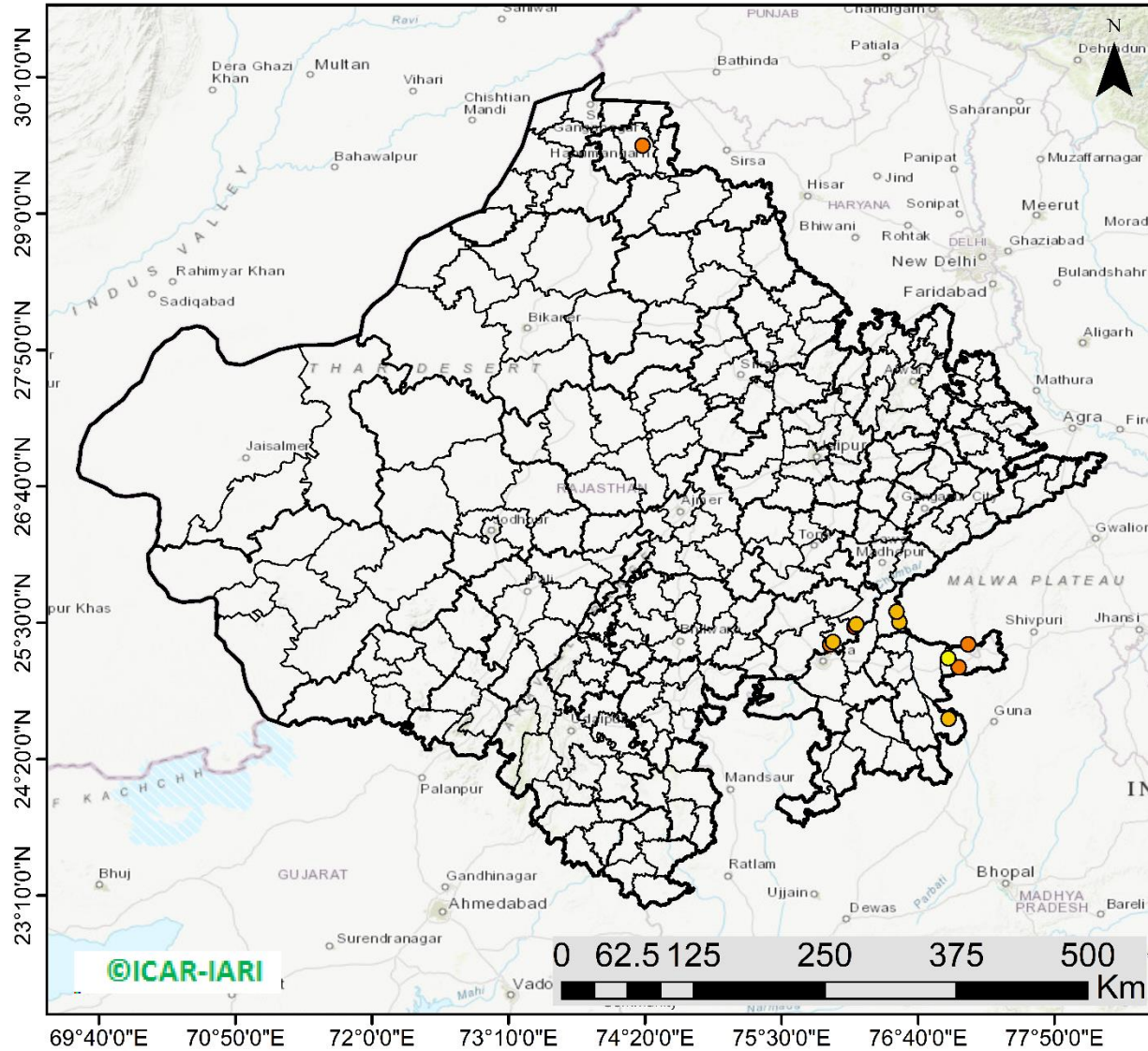


## District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-24Oct-2024)



# Rajasthan

## RICE RESIDUE BURNING IN RAJASTHAN



**11** burning events  
detected in Rajasthan on  
**(24th Oct 2024)**

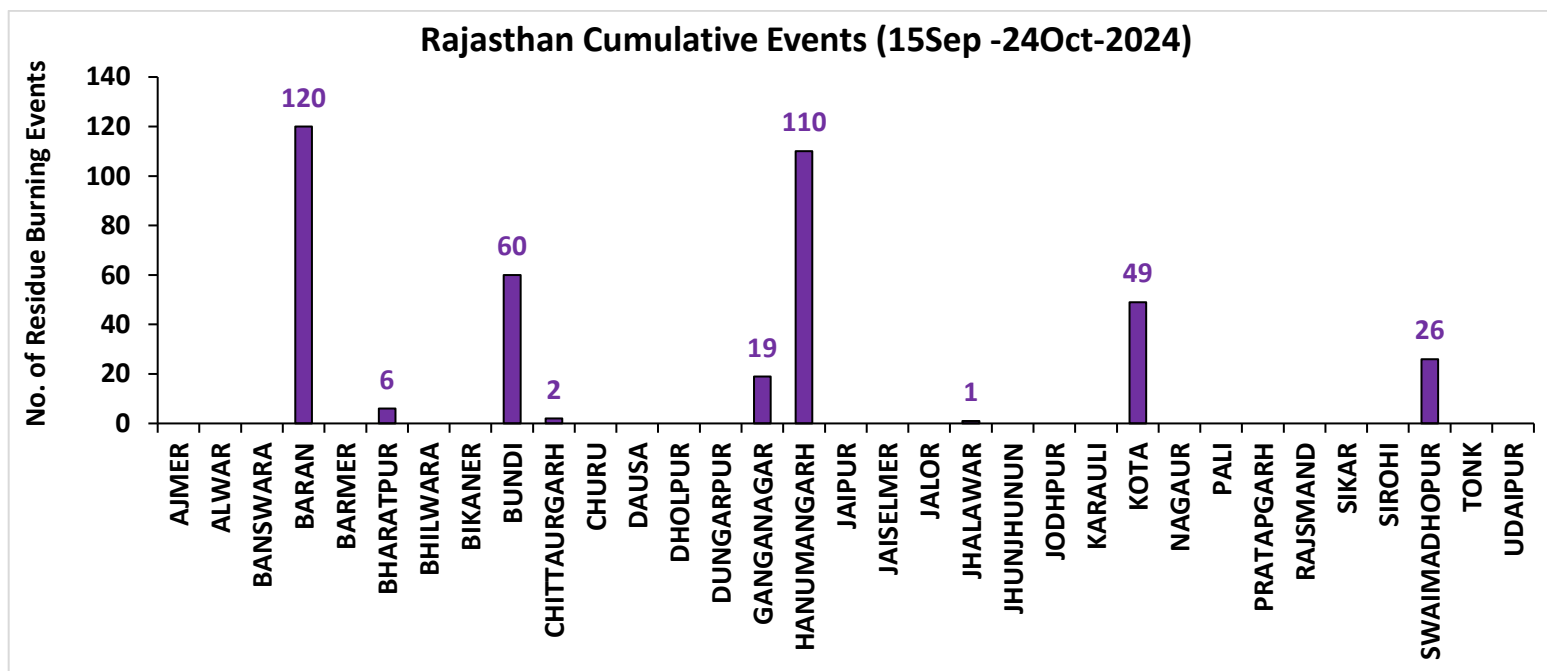
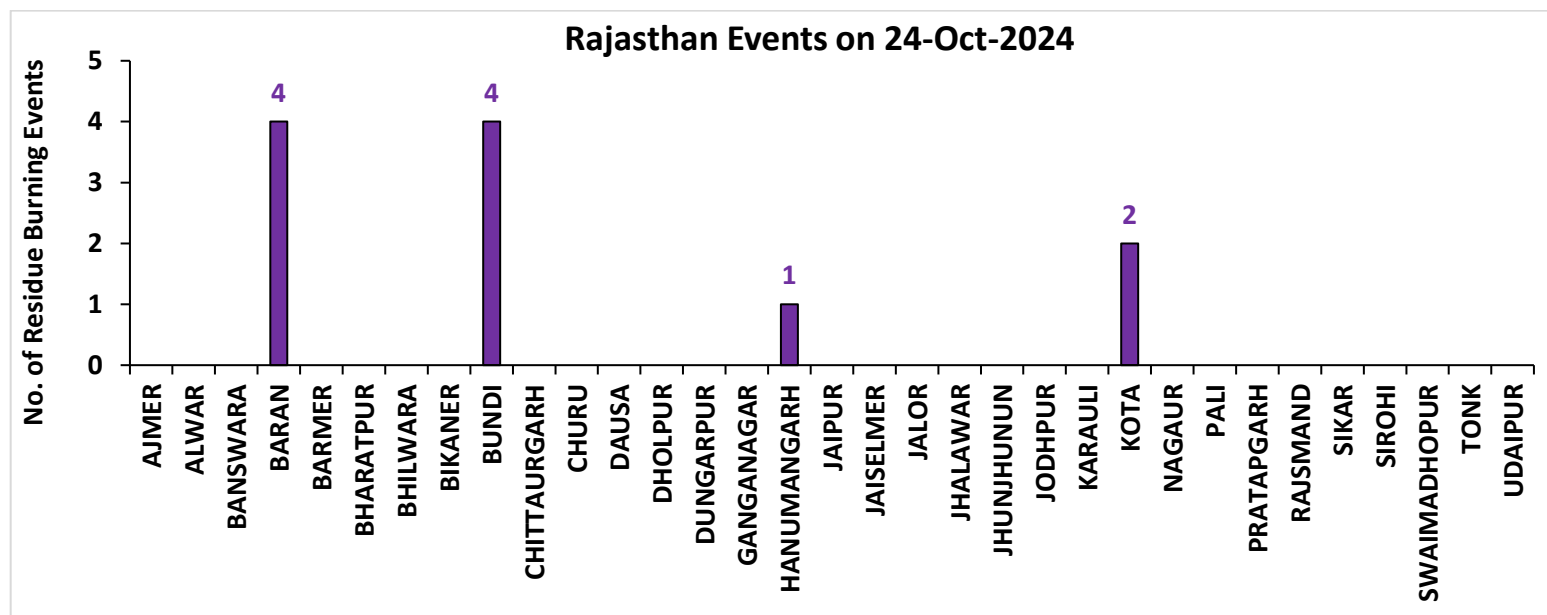
### Fire Intensity (W/m<sup>2</sup>)

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



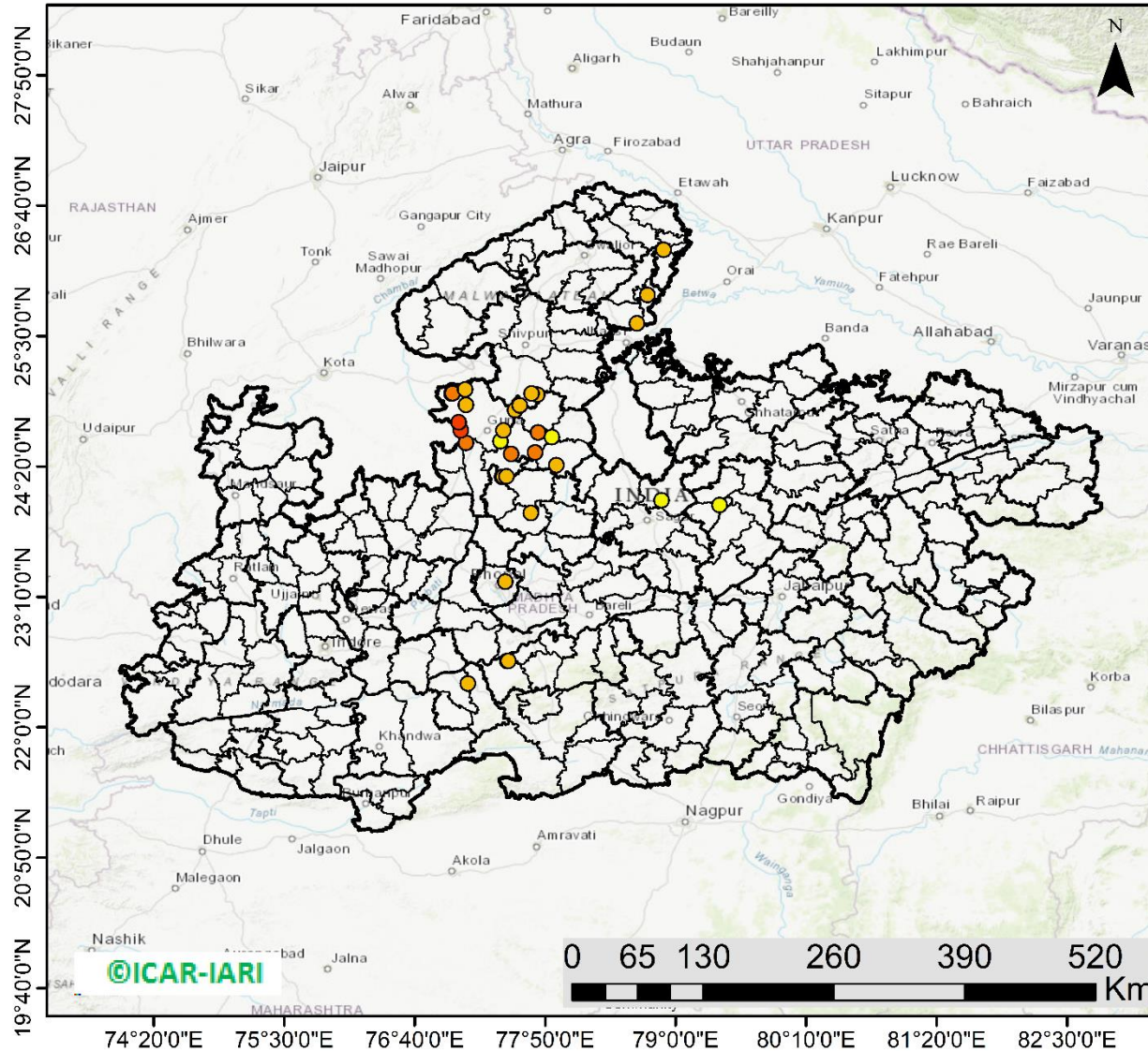
[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

## District-wise cumulative number of residues burning events in Rajasthan (15Sep-24Oct-2024)



# Madhya Pradesh

## RICE RESIDUE BURNING IN MADHYA PRADESH



**32** burning events detected in MP on (24th Oct 2024)

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

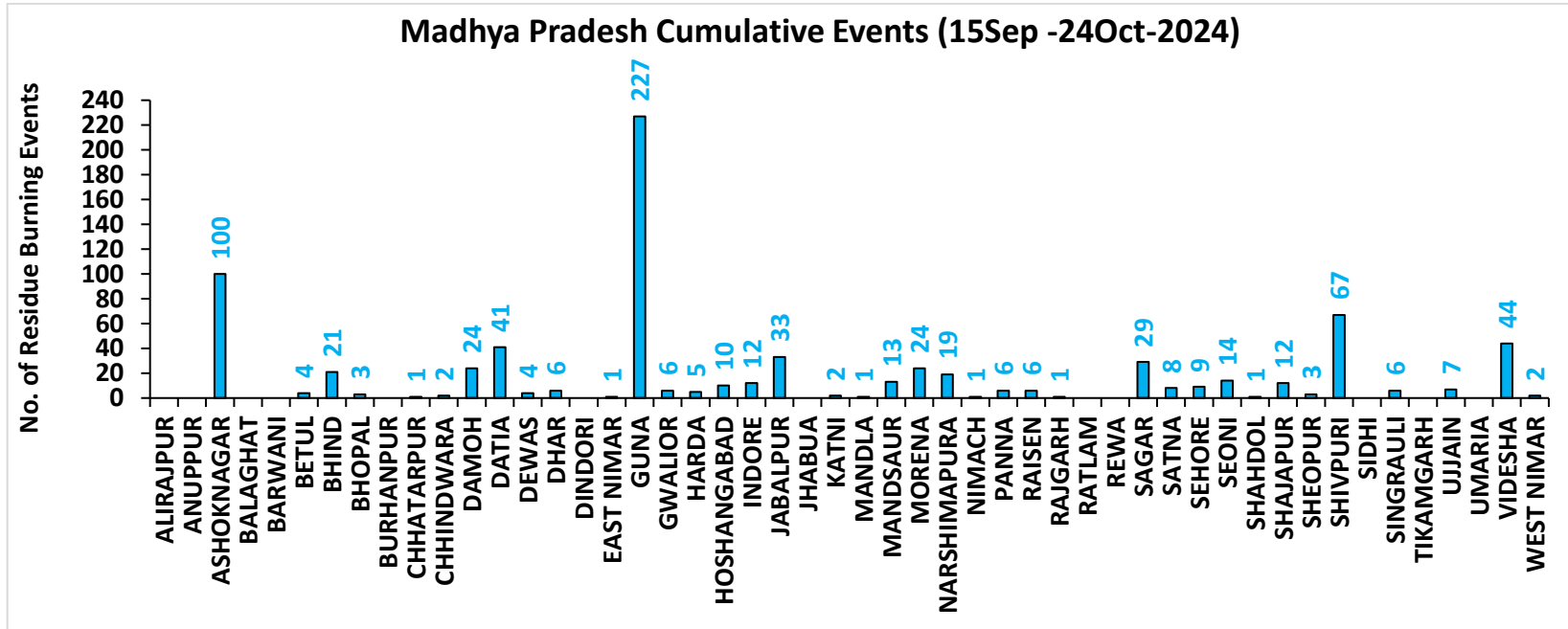
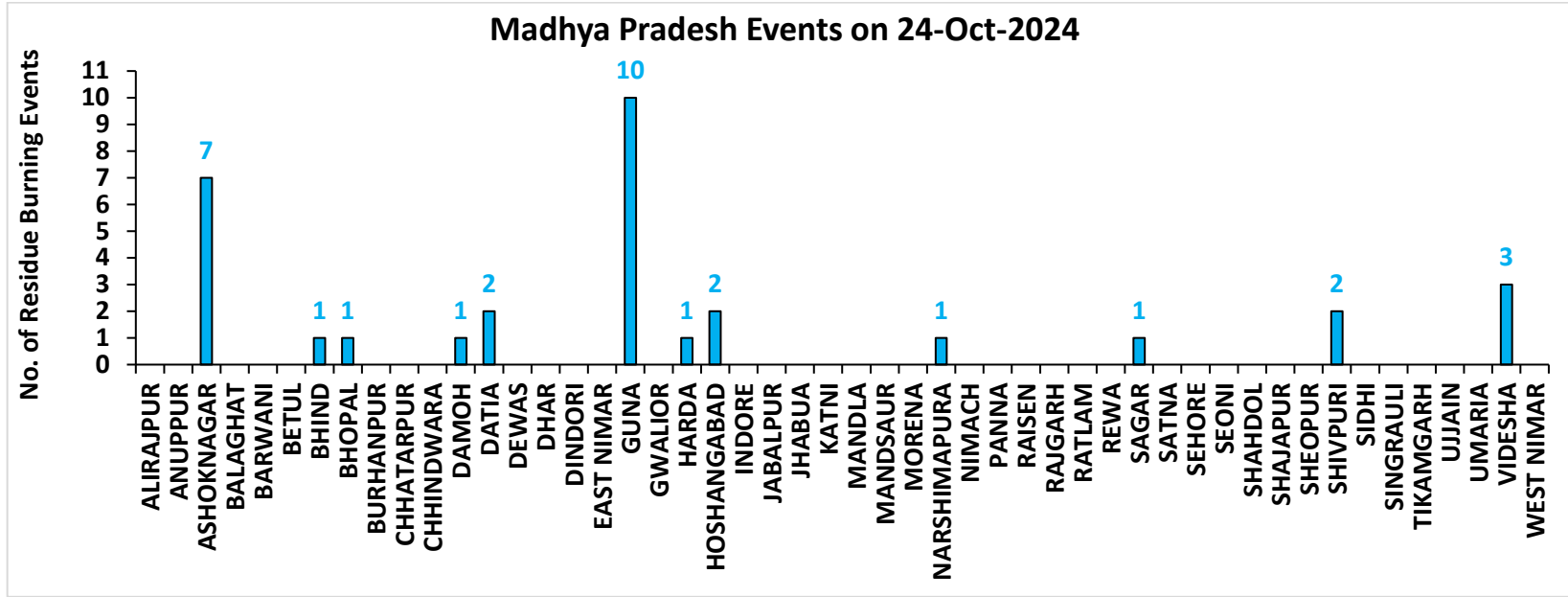
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)



**District-wise cumulative number of residues burning events in Madhya Pradesh (15Sep-24Oct-2024)**



**District-wise cumulative number of residues burning events detected in 2020, 2021, 2022, 2023 and 2024**  
**(Period: 15 September-24 October)**

**(a) Punjab**

District	15 Sep-24 Oct				
	2020	2021	2022	2023	2024
Amritsar	2343	945	1073	755	455
Barnala	81	47	36	17	10
Bathinda	197	71	84	11	11
Faridkot	787	285	52	31	10
Fatehgarh Sahib	468	286	231	100	47
Fazilka	229	82	48	16	18
Firozpur	1884	394	293	150	142
Gurdaspur	1215	394	565	40	51
Hoshiarpur	200	58	49	3	0
Jalandhar	354	273	269	43	21
Kapurthala	771	391	368	103	72
Ludhiana	373	389	238	94	33
Malerkotla	0	0	0	8	26
Mansa	132	32	44	85	34
Moga	282	131	132	46	14
Muktsar	254	85	26	3	4
Pathankot	7	0	0	0	0
Patiala	1323	500	474	278	212
Rupnagar	64	46	52	3	4
Sangrur	470	146	218	148	151
SAS NAGAR (Mohali)	75	54	45	79	28
SBS Nagar	27	34	9	5	4
Tarn Taran	3269	1415	1311	288	331
<b>Total</b>	<b>14805</b>	<b>6058</b>	<b>5617</b>	<b>2306</b>	<b>1678</b>

**(b) Haryana**

District	15 Sep-24 Oct				
	2020	2021	2022	2023	2024
AMBALA	197	85	93	106	74
BHIWANI	0	0	0	2	0
CHARKHI DADRI	0	0	0	0	0
FARIDABAD	1	1	1	2	34
FATEHABAD	99	110	132	123	41
GURGAON	0	0	0	0	0
HISAR	10	8	23	47	20
JHAJJAR	1	0	0	4	3
JIND	51	76	110	102	52
KAITHAL	332	479	379	107	130
KARNAL	413	554	224	53	72
KURUKSHETRA	338	319	246	91	99
MAHENDRAGARH	0	0	0	0	0
MEWAT	0	0	0	0	0
PALWAL	27	26	16	42	26
PANCHKULA	0	0	0	1	14
PANIPAT	12	22	20	17	28
REWARI	0	0	0	0	0
ROHTAK	2	0	0	7	8
SIRSA	32	17	27	11	18
SONIPAT	15	7	10	47	40
YAMUNANAGAR	87	60	79	51	27
<b>Total</b>	<b>1617</b>	<b>1764</b>	<b>1360</b>	<b>813</b>	<b>686</b>

(c) Uttar Pradesh

District	15 Sep-24 Oct																
	2020	2021	2022	2023	2024	GAUTAMBUDHNAGAR	6	7	7	7	23	MUZAFARNAGAR	3	2	1	1	7
AGRA	2	0	0	1	0	GAZIPUR	0	0	0	0	0	PILHIBHIT	10	108	81	68	26
ALIGARH	50	21	22	73	149	GHAZIABAD	3	2	2	10	9	PRATAPGARH	4	0	0	1	1
ALLAHABAD	0	1	2	2	1	GONDA	0	0	0	0	0	RAIBEARELI	1	0	2	1	2
AMBEDKARNAGAR	0	0	0	0	2	GORAKHPUR	1	0	0	0	1	RAMPUR	55	50	40	37	15
AMETHI	0	1	4	1	0	HAMIRPUR	1	0	0	0	0	SAMBHAL	7	7	6	12	84
AMROHA	2	0	0	2	4	HAPUR	7	1	1	0	9	SANTKABIRNAGAR	0	0	0	1	0
AURAIYA	19	7	7	10	1	HARDOI	19	6	7	9	15	SANTRAVIDASNAGAR	0	0	0	0	0
AZAMGARH	0	0	0	0	0	HATHRAS	0	0	0	2	13	SHAHJAHANPUR	51	181	178	30	50
BADAUN	2	6	0	2	20	JALAUN	0	0	0	0	0	SHAMLI	21	15	5	5	8
BAGHPAT	4	1	1	1	3	JAUNPUR	0	0	0	1	0	SHARANPUR	44	20	4	1	5
BAHRAICH	20	2	5	1	3	JHANSI	26	6	0	20	8	SHRAWASTI	8	0	0	2	0
BALLIA	0	0	0	0	1	KANNAUJ	6	2	0	1	5	SIDDHARTHANAGAR	0	0	0	0	1
BALRAMPUR	5	1	1	1	0	KANPUR	5	7	10	20	2	SITAPUR	21	9	3	4	46
BANDA	0	0	0	0	0	KANPUR DEHAT	15	1	0	9	2	SONBHADRA	0	0	0	0	0
BARABANKI	21	20	18	41	67	KASGANJ	2	2	0	1	1	SULTANPUR	1	0	0	0	0
BAREILLY	25	15	9	18	13	KAUSHAMBI	14	3	2	16	3	UNNAO	6	1	0	7	6
BASTI	3	1	0	0	1	KHERI	50	54	60	8	14	VARANASI	1	0	0	0	0
BIJNOR	6	4	2	6	4	KUSHINAGAR	0	0	0	0	0	Total	733	653	543	598	826
BULANDSAHAR	16	2	7	6	26	LALITPUR	0	1	3	1	0						
CHANDAULI	0	0	0	0	0	LUCKNOW	2	0	1	2	5						
CHITRAKOOT	0	1	2	3	0	MAHARAJGANJ	0	0	1	2	1						
DEORIA	0	0	0	2	0	MAHOBA	12	0	0	0	0						
ETAH	12	6	1	11	10	MAINPURI	15	7	11	13	18						
ETAWAH	8	7	6	28	10	MATHURA	49	43	9	70	72						
FAIZABAD	3	0	0	2	4	MAU	0	0	0	0	0						
FARRUKHABAD	1	0	0	0	0	MEERUT	16	4	4	3	9						
FATEHPUR	26	6	16	16	21	MIRZAPUR	6	5	2	0	2						
FIROZABAD	12	4	0	3	3	MORADABAD	8	3	0	3	20						

**(d) Delhi**

District	15 Sep-24 Oct				
	2020	2021	2022	2023	2024
CENTRAL	0	0	0	0	0
EAST	0	0	0	0	0
NEW DELHI	0	0	0	0	0
NORTH	2	0	5	2	8
NORTH EAST	0	0	0	0	0
NORTH WEST DELHI	3	0	0	0	3
SHAHADRA	0	0	0	0	0
SOUTH	1	0	0	0	0
SOUTH EAST	0	0	0	0	0
SOUTH WEST DELHI	0	0	0	0	0
WEST DELHI	1	0	0	0	0
<b>Total</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>11</b>

**(e) Rajasthan**

District	15 Sep-24 Oct				
	2020	2021	2022	2023	2024
AJMER	2	0	0	0	0
ALWAR	2	0	0	0	0
BANSWARA	0	0	0	0	0
BARAN	106	0	10	206	120
BARMER	2	0	0	0	0
BHARATPUR	2	0	0	2	6
BHILWARA	4	0	0	0	0
BIKANER	1	0	0	0	0
BUNDI	25	3	35	85	60
CHITTAURGARH	0	2	2	8	2
CHURU	0	0	0	0	0
DAUSA	0	0	0	0	0
DHOLPUR	0	0	0	0	0
DUNGARPUR	0	0	0	0	0
GANGANAGAR	4	2	5	9	19
HANUMANGARH	216	47	18	55	110
JAIPUR	2	0	0	0	0
JAISELMER	2	0	0	0	0
JALOR	0	0	0	0	0
JHALAWAR	1	0	2	8	1
JHUNJHUNUN	1	0	0	0	0
JODHPUR	1	0	0	0	0
KARALI	1	0	0	0	0
KOTA	42	2	23	102	49
NAGOUR	0	0	0	0	0
PALI	2	0	0	0	0
PRATAPGARH	4	0	0	0	0
RAJSMAND	0	0	0	0	0
SIKAR	0	0	0	0	0
SIROHI	1	0	0	0	0
SWAIMADHOPUR	10	0	3	35	26
TONK	3	0	0	0	0
UDAIPUR	0	0	0	0	0
<b>Total</b>	<b>434</b>	<b>56</b>	<b>98</b>	<b>510</b>	<b>393</b>



**(f) Madhya Pradesh**

District	15 Sep-24 Oct										
	2020	2021	2022	2023	2024	PANNA	8	1	0	1	6
ALIRAJPUR	0	0	0	0	0	RAISEN	73	3	7	26	6
ANUPPUR	0	0	0	0	0	RAJGARH	7	1	3	9	1
ASHOKNAGAR	42	1	5	70	100	RATLAM	0	0	0	1	0
BALAGHAT	0	0	0	0	0	REWA	19	0	1	1	0
BARWANI	0	0	0	0	0	SAGAR	19	13	14	25	29
BETUL	4	1	1	3	4	SATNA	40	8	1	6	8
BHIND	14	1	7	28	21	SEHORE	19	8	25	22	9
BHOPAL	12	5	3	12	3	SEONI	121	74	26	38	14
BURHANPUR	0	0	0	1	0	SHAHDOL	0	0	0	0	1
CHHATARPUR	4	0	0	3	1	SHAJAPUR	5	0	0	7	12
CHHINDWARA	15	9	4	11	2	SHEOPUR	41	0	3	127	3
DAMOH	38	15	13	19	24	SHIVPURI	22	0	9	31	67
DATIA	127	8	11	124	41	SIDHI	0	0	0	0	0
DEWAS	3	0	0	7	4	SINGRAULI	0	0	0	0	6
DHAR	22	0	0	26	6	TIKAMGARH	1	0	0	3	0
DINDORI	0	0	0	1	0	UJJAIN	5	0	0	14	7
EAST NIMAR	10	5	4	2	1	UMARIA	0	0	0	0	0
GUNA	26	2	11	202	227	VIDESHA	73	10	16	41	44
GWALIOR	115	0	4	30	6	WEST NIMAR	16	1	0	8	2
HARDA	10	15	4	19	5	<b>Total</b>	<b>1179</b>	<b>231</b>	<b>210</b>	<b>1102</b>	<b>775</b>
HOSHANGABAD	155	28	17	90	10						
INDORE	2	0	0	12	12						
JABALPUR	36	7	6	33	33						
JHABUA	0	0	0	0	0						
KATNI	21	0	0	2	2						
MANDLA	5	2	0	2	1						
MANDSAUR	3	0	0	1	13						
MORENA	23	5	3	27	24						
NARSHIMAPURA	23	8	12	17	19						
NIMACH	0	0	0	0	1						

**State-wise and date-wise number of paddy residue burning events detected in 2020 ,2021 ,2022, 2023 and 2024**  
**(Period: 15 September-24 October)**

**Number of Paddy Residue Burning Events Detected**

Date	Punjab					Haryana					Uttar Pradesh				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
15-Sep	5	0	14	0	11	2	0	0	1	1	1	0	0	0	0
16-Sep	0	2	0	6	0	1	0	0	1	0	0	0	0	2	0
17-Sep	5	0	1	0	5	3	0	0	0	1	0	0	0	0	1
18-Sep	17	9	7	0	2	0	0	1	0	0	0	1	0	0	0
19-Sep	30	5	18	0	0	2	0	0	1	0	0	1	0	0	0
20-Sep	67	8	10	0	13	6	0	0	2	1	2	0	0	0	0
21-Sep	54	0	56	1	21	2	0	0	2	13	1	0	0	1	2
22-Sep	34	0	30	0	11	1	0	0	2	18	1	0	0	0	0
23-Sep	49	0	3	1	6	0	0	0	3	12	1	0	0	0	0
24-Sep	78	5	0	0	12	0	0	0	0	6	1	1	0	1	0
25-Sep	184	11	0	0	12	11	0	0	1	18	5	0	0	1	0
26-Sep	190	19	0	3	5	5	0	0	2	5	8	0	0	0	0
27-Sep	78	37	0	21	0	8	0	0	9	5	4	1	0	0	3
28-Sep	55	28	0	33	0	6	1	0	8	0	1	6	0	4	0
29-Sep	63	64	0	68	21	9	4	0	17	0	6	10	0	6	0
30-Sep	116	27	8	81	10	22	2	0	26	1	13	13	10	18	0
01-Oct	165	13	45	123	26	15	4	1	21	3	7	13	3	17	0
02-Oct	141	0	83	119	16	30	2	7	24	20	12	0	36	7	9
03-Oct	110	9	75	105	8	8	6	8	17	6	4	3	29	8	7
04-Oct	162	23	65	95	9	29	2	7	29	9	8	0	2	9	0
05-Oct	161	18	130	98	5	17	3	24	24	8	14	2	0	14	1
06-Oct	171	42	85	91	3	30	0	26	19	23	12	1	0	18	17
07-Oct	197	72	62	32	18	32	11	6	13	14	41	13	0	5	11
08-Oct	95	108	19	92	20	29	27	0	55	13	25	11	0	27	16
09-Oct	121	114	3	58	33	20	39	1	14	10	15	20	0	13	10
10-Oct	232	150	4	10	123	33	95	2	28	38	9	54	0	34	56
11-Oct	377	64	45	26	143	90	51	0	21	55	23	28	0	50	87
12-Oct	388	97	104	13	177	69	51	4	5	98	46	23	0	5	102

<b>13-Oct</b>	266	132	120	154	162	47	91	15	29	90	36	42	0	19	76
<b>14-Oct</b>	605	229	82	89	97	69	98	30	41	49	9	68	5	18	52
<b>15-Oct</b>	449	660	169	69	144	106	363	36	127	42	15	149	0	35	78
<b>16-Oct</b>	654	429	206	0	99	80	176	76	4	14	21	121	6	14	59
<b>17-Oct</b>	1172	14	403	1	77	143	0	86	0	28	38	39	7	0	23
<b>18-Oct</b>	938	57	342	18	59	166	1	134	8	26	76	0	30	2	47
<b>19-Oct</b>	1080	496	436	37	45	72	55	122	16	15	43	5	36	11	30
<b>20-Oct</b>	890	788	96	174	52	62	155	78	51	11	31	1	17	25	11
<b>21-Oct</b>	1392	597	393	146	65	101	131	107	68	2	25	5	23	59	25
<b>22-Oct</b>	1665	1111	582	30	71	128	140	122	25	10	32	3	18	117	17
<b>23-Oct</b>	1438	620	902	152	57	106	218	217	29	15	84	8	109	20	68
<b>24-Oct</b>	911	0	1019	360	40	57	38	250	70	6	63	11	212	38	18
<b>Total</b>	<b>14805</b>	<b>6058</b>	<b>5617</b>	<b>2306</b>	<b>1678</b>	<b>1617</b>	<b>1764</b>	<b>1360</b>	<b>813</b>	<b>686</b>	<b>733</b>	<b>653</b>	<b>543</b>	<b>598</b>	<b>826</b>

### Number of Paddy Residue Burning Events Detected

Date	Delhi					Rajasthan					Madhya Pradesh				
	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024	2020	2021	2022	2023	2024
15-Sep	0	0	0	0	0	1	0	0	0	0	2	0	0	0	0
16-Sep	0	0	0	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	0	0	1
18-Sep	0	0	0	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	0	0	1	0
20-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
21-Sep	0	0	0	0	0	1	0	1	0	0	2	0	0	0	1
22-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
23-Sep	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
24-Sep	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
25-Sep	0	0	0	0	0	1	0	0	0	3	0	0	0	1	0
26-Sep	0	0	0	1	0	1	0	0	0	0	2	0	0	0	2
27-Sep	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
28-Sep	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0
29-Sep	0	0	0	0	0	3	0	0	6	0	0	4	0	5	0
30-Sep	1	0	0	0	0	1	0	0	4	2	5	0	0	11	0
01-Oct	0	0	0	0	0	4	1	1	4	1	13	0	1	8	3

02-Oct	1	0	0	0	0	7	0	3	4	3	12	0	1	1	0
03-Oct	0	0	0	0	0	9	0	2	5	0	5	1	5	5	2
04-Oct	0	0	0	0	0	15	0	0	22	0	4	2	0	12	0
05-Oct	0	0	2	0	0	14	0	1	11	2	13	1	0	18	2
06-Oct	1	0	0	0	0	16	0	0	9	1	37	1	0	7	12
07-Oct	0	0	0	0	0	14	1	1	7	4	31	1	0	9	17
08-Oct	0	0	0	0	0	11	0	0	9	1	17	2	0	18	7
09-Oct	0	0	0	0	0	12	0	0	17	1	15	4	0	24	2
10-Oct	0	0	0	0	3	14	1	0	26	3	18	10	0	52	1
11-Oct	0	0	0	1	0	21	7	1	21	6	32	2	0	24	17
12-Oct	0	0	0	0	2	24	1	2	1	13	44	1	1	1	5
13-Oct	0	0	0	0	1	7	5	2	28	10	21	2	7	32	5
14-Oct	0	0	0	0	1	16	1	1	15	20	15	11	1	26	7
15-Oct	0	0	0	0	0	9	8	2	34	23	8	27	2	66	11
16-Oct	1	0	0	0	1	12	2	4	18	100	23	13	2	51	112
17-Oct	0	0	0	0	0	26	0	4	12	16	63	1	11	31	51
18-Oct	0	0	1	0	3	37	2	12	11	30	88	0	15	13	71
19-Oct	0	0	0	0	0	27	5	12	31	25	49	1	12	65	46
20-Oct	0	0	0	0	0	26	4	4	57	11	9	21	7	131	24
21-Oct	2	0	0	0	0	32	2	6	34	21	112	30	18	147	53
22-Oct	0	0	0	0	0	29	5	12	57	36	183	29	31	119	93
23-Oct	1	0	0	0	0	23	7	20	29	50	204	32	70	89	194
24-Oct	0	0	2	0	0	20	4	7	38	11	150	34	26	132	32
<b>Total</b>	<b>7</b>	<b>0</b>	<b>5</b>	<b>2</b>	<b>11</b>	<b>434</b>	<b>56</b>	<b>98</b>	<b>510</b>	<b>393</b>	<b>1179</b>	<b>231</b>	<b>210</b>	<b>1102</b>	<b>775</b>

## Details of residue burning events in Punjab on 24-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMRITSAR	AJNALA	AQUA	31.90300	74.83800	14:24:22	D	5.10
2	AMRITSAR	CHOGAWAN	AQUA	31.70100	74.60400	14:24:22	D	6.50
3	AMRITSAR	CHOGAWAN	AQUA	31.82700	74.58200	14:24:22	D	4.60
4	AMRITSAR	RAYYA	AQUA	31.56600	75.23900	14:24:22	D	5.10
5	FATEHGARH SAHIB	AMLOH	S-NPP	30.58024	76.26668	01:53:13	N	3.80
6	FATEHGARH SAHIB	AMLOH	S-NPP	30.58417	76.26730	01:53:13	N	5.90
7	FAZILKA	FAZILKA	AQUA	30.41400	74.06900	14:24:22	D	5.10
8	FAZILKA	KHUIAN SARWAR	AQUA	30.27900	73.98300	14:24:22	D	8.80
9	FIROZPUR	FIROZPUR	AQUA	30.93200	74.53700	14:24:22	D	5.40
10	FIROZPUR	FIROZPUR	AQUA	30.99800	74.60900	14:24:22	D	7.70
11	FIROZPUR	FIROZPUR	AQUA	31.04700	74.67700	14:24:22	D	16.10
12	FIROZPUR	GHALL KHURD	AQUA	30.88500	74.71300	14:24:22	D	9.30
13	FIROZPUR	GHALL KHURD	AQUA	30.90300	74.70900	14:24:22	D	10.00
14	FIROZPUR	GHALL KHURD	AQUA	30.90400	74.83600	14:24:22	D	8.00
15	FIROZPUR	GHALL KHURD	AQUA	30.91900	74.69500	14:24:22	D	5.70
16	FIROZPUR	MAMDOT	AQUA	30.79200	74.53600	14:24:22	D	6.00
17	FIROZPUR	MAMDOT	AQUA	30.79900	74.33400	14:24:22	D	6.00
18	FIROZPUR	MAMDOT	AQUA	30.83800	74.34700	14:24:22	D	5.60
19	FIROZPUR	MAMDOT	AQUA	30.92200	74.47500	14:24:22	D	7.60
20	FIROZPUR	MAMDOT	AQUA	30.93700	74.45000	14:24:22	D	5.70
21	FIROZPUR	ZIRA	AQUA	30.91100	75.00400	14:24:22	D	7.10
22	FIROZPUR	ZIRA	AQUA	30.91300	75.01400	14:24:22	D	4.50
23	GURDASPUR	BATALA	AQUA	31.79600	75.17900	14:24:22	D	5.70
24	GURDASPUR	FATEHGARH CHURIAN	AQUA	31.87600	75.09300	14:24:22	D	4.50
25	GURDASPUR	FATEHGARH CHURIAN	AQUA	31.90300	75.08700	14:24:22	D	5.90
26	JALANDHAR	SHAHKOT	AQUA	31.16000	75.37200	14:24:22	D	4.60
27	KAPURTHALA	SULTANPUR LODHI	AQUA	31.17200	75.01700	14:24:22	D	13.50
28	KAPURTHALA	SULTANPUR LODHI	AQUA	31.30300	75.15200	14:24:22	D	10.40
29	MANSA	BHIKHI	AQUA	30.14800	75.47500	14:24:22	D	5.30
30	MANSA	SARDULGARH	AQUA	29.70500	75.35500	14:24:22	D	6.30
31	MOGA	KOT ISE KHAN AT DHARAMKOT	AQUA	30.95200	75.34200	14:24:22	D	8.70

32	MOGA	KOT ISE KHAN AT DHARAMKOT	AQUA	30.95400	75.35200	14:24:22	D	10.30
33	PATIALA	SANAUR	AQUA	30.30400	76.49700	14:24:22	D	5.30
34	PATIALA	SANAUR	AQUA	30.30600	76.50800	14:24:22	D	13.70
35	SANGRUR	BHAWANIGARH	AQUA	30.29500	76.17500	14:24:22	D	19.70
36	SANGRUR	SANGRUR	AQUA	30.24400	75.94500	14:24:22	D	6.70
37	SANGRUR	SANGRUR	AQUA	30.24500	75.95500	14:24:22	D	8.20
38	TARN TARAN	KHADUR SAHIB	AQUA	31.42500	75.17400	14:24:22	D	5.20
39	TARN TARAN	KHADUR SAHIB	AQUA	31.47500	75.18900	14:24:22	D	5.00
40	TARN TARAN	VALTOHA	AQUA	31.21000	74.53500	14:24:22	D	8.00

**Details of residue burning events in Haryana on 24-Oct-2024**

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m <sup>2</sup> )
1	JIND	NARWANA	AQUA	29.79100	76.12500	14:24:22	D	5.40
2	JIND	NARWANA	S-NPP	29.79104	76.12408	01:53:13	N	1.20
3	KAITHAL	GUHLA	AQUA	30.09200	76.36100	14:24:22	D	24.30
4	KURUKSHETRA	THANESAR	S-NPP	30.04375	76.80972	01:53:13	N	1.20
5	SIRSA	SIRSA	S-NPP	29.55236	74.99703	01:53:13	N	0.90
6	YAMUNANAGAR	MUSTAFABAD	AQUA	30.15000	77.11800	14:24:22	D	7.20

### Details of residue burning events in Uttar Pradesh on 24-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ALIGARH	KHAIR	AQUA	28.08700	77.60700	14:24:22	D	6.50
2	BARABANKI	NAWABGANJ	S-NPP	26.85146	81.34599	01:53:13	N	0.80
3	BARABANKI	NAWABGANJ	S-NPP	26.89653	81.31449	01:53:13	N	1.30
4	ETAH	JALESAR	AQUA	27.51600	78.42400	14:24:22	D	13.20
5	JHANSI	JHANSI	AQUA	25.55900	78.72200	14:24:22	D	6.70
6	JHANSI	TAHRAULI	AQUA	25.56800	78.72000	14:24:22	D	18.40
7	KANNAUJ	TIRWA	S-NPP	26.94951	79.72296	01:53:13	N	0.40
8	KHERI	LAKHIMPUR	S-NPP	28.03602	80.69943	01:53:13	N	0.40
9	MATHURA	CHHATA	AQUA	27.82300	77.48800	14:24:22	D	8.30
10	MATHURA	CHHATA	AQUA	27.83200	77.48600	14:24:22	D	43.40
11	MATHURA	CHHATA	AQUA	27.83300	77.49600	14:24:22	D	14.30
12	PILHIBHIT	BISALPUR	S-NPP	28.33828	79.89214	01:53:13	N	0.80
13	PILHIBHIT	PILHIBHIT	S-NPP	28.79932	79.72433	01:53:13	N	0.30
14	PILHIBHIT	PURANPUR	S-NPP	28.48896	80.05792	01:53:13	N	1.40
15	SHAHJAHANPUR	PUWANYA	S-NPP	27.93269	80.00561	01:53:13	N	0.30
16	SHAHJAHANPUR	PUWANYA	S-NPP	28.04360	80.00941	01:53:13	N	0.40
17	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	27.97178	79.81437	01:53:13	N	1.00
18	SHAHJAHANPUR	TILHAR	S-NPP	28.04213	79.81419	01:53:13	N	0.30

### Details of residue burning events in Rajasthan on 24-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	BARAN	CHHABRA	AQUA	24.67800	76.92800	14:24:22	D	7.70
2	BARAN	SHAHBAD	AQUA	25.11700	77.01600	14:24:22	D	15.00
3	BARAN	SHAHBAD	AQUA	25.19600	76.92600	14:24:22	D	4.70
4	BARAN	SHAHBAD	AQUA	25.31400	77.09700	14:24:22	D	10.80
5	BUNDI	INDRAGARH	AQUA	25.48500	76.14000	14:24:22	D	9.00
6	BUNDI	KESHORAIPATAN	AQUA	25.31300	75.91500	14:24:22	D	10.20
7	BUNDI	KESHORAIPATAN	AQUA	25.33500	75.94100	14:24:22	D	5.30
8	BUNDI	KESHORAIPATAN	AQUA	25.46400	76.12400	14:24:22	D	15.10
9	HANUMANGARH	HANUMANGARH	AQUA	29.58100	74.31300	14:24:22	D	12.10
10	KOTA	PIPALDA	AQUA	25.50400	76.50800	14:24:22	D	7.60
11	KOTA	PIPALDA	AQUA	25.59300	76.48500	14:24:22	D	6.90



### Details of residue burning events in Madhya Pradesh on 24-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ASHOKNAGAR	ASHOKNAGAR	AQUA	24.44400	77.52900	14:24:22	D	11.40
2	ASHOKNAGAR	ASHOKNAGAR	AQUA	24.45700	77.74400	14:24:22	D	11.20
3	ASHOKNAGAR	ASHOKNAGAR	AQUA	24.83600	77.56400	14:24:22	D	6.50
4	ASHOKNAGAR	CHANDERI	AQUA	24.59600	77.89300	14:24:22	D	4.80
5	ASHOKNAGAR	ISAGARH	AQUA	24.63600	77.77000	14:24:22	D	14.10
6	ASHOKNAGAR	ISAGARH	AQUA	24.87800	77.60700	14:24:22	D	7.30
7	ASHOKNAGAR	MUNGAOLI	AQUA	24.34400	77.93400	14:24:22	D	5.80
8	BHIND	MAJHGAWAN	AQUA	26.27100	78.89200	14:24:22	D	8.80
9	BHOPAL	HUZUR	AQUA	23.30100	77.47800	14:24:22	D	5.60
10	DAMOH	PATHARIA	S-NPP	23.98755	79.39271	01:53:13	N	0.60
11	DATIA	BHANDER	AQUA	25.61300	78.65400	14:24:22	D	6.20
12	DATIA	BHANDER	AQUA	25.86600	78.74900	14:24:22	D	7.30
13	GUNA	ARON	AQUA	24.23900	77.44900	14:24:22	D	11.70
14	GUNA	GUNA	AQUA	24.55800	77.43400	14:24:22	D	4.30
15	GUNA	GUNA	AQUA	24.65500	77.08000	14:24:22	D	19.00
16	GUNA	GUNA	AQUA	24.65500	77.46000	14:24:22	D	5.80
17	GUNA	GUNA	AQUA	24.72700	77.06000	14:24:22	D	16.20
18	GUNA	GUNA	AQUA	24.88300	77.12600	14:24:22	D	7.20
19	GUNA	GUNA	AQUA	24.98500	76.99600	14:24:22	D	7.90
20	GUNA	GUNA	AQUA	24.98700	77.00600	14:24:22	D	10.70
21	GUNA	GUNA	AQUA	25.02100	77.11800	14:24:22	D	7.00
22	GUNA	RAGHOGARH	AQUA	24.54300	77.12500	14:24:22	D	10.10
23	HARDA	HARDA	AQUA	22.39100	77.14300	14:24:22	D	9.90
24	HOSHANGABAD	SEONI MALWA	AQUA	22.59200	77.49400	14:24:22	D	11.00
25	HOSHANGABAD	SEONI MALWA	AQUA	22.59300	77.50400	14:24:22	D	5.30
26	NARSHIMAPURA	GOTECAON	S-NPP	23.08082	79.47425	01:53:13	N	0.30
27	SAGAR	BANDA	S-NPP	24.02897	78.87463	01:53:13	N	0.40
28	SHIVPURI	KOLARAS	AQUA	24.97400	77.76300	14:24:22	D	5.50
29	SHIVPURI	KOLARAS	AQUA	24.98500	77.71200	14:24:22	D	6.50
30	VIDESHA	NATERAN	AQUA	23.91600	77.70600	14:24:22	D	6.40
31	VIDESHA	SIRANJ	AQUA	24.24000	77.45900	14:24:22	D	5.10
32	VIDESHA	SIRANJ	AQUA	24.24400	77.48700	14:24:22	D	5.70

**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	Both
2.	<del>JPSS 1 (NOAA-20)</del>	<del>VIIRS</del>	<del>375</del>	<del>Both</del>
3.	<del>JPSS 2 (NOAA-21)</del>	<del>VIIRS</del>	<del>375</del>	<del>Both</del>
4.	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 Rajbir Singh	ADG-NRM (AAF&CC)	<a href="mailto:adgagroandaf@gmail.com">adgagroandaf@gmail.com</a>
ICAR - IARI	<b>Dr V.K. Sehgal</b>	Principal & Nodal Scientist	<a href="mailto:iaricreams@gmail.com">iaricreams@gmail.com</a>
	Dr Rajkumar Dhakar	Senior 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 Parvender Sheoran	Director ATARI (Zone-I) Ludhiana	<a href="mailto:zcu1ldh@gmail.com">zcu1ldh@gmail.com</a>
	Dr. J.P. Mishra	Director ATARI (Zone-II) Jodhpur	<a href="mailto:jp.mishra67@gov.in">jp.mishra67@gov.in</a>
	Dr S.K. Dubey	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)

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

\*\*\*