



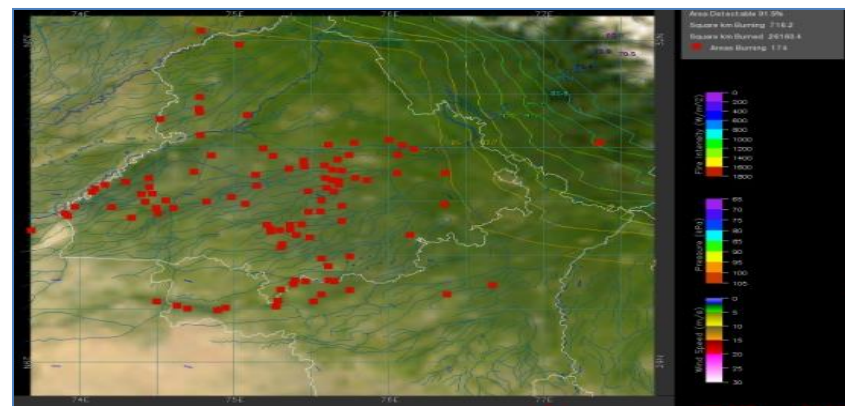
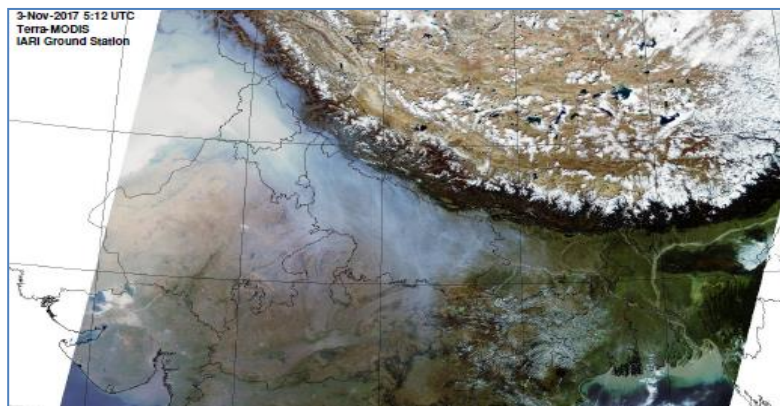
**Bulletin
No. 32**

**Events Date:
16-Oct-2023**

**Issued on:
16-Oct-2023**



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



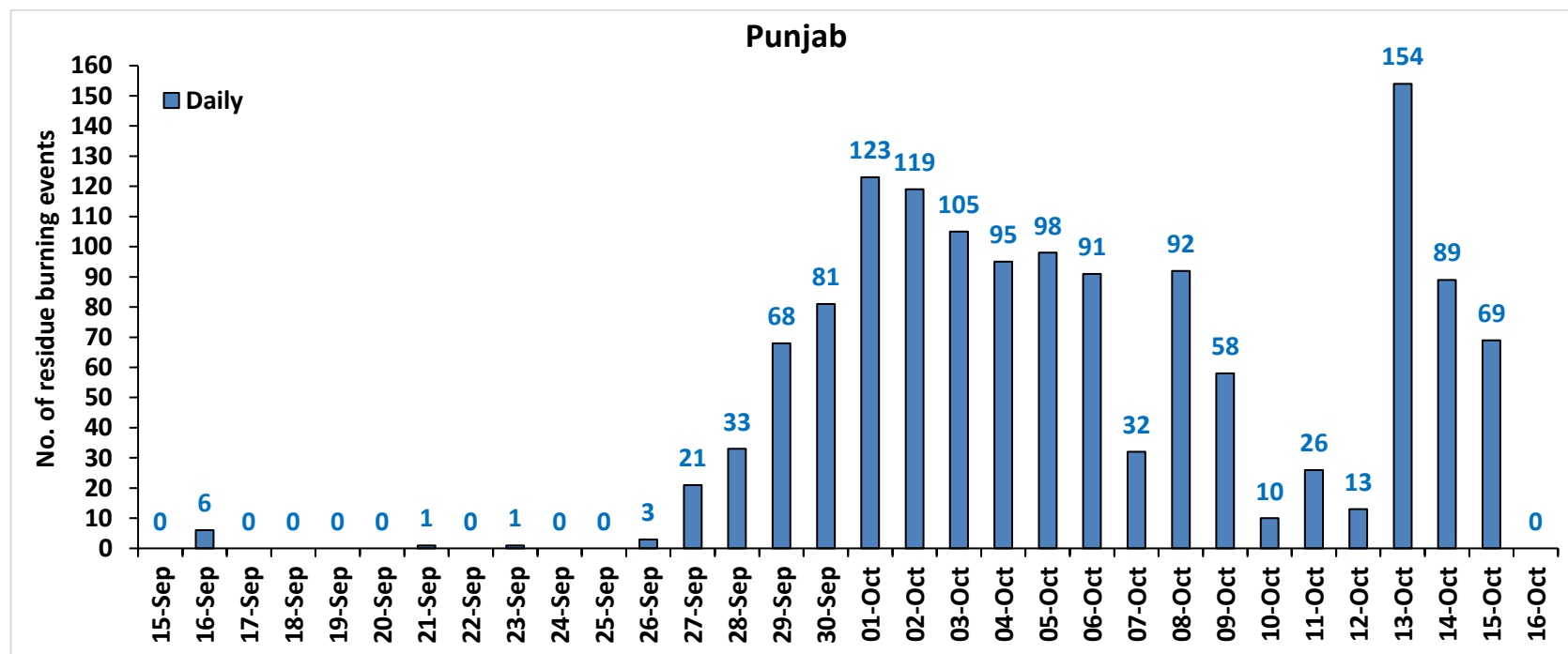
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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

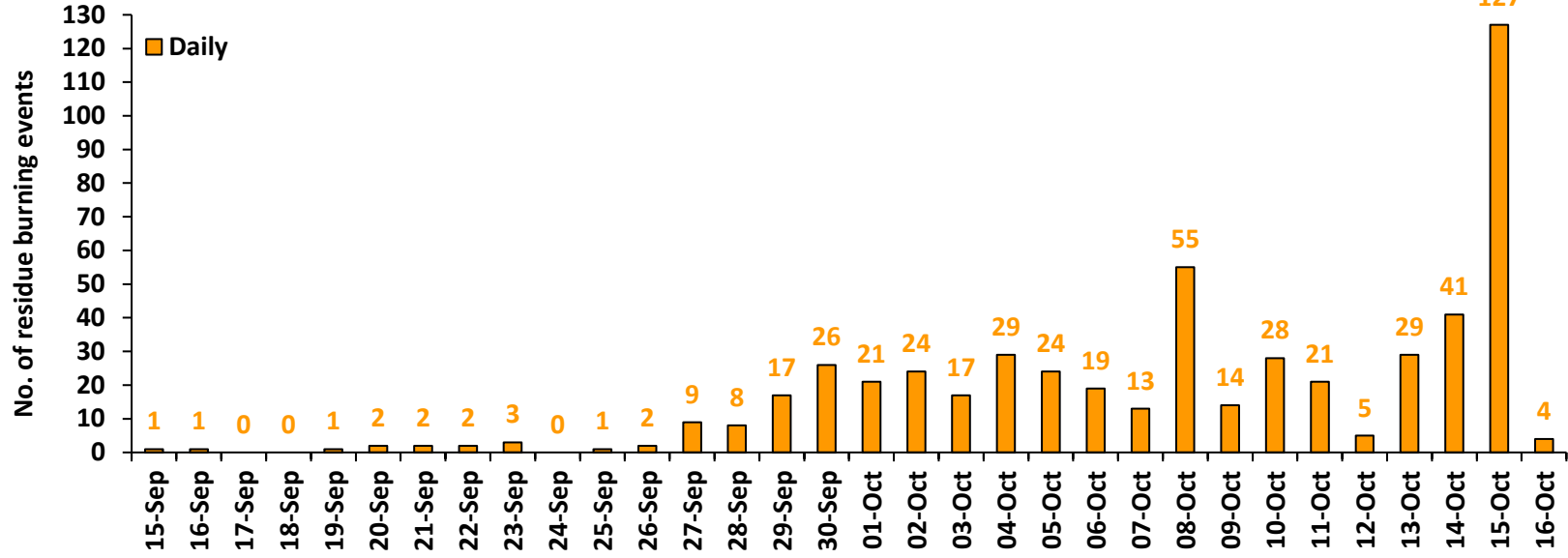
Highlights for 16-Oct-2023

- 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 **87** residue burning events in the six study States on 16-Oct-2023.
- The state wise events detected on 16-Oct-2023 were **00** in Punjab, **04** in Haryana, **14** in UP, **00** in Delhi, **18** in Rajasthan and **51** in MP.
- Total **2878** burning events were detected in the six states between 15-Sept-2023 and 16-Oct-2023, which are distributed as **1388**, **546**, **326**, **02**, **241** and **375** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of residue burning events was hampered by the presence of clouds over Punjab, Haryana, Delhi, Western Rajasthan and Central Madhya Pradesh states.

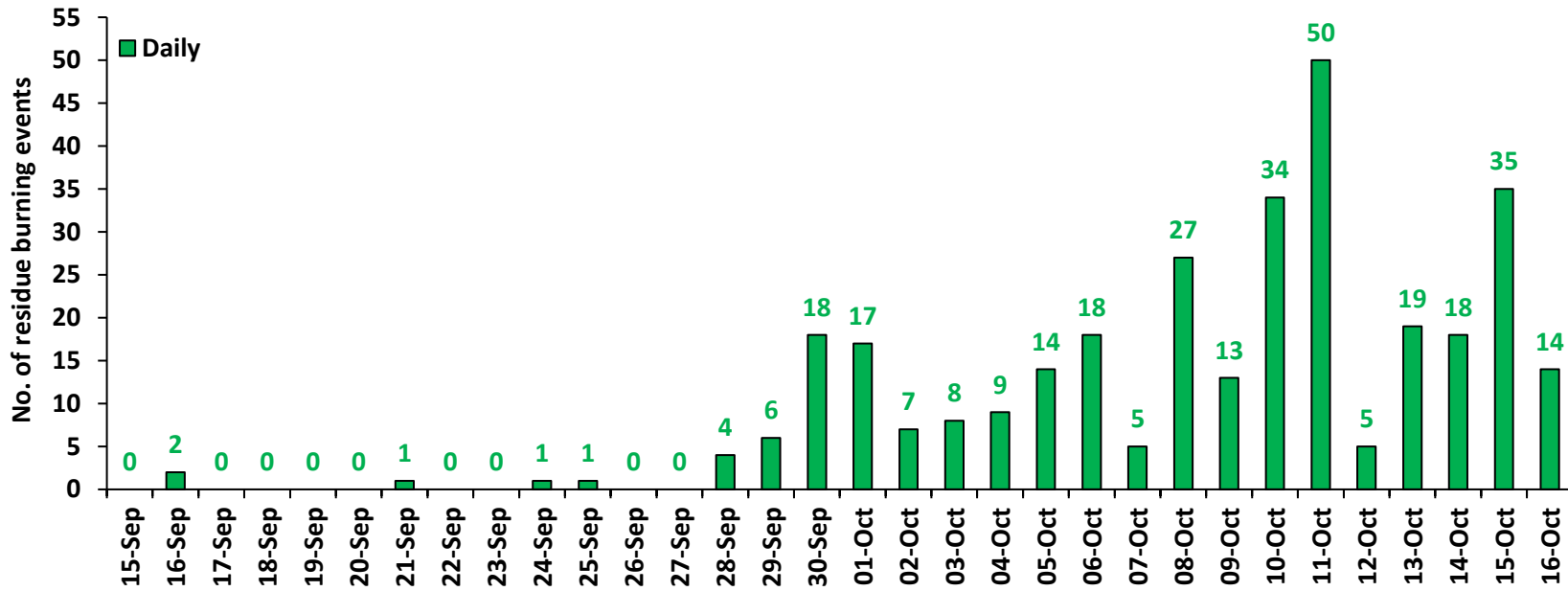
Temporal distribution of rice residue burning events for the study States in 2023



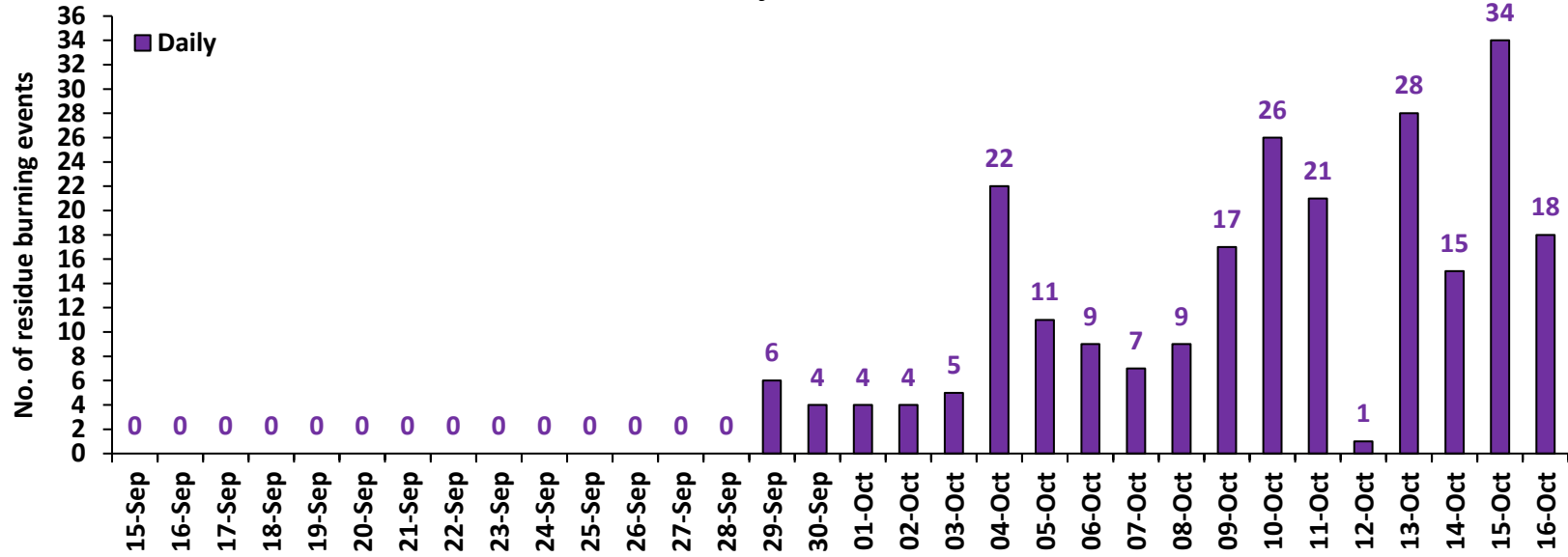
Haryana



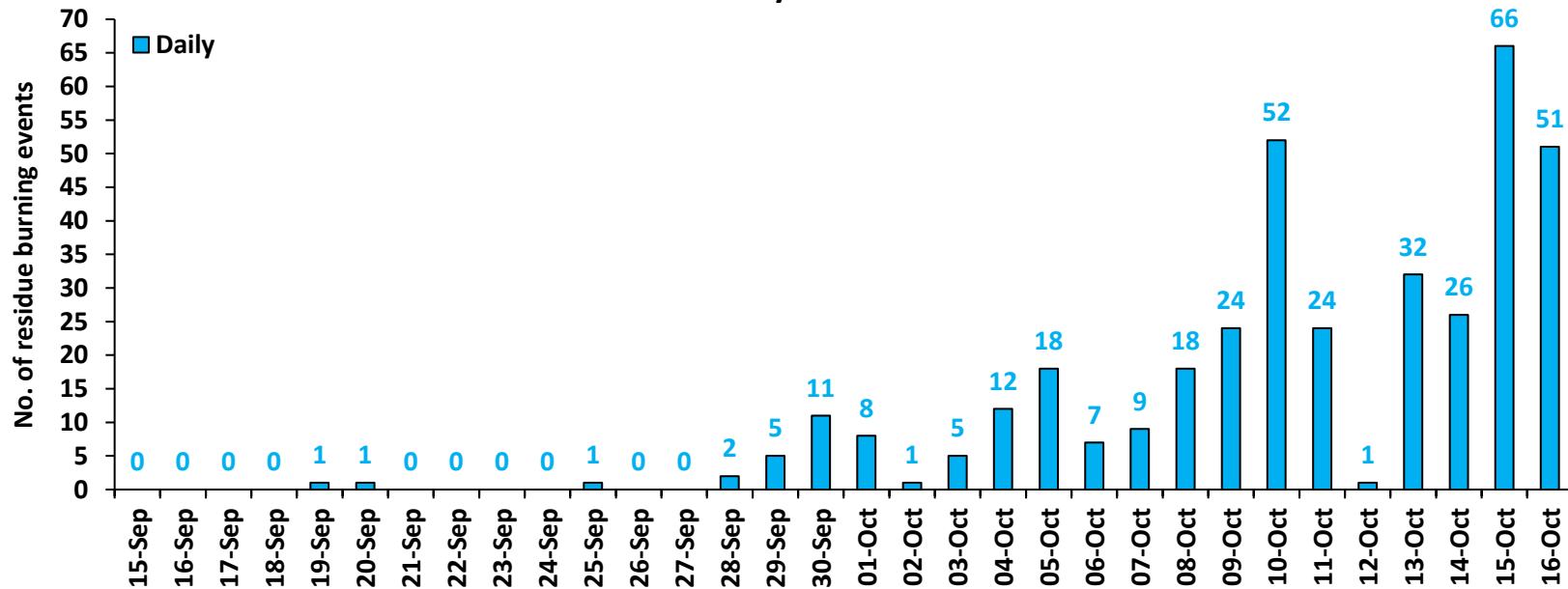
Uttar Pradesh



Rajasthan



Madhya Pradesh



Delhi

No. of residue burning events

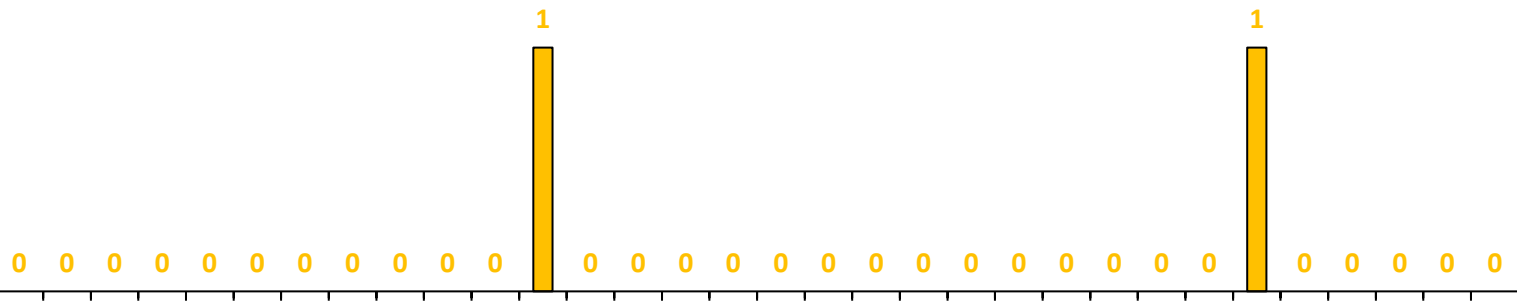
■ Daily

2

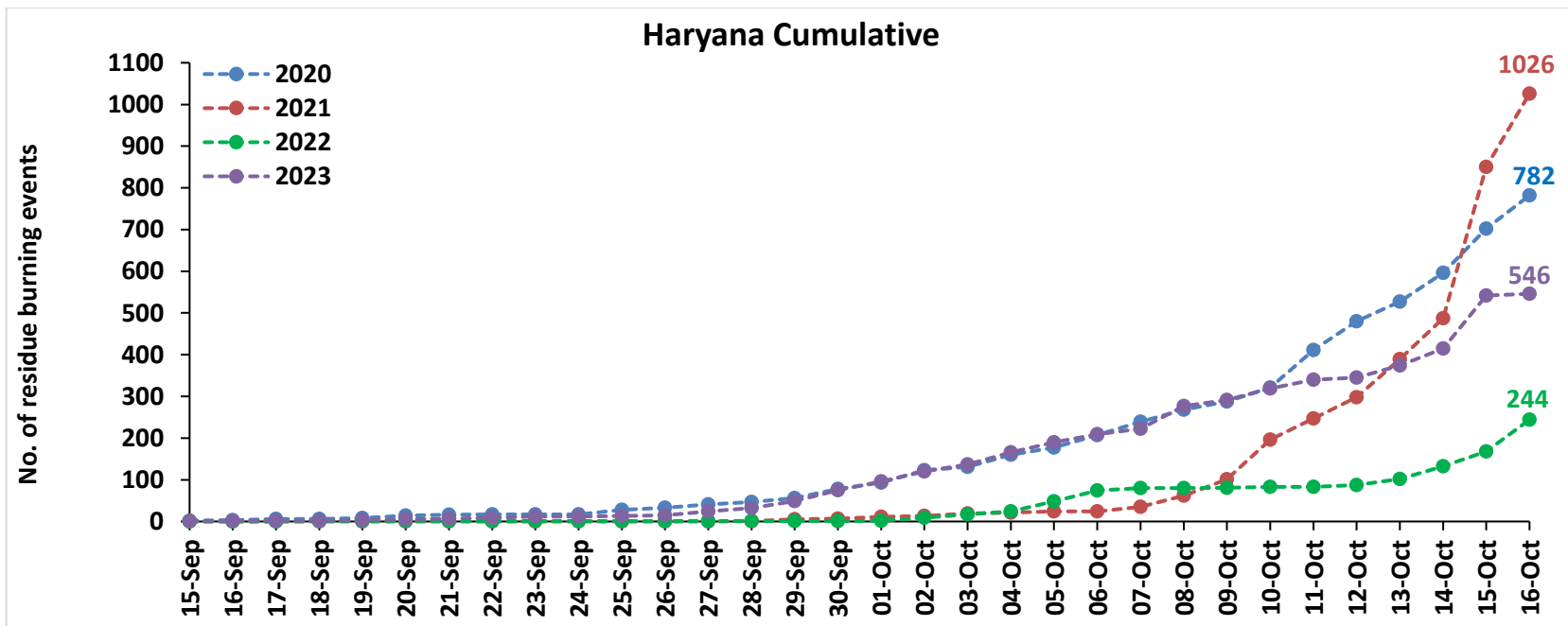
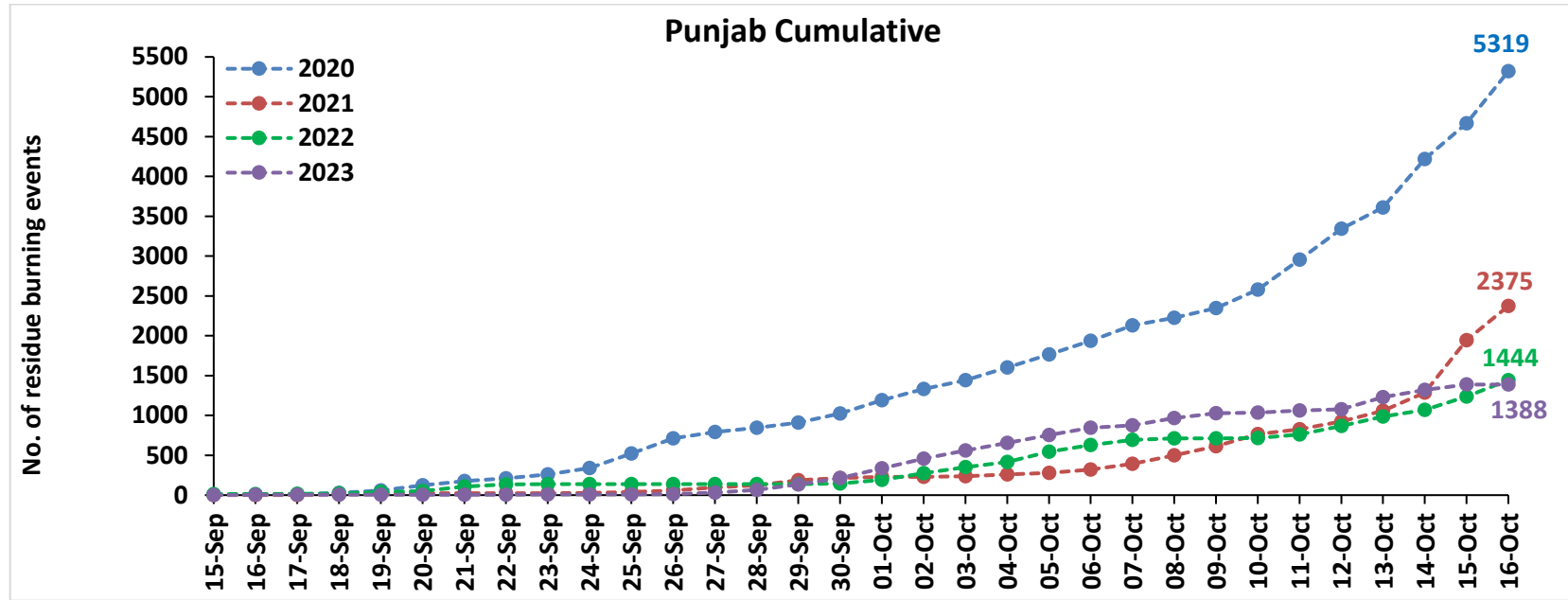
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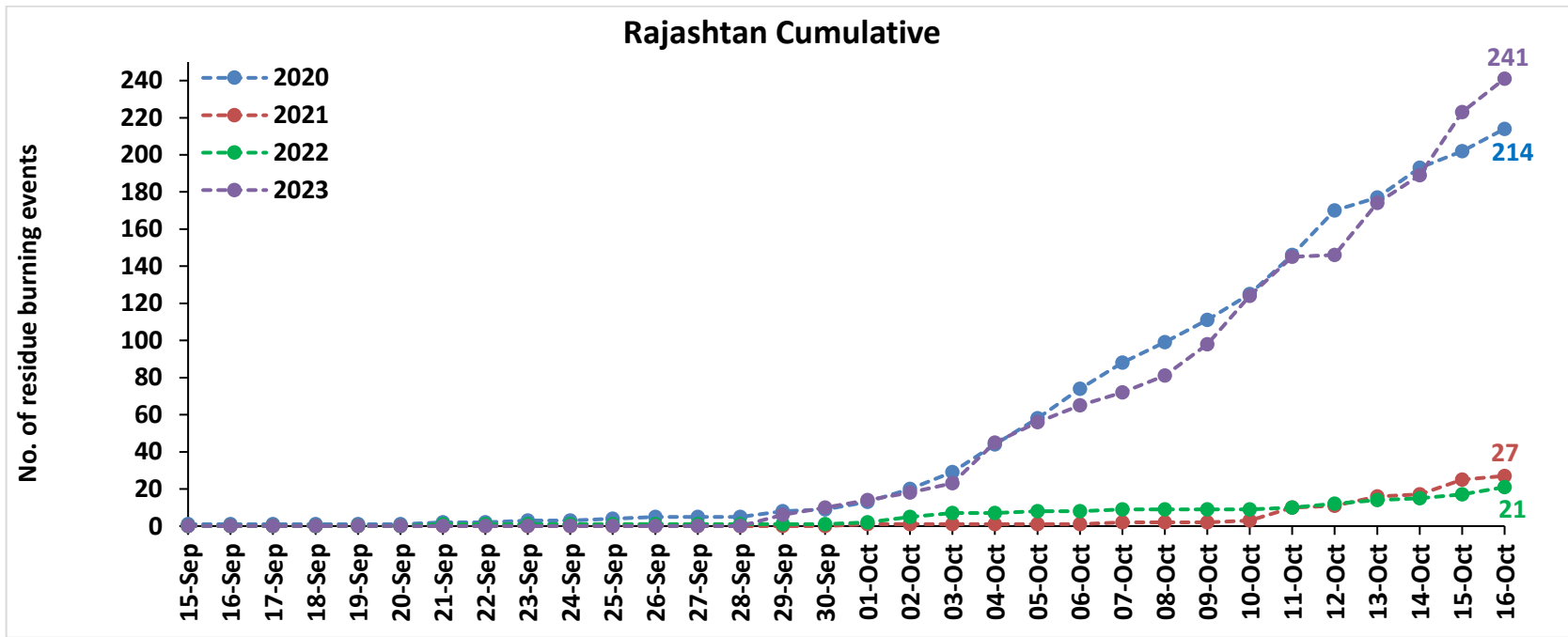
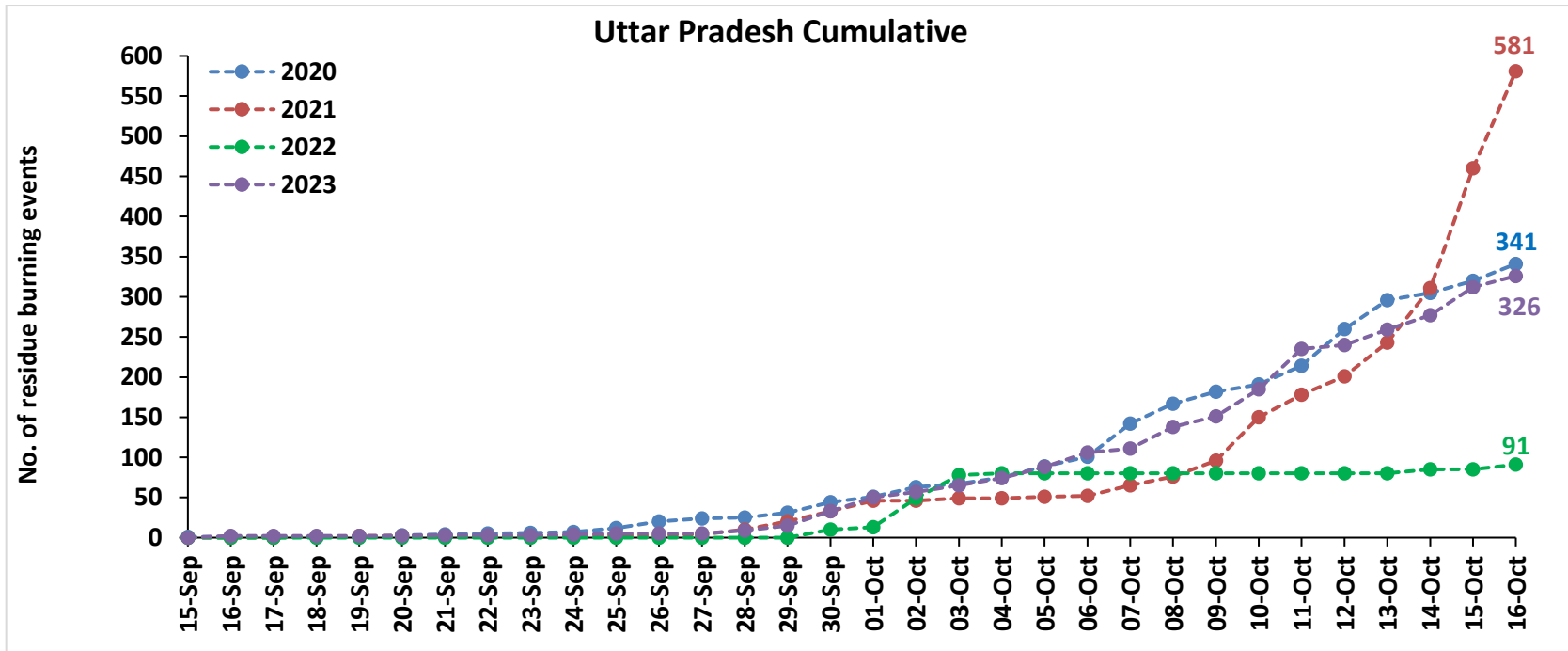
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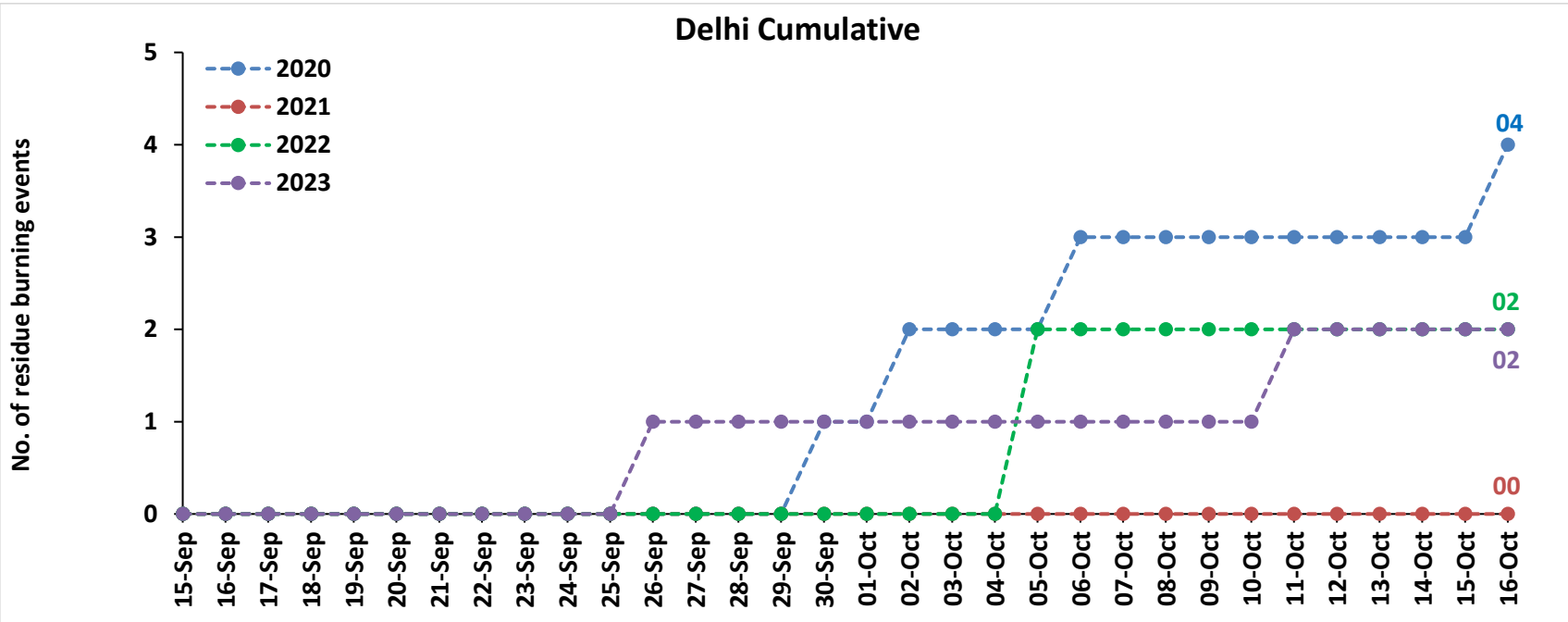
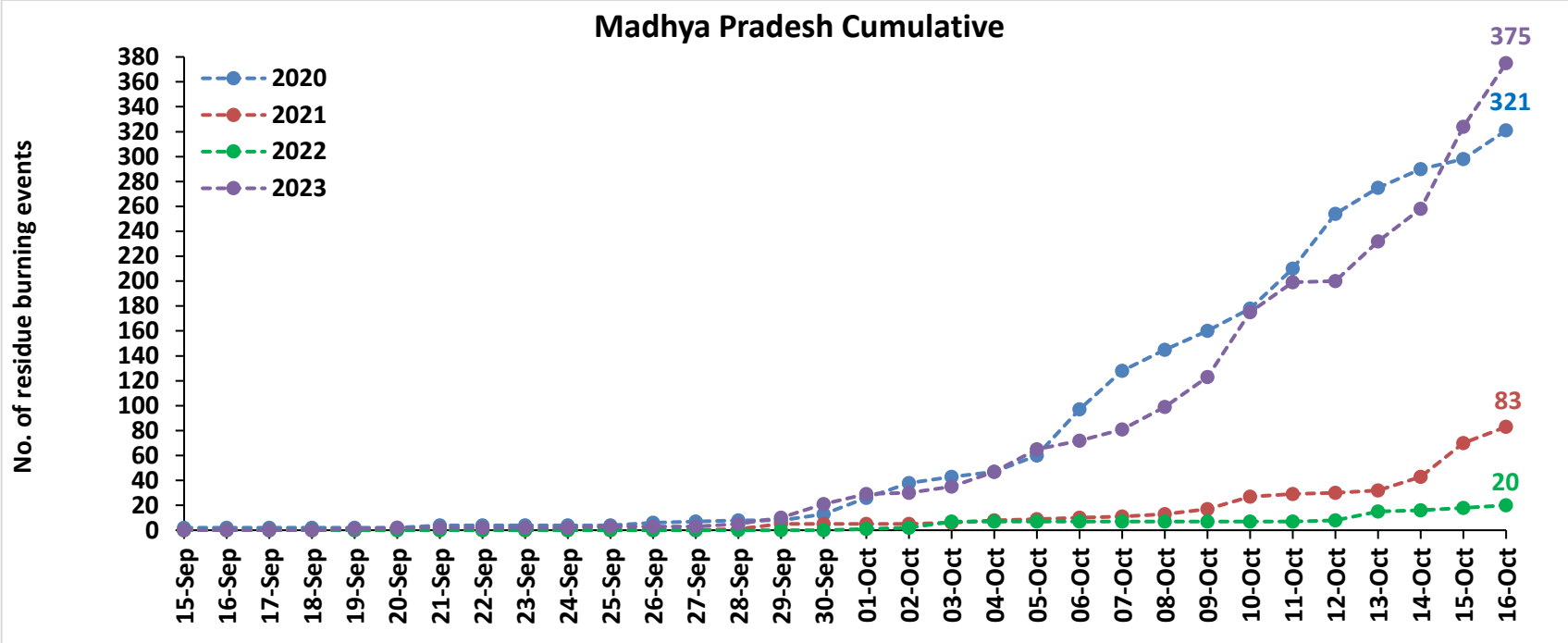
15-Sep 16-Sep 17-Sep 18-Sep 19-Sep 20-Sep 21-Sep 22-Sep 23-Sep 24-Sep 25-Sep 26-Sep 27-Sep 28-Sep 29-Sep 30-Sep 01-Oct 02-Oct 03-Oct 04-Oct 05-Oct 06-Oct 07-Oct 08-Oct 09-Oct 10-Oct 11-Oct 12-Oct 13-Oct 14-Oct 15-Oct 16-Oct



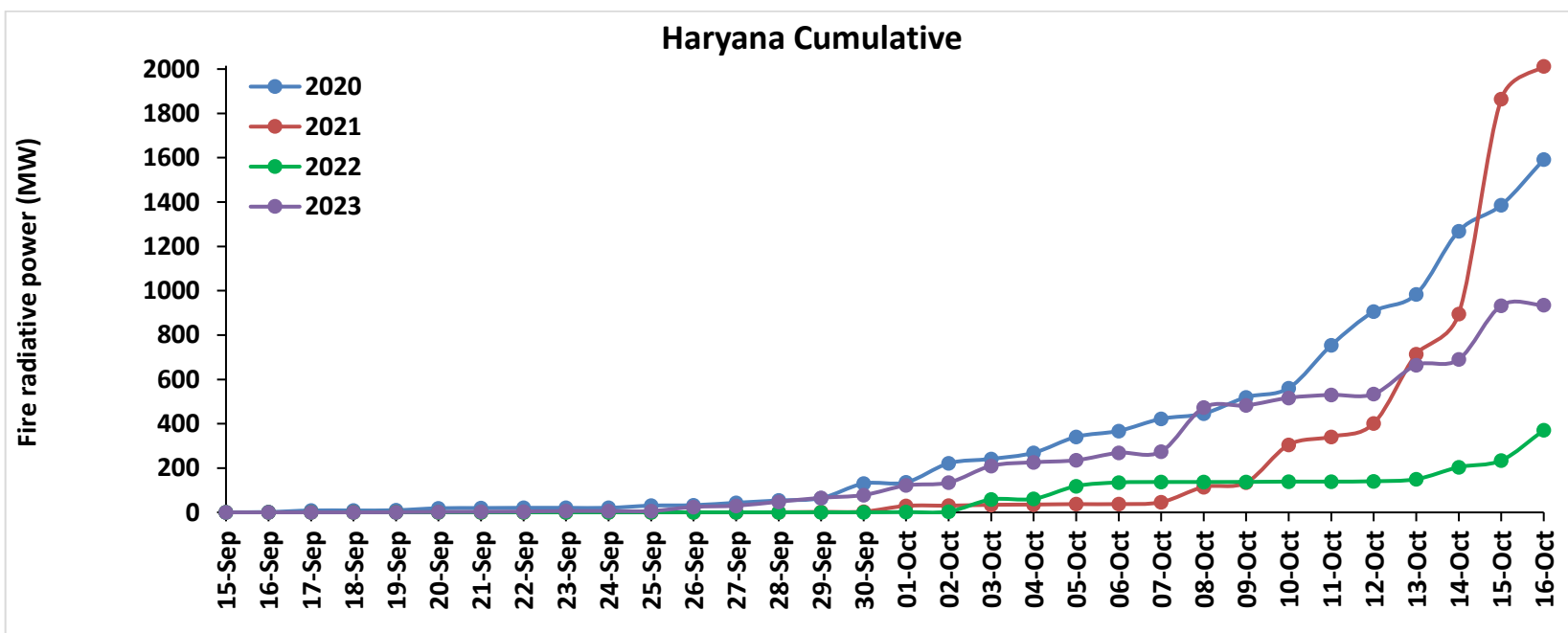
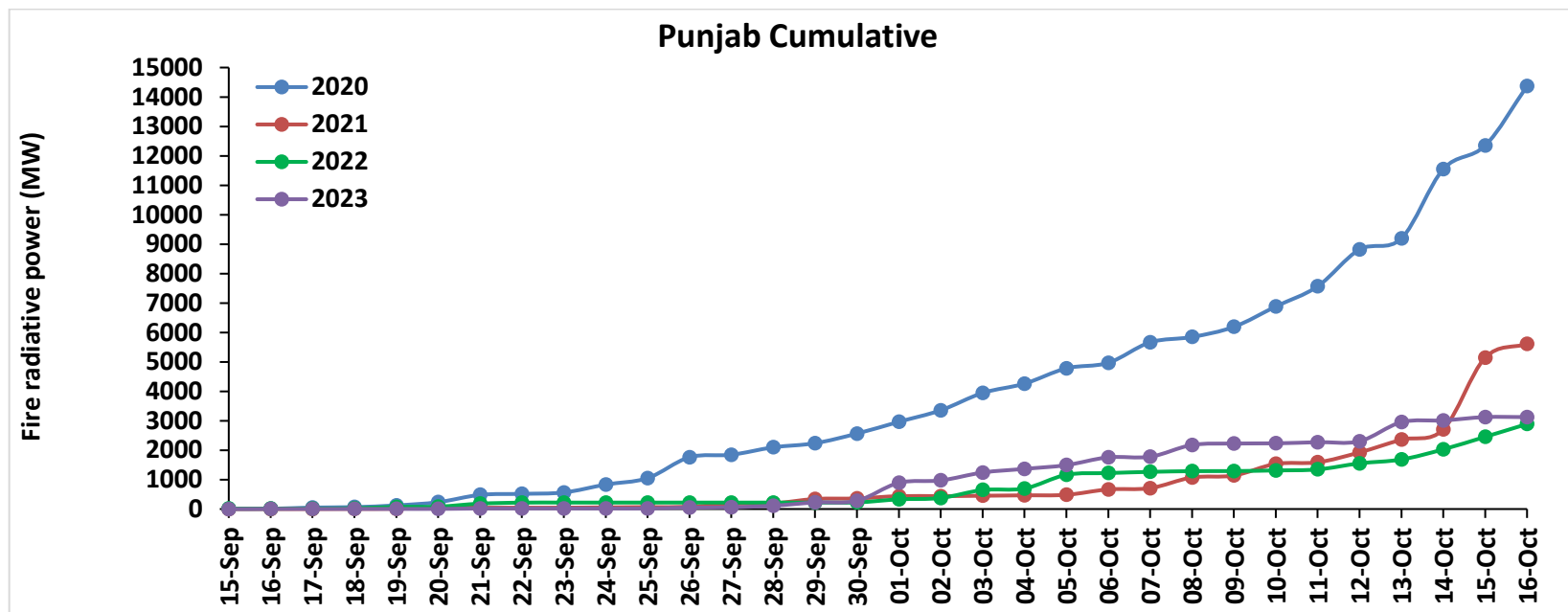
Comparison of residue burning events in current year (2023) with previous years (2020, 2021 and 2022) for the study State



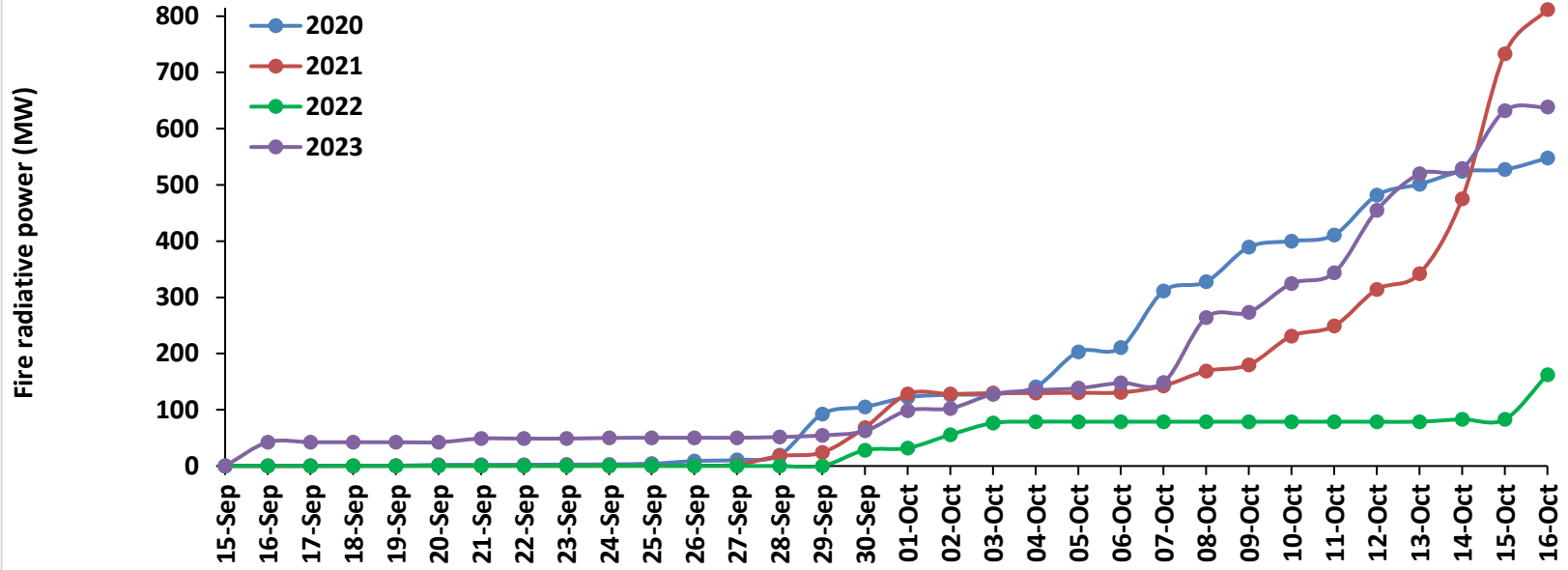




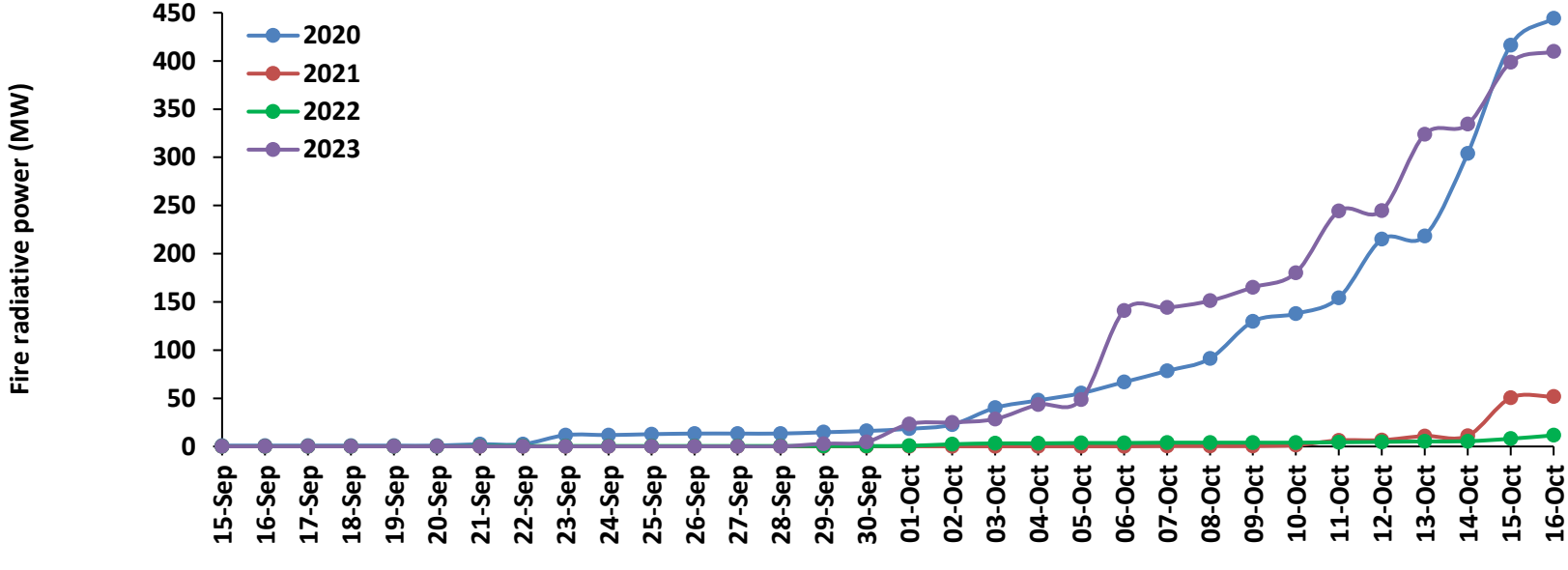
Comparison of residue burning fire power in current year (2023) with previous years (2020, 2021 and 2022) for the study States

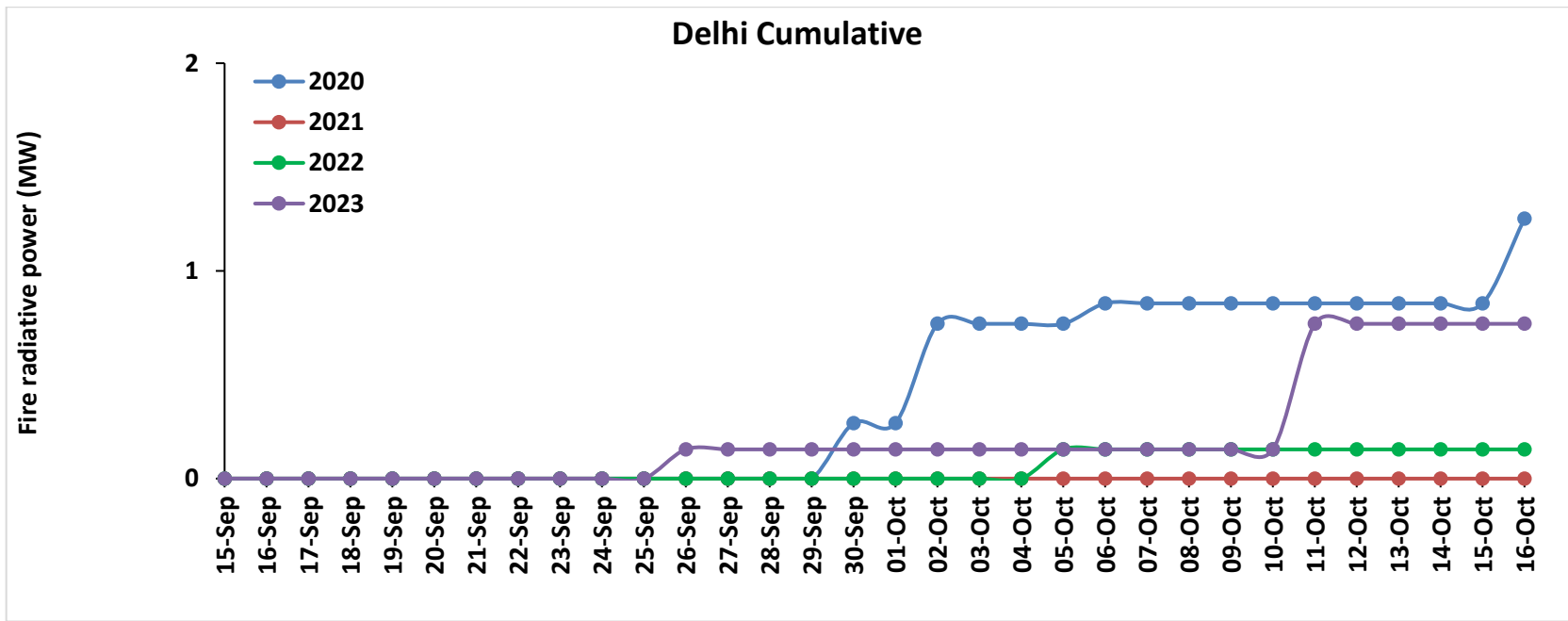
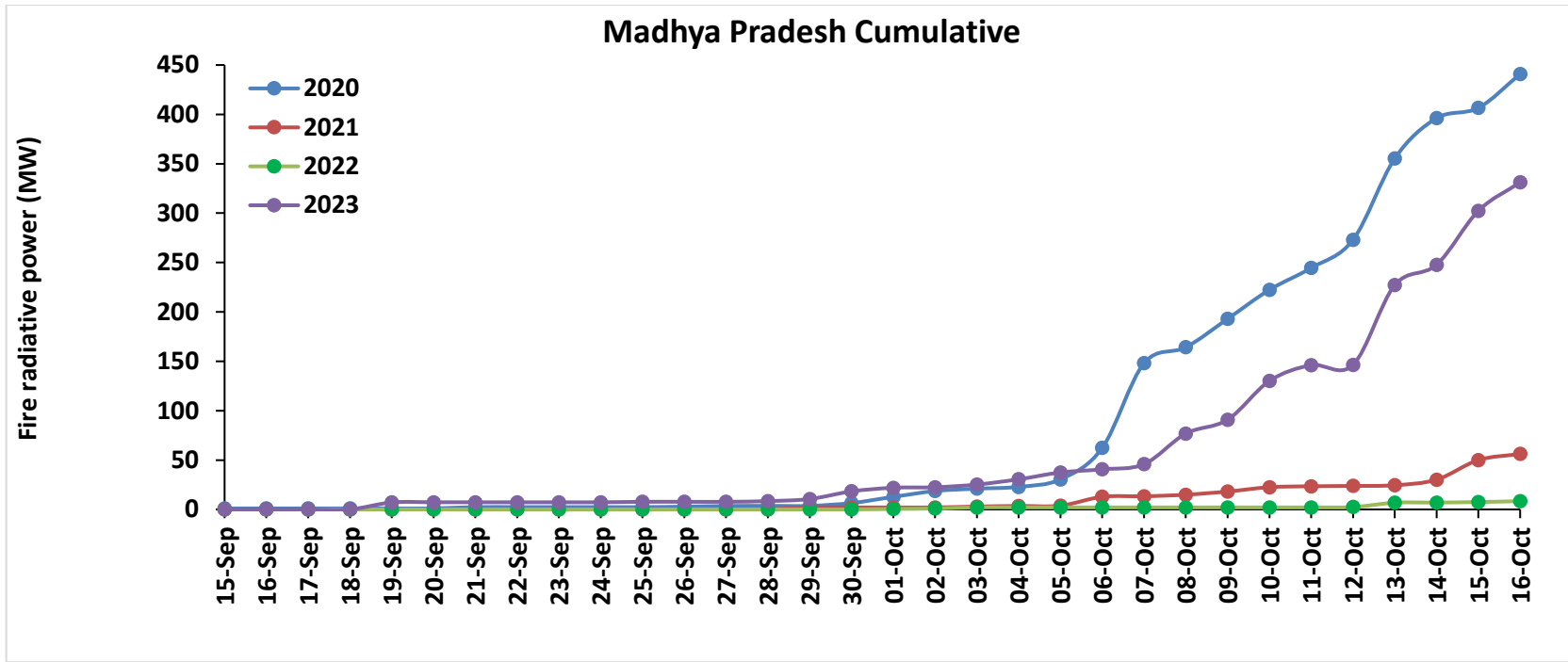


Uttar Pradesh Cumulative



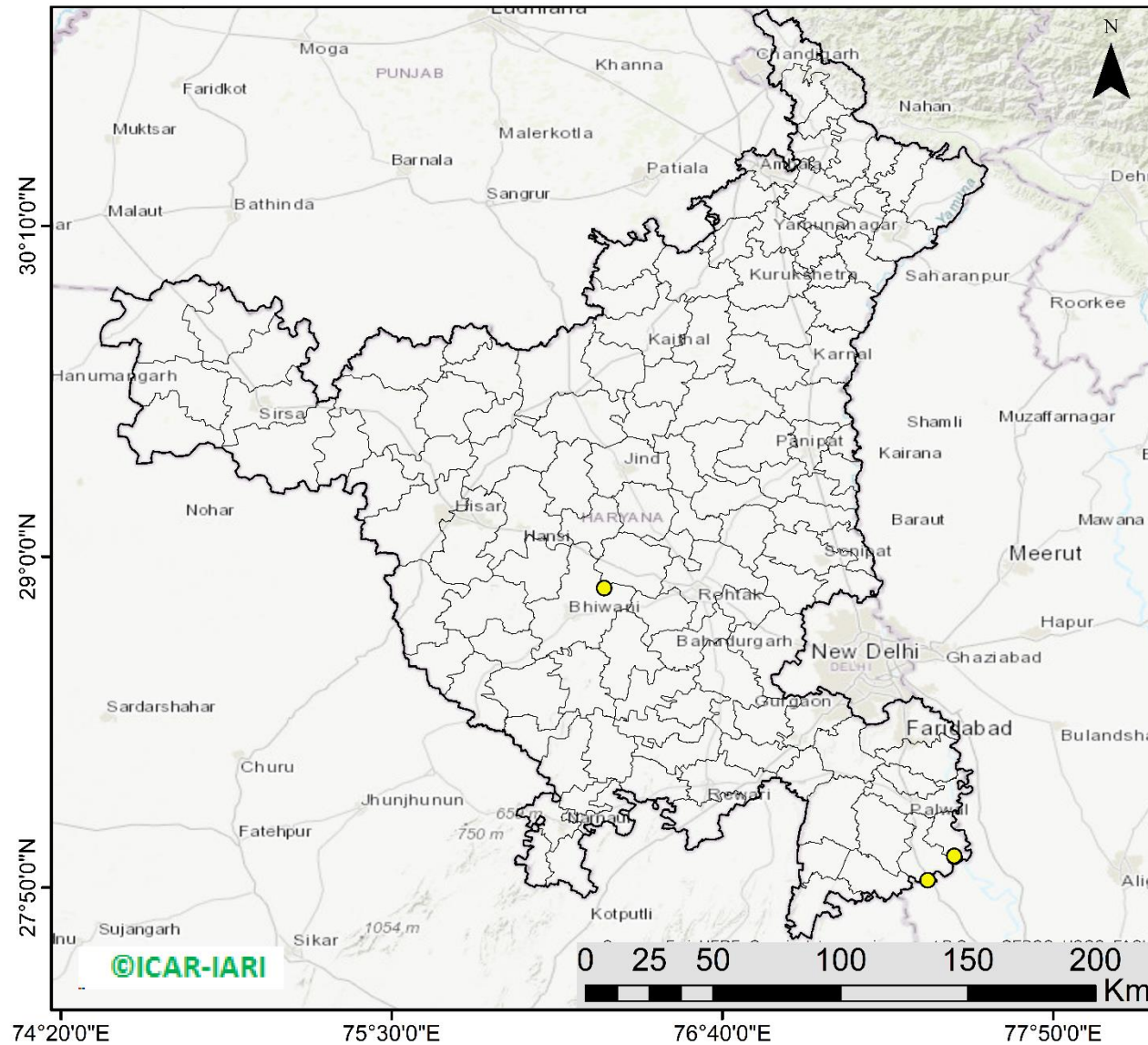
Rajasthan Cumulative





Haryana

RICE RESIDUE BURNING IN HARYANA



04 burning events detected in Haryana on (16th Oct 2023)

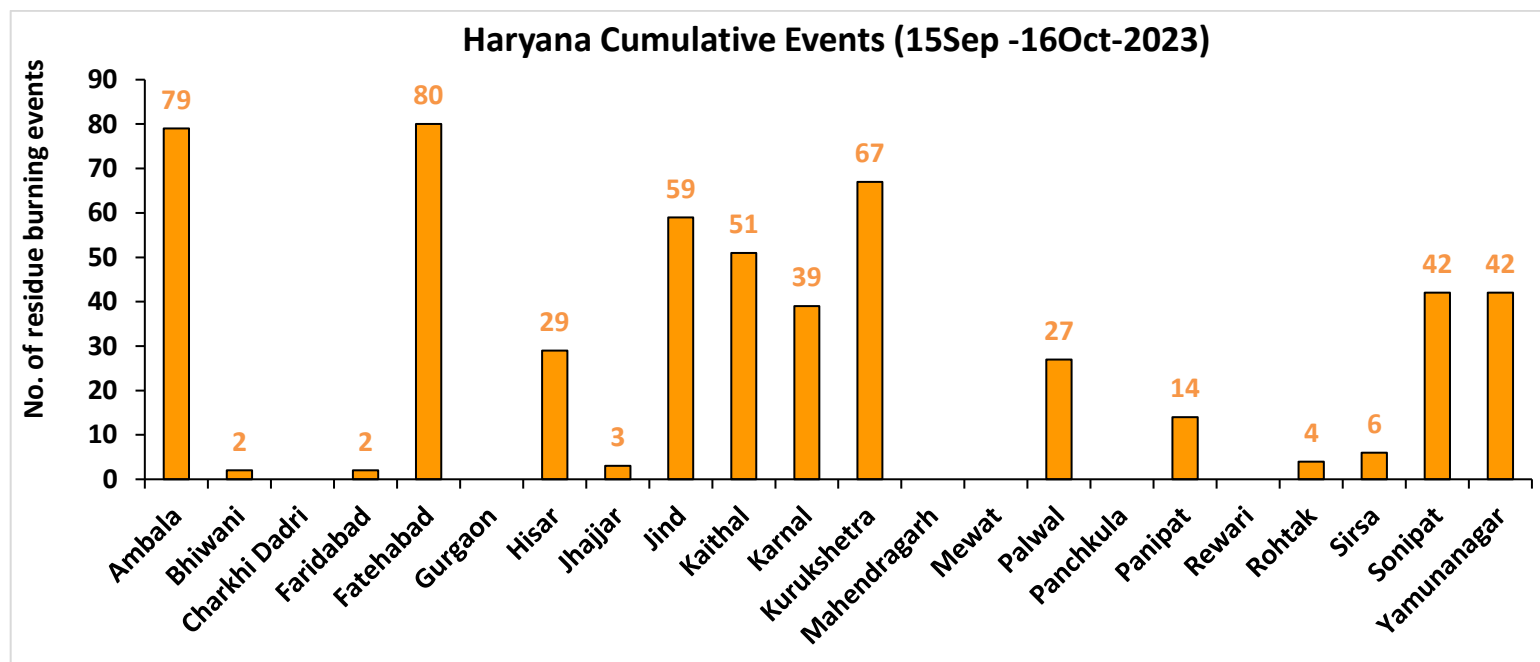
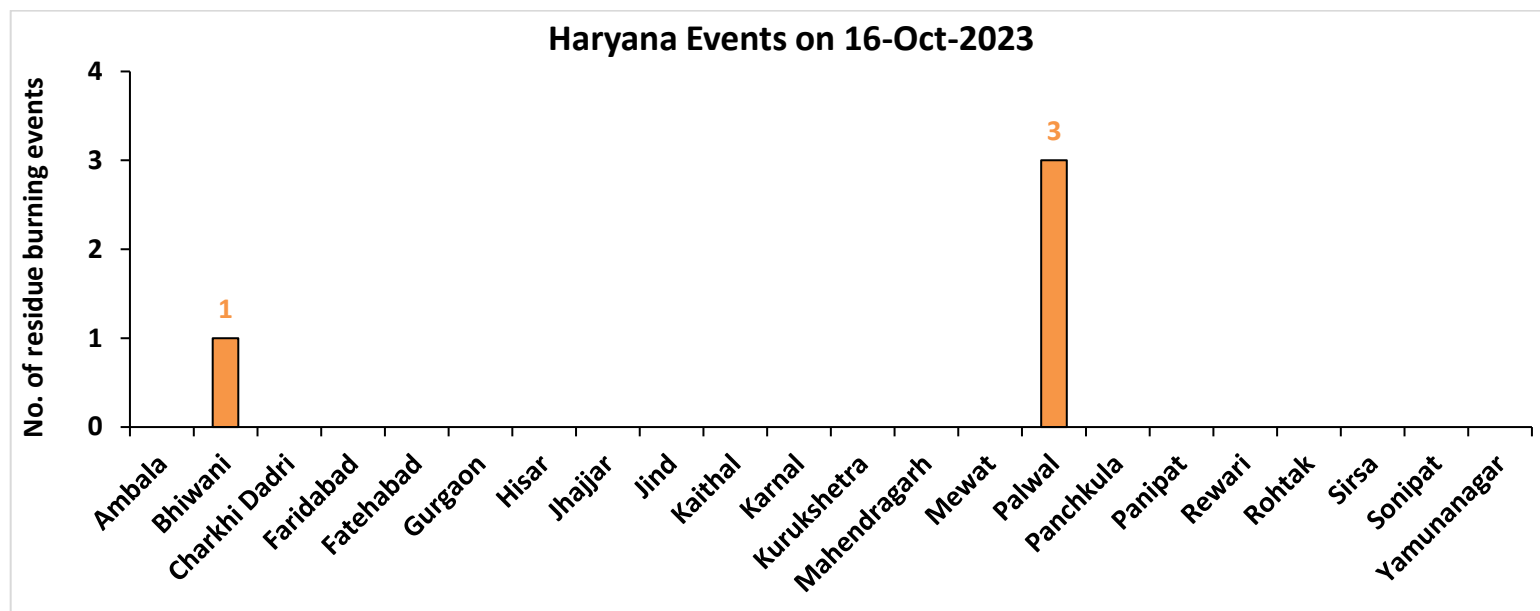
Fire Intensity (W/m²)

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



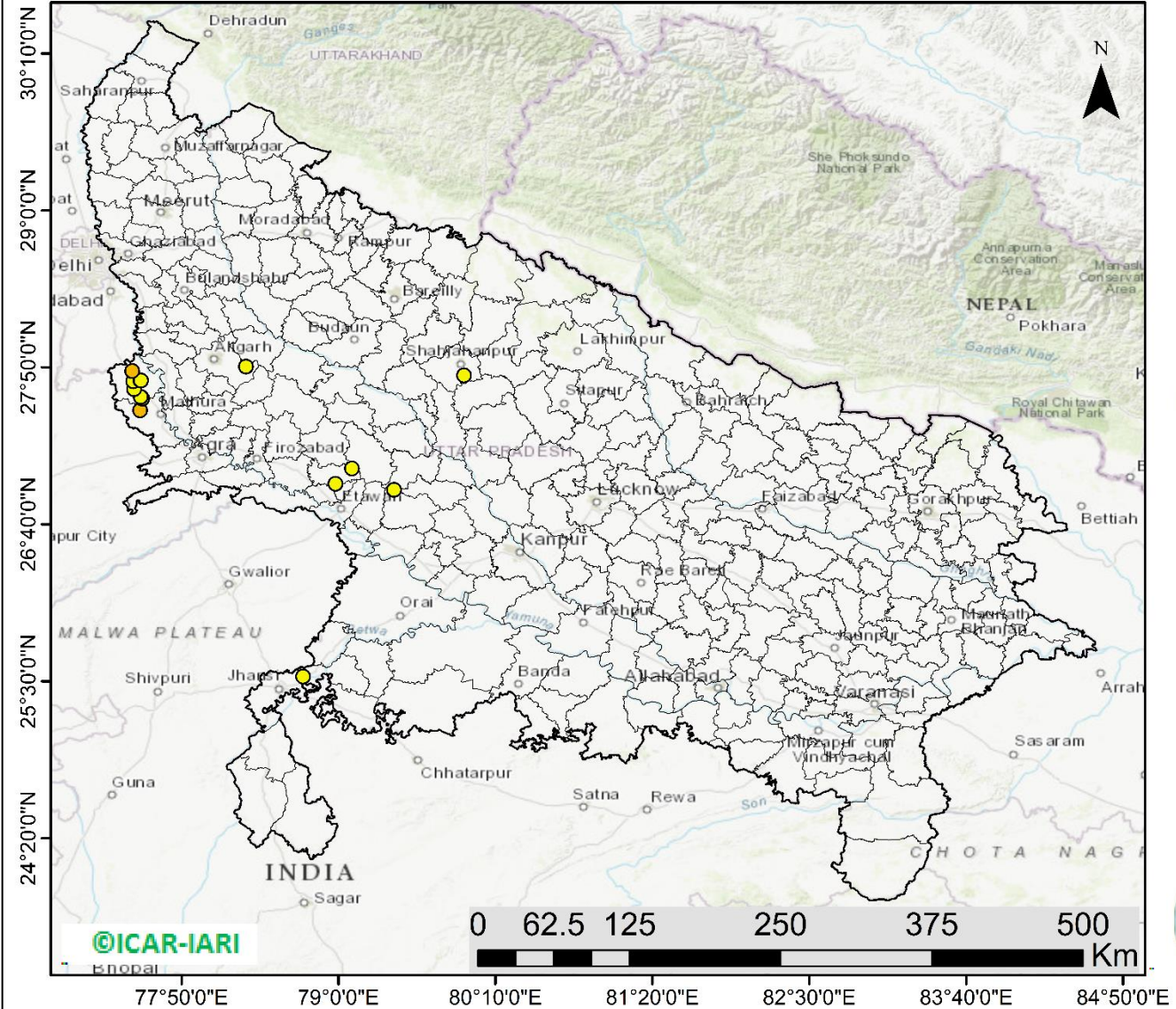
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Haryana (15Sep-16Oct -2023)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



14 burning events detected in Uttar Pradesh on (16th Oct 2023)

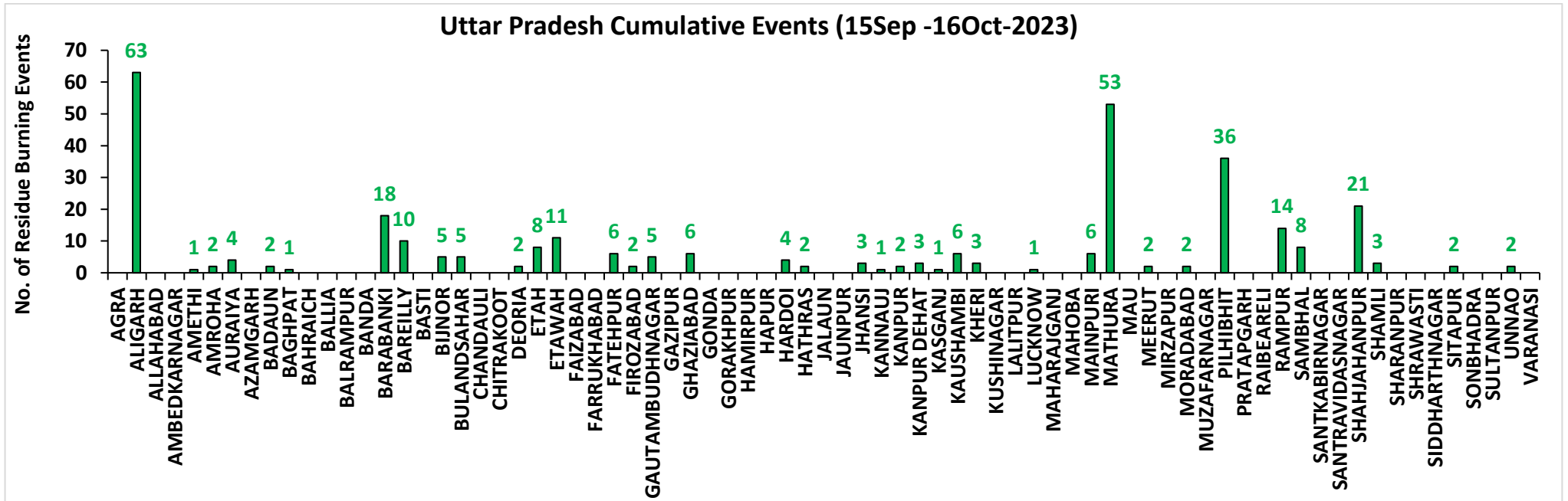
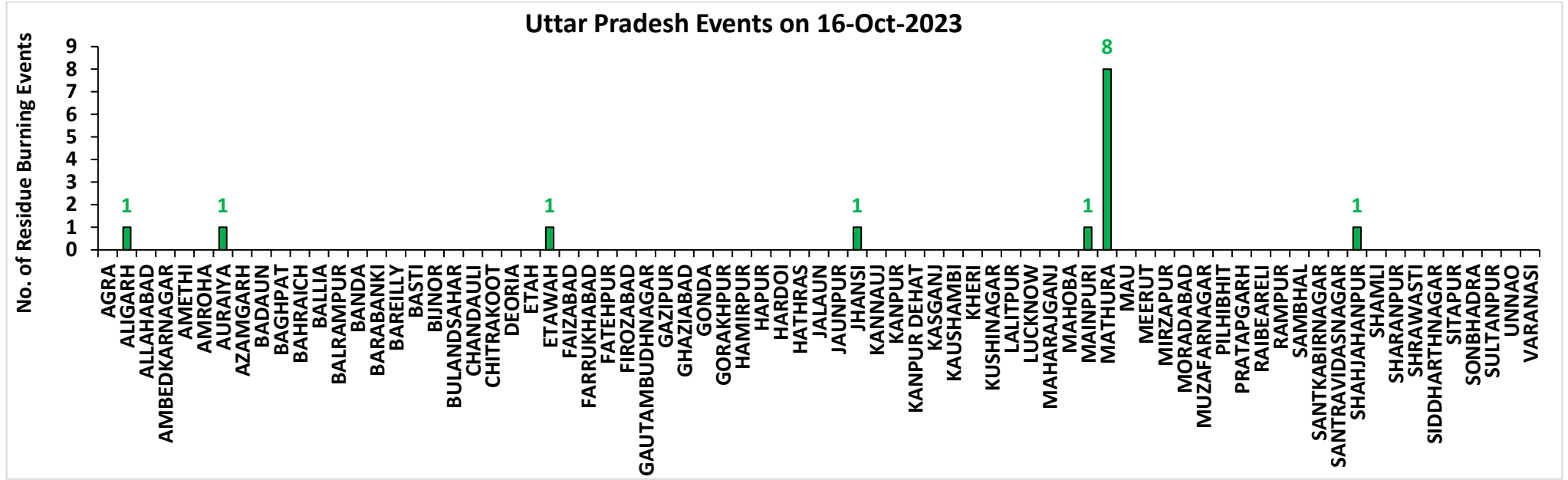
Fire Intensity (W/m2)

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



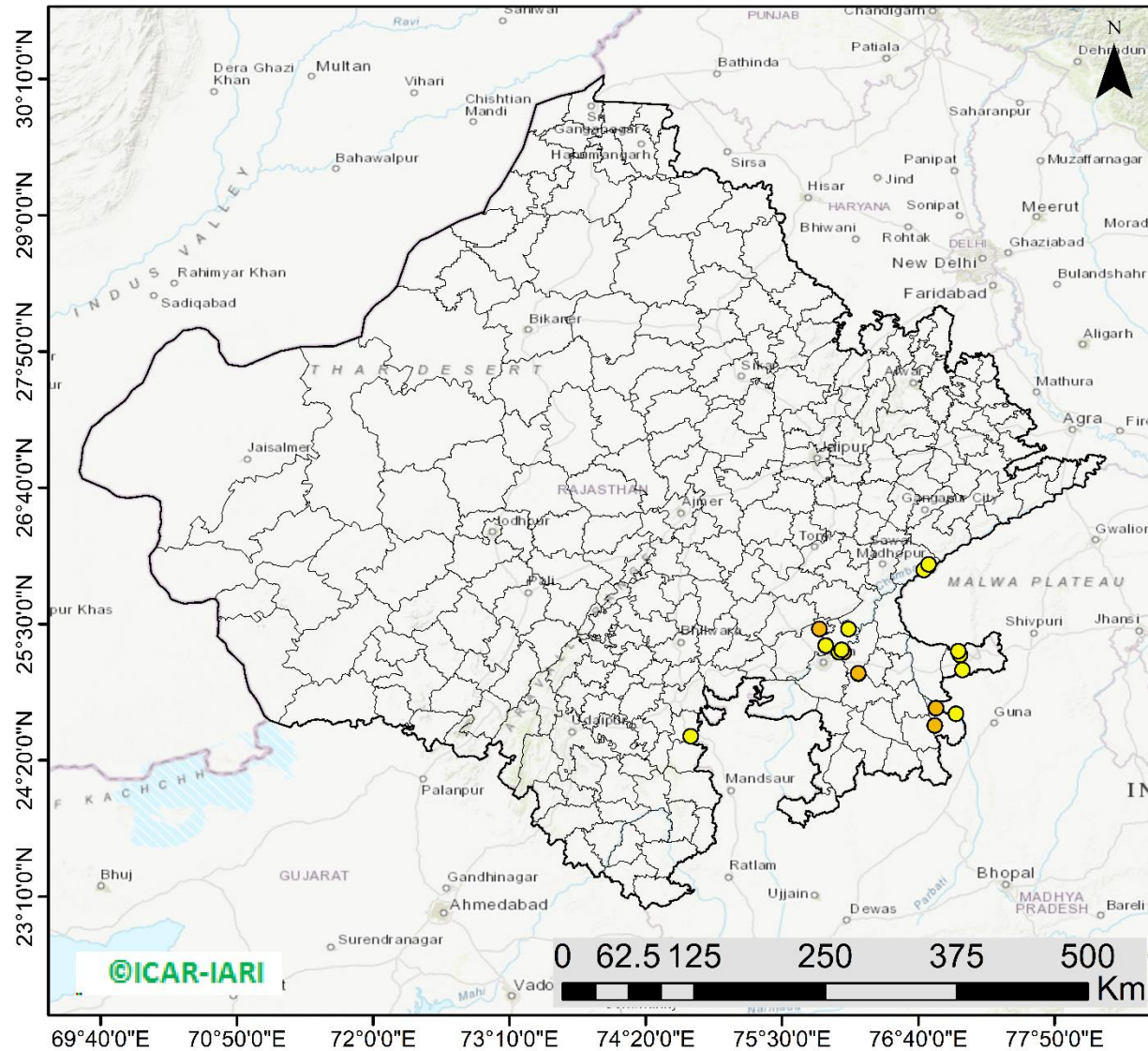
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-16Oct -2023)



Rajasthan

RICE RESIDUE BURNING IN RAJASTHAN



18 burning events
detected in Rajasthan on
(16th Oct 2023)

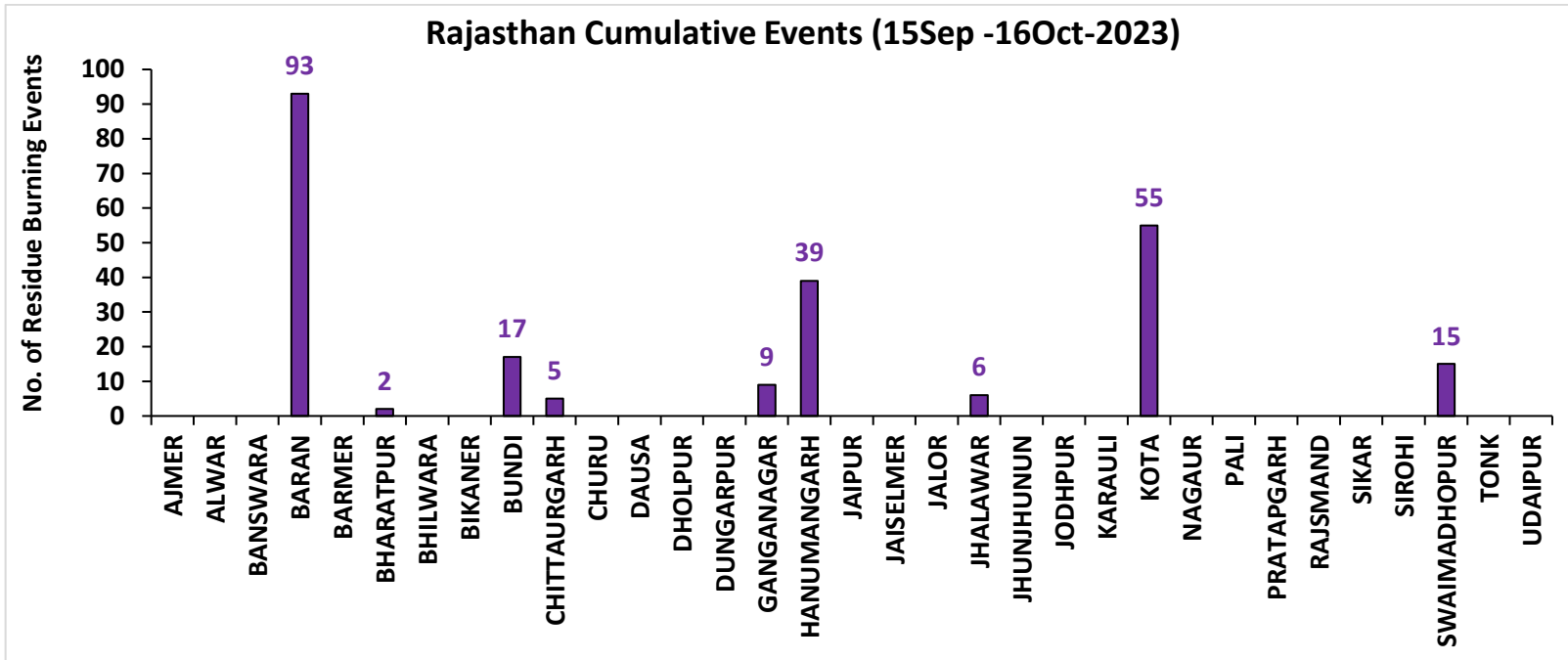
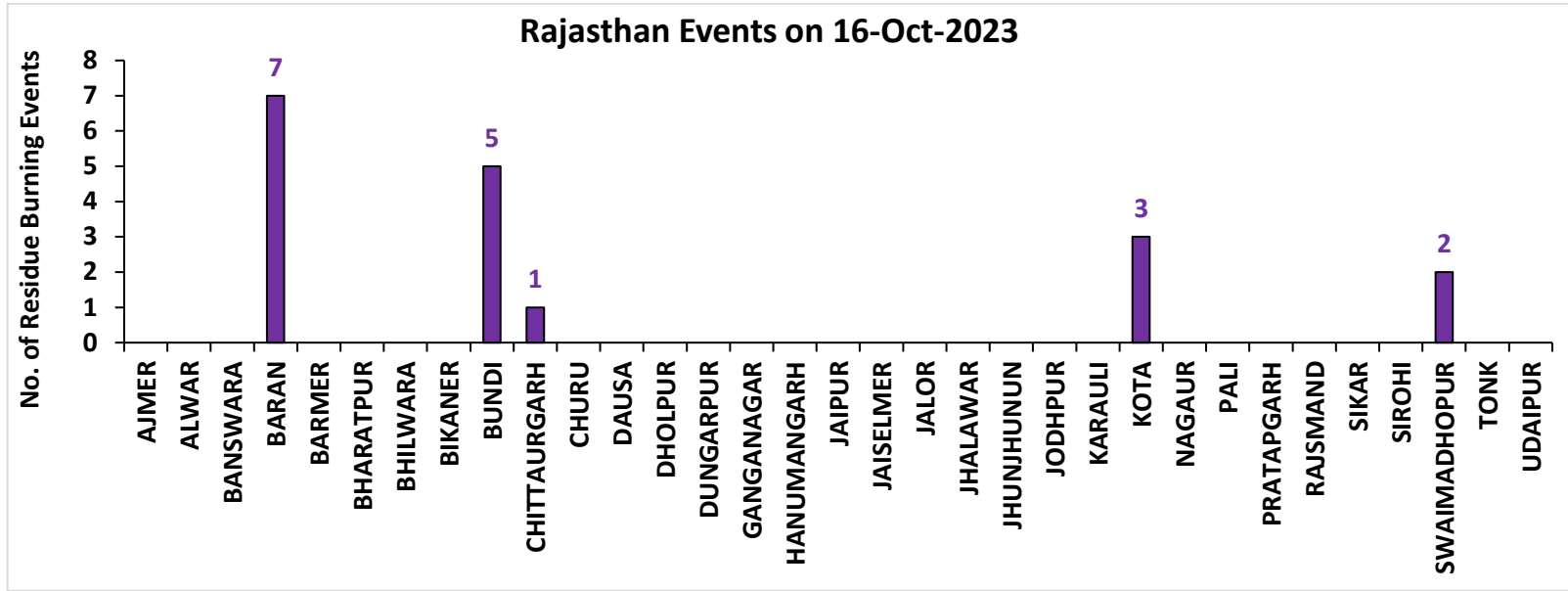
Fire Intensity (W/m²)

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



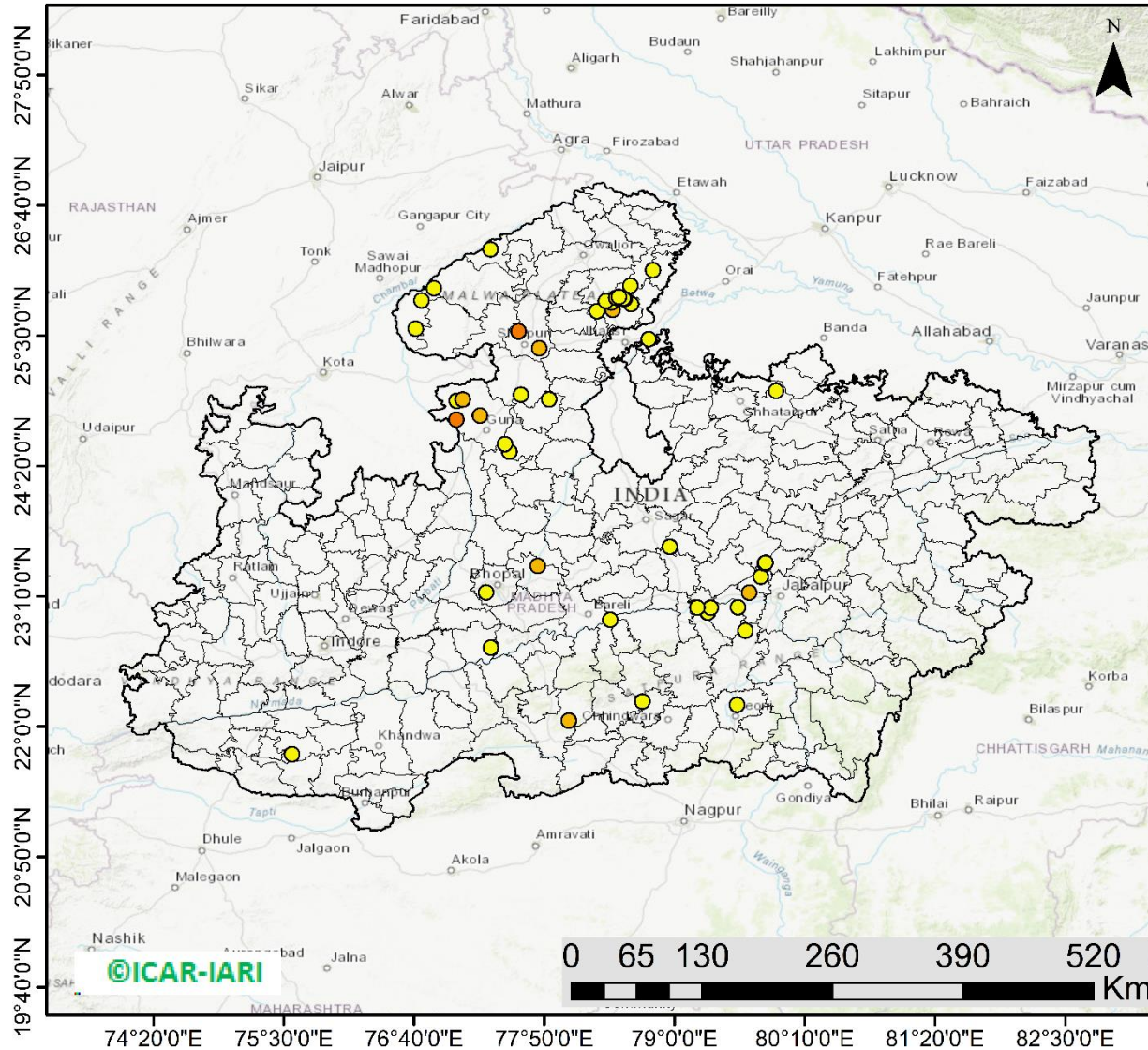
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Rajasthan (15Sep-16Oct -2023)



Madhya Pradesh

RICE RESIDUE BURNING IN MADHYA PRADESH



51 burning events detected in MP on (16th Oct 2023)

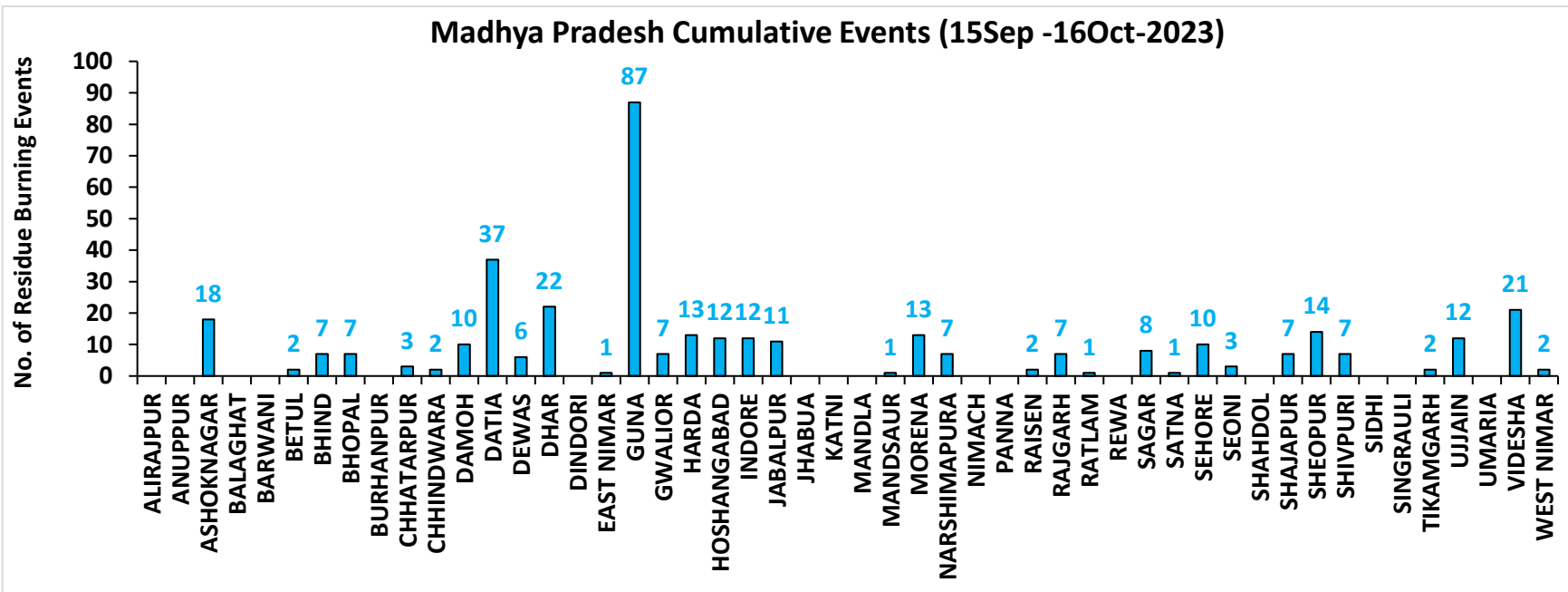
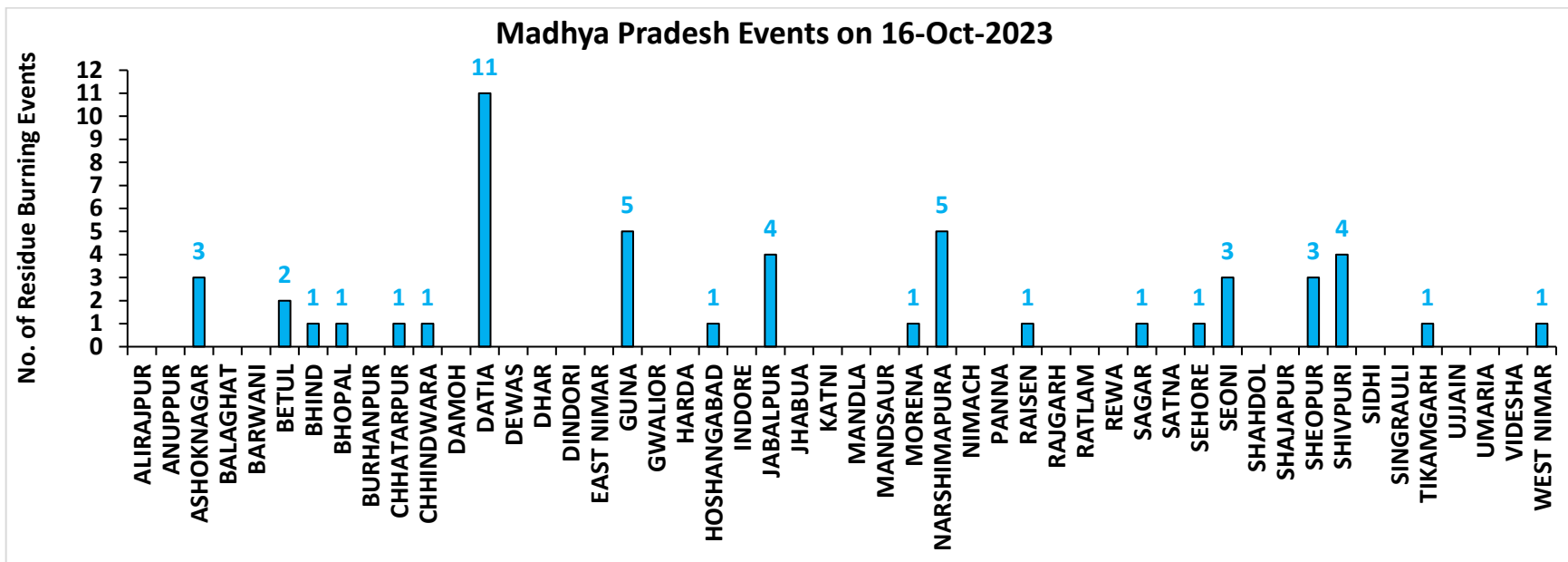
Fire Intensity (W/m²)

- 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-16Oct -2023)



District-wise cumulative number of residues burning events detected in 2020, 2021, 2022 and 2023
(Period: 15 September-16 October)

(a) Punjab

District	15 Sep-16 Oct			
	2020	2021	2022	2023
Amritsar	1781	604	600	644
Barnala	18	13	7	7
Bathinda	43	8	1	2
Faridkot	147	70	8	9
Fatehgarh Sahib	102	101	13	24
Fazilka	32	29	11	6
Firozpur	365	78	66	47
Gurdaspur	331	143	70	11
Hoshiarpur	31	11	2	2
Jalandhar	88	76	48	20
Kapurthala	182	93	72	81
Ludhiana	135	148	26	24
Mansa	36	2	7	28
Moga	44	39	28	9
Muktsar	26	21	1	1
Pathankot	0	0	0	0
Patiala	470	256	55	161
Rupnagar	18	16	0	1
Sangrur	118	45	31	81
SAS NAGAR (Mohali)	38	27	5	36
SBS Nagar	11	9	2	2
Tarn Taran	1303	586	391	192
Total	5319	2375	1444	1388

(b) Haryana

District	15 Sep-16 Oct			
	2020	2021	2022	2023
AMBALA	93	54	19	79
BHIWANI	0	0	0	2
CHARKHI DADRI	0	0	0	0
FARIDABAD	0	1	0	2
FATEHABAD	44	49	17	80
GURGAON	0	0	0	0
HISAR	6	1	2	29
JHAJJAR	1	0	0	3
JIND	22	30	18	59
KAITHAL	136	249	48	51
KARNAL	233	343	51	39
KURUKSHETRA	175	205	64	67
MAHENDRAGARH	0	0	0	0
MEWAT	0	0	0	0
PALWAL	6	25	0	27
PANCHKULA	0	0	0	0
PANIPAT	9	15	2	14
REWARI	0	0	0	0
ROHTAK	0	0	0	4
SIRSA	7	4	3	6
SONIPAT	9	5	3	42
YAMUNANAGAR	41	45	17	42
Total	782	1026	244	546

(c) Uttar Pradesh

District	15 Sep-16 Oct													
	2020	2021	2022	2023	GAUTAMBUDHNAGAR	1	7	0	5	MUZAFARNAGAR	2	2	0	0
AGRA	1	0	0	0	GAZIPUR	0	0	0	0	PILHIBHIT	8	82	3	36
ALIGARH	25	21	1	63	GHAZIABAD	3	2	1	6	PRATAPGARH	0	0	0	0
ALLAHABAD	0	1	0	0	GONDA	0	0	0	0	RAIBEARELI	1	0	0	0
AMBEDKARNAGAR	0	0	0	0	GORAKHPUR	0	0	0	0	RAMPUR	19	50	0	14
AMETHI	0	1	4	1	HAMIRPUR	1	0	0	0	SAMBHAL	6	7	4	8
AMROHA	1	0	0	2	HAPUR	3	1	0	0	SANTKABIRNAGAR	0	0	0	0
AURAIYA	16	5	4	4	HARDOI	6	6	0	4	SANTRAVIDASNAGAR	0	0	0	0
AZAMGARH	0	0	0	0	HATHRAS	0	0	0	2	SHAHJAHANPUR	37	174	53	21
BADAUN	0	1	0	2	JALAUN	0	0	0	0	SHAMLI	18	11	2	3
BAGHPAT	2	1	0	1	JAUNPUR	0	0	0	0	SHARANPUR	19	17	0	0
BAHRAICH	2	2	4	0	JHANSI	8	5	0	3	SHRAWASTI	2	0	0	0
BALLIA	0	0	0	0	KANNAUJ	3	1	0	1	SIDDHARTHANAGAR	0	0	0	0
BALRAMPUR	0	1	0	0	KANPUR	0	7	0	2	SITAPUR	9	9	0	2
BANDA	0	0	0	0	KANPUR DEHAT	4	1	0	3	SONBHADRA	0	0	0	0
BARABANKI	11	18	0	18	KASGANJ	1	2	0	1	SULTANPUR	0	0	0	0
BAREILLY	10	15	0	10	KAUSHAMBI	7	3	0	6	UNNAO	4	0	0	2
BASTI	2	1	0	0	KHERI	32	52	8	3	VARANASI	0	0	0	0
BIJNOR	4	3	1	5	KUSHINAGAR	0	0	0	0	Total	341	581	91	326
BULANDSAHAR	6	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	1	0	0	0					
ETAH	4	6	0	8	MAINPURI	5	7	0	6					
ETAWAH	2	7	0	11	MATHURA	14	27	0	53					
FAIZABAD	1	0	0	0	MAU	0	0	0	0					
FARRUKHABAD	0	0	0	0	MEERUT	11	4	0	2					
FATEHPUR	14	6	0	6	MIRZAPUR	5	5	2	0					
FIROZABAD	4	4	0	2	MORADABAD	4	3	0	2					

(d) Delhi

District	15 Sep-16 Oct			
	2020	2021	2022	2023
CENTRAL	0	0	0	0
EAST	0	0	0	0
NEW DELHI	0	0	0	0
NORTH	2	0	2	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	2	2

(e) Rajasthan

District	15 Sep-16 Oct			
	2020	2021	2022	2023
AJMER	0	0	0	0
ALWAR	1	0	0	0
BANSWARA	0	0	0	0
BARAN	81	0	4	93
BARMER	2	0	0	0
BHARATPUR	0	0	0	2
BHILWARA	2	0	0	0
BIKANER	1	0	0	0
BUNDI	4	0	8	17
CHITTAURGARH	0	2	2	5
CHURU	0	0	0	0
DAUSA	0	0	0	0
DHOLPUR	0	0	0	0
DUNGARPUR	0	0	0	0
GANGANAGAR	2	0	1	9
HANUMANGARH	83	24	3	39
JAIPUR	1	0	0	0
JAISELMER	2	0	0	0
JALOR	0	0	0	0
JHALAWAR	1	0	0	6
JHUNJHUNUN	1	0	0	0
JODHPUR	1	0	0	0
KARAULI	1	0	0	0
KOTA	23	1	3	55
NAGAU	0	0	0	0
PALI	1	0	0	0
PRATAPGARH	0	0	0	0
RAJSMAND	0	0	0	0
SIKAR	0	0	0	0
SIROHI	1	0	0	0
SWAIMADHOPUR	5	0	0	15
TONK	1	0	0	0
UDAIPUR	0	0	0	0
Total	214	27	21	241

(f) Madhya Pradesh

District	15 Sep-16 Oct								
	2020	2021	2022	2023					
					PANNA	2	0	0	0
ALIRAJPUR	0	0	0	0	RAISEN	11	1	0	2
ANUPPUR	0	0	0	0	RAJGARH	7	1	2	7
ASHOKNAGAR	10	0	0	18	RATLAM	0	0	0	1
BALAGHAT	0	0	0	0	REWA	3	0	0	0
BARWANI	0	0	0	0	SAGAR	13	6	1	8
BETUL	0	0	0	2	SATNA	3	6	0	1
BHIND	3	1	0	7	SEHORE	5	3	1	10
BHOPAL	6	5	1	7	SEONI	9	5	0	3
BURHANPUR	0	0	0	0	SHAHDOL	0	0	0	0
CHHATARPUR	4	0	0	3	SHAJAPUR	5	0	0	7
CHHINDWARA	1	3	0	2	SHEOPUR	11	0	0	14
DAMOH	16	4	0	10	SHIVPURI	5	0	6	7
DATIA	37	8	0	37	SIDHI	0	0	0	0
DEWAS	3	0	0	6	SINGRAULI	0	0	0	0
DHAR	20	0	0	22	TIKAMGARH	1	0	0	2
DINDORI	0	0	0	0	UJJAIN	5	0	0	12
EAST NIMAR	2	1	2	1	UMARIA	0	0	0	0
GUNA	15	1	1	87	VIDESHA	53	8	2	21
GWALIOR	23	0	1	7	WEST NIMAR	2	0	0	2
HARDA	8	9	0	13	Total	321	83	20	375
HOSHANGABAD	9	8	0	12					
INDORE	2	0	0	12					
JABALPUR	7	4	1	11					
JHABUA	0	0	0	0					
KATNI	0	0	0	0					
MANDLA	0	0	0	0					
MANDSAUR	3	0	0	1					
MORENA	14	5	0	13					
NARSHIMAPURA	3	4	2	7					
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-16 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
Total	5319	2375	1444	1388	782	1026	244	546	341	581	91	326

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
Total	4	0	2	2	214	27	21	241	321	83	20	375

Details of residue burning events in Haryana on 16-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	BHIWANI	BHIWANI	S-NPP	28.88894	76.24973	13:16:49	D	3.50
2	PALWAL	HASSANPUR	S-NPP	27.94102	77.48563	13:16:49	D	4.60
3	PALWAL	HASSANPUR	S-NPP	27.94440	77.48492	13:16:49	D	4.60
4	PALWAL	HODAL	S-NPP	27.85892	77.39133	13:16:49	D	4.90

Details of residue burning events in Uttar Pradesh on 16-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	ALIGARH	KOL	S-NPP	27.83756	78.31224	02:06:49	N	2.50
2	AURAIYA	BIDHUNA	S-NPP	26.92235	79.41303	13:16:49	D	4.70
3	ETAWAH	SAIFAI	S-NPP	26.96639	78.97803	13:16:49	D	2.80
4	JHANSI	JHANSI	S-NPP	25.53367	78.73774	13:16:49	D	2.90
5	MAINPURI	KARHAL	S-NPP	27.08053	79.10057	13:16:49	D	2.50
6	MATHURA	CHHATA	S-NPP	27.61212	77.53060	13:16:49	D	2.60
7	MATHURA	CHHATA	S-NPP	27.67052	77.48062	13:16:49	D	1.80
8	MATHURA	CHHATA	S-NPP	27.72863	77.47385	13:16:49	D	4.10
9	MATHURA	CHHATA	S-NPP	27.73423	77.52808	13:16:49	D	2.70
10	MATHURA	CHHATA	S-NPP	27.73493	77.53220	13:16:49	D	2.70
11	MATHURA	CHHATA	S-NPP	27.80471	77.46635	13:16:49	D	5.10
12	MATHURA	MATHURA	S-NPP	27.51292	77.52586	13:16:49	D	5.30
13	MATHURA	MATHURA	S-NPP	27.59991	77.54169	13:16:49	D	2.90
14	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	27.77279	79.93417	13:16:49	D	2.80

Details of residue burning events in Rajasthan on 16-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	BARAN	CHHABRA	S-NPP	24.63041	76.80914	13:16:49	D	8.20
2	BARAN	CHHABRA	S-NPP	24.73044	76.99077	13:16:49	D	2.50
3	BARAN	CHHABRA	S-NPP	24.77806	76.81721	13:16:49	D	2.20
4	BARAN	CHHABRA	S-NPP	24.77895	76.81910	13:16:49	D	8.40
5	BARAN	SHAHBAD	S-NPP	25.10652	77.04539	13:16:49	D	2.70
6	BARAN	SHAHBAD	S-NPP	25.23390	77.02452	13:16:49	D	2.70
7	BARAN	SHAHBAD	S-NPP	25.26665	77.01031	13:16:49	D	3.60
8	BUNDI	BUNDI	S-NPP	25.45720	75.82034	13:16:49	D	6.20
9	BUNDI	KESHORAIPATAN	S-NPP	25.25802	75.98776	13:16:49	D	4.60
10	BUNDI	KESHORAIPATAN	S-NPP	25.27836	76.01072	13:16:49	D	3.10
11	BUNDI	KESHORAIPATAN	S-NPP	25.31531	75.87499	13:16:49	D	4.80
12	BUNDI	KESHORAIPATAN	S-NPP	25.45597	76.06986	13:16:49	D	3.10
13	CHITTAURGARH	NIMBAHERA	S-NPP	24.53827	74.71893	13:16:49	D	2.90
14	KOTA	DIGOD	S-NPP	25.07767	76.15346	13:16:49	D	8.90
15	KOTA	DIGOD	S-NPP	25.25763	76.02845	13:16:49	D	5.90
16	KOTA	SANGOD	S-NPP	25.07398	76.15426	13:16:49	D	3.80
17	SWAIMADHOPUR	KHANDAR	S-NPP	25.96196	76.71487	13:16:49	D	2.90
18	SWAIMADHOPUR	KHANDAR	S-NPP	26.00965	76.75565	13:16:49	D	3.00

Details of residue burning events in Madhya Pradesh on 16-Oct-2023

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ASHOKNAGAR	ASHOKNAGAR	S-NPP	24.46025	77.52308	13:16:49	D	2.70
2	ASHOKNAGAR	ASHOKNAGAR	S-NPP	24.46033	77.52230	13:16:49	D	3.10
3	ASHOKNAGAR	ISAGARH	S-NPP	24.92949	77.87786	13:16:49	D	3.10
4	BETUL	BETUL	S-NPP	22.05194	78.05547	13:16:49	D	8.00
5	BETUL	BETUL	S-NPP	22.05196	78.05382	13:16:49	D	7.10
6	BHIND	LAHAR	S-NPP	26.08578	78.80815	13:16:49	D	4.00
7	BHOPAL	HUZUR	S-NPP	23.19982	77.31326	13:16:49	D	4.40
8	CHHATARPUR	RAJNAGAR	S-NPP	25.00452	79.91025	13:16:49	D	2.70
9	CHHINDWARA	PARASIA	S-NPP	22.22417	78.71381	13:16:49	D	3.30
10	DATIA	DATIA	S-NPP	25.71838	78.30591	13:16:49	D	2.30
11	DATIA	DATIA	S-NPP	25.73111	78.44716	13:16:49	D	5.40
12	DATIA	DATIA	S-NPP	25.78223	78.61227	13:16:49	D	3.70
13	DATIA	DATIA	S-NPP	25.79501	78.43445	13:16:49	D	3.60
14	DATIA	DATIA	S-NPP	25.80921	78.38693	13:16:49	D	1.30
15	DATIA	SEONDHA	S-NPP	25.82824	78.55440	13:16:49	D	5.90
16	DATIA	SEONDHA	S-NPP	25.82972	78.55447	13:16:49	D	7.10
17	DATIA	SEONDHA	S-NPP	25.83114	78.54198	13:16:49	D	1.80
18	DATIA	SEONDHA	S-NPP	25.83825	78.47941	13:16:49	D	5.50
19	DATIA	SEONDHA	S-NPP	25.84548	78.50246	13:16:49	D	2.10
20	DATIA	SEONDHA	S-NPP	25.94635	78.60535	13:16:49	D	2.90
21	GUNA	ARON	S-NPP	24.52933	77.48235	13:16:49	D	3.90
22	GUNA	GUNA	S-NPP	24.74772	77.04725	13:16:49	D	11.60
23	GUNA	GUNA	S-NPP	24.78450	77.25852	13:16:49	D	5.70
24	GUNA	GUNA	S-NPP	24.91574	77.05096	13:16:49	D	4.00
25	GUNA	GUNA	S-NPP	24.92838	77.10325	13:16:49	D	7.30
26	HOSHANGABAD	PIPARIYA	S-NPP	22.95372	78.42526	13:16:49	D	1.70
27	JABALPUR	MAJHOULI	S-NPP	23.46618	79.81660	13:16:49	D	2.40
28	JABALPUR	PATAN	S-NPP	23.34054	79.77363	13:16:49	D	3.40
29	JABALPUR	PATAN	S-NPP	23.45836	79.81027	13:16:49	D	3.00

30	JABALPUR	SAHPURA	S-NPP	23.19891	79.67054	13:16:49	D	5.70
31	MORENA	SABALGARH	S-NPP	26.27143	77.35266	13:16:49	D	4.60
32	NARSHIMAPURA	GOTECAON	S-NPP	23.06725	79.56952	13:16:49	D	3.30
33	NARSHIMAPURA	NARSIMHAPUR	S-NPP	23.02003	79.29787	13:16:49	D	3.30
34	NARSHIMAPURA	NARSIMHAPUR	S-NPP	23.02066	79.30172	13:16:49	D	3.30
35	NARSHIMAPURA	NARSIMHAPUR	S-NPP	23.06254	79.32562	13:16:49	D	1.00
36	NARSHIMAPURA	NARSIMHAPUR	S-NPP	23.06400	79.20589	13:16:49	D	1.20
37	RAISEN	RAISEN	S-NPP	23.43851	77.77670	13:16:49	D	5.10
38	SAGAR	REHLI	S-NPP	23.60849	78.95944	13:16:49	D	4.40
39	SEHORE	NASRULLAHGANJ	S-NPP	22.70536	77.35551	13:16:49	D	3.80
40	SEONI	LAKHNADOU	S-NPP	22.85591	79.63657	13:16:49	D	2.30
41	SEONI	LAKHNADOU	S-NPP	22.85755	79.63607	13:16:49	D	2.30
42	SEONI	SEONI	S-NPP	22.19367	79.56174	13:16:49	D	3.10
43	SHEOPUR	SHEOPUR	S-NPP	25.56151	76.68237	13:16:49	D	2.90
44	SHEOPUR	SHEOPUR	S-NPP	25.81413	76.73456	13:16:49	D	1.30
45	SHEOPUR	SHEOPUR	S-NPP	25.92375	76.84637	13:16:49	D	3.40
46	SHIVPURI	KOLARAS	S-NPP	24.97028	77.62481	13:16:49	D	3.80
47	SHIVPURI	SHIVPURI	S-NPP	25.38664	77.78915	13:16:49	D	5.30
48	SHIVPURI	SHIVPURI	S-NPP	25.53555	77.60458	13:16:49	D	4.10
49	SHIVPURI	SHIVPURI	S-NPP	25.53900	77.60387	13:16:49	D	13.30
50	TIKAMGARH	NIVARI	S-NPP	25.46852	78.76998	13:16:49	D	1.90
51	WEST NIMAR	KHARGON	S-NPP	21.75115	75.57474	13:16:49	D	3.10

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](#)
