

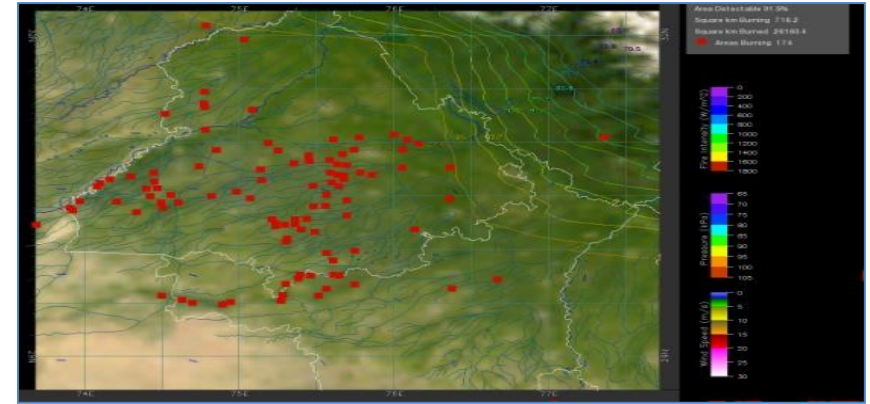
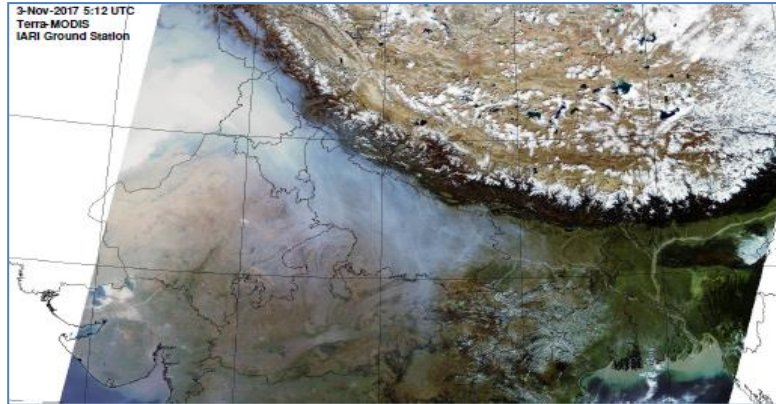


MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2024

Bulletin
No. 34

Events Date:
18-Oct-2024

Issued on:
18-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

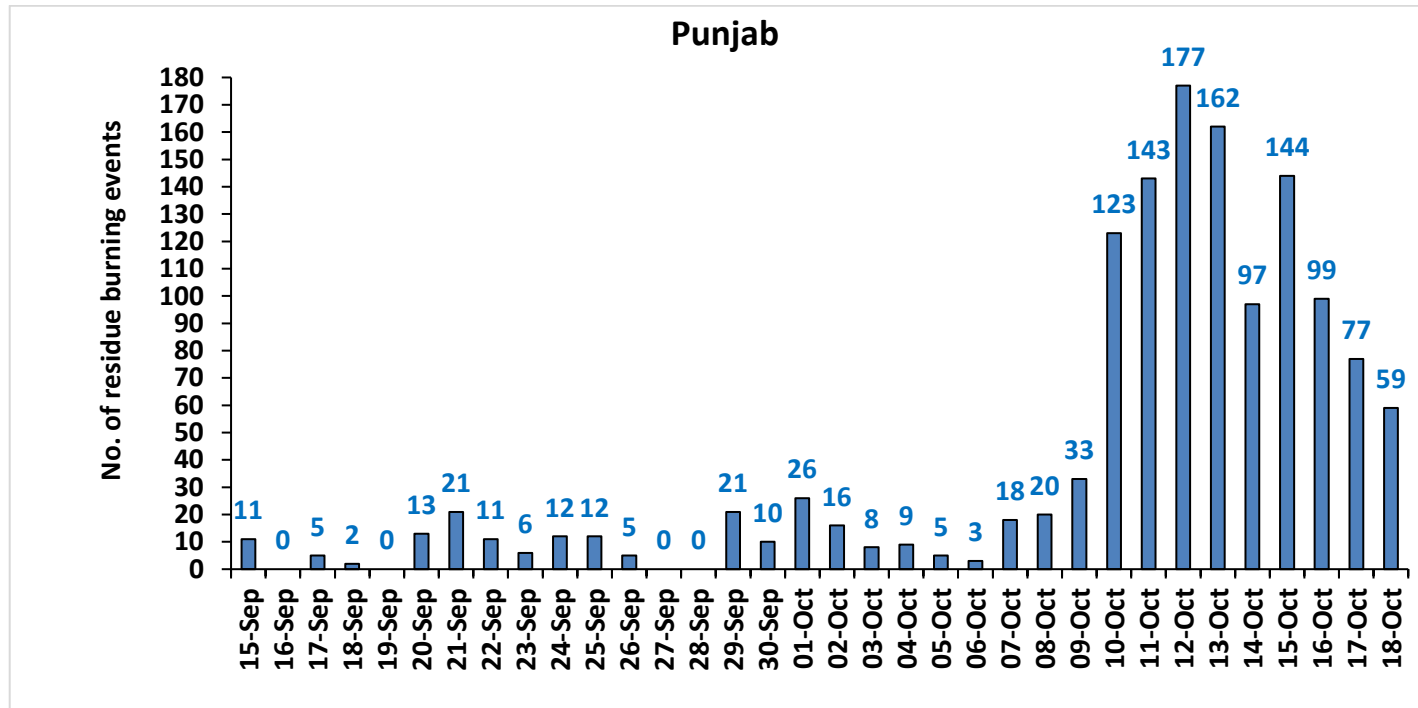
<https://creams.iari.res.in>



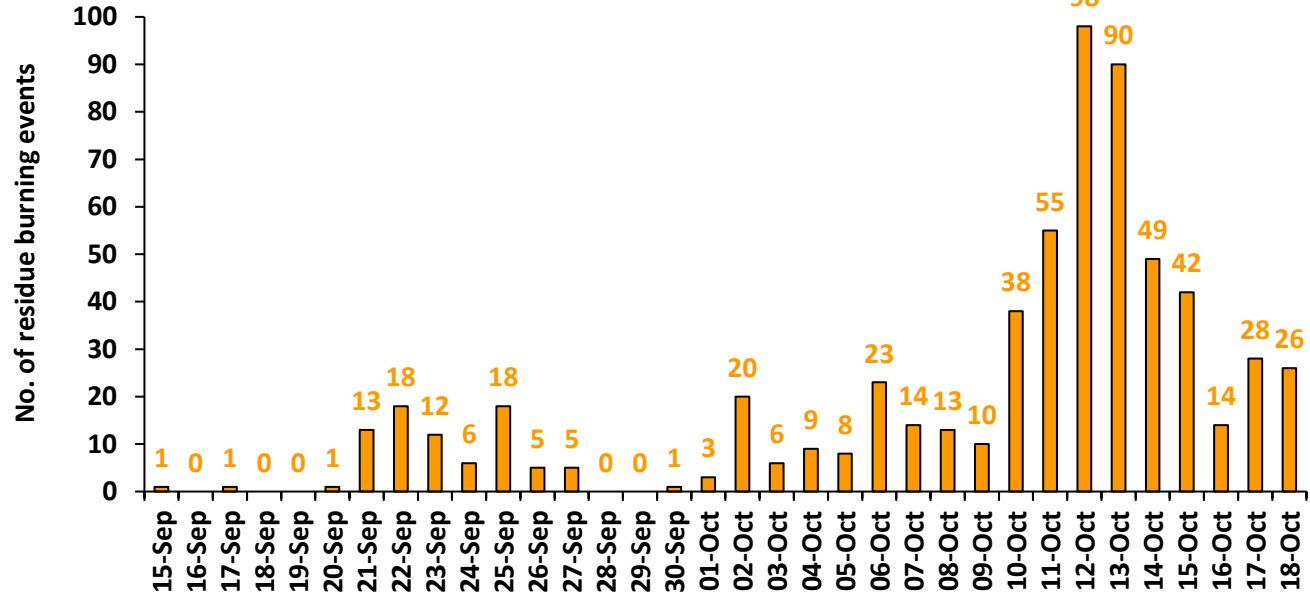
Highlights for 18-Oct-2024

- The active fire events due to rice residue burning were monitored using satellite remote sensing, following the "Standard Protocol " recommended by CAQM. The data from JPSS-1 and JPSS-2 satellites are included from 10-Oct-2024 onwards.
- Satellites detected **236** residue burning events in the six study States on **18-Oct-2024**.
- The state wise events detected on **18-Oct-2024** were **59** in Punjab, **26** in Haryana, **47** in UP, **03** in Delhi, **30** in Rajasthan and **71** in MP.
- Total **3215** burning events were detected in the six states between **15-Sept-2024** and **18-Oct-2024**, which are distributed as **1348**, **627**, **657**, **11**, **239** and **333** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of burning events was hampered by the presence of scattered clouds over south-western Madhya Pradesh state.

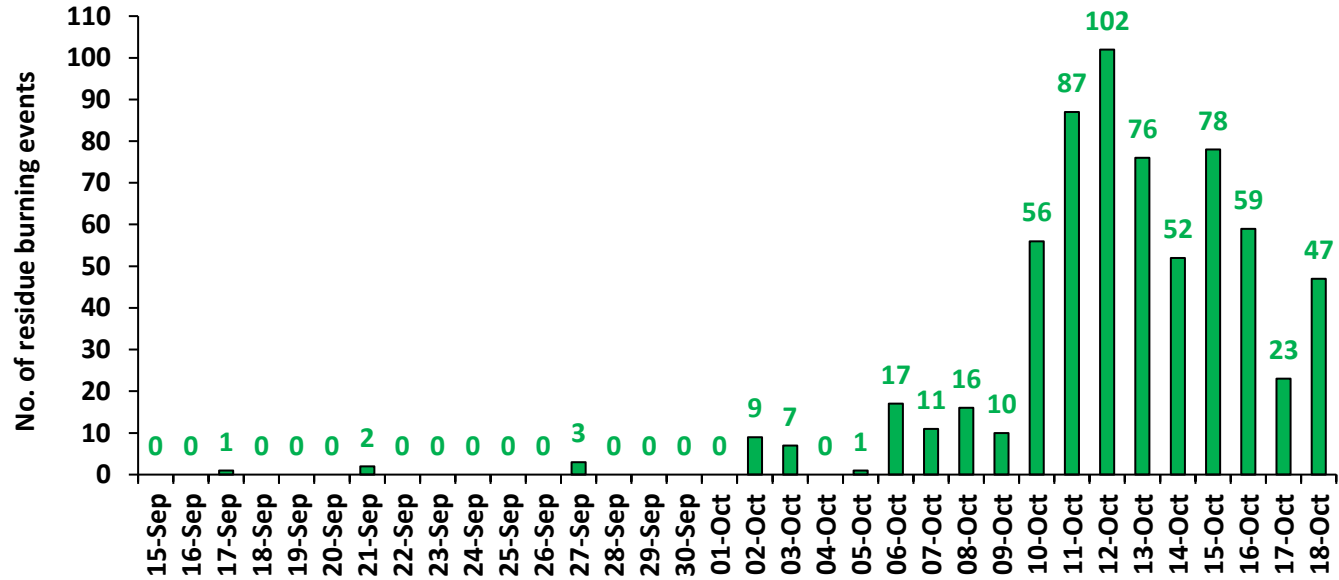
Temporal distribution of rice residue burning events for the study States in 2024



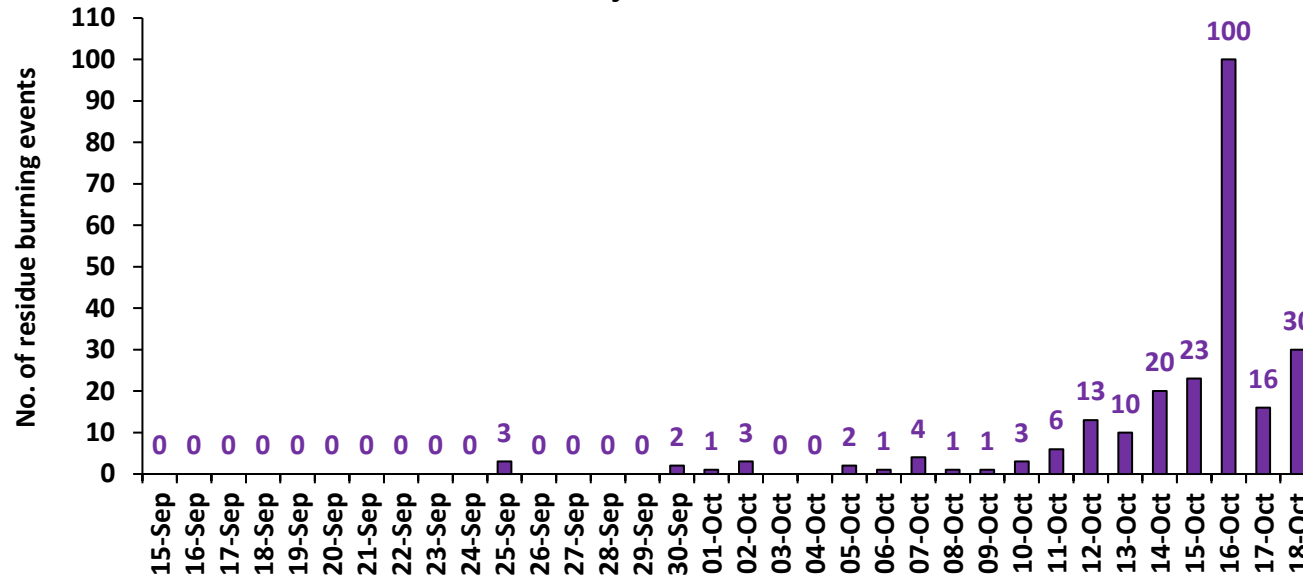
Haryana



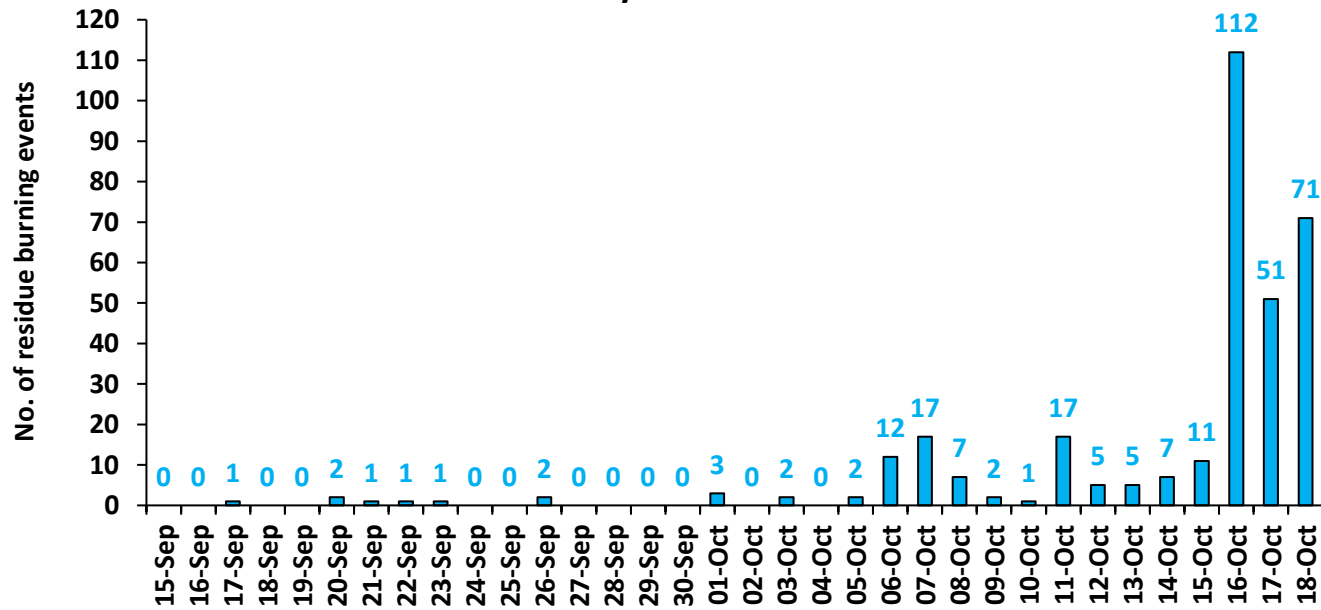
Uttar Pradesh



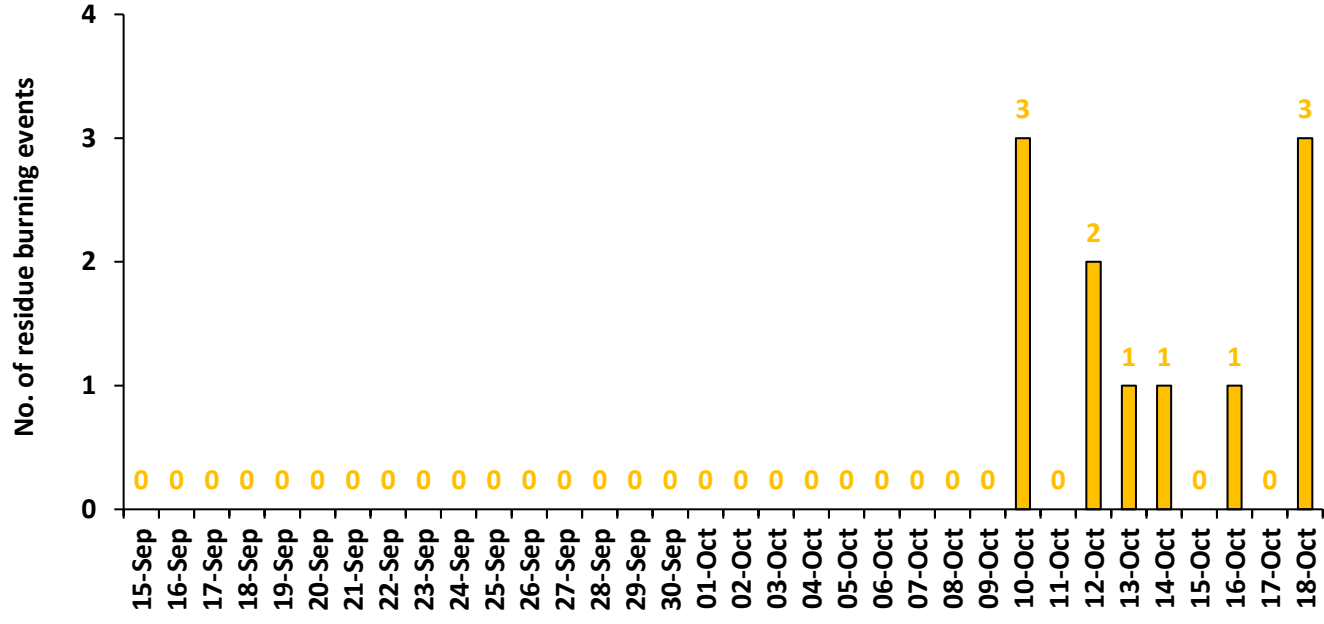
Rajasthan



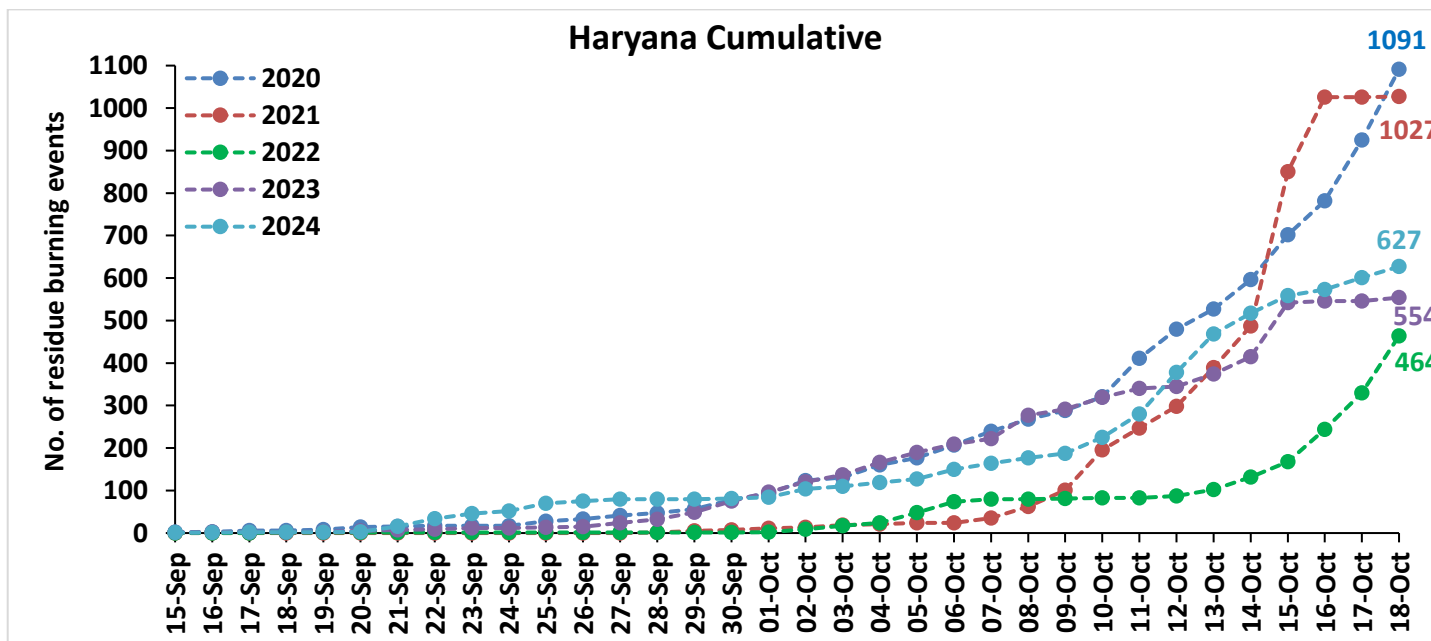
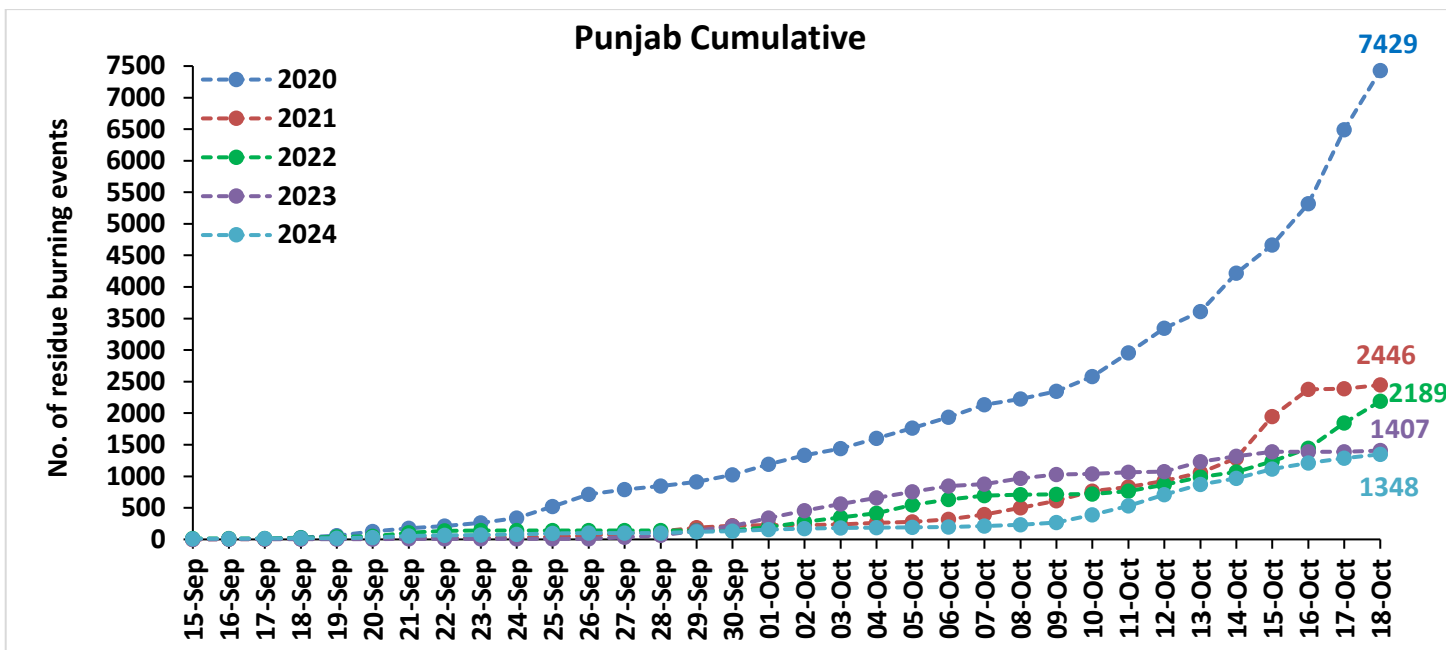
Madhya Pradesh

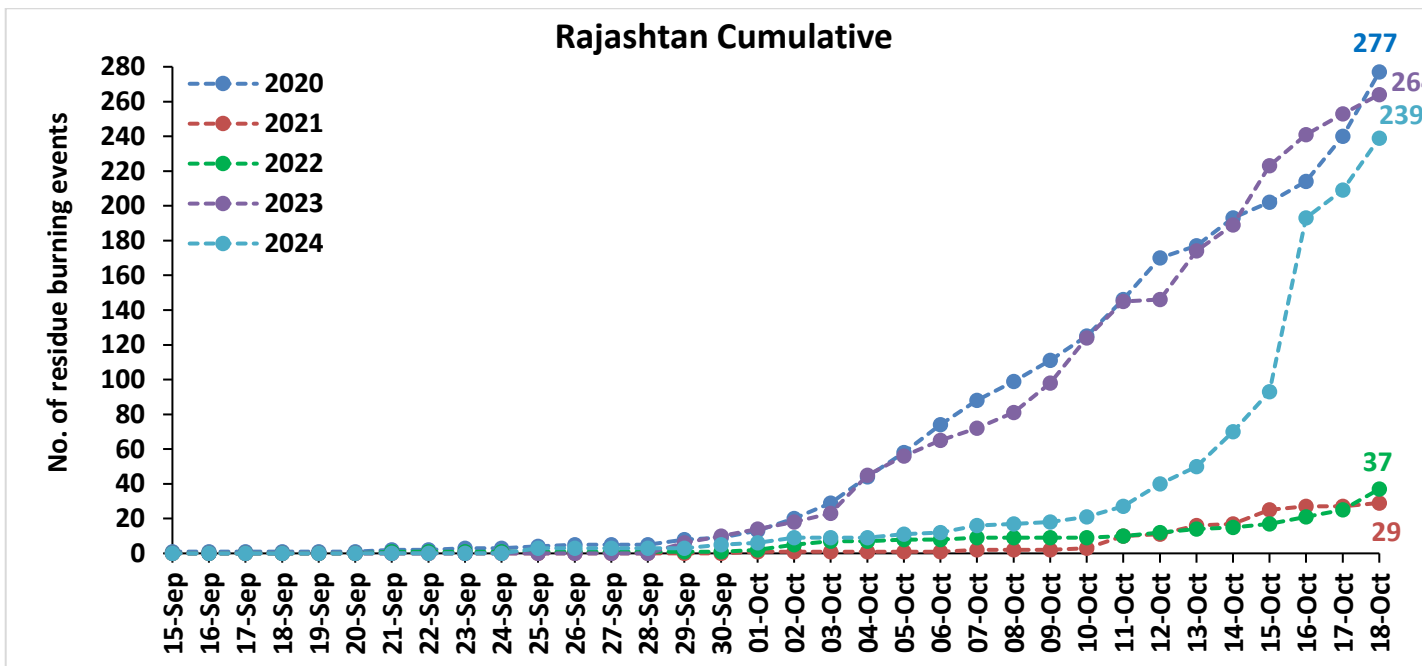
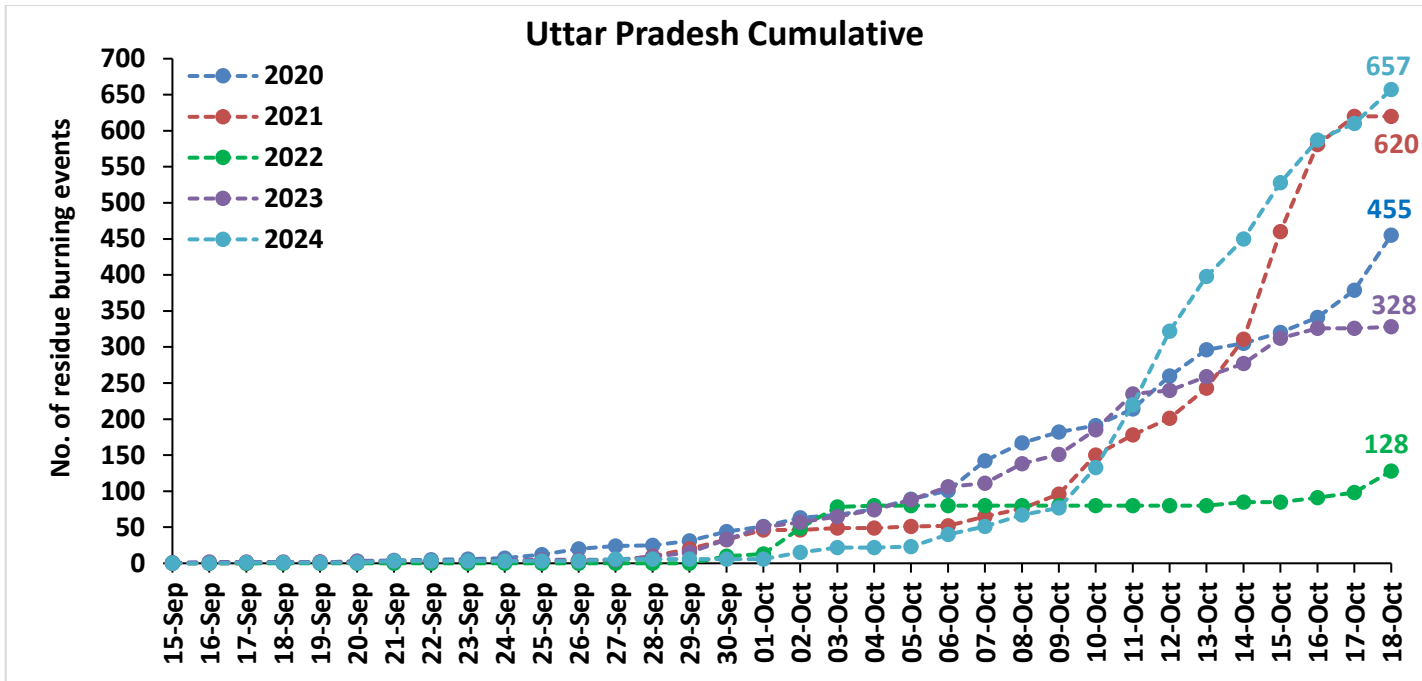


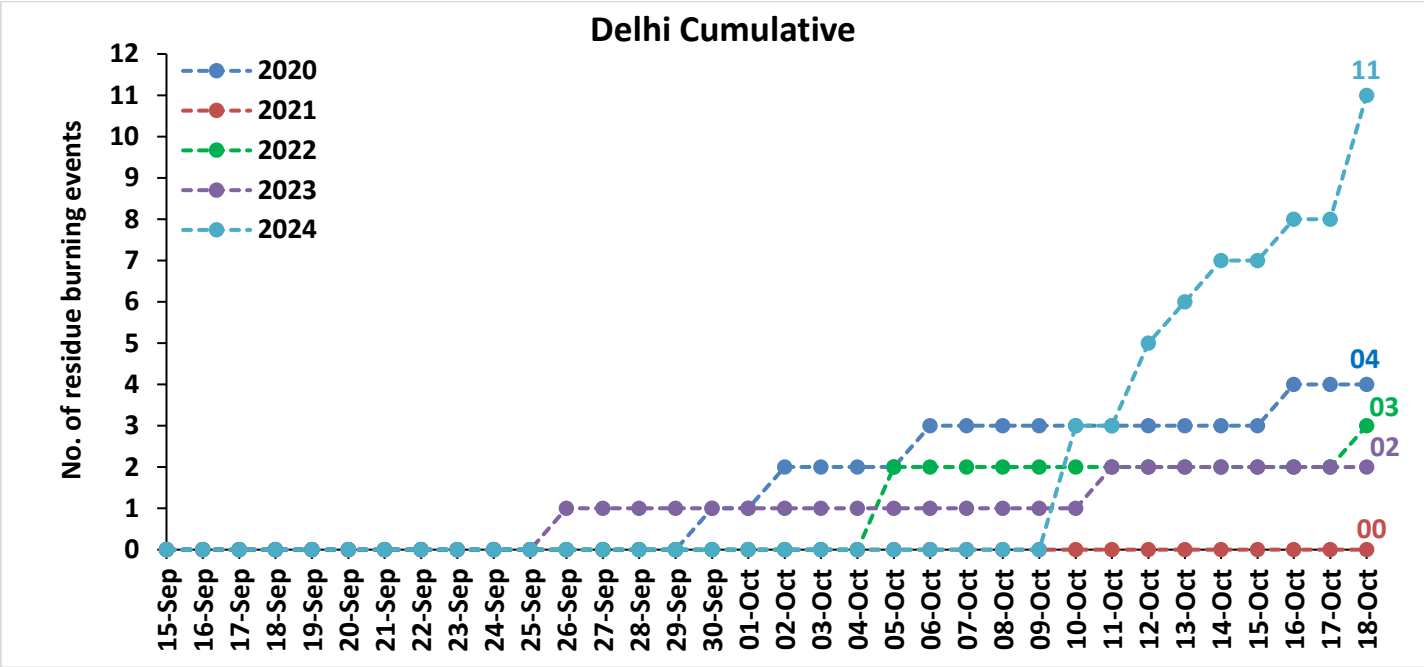
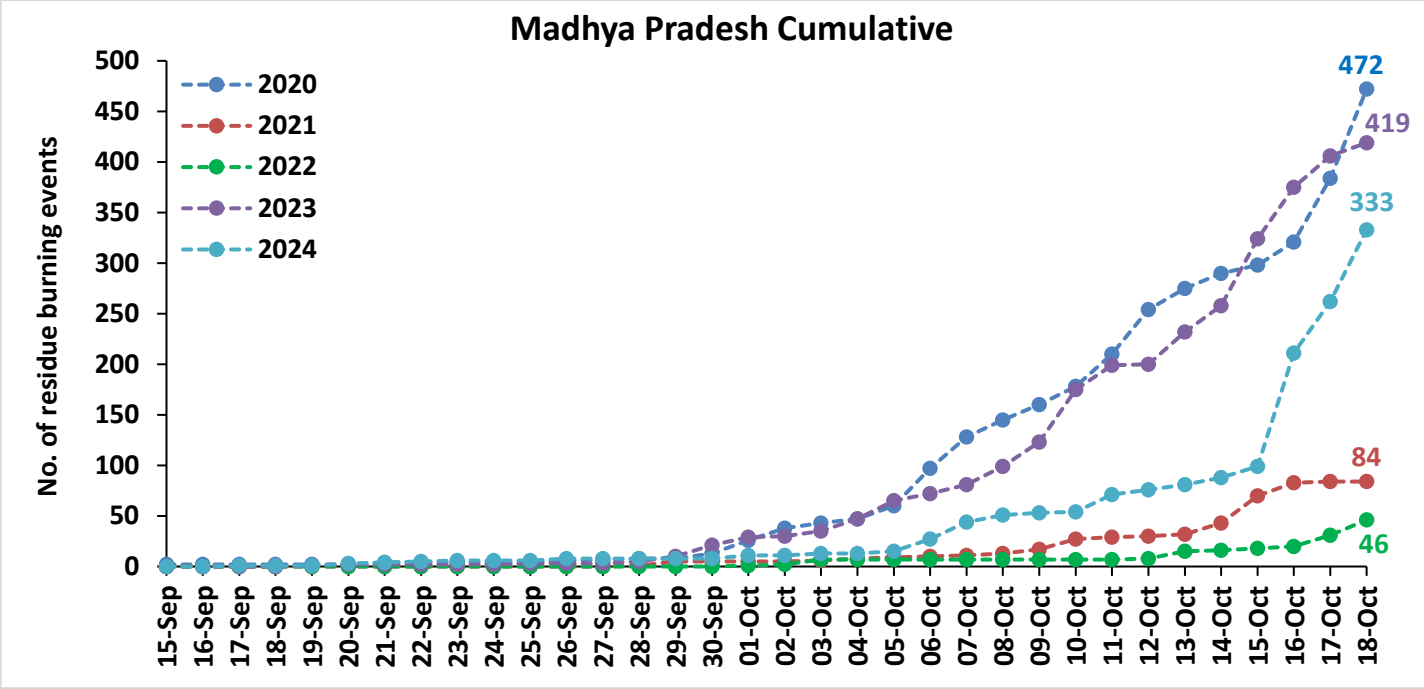
Delhi



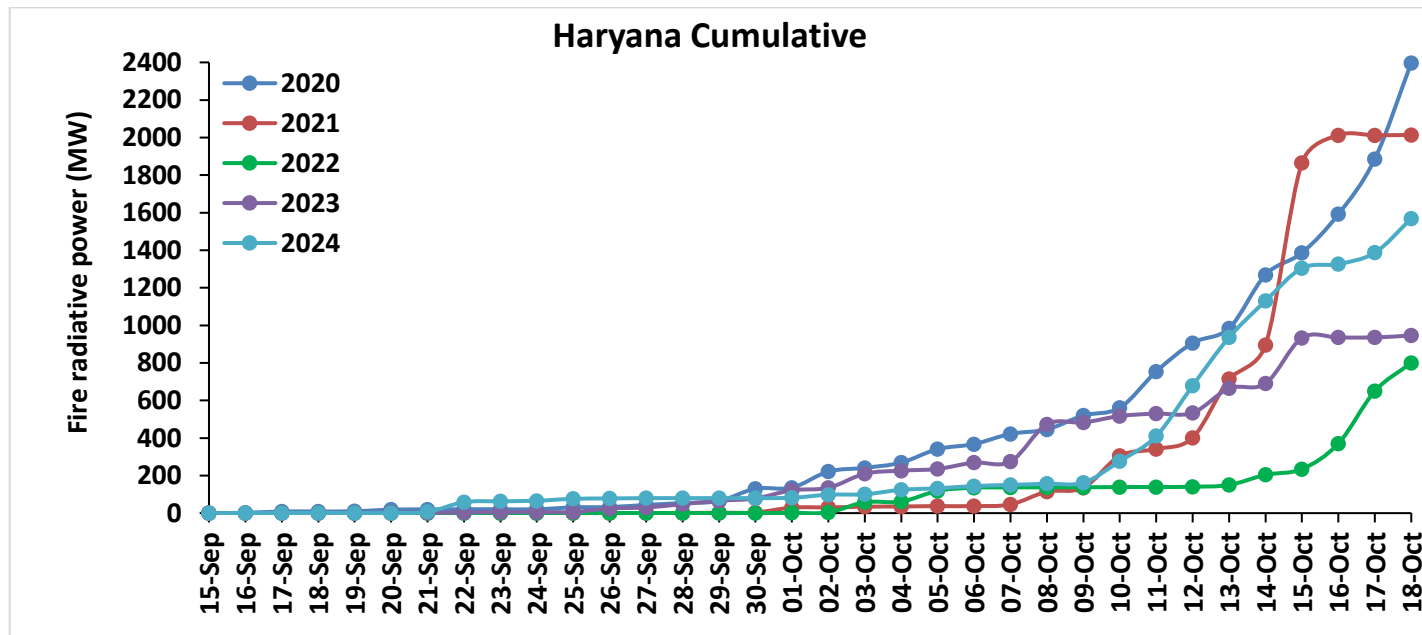
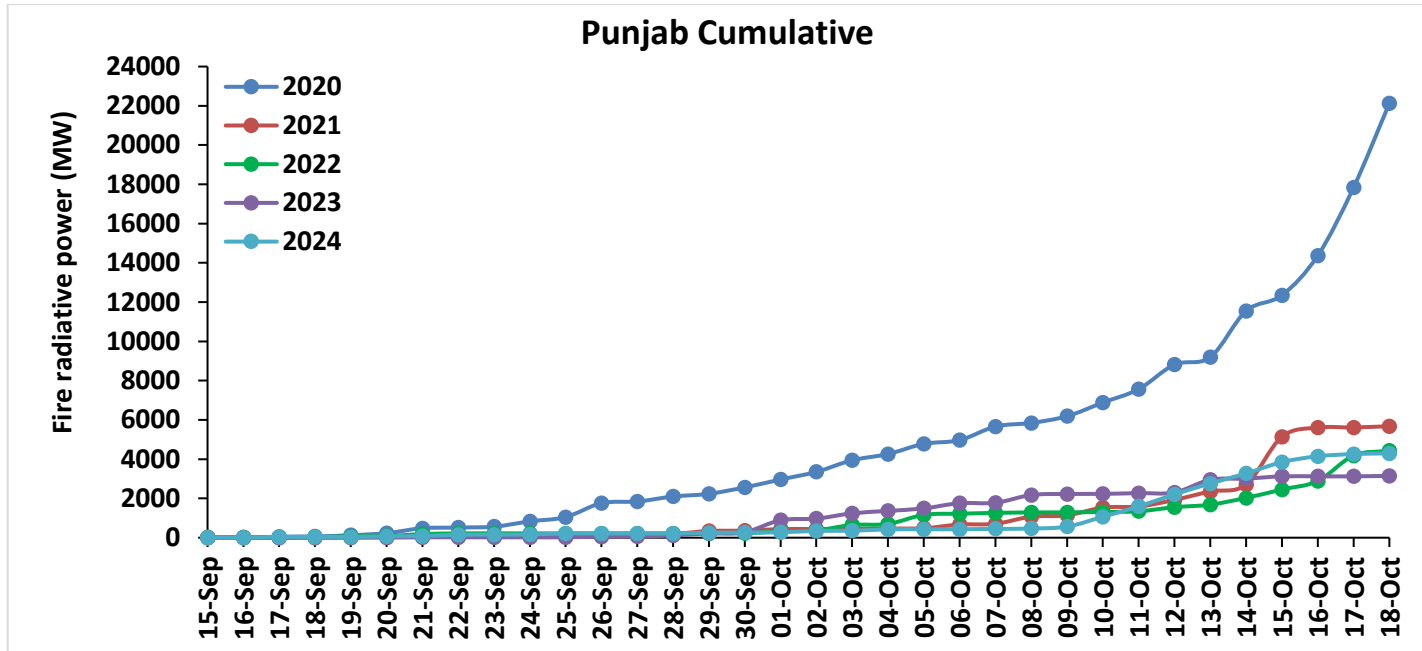
Comparison of residue burning events in current year (2024) with previous years (2020, 2021, 2022 and 2023) for the study States



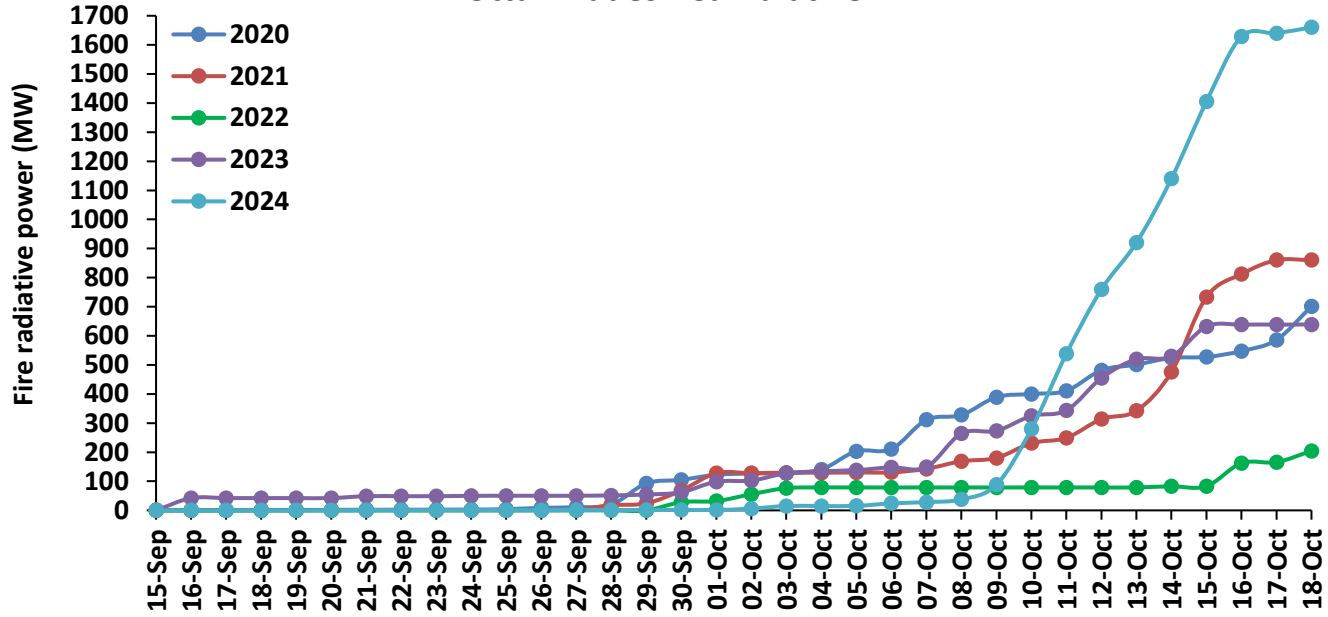




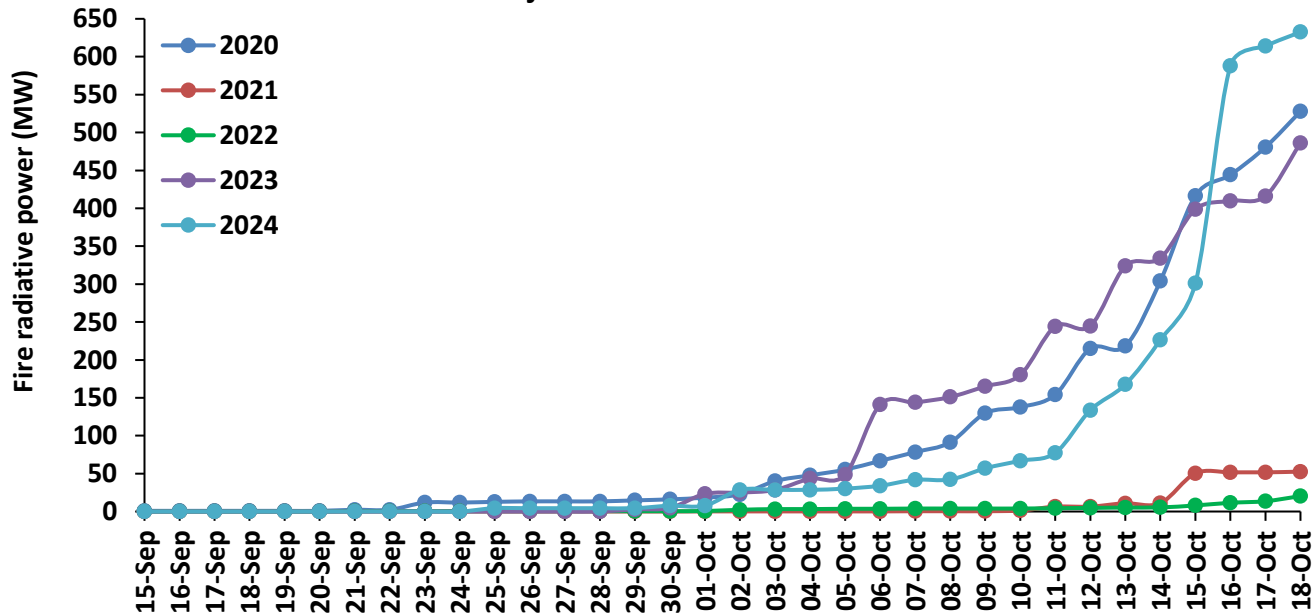
Comparison of residue burning fire power in current year (2024) with previous years (2020,2021,2022 and 2023) for the study States



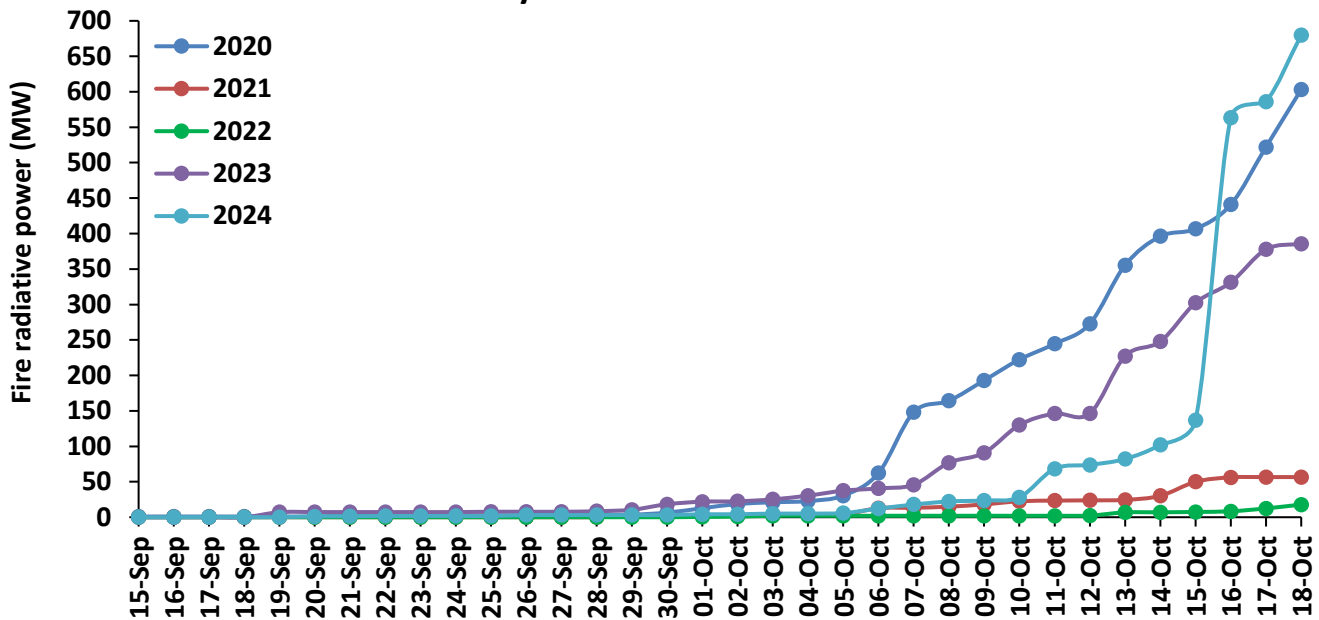
Uttar Pradesh Cumulative



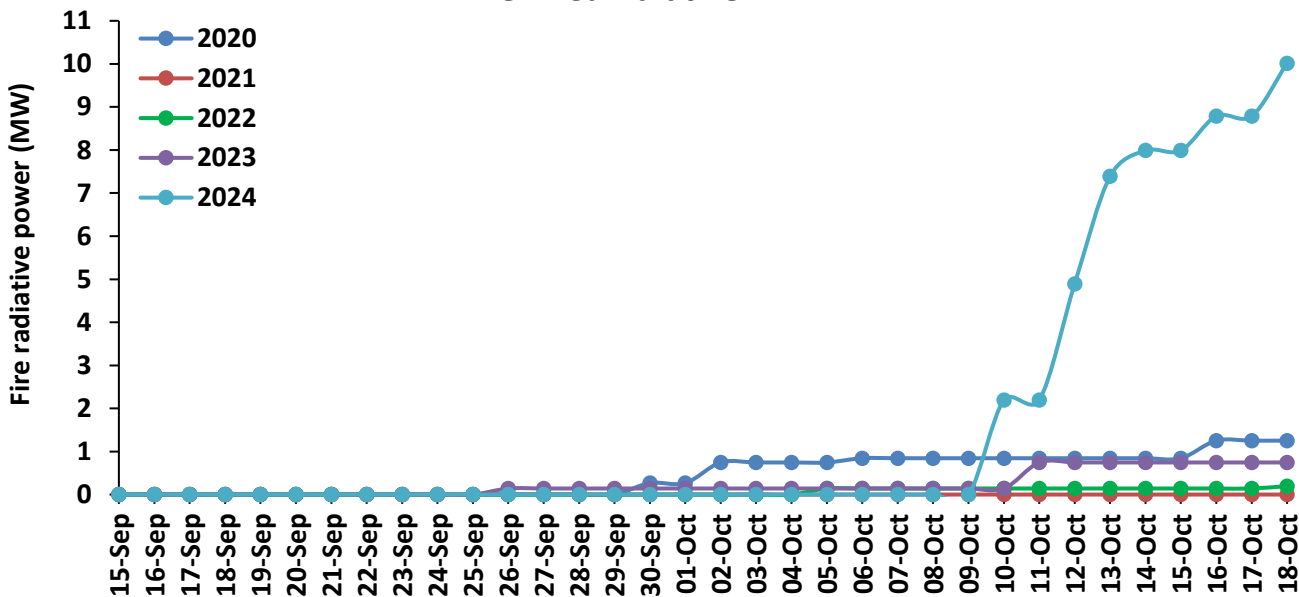
Rajasthan Cumulative



Madhya Pradesh Cumulative

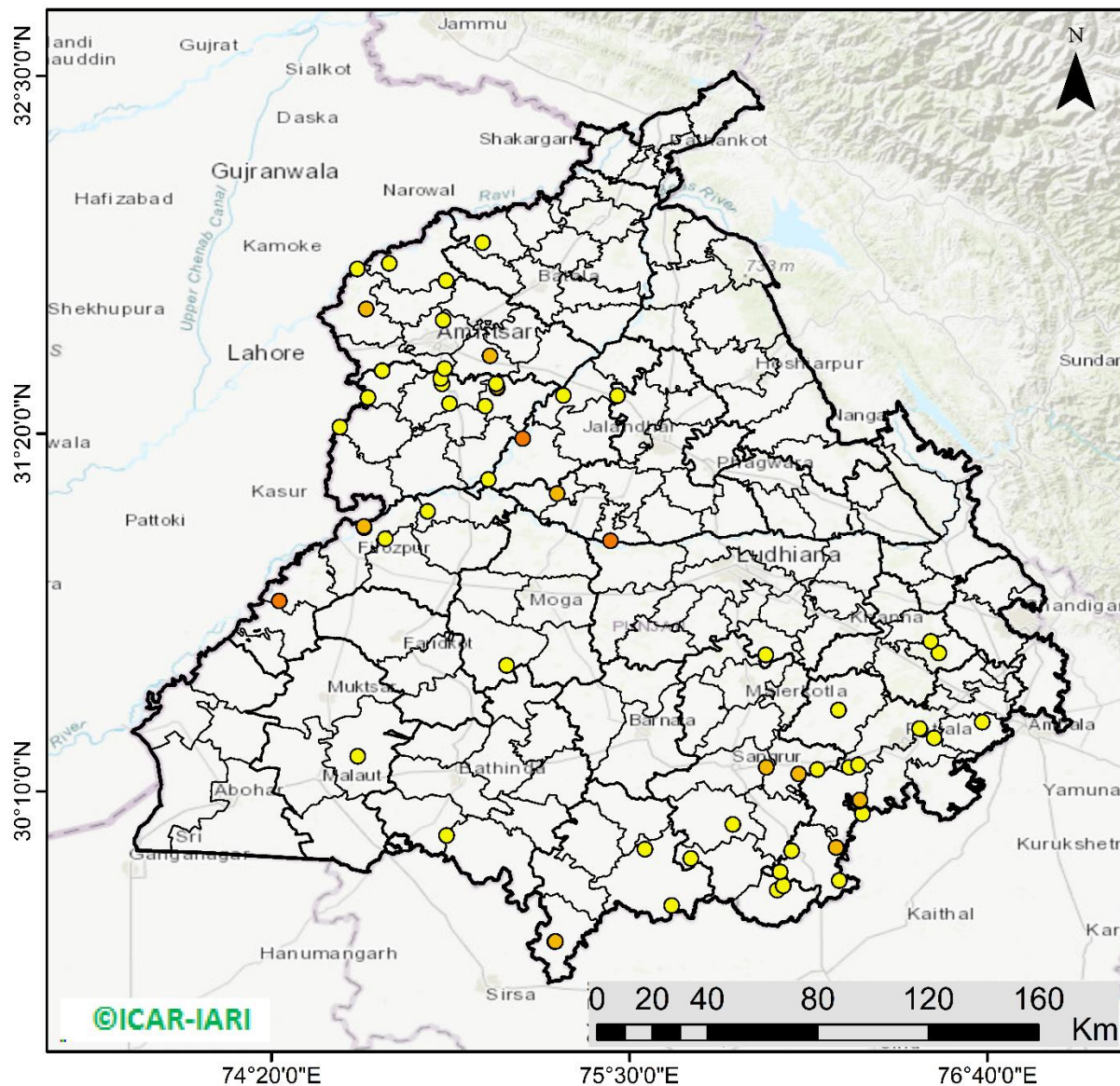


Delhi Cumulative



Punjab

RICE RESIDUE BURNING IN PUNJAB



59 burning events detected in Punjab during (18th Oct 2024)

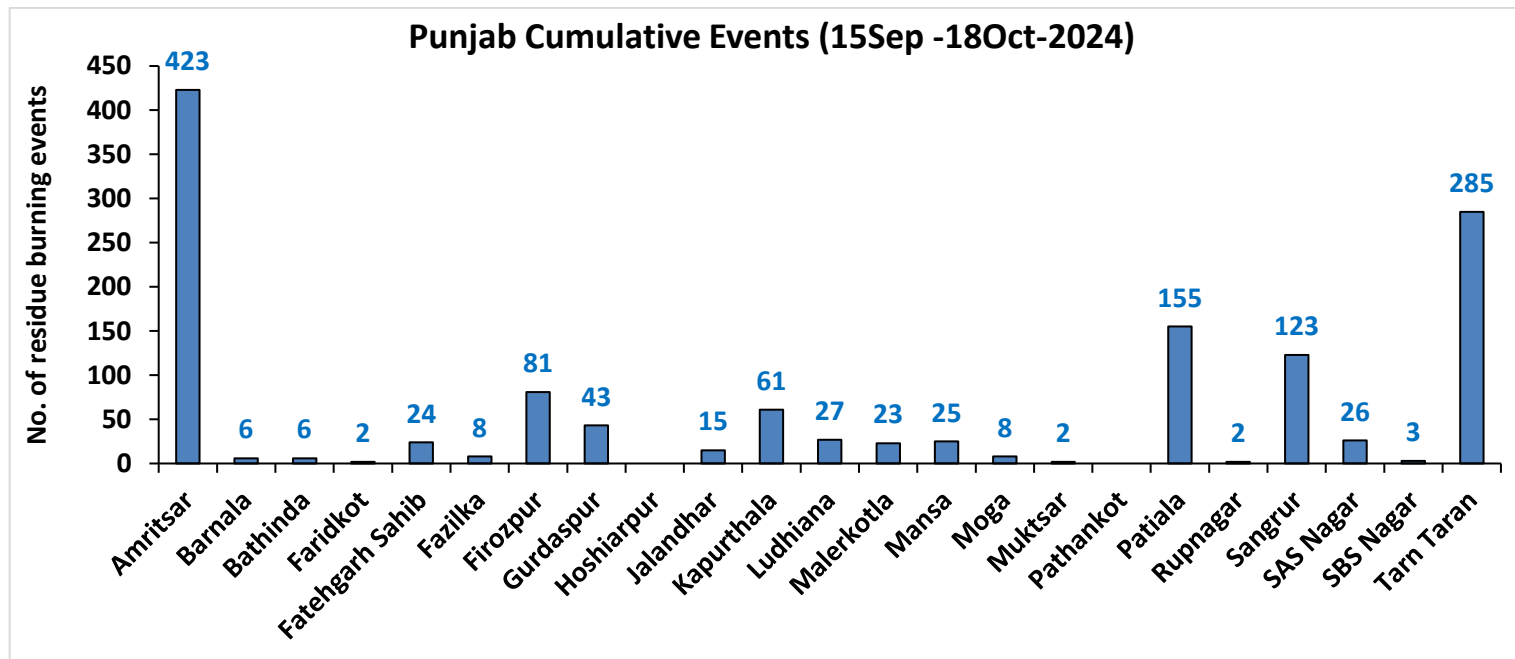
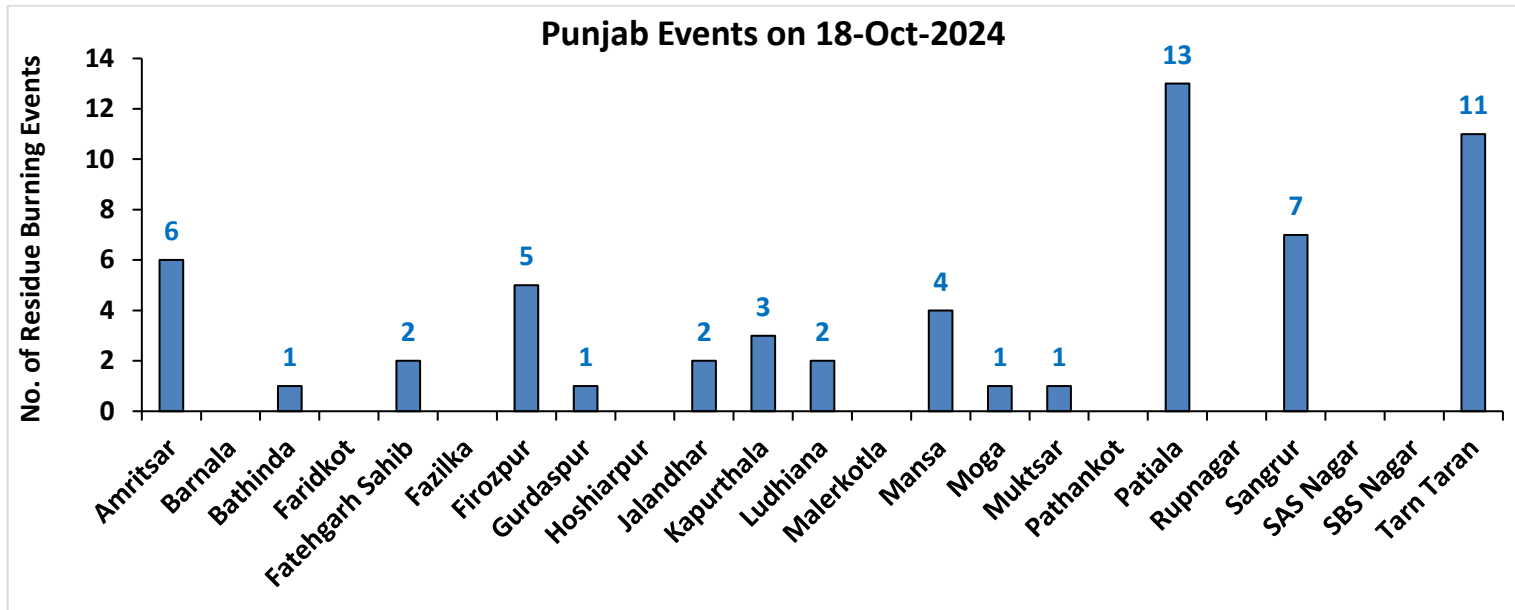
Fire Intensity (W/m²)

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



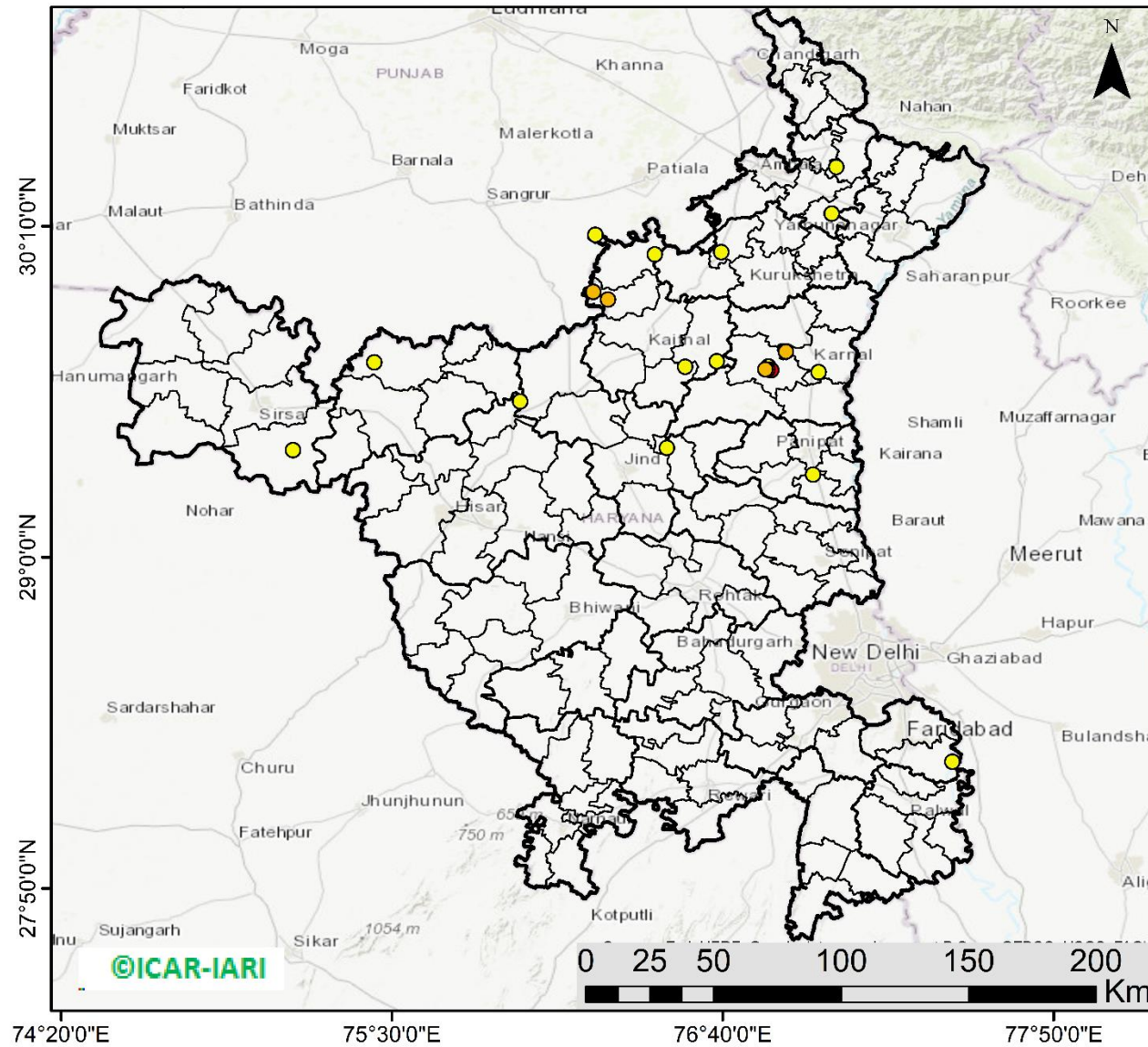
http://103.111.37.126/icar_geoportal/

District-wise cumulative number of residues burning events in Punjab (15Sep-18Oct-2024)



Haryana

RICE RESIDUE BURNING IN HARYANA



26 burning events detected in Haryana on (18th Oct 2024)

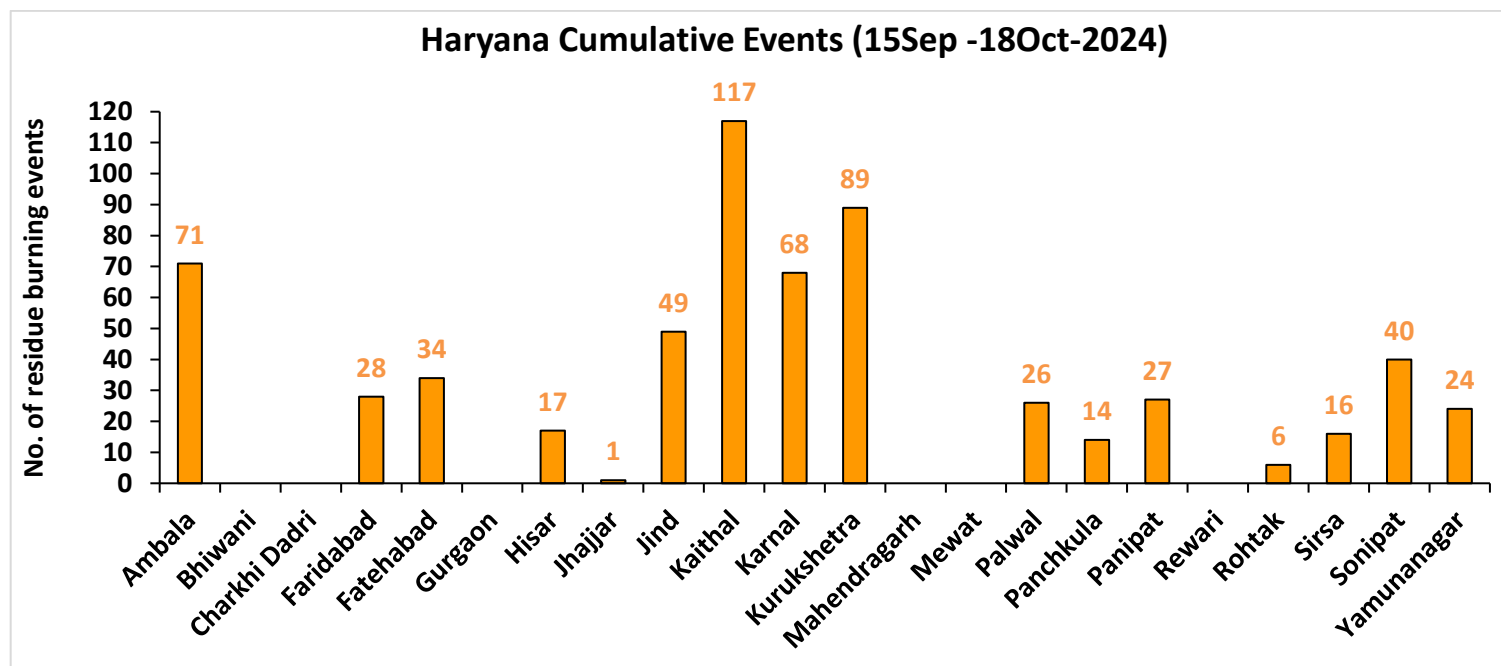
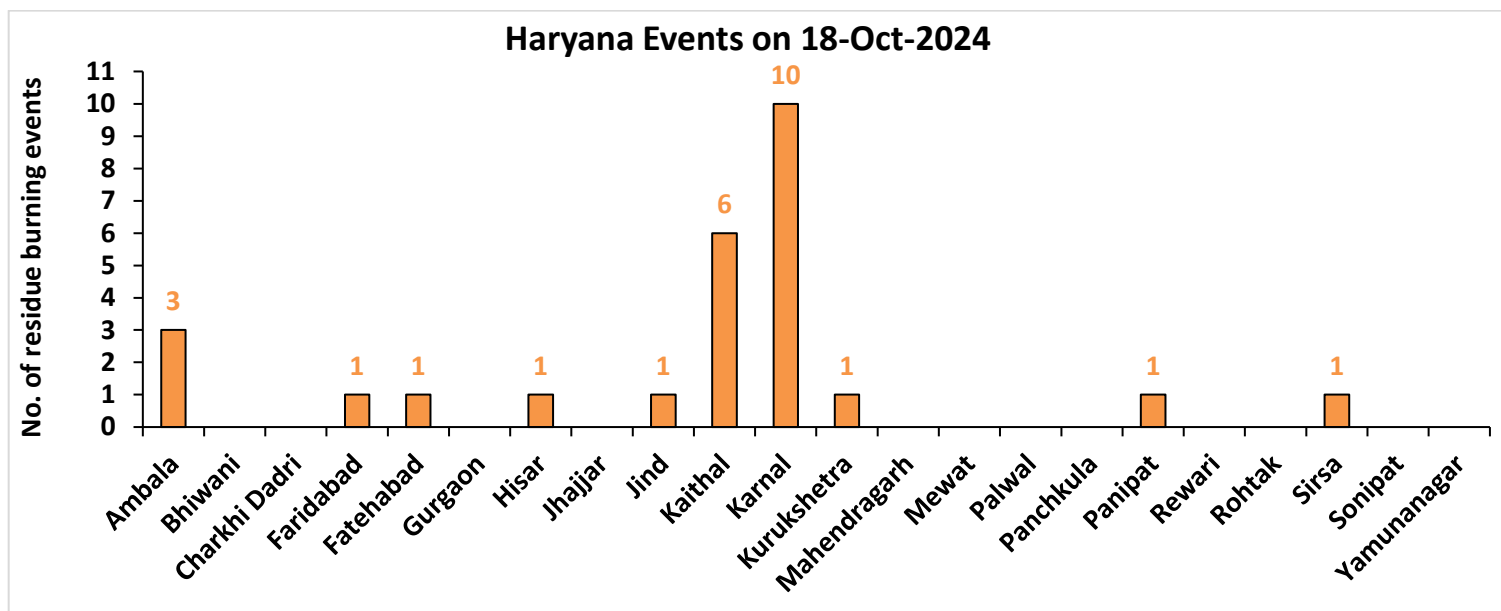
Fire Intensity (W/m²)

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



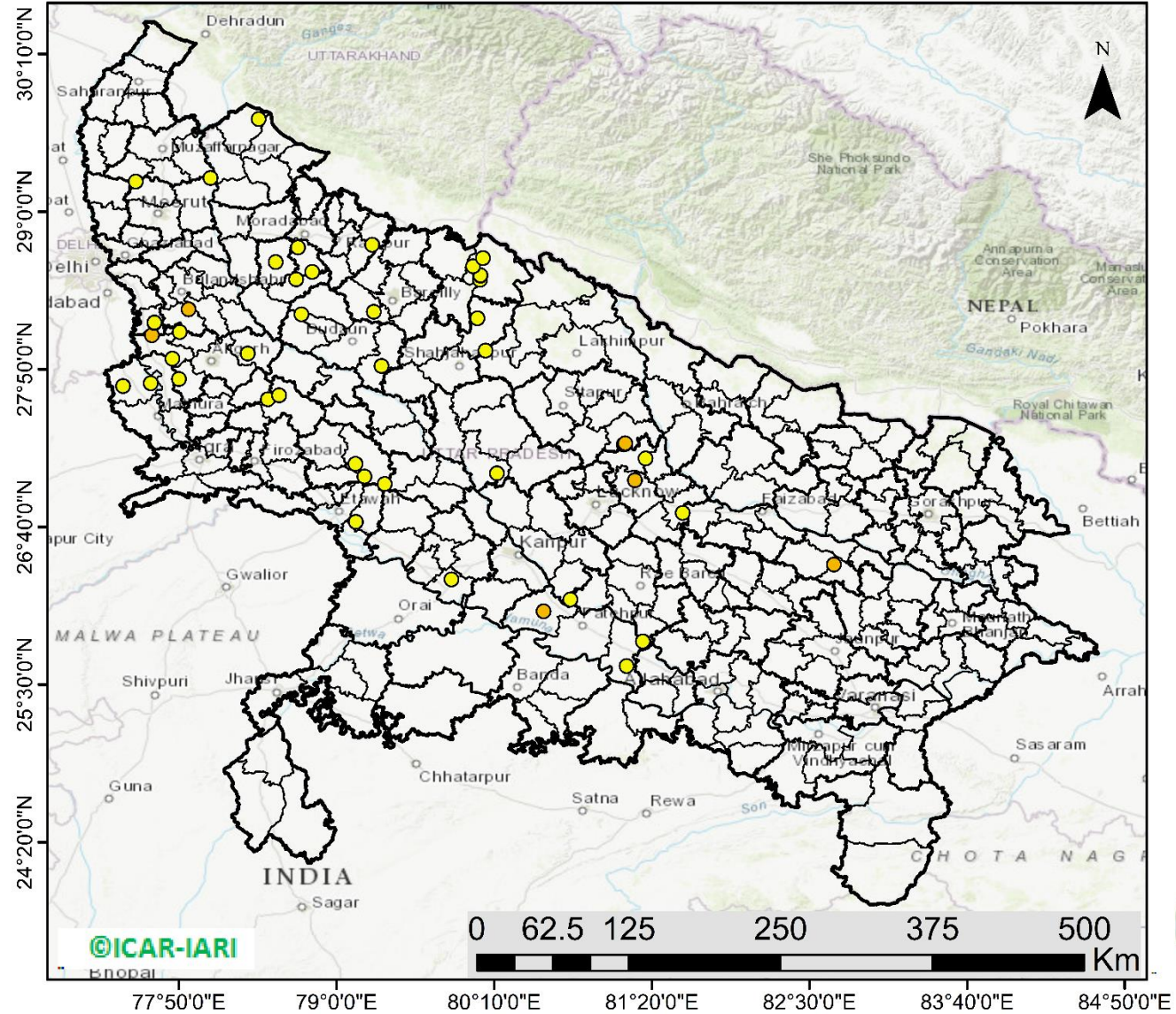
http://103.111.37.126/icar_geoportal/

District-wise cumulative number of residues burning events in Haryana (15Sep-18Oct-2024)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



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

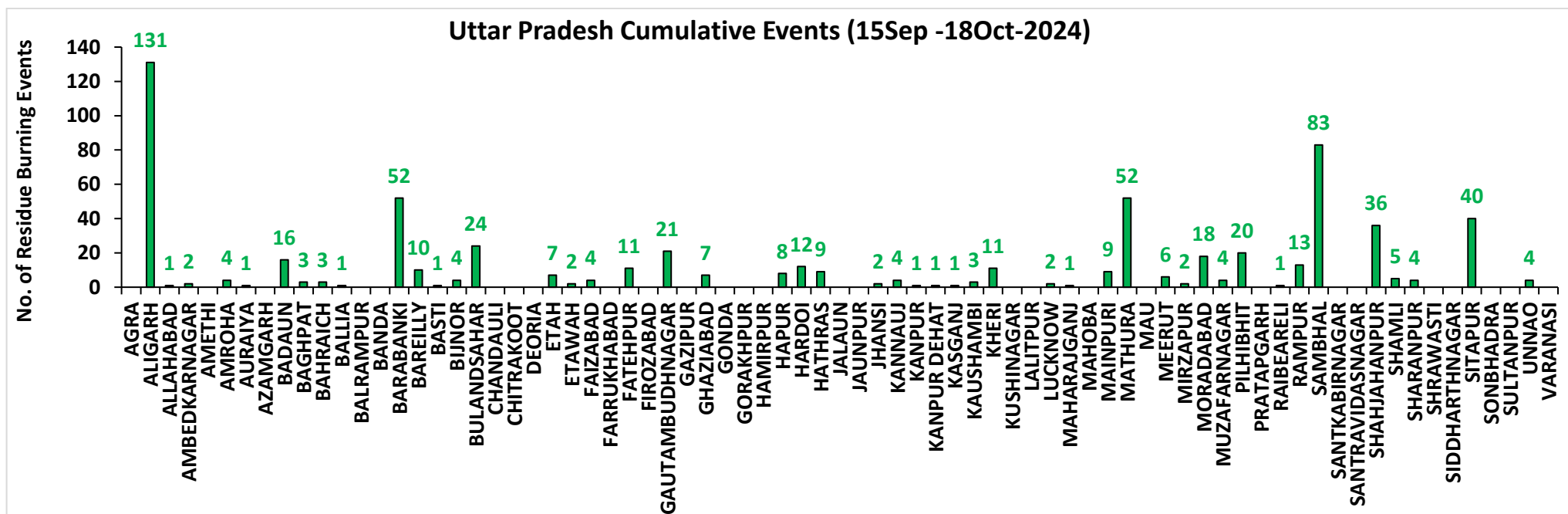
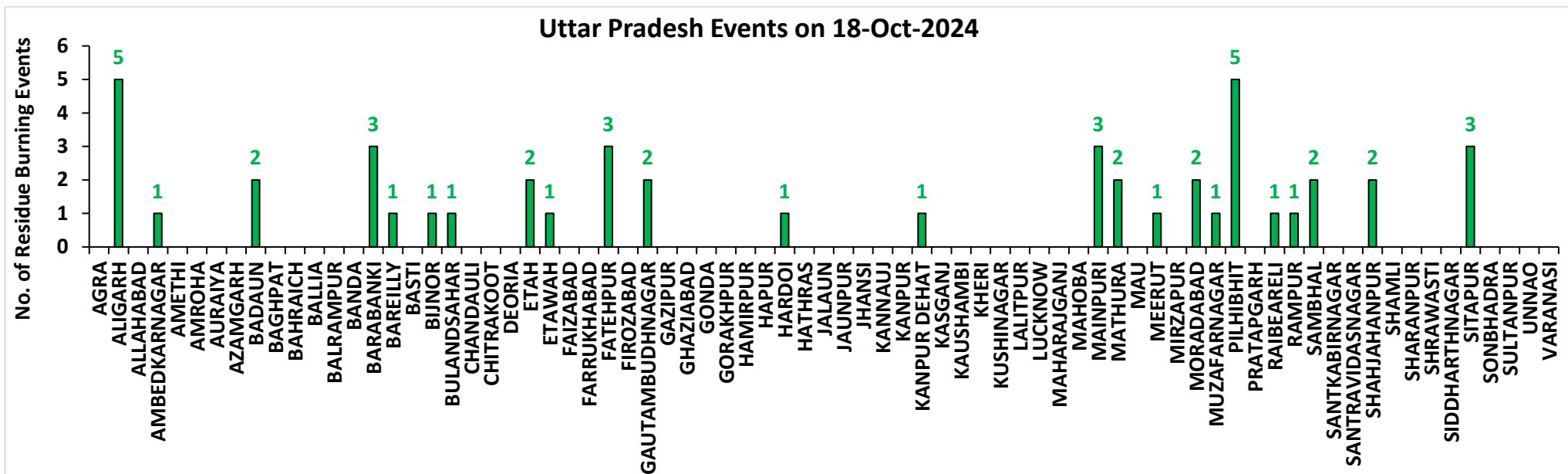
Fire Intensity (W/m2)

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



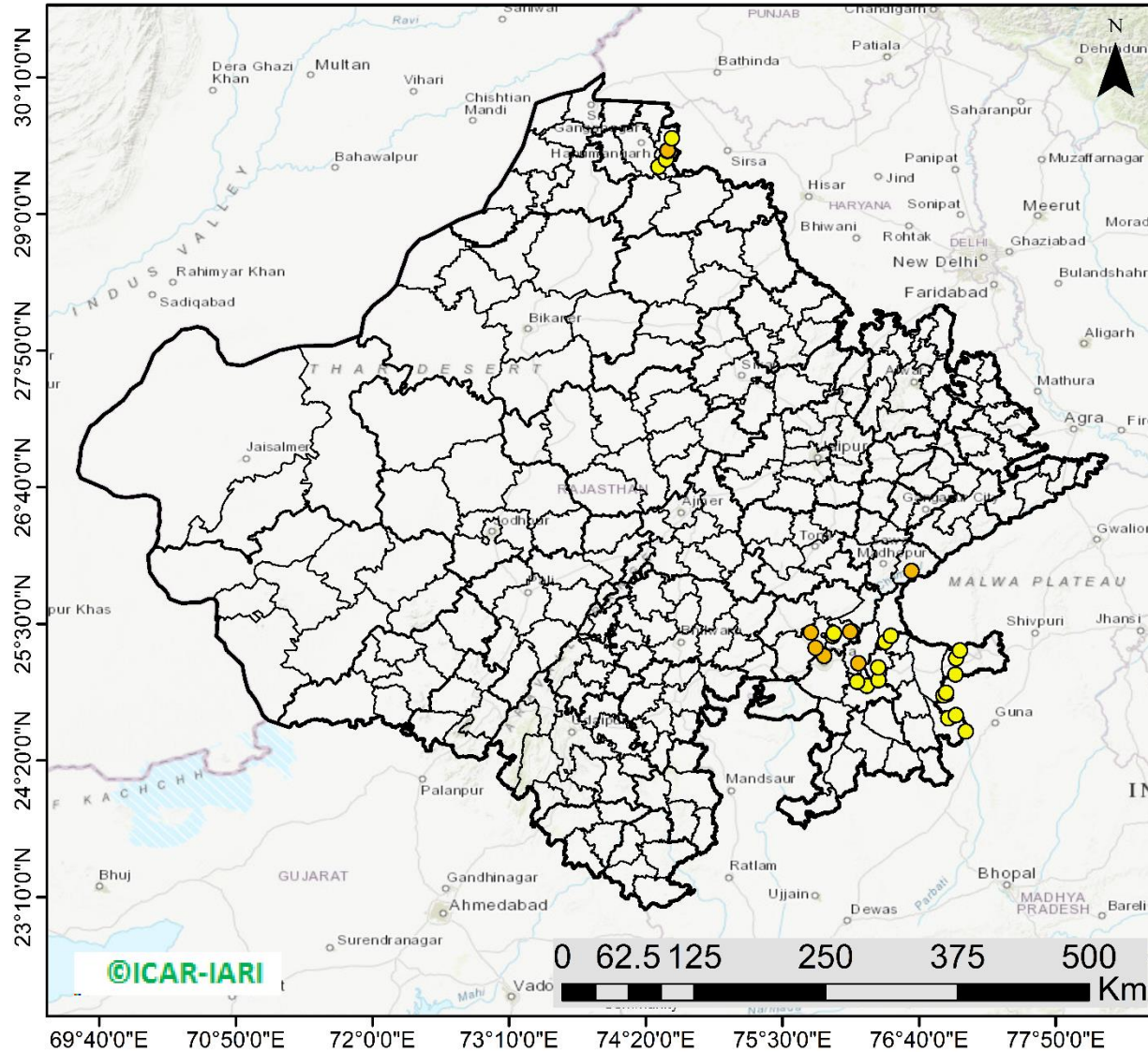
http://103.111.37.126/icar_geoportal/

District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-18Oct-2024)



Rajasthan

RICE RESIDUE BURNING IN RAJASTHAN



30 burning events
detected in Rajasthan on
(18th Oct 2024)

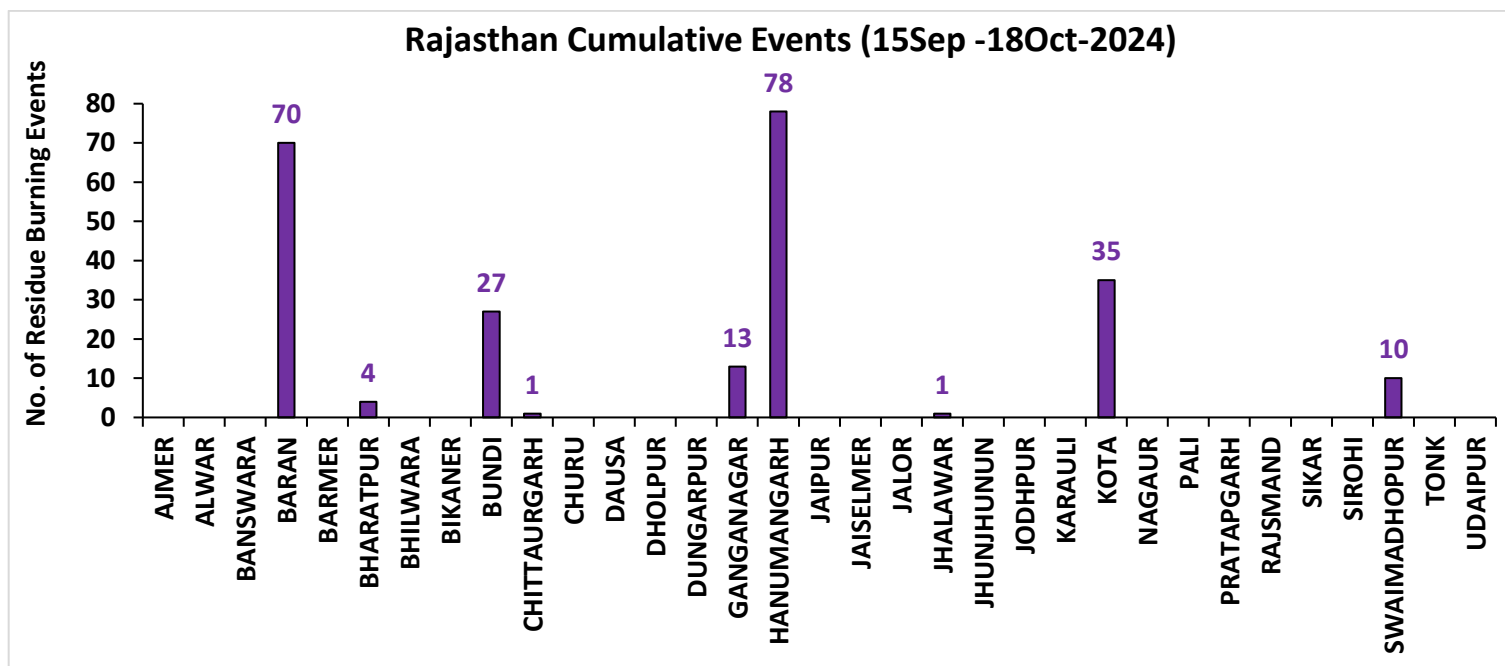
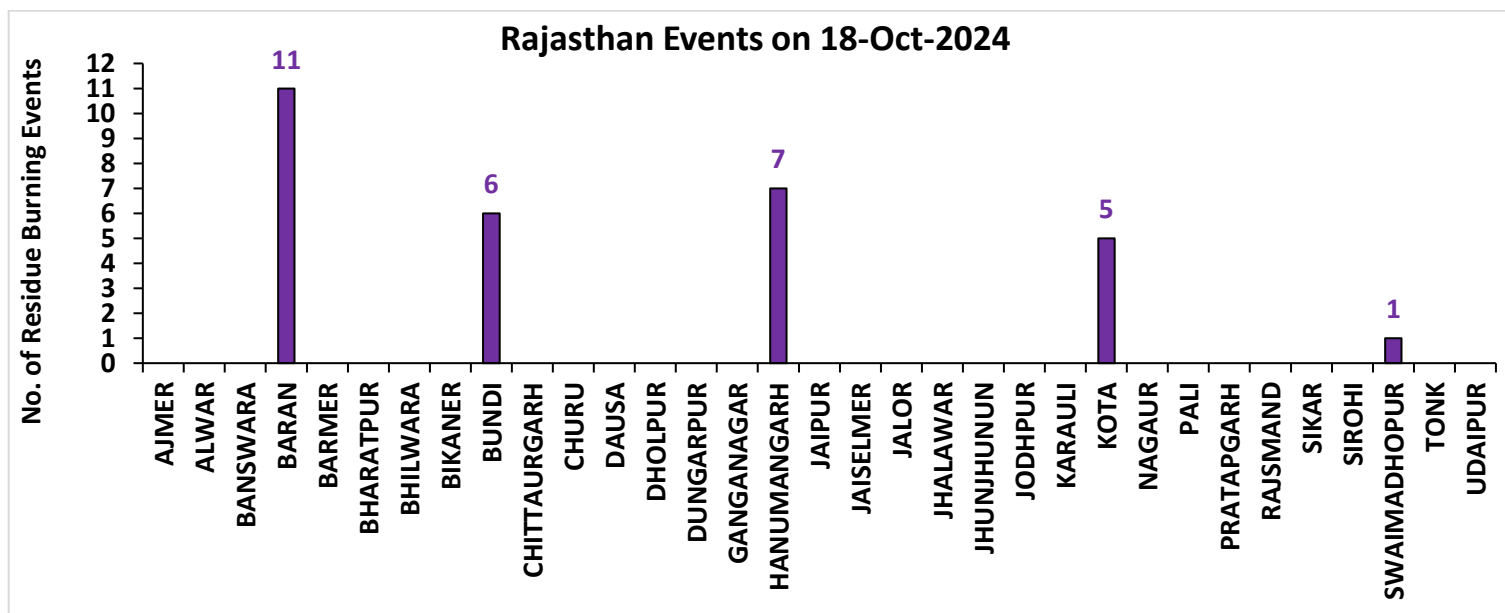
Fire Intensity (W/m²)

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



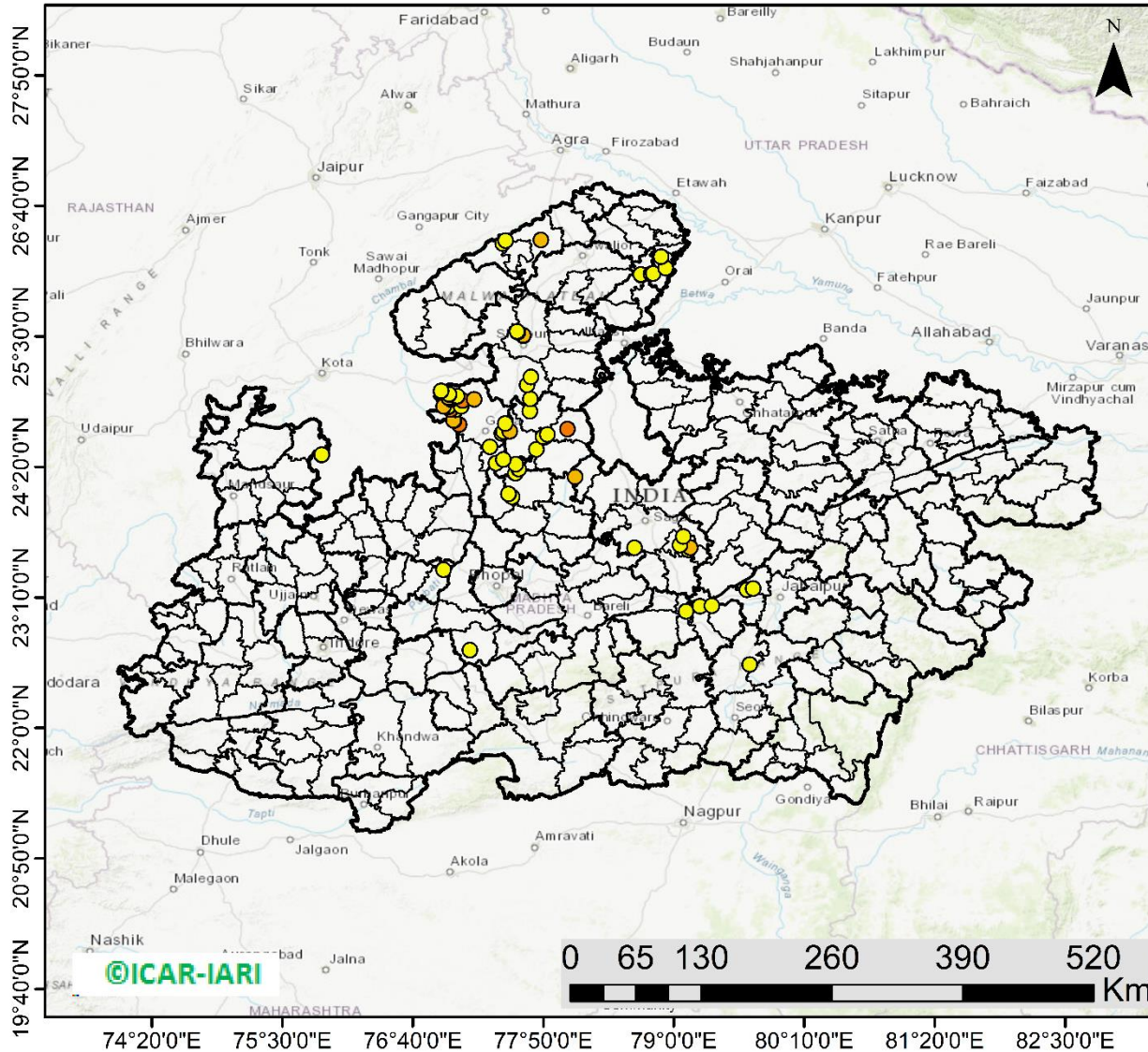
http://103.111.37.126/icar_geoportal/

District-wise cumulative number of residues burning events in Rajasthan (15Sep-18Oct-2024)



Madhya Pradesh

RICE RESIDUE BURNING IN MADHYA PRADESH



71 burning events detected in MP on (18th Oct 2024)

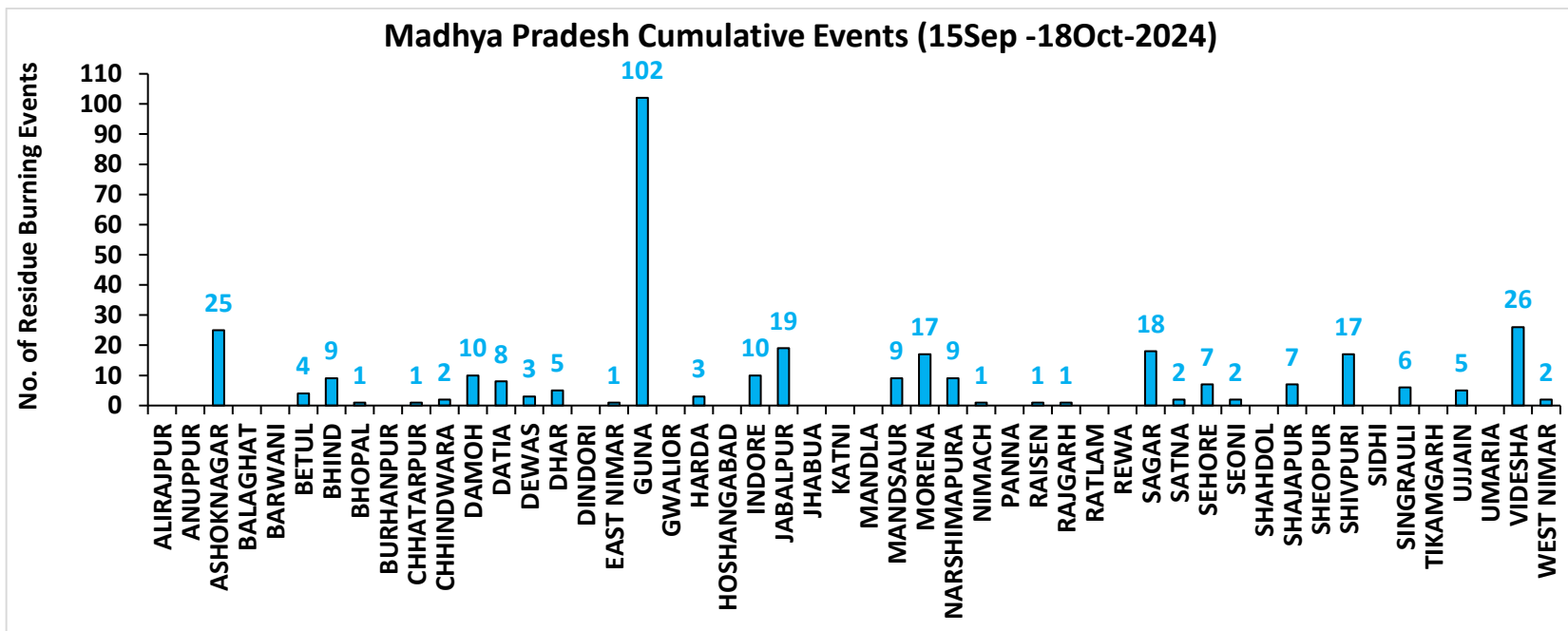
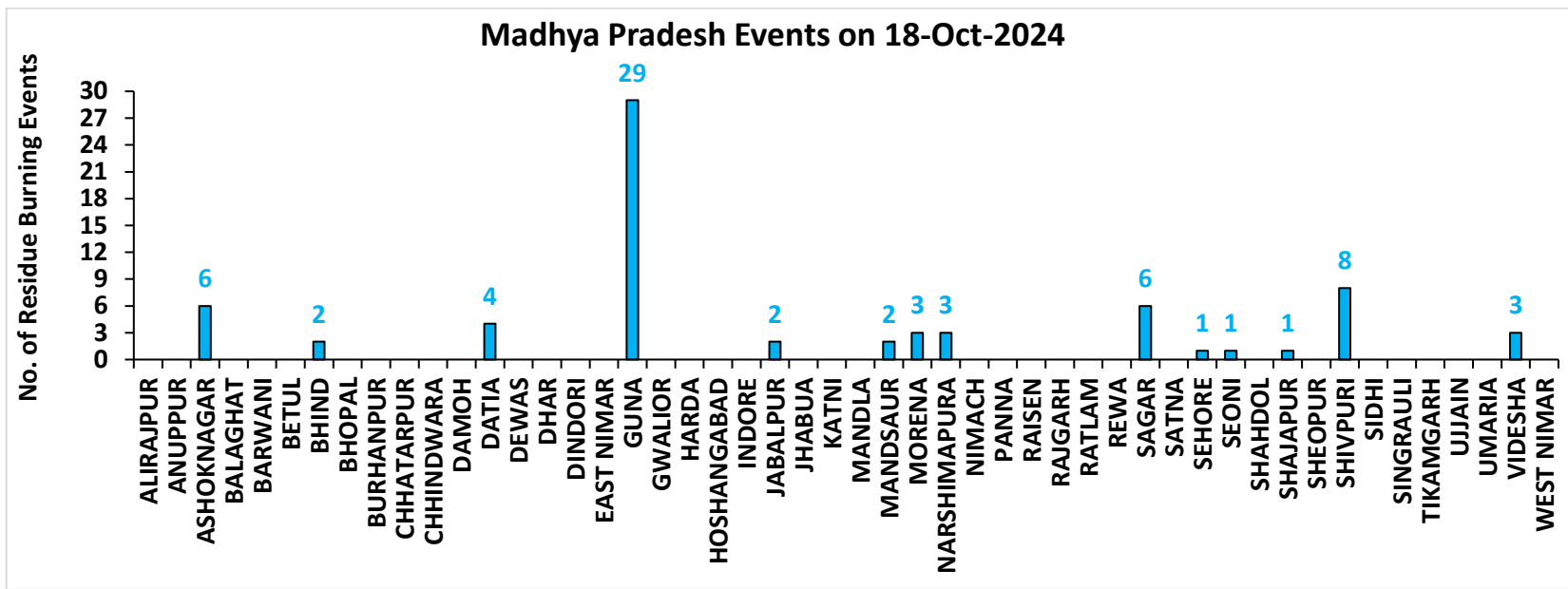
Fire Intensity (W/m²)

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



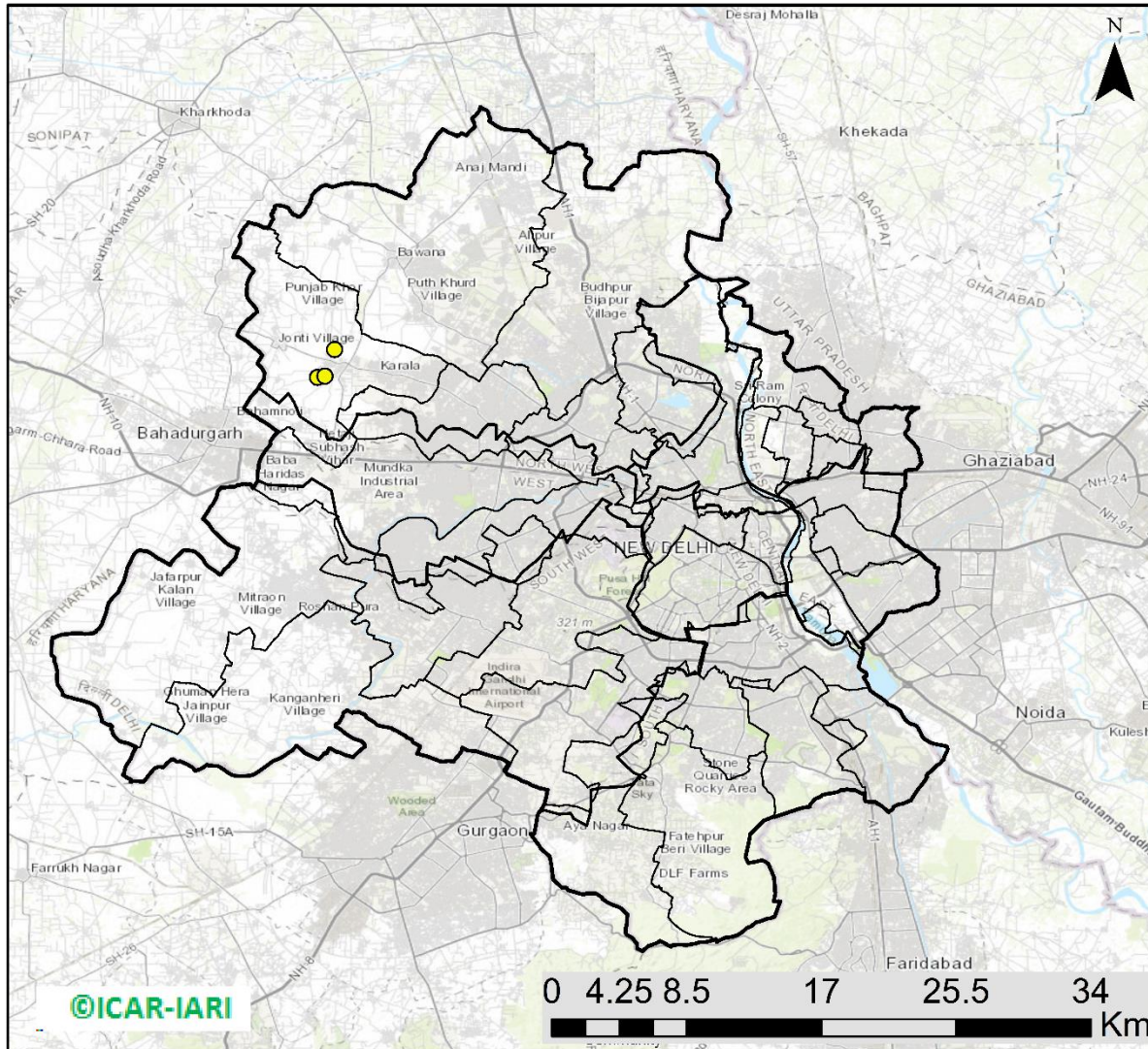
http://103.111.37.126/icar_geportal/

District-wise cumulative number of residues burning events in Madhya Pradesh (15Sep-18Oct-2024)



Delhi

RICE RESIDUE BURNING IN DELHI



03 burning events
detected in Delhi on
(18th Oct 2024)

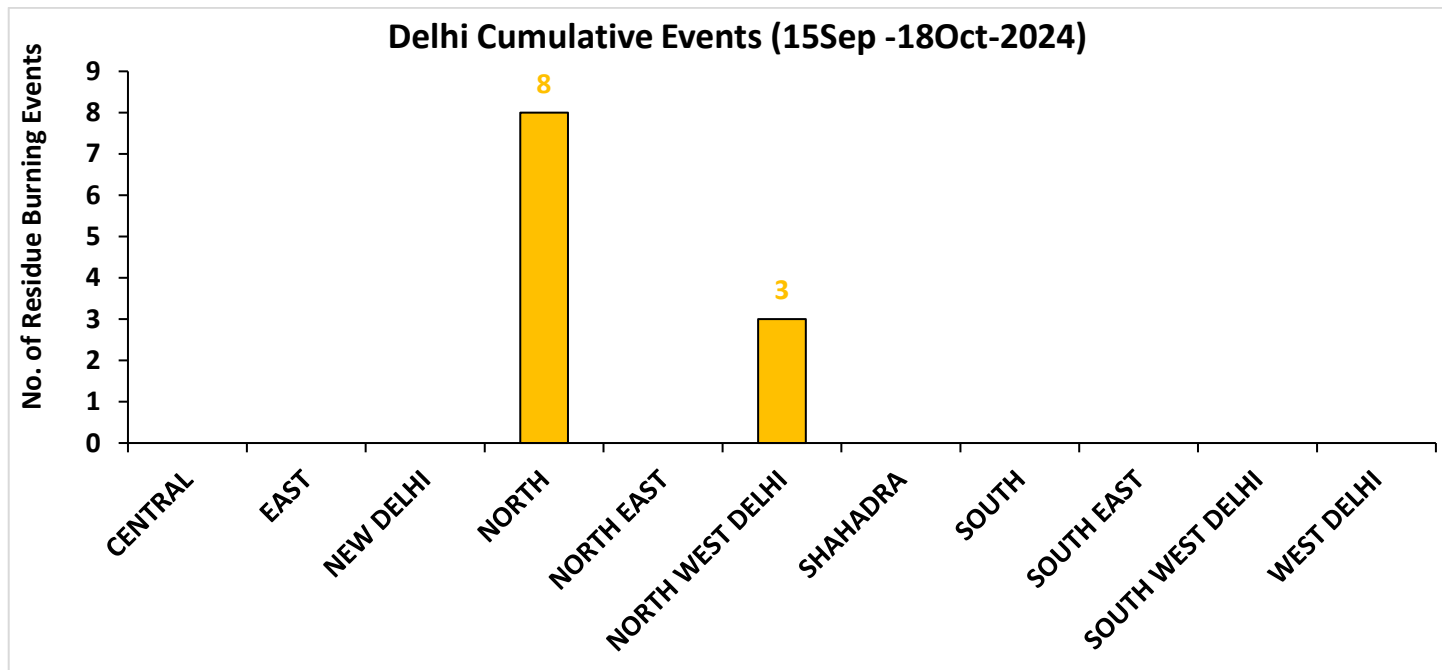
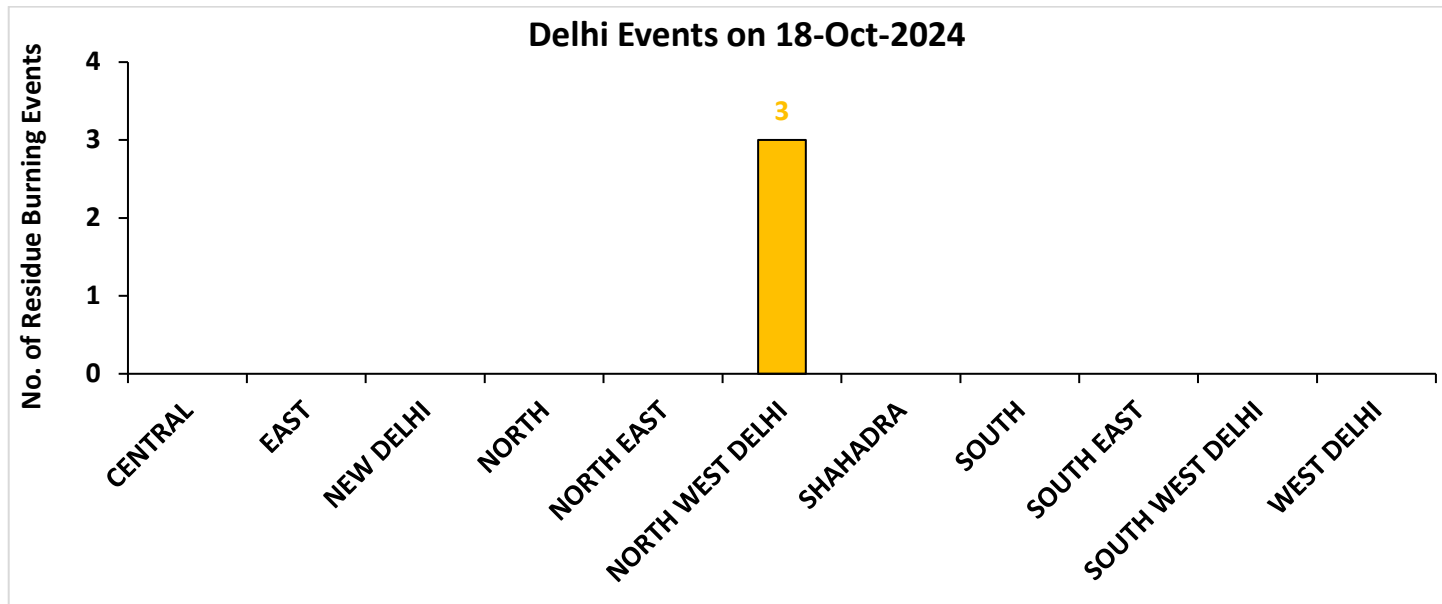
Fire Intensity (W/m²)

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



http://103.111.37.126/icar_geoportal/

District-wise cumulative number of residues burning events in Delhi (15Sep-18Oct-2024)



District-wise cumulative number of residues burning events detected in 2020, 2021, 2022, 2023 and 2024
(Period: 15 September-18 October)

(a) Punjab

District	15 Sep-18 Oct				
	2020	2021	2022	2023	2024
Amritsar	1969	606	706	644	423
Barnala	27	15	13	7	6
Bathinda	85	9	5	2	6
Faridkot	291	77	10	9	2
Fatehgarh Sahib	190	101	31	24	24
Fazilka	67	34	19	7	8
Firozpur	609	94	98	55	81
Gurdaspur	528	143	164	11	43
Hoshiarpur	65	11	2	2	0
Jalandhar	125	78	83	20	15
Kapurthala	303	100	116	81	61
Ludhiana	189	151	46	24	27
Malerkotla	0	0	0	3	23
Mansa	62	2	12	31	25
Moga	90	41	41	11	8
Muktsar	47	22	5	1	2
Pathankot	3	0	0	0	0
Patiala	644	256	90	148	155
Rupnagar	44	16	4	1	2
Sangrur	165	45	48	78	123
SAS NAGAR (Mohali)	50	27	11	54	26
SBS Nagar	16	9	2	2	3
Tarn Taran	1860	609	683	192	285
Total	7429	2446	2189	1407	1348

(b) Haryana

District	15 Sep-18 Oct				
	2020	2021	2022	2023	2024
AMBALA	123	54	28	80	71
BHIWANI	0	0	0	2	0
CHARKHI DADRI	0	0	0	0	0
FARIDABAD	0	1	0	2	28
FATEHABAD	62	50	34	82	34
GURGAON	0	0	0	0	0
HISAR	9	1	7	30	17
JHAJJAR	1	0	0	3	1
JIND	33	30	45	61	49
KAITHAL	204	249	126	51	117
KARNAL	313	343	83	39	68
KURUKSHETRA	238	205	98	67	89
MAHENDRAGARH	0	0	0	0	0
MEWAT	0	0	0	0	0
PALWAL	19	25	0	27	26
PANCHKULA	0	0	0	1	14
PANIPAT	9	15	5	14	27
REWARI	0	0	0	0	0
ROHTAK	1	0	0	4	6
SIRSA	11	4	4	6	16
SONIPAT	11	5	6	43	40
YAMUNANAGAR	57	45	28	42	24
Total	1091	1027	464	554	627

(c) Uttar Pradesh

District	15 Sep-18 Oct																
	2020	2021	2022	2023	2024	GAUTAMBUDHNAGAR	2	7	1	6	21	MUZAFARNAGAR	3	2	1	0	4
AGRA	2	0	0	0	0	GAZIPUR	0	0	0	0	0	PILHIBHIT	8	108	9	36	20
ALIGARH	34	21	2	63	131	GHAZIABAD	3	2	1	6	7	PRATAPGARH	1	0	0	0	0
ALLAHABAD	0	1	0	0	1	GONDA	0	0	0	0	0	RAIBEARELI	1	0	0	0	1
AMBEDKARNAGAR	0	0	0	0	2	GORAKHPUR	1	0	0	0	0	RAMPUR	33	50	4	14	13
AMETHI	0	1	4	1	0	HAMIRPUR	1	0	0	0	0	SAMBHAL	7	7	4	8	83
AMROHA	1	0	0	2	4	HAPUR	3	1	0	0	8	SANTKABIRNAGAR	0	0	0	0	0
AURAIYA	17	6	4	4	1	HARDOI	11	6	2	4	12	SANTRAVIDASNAGAR	0	0	0	0	0
AZAMGARH	0	0	0	0	0	HATHRAS	0	0	0	2	9	SHAHJAHANPUR	40	181	64	21	36
BADAUN	1	1	0	2	16	JALAUN	0	0	0	0	0	SHAMLI	19	11	3	3	5
BAGHPAT	3	1	1	1	3	JAUNPUR	0	0	0	1	0	SHARANPUR	31	17	1	0	4
BAHRAICH	5	2	4	0	3	JHANSI	10	6	0	3	2	SHRAWASTI	4	0	0	0	0
BALLIA	0	0	0	0	1	KANNAUJ	3	1	0	1	4	SIDDHARTHANAGAR	0	0	0	0	0
BALRAMPUR	1	1	1	0	0	KANPUR	2	7	0	2	1	SITAPUR	13	9	0	2	40
BANDA	0	0	0	0	0	KANPUR DEHAT	7	1	0	3	1	SONBHADRA	0	0	0	0	0
BARABANKI	12	20	0	18	52	KASGANJ	1	2	0	1	1	SULTANPUR	0	0	0	0	0
BAREILLY	15	15	2	10	10	KAUSHAMBI	9	3	0	6	3	UNNAO	5	0	0	2	4
BASTI	3	1	0	0	1	KHERI	40	54	8	3	11	VARANASI	0	0	0	0	0
BIJNOR	5	3	1	5	4	KUSHINAGAR	0	0	0	0	0	Total	455	620	128	328	657
BULANDSAHAR	10	2	2	5	24	LALITPUR	0	1	2	0	0						
CHANDAULI	0	0	0	0	0	LUCKNOW	2	0	0	1	2						
CHITRAKOOT	0	0	0	0	0	MAHARAJGANJ	0	0	0	0	1						
DEORIA	0	0	0	2	0	MAHOBA	3	0	0	0	0						
ETAH	6	6	0	8	7	MAINPURI	8	7	3	6	9						
ETAWAH	2	7	0	11	2	MATHURA	22	27	0	53	52						
FAIZABAD	1	0	0	0	4	MAU	0	0	0	0	0						
FARRUKHABAD	0	0	0	0	0	MEERUT	11	4	1	2	6						
FATEHPUR	18	6	1	6	11	MIRZAPUR	6	5	2	0	2						
FIROZABAD	4	4	0	2	0	MORADABAD	5	3	0	2	18						

(d) Delhi

District	15 Sep-18 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	3	2	8
NORTH EAST	0	0	0	0	0
NORTH WEST DELHI	1	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	0	0	0	0	0
Total	4	0	3	2	11

(e) Rajasthan

District	15 Sep-18 Oct				
	2020	2021	2022	2023	2024
AJMER	0	0	0	0	0
ALWAR	1	0	0	0	0
BANSWARA	0	0	0	0	0
BARAN	88	0	5	107	70
BARMER	2	0	0	0	0
BHARATPUR	1	0	0	2	4
BHILWARA	2	0	0	0	0
BIKANER	1	0	0	0	0
BUNDI	10	0	15	21	27
CHITTAURGARH	0	2	2	7	1
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	3	0	1	9	13
HANUMANGARH	121	26	6	40	78
JAIPUR	1	0	0	0	0
JAISELMER	2	0	0	0	0
JALOR	0	0	0	0	0
JHALAWAR	1	0	1	6	1
JHUNJHUNUN	1	0	0	0	0
JODHPUR	1	0	0	0	0
KARALI	1	0	0	0	0
KOTA	27	1	6	56	35
NAGOUR	0	0	0	0	0
PALI	1	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	7	0	1	16	10
TONK	1	0	0	0	0
UDAIPUR	0	0	0	0	0
Total	277	29	37	264	239

(f) Madhya Pradesh

District	15 Sep-18 Oct										
	2020	2021	2022	2023	2024	PANNA	3	0	0	0	0
ALIRAJPUR	0	0	0	0	0	RAISEN	13	1	1	2	1
ANUPPUR	0	0	0	0	0	RAJGARH	7	1	3	7	1
ASHOKNAGAR	16	1	1	22	25	RATLAM	0	0	0	1	0
BALAGHAT	0	0	0	0	0	REWA	4	0	1	0	0
BARWANI	0	0	0	0	0	SAGAR	14	6	4	12	18
BETUL	1	0	0	2	4	SATNA	10	6	0	1	2
BHIND	9	1	0	7	9	SEHORE	7	3	5	11	7
BHOPAL	6	5	2	7	1	SEONI	27	5	0	3	2
BURHANPUR	0	0	0	0	0	SHAHDOL	0	0	0	0	0
CHHATARPUR	4	0	0	3	1	SHAJAPUR	5	0	0	7	7
CHHINDWARA	4	3	0	2	2	SHEOPUR	15	0	1	16	0
DAMOH	19	4	3	11	10	SHIVPURI	9	0	6	7	17
DATIA	71	8	0	40	8	SIDHI	0	0	0	0	0
DEWAS	3	0	0	6	3	SINGRAULI	0	0	0	0	6
DHAR	20	0	0	23	5	TIKAMGARH	1	0	0	2	0
DINDORI	0	0	0	0	0	UJJAIN	5	0	0	14	5
EAST NIMAR	2	1	3	1	1	UMARIA	0	0	0	0	0
GUNA	16	1	4	106	102	VIDESHA	60	8	4	22	26
GWALIOR	44	0	1	7	0	WEST NIMAR	6	0	0	3	2
HARDA	8	9	0	13	3	Total	472	84	46	419	333
HOSHANGABAD	26	8	0	14	0						
INDORE	2	0	0	12	10						
JABALPUR	7	4	3	11	19						
JHABUA	0	0	0	0	0						
KATNI	2	0	0	1	0						
MANDLA	1	0	0	0	0						
MANDSAUR	3	0	0	1	9						
MORENA	17	5	0	13	17						
NARSHIMAPURA	5	4	4	9	9						
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-18 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

13-Oct	266	132	120	154	162	47	91	15	29	90	36	42	0	19	76
14-Oct	605	229	82	89	97	69	98	30	41	49	9	68	5	18	52
15-Oct	449	660	169	69	144	106	363	36	127	42	15	149	0	35	78
16-Oct	654	429	206	0	99	80	176	76	4	14	21	121	6	14	59
17-Oct	1172	14	403	1	77	143	0	86	0	28	38	39	7	0	23
18-Oct	938	57	342	18	59	166	1	134	8	26	76	0	30	2	47
Total	7429	2446	2189	1407	1348	1091	1027	464	554	627	455	620	128	328	657

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
Total	4	0	3	2	11	277	29	37	264	239	472	84	46	419	333

Details of residue burning events in Punjab on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	AMRITSAR	AJNALA	S-NPP	31.83188	74.90263	13:15:45	D	2.00
2	AMRITSAR	AJNALA	S-NPP	31.88769	74.71731	02:05:45	N	0.70
3	AMRITSAR	CHOGAWAN	S-NPP	31.73912	74.64238	13:15:45	D	8.00
4	AMRITSAR	CHOGAWAN	S-NPP	31.86962	74.61371	13:15:45	D	2.20
5	AMRITSAR	JANDIALA GURU	S-NPP	31.58621	75.04591	13:15:45	D	5.80
6	AMRITSAR	VERKA	S-NPP	31.70267	74.89314	13:15:45	D	2.20
7	BATHINDA	SANGAT	S-NPP	30.02230	74.90454	13:15:45	D	3.70
8	FATEHGARH SAHIB	KHERA	S-NPP	30.61741	76.50858	13:15:45	D	3.20
9	FATEHGARH SAHIB	KHERA	S-NPP	30.65540	76.48214	13:15:45	D	4.20
10	FIROZPUR	FIROZPUR	S-NPP	31.02618	74.63579	13:15:45	D	6.40
11	FIROZPUR	FIROZPUR	S-NPP	31.02981	74.63489	13:15:45	D	6.40
12	FIROZPUR	GHALL KHURD	S-NPP	30.99004	74.70430	13:15:45	D	4.20
13	FIROZPUR	MAKHU	S-NPP	31.07936	74.84256	13:15:45	D	2.80
14	FIROZPUR	MAMDOT	S-NPP	30.78701	74.35938	13:15:45	D	11.90
15	GURDASPUR	DERA BABA NANAK	S-NPP	31.95551	75.02169	13:15:45	D	2.50
16	JALANDHAR	JALANDHAR WEST	S-NPP	31.45630	75.46112	13:15:45	D	2.70
17	JALANDHAR	LOHIAN	S-NPP	31.13739	75.26475	13:15:45	D	7.50

18	KAPURTHALA	DHILWAN	S-NPP	31.45719	75.28504	13:15:45	D	4.70
19	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.18326	75.04013	13:15:45	D	2.60
20	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.31692	75.15234	13:15:45	D	10.50
21	LUDHIANA	MALoud	S-NPP	30.61141	75.94446	13:15:45	D	4.10
22	LUDHIANA	SIDHWAN BET	S-NPP	30.98349	75.43871	13:15:45	D	10.90
23	MANSA	BUDHLADA	S-NPP	29.79393	75.63818	13:15:45	D	4.50
24	MANSA	BUDHLADA	S-NPP	29.97789	75.55087	13:15:45	D	2.90
25	MANSA	SARDULGARH	S-NPP	29.67645	75.25732	13:15:45	D	7.80
26	MANSA	SARDULGARH	S-NPP	29.67661	75.25911	13:15:45	D	8.30
27	MOGA	BAGHA PURANA	S-NPP	30.57684	75.10020	13:15:45	D	2.70
28	MUKTSAR	KOT BHAI AT GIDDERBAHA	S-NPP	30.28079	74.61495	13:15:45	D	4.60
29	PATIALA	GHANAUR	S-NPP	30.39200	76.65003	13:15:45	D	2.50
30	PATIALA	NABHA	S-NPP	30.43119	76.18134	13:15:45	D	2.10
31	PATIALA	PATIALA	S-NPP	30.24461	76.21662	13:15:45	D	1.70
32	PATIALA	PATIALA	S-NPP	30.25335	76.24644	13:15:45	D	3.40
33	PATIALA	PATIALA	S-NPP	30.37130	76.44588	13:15:45	D	2.60
34	PATIALA	PATRAN	S-NPP	29.87549	76.18425	02:05:45	N	0.80
35	PATIALA	PATRAN	S-NPP	29.90381	75.99122	13:15:45	D	2.70
36	PATIALA	PATRAN	S-NPP	29.97240	76.02871	13:15:45	D	3.50
37	PATIALA	PATRAN	S-NPP	29.98336	76.17372	13:15:45	D	5.70
38	PATIALA	SAMANA	S-NPP	30.09265	76.25935	13:15:45	D	2.10
39	PATIALA	SAMANA	S-NPP	30.13461	76.25086	02:05:45	N	5.30
40	PATIALA	SAMANA	S-NPP	30.13801	76.25151	02:05:45	N	5.30
41	PATIALA	SANAUR	S-NPP	30.34035	76.49312	13:15:45	D	2.70
42	SANGRUR	ANDANA	S-NPP	29.84403	75.98171	13:15:45	D	2.90
43	SANGRUR	ANDANA	S-NPP	29.85845	76.00168	13:15:45	D	1.80
44	SANGRUR	BHAWANIGARH	S-NPP	30.22327	76.05190	13:15:45	D	7.60
45	SANGRUR	BHAWANIGARH	S-NPP	30.23748	76.11305	13:15:45	D	3.60
46	SANGRUR	LEHRA GAGA	S-NPP	29.94740	75.70055	13:15:45	D	3.00
47	SANGRUR	SANGRUR	S-NPP	30.24474	75.94619	13:15:45	D	5.90
48	SANGRUR	SUNAM	S-NPP	30.05832	75.83719	13:15:45	D	3.40
49	TARN TARAN	BHIKHIWIND	S-NPP	31.35419	74.55660	13:15:45	D	4.90
50	TARN TARAN	GANDIWIND TATLA	S-NPP	31.45034	74.64814	13:15:45	D	4.10
51	TARN TARAN	GANDIWIND TATLA	S-NPP	31.53788	74.69469	13:15:45	D	2.20

52	TARN TARAN	KHADUR SAHIB	S-NPP	31.42217	75.03003	13:15:45	D	2.20
53	TARN TARAN	KHADUR SAHIB	S-NPP	31.48118	75.06977	13:15:45	D	2.30
54	TARN TARAN	KHADUR SAHIB	S-NPP	31.48472	75.06889	13:15:45	D	7.40
55	TARN TARAN	KHADUR SAHIB	S-NPP	31.49535	75.06629	13:15:45	D	2.20
56	TARN TARAN	NAUSHERA PANNUAN	S-NPP	31.43081	74.91367	13:15:45	D	2.90
57	TARN TARAN	TARN TARAN	S-NPP	31.49487	74.88991	13:15:45	D	5.00
58	TARN TARAN	TARN TARAN	S-NPP	31.51270	74.88550	13:15:45	D	3.10
59	TARN TARAN	TARN TARAN	S-NPP	31.54469	74.89757	13:15:45	D	3.20

Details of residue burning events in Haryana on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMBALA	BARARA	S-NPP	30.21025	77.05053	13:15:45	D	2.80
2	AMBALA	BARARA	S-NPP	30.21054	77.05109	13:15:45	D	3.40
3	AMBALA	NARAINGARH	S-NPP	30.37465	77.06735	13:15:45	D	1.90
4	FARIDABAD	BALLABGARH	S-NPP	28.27907	77.47632	13:15:45	D	3.70
5	FATEHABAD	RATIA	S-NPP	29.68645	75.43831	13:15:45	D	4.80
6	HISAR	UKLANA	S-NPP	29.54868	75.95228	13:15:45	D	1.80
7	JIND	PILLUKHERA	S-NPP	29.38508	76.46971	13:15:45	D	3.20
8	KAITHAL	GUHLA	S-NPP	30.06662	76.42704	13:15:45	D	3.70
9	KAITHAL	GUHLA	S-NPP	30.13564	76.21766	13:15:45	D	2.10
10	KAITHAL	PUNDRI	S-NPP	29.68999	76.64584	13:15:45	D	3.20
11	KAITHAL	RAJOUND	S-NPP	29.67100	76.53409	13:15:45	D	2.40
12	KAITHAL	SIWAN	S-NPP	29.90759	76.26216	13:15:45	D	7.50
13	KAITHAL	SIWAN	S-NPP	29.93457	76.21033	13:15:45	D	5.10
14	KARNAL	CHIRAO	S-NPP	29.66498	76.82597	02:05:45	N	39.60
15	KARNAL	CHIRAO	S-NPP	29.66767	76.82748	13:15:45	D	20.70
16	KARNAL	CHIRAO	S-NPP	29.66833	76.82661	02:05:45	N	39.60
17	KARNAL	CHIRAO	S-NPP	29.67168	76.82726	02:05:45	N	0.60
18	KARNAL	CHIRAO	AQUA	29.65900	76.83800	02:49:27	N	24.80
19	KARNAL	CHIRAO	AQUA	29.66000	76.83000	02:49:27	N	79.40
20	KARNAL	CHIRAO	AQUA	29.66100	76.82500	02:49:27	N	44.60
21	KARNAL	CHIRAO	AQUA	29.66200	76.81700	02:49:27	N	9.10

22	KARNAL	KARNAL	S-NPP	29.65192	77.00474	13:15:45	D	4.40
23	KARNAL	KARNAL	S-NPP	29.72400	76.88946	13:15:45	D	9.40
24	KURUKSHETRA	ISMAILABAD	S-NPP	30.07470	76.66145	13:15:45	D	2.50
25	PANIPAT	SAMALKHA	S-NPP	29.29111	76.98547	13:15:45	D	1.40
26	SIRSA	NATHUSARI CHOPTA	S-NPP	29.37693	75.15142	02:05:45	N	0.80

Details of residue burning events in Uttar Pradesh on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ALIGARH	ATRAULI	S-NPP	27.94847	78.34357	13:15:45	D	2.80
2	ALIGARH	GABHANA	S-NPP	28.10792	77.83987	13:15:45	D	2.00
3	ALIGARH	IGLAS	S-NPP	27.76005	77.83496	13:15:45	D	3.30
4	ALIGARH	KHAIR	S-NPP	27.91138	77.78648	02:05:45	N	1.60
5	ALIGARH	KHAIR	S-NPP	28.08449	77.63448	13:15:45	D	9.80
6	AMBEDKARNAGAR	JALALPUR	S-NPP	26.38692	82.68205	13:15:45	D	5.10
7	BADAUN	BISAULI	S-NPP	28.23905	78.74072	13:15:45	D	2.10
8	BADAUN	DATAGANJ	S-NPP	27.85704	79.33351	13:15:45	D	3.20
9	BARABANKI	FATEHPUR	S-NPP	27.17230	81.28802	13:15:45	D	3.30
10	BARABANKI	NAWABGANJ	S-NPP	27.01135	81.20880	13:15:45	D	7.60
11	BARABANKI	RAMSANEHIGHAT	S-NPP	26.76897	81.56330	13:15:45	D	3.20
12	BAREILLY	AONLA	S-NPP	28.25787	79.27653	13:15:45	D	1.70
13	BIJNOR	NAJIBABAD	S-NPP	29.68386	78.42406	13:15:45	D	3.00
14	BULANDSAHAR	BULANDSHAHR	S-NPP	28.27562	77.90549	13:15:45	D	5.80
15	ETAH	ETAH	S-NPP	27.61040	78.49224	13:15:45	D	1.90
16	ETAH	ETAH	S-NPP	27.63937	78.57588	13:15:45	D	3.50
17	ETAWAH	BHARTHNA	S-NPP	26.70315	79.14445	13:15:45	D	2.80
18	FATEHPUR	BINKI	S-NPP	26.04165	80.53269	13:15:45	D	5.50
19	FATEHPUR	KHAGA	S-NPP	25.63590	81.14783	13:15:45	D	2.30
20	FATEHPUR	KHAGA	S-NPP	25.81799	81.26813	13:15:45	D	2.00
21	GAUTAMBUDHNAGAR	JEVAR	S-NPP	28.17520	77.65389	13:15:45	D	3.40
22	GAUTAMBUDHNAGAR	JEVAR	S-NPP	28.17857	77.65318	13:15:45	D	3.40
23	HARDOI	BILGRAM	S-NPP	27.06225	80.18826	13:15:45	D	2.50

24	KANPUR DEHAT	BHOGANIPUR	S-NPP	26.27773	79.85115	13:15:45	D	2.30
25	MAINPURI	BHOGAON	S-NPP	26.98375	79.35710	13:15:45	D	1.00
26	MAINPURI	BHOGAON	S-NPP	27.03840	79.20721	13:15:45	D	1.90
27	MAINPURI	BHOGAON	S-NPP	27.13292	79.14156	13:15:45	D	2.70
28	MATHURA	CHHATA	S-NPP	27.70857	77.42158	13:15:45	D	3.60
29	MATHURA	CHHATA	S-NPP	27.72887	77.62647	13:15:45	D	3.60
30	MEERUT	MAWANA	S-NPP	29.24821	78.06821	13:15:45	D	2.10
31	MORADABAD	BILARI	S-NPP	28.55279	78.82066	13:15:45	D	3.30
32	MORADABAD	BILARI	S-NPP	28.73383	78.71578	13:15:45	D	2.40
33	MUZAFARNAGAR	BUDHANA	S-NPP	29.22156	77.51492	13:15:45	D	2.20
34	PILHIBHIT	PURANPUR	S-NPP	28.49368	80.06269	02:05:45	N	0.80
35	PILHIBHIT	PURANPUR	S-NPP	28.52508	80.06532	02:05:45	N	0.60
36	PILHIBHIT	PURANPUR	S-NPP	28.52849	80.06607	02:05:45	N	0.50
37	PILHIBHIT	PURANPUR	S-NPP	28.59451	80.01122	02:05:45	N	1.30
38	PILHIBHIT	PURANPUR	S-NPP	28.65569	80.08421	02:05:45	N	0.50
39	RAIBEARELI	LALGANJ	S-NPP	26.12805	80.73104	13:15:45	D	2.90
40	RAMPUR	BILASPUR	S-NPP	28.75365	79.26411	02:05:45	N	0.80
41	SAMBHAL	CHANDAUSI	S-NPP	28.49772	78.70212	13:15:45	D	4.80
42	SAMBHAL	SAMBHAL	S-NPP	28.62589	78.55071	13:15:45	D	4.80
43	SHAHJAHANPUR	PUWANYA	S-NPP	27.97056	80.10317	02:05:45	N	1.00
44	SHAHJAHANPUR	PUWANYA	S-NPP	28.20943	80.04394	02:05:45	N	1.40
45	SITAPUR	MAHMUDABAD	S-NPP	27.27554	81.12624	13:15:45	D	4.30
46	SITAPUR	MAHMUDABAD	S-NPP	27.28060	81.13767	13:15:45	D	6.00
47	SITAPUR	MAHMUDABAD	S-NPP	27.28396	81.13708	13:15:45	D	6.30

Details of residue burning events in Rajasthan on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	BARAN	ANTA	S-NPP	25.01805	76.32018	13:15:45	D	2.70
2	BARAN	ANTA	S-NPP	25.12633	76.31831	13:15:45	D	4.30
3	BARAN	CHHABRA	S-NPP	24.58003	77.06493	13:15:45	D	3.50
4	BARAN	CHHABRA	S-NPP	24.69268	76.91695	13:15:45	D	2.30
5	BARAN	CHHABRA	S-NPP	24.71885	76.98154	13:15:45	D	3.70
6	BARAN	KISHANGUNJ	S-NPP	24.88798	76.87471	13:15:45	D	4.90
7	BARAN	KISHANGUNJ	S-NPP	24.91065	76.89803	13:15:45	D	4.10
8	BARAN	MANGROL	S-NPP	25.34360	76.37885	13:15:45	D	3.60
9	BARAN	SHAHBAD	S-NPP	25.06643	76.97804	13:15:45	D	1.50
10	BARAN	SHAHBAD	S-NPP	25.20396	76.98389	13:15:45	D	2.80
11	BARAN	SHAHBAD	S-NPP	25.27205	77.01566	13:15:45	D	3.40
12	BUNDI	BUNDI	S-NPP	25.29383	75.78399	13:15:45	D	5.20
13	BUNDI	BUNDI	S-NPP	25.42624	75.74367	13:15:45	D	5.10
14	BUNDI	KESHORAIPATAN	S-NPP	25.39444	75.92970	13:15:45	D	3.70
15	BUNDI	KESHORAIPATAN	S-NPP	25.41570	75.94036	13:15:45	D	4.80
16	BUNDI	KESHORAIPATAN	S-NPP	25.41942	75.93954	13:15:45	D	4.80
17	BUNDI	KESHORAIPATAN	S-NPP	25.43297	76.07873	13:15:45	D	5.50
18	HANUMANGARH	TIBI	S-NPP	29.40253	74.44236	13:15:45	D	2.40
19	HANUMANGARH	TIBI	S-NPP	29.46516	74.50632	13:15:45	D	2.90
20	HANUMANGARH	TIBI	S-NPP	29.53736	74.51839	13:15:45	D	8.50
21	HANUMANGARH	TIBI	S-NPP	29.53829	74.52097	13:15:45	D	8.00
22	HANUMANGARH	TIBI	S-NPP	29.54109	74.51748	13:15:45	D	8.50
23	HANUMANGARH	TIBI	S-NPP	29.54202	74.52007	13:15:45	D	8.00
24	HANUMANGARH	TIBI	S-NPP	29.64595	74.55658	13:15:45	D	4.30
25	KOTA	DIGOD	S-NPP	25.16266	76.14886	13:15:45	D	5.10
26	KOTA	LADPURA	S-NPP	25.22521	75.85643	13:15:45	D	5.20
27	KOTA	PIPALDA	S-NPP	25.39730	76.42574	13:15:45	D	2.90
28	KOTA	SANGOD	S-NPP	24.96949	76.22107	13:15:45	D	3.60
29	KOTA	SANGOD	S-NPP	25.00436	76.13800	13:15:45	D	1.40
30	SWAIMADHOPUR	KHANDAR	S-NPP	25.95045	76.60181	13:15:45	D	5.90

Details of residue burning events in Madhya Pradesh on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ASHOKNAGAR	ASHOKNAGAR	S-NPP	24.48897	77.77176	13:15:45	D	2.90
2	ASHOKNAGAR	ASHOKNAGAR	S-NPP	24.60109	77.83218	13:15:45	D	2.30
3	ASHOKNAGAR	ASHOKNAGAR	S-NPP	24.65113	77.53432	13:15:45	D	5.20
4	ASHOKNAGAR	CHANDERI	S-NPP	24.62201	77.87105	13:15:45	D	3.80
5	ASHOKNAGAR	CHANDERI	S-NPP	24.66992	78.04930	13:15:45	D	12.80
6	ASHOKNAGAR	ISAGARH	S-NPP	24.83044	77.71329	13:15:45	D	3.40
7	BHIND	LAHAR	S-NPP	26.10970	78.92754	13:15:45	D	2.70
8	BHIND	LAHAR	S-NPP	26.21160	78.88755	13:15:45	D	2.90
9	DATIA	SEONDHA	S-NPP	26.04724	78.71024	13:15:45	D	3.00
10	DATIA	SEONDHA	S-NPP	26.05329	78.70500	13:15:45	D	4.70
11	DATIA	SEONDHA	S-NPP	26.05781	78.79698	13:15:45	D	3.70
12	DATIA	SEONDHA	S-NPP	26.06096	78.81651	13:15:45	D	2.10
13	GUNA	ARON	S-NPP	24.27566	77.58471	13:15:45	D	1.90
14	GUNA	ARON	S-NPP	24.31410	77.61445	02:05:45	N	1.50
15	GUNA	ARON	S-NPP	24.35599	77.58698	13:15:45	D	2.70
16	GUNA	ARON	S-NPP	24.36572	77.41114	13:15:45	D	2.30
17	GUNA	ARON	S-NPP	24.39867	77.47598	13:15:45	D	5.00
18	GUNA	GUNA	S-NPP	24.51176	77.35693	13:15:45	D	2.90
19	GUNA	GUNA	S-NPP	24.63147	77.46288	13:15:45	D	2.70
20	GUNA	GUNA	S-NPP	24.64847	77.47719	13:15:45	D	1.90
21	GUNA	GUNA	S-NPP	24.71031	77.08065	13:15:45	D	14.30
22	GUNA	GUNA	S-NPP	24.72016	77.49364	13:15:45	D	4.30
23	GUNA	GUNA	S-NPP	24.74683	77.03605	13:15:45	D	10.90
24	GUNA	GUNA	S-NPP	24.74962	77.03082	13:15:45	D	8.30
25	GUNA	GUNA	S-NPP	24.84306	77.05030	13:15:45	D	4.90
26	GUNA	GUNA	S-NPP	24.84597	77.00339	13:15:45	D	10.30
27	GUNA	GUNA	S-NPP	24.87058	76.98569	13:15:45	D	3.10
28	GUNA	GUNA	S-NPP	24.87216	76.98392	13:15:45	D	4.60
29	GUNA	GUNA	S-NPP	24.87361	77.09911	13:15:45	D	3.40

30	GUNA	GUNA	S-NPP	24.87411	76.94308	13:15:45	D	7.20
31	GUNA	GUNA	S-NPP	24.92610	77.11240	13:15:45	D	14.60
32	GUNA	GUNA	S-NPP	24.93388	77.00952	13:15:45	D	7.30
33	GUNA	GUNA	S-NPP	24.93670	77.21498	13:15:45	D	6.60
34	GUNA	GUNA	S-NPP	24.94300	76.99834	13:15:45	D	4.40
35	GUNA	GUNA	S-NPP	24.95213	76.98715	13:15:45	D	7.30
36	GUNA	GUNA	S-NPP	24.96171	77.06358	13:15:45	D	3.00
37	GUNA	GUNA	S-NPP	24.96526	77.06283	13:15:45	D	3.00
38	GUNA	GUNA	S-NPP	24.98024	76.99161	13:15:45	D	3.90
39	GUNA	GUNA	S-NPP	24.98216	76.99008	13:15:45	D	4.70
40	GUNA	GUNA	S-NPP	25.01194	76.91991	13:15:45	D	3.30
41	GUNA	GUNA	AQUA	24.73800	77.03000	13:41:07	D	51.20
42	JABALPUR	PATAN	S-NPP	23.23337	79.65387	13:15:45	D	4.90
43	JABALPUR	PATAN	S-NPP	23.24572	79.71031	13:15:45	D	3.10
44	MANDSAUR	BHANPURA	S-NPP	24.43911	75.85091	13:15:45	D	1.60
45	MANDSAUR	BHANPURA	S-NPP	24.44221	75.85286	13:15:45	D	2.60
46	MORENA	JORA	S-NPP	26.36171	77.81280	13:15:45	D	6.00
47	MORENA	SABALGARH	S-NPP	26.32915	77.47193	13:15:45	D	1.60
48	MORENA	SABALGARH	S-NPP	26.35475	77.49696	13:15:45	D	1.30
49	NARSHIMAPURA	GOTECAON	S-NPP	23.09217	79.34075	13:15:45	D	2.60
50	NARSHIMAPURA	KARELI	S-NPP	23.04127	79.11035	13:15:45	D	2.80
51	NARSHIMAPURA	NARSIMHAPUR	S-NPP	23.08674	79.23432	13:15:45	D	1.90
52	SAGAR	BINA	S-NPP	24.24350	78.11895	13:15:45	D	5.20
53	SAGAR	REHLI	S-NPP	23.59067	79.13177	13:15:45	D	3.50
54	SAGAR	REHLI	S-NPP	23.61148	79.14781	13:15:45	D	6.60
55	SAGAR	REHLI	S-NPP	23.63454	79.05520	13:15:45	D	2.70
56	SAGAR	REHLI	S-NPP	23.71009	79.08578	13:15:45	D	2.10
57	SAGAR	SAGAR	S-NPP	23.61014	78.64950	13:15:45	D	1.80
58	SEHORE	NASRULLAHGANJ	S-NPP	22.69451	77.17693	13:15:45	D	2.60
59	SEONI	LAKHNADOU	S-NPP	22.56643	79.67972	13:15:45	D	2.90
60	SHAJAPUR	KALA PIPAL	S-NPP	23.41443	76.94215	13:15:45	D	4.10
61	SHIVPURI	KOLARAS	S-NPP	24.93979	77.71845	13:15:45	D	3.80
62	SHIVPURI	KOLARAS	S-NPP	25.06521	77.68922	13:15:45	D	3.10
63	SHIVPURI	KOLARAS	S-NPP	25.13646	77.72288	13:15:45	D	3.40

64	SHIVPURI	SHIVPURI	S-NPP	25.50478	77.65472	13:15:45	D	5.70
65	SHIVPURI	SHIVPURI	S-NPP	25.50822	77.65401	13:15:45	D	5.70
66	SHIVPURI	SHIVPURI	S-NPP	25.53698	77.60532	13:15:45	D	7.50
67	SHIVPURI	SHIVPURI	S-NPP	25.53972	77.60041	13:15:45	D	3.10
68	SHIVPURI	SHIVPURI	S-NPP	25.54317	77.59969	13:15:45	D	3.10
69	VIDESHA	LETERI	S-NPP	24.06406	77.55483	13:15:45	D	3.00
70	VIDESHA	LETERI	S-NPP	24.09114	77.52357	13:15:45	D	2.80
71	VIDESHA	LETERI	S-NPP	24.09131	77.52254	13:15:45	D	1.90

Details of residue burning events in Delhi on 18-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	NORTH WEST DELHI	KANJHAWALA	S-NPP	28.73020	76.99013	13:15:45	D	3.2
2	NORTH WEST DELHI	KANJHAWALA	S-NPP	28.73092	76.99435	13:15:45	D	3.2
3	NORTH WEST DELHI	KANJHAWALA	S-NPP	28.74602	76.99982	13:15:45	D	2.3

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.	JPSS-1 (NOAA -20)	VIIRS	375	Both
3.	JPSS-2 (NOAA-21)	VIIRS	375	Both
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

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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](#)
