

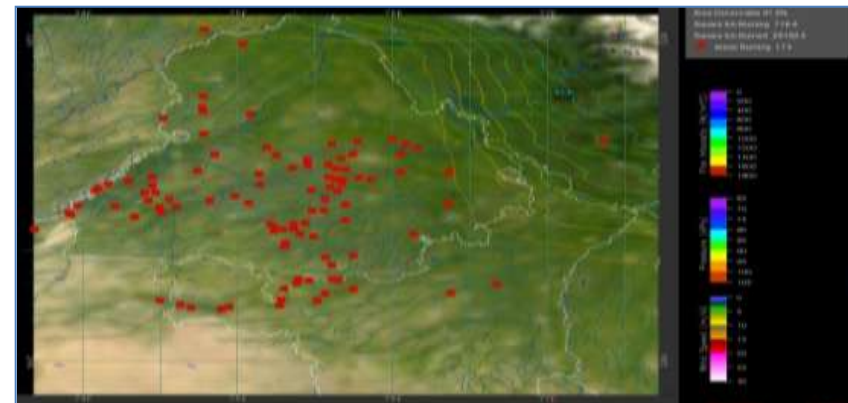


MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2023

**Bulletin
No. 34**

**Events Date:
18-Oct-2023**

**Issued on:
18-Oct-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**

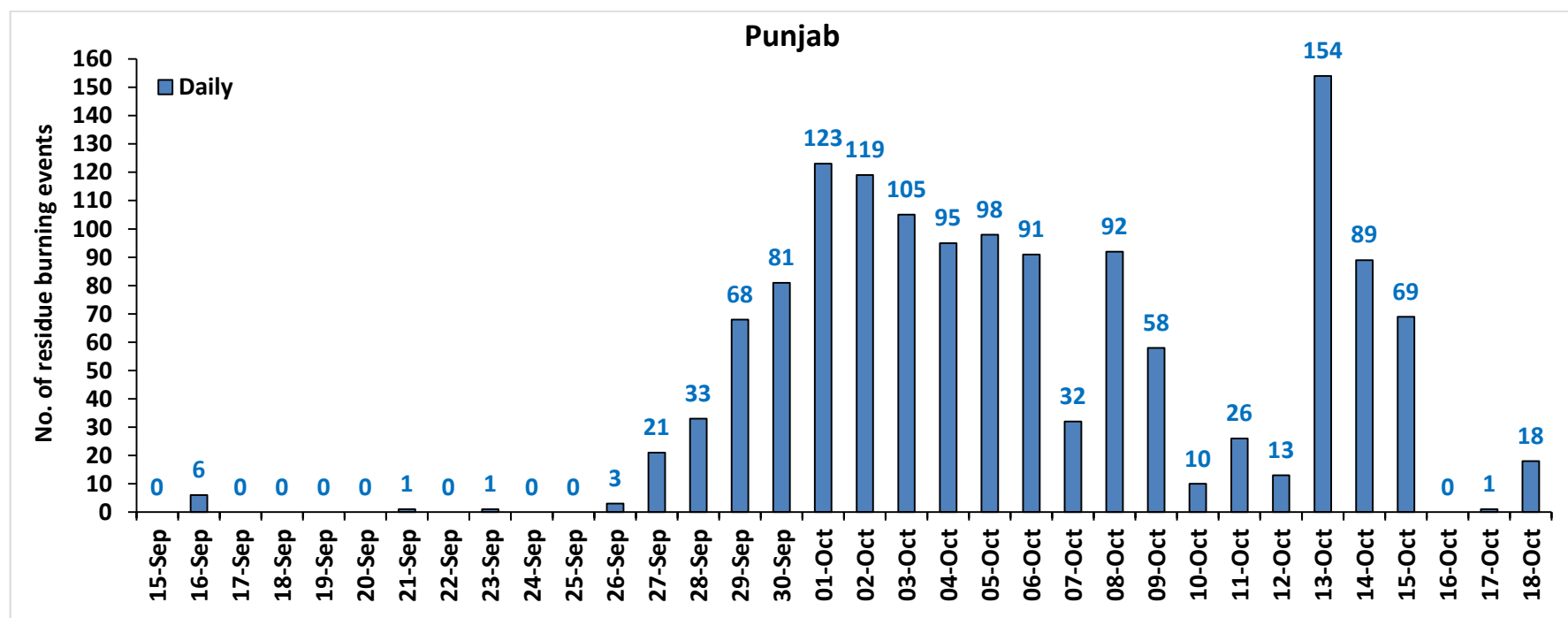
<http://creams.iari.res.in>



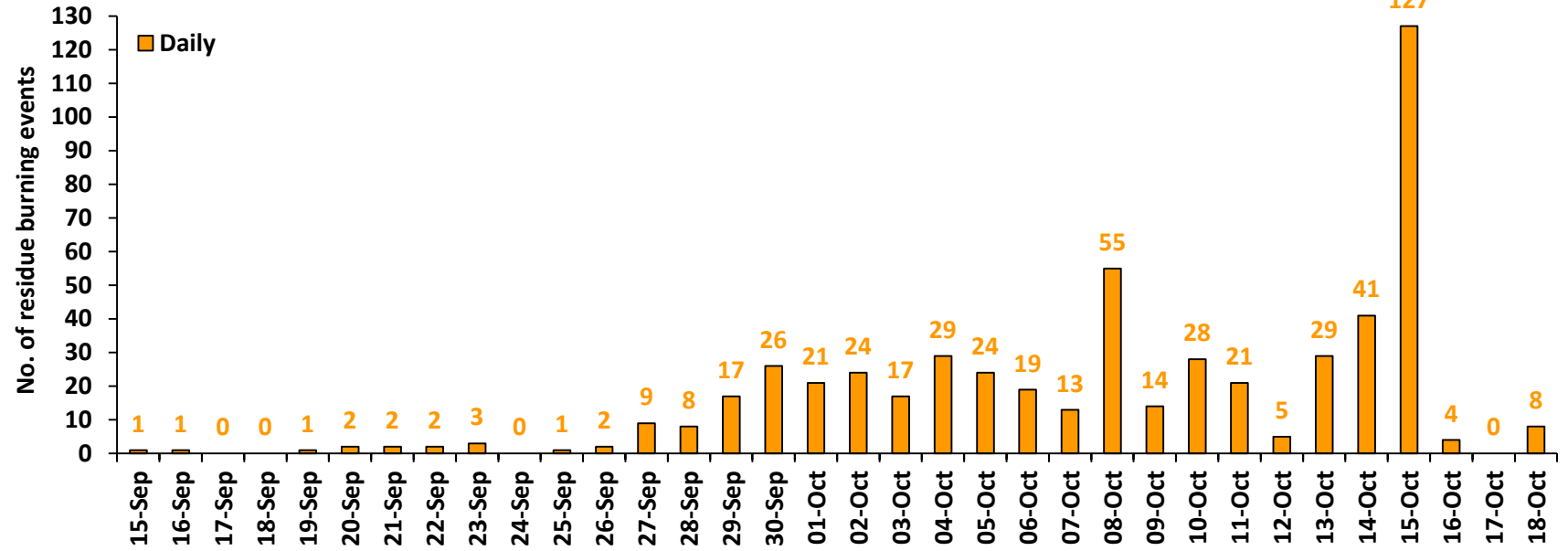
Highlights for 18-Oct-2023

- 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 **52** residue burning events in the six study States on 18-Oct-2023.
- The state wise events detected on 18-Oct-2023 were **18** in Punjab, **08** in Haryana, **02** in UP, **00** in Delhi, **11** in Rajasthan and **13** in MP.
- Total **2974** burning events were detected in the six states between 15-Sept-2023 and 18-Oct-2023, which are distributed as **1407**, **554**, **328**, **02**, **264** and **419** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of residue burning events was hampered by the presence of clouds over Western Rajasthan and Madhya Pradesh states.

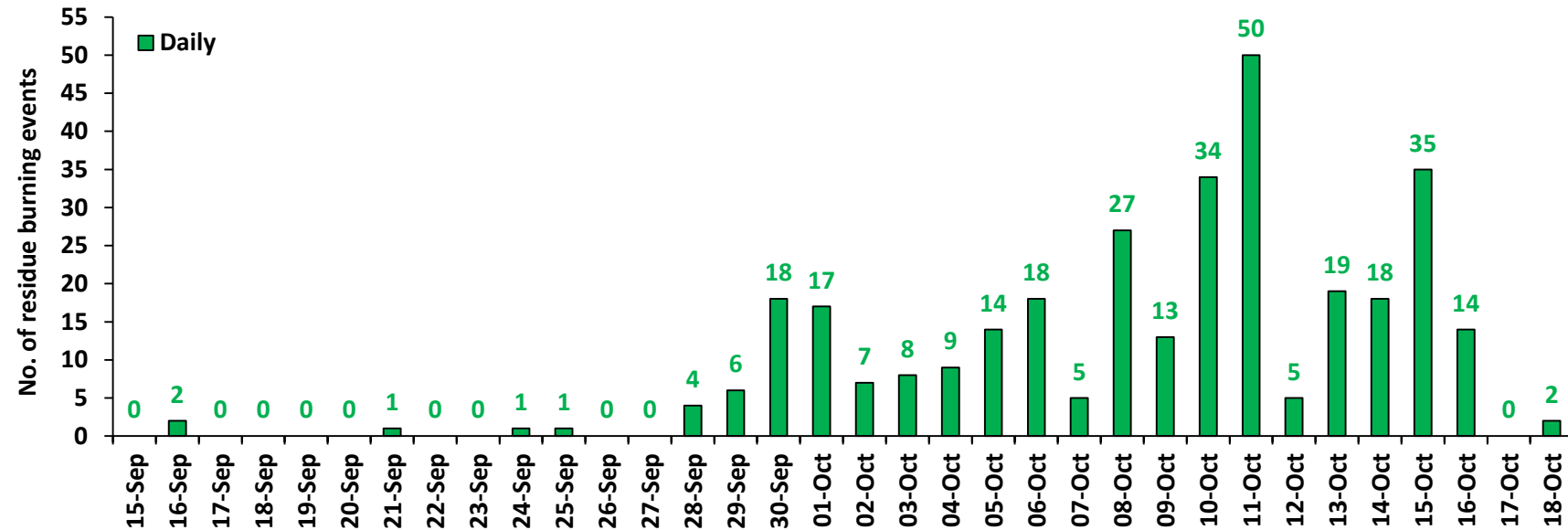
Temporal distribution of rice residue burning events for the study States in 2023



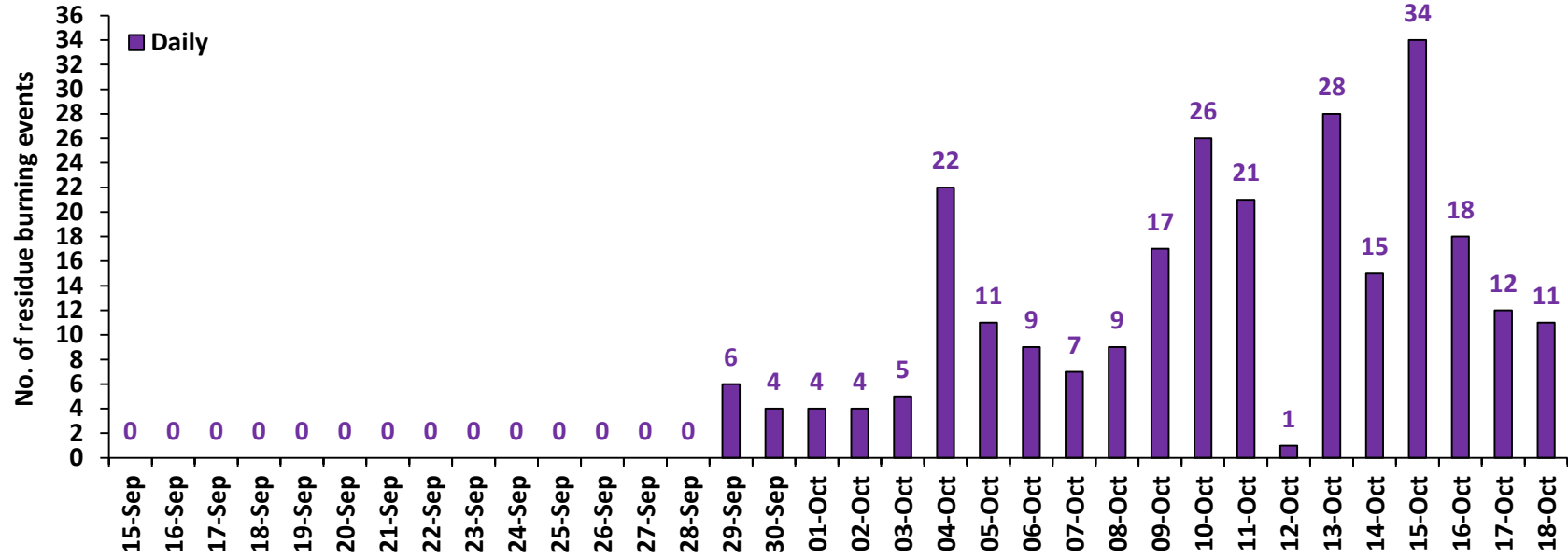
Haryana



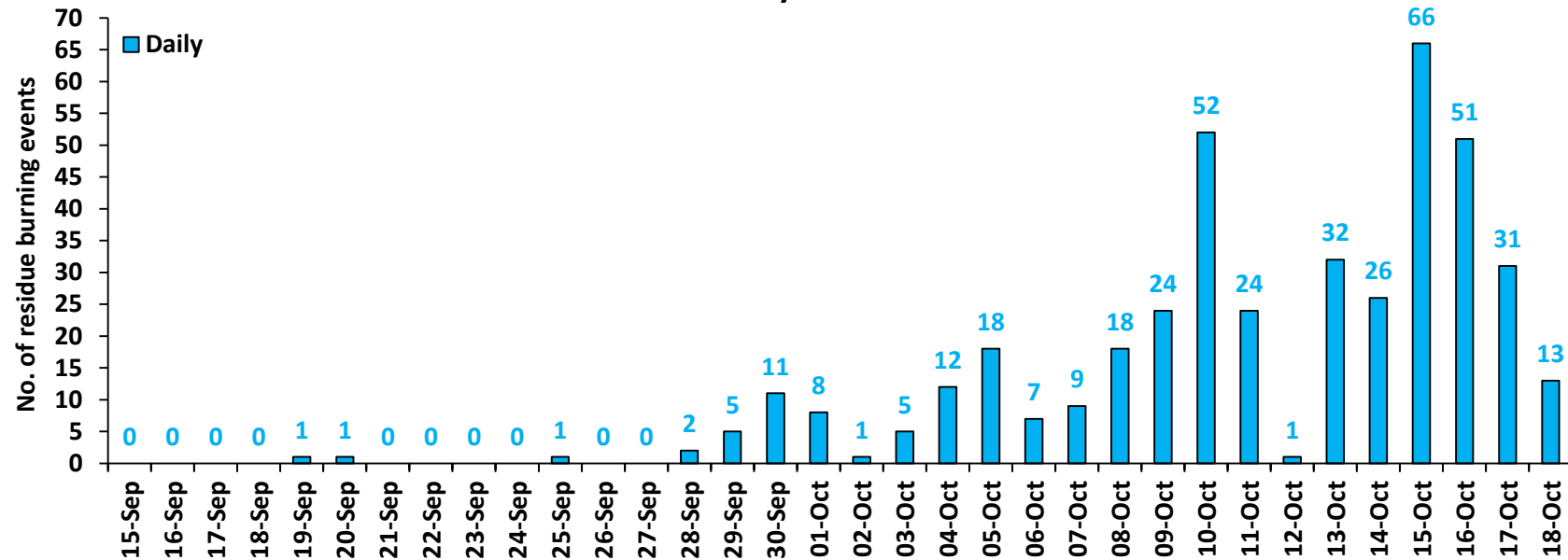
Uttar Pradesh



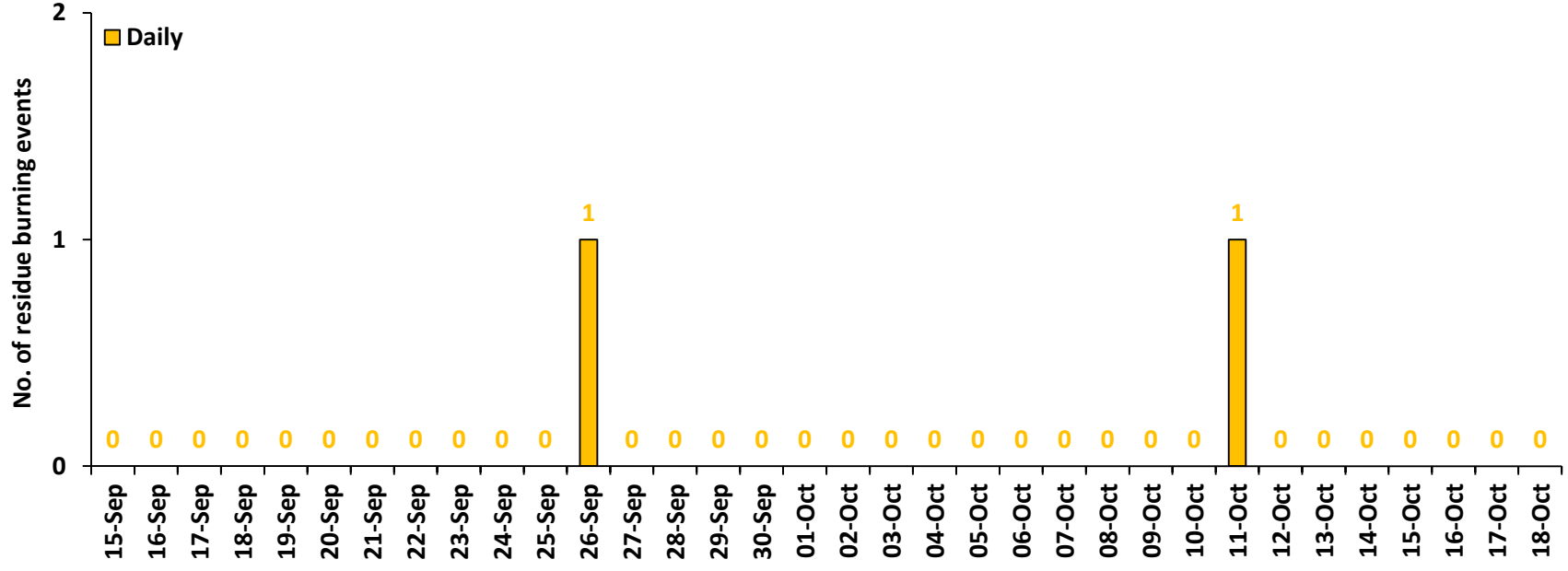
Rajasthan



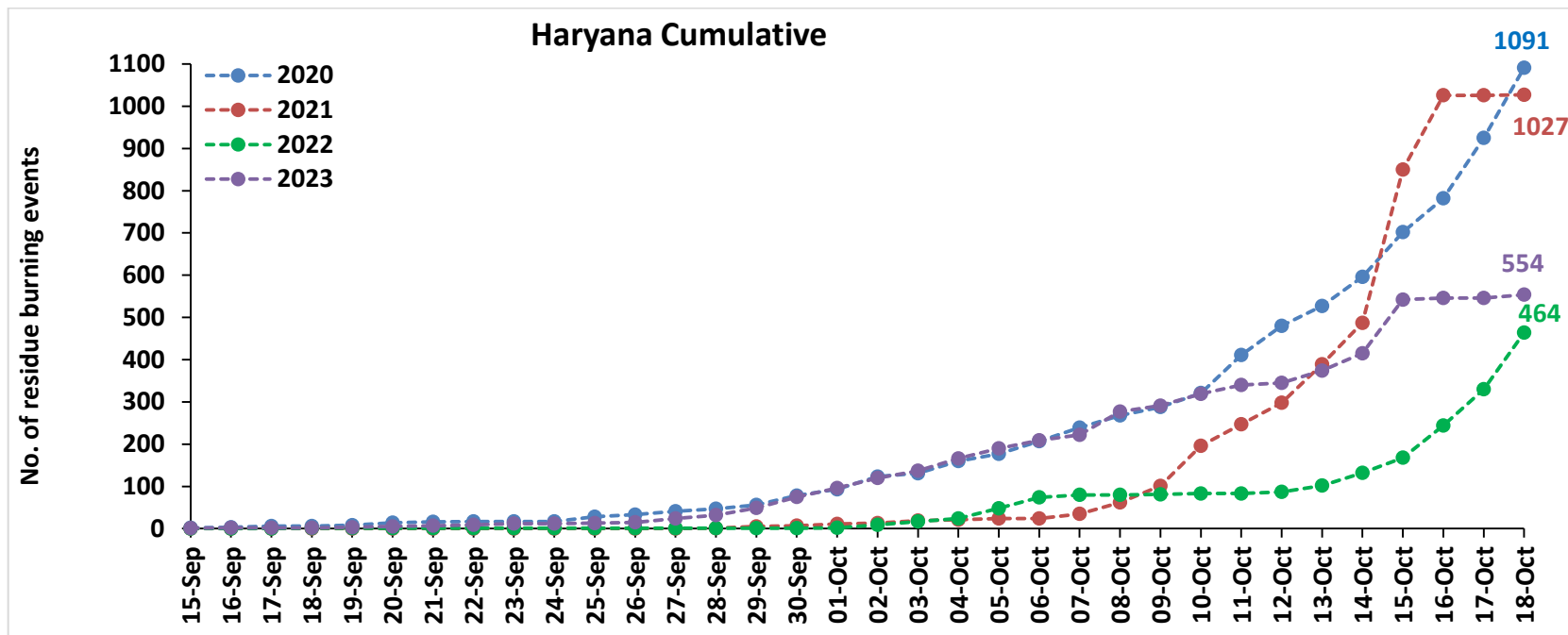
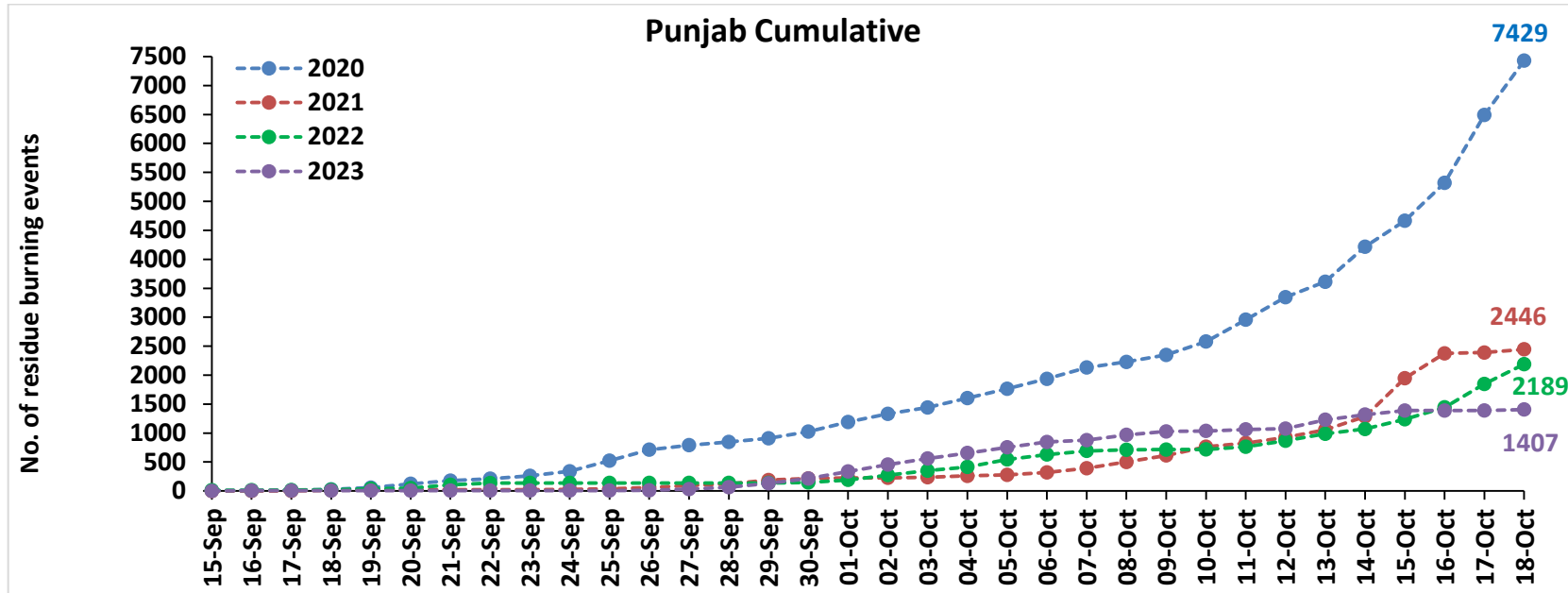
Madhya Pradesh

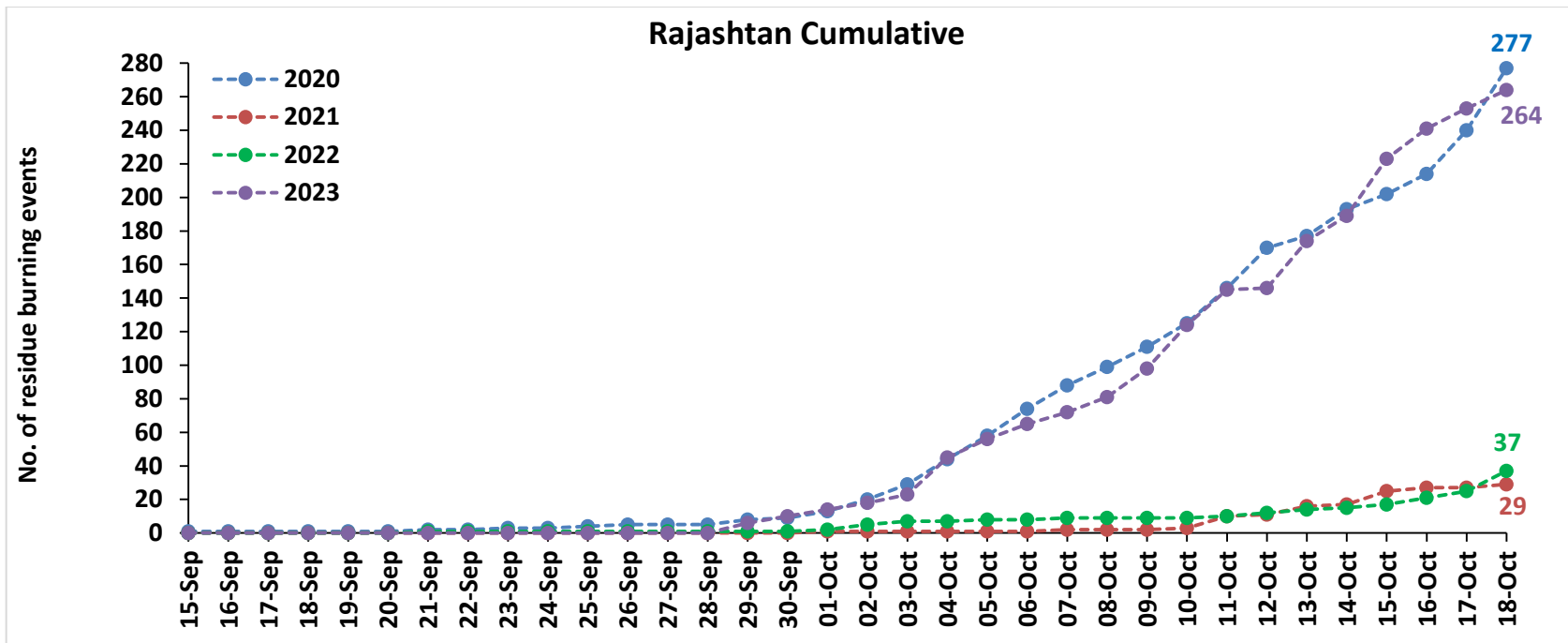
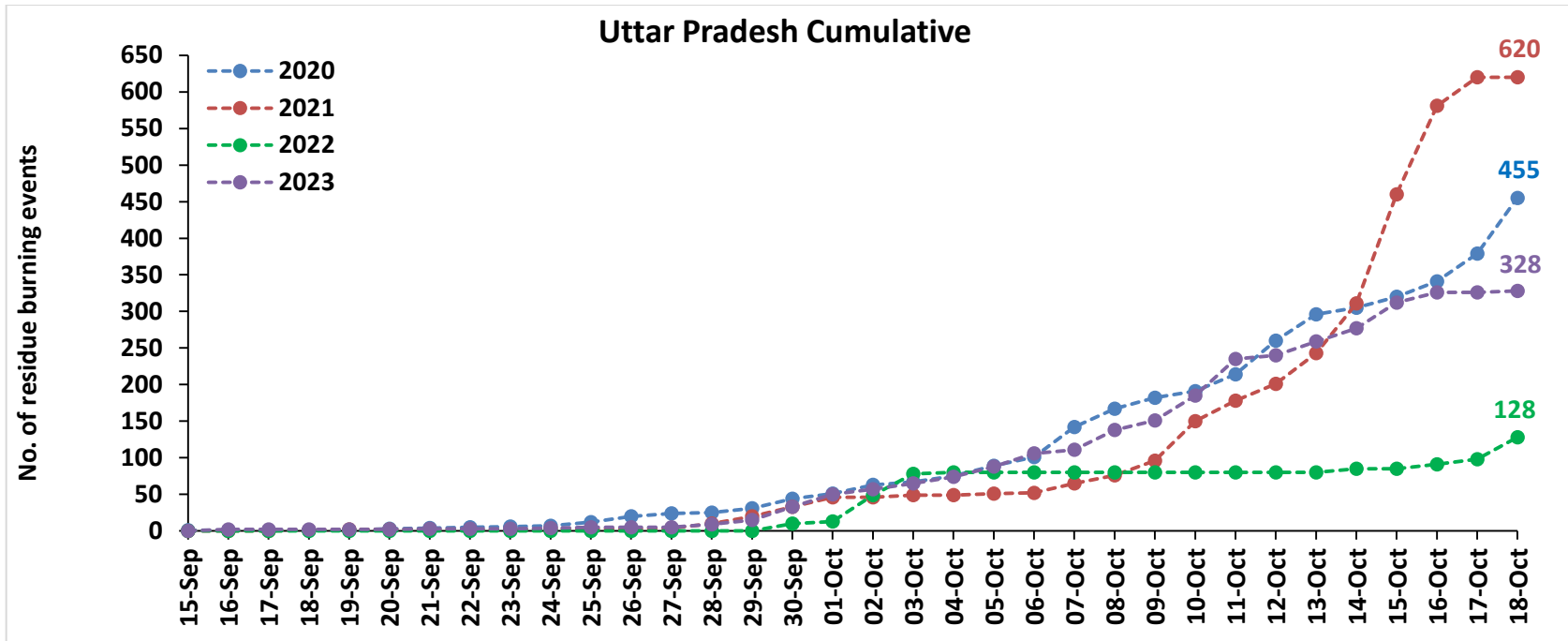


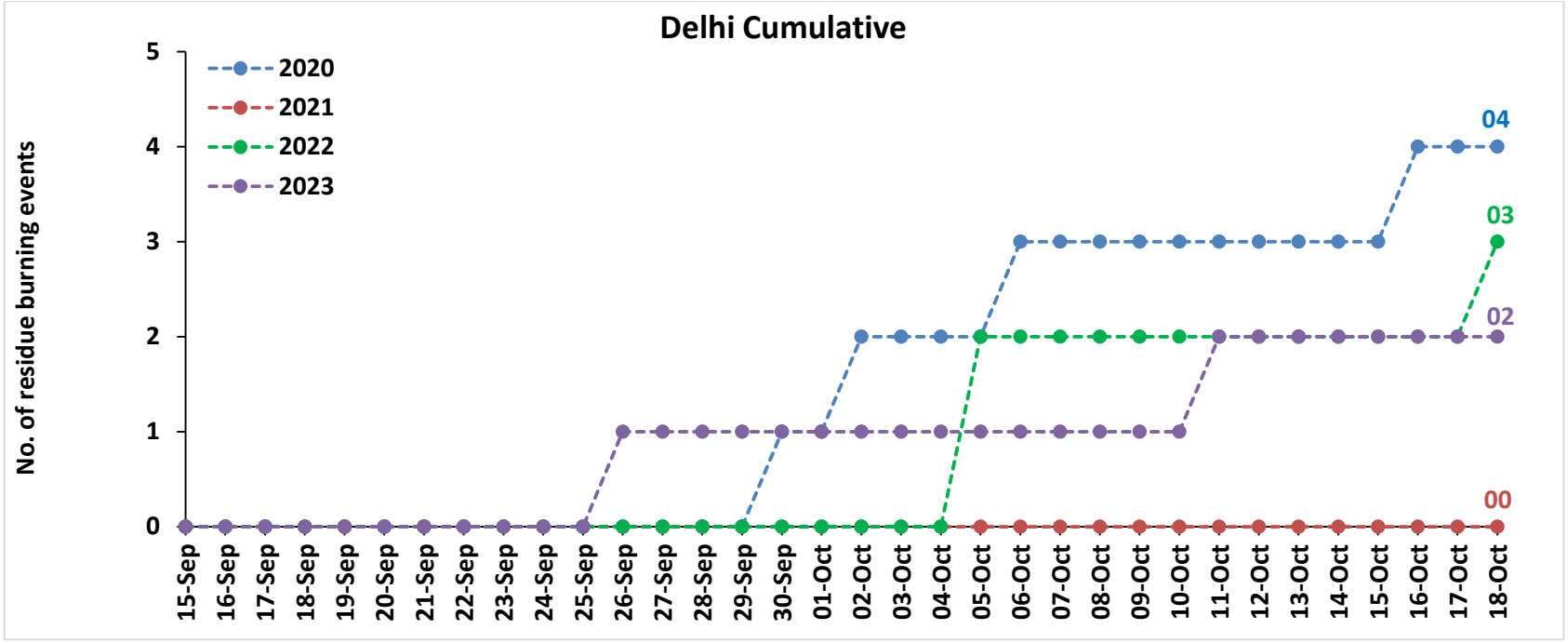
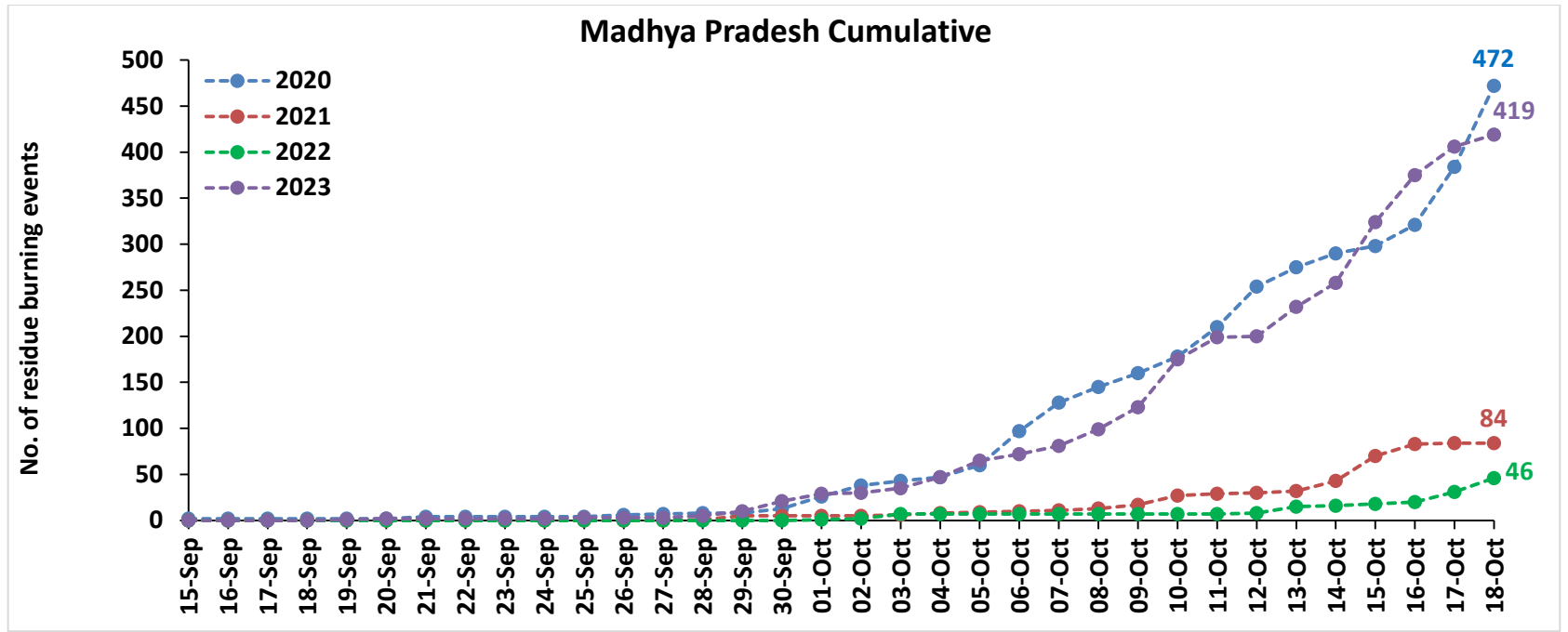
Delhi



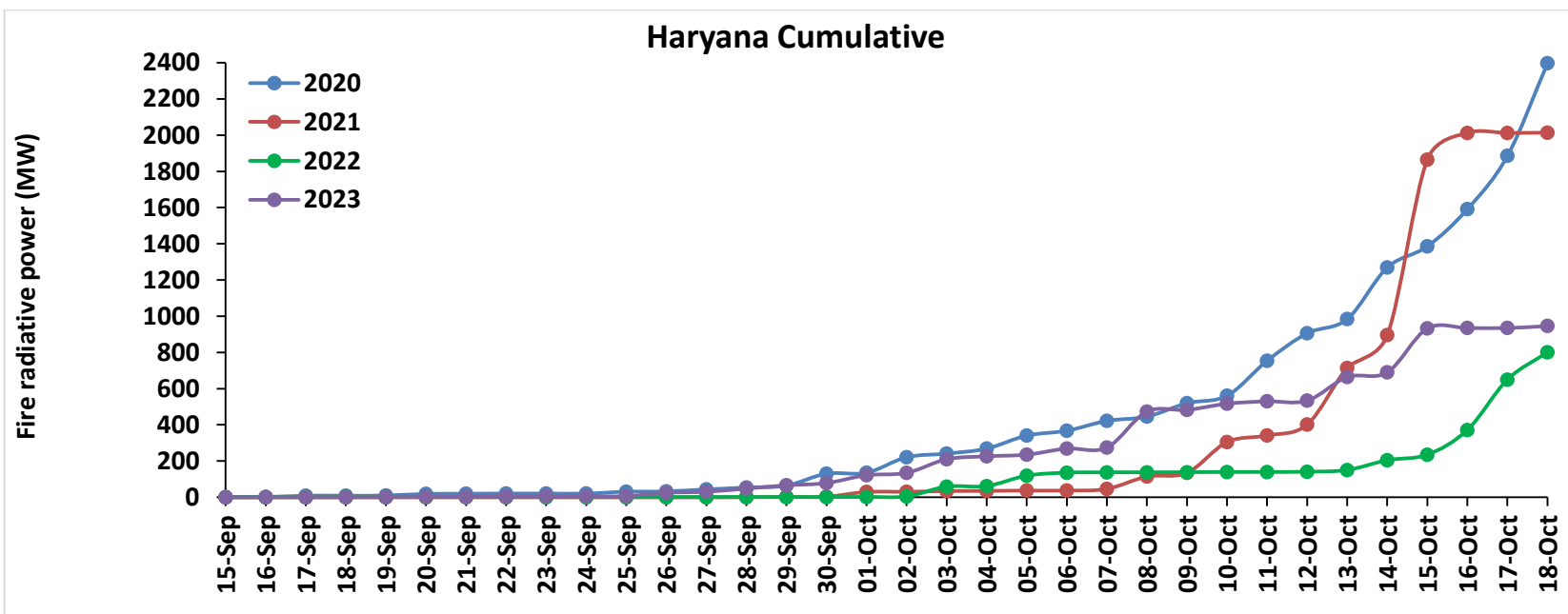
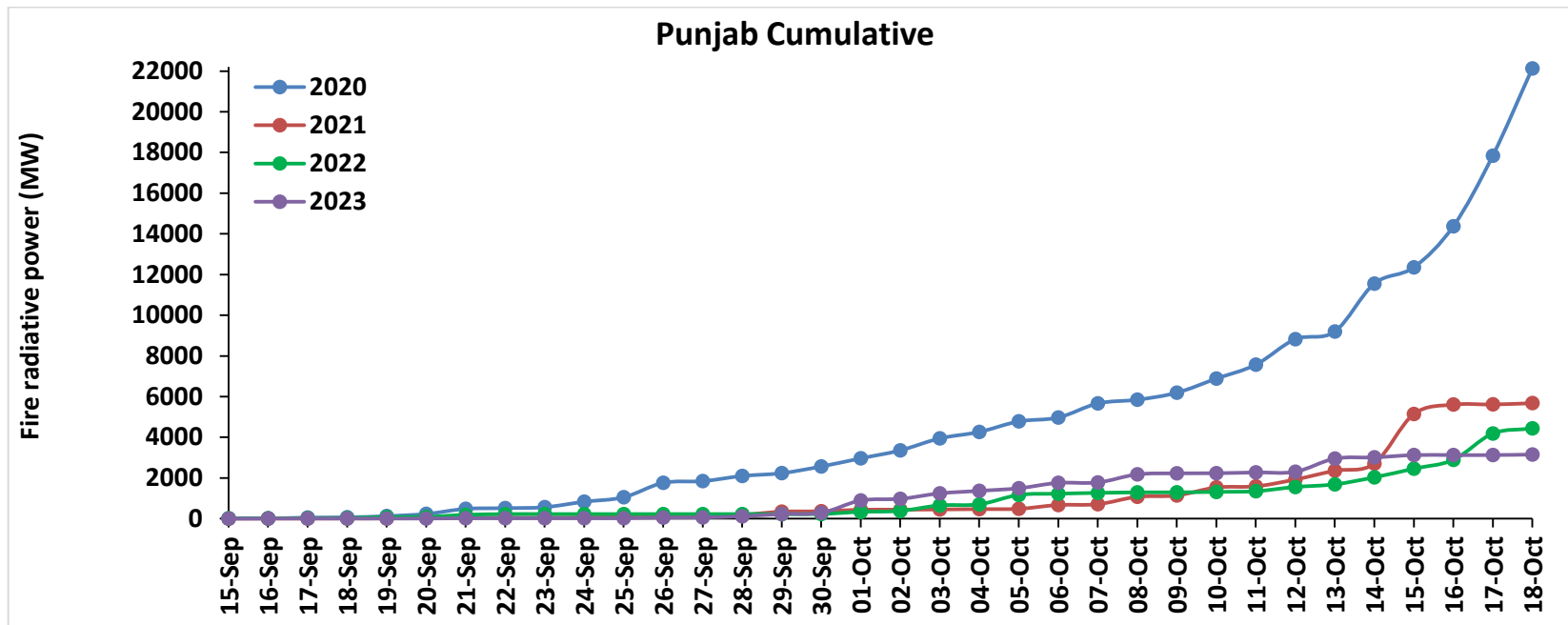
Comparison of residue burning events in current year (2023) with previous years (2020, 2021 and 2022) for the study State



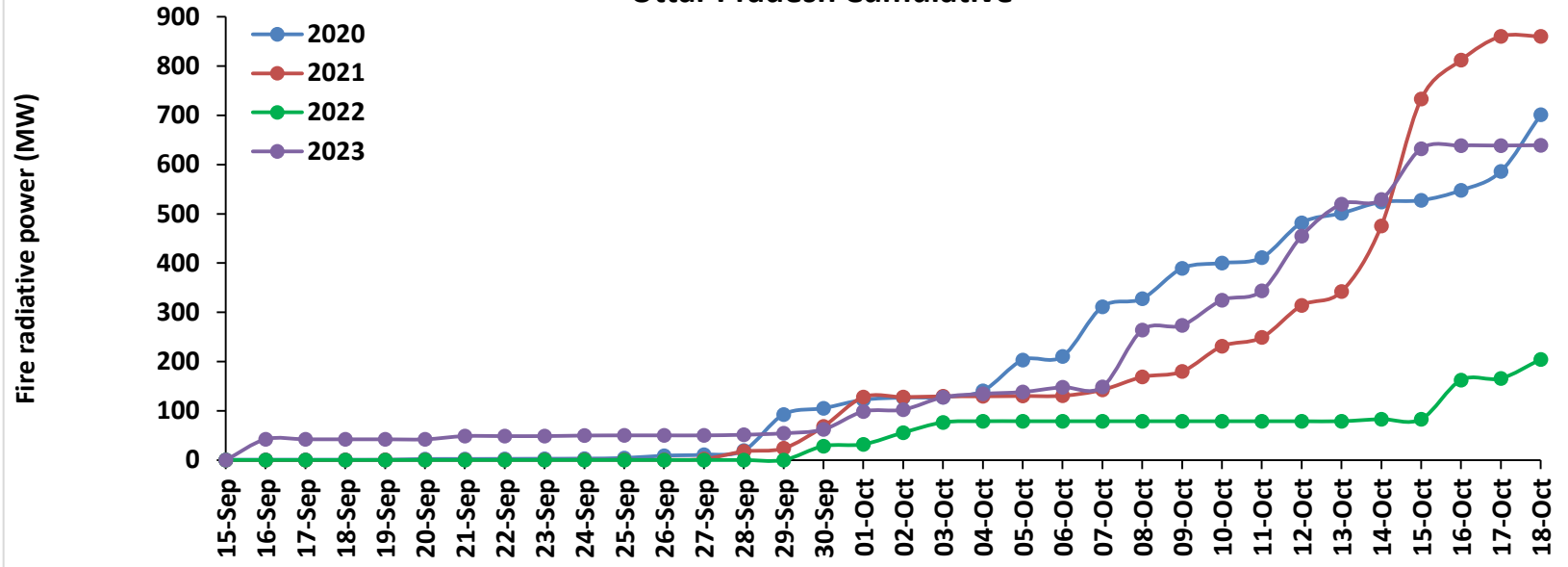




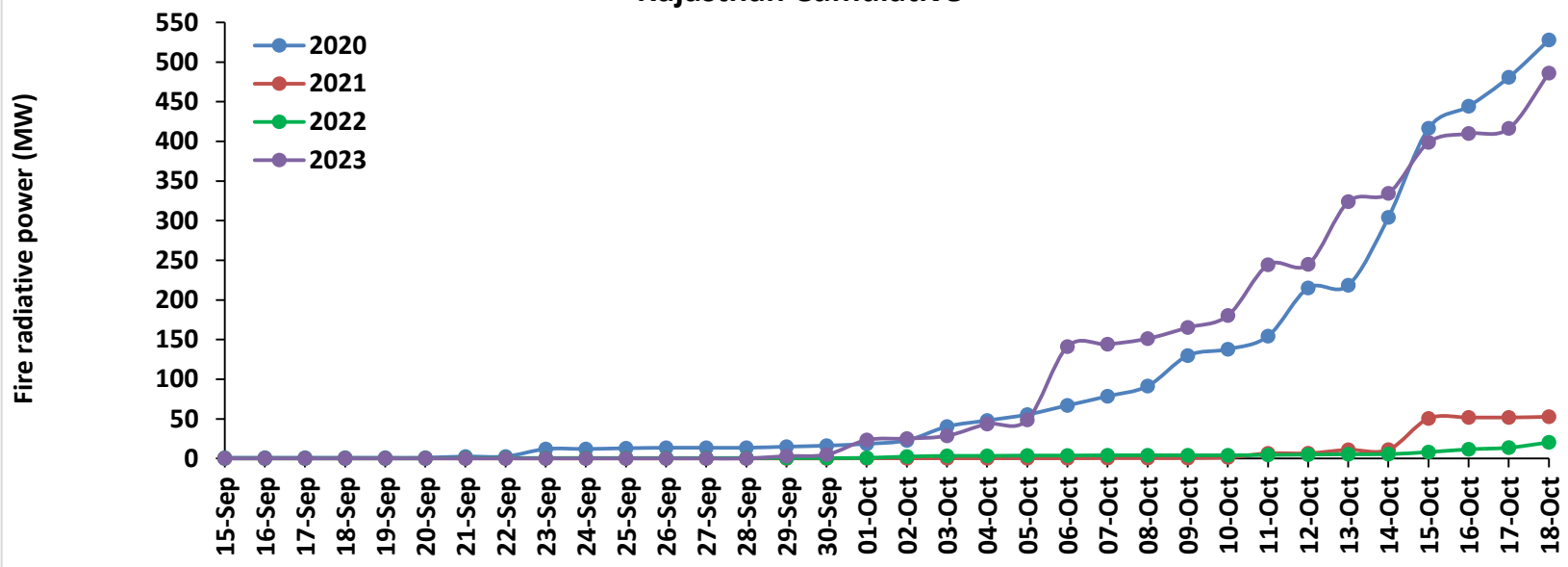
Comparison of residue burning fire power in current year (2023) with previous years (2020, 2021 and 2022) for the study States

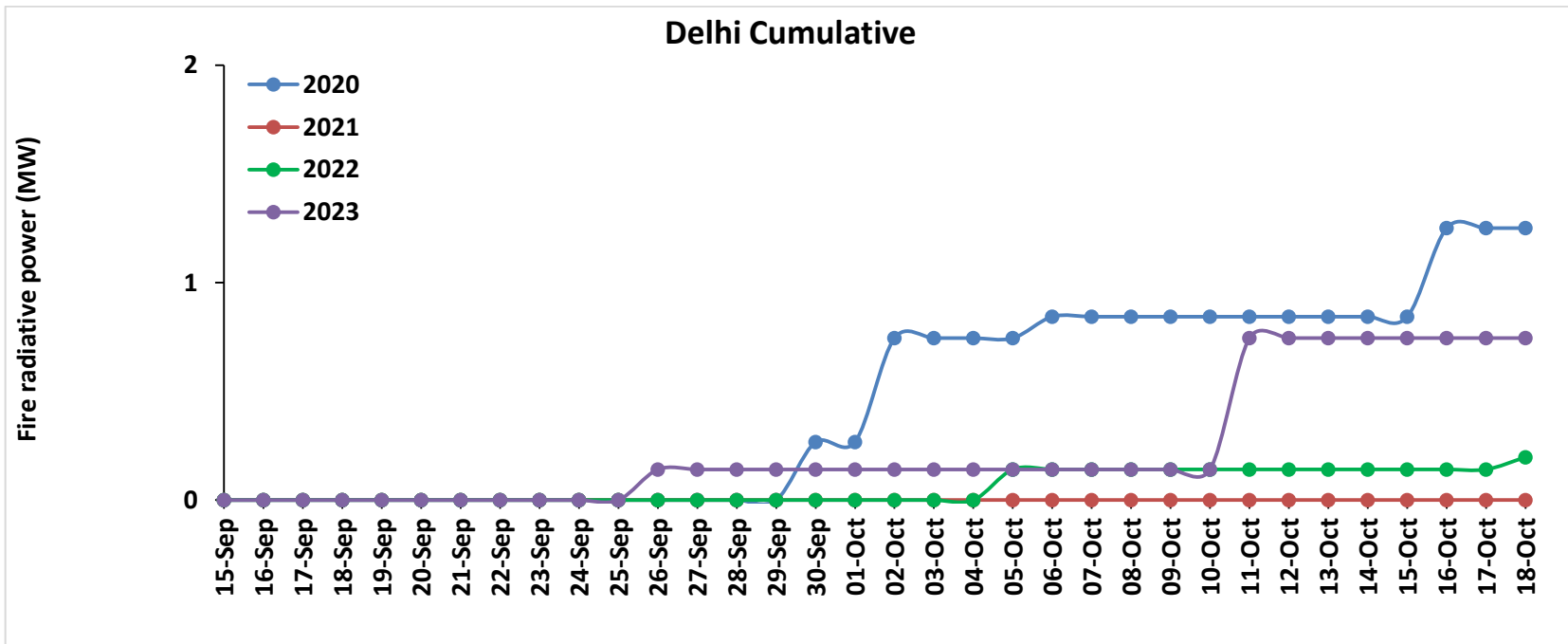
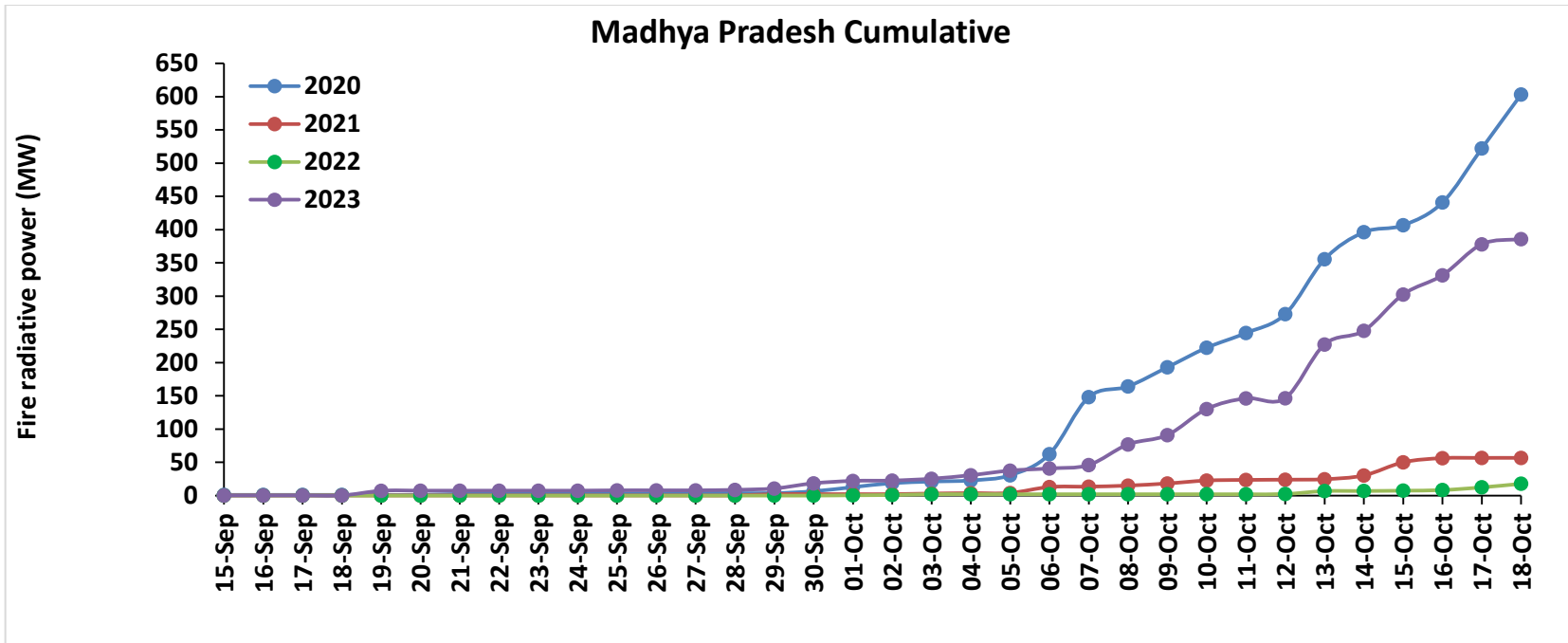


Uttar Pradesh Cumulative



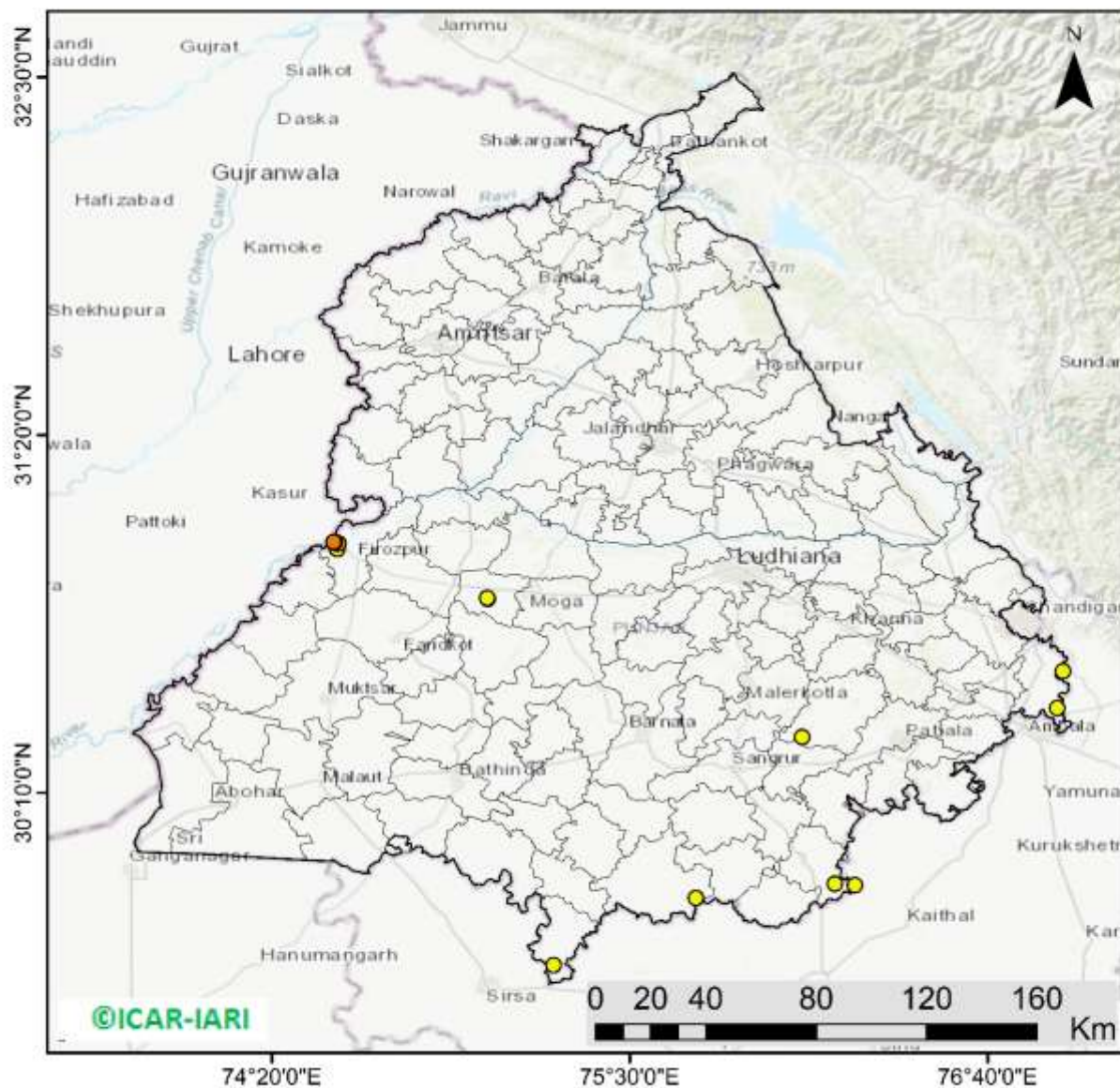
Rajasthan Cumulative





Punjab

RICE RESIDUE BURNING IN PUNJAB



18 burning events
detected in Punjab during
(18th Oct 2023)

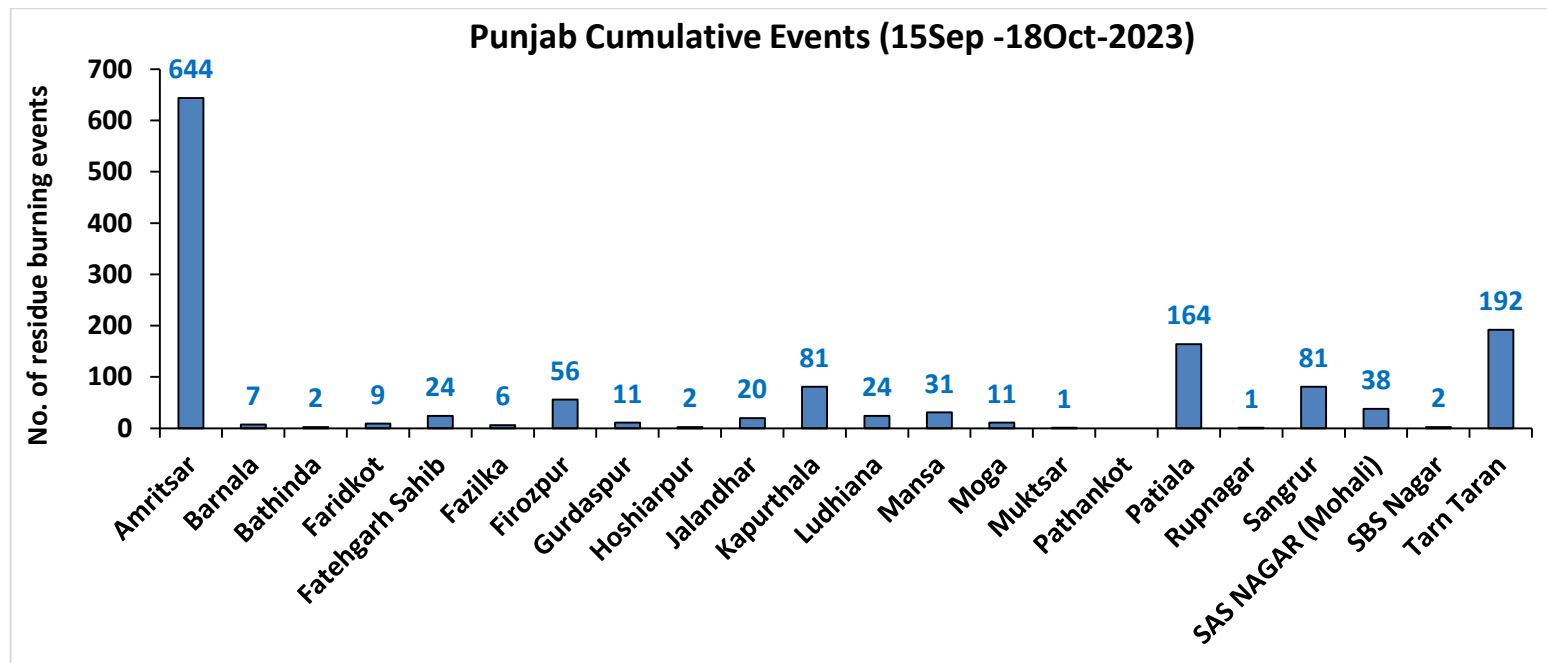
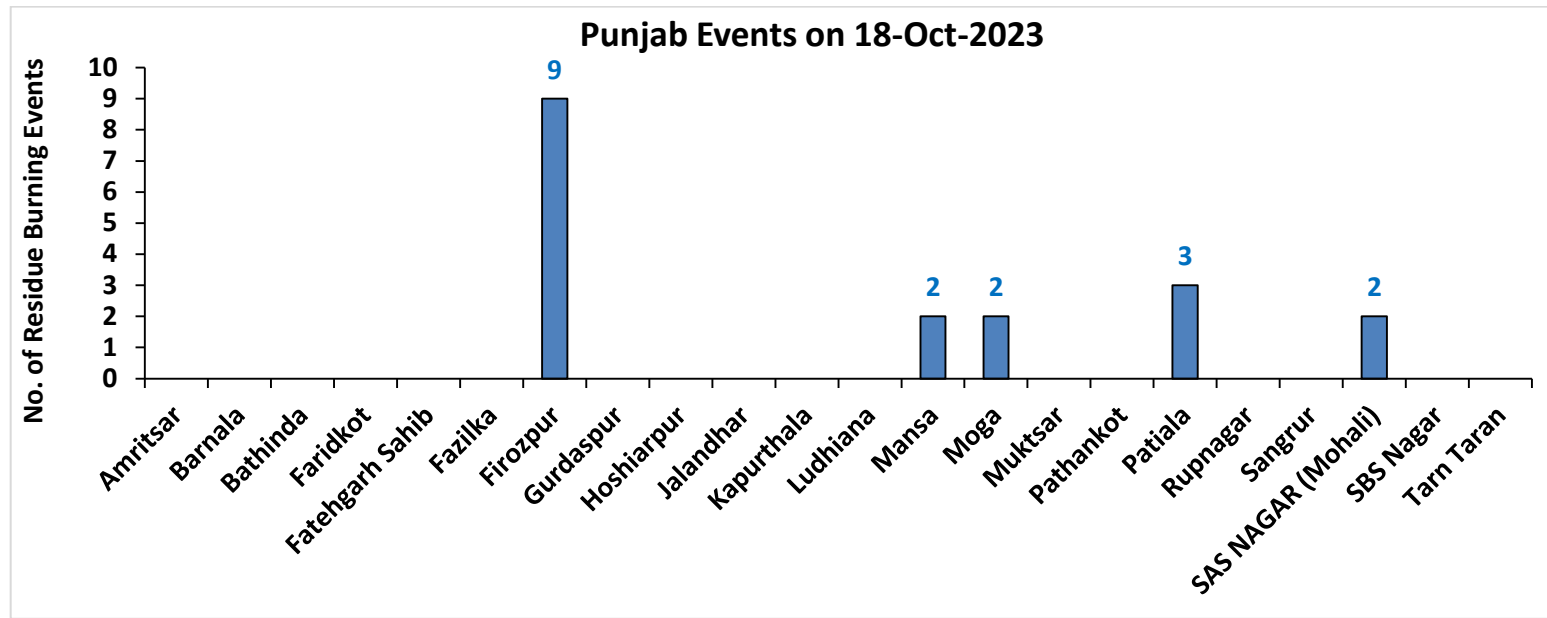
Fire Intensity (W/m²)

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



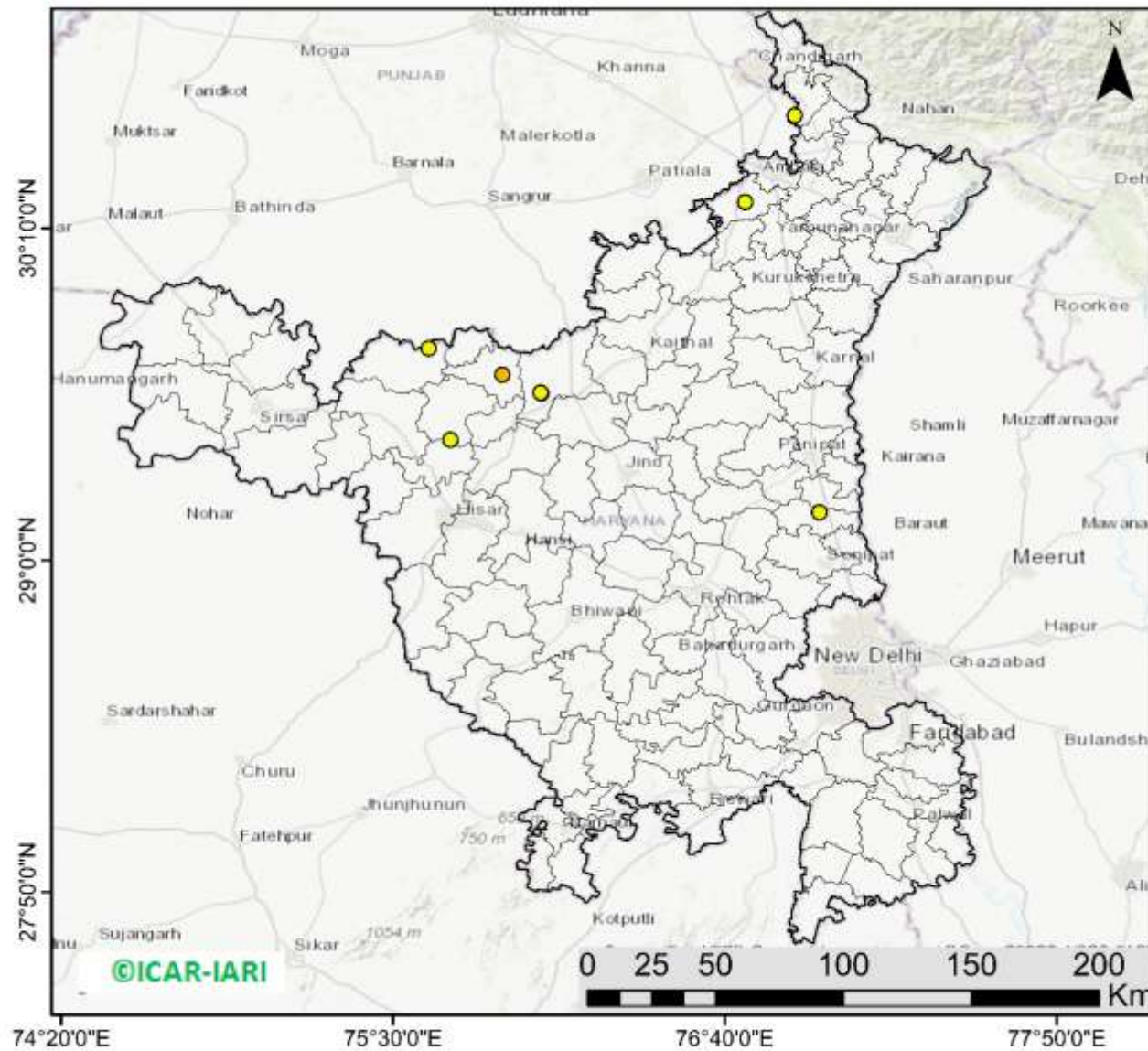
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Punjab (15Sep- 18Oct-2023)



Haryana

RICE RESIDUE BURNING IN HARYANA



08 burning events detected in Haryana on (18th Oct 2023)

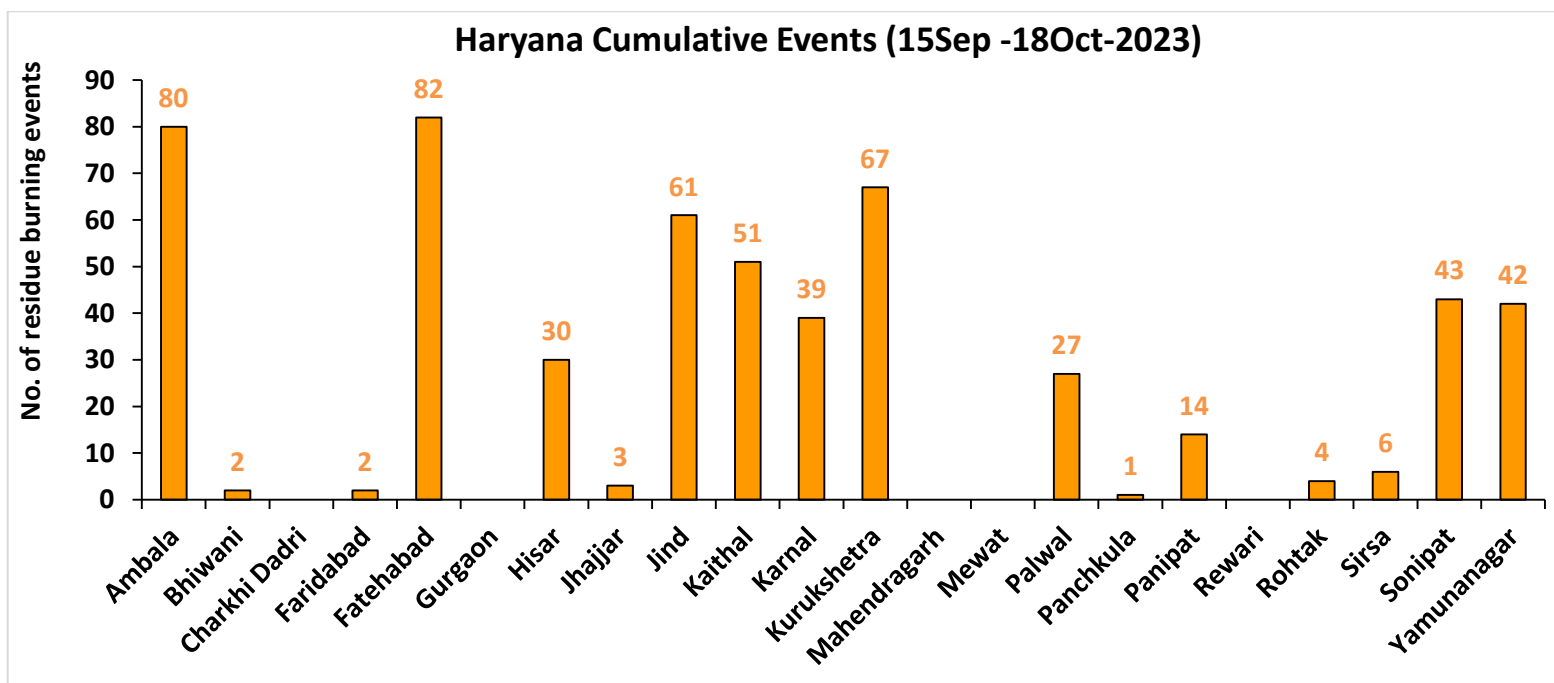
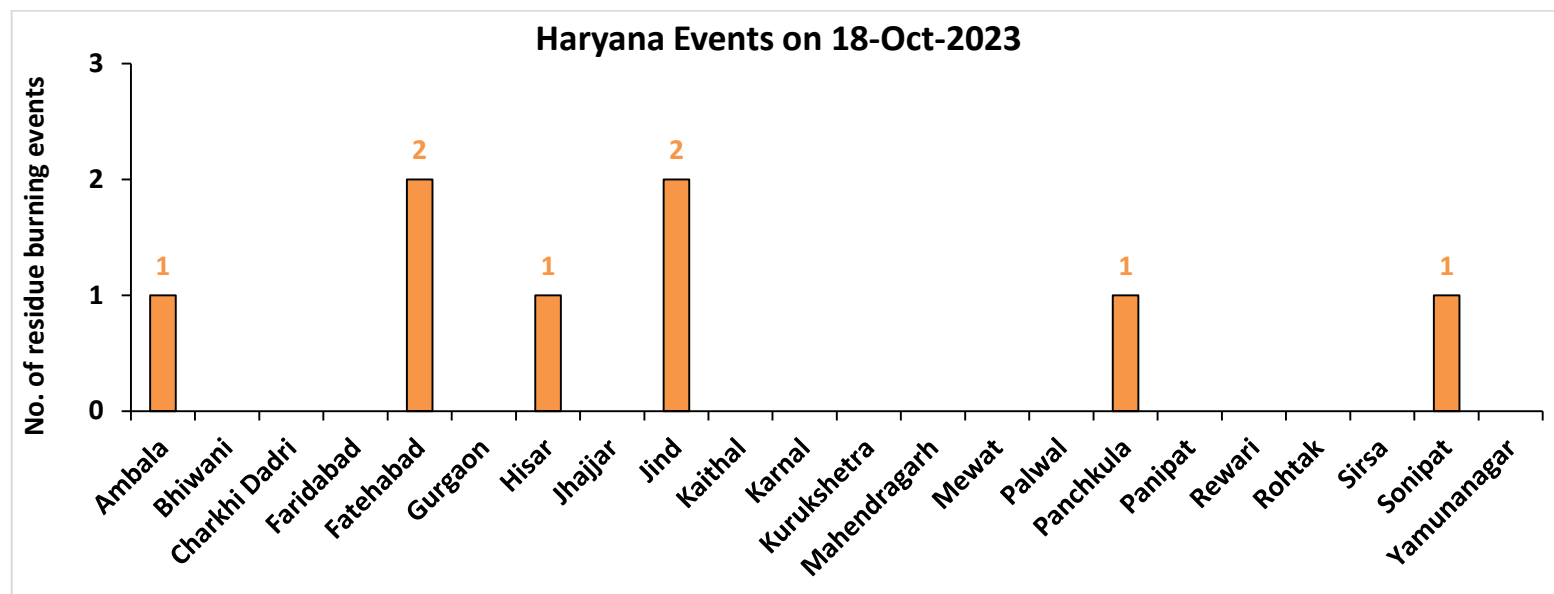
Fire Intensity (W/m²)

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



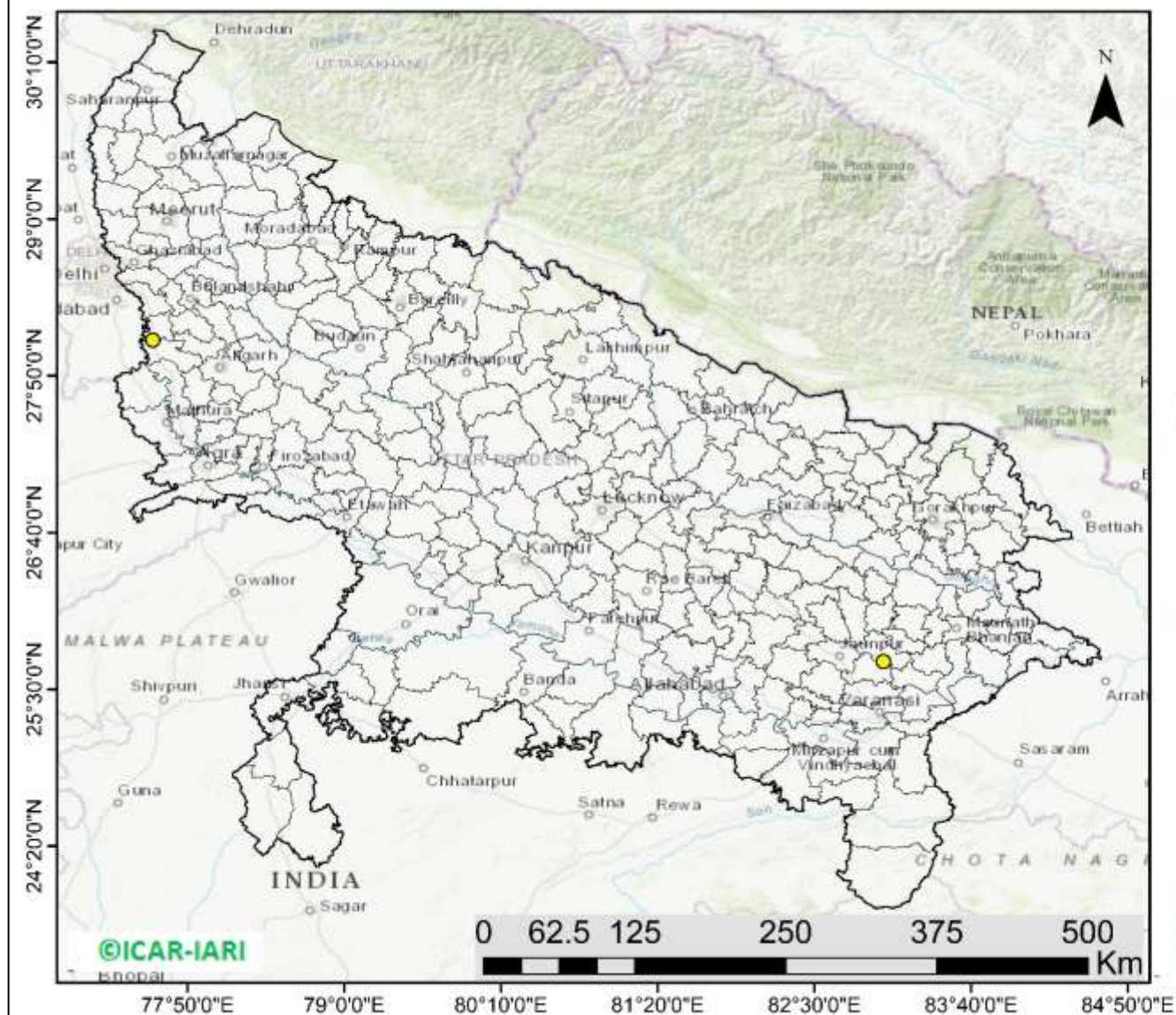
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Haryana (15Sep-18Oct -2023)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



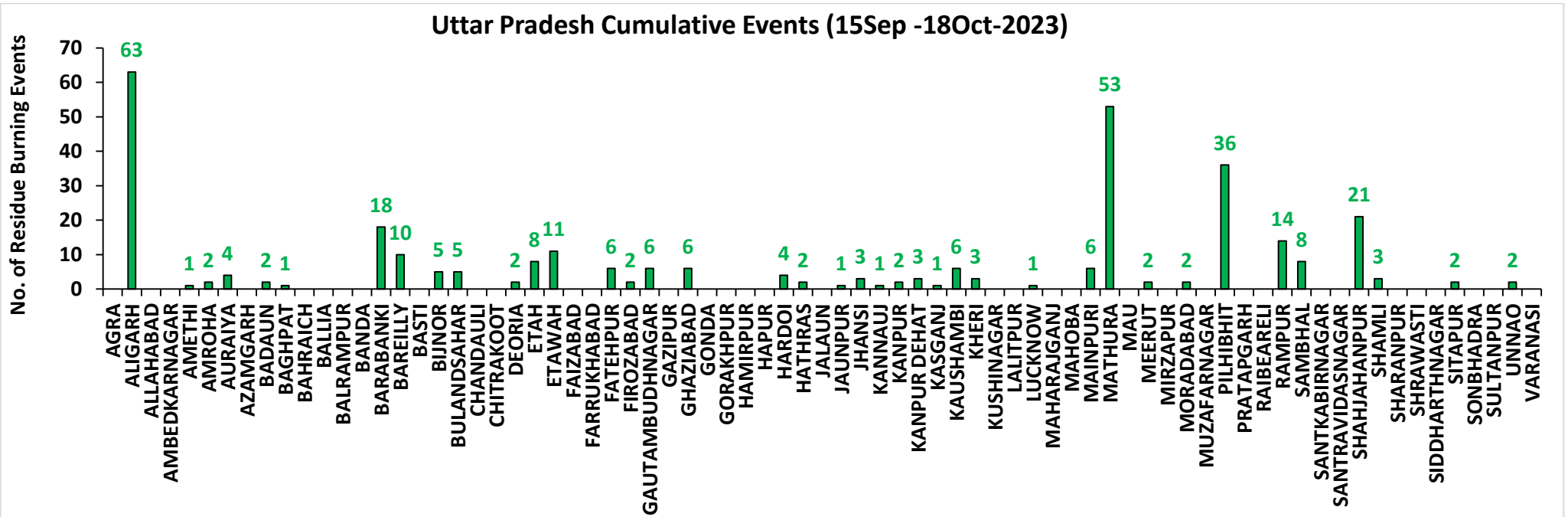
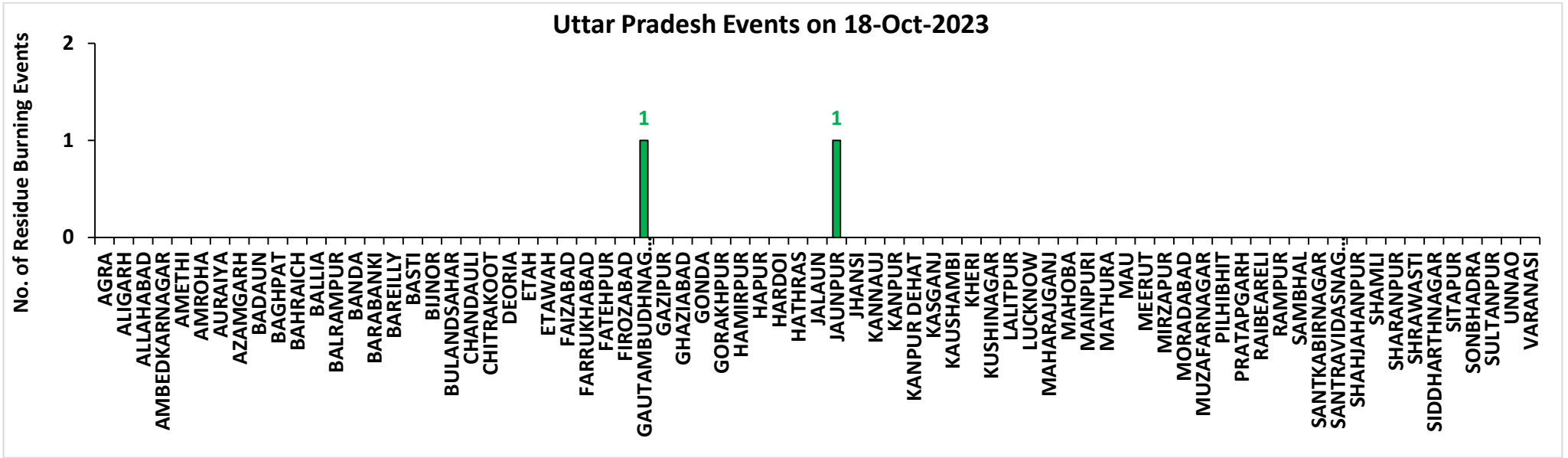
02 burning events
detected in Uttar Pradesh on
(18th Oct 2023)

Fire Intensity (W/m²)



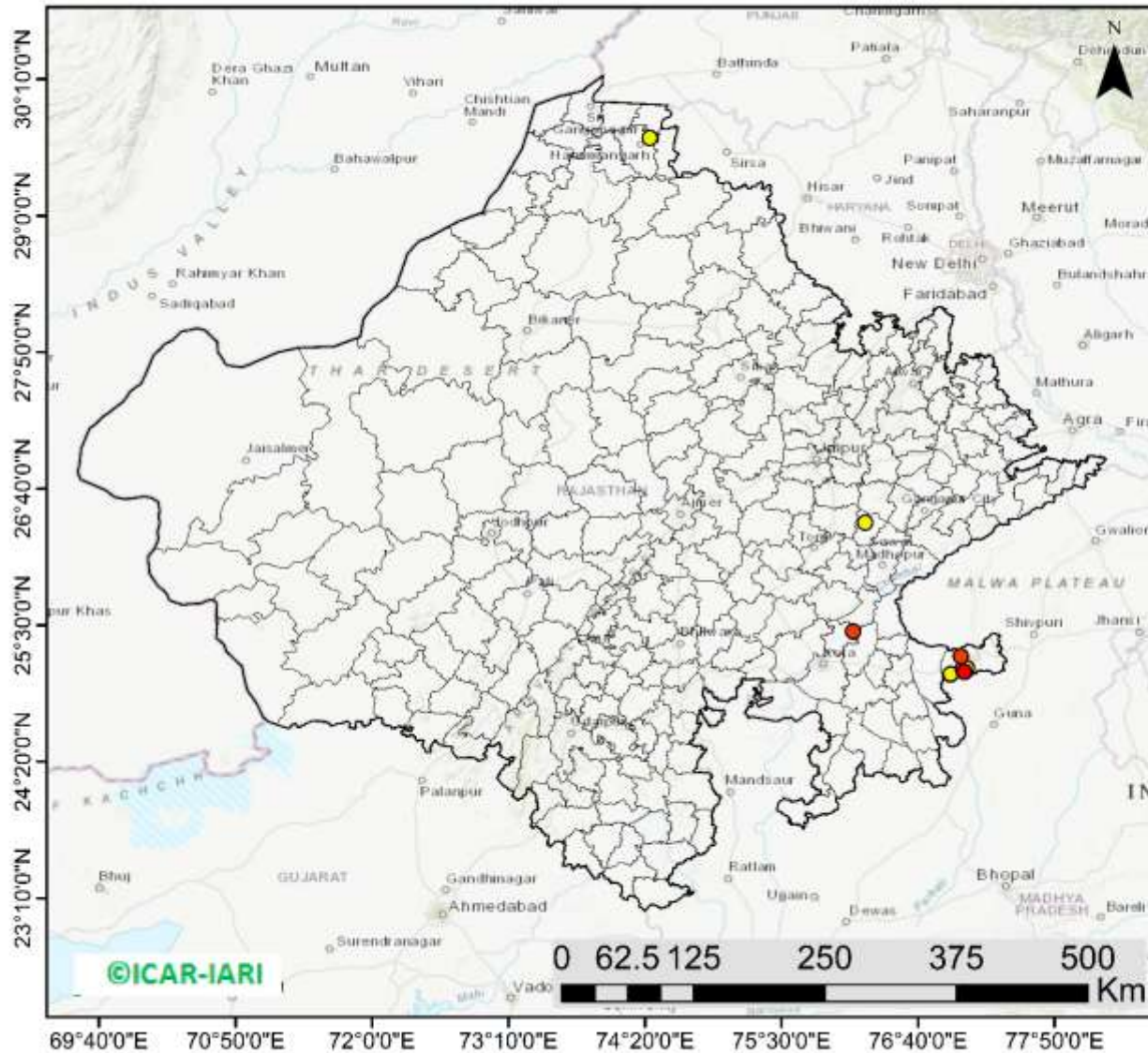
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-18Oct -2023)



Rajasthan

RICE RESIDUE BURNING IN RAJASTHAN



11 burning events detected in Rajasthan on (18th Oct 2023)

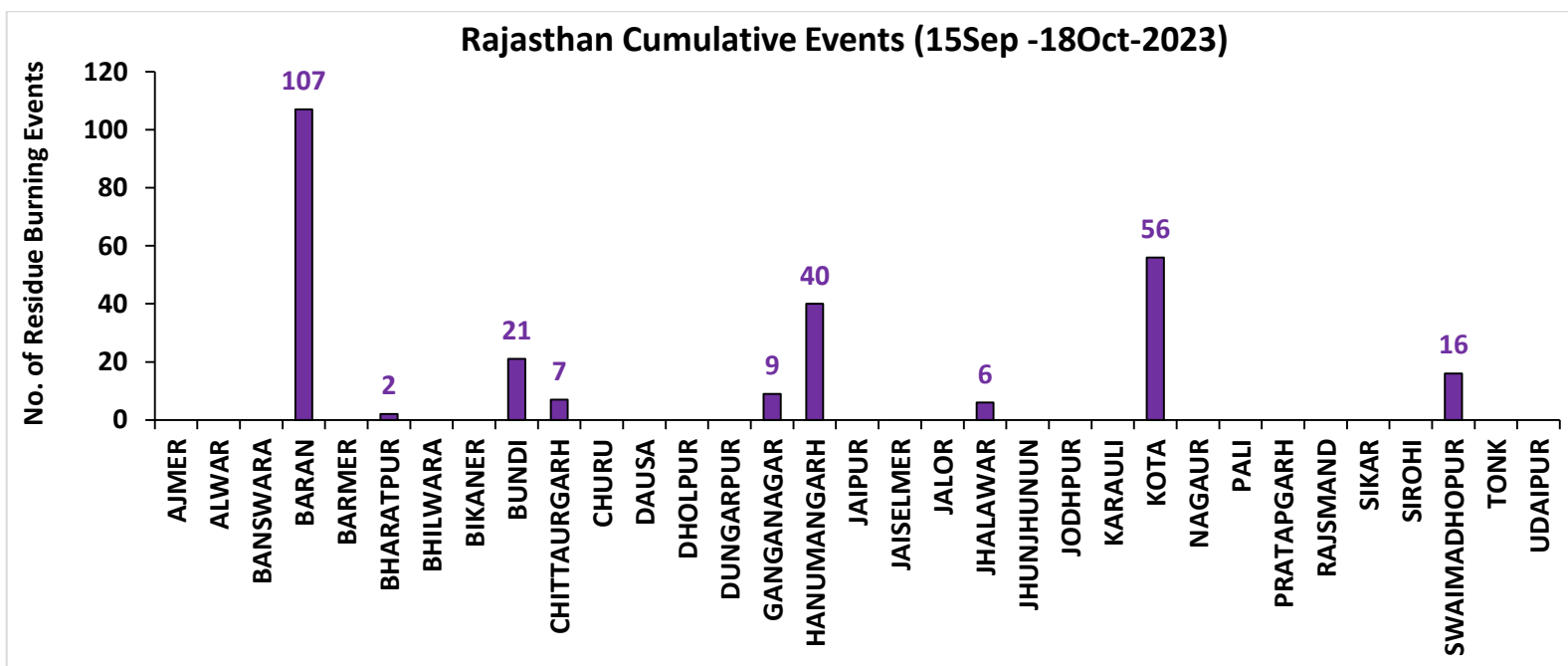
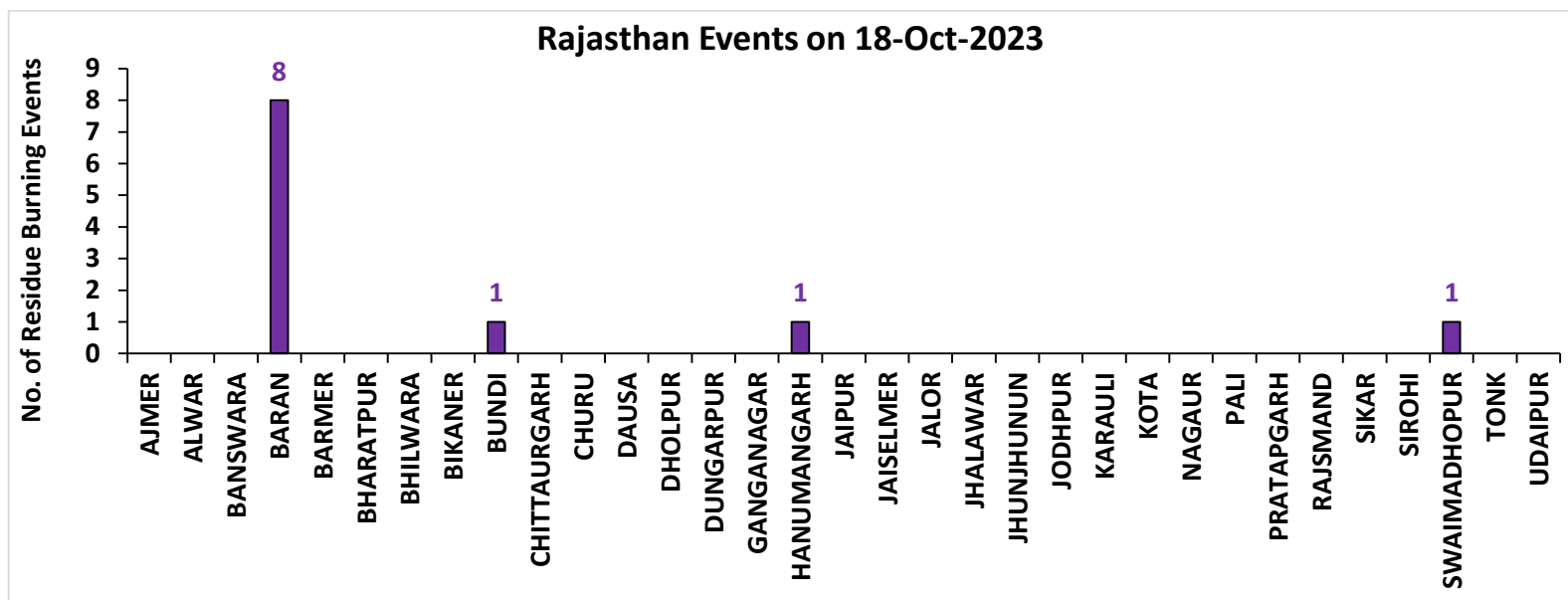
Fire Intensity (W/m²)

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



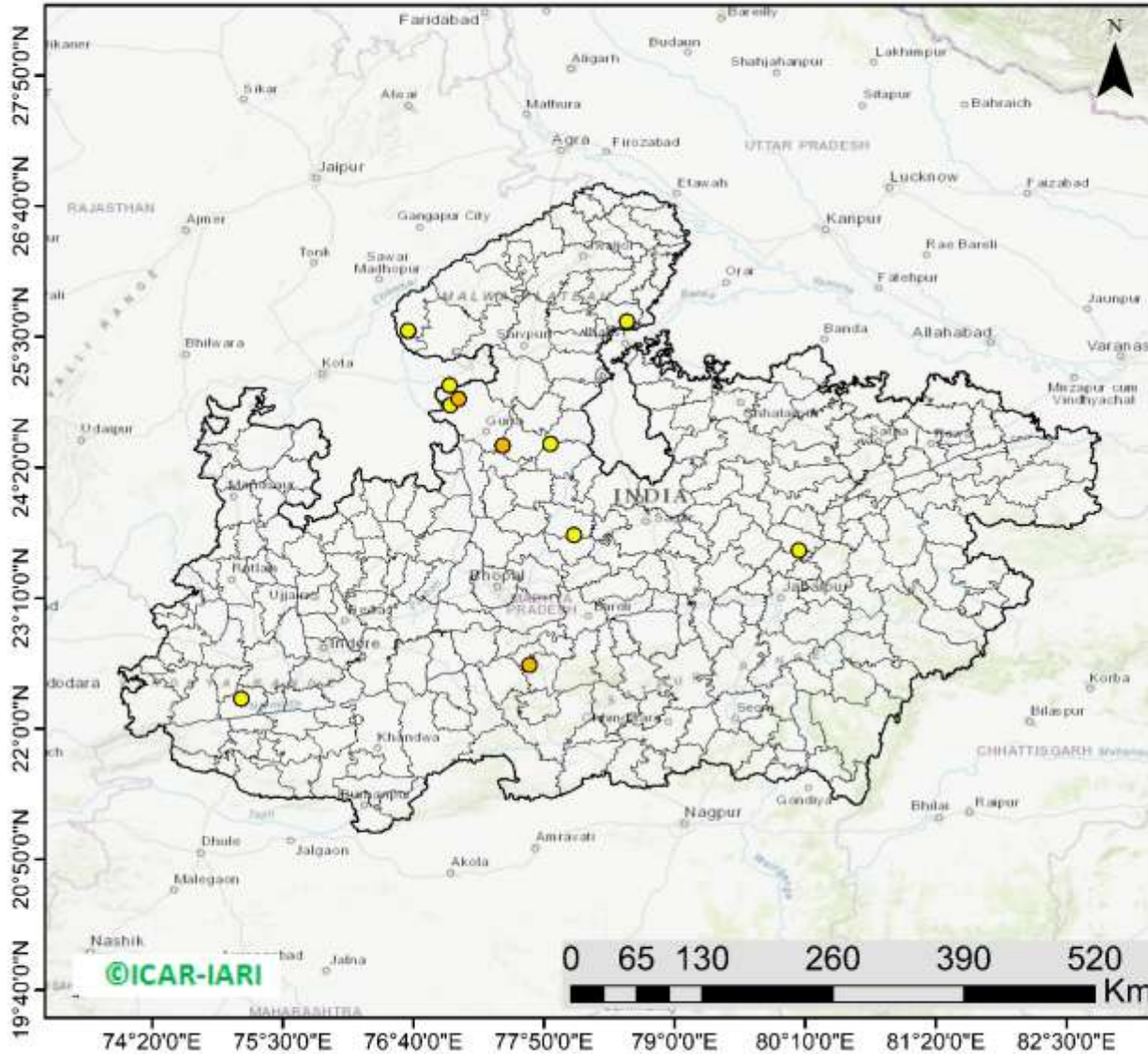
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Rajasthan (15Sep-18Oct -2023)



Madhya Pradesh

RICE RESIDUE BURNING IN MADHYA PRADESH



13 burning events
detected in MP on
(18th Oct 2023)

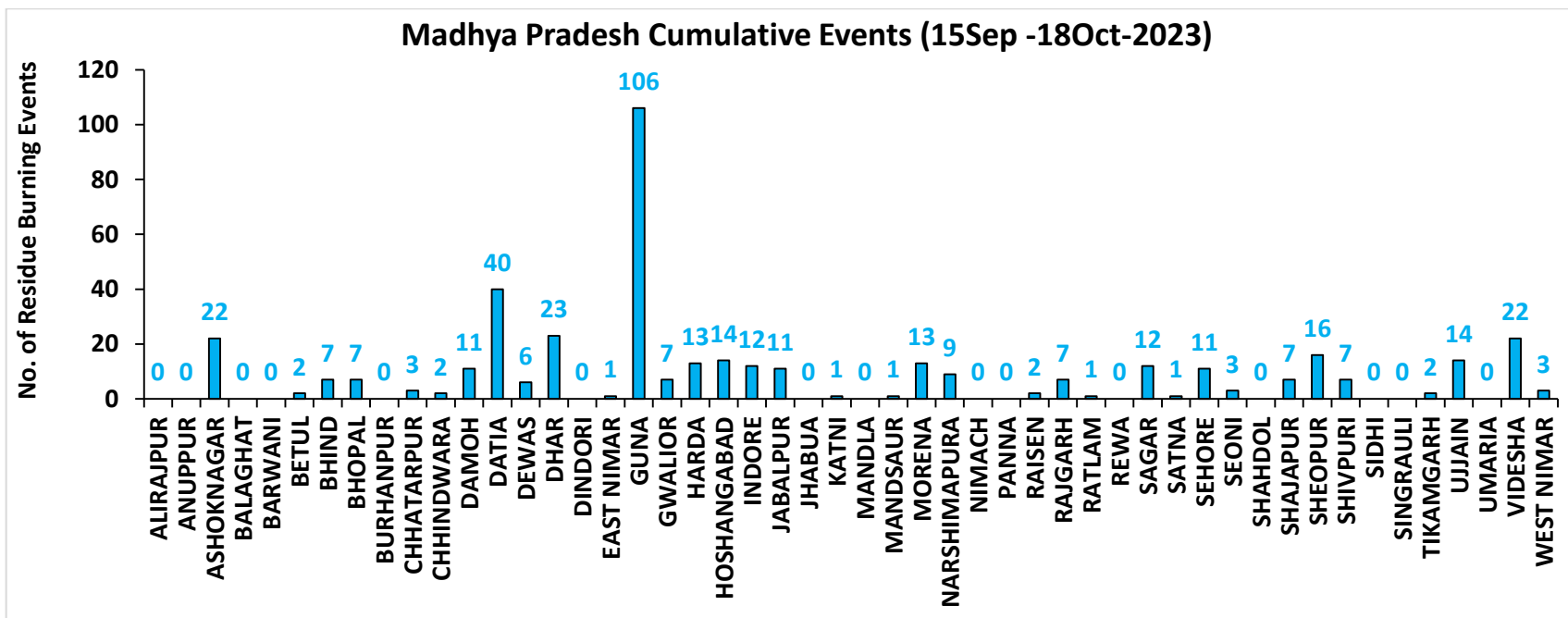
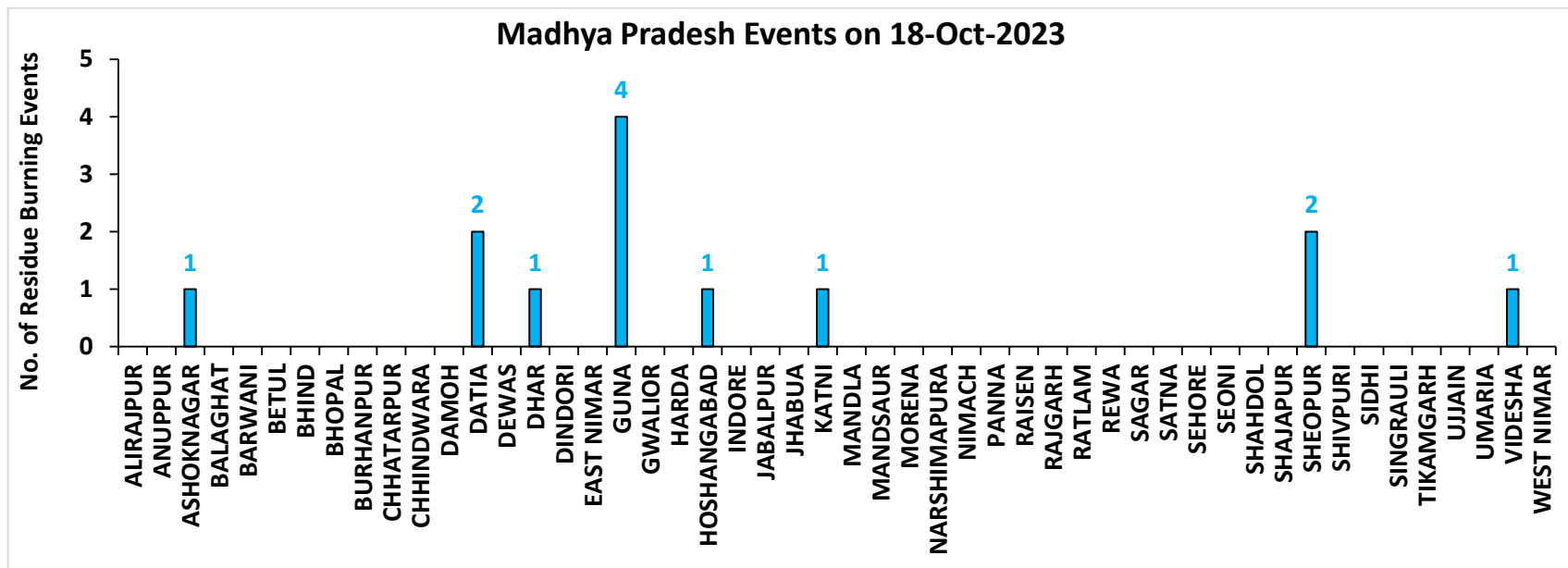
Fire Intensity (W/m²)

- 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 Madhya Pradesh (15Sep-18Oct -2023)



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

(a) Punjab

District	15 Sep-18 Oct			
	2020	2021	2022	2023
Amritsar	1969	606	706	644
Barnala	27	15	13	7
Bathinda	85	9	5	2
Faridkot	291	77	10	9
Fatehgarh Sahib	190	101	31	24
Fazilka	67	34	19	6
Firozpur	609	94	98	56
Gurdaspur	528	143	164	11
Hoshiarpur	65	11	2	2
Jalandhar	125	78	83	20
Kapurthala	303	100	116	81
Ludhiana	189	151	46	24
Mansa	62	2	12	31
Moga	90	41	41	11
Muktsar	47	22	5	1
Pathankot	3	0	0	0
Patiala	644	256	90	164
Rupnagar	44	16	4	1
Sangrur	165	45	48	81
SAS NAGAR (Mohali)	50	27	11	38
SBS Nagar	16	9	2	2
Tarn Taran	1860	609	683	192
Total	7429	2446	2189	1407

(b) Haryana

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

(c) Uttar Pradesh

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

(d) Delhi

District	15 Sep-18 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
Total	4	0	3	2

(e) Rajasthan

District	15 Sep-18 Oct			
	2020	2021	2022	2023
AJMER	0	0	0	0
ALWAR	1	0	0	0
BANSWARA	0	0	0	0
BARAN	88	0	5	107
BARMER	2	0	0	0
BHARATPUR	1	0	0	2
BHILWARA	2	0	0	0
BIKANER	1	0	0	0
BUNDI	10	0	15	21
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	121	26	6	40
JAIPUR	1	0	0	0
JAISELMER	2	0	0	0
JALOR	0	0	0	0
JHALAWAR	1	0	1	6
JHUNJHUNUN	1	0	0	0
JODHPUR	1	0	0	0
KARALI	1	0	0	0
KOTA	27	1	6	56
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	1	16
TONK	1	0	0	0
UDAIPUR	0	0	0	0
Total	277	29	37	264

(f) Madhya Pradesh

District	15 Sep-18 Oct								
	2020	2021	2022	2023					
					PANNA	3	0	0	0
ALIRAJPUR	0	0	0	0	RAISEN	13	1	1	2
ANUPPUR	0	0	0	0	RAJGARH	7	1	3	7
ASHOKNAGAR	16	1	1	22	RATLAM	0	0	0	1
BALAGHAT	0	0	0	0	REWA	4	0	1	0
BARWANI	0	0	0	0	SAGAR	14	6	4	12
BETUL	1	0	0	2	SATNA	10	6	0	1
BHIND	9	1	0	7	SEHORE	7	3	5	11
BHOPAL	6	5	2	7	SEONI	27	5	0	3
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	16
DAMOH	19	4	3	11	SHIVPURI	9	0	6	7
DATIA	71	8	0	40	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	0	UJJAIN	5	0	0	14
EAST NIMAR	2	1	3	1	UMARIA	0	0	0	0
GUNA	16	1	4	106	VIDESHA	60	8	4	22
GWALIOR	44	0	1	7	WEST NIMAR	6	0	0	3
HARDA	8	9	0	13	Total	472	84	46	419
HOSHANGABAD	26	8	0	14					
INDORE	2	0	0	12					
JABALPUR	7	4	3	11					
JHABUA	0	0	0	0					
KATNI	2	0	0	1					
MANDLA	1	0	0	0					
MANDSAUR	3	0	0	1					
MORENA	17	5	0	13					
NARSHIMAPURA	5	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-18 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
12-Oct	388	97	104	13	69	51	4	5	46	23	0	5
13-Oct	266	132	120	154	47	91	15	29	36	42	0	19
14-Oct	605	229	82	89	69	98	30	41	9	68	5	18
15-Oct	449	660	169	69	106	363	36	127	15	149	0	35
16-Oct	654	429	206	0	80	176	76	4	21	121	6	14
17-Oct	1172	14	403	1	143	0	86	0	38	39	7	0
18-Oct	938	57	342	18	166	1	134	8	76	0	30	2
Total	7429	2446	2189	1407	1091	1027	464	554	455	620	128	328

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
05-Oct	0	0	2	0	14	0	1	11	13	1	0	18
06-Oct	1	0	0	0	16	0	0	9	37	1	0	7
07-Oct	0	0	0	0	14	1	1	7	31	1	0	9
08-Oct	0	0	0	0	11	0	0	9	17	2	0	18
09-Oct	0	0	0	0	12	0	0	17	15	4	0	24
10-Oct	0	0	0	0	14	1	0	26	18	10	0	52
11-Oct	0	0	0	1	21	7	1	21	32	2	0	24
12-Oct	0	0	0	0	24	1	2	1	44	1	1	1
13-Oct	0	0	0	0	7	5	2	28	21	2	7	32
14-Oct	0	0	0	0	16	1	1	15	15	11	1	26
15-Oct	0	0	0	0	9	8	2	34	8	27	2	66
16-Oct	1	0	0	0	12	2	4	18	23	13	2	51
17-Oct	0	0	0	0	26	0	4	12	63	1	11	31
18-Oct	0	0	1	0	37	2	12	11	88	0	15	13
Total	4	0	3	2	277	29	37	264	472	84	46	419

Details of residue burning events in Punjab on 18-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	FIROZPUR	FIROZPUR	AQUA	30.98400	74.53500	14:17:28	D	12.20
2	FIROZPUR	FIROZPUR	S-NPP	30.96112	74.54578	14:19:15	D	4.10
3	FIROZPUR	FIROZPUR	S-NPP	30.96124	74.54733	14:19:15	D	3.90
4	FIROZPUR	FIROZPUR	S-NPP	30.97865	74.54592	14:19:15	D	8.90
5	FIROZPUR	FIROZPUR	S-NPP	30.97884	74.54912	14:19:15	D	14.80
6	FIROZPUR	FIROZPUR	S-NPP	30.97893	74.55059	14:19:15	D	8.90
7	FIROZPUR	FIROZPUR	S-NPP	30.98371	74.53464	14:19:15	D	6.30
8	FIROZPUR	FIROZPUR	S-NPP	30.98389	74.53610	14:19:15	D	14.00
9	FIROZPUR	FIROZPUR	S-NPP	30.98402	74.53931	14:19:15	D	6.30
10	MANSA	BUDHLADA	S-NPP	29.82314	75.71580	14:19:15	D	3.70
11	MANSA	SARDULGARH	S-NPP	29.60420	75.25190	14:19:15	D	2.70
12	MOGA	MOGA-2	S-NPP	30.79833	75.03738	14:19:15	D	3.80
13	MOGA	MOGA-2	S-NPP	30.80103	75.03549	14:19:15	D	3.00
14	PATIALA	NABHA	S-NPP	30.34795	76.06225	14:19:15	D	4.60
15	PATIALA	PATRAM	S-NPP	29.86482	76.23389	14:19:15	D	1.70
16	PATIALA	PATRAM	S-NPP	29.86938	76.16898	12:38:58	D	2.90
17	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.44252	76.89365	12:38:58	D	1.40
18	SAS NAGAR (MOHALI)	DERABASSI	S-NPP	30.56265	76.91247	12:38:58	D	2.20

Details of residue burning events in Haryana on 18-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	AMBALA	AMBALA-II	S-NPP	30.25827	76.73862	12:38:58	D	2.30
2	FATEHABAD	RATIA	S-NPP	29.74388	75.62619	14:19:15	D	2.70
3	FATEHABAD	TOHANA	AQUA	29.65200	75.88500	14:17:28	D	8.90
4	HISAR	AGROHA	S-NPP	29.42297	75.70193	14:19:15	D	2.00
5	JIND	NARWANA	S-NPP	29.58603	76.02177	12:38:58	D	3.30
6	JIND	NARWANA	S-NPP	29.58836	76.01971	12:38:58	D	2.60
7	PANCHKULA	BARWALA	S-NPP	30.56265	76.91247	12:38:58	D	2.20
8	SONIPAT	GANAUR	S-NPP	29.16742	76.99953	01:28:58	N	0.40

Details of residue burning events in Uttar Pradesh on 18-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	GAUTAMBUDHNAGAR	JEVAR	S-NPP	28.09776	77.57544	12:38:58	D	2.40
2	JAUNPUR	KIRAKAT	S-NPP	25.70523	83.01430	12:38:58	D	2.40

Details of residue burning events in Rajasthan on 18-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	BARAN	SHAHBAD	AQUA	25.09900	77.06200	14:17:28	D	40.80
2	BARAN	SHAHBAD	S-NPP	25.07844	76.94388	14:19:15	D	3.90
3	BARAN	SHAHBAD	S-NPP	25.08186	76.94650	14:19:15	D	4.30
4	BARAN	SHAHBAD	S-NPP	25.10131	77.05889	12:38:58	D	8.60
5	BARAN	SHAHBAD	S-NPP	25.10258	77.06407	12:38:58	D	9.90
6	BARAN	SHAHBAD	S-NPP	25.12397	77.05045	14:19:15	D	7.30
7	BARAN	SHAHBAD	S-NPP	25.13345	77.08447	12:38:58	D	8.20
8	BARAN	SHAHBAD	S-NPP	25.23326	77.03297	14:19:15	D	17.10
9	BUNDI	KESHORAIPATAN	AQUA	25.44500	76.11300	14:17:28	D	20.00

10	HANUMANGARH	SANGHRIYA	S-NPP	29.66317	74.37542	12:38:58	D	3.70
11	SWAIMADHOPUR	BAULI	S-NPP	26.37546	76.21515	01:28:58	N	0.60

Details of residue burning events in Madhya Pradesh on 18-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ASHOKNAGAR	MUNGAOLI	S-NPP	24.54209	77.89278	14:19:15	D	2.90
2	DATIA	DATIA	S-NPP	25.63254	78.57724	12:38:58	D	3.10
3	DATIA	DATIA	S-NPP	25.63601	78.57614	12:38:58	D	4.90
4	DHAR	MANAWAR	S-NPP	22.26563	75.13088	01:28:58	N	1.30
5	GUNA	ARON	S-NPP	24.52645	77.46490	14:19:15	D	6.40
6	GUNA	GUNA	S-NPP	24.88733	76.99723	12:38:58	D	4.20
7	GUNA	GUNA	S-NPP	24.94409	77.07232	14:19:15	D	6.90
8	GUNA	GUNA	S-NPP	25.06529	76.99148	12:38:58	D	3.50
9	HOSHANGABAD	ITARSI	S-NPP	22.56674	77.70461	14:19:15	D	6.60
10	KATNI	BAHURIBAND	S-NPP	23.59025	80.11148	12:38:58	D	2.30
11	SHEOPUR	SHEOPUR	S-NPP	25.54958	76.62404	14:19:15	D	5.50
12	SHEOPUR	SHEOPUR	S-NPP	25.55335	76.61985	14:19:15	D	4.90
13	VIDESHA	BASODA	S-NPP	23.72843	78.10307	12:38:58	D	3.70

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 / 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](#)
