



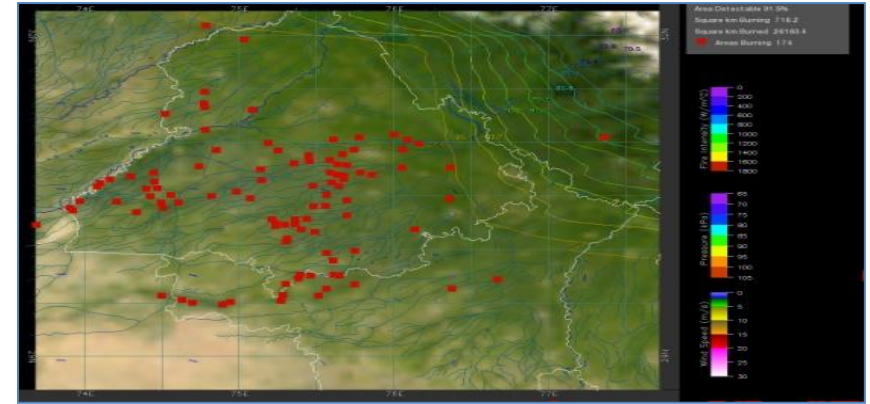
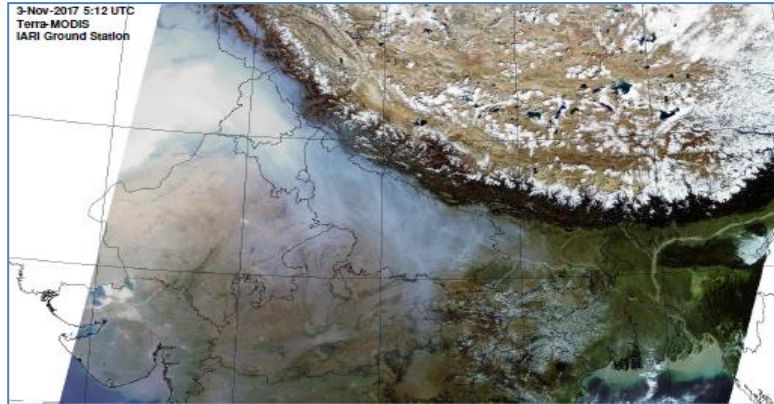
MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2024

Bulletin
No. 30

Events Date:
14-Oct-2024

Issued on:
14-Oct-2024

Updated on:
15-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

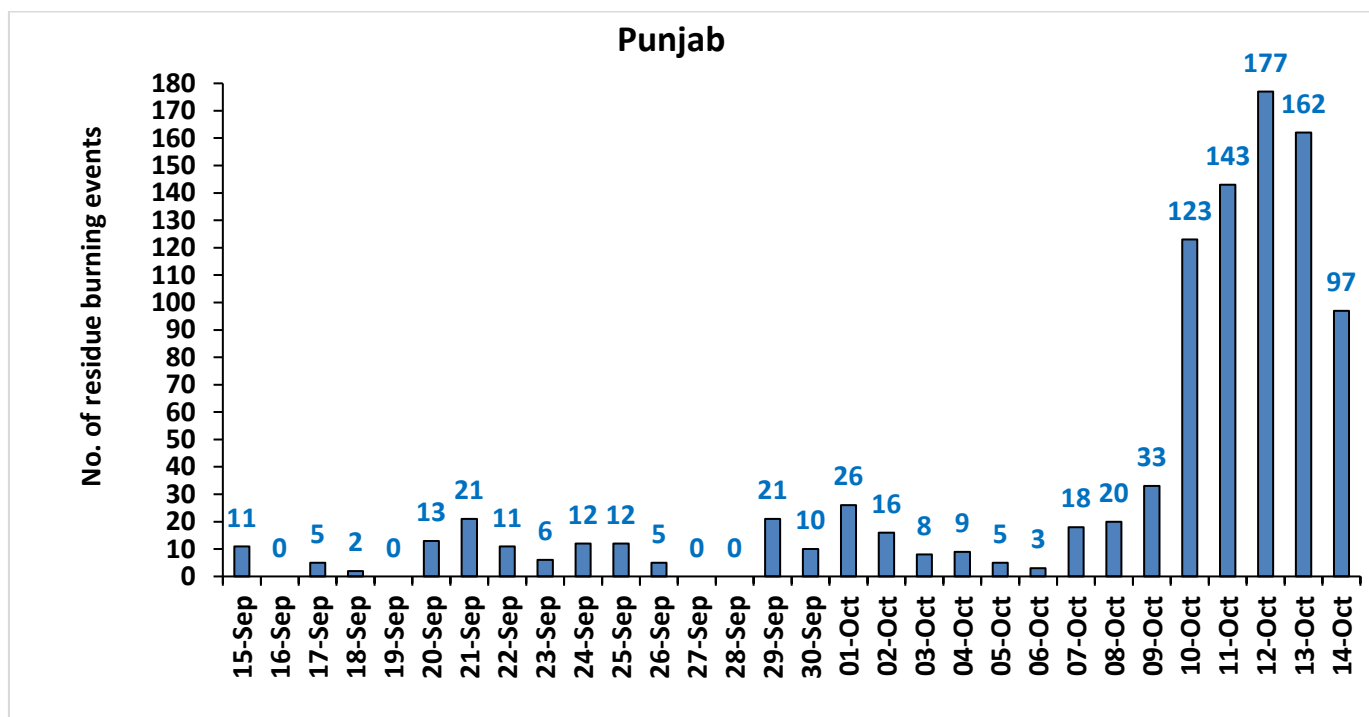
<https://creams.iari.res.in>



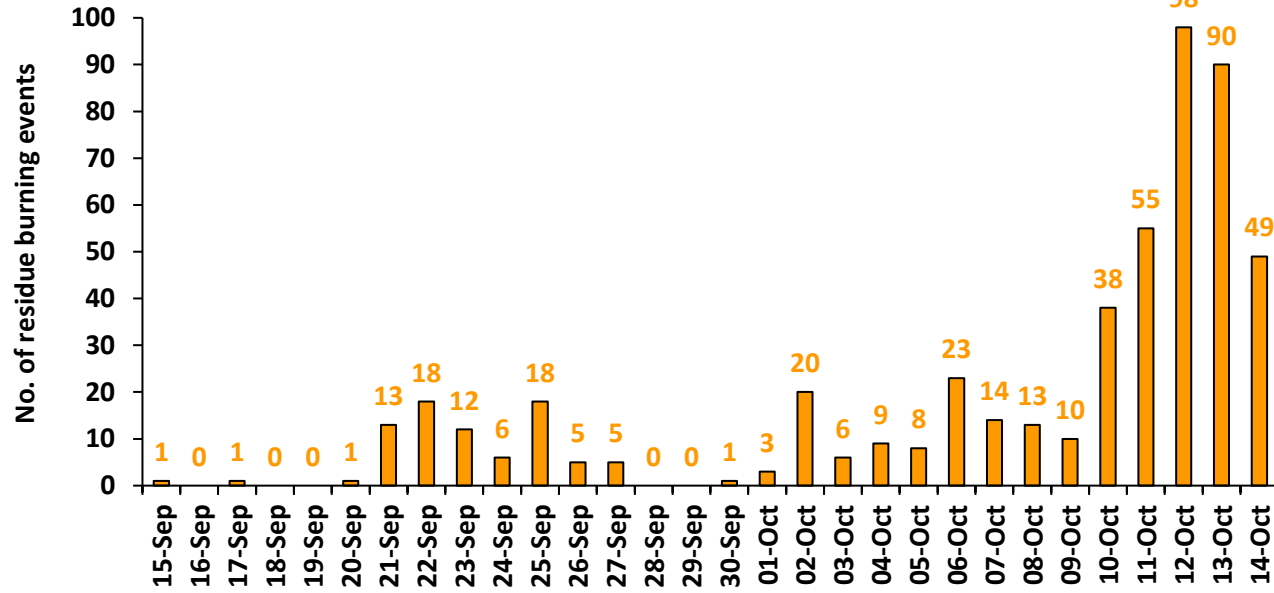
Highlights for 14-Oct-2024

- 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 **226** residue burning events in the six study States on **14-Oct-2024**.
- The state wise events detected on **14-Oct-2024** were **97** in Punjab, **49** in Haryana, **52** in UP, **01** in Delhi, **20** in Rajasthan and **07** in MP.
- Total **2101** burning events were detected in the six states between **15-Sept-2024** and **14-Oct-2024**, which are distributed as **969**, **517**, **450**, **07**, **70** and **88** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of burning events was hampered by the presence of scattered clouds over parts of Uttar Pradesh, Rajasthan and Madhya Pradesh states.

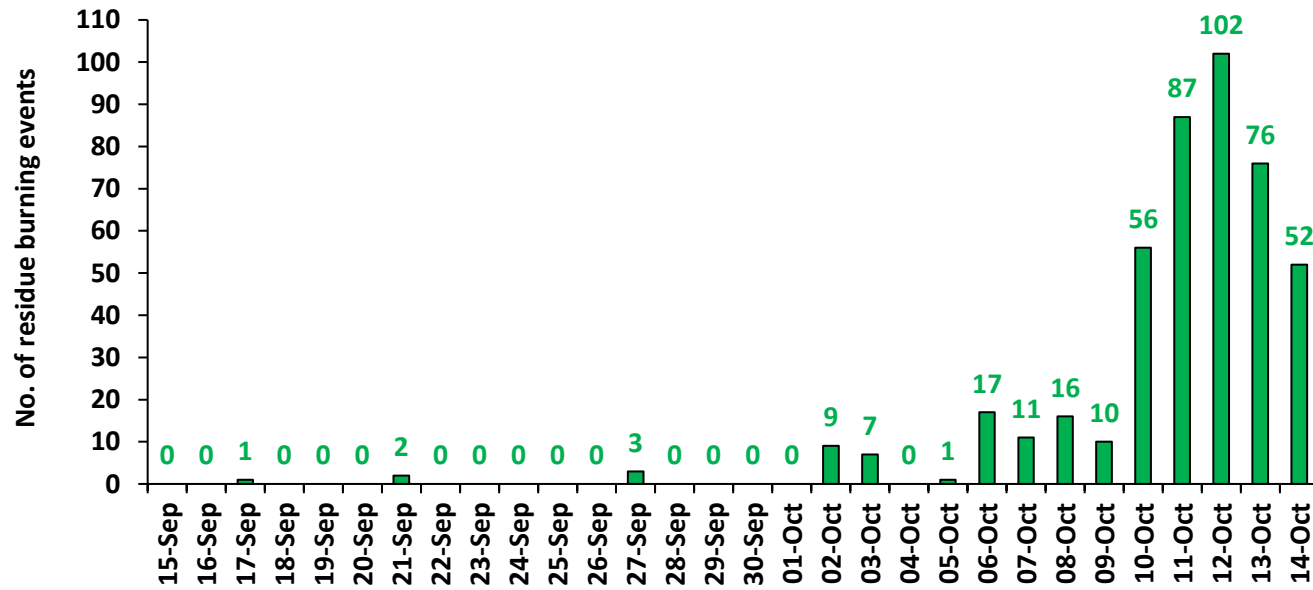
Temporal distribution of rice residue burning events for the study States in 2024



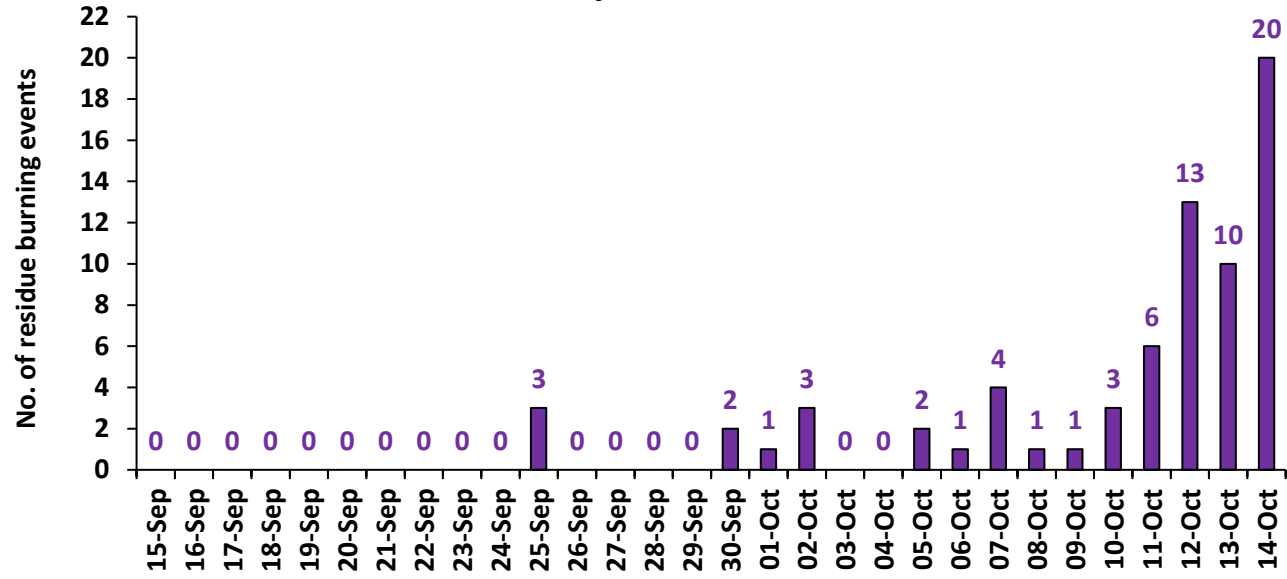
Haryana



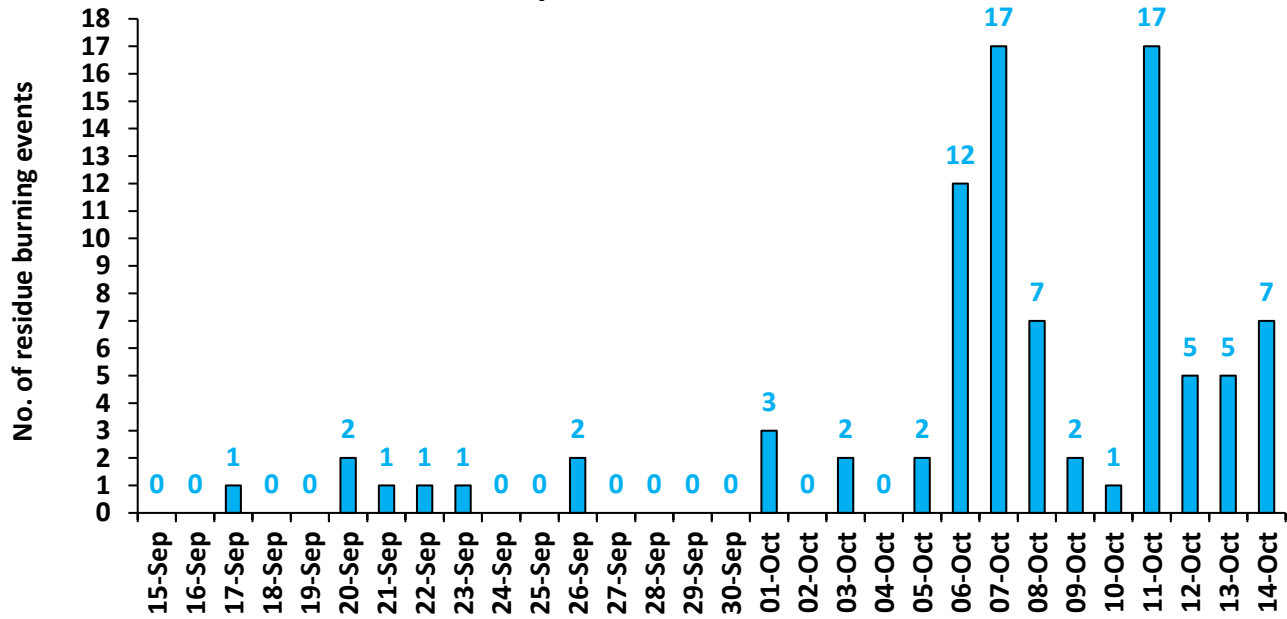
Uttar Pradesh



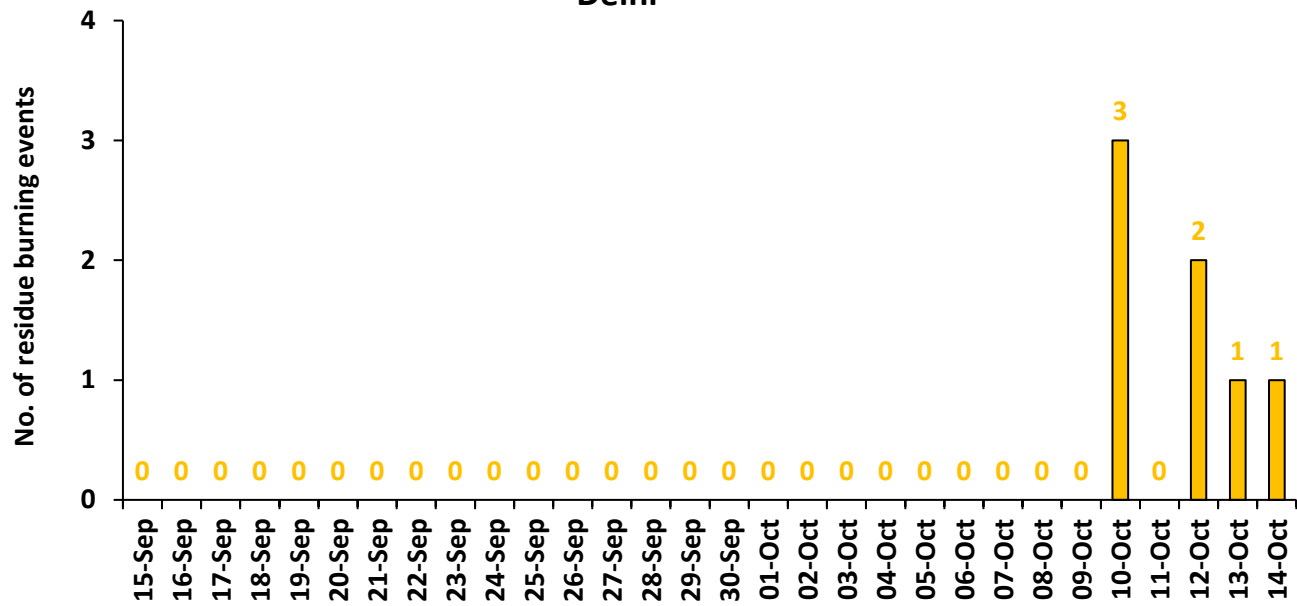
Rajasthan



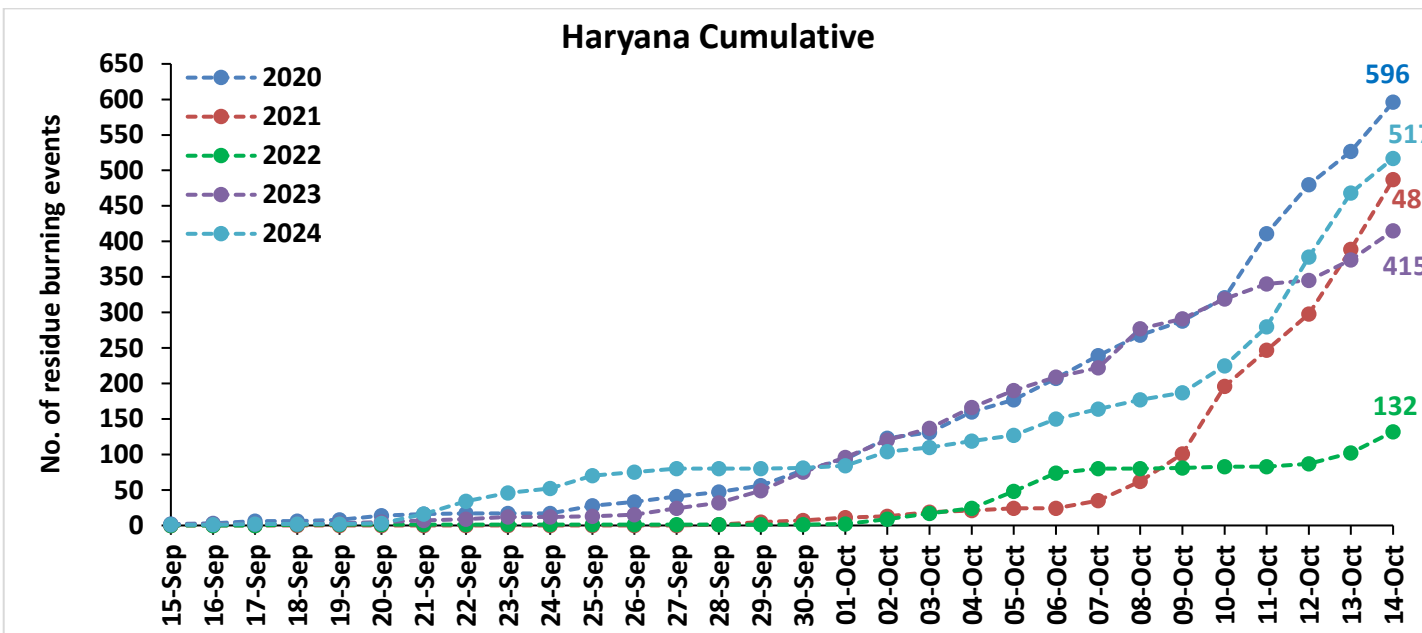
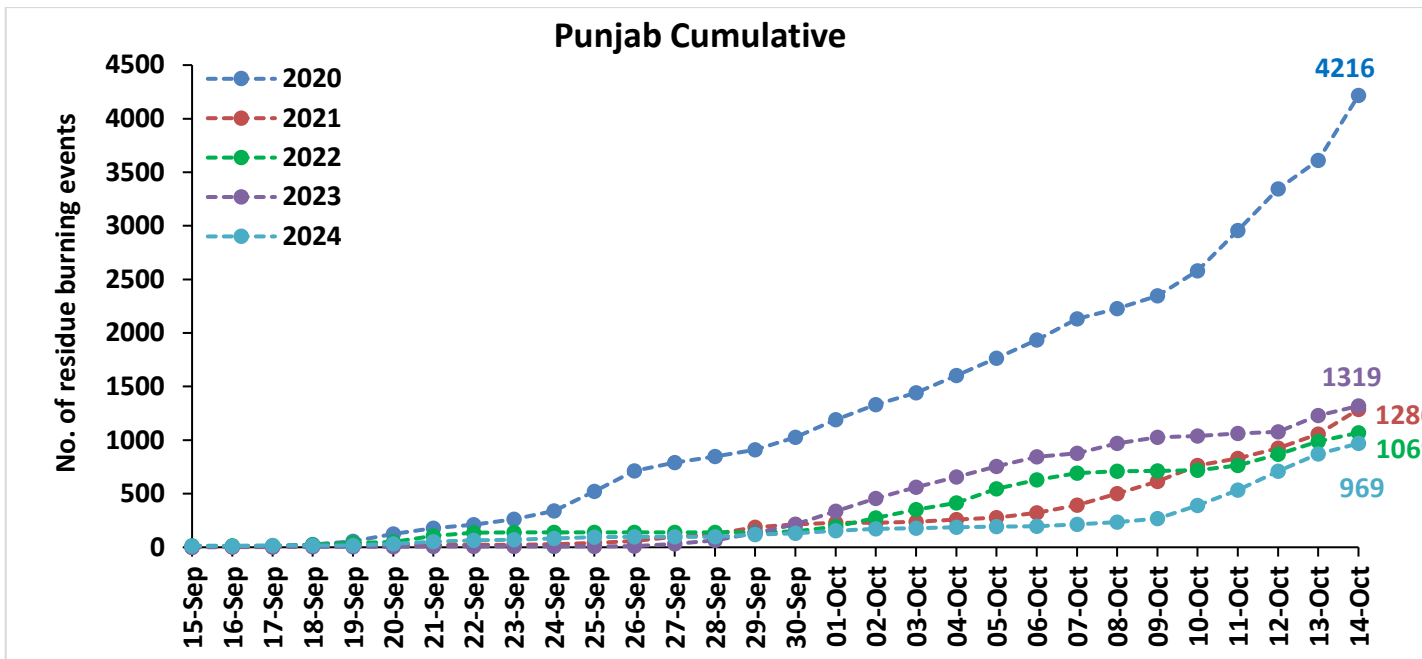
Madhya Pradesh

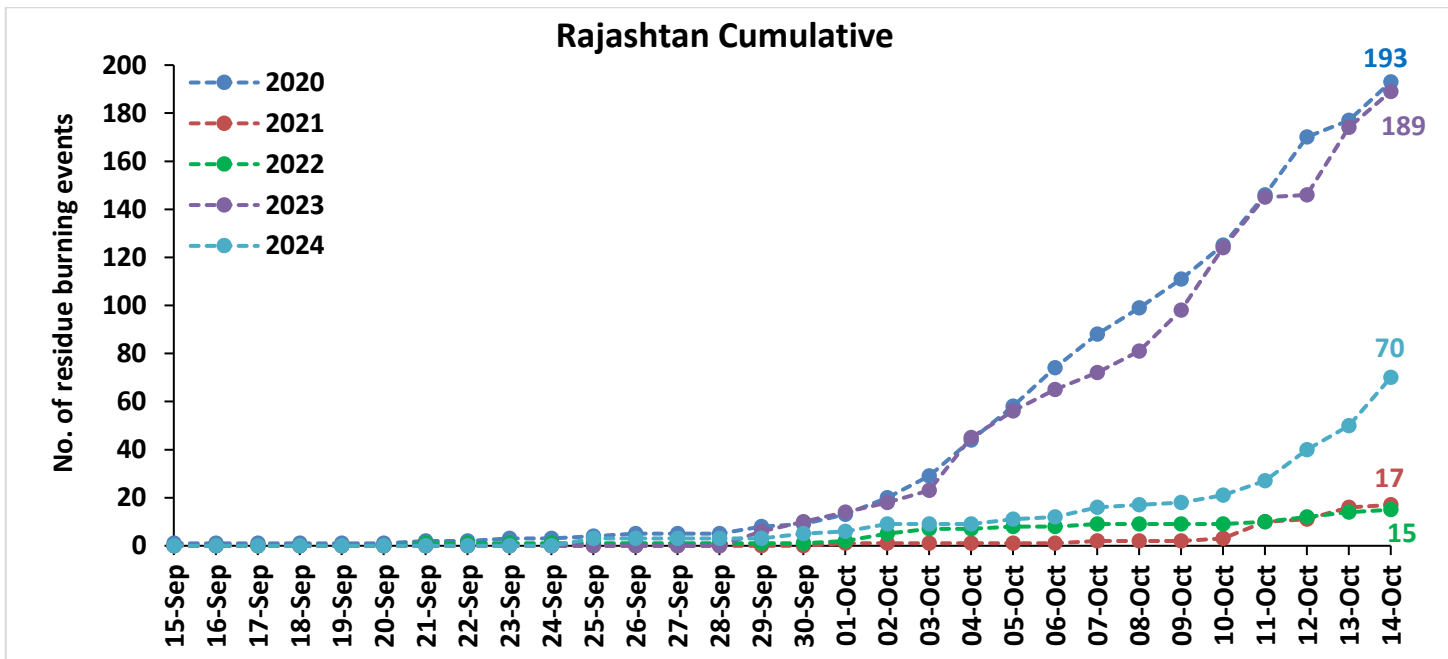
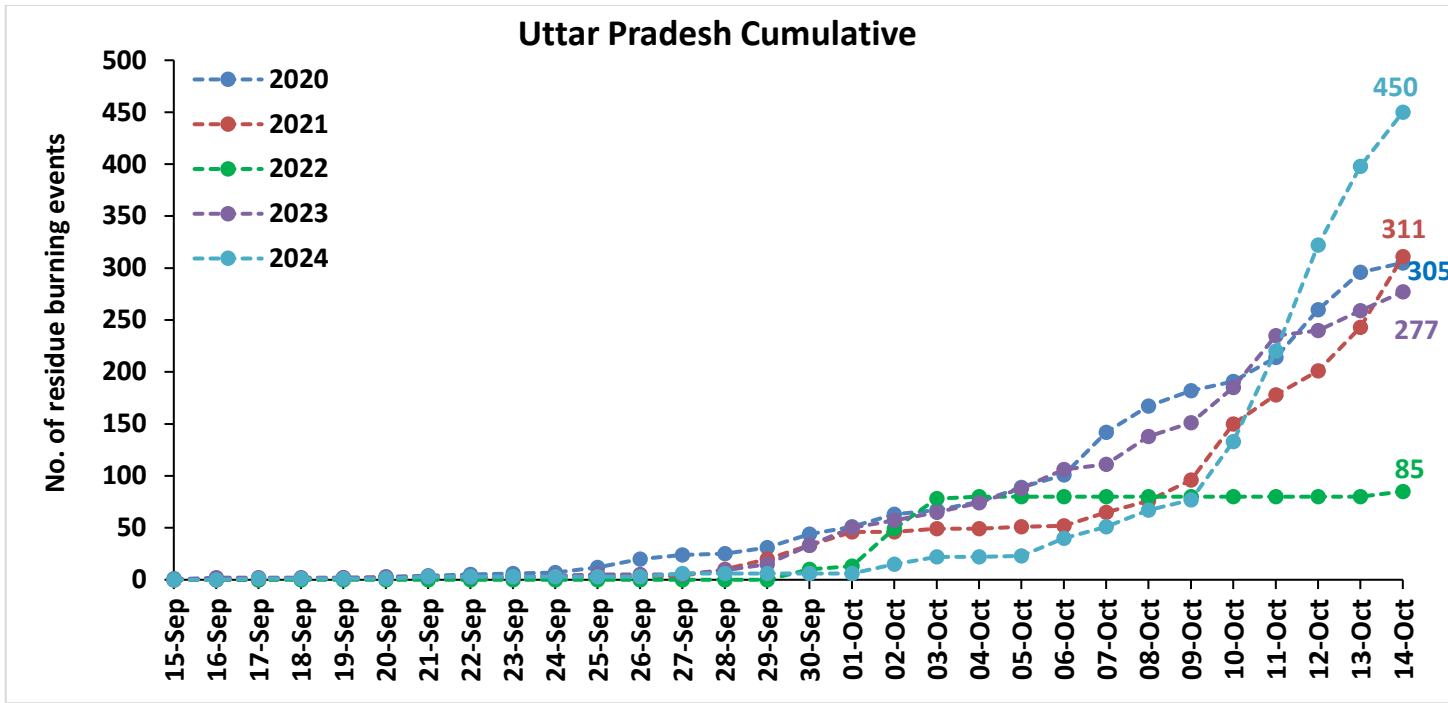


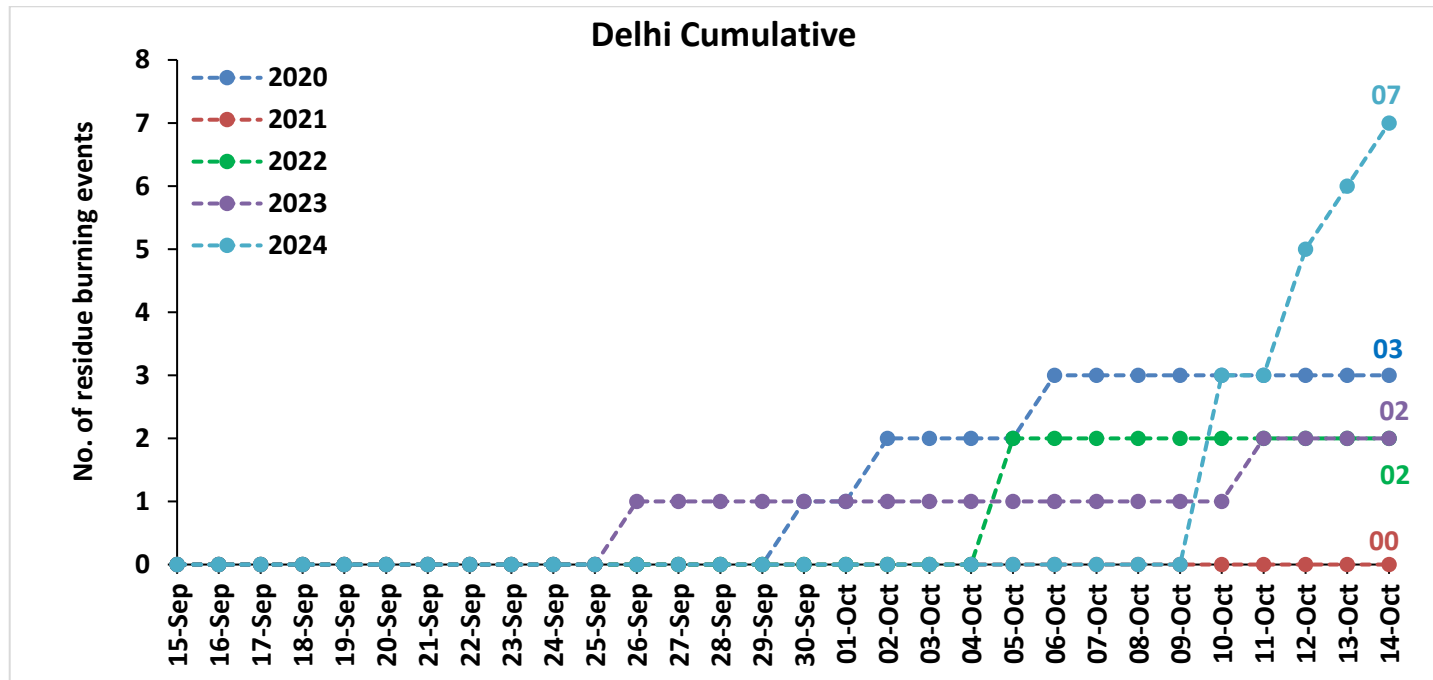
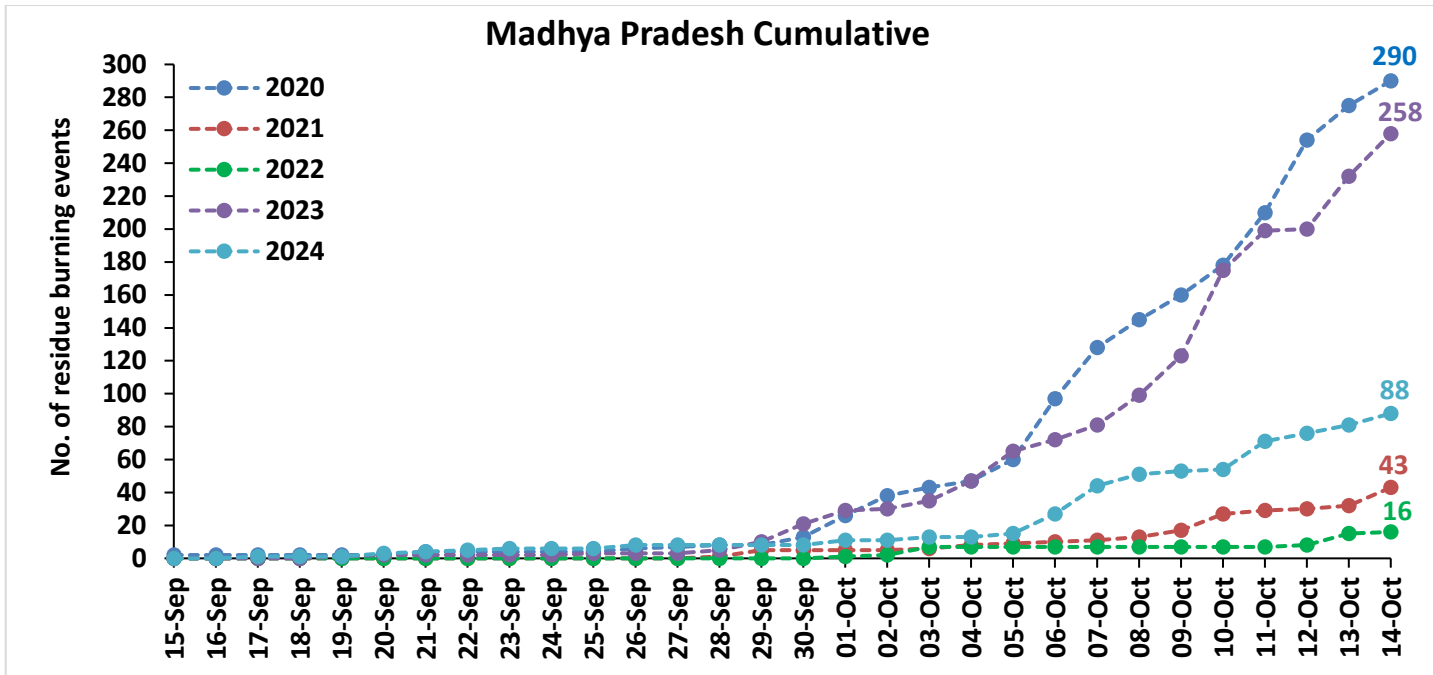
Delhi



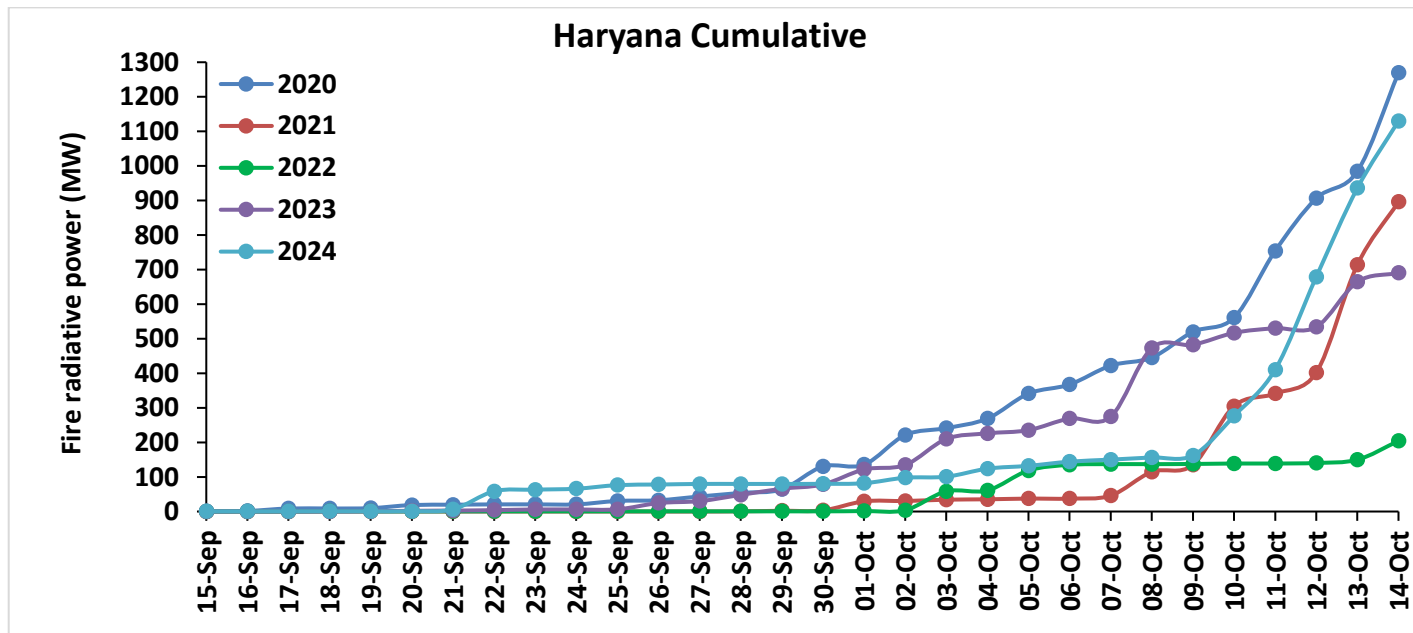
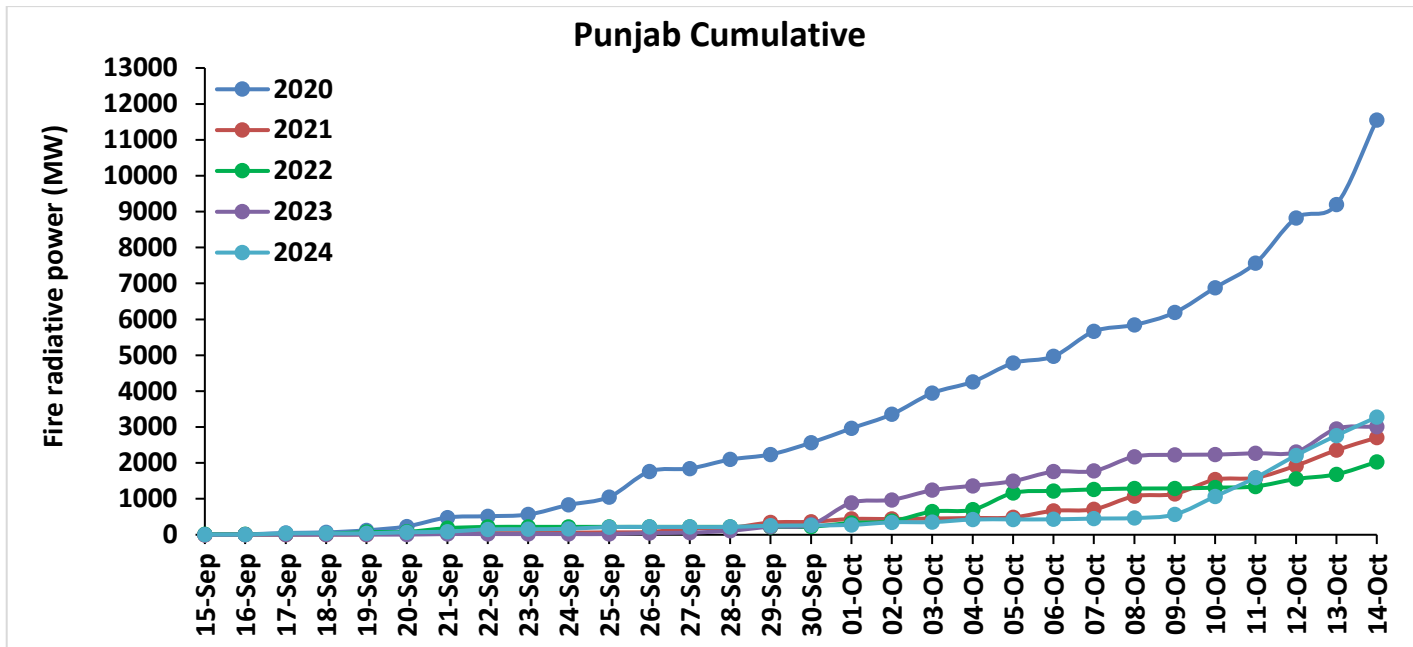
Comparison of residue burning events in current year (2024) with previous years (2020, 2021, 2022 and 2023) for the study States

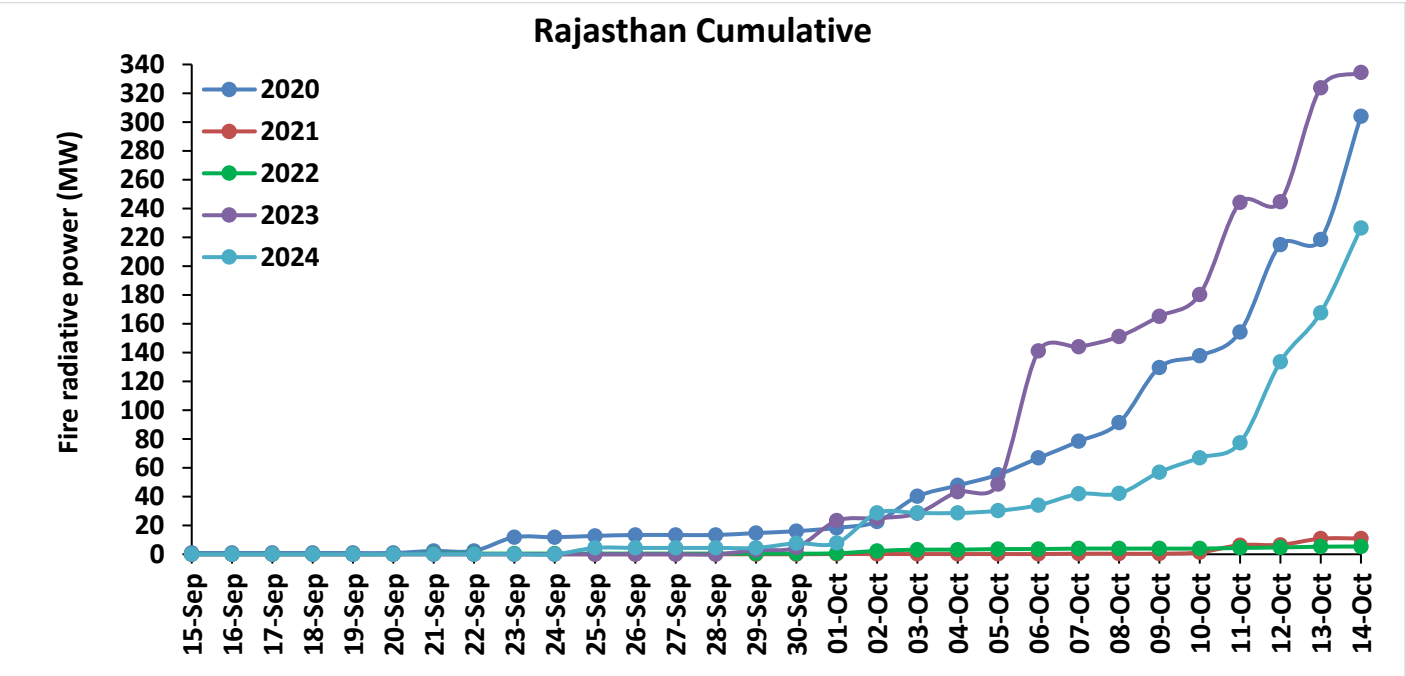
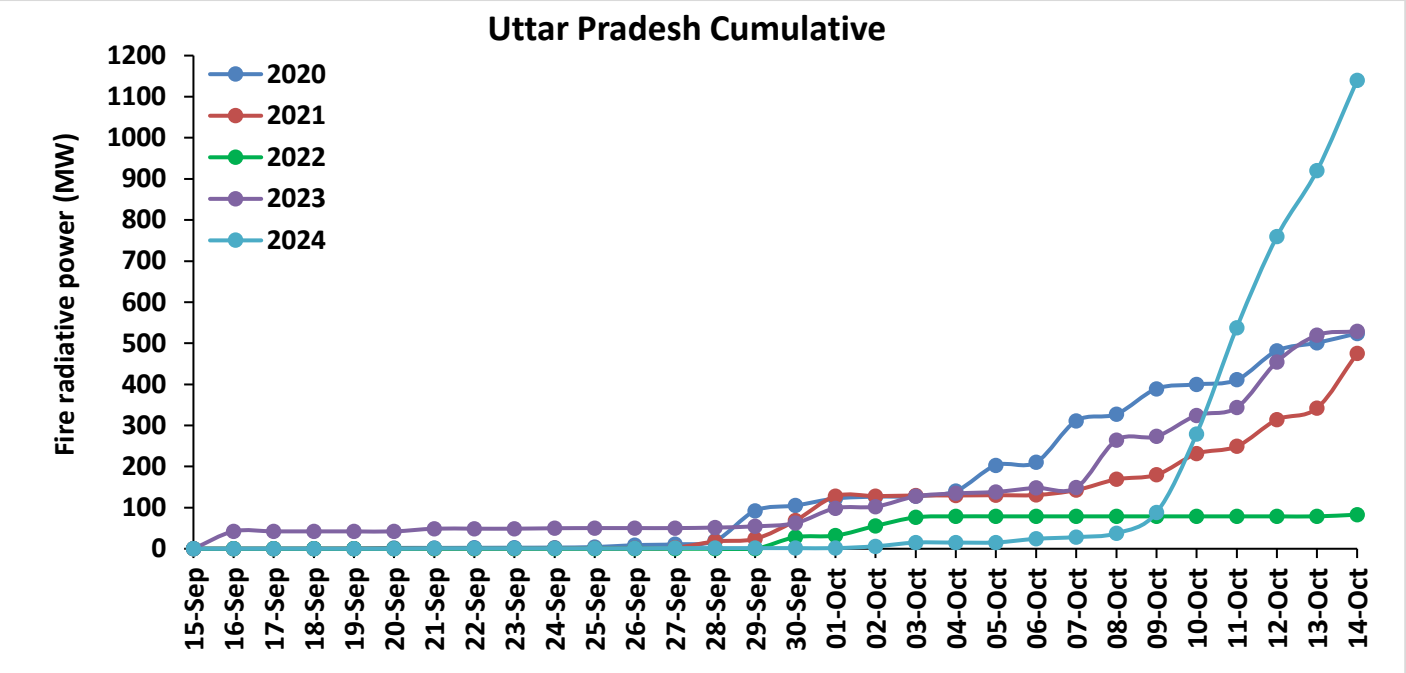




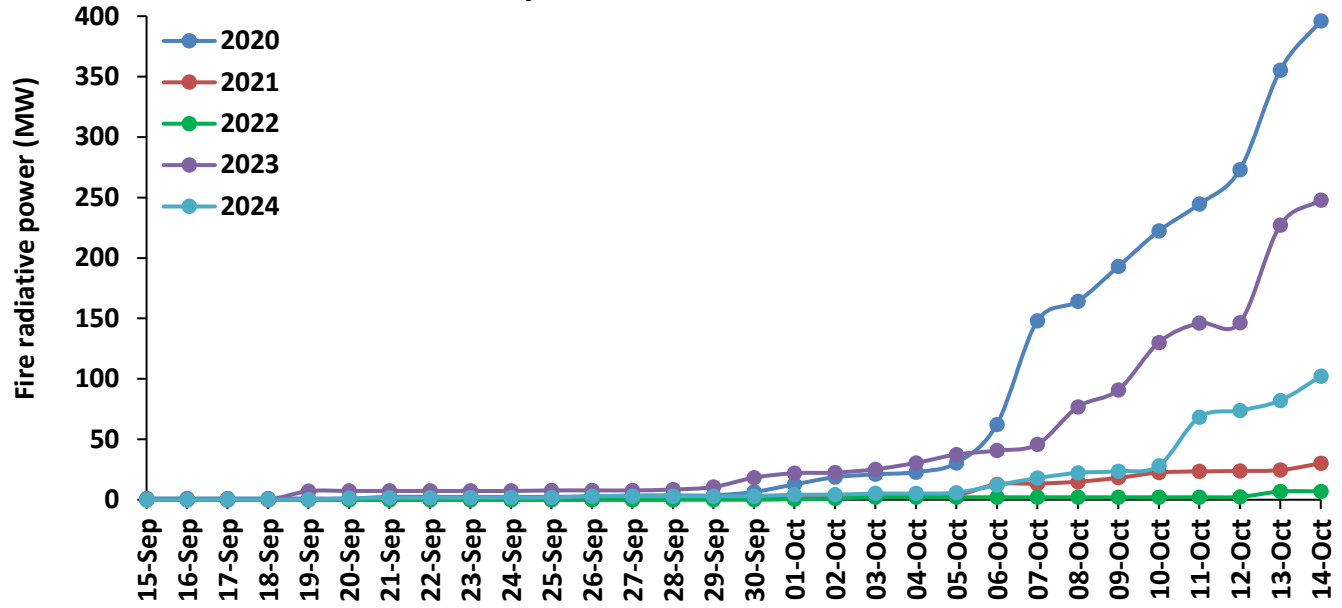


Comparison of residue burning fire power in current year (2024) with previous years (2020,2021,2022 and 2023) for the study States

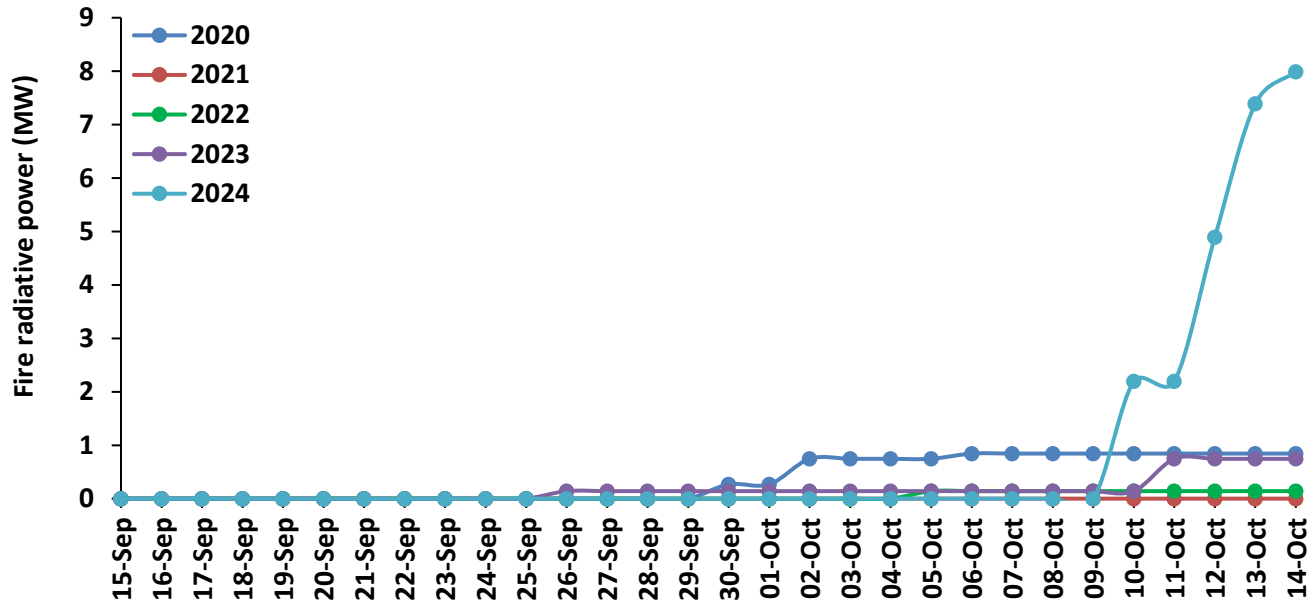




Madhya Pradesh Cumulative

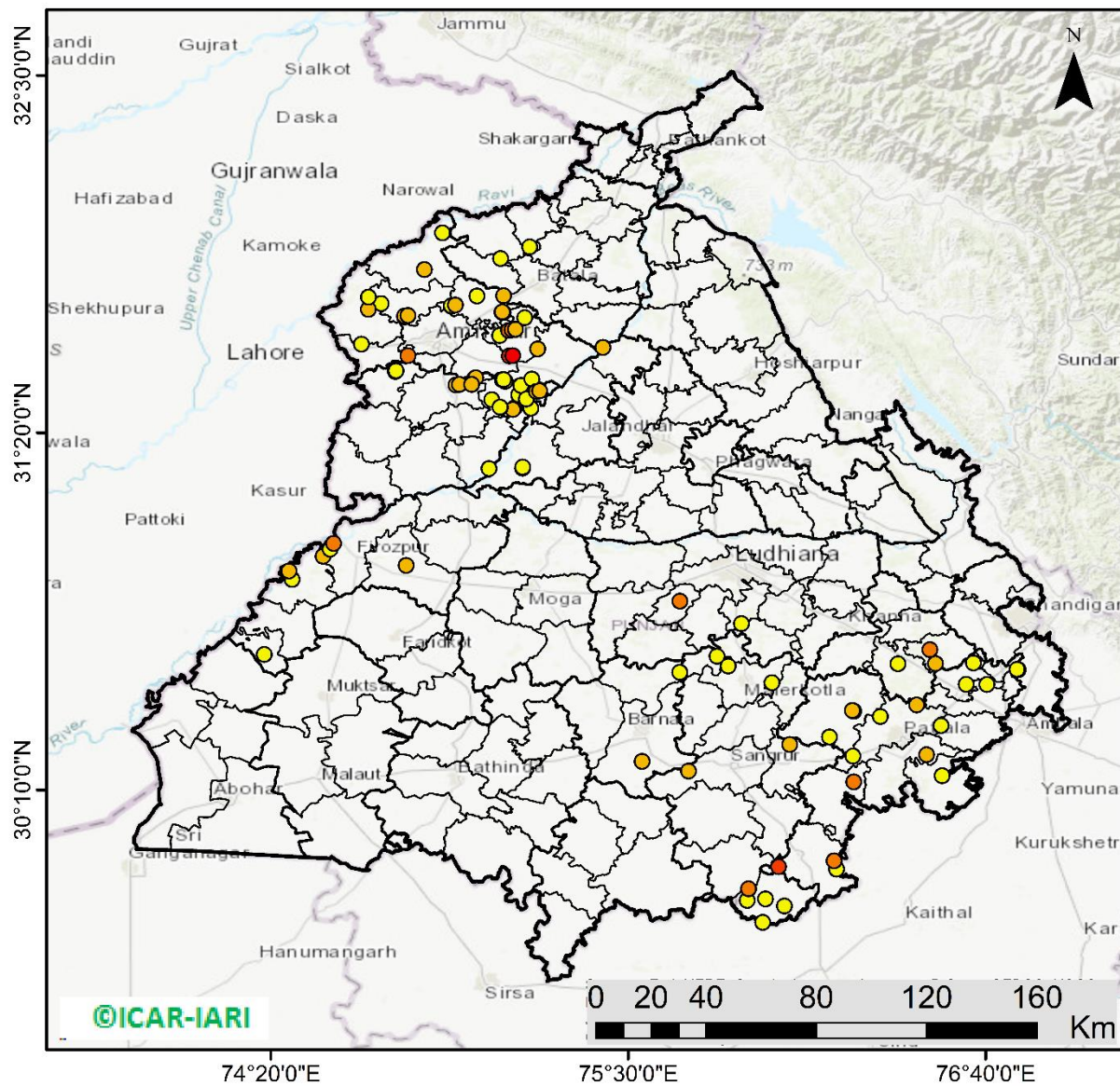


Delhi Cumulative



Punjab

RICE RESIDUE BURNING IN PUNJAB



97 burning events detected in Punjab during (14th Oct 2024)

Fire Intensity (W/m²)

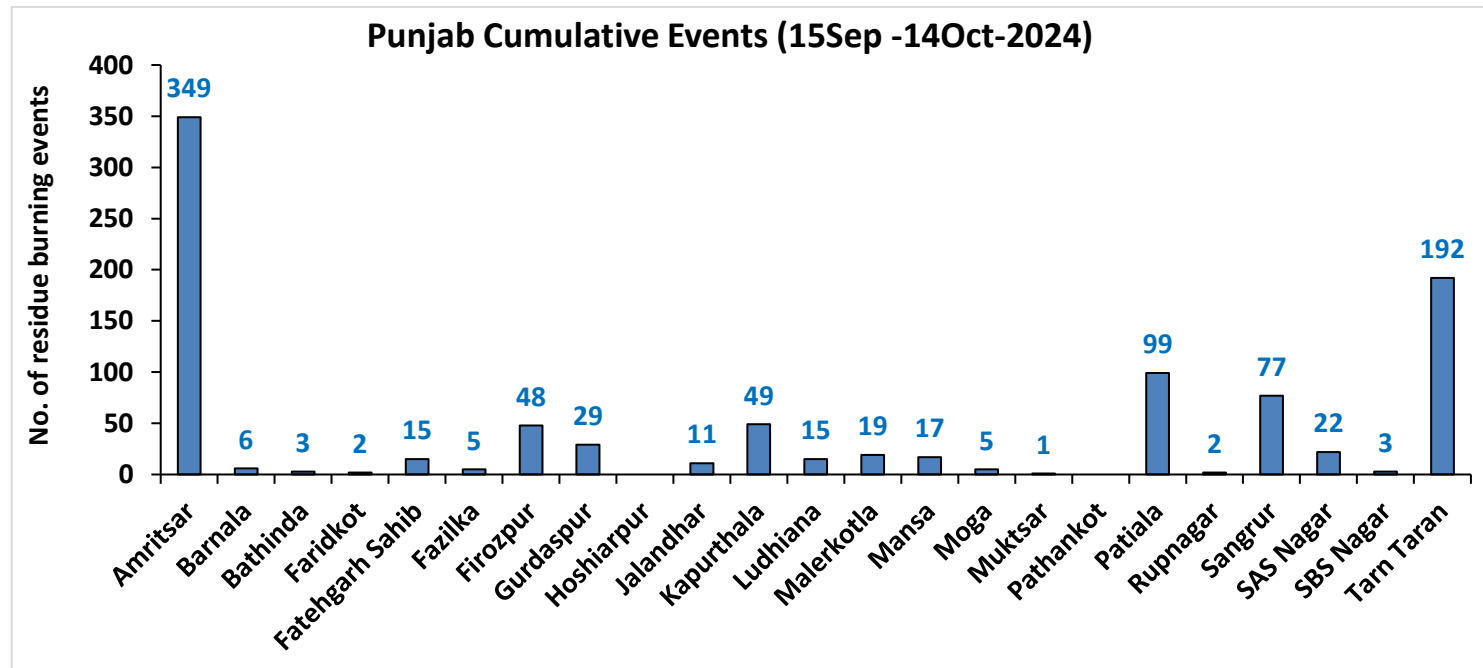
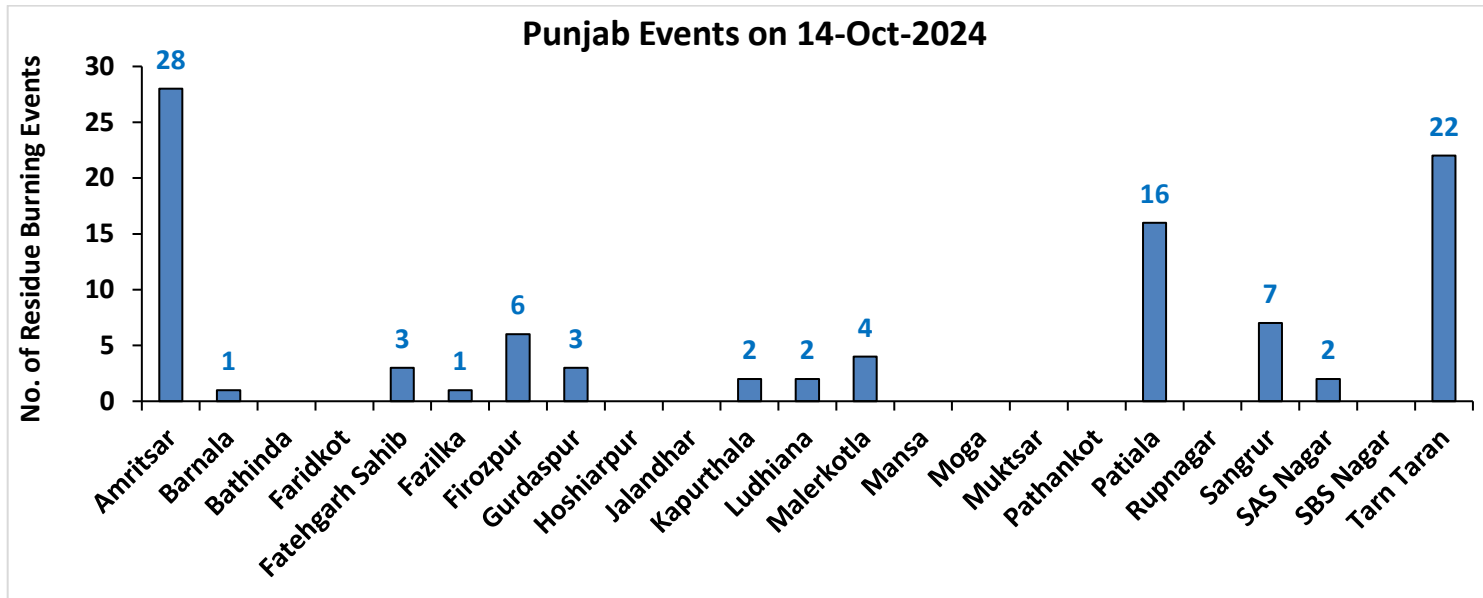
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20

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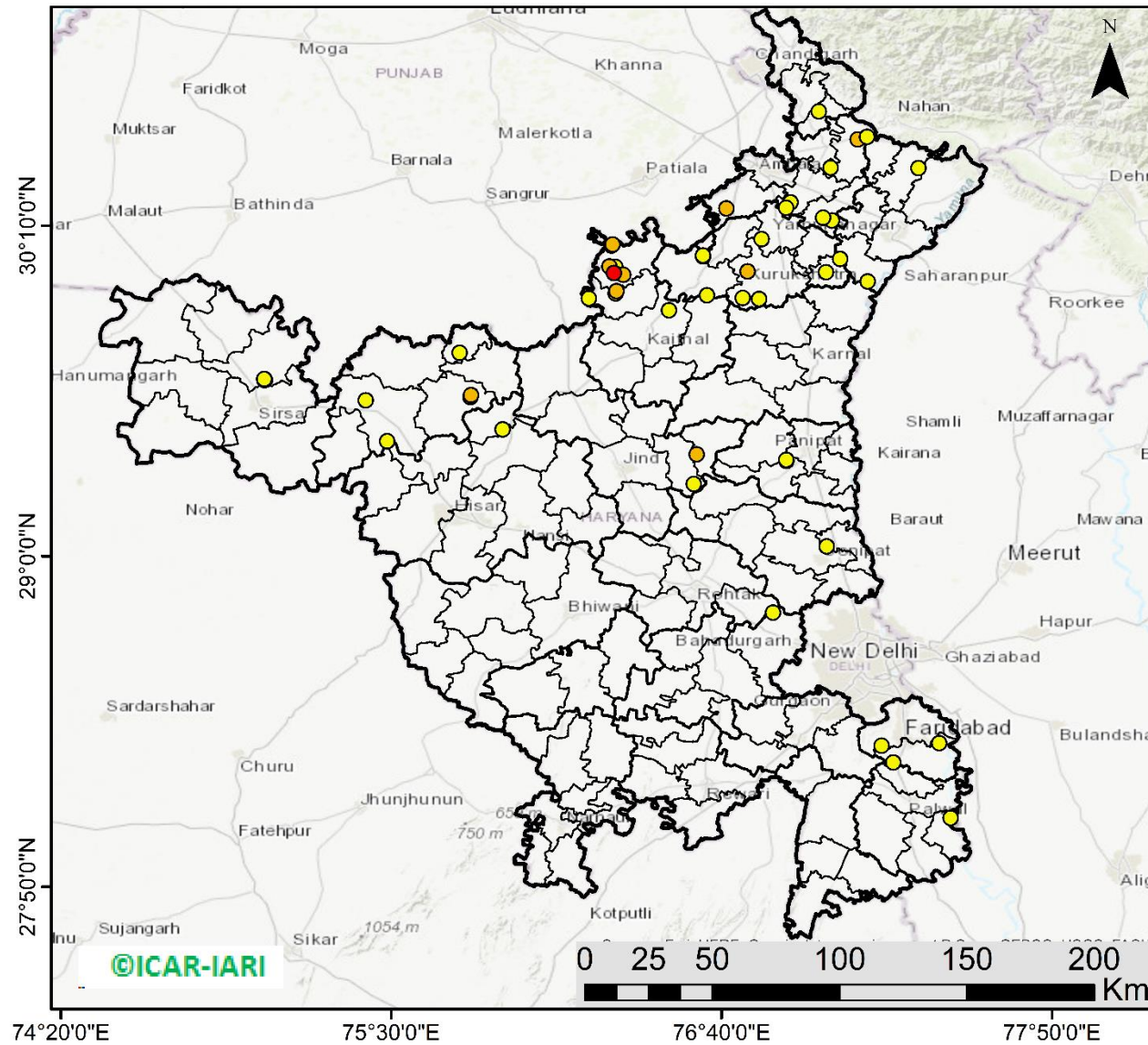
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Punjab (15Sep-14Oct-2024)



Haryana

RICE RESIDUE BURNING IN HARYANA



49 burning events detected in Haryana on **14th Oct 2024**

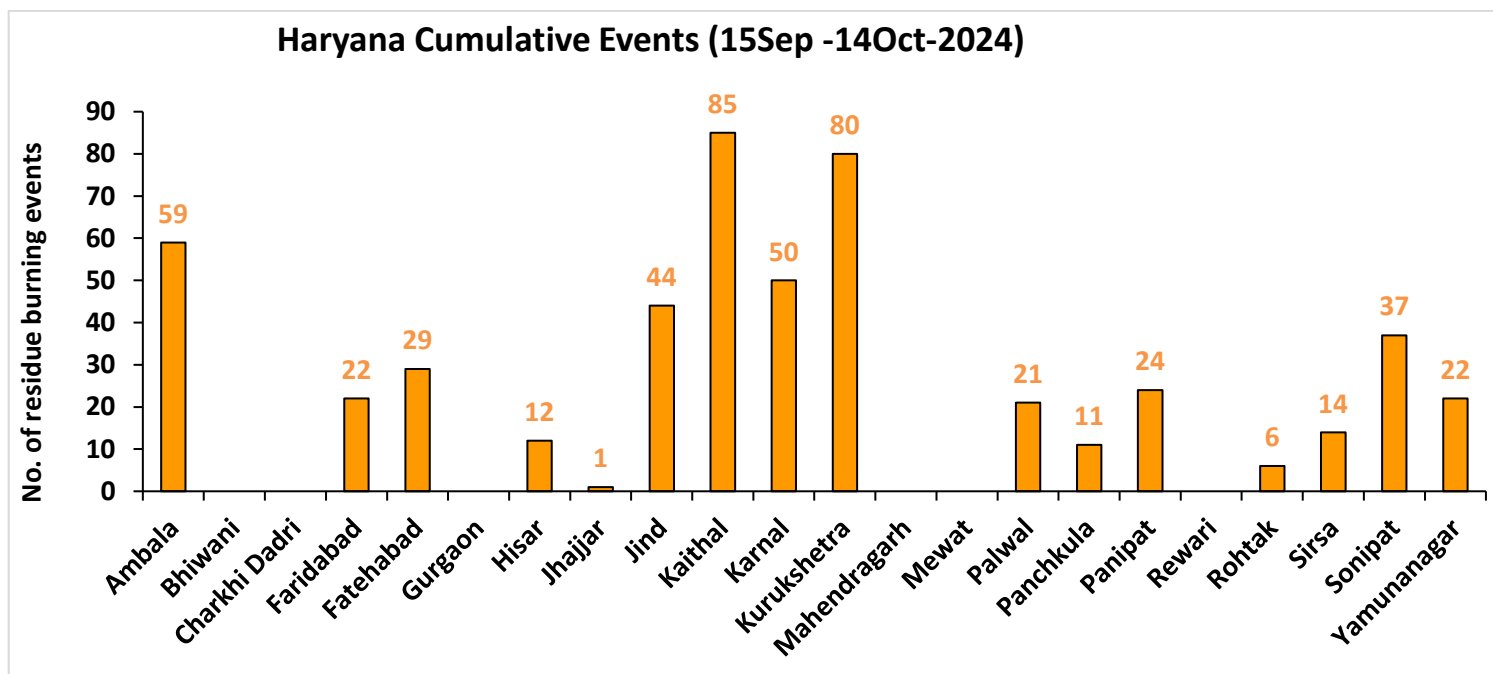
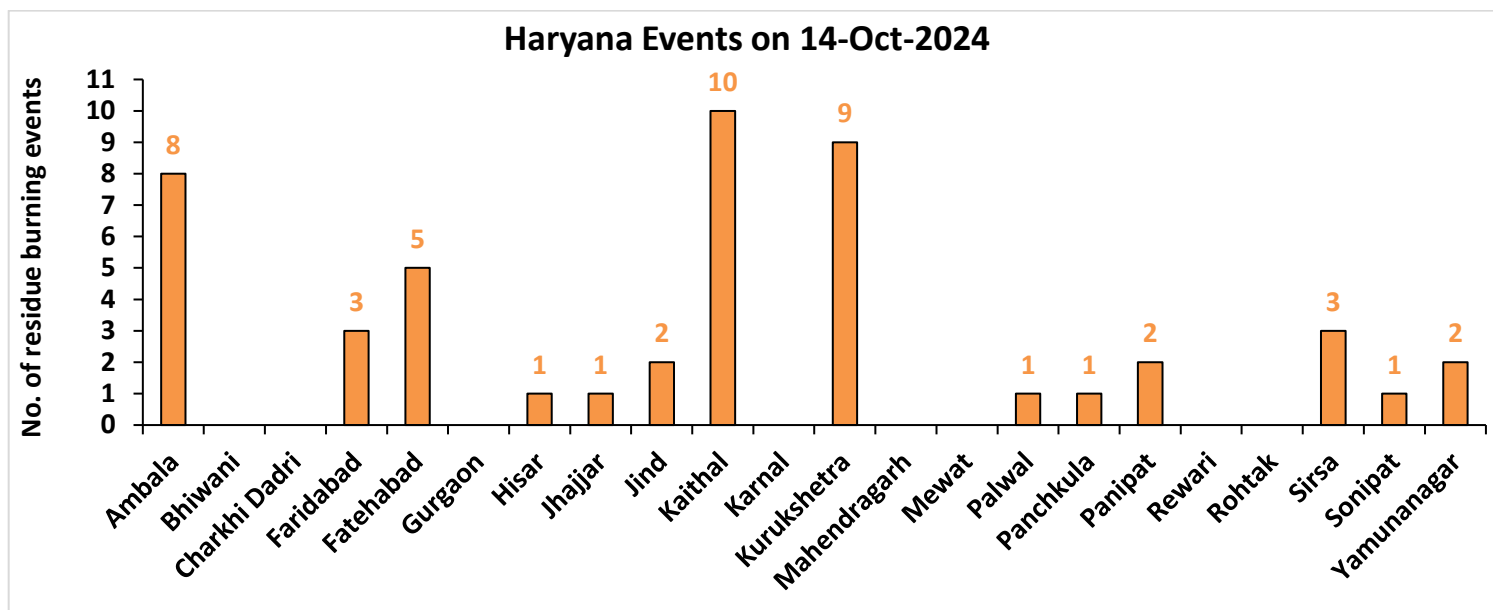
Fire Intensity (W/m²)

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



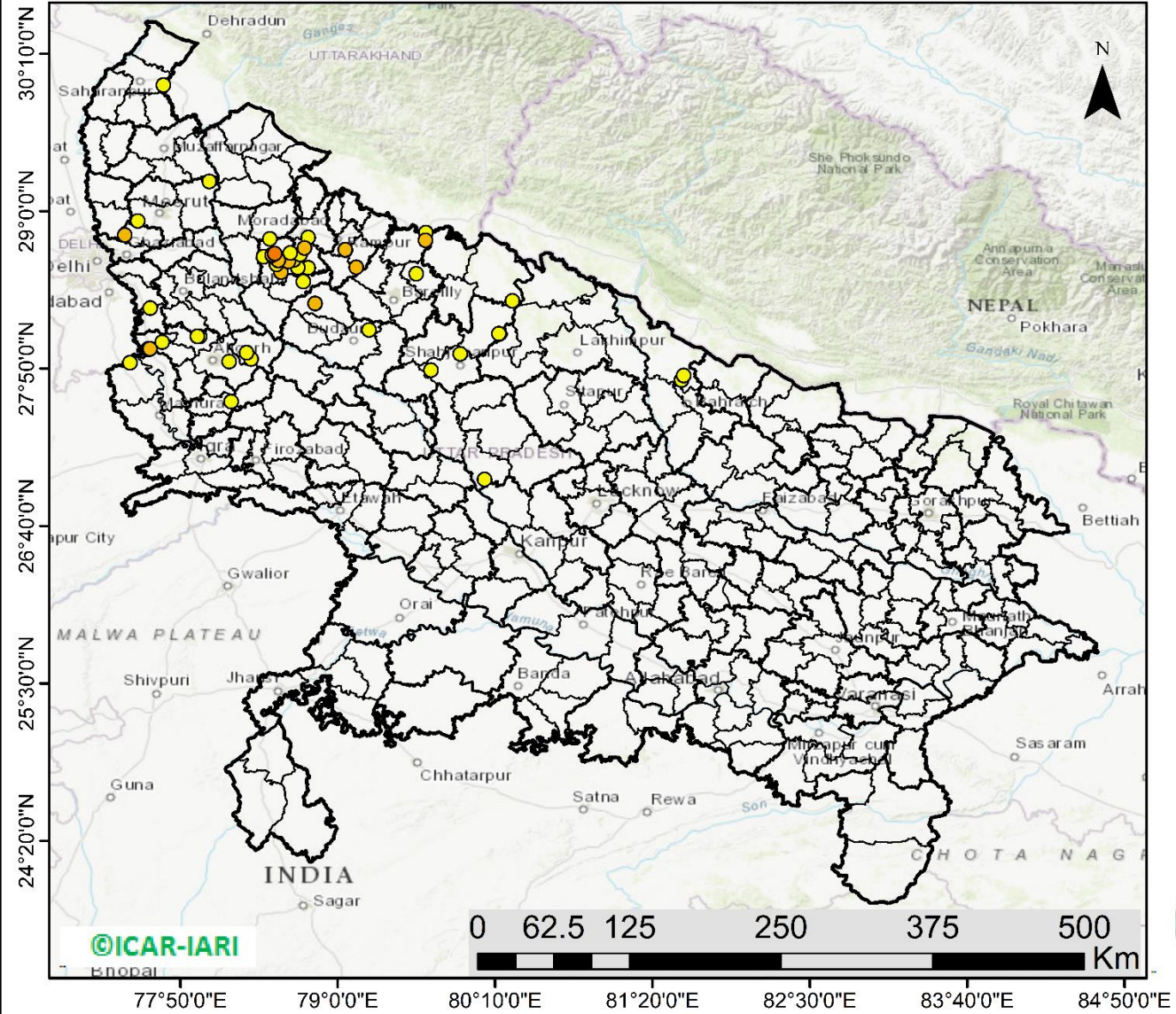
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Haryana (15Sep-14Oct-2024)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



52 burning events detected in Uttar Pradesh on (14th Oct 2024)

Fire Intensity (W/m²)

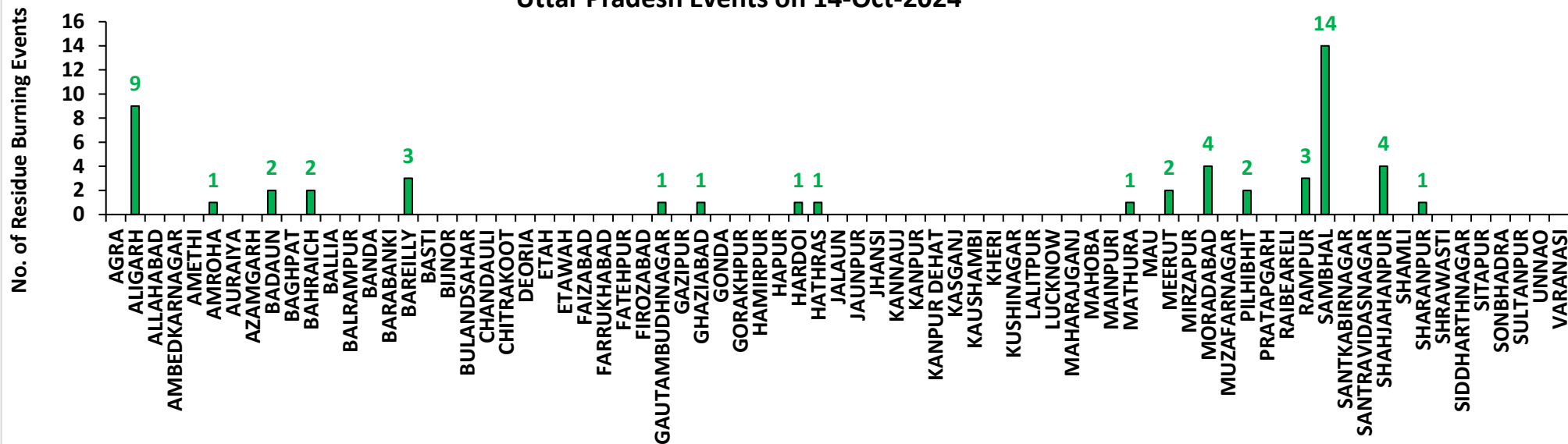
- 0 - 5
- 6 - 10
- 11 - 15
- 16 - 20
- >20



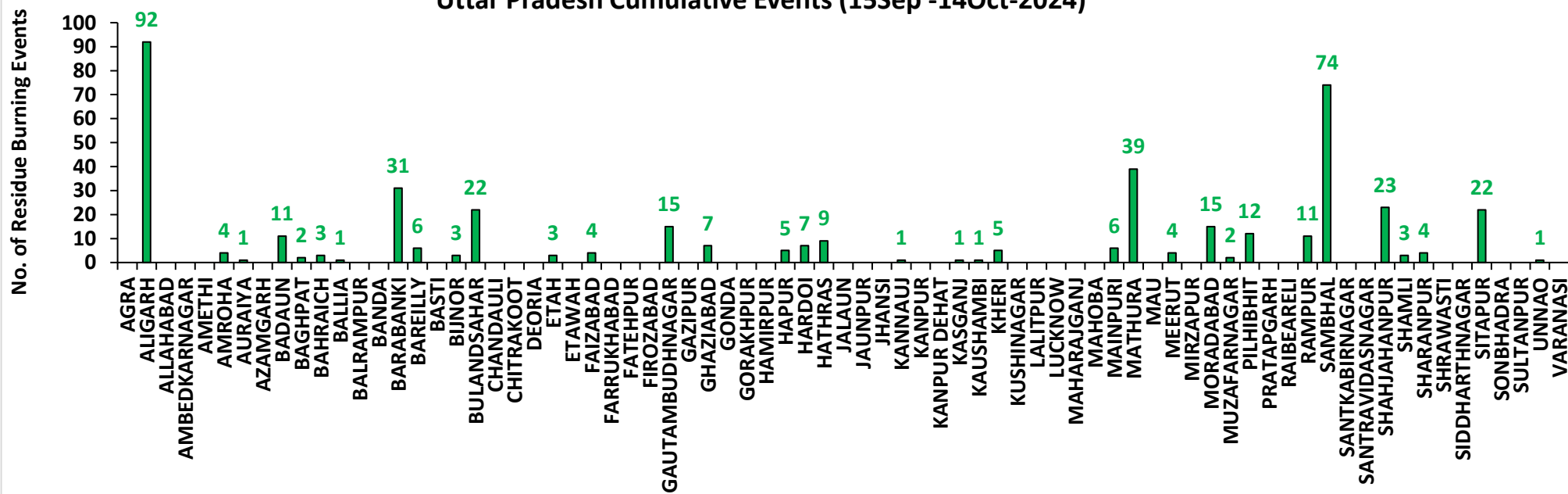
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-14Oct-2024)

Uttar Pradesh Events on 14-Oct-2024

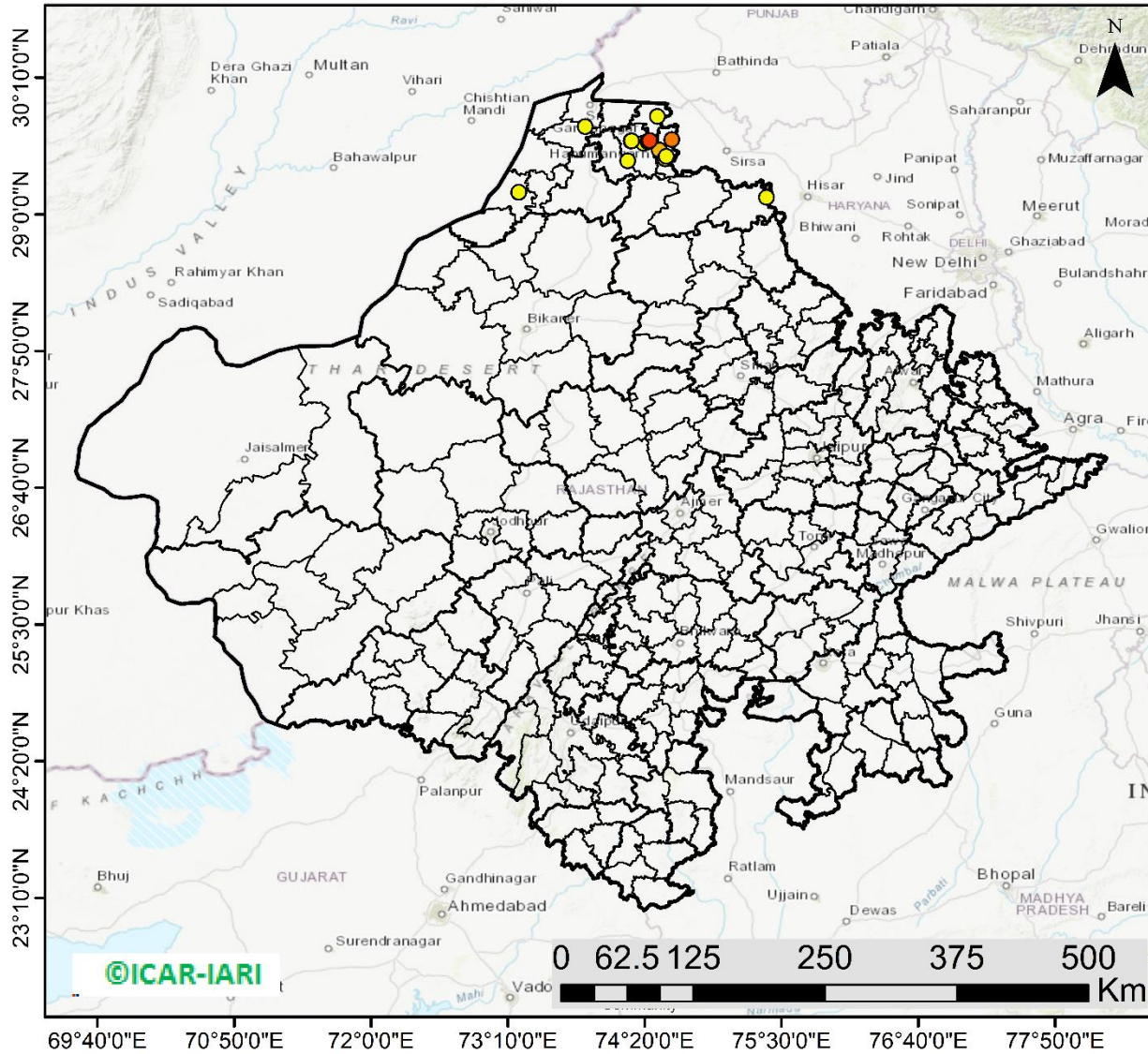


Uttar Pradesh Cumulative Events (15Sep -14Oct-2024)



Rajasthan

RICE RESIDUE BURNING IN RAJASTHAN



20 burning events detected in Rajasthan on (14th Oct 2024)

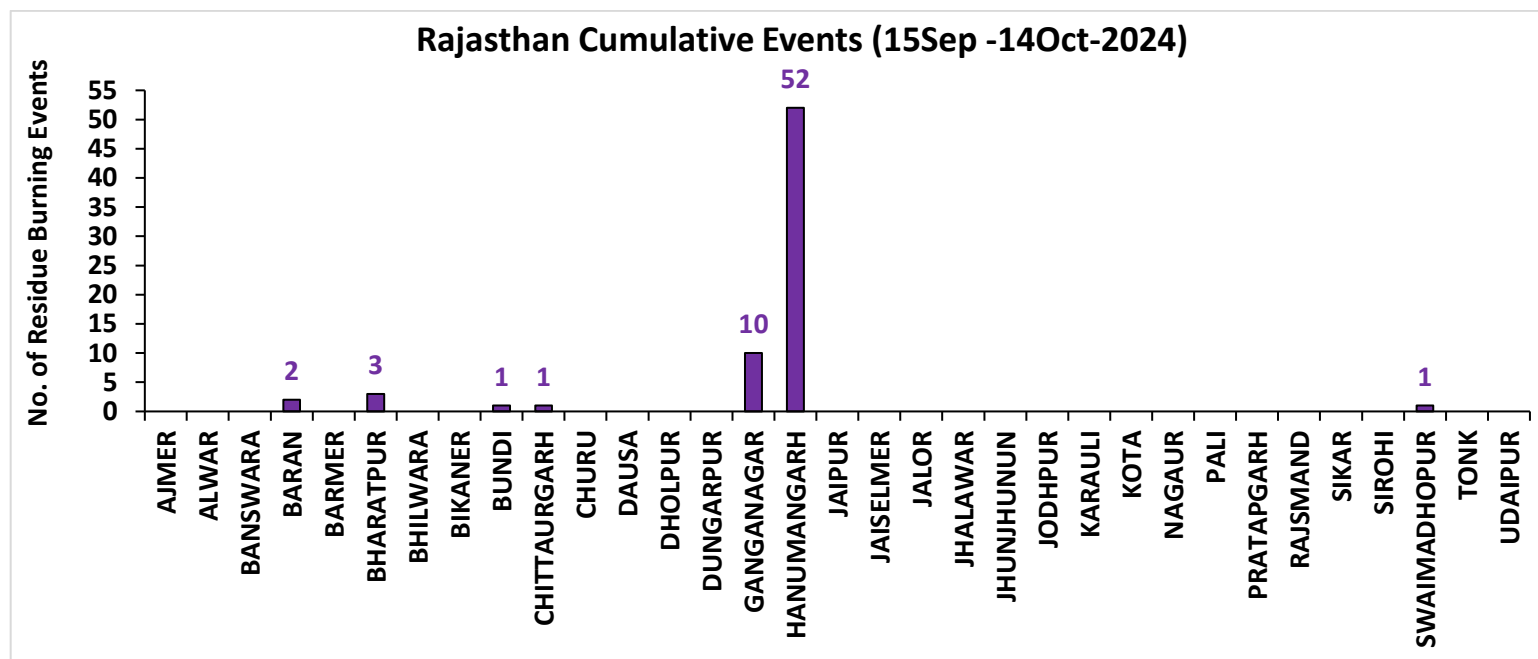
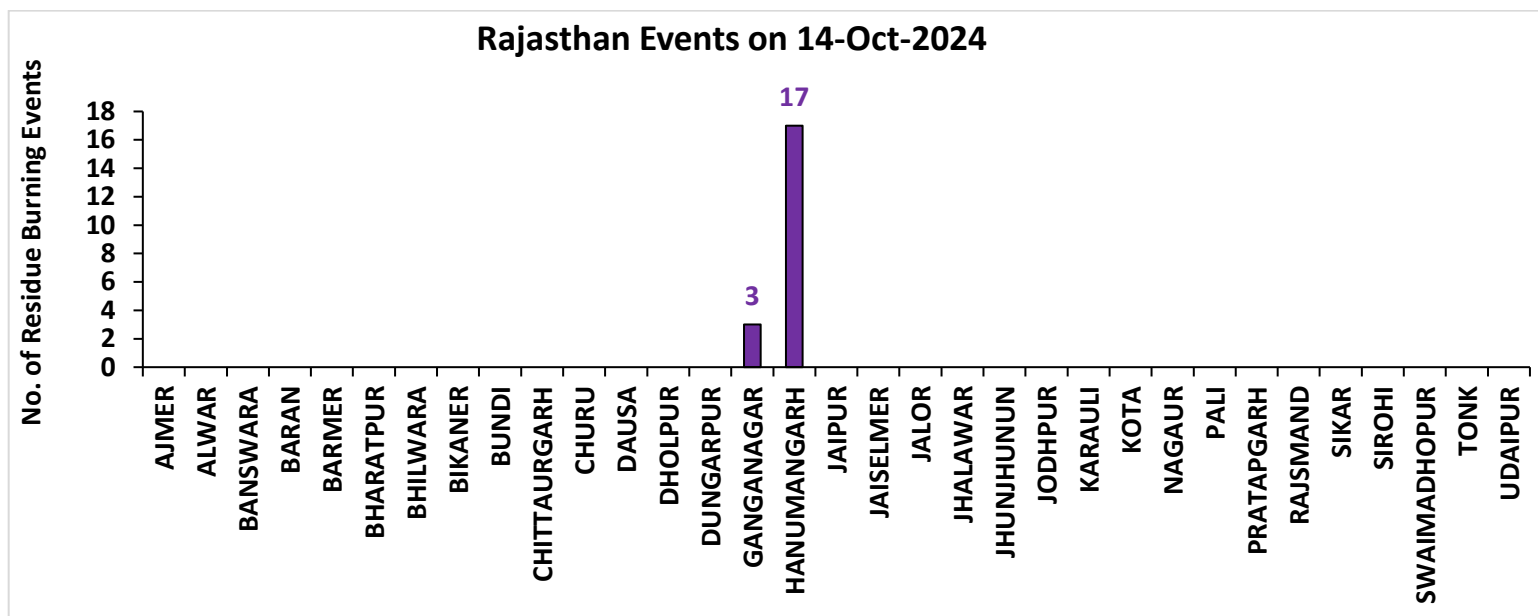
Fire Intensity (W/m²)

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



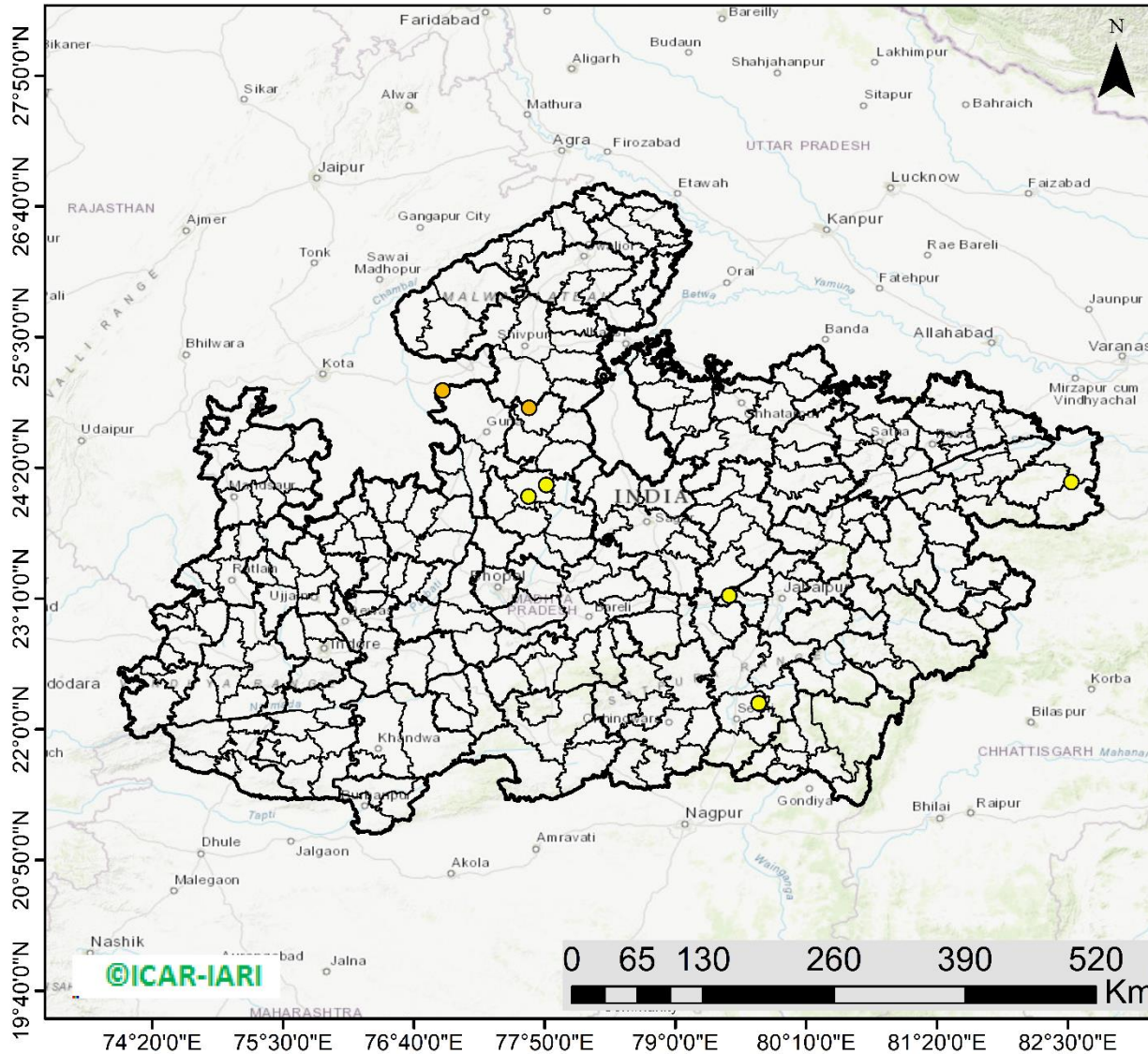
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Rajasthan (15Sep-14Oct-2024)



Madhya Pradesh

RICE RESIDUE BURNING IN MADHYA PRADESH



07 burning events detected in MP on (14th Oct 2024)

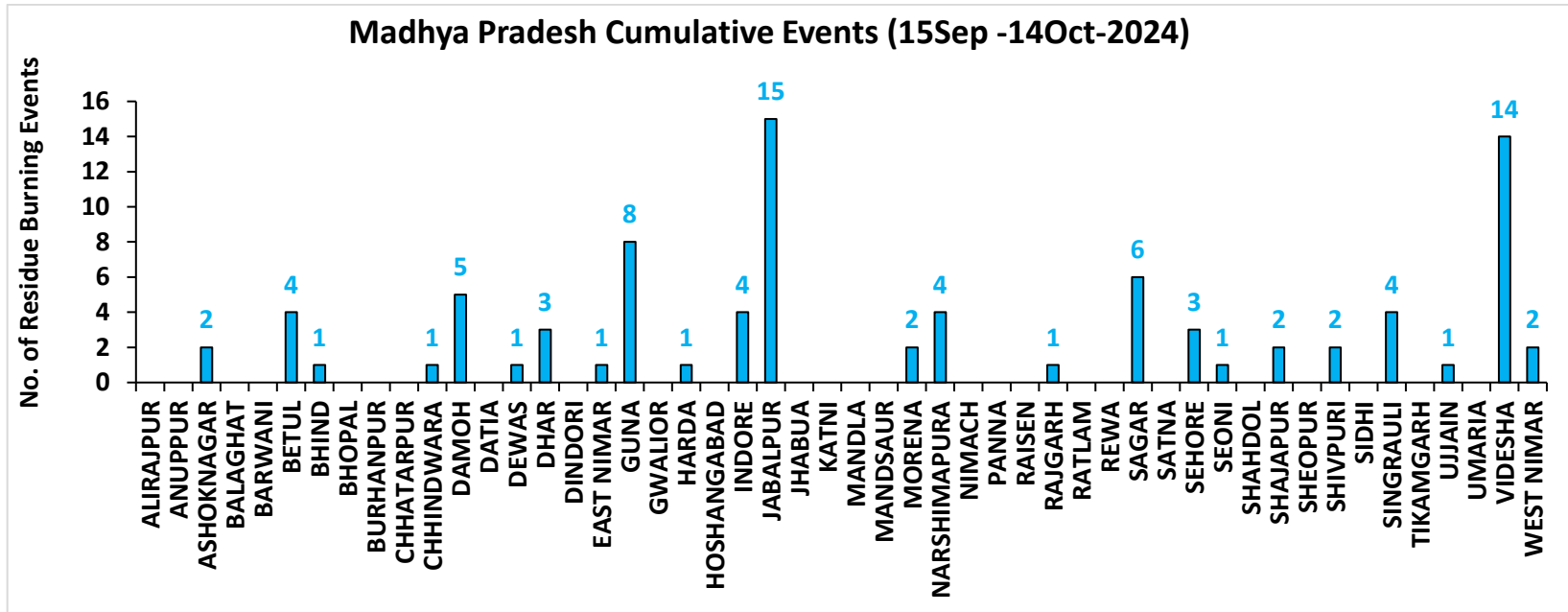
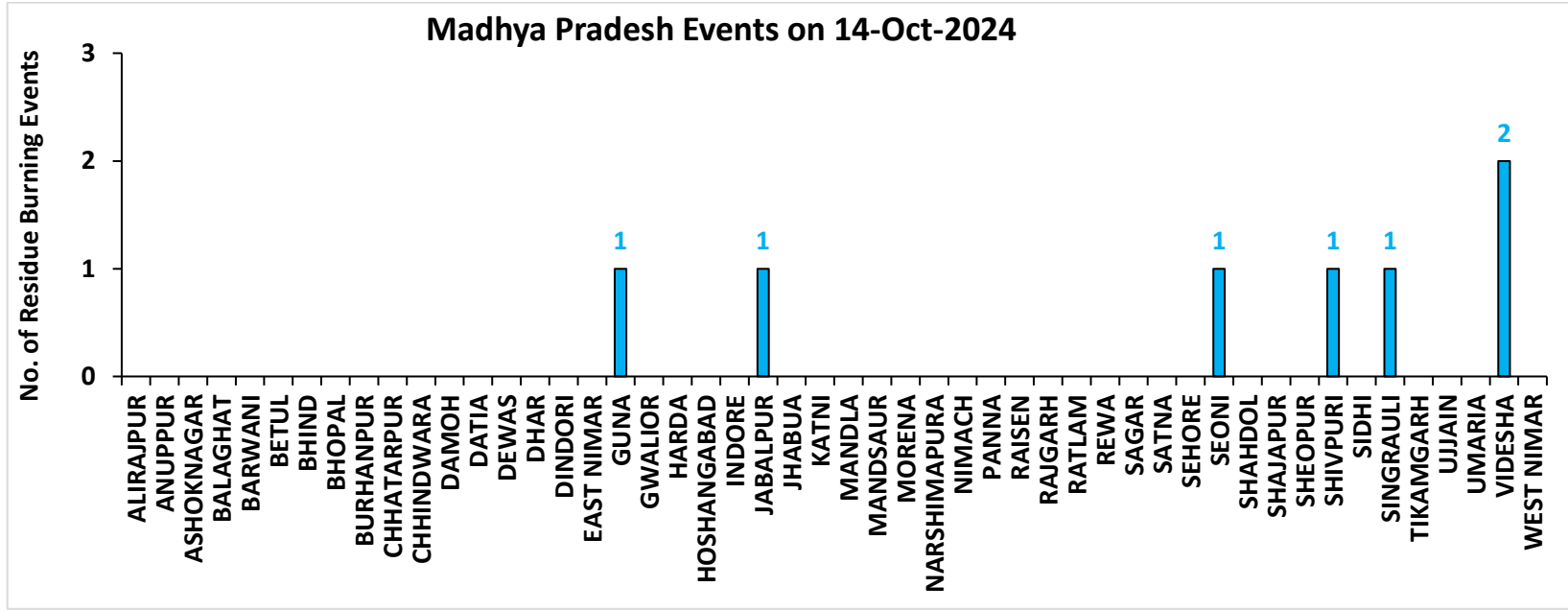
Fire Intensity (W/m²)

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



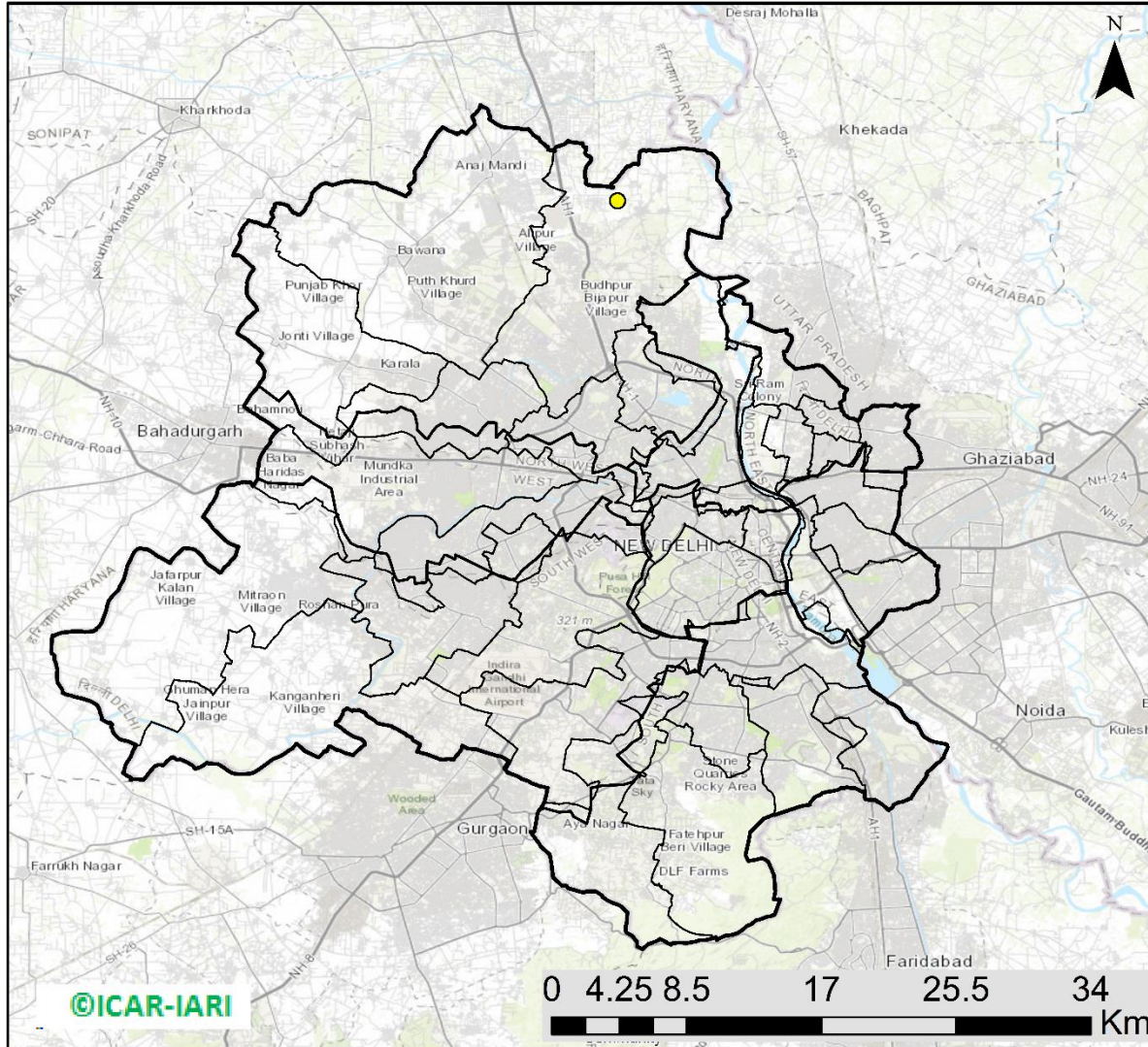
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise cumulative number of residues burning events in Madhya Pradesh (15Sep-14Oct-2024)



Delhi

RICE RESIDUE BURNING IN DELHI



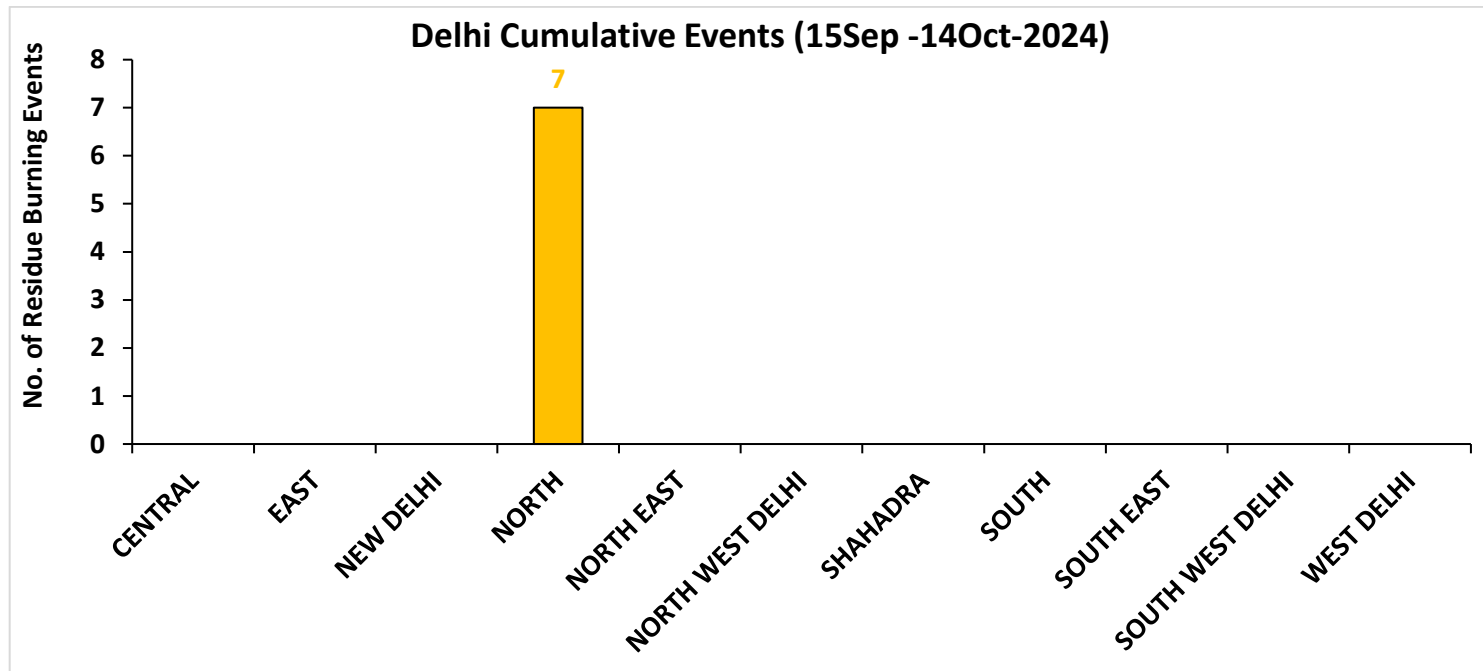
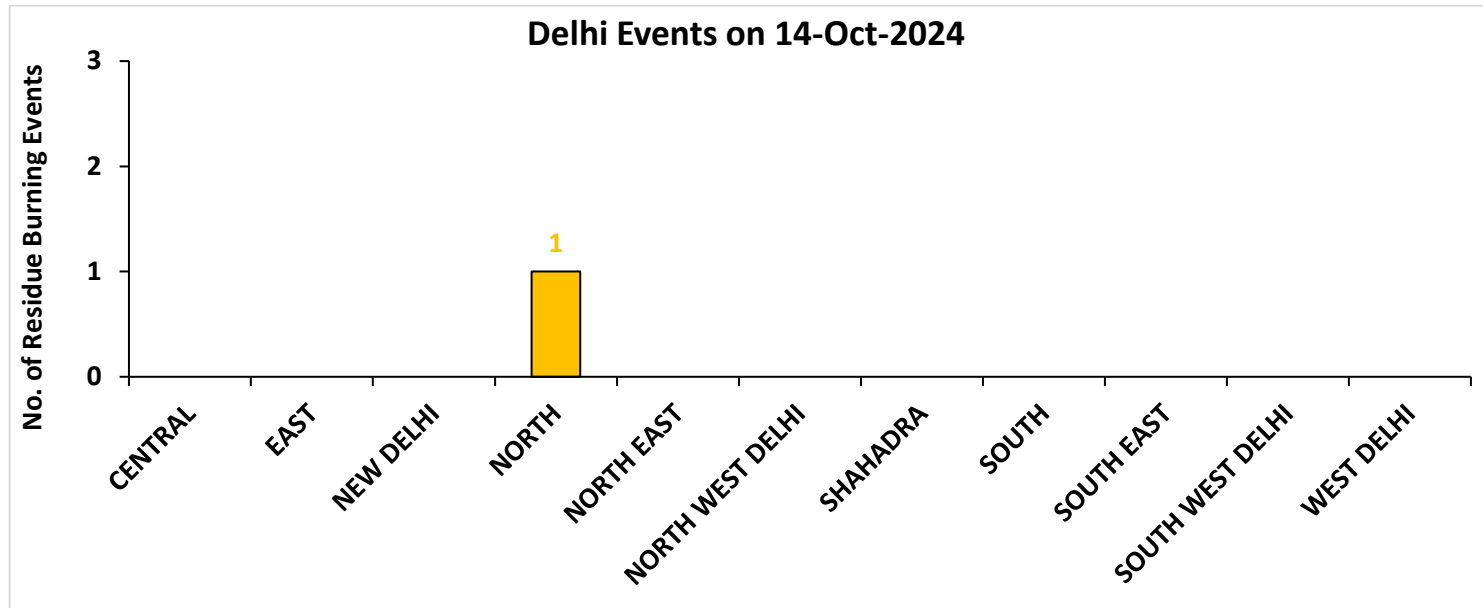
01 burning events detected in Delhi on (14th Oct 2024)

Fire Intensity (W/m²)

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



District-wise cumulative number of residues burning events in Delhi (15Sep-14Oct-2024)



District-wise cumulative number of residues burning events detected in 2020, 2021, 2022, 2023 and 2024
(Period: 15 September-14 October)

(a) Punjab

District	15 Sep-14 Oct				
	2020	2021	2022	2023	2024
Amritsar	1642	423	540	644	349
Barnala	15	8	7	7	6
Bathinda	30	0	0	2	3
Faridkot	84	35	6	9	2
Fatehgarh Sahib	78	54	9	24	15
Fazilka	13	12	3	6	5
Firozpur	218	43	34	46	48
Gurdaspur	250	57	48	11	29
Hoshiarpur	24	1	0	2	0
Jalandhar	66	31	33	20	11
Kapurthala	116	51	47	81	49
Ludhiana	112	86	14	23	15
Malerkotla	0	0	0	3	19
Mansa	30	1	3	17	17
Moga	32	14	15	9	5
Muktsar	10	10	1	0	1
Pathankot	0	0	0	0	0
Patiala	358	103	36	113	99
Rupnagar	12	6	0	1	2
Sangrur	91	19	25	57	77
SAS NAGAR (Mohali)	25	16	4	50	22
SBS Nagar	10	2	2	2	3
Tarn Taran	1000	314	242	192	192
Total	4216	1286	1069	1319	969

(b) Haryana

District	15 Sep-14 Oct				
	2020	2021	2022	2023	2024
AMBALA	82	21	13	69	59
BHIWANI	0	0	0	1	0
CHARKHI DADRI	0	0	0	0	0
FARIDABAD	0	1	0	2	22
FATEHABAD	38	20	7	55	29
GURGAON	0	0	0	0	0
HISAR	6	0	1	22	12
JHAJJAR	1	0	0	2	1
JIND	15	15	15	46	44
KAITHAL	101	103	23	37	85
KARNAL	168	180	26	26	50
KURUKSHETRA	120	105	35	54	80
MAHENDRAGARH	0	0	0	0	0
MEWAT	0	0	0	0	0
PALWAL	5	12	0	15	21
PANCHKULA	0	0	0	0	11
PANIPAT	7	5	2	13	24
REWARI	0	0	0	0	0
ROHTAK	0	0	0	1	6
SIRSA	7	1	2	3	14
SONIPAT	8	2	2	34	37
YAMUNANAGAR	38	22	6	35	22
Total	596	487	132	415	517

(c) Uttar Pradesh

District	15 Sep-14 Oct																		
	2020	2021	2022	2023	2024	GAUTAMBUDHNAGAR	1	7	0	4	15	MUZAFARNAGAR	2	1	0	0	2		
AGRA	1	0	0	0	0	GAZIPUR	0	0	0	0	0	PILHIBHIT	5	26	2	29	12		
ALIGARH	21	9	1	60	92	GHAZIABAD	1	2	1	6	7	PRATAPGARH	0	0	0	0	0		
ALLAHABAD	0	0	0	0	0	GONDA	0	0	0	0	0	RAIBEARELI	1	0	0	0	0		
AMBEDKARNAGAR	0	0	0	0	0	GORAKHPUR	0	0	0	0	0	RAMPUR	16	34	0	13	11		
AMETHI	0	1	2	1	0	HAMIRPUR	1	0	0	0	0	SAMBHAL	6	4	4	8	74		
AMROHA	1	0	0	2	4	HAPUR	3	0	0	0	5	SANTKABIRNAGAR	0	0	0	0	0		
AURAIYA	15	2	4	3	1	HARDOI	4	5	0	4	7	SANTRAVIDASNAGAR	0	0	0	0	0		
AZAMGARH	0	0	0	0	0	HATHRAS	0	0	0	2	9	SHAHJAHANPUR	36	118	53	20	23		
BADAUN	0	0	0	1	11	JALAUN	0	0	0	0	0	SHAMLI	18	9	2	3	3		
BAGHPAT	2	1	0	1	2	JAUNPUR	0	0	0	0	0	SHARANPUR	18	6	0	0	4		
BAHRAICH	2	2	1	0	3	JHANSI	6	0	0	2	0	SHRAWASTI	2	0	0	0	0		
BALLIA	0	0	0	0	1	KANNAUJ	3	0	0	1	1	SIDDHARTHANAGAR	0	0	0	0	0		
BALRAMPUR	0	0	0	0	0	KANPUR	0	1	0	2	0	SITAPUR	9	4	0	2	22		
BANDA	0	0	0	0	0	KANPUR DEHAT	3	0	0	3	0	SONBHADRA	0	0	0	0	0		
BARABANKI	10	1	0	17	31	KASGANJ	1	0	0	1	1	SULTANPUR	0	0	0	0	0		
BAREILLY	10	6	0	8	6	KAUSHAMBI	7	2	0	6	1	UNNAO	3	0	0	2	1		
BASTI	2	0	0	0	0	KHERI	29	27	8	3	5	VARANASI	0	0	0	0	0		
BIJNOR	4	1	1	5	3	KUSHINAGAR	0	0	0	0	0	Total	305	311	85	277	450		
BULANDSAHAR	6	1	2	4	22	LALITPUR	0	1	2	0	0								
CHANDAULI	0	0	0	0	0	LUCKNOW	2	0	0	1	0								
CHITRAKOOT	0	0	0	0	0	MAHARAJGANJ	0	0	0	0	0								
DEORIA	0	0	0	2	0	MAHOBA	1	0	0	0	0								
ETAH	4	6	0	8	3	MAINPURI	4	3	0	4	6								
ETAWAH	2	5	0	8	0	MATHURA	8	15	0	32	39								
FAIZABAD	1	0	0	0	4	MAU	0	0	0	0	0								
FARRUKHABAD	0	0	0	0	0	MEERUT	9	1	0	2	4								
FATEHPUR	14	1	0	4	0	MIRZAPUR	5	5	2	0	0								
FIROZABAD	4	2	0	1	0	MORADABAD	2	2	0	2	15								

(d) Delhi

District	15 Sep-14 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	2	2	7
NORTH EAST	0	0	0	0	0
NORTH WEST DELHI	0	0	0	0	0
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	3	0	2	2	7

(e) Rajasthan

District	15 Sep-14 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	80	0	4	72	2
BARMER	2	0	0	0	0
BHARATPUR	0	0	0	2	3
BHILWARA	2	0	0	0	0
BIKANER	0	0	0	0	0
BUNDI	4	0	4	9	1
CHITTAURGARH	0	1	2	4	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	2	0	1	7	10
HANUMANGARH	68	15	3	37	52
JAIPUR	0	0	0	0	0
JAISELMER	2	0	0	0	0
JALOR	0	0	0	0	0
JHALAWAR	1	0	0	6	0
JHUNJHUNUN	1	0	0	0	0
JODHPUR	1	0	0	0	0
KARALI	1	0	0	0	0
KOTA	22	1	1	44	0
NAGPUR	0	0	0	0	0
PALI	1	0	0	0	0
PRATAPGARH	0	0	0	0	0
RAJSMAND	0	0	0	0	0
SIKAR	0	0	0	0	0
SIROHI	1	0	0	0	0
SWAIMADHOPUR	3	0	0	8	1
TONK	1	0	0	0	0
UDAIPUR	0	0	0	0	0
Total	193	17	15	189	70

(f) Madhya Pradesh

District	15 Sep-14 Oct										
	2020	2021	2022	2023	2024	PANNA	2	0	0	0	0
ALIRAJPUR	0	0	0	0	0	RAISEN	10	1	0	1	0
ANUPPUR	0	0	0	0	0	RAJGARH	7	1	2	6	1
ASHOKNAGAR	9	0	0	13	2	RATLAM	0	0	0	1	0
BALAGHAT	0	0	0	0	0	REWA	3	0	0	0	0
BARWANI	0	0	0	0	0	SAGAR	13	3	1	5	6
BETUL	0	0	0	0	4	SATNA	3	3	0	1	0
BHIND	2	1	0	6	1	SEHORE	5	1	1	9	3
BHOPAL	5	4	1	6	0	SEONI	8	2	0	0	1
BURHANPUR	0	0	0	0	0	SHAHDOL	0	0	0	0	0
CHHATARPUR	4	0	0	2	0	SHAJAPUR	5	0	0	6	2
CHHINDWARA	0	0	0	1	1	SHEOPUR	6	0	0	5	0
DAMOH	14	2	0	8	5	SHIVPURI	4	0	6	1	2
DATIA	28	3	0	16	0	SIDHI	0	0	0	0	0
DEWAS	3	0	0	5	1	SINGRAULI	0	0	0	0	4
DHAR	19	0	0	22	3	TIKAMGARH	1	0	0	0	0
DINDORI	0	0	0	0	0	UJJAIN	5	0	0	10	1
EAST NIMAR	2	1	1	0	1	UMARIA	0	0	0	0	0
GUNA	14	1	1	69	8	VIDESHA	51	5	2	15	14
GWALIOR	21	0	1	4	0	WEST NIMAR	2	0	0	0	2
HARDA	8	8	0	10	1	Total	290	43	16	258	88
HOSHANGABAD	9	0	0	6	0						
INDORE	2	0	0	11	4						
JABALPUR	6	2	0	5	15						
JHABUA	0	0	0	0	0						
KATNI	0	0	0	0	0						
MANDLA	0	0	0	0	0						
MANDSAUR	3	0	0	1	0						
MORENA	14	3	0	12	2						
NARSHIMAPURA	2	2	0	1	4						
NIMACH	0	0	0	0	0						

State-wise and date-wise number of paddy residue burning events detected in 2020 ,2021 ,2022, 2023 and 2024
(Period: 15 September-14 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
Total	4216	1286	1069	1319	969	596	487	132	415	517	305	311	85	277	450

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
Total	3	0	2	2	7	193	17	15	189	70	290	43	16	258	88

Details of residue burning events in Punjab on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMRITSAR	AJNALA	S-NPP	31.98567	74.89393	12:49:44	D	2.10
2	AMRITSAR	AJNALA	JPSS-1	31.86584	74.83511	13:14:38	D	7.20
3	AMRITSAR	ATTARI	AQUA	31.58500	74.78100	14:16:55	D	10.90
4	AMRITSAR	ATTARI	JPSS-1	31.62241	74.62910	13:14:38	D	3.70
5	AMRITSAR	CHOGAWAN	JPSS-2	31.73606	74.65205	14:06:57	D	5.70
6	AMRITSAR	CHOGAWAN	S-NPP	31.77607	74.65218	12:49:44	D	3.40
7	AMRITSAR	CHOGAWAN	JPSS-1	31.75508	74.69372	13:14:38	D	3.80
8	AMRITSAR	HARSHA CHHINA	AQUA	31.71400	74.77000	14:16:55	D	5.80
9	AMRITSAR	HARSHA CHHINA	AQUA	31.71600	74.78100	14:16:55	D	9.80
10	AMRITSAR	HARSHA CHHINA	JPSS-2	31.71106	74.77037	14:06:57	D	8.20
11	AMRITSAR	HARSHA CHHINA	JPSS-2	31.71341	74.76983	14:06:57	D	9.20
12	AMRITSAR	MAJITHA	AQUA	31.75000	74.93600	14:16:55	D	5.70
13	AMRITSAR	MAJITHA	S-NPP	31.72657	75.08797	12:49:44	D	3.80
14	AMRITSAR	MAJITHA	S-NPP	31.72741	75.08929	12:49:44	D	5.50
15	AMRITSAR	MAJITHA	JPSS-2	31.74637	74.92269	14:06:57	D	7.20
16	AMRITSAR	MAJITHA	JPSS-2	31.74793	74.92289	14:06:57	D	4.50
17	AMRITSAR	MAJITHA	JPSS-1	31.72549	75.09236	13:14:38	D	2.50
18	AMRITSAR	MAJITHA	JPSS-1	31.77963	75.00639	13:14:38	D	3.10
19	AMRITSAR	MAJITHA	JPSS-1	31.78048	75.09341	13:14:38	D	6.00
20	AMRITSAR	RAYYA	JPSS-1	31.50854	75.18546	13:14:38	D	3.20
21	AMRITSAR	TARSIKKA	AQUA	31.58400	75.11200	14:16:55	D	18.70
22	AMRITSAR	TARSIKKA	AQUA	31.58500	75.12300	14:16:55	D	40.10
23	AMRITSAR	TARSIKKA	AQUA	31.66700	75.11000	14:16:55	D	11.20
24	AMRITSAR	TARSIKKA	AQUA	31.66900	75.12100	14:16:55	D	14.50
25	AMRITSAR	TARSIKKA	AQUA	31.67100	75.13200	14:16:55	D	9.20

26	AMRITSAR	TARSIKKA	JPSS-1	31.60680	75.20482	13:14:38	D	7.60
27	AMRITSAR	TARSIKKA	JPSS-1	31.65026	75.08031	13:14:38	D	1.90
28	AMRITSAR	TARSIKKA	JPSS-1	31.70868	75.16254	13:14:38	D	2.40
29	BARNALA	BARNALA	JPSS-2	30.25959	75.54558	14:06:57	D	7.10
30	FATEHGARH SAHIB	KHERA	AQUA	30.57900	76.50300	14:16:55	D	9.60
31	FATEHGARH SAHIB	KHERA	JPSS-2	30.62482	76.48500	14:06:57	D	11.40
32	FATEHGARH SAHIB	SIRHIND	JPSS-1	30.57861	76.38058	13:14:38	D	1.90
33	FAZILKA	GURUHAR SAHAI	S-NPP	30.60917	74.31218	12:49:44	D	3.60
34	FIROZPUR	FIROZPUR	JPSS-2	30.97171	74.53810	14:06:57	D	11.60
35	FIROZPUR	FIROZPUR	JPSS-1	30.95275	74.52695	13:14:38	D	2.90
36	FIROZPUR	GHALL KHURD	JPSS-2	30.89980	74.77549	14:06:57	D	5.20
37	FIROZPUR	MAMDOT	JPSS-2	30.88146	74.39267	14:06:57	D	5.50
38	FIROZPUR	MAMDOT	JPSS-1	30.85397	74.40271	13:14:38	D	3.70
39	FIROZPUR	MAMDOT	JPSS-1	30.92972	74.50385	13:14:38	D	5.20
40	GURDASPUR	FATEHGARH CHURIAN	JPSS-2	31.90196	75.08347	14:06:57	D	2.30
41	GURDASPUR	KALANAUR	JPSS-2	31.93993	75.17834	14:06:57	D	3.20
42	GURDASPUR	SRI HARGOBINDPUR	JPSS-1	31.61157	75.41751	13:14:38	D	5.50
43	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.21752	75.15520	14:30:01	D	3.50
44	KAPURTHALA	SULTANPUR LODHI	S-NPP	31.22087	75.15563	14:30:01	D	4.40
45	LUDHIANA	MALoud	JPSS-1	30.70950	75.86950	13:14:38	D	2.70
46	LUDHIANA	SUDHAR	AQUA	30.78300	75.66900	14:16:55	D	11.80
47	MALERKOTLA	AHMEDGARH	JPSS-2	30.60331	75.78976	14:06:57	D	2.70
48	MALERKOTLA	AHMEDGARH	JPSS-1	30.55068	75.66841	13:14:38	D	2.60
49	MALERKOTLA	MALERKOTLA	JPSS-2	30.51682	75.96932	14:06:57	D	2.60
50	MALERKOTLA	MALERKOTLA	JPSS-1	30.57121	75.82659	13:14:38	D	2.90
51	PATIALA	BHUNARHERI	S-NPP	30.21316	76.52491	12:49:44	D	3.70
52	PATIALA	GHANAUR	JPSS-1	30.37692	76.52124	13:14:38	D	2.30
53	PATIALA	NABHA	AQUA	30.42600	76.23200	14:16:55	D	6.70
54	PATIALA	NABHA	S-NPP	30.33958	76.15682	12:49:44	D	2.80
55	PATIALA	NABHA	JPSS-1	30.42354	76.23615	13:14:38	D	3.70
56	PATIALA	PATIALA	S-NPP	30.27716	76.23356	12:49:44	D	3.90
57	PATIALA	PATIALA	JPSS-2	30.40651	76.32333	14:06:57	D	2.50
58	PATIALA	PATIALA	S-NPP	30.44409	76.44144	12:49:44	D	8.50
59	PATIALA	PATRAN	AQUA	29.91600	75.99100	14:16:55	D	19.60

60	PATIALA	PATRAN	AQUA	29.93500	76.17200	14:16:55	D	12.90
61	PATIALA	PATRAN	JPSS-2	29.90773	76.18018	14:06:57	D	2.30
62	PATIALA	RAJPURA	AQUA	30.51100	76.67100	14:16:55	D	4.60
63	PATIALA	RAJPURA	JPSS-1	30.58161	76.62673	13:14:38	D	2.40
64	PATIALA	SAMANA	JPSS-2	30.19318	76.23609	14:06:57	D	12.10
65	PATIALA	SANAUR	S-NPP	30.28153	76.47389	12:49:44	D	8.00
66	PATIALA	SHAMBU KALAN	JPSS-2	30.51135	76.60342	14:06:57	D	4.70
67	SANGRUR	ANDANA	AQUA	29.84400	75.89300	14:16:55	D	14.80
68	SANGRUR	ANDANA	S-NPP	29.73422	75.93899	12:49:44	D	4.40
69	SANGRUR	ANDANA	JPSS-2	29.78776	76.01001	14:06:57	D	3.30
70	SANGRUR	ANDANA	JPSS-2	29.80606	75.88832	14:06:57	D	4.00
71	SANGRUR	ANDANA	JPSS-2	29.81073	75.94805	14:06:57	D	2.60
72	SANGRUR	BHAWANIGARH	S-NPP	30.31508	76.02745	12:49:44	D	7.40
73	SANGRUR	SANGRUR	S-NPP	30.22831	75.69674	12:49:44	D	6.60
74	SAS NAGAR	DERABASSI	S-NPP	30.55895	76.77285	12:49:44	D	3.40
75	SAS NAGAR	DERABASSI	S-NPP	30.56063	76.76926	12:49:44	D	4.50
76	TARN TARAN	CHOHLA SAHIB	JPSS-2	31.21619	75.04549	14:06:57	D	4.70
77	TARN TARAN	GANDIWIND TATLA	JPSS-1	31.53312	74.74004	13:14:38	D	4.90
78	TARN TARAN	GANDIWIND TATLA	JPSS-1	31.53563	74.74227	13:14:38	D	4.00
79	TARN TARAN	KHADUR SAHIB	AQUA	31.46800	75.20000	14:16:55	D	7.10
80	TARN TARAN	KHADUR SAHIB	AQUA	31.47000	75.21100	14:16:55	D	9.30
81	TARN TARAN	KHADUR SAHIB	JPSS-2	31.40914	75.12364	14:06:57	D	9.10
82	TARN TARAN	KHADUR SAHIB	JPSS-2	31.41579	75.08282	14:06:57	D	7.00
83	TARN TARAN	KHADUR SAHIB	JPSS-2	31.41653	75.08157	14:06:57	D	4.80
84	TARN TARAN	KHADUR SAHIB	JPSS-2	31.44333	75.16749	14:06:57	D	2.20
85	TARN TARAN	KHADUR SAHIB	JPSS-2	31.50123	75.09861	02:56:48	N	1.80
86	TARN TARAN	KHADUR SAHIB	JPSS-1	31.50606	75.08923	02:04:38	N	1.70
87	TARN TARAN	KHADUR SAHIB	S-NPP	31.50653	75.09327	01:40:27	N	1.20
88	TARN TARAN	KHADUR SAHIB	JPSS-1	31.41295	75.18240	13:14:38	D	2.30
89	TARN TARAN	KHADUR SAHIB	JPSS-1	31.41432	75.12901	13:14:38	D	4.50
90	TARN TARAN	KHADUR SAHIB	JPSS-1	31.44129	75.05446	13:14:38	D	3.00
91	TARN TARAN	KHADUR SAHIB	JPSS-1	31.45355	75.14366	13:14:38	D	3.50
92	TARN TARAN	KHADUR SAHIB	JPSS-1	31.45706	75.14281	13:14:38	D	3.50
93	TARN TARAN	KHADUR SAHIB	JPSS-1	31.48756	75.14986	13:14:38	D	2.50

94	TARN TARAN	TARN TARAN	AQUA	31.48900	74.93800	14:16:55	D	5.80
95	TARN TARAN	TARN TARAN	AQUA	31.49100	74.94900	14:16:55	D	6.30
96	TARN TARAN	TARN TARAN	AQUA	31.49100	74.98900	14:16:55	D	5.40
97	TARN TARAN	TARN TARAN	JPSS-2	31.51290	75.00224	12:27:05	D	5.30

Details of residue burning events in Haryana on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	AMBALA	AMBALA-II	AQUA	30.22700	76.68400	14:16:55	D	5.20
2	AMBALA	BARARA	JPSS-1	30.18421	77.05703	13:14:38	D	1.00
3	AMBALA	BARARA	JPSS-1	30.19429	77.02553	13:14:38	D	1.70
4	AMBALA	NARAINGARH	JPSS-2	30.37057	77.05212	12:27:05	D	2.90
5	AMBALA	NARAINGARH	S-NPP	30.47037	77.14747	12:49:44	D	5.30
6	AMBALA	NARAINGARH	JPSS-2	30.47956	77.18078	14:06:57	D	2.30
7	AMBALA	SAHA	S-NPP	30.22936	76.89514	12:49:44	D	3.40
8	AMBALA	SAHA	JPSS-1	30.24821	76.91048	13:14:38	D	3.00
9	FARIDABAD	BALLABGARH	JPSS-1	28.27147	77.27334	02:04:38	N	0.50
10	FARIDABAD	BALLABGARH	JPSS-2	28.33975	77.43578	14:06:57	D	2.10
11	FARIDABAD	FARIDABAD	JPSS-2	28.33099	77.23215	02:56:48	N	0.40
12	FATEHABAD	BHUNA	AQUA	29.56800	75.78200	14:16:55	D	7.70
13	FATEHABAD	BHUNA	JPSS-2	29.56102	75.78001	14:06:57	D	12.10
14	FATEHABAD	FATEHABAD	JPSS-1	29.40562	75.48618	13:14:38	D	2.30
15	FATEHABAD	FATEHABAD	JPSS-1	29.54955	75.41048	13:14:38	D	2.30
16	FATEHABAD	JAKHAL	JPSS-1	29.71766	75.74181	13:14:38	D	2.70
17	HISAR	BARWALA	S-NPP	29.44694	75.89362	12:49:44	D	1.30
18	JHAJJAR	BAHADURGARH	JPSS-2	28.80063	76.84860	02:56:48	N	0.90
19	JIND	PILLUKHERA	JPSS-2	29.25444	76.56879	14:06:57	D	3.40
20	JIND	SAFIDON	AQUA	29.35900	76.57900	14:16:55	D	6.50
21	KAITHAL	GUHLA	AQUA	29.99900	76.28700	14:16:55	D	20.70
22	KAITHAL	GUHLA	AQUA	30.10000	76.28200	14:16:55	D	7.50
23	KAITHAL	GUHLA	JPSS-2	29.99299	76.31972	14:06:57	D	6.20
24	KAITHAL	GUHLA	JPSS-2	30.02203	76.27052	12:27:05	D	6.10
25	KAITHAL	GUHLA	JPSS-2	30.09582	76.27847	14:06:57	D	6.50
26	KAITHAL	GUHLA	JPSS-1	30.02087	76.29195	13:14:38	D	3.20

27	KAITHAL	KAITHAL	JPSS-2	29.86733	76.48131	14:06:57	D	2.70
28	KAITHAL	SIWAN	AQUA	29.93500	76.29600	14:16:55	D	8.10
29	KAITHAL	SIWAN	JPSS-2	29.92714	76.29280	14:06:57	D	1.90
30	KAITHAL	SIWAN	JPSS-1	29.90971	76.19823	13:14:38	D	3.40
31	KURUKSHETRA	LADWA	JPSS-1	30.00202	77.03588	13:14:38	D	2.10
32	KURUKSHETRA	LADWA	JPSS-1	30.04848	77.08565	13:14:38	D	4.80
33	KURUKSHETRA	PEHOWA	JPSS-2	30.05788	76.60164	14:06:57	D	4.60
34	KURUKSHETRA	PEHOWA	JPSS-2	30.06085	76.60115	14:06:57	D	4.20
35	KURUKSHETRA	PEHOWA	JPSS-1	29.92074	76.61539	13:14:38	D	3.30
36	KURUKSHETRA	SHAHBAD	JPSS-1	30.11874	76.80860	13:14:38	D	4.40
37	KURUKSHETRA	THANESAR	AQUA	29.91100	76.74200	14:16:55	D	3.60
38	KURUKSHETRA	THANESAR	JPSS-2	29.90715	76.79937	14:06:57	D	3.50
39	KURUKSHETRA	THANESAR	JPSS-1	30.00466	76.75871	13:14:38	D	7.40
40	PALWAL	HASSANPUR	JPSS-1	28.07596	77.47598	13:14:38	D	1.80
41	PANCHKULA	RAIPUR RANI	S-NPP	30.56967	77.01028	12:49:44	D	3.80
42	PANIPAT	MADLAUDA	JPSS-2	29.33604	76.89604	14:06:57	D	3.10
43	PANIPAT	MADLAUDA	JPSS-2	29.33951	76.89552	14:06:57	D	3.20
44	SIRSA	BARAGUNDA	JPSS-1	29.62116	75.05273	13:14:38	D	4.00
45	SIRSA	BARAGUNDA	JPSS-1	29.62175	75.05479	13:14:38	D	5.10
46	SIRSA	BARAGUNDA	JPSS-1	29.62477	75.05187	13:14:38	D	4.00
47	SONIPAT	SONIPAT	JPSS-1	29.03403	77.03829	13:14:38	D	3.80
48	YAMUNANAGAR	BILASPUR	JPSS-1	30.36941	77.36216	13:14:38	D	2.20
49	YAMUNANAGAR	RADAUR	JPSS-1	29.96940	77.18327	13:14:38	D	3.90

Details of residue burning events in Uttar Pradesh on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	ALIGARH	ATRAULI	JPSS-1	27.90382	78.35897	13:14:38	D	1.50
2	ALIGARH	ATRAULI	JPSS-1	27.94975	78.32529	13:14:38	D	1.60
3	ALIGARH	GABHANA	JPSS-1	28.07052	77.97753	13:14:38	D	2.50
4	ALIGARH	GABHANA	JPSS-1	28.07125	77.96088	13:14:38	D	1.60
5	ALIGARH	KHAIR	AQUA	27.97900	77.60900	14:16:55	D	8.50
6	ALIGARH	KHAIR	JPSS-2	27.97355	77.59590	14:06:57	D	3.50

7	ALIGARH	KHAIR	JPSS-2	27.97915	77.59541	14:06:57	D	2.30
8	ALIGARH	KHAIR	JPSS-1	28.02848	77.69987	13:14:38	D	3.00
9	ALIGARH	KOL	JPSS-1	27.88445	78.19586	13:14:38	D	5.00
10	AMROHA	AMROHA	JPSS-1	28.79381	78.49754	13:14:38	D	1.90
11	BADAUN	BADAUN	JPSS-1	28.11849	79.23293	13:14:38	D	1.50
12	BADAUN	BISALI	JPSS-2	28.31479	78.83302	14:06:57	D	7.00
13	BAHRAICH	NANPARA	JPSS-1	27.74731	81.54980	13:14:38	D	2.40
14	BAHRAICH	NANPARA	JPSS-1	27.78084	81.56532	13:14:38	D	3.60
15	BAREILLY	BAHERI	AQUA	28.78300	79.65100	14:16:55	D	6.20
16	BAREILLY	BAHERI	S-NPP	28.84039	79.65407	12:49:44	D	2.10
17	BAREILLY	NAWABGANJ	S-NPP	28.53523	79.58328	12:49:44	D	3.70
18	GAUTAMBUDHNAGAR	JEVAR	JPSS-1	28.28050	77.61085	13:14:38	D	4.80
19	GHAZIABAD	MODINAGAR	JPSS-2	28.82200	77.42233	12:27:05	D	6.60
20	HARDOI	BILGRAM	JPSS-1	27.01098	80.08905	13:14:38	D	1.80
21	HATHRAS	SIKANDRA RAO	S-NPP	27.58735	78.21095	12:49:44	D	3.40
22	MATHURA	CHHATA	JPSS-1	27.87621	77.46144	13:14:38	D	3.50
23	MEERUT	MAWANA	JPSS-1	29.21983	78.04847	13:14:38	D	2.60
24	MEERUT	MEERUT	JPSS-1	28.92677	77.51929	13:14:38	D	3.70
25	MORADABAD	BILARI	AQUA	28.72600	78.75400	14:16:55	D	6.70
26	MORADABAD	BILARI	JPSS-1	28.57943	78.78151	13:14:38	D	1.40
27	MORADABAD	BILARI	JPSS-1	28.67910	78.72192	13:14:38	D	4.90
28	MORADABAD	MORADABAD	JPSS-1	28.80392	78.78188	13:14:38	D	1.60
29	PILHIBHIT	PILHIBHIT	JPSS-1	28.81052	79.74664	02:04:38	N	0.30
30	PILHIBHIT	PURANPUR	JPSS-1	28.33389	80.29578	13:14:38	D	2.40
31	RAMPUR	MILAK	JPSS-1	28.58341	79.13849	13:14:38	D	8.20
32	RAMPUR	RAMPUR	JPSS-1	28.71046	79.05783	13:14:38	D	5.30
33	RAMPUR	RAMPUR	JPSS-1	28.71375	79.05718	13:14:38	D	5.30
34	SAMBHAL	CHANDAUSI	S-NPP	28.47711	78.74593	12:49:44	D	4.40
35	SAMBHAL	SAMBHAL	AQUA	28.67400	78.51500	14:16:55	D	7.00
36	SAMBHAL	SAMBHAL	AQUA	28.68500	78.53300	14:16:55	D	12.70
37	SAMBHAL	SAMBHAL	JPSS-2	28.54720	78.57951	12:27:05	D	7.00
38	SAMBHAL	SAMBHAL	S-NPP	28.60369	78.54679	12:49:44	D	4.70
39	SAMBHAL	SAMBHAL	S-NPP	28.62637	78.63470	12:49:44	D	5.20
40	SAMBHAL	SAMBHAL	S-NPP	28.63342	78.55877	12:49:44	D	3.90
41	SAMBHAL	SAMBHAL	S-NPP	28.63453	78.56030	12:49:44	D	5.70

42	SAMBHAL	SAMBHAL	JPSS-2	28.67836	78.51647	14:06:57	D	18.90
43	SAMBHAL	SAMBHAL	JPSS-2	28.67869	78.52136	14:06:57	D	38.50
44	SAMBHAL	SAMBHAL	S-NPP	28.68946	78.64919	12:49:44	D	3.60
45	SAMBHAL	SAMBHAL	JPSS-1	28.58109	78.70467	13:14:38	D	1.70
46	SAMBHAL	SAMBHAL	JPSS-1	28.63764	78.67373	13:14:38	D	3.10
47	SAMBHAL	SAMBHAL	JPSS-1	28.66057	78.45062	13:14:38	D	4.50
48	SHAHJAHANPUR	PUWANYA	JPSS-1	28.09057	80.19958	02:04:38	N	2.10
49	SHAHJAHANPUR	PUWANYA	JPSS-1	28.09131	80.19531	02:04:38	N	2.90
50	SHAHJAHANPUR	SHAHJAHANPUR	JPSS-1	27.82097	79.69183	13:14:38	D	2.50
51	SHAHJAHANPUR	SHAHJAHANPUR	JPSS-1	27.94169	79.90918	13:14:38	D	2.60
52	SHARANPUR	SHARANPUR	S-NPP	29.93324	77.70825	12:49:44	D	3.20

Details of residue burning events in Rajasthan on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m ²)
1	GANGANAGAR	ANAPGARH	S-NPP	29.18719	73.25940	12:49:44	D	4.20
2	GANGANAGAR	ANAPGARH	S-NPP	29.18828	73.26015	12:49:44	D	2.60
3	GANGANAGAR	GANGANAGAR	S-NPP	29.74750	73.82640	12:49:44	D	2.40
4	HANUMANGARH	BHADRA	JPSS-1	29.14362	75.37199	13:14:38	D	4.50
5	HANUMANGARH	HANUMANGARH	S-NPP	29.45563	74.18900	12:49:44	D	3.80
6	HANUMANGARH	HANUMANGARH	S-NPP	29.62462	74.21842	12:49:44	D	3.50
7	HANUMANGARH	HANUMANGARH	S-NPP	29.62497	74.21832	12:49:44	D	3.20
8	HANUMANGARH	HANUMANGARH	S-NPP	29.62559	74.22245	12:49:44	D	5.40
9	HANUMANGARH	HANUMANGARH	S-NPP	29.62597	74.22234	12:49:44	D	4.80
10	HANUMANGARH	HANUMANGARH	S-NPP	29.62868	74.36971	14:30:01	D	17.50
11	HANUMANGARH	HANUMANGARH	S-NPP	29.62899	74.37653	14:30:01	D	17.50
12	HANUMANGARH	HANUMANGARH	JPSS-1	29.60549	74.32301	13:14:38	D	3.90
13	HANUMANGARH	HANUMANGARH	JPSS-1	29.61714	74.36368	13:14:38	D	3.00
14	HANUMANGARH	HANUMANGARH	JPSS-1	29.62086	74.36275	13:14:38	D	8.90
15	HANUMANGARH	SANGHRIYA	JPSS-1	29.83458	74.44242	13:14:38	D	3.30
16	HANUMANGARH	TIBI	S-NPP	29.47414	74.50709	12:49:44	D	3.60
17	HANUMANGARH	TIBI	S-NPP	29.49379	74.51771	12:49:44	D	2.90

18	HANUMANGARH	TIBI	JPSS-2	29.63673	74.56588	14:06:57	D	14.80
19	HANUMANGARH	TIBI	JPSS-1	29.47240	74.51159	13:14:38	D	4.90
20	HANUMANGARH	TIBI	JPSS-1	29.54861	74.45818	13:14:38	D	5.50

Details of residue burning events in Madhya Pradesh on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	GUNA	GUNA	JPSS-2	25.02246	76.92335	14:06:57	D	5.10
2	JABALPUR	SAHPURA	JPSS-1	23.19223	79.48025	13:14:38	D	2.20
3	SEONI	SEONI	JPSS-1	22.23113	79.74364	13:14:38	D	2.90
4	SHIVPURI	KOLARAS	AQUA	24.86700	77.69500	14:16:55	D	6.70
5	SINGRAULI	DEOSAR	JPSS-2	24.20535	82.53276	01:16:56	N	0.90
6	VIDESHA	SIRANJ	S-NPP	24.07665	77.69002	12:49:44	D	2.00
7	VIDESHA	SIRANJ	JPSS-1	24.17935	77.84836	13:14:38	D	1.90

Details of residue burning events in Delhi on 14-Oct-2024

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	ACQ_TIME	Day / Night	Fire Power (W/m2)
1	NORTH	ALIPUR	JPSS-1	28.82932	77.16031	02:04:38	N	0.6

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](#)
