



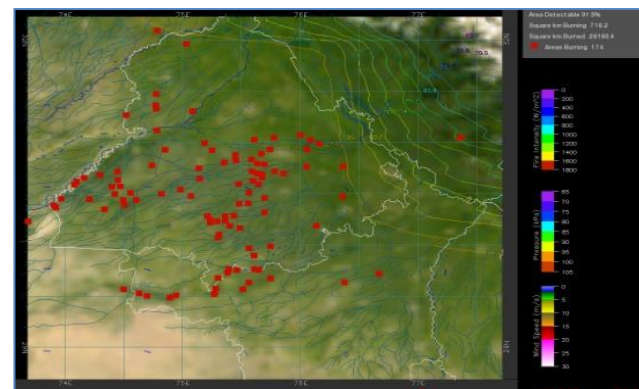
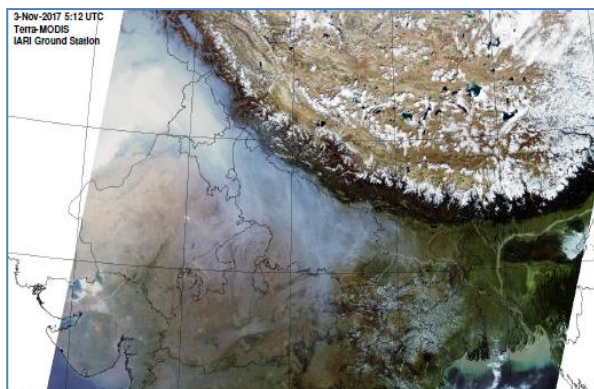
**Bulletin
No. 54**

**Events Date:
23-Nov-2020**

**Issued on:
24-Nov-2020**



MONITORING PADDY RESIDUE BURNING IN NORTH INDIA USING SATELLITE REMOTE SENSING DURING 2020



Prepared by:

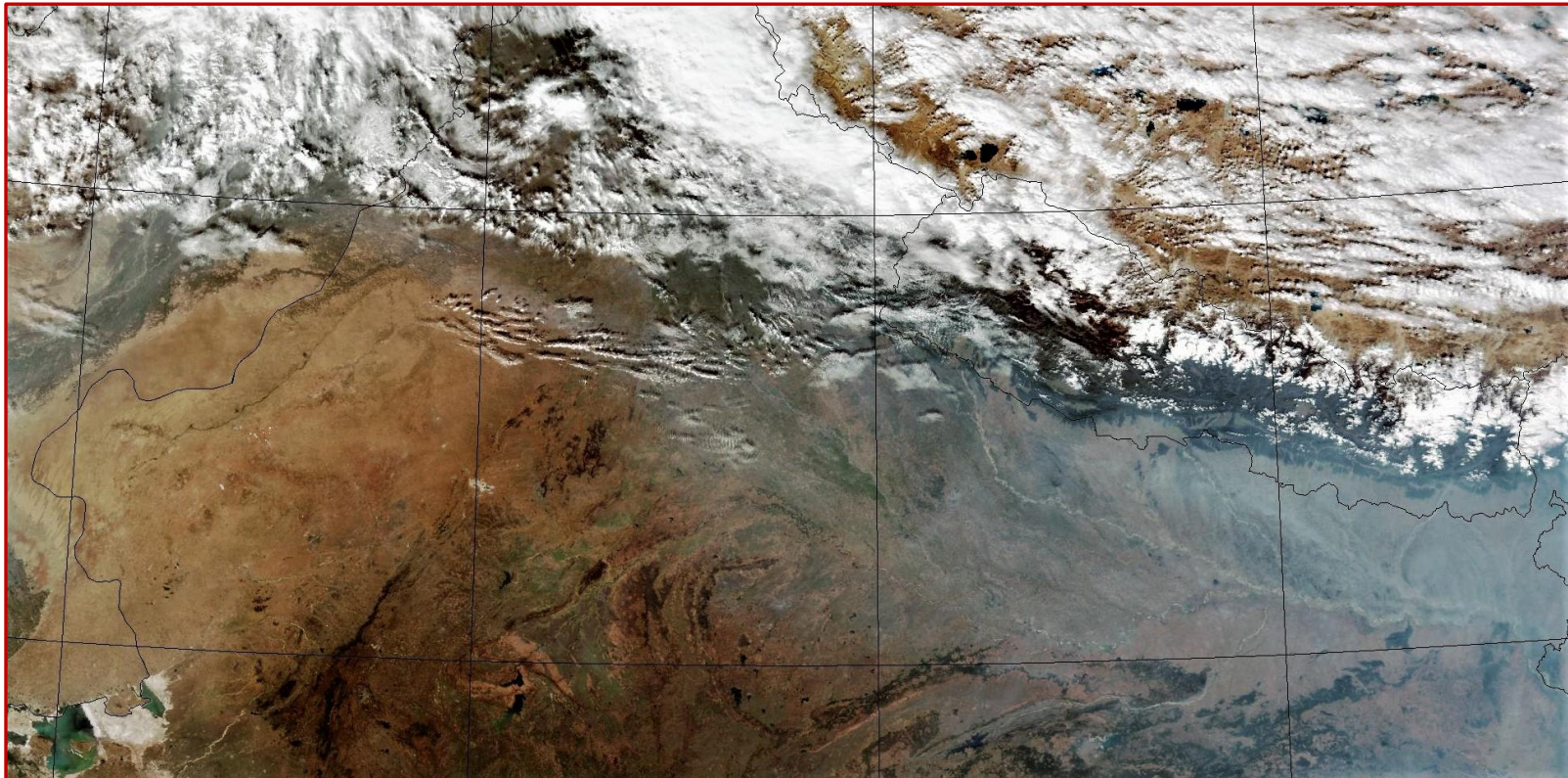
**Consortium for Research on Agroecosystem Monitoring and Modeling from Space (CREAMS) Laboratory,
Division of Agricultural Physics, ICAR – Indian Agricultural Research Institute, New Delhi – 110012**

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

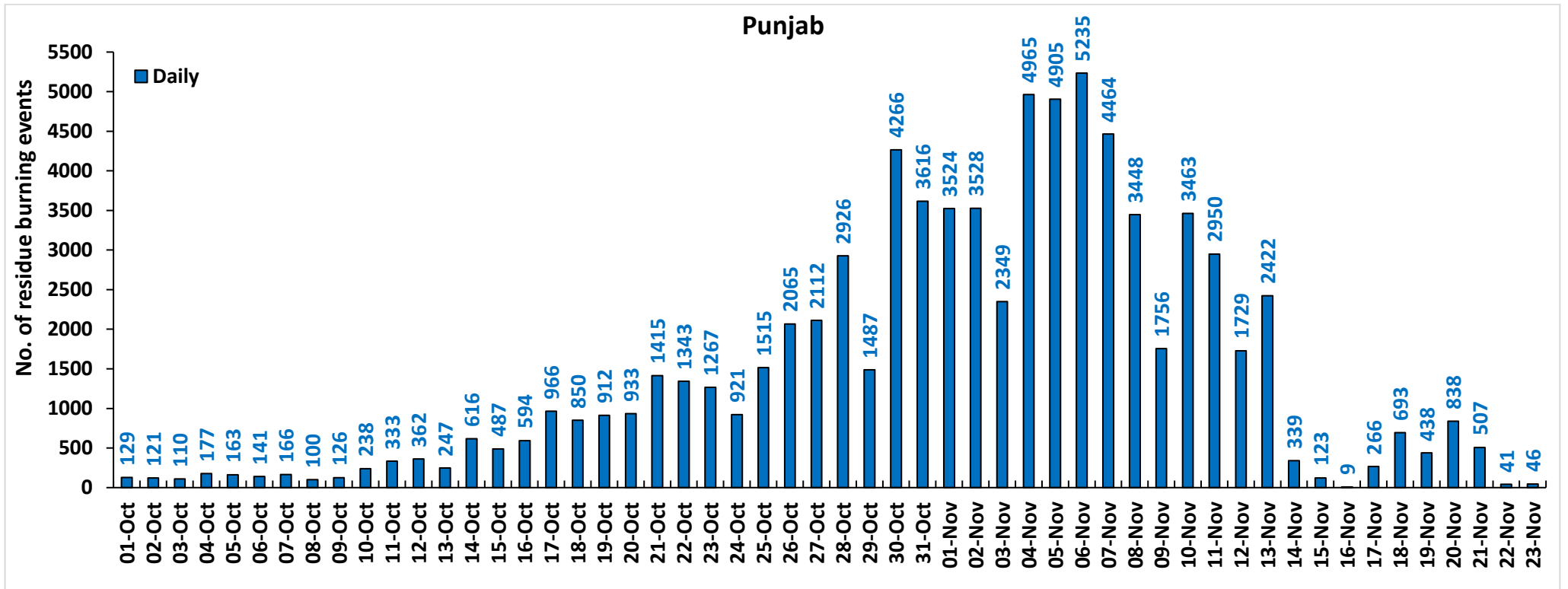
Highlights for 23-November-2020

- Satellites detected **197** residue burning events in the three study States on **23-Nov-2020**.
- The state wise events detected on **23-Nov-2020** were **46** in Punjab, **62** in Haryana and **89** in UP.
- The number of events has increased from **186** on **22-Nov-2020** to **197** on **23-Nov-2020** in the three states.
- The state of Punjab was partly covered with clouds which prevented fire event detection by satellites.
- Barnala in Punjab, Sirsa in Haryana and Jhansi in UP reported the highest number of events on **23-Nov-2020**.
- Total **87781** burning events were detected in the three States between **01-Oct-2020** and **23-Nov-2020**, which are distributed as **78742**, **5430** and **3609** in Punjab, Haryana and UP, respectively.
- In Haryana and UP, the cumulative number of burning events between **01-Oct** and **23-Nov 2020** were lower than in **2019**, while in Punjab the cumulative number of events were significantly more than in **2019**.

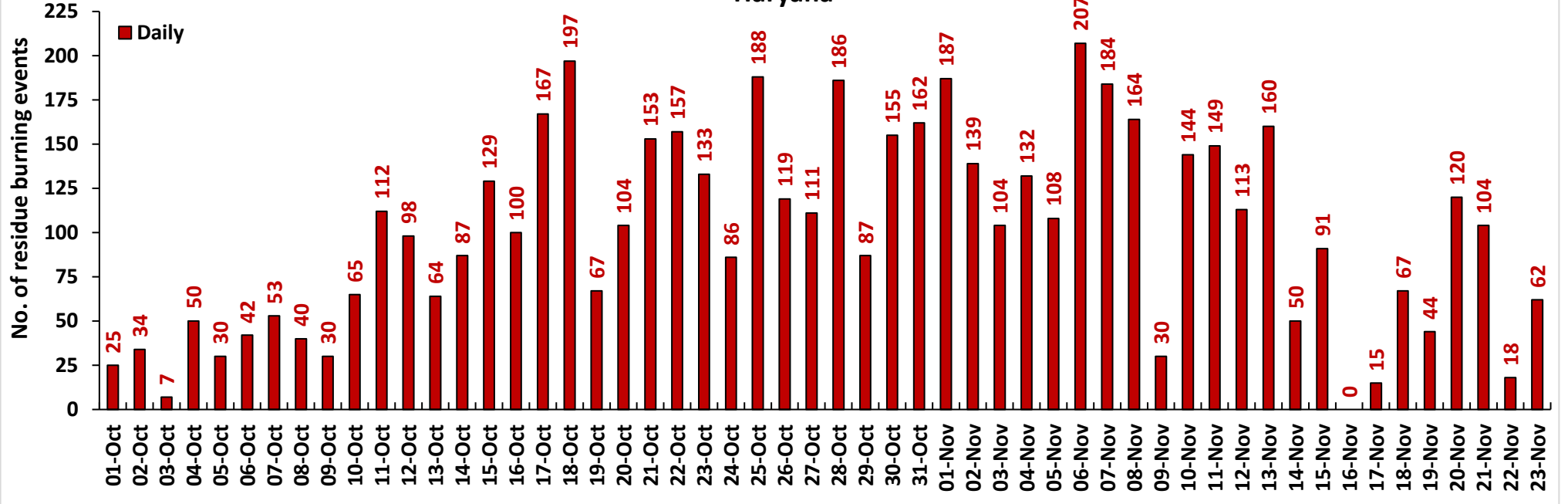
SNPP (VIIRS) Satellite image of North India Acquired on 23-Nov-2020 at 13:36 IST by IARI Ground Station



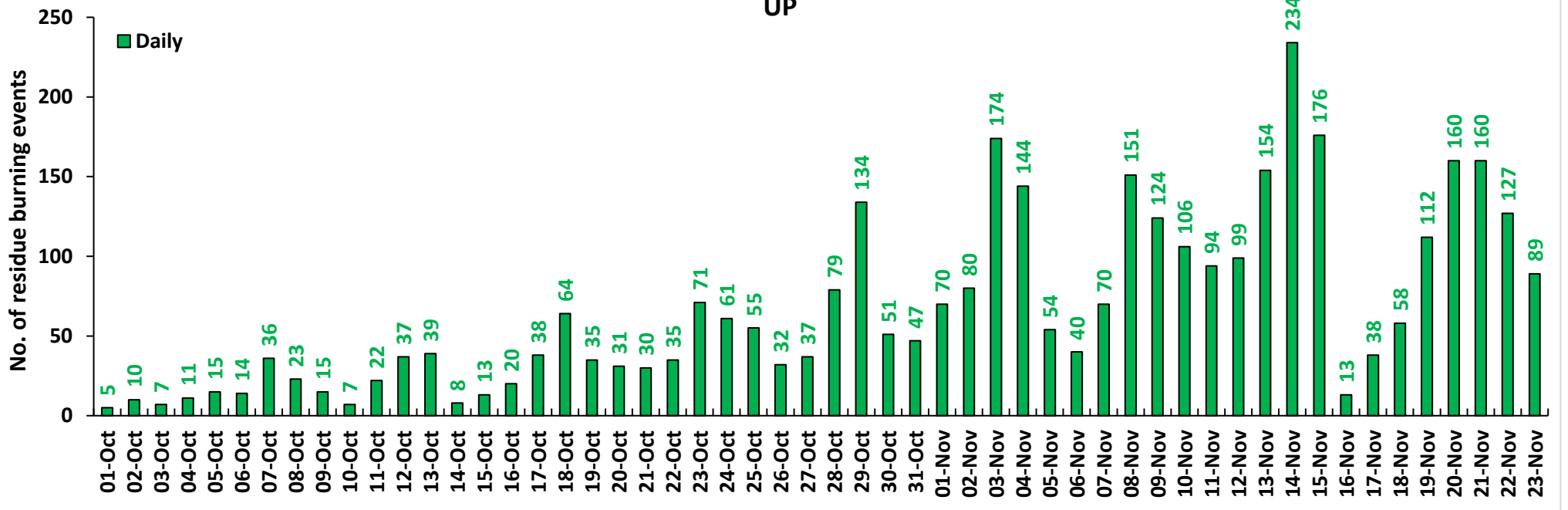
Temporal distribution of residue burning events for the three study States in 2020.



Haryana



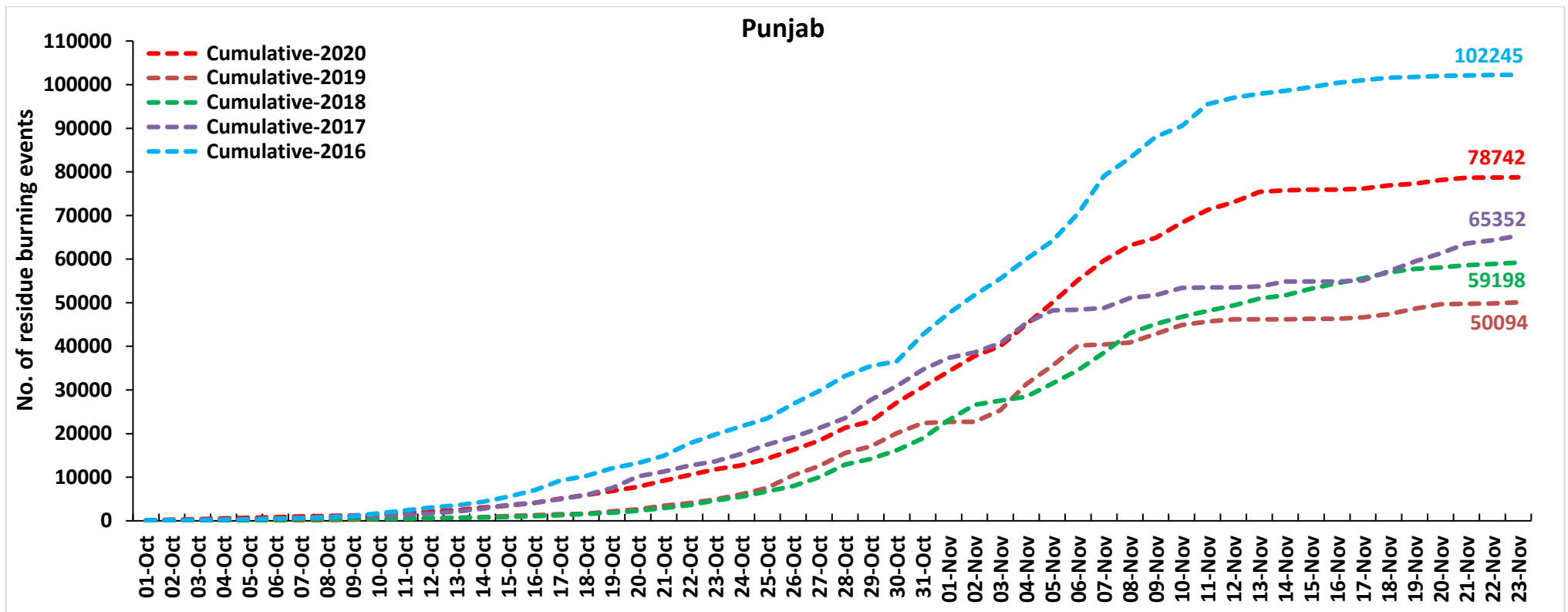
UP

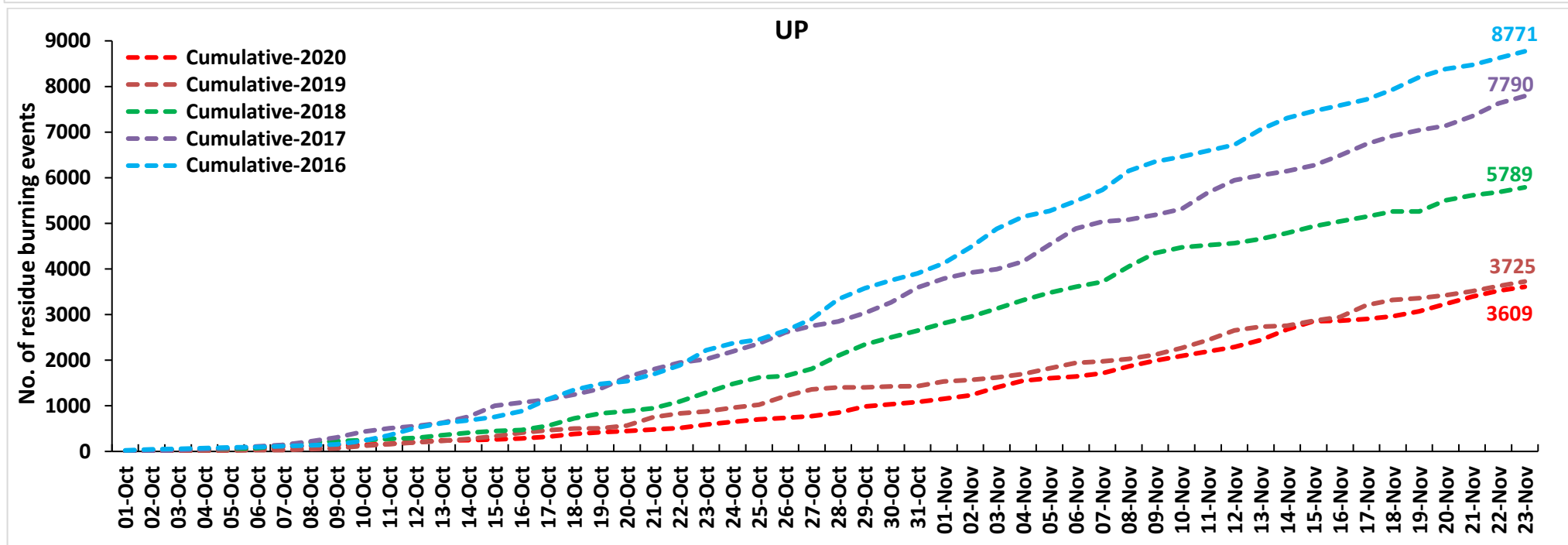
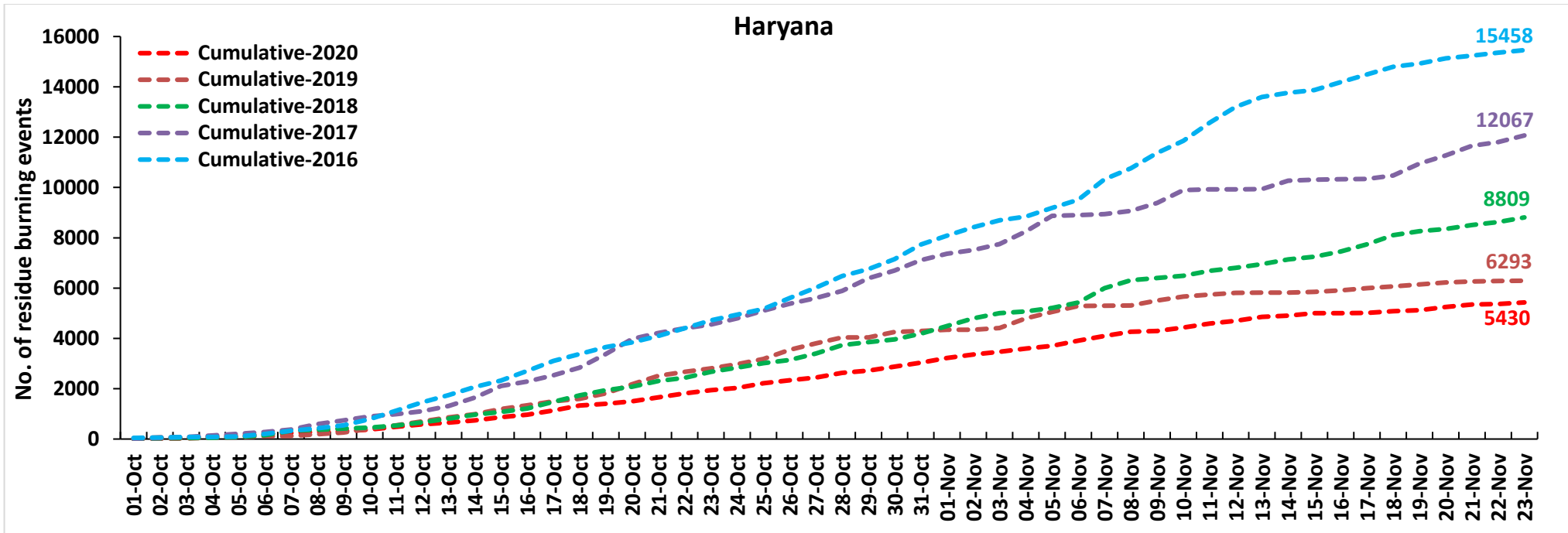


Comparison of residue burning events in current year (2020) with previous years (2019, 2018, 2017 & 2016) for the three study States

(01-Oct to 23-Nov)

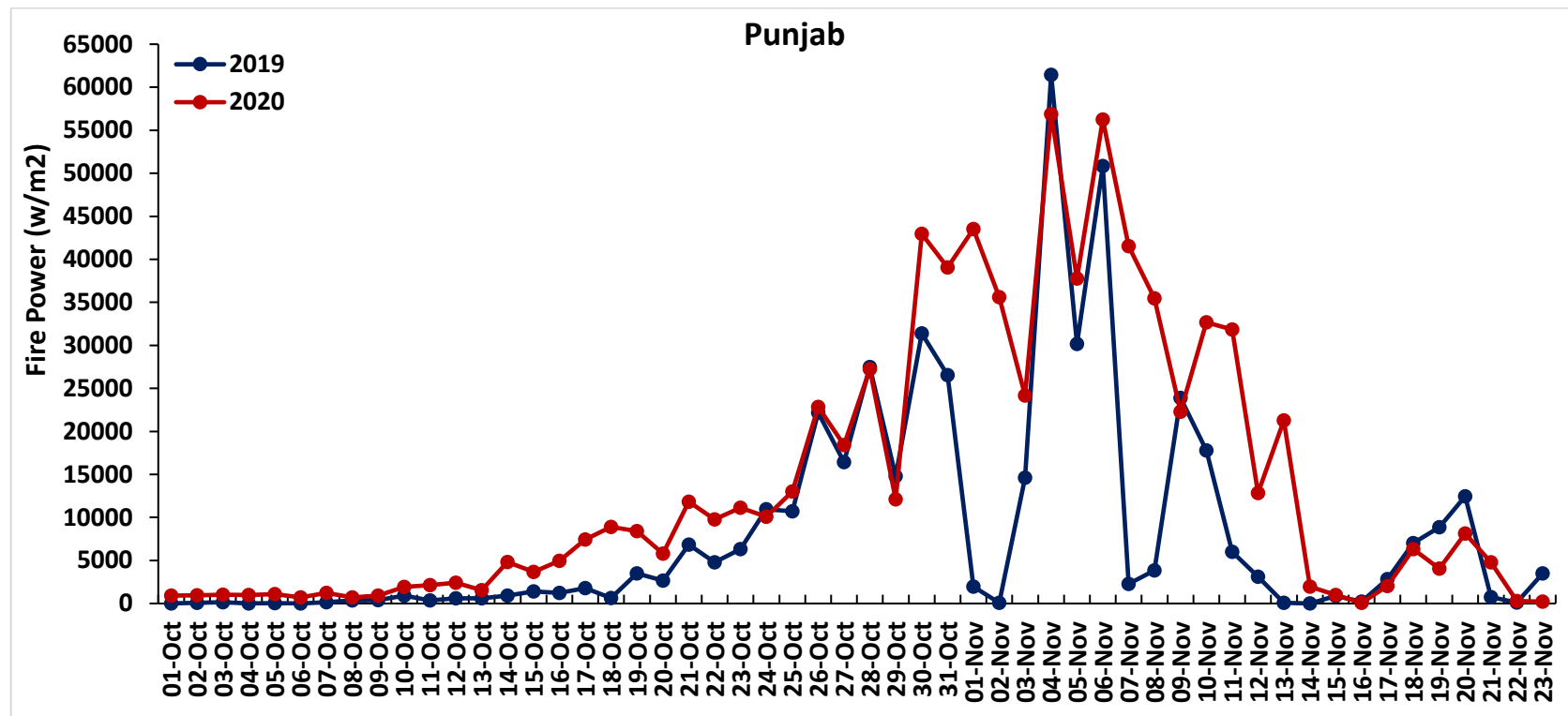
Punjab

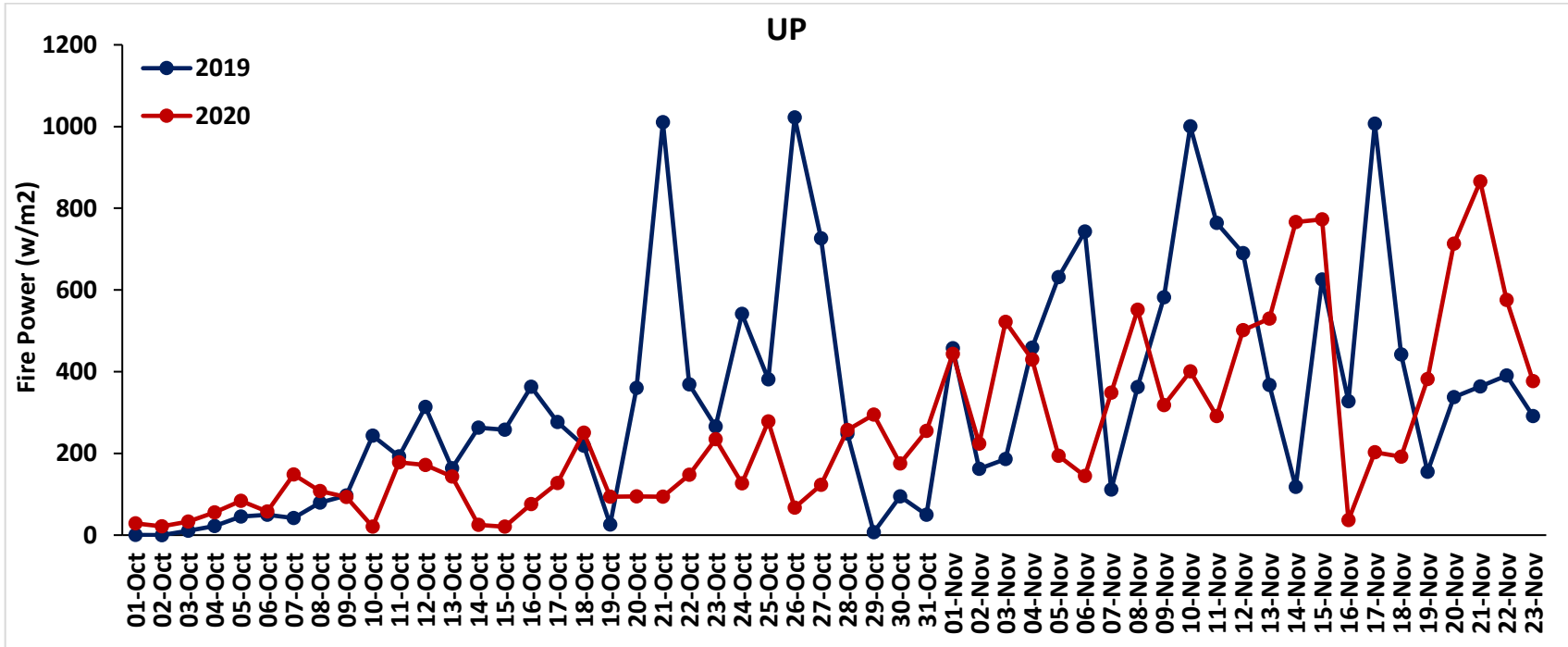
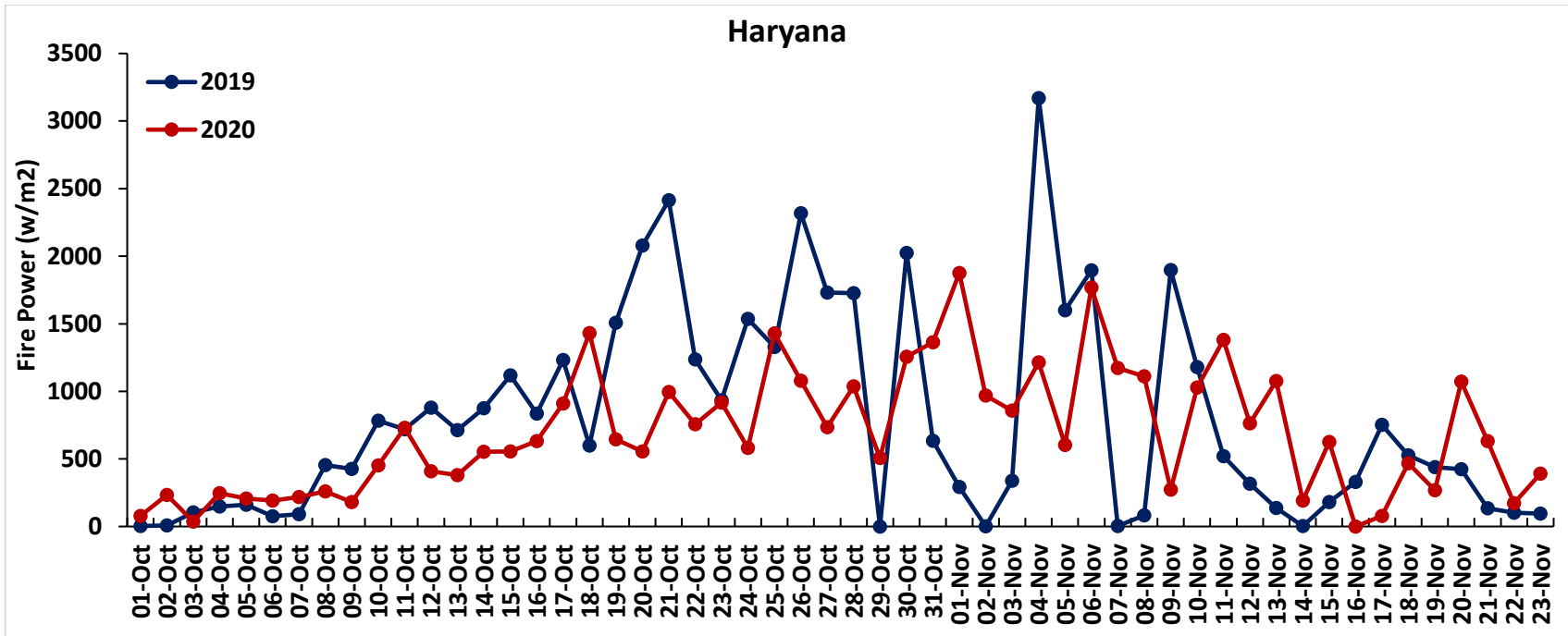




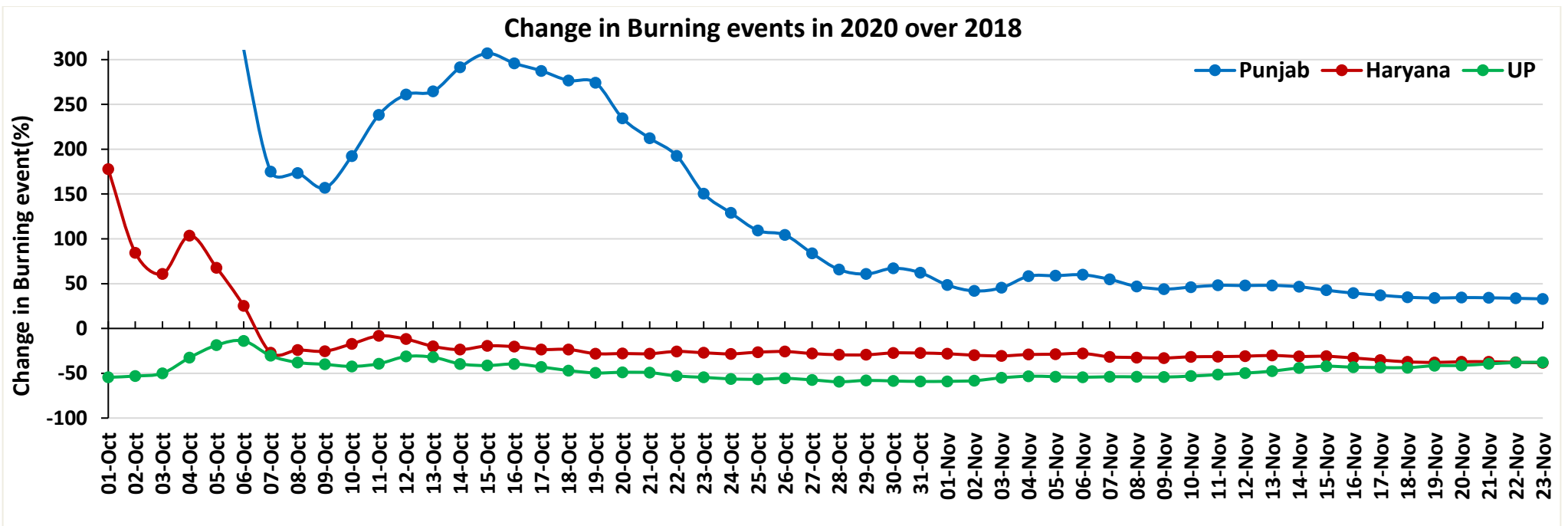
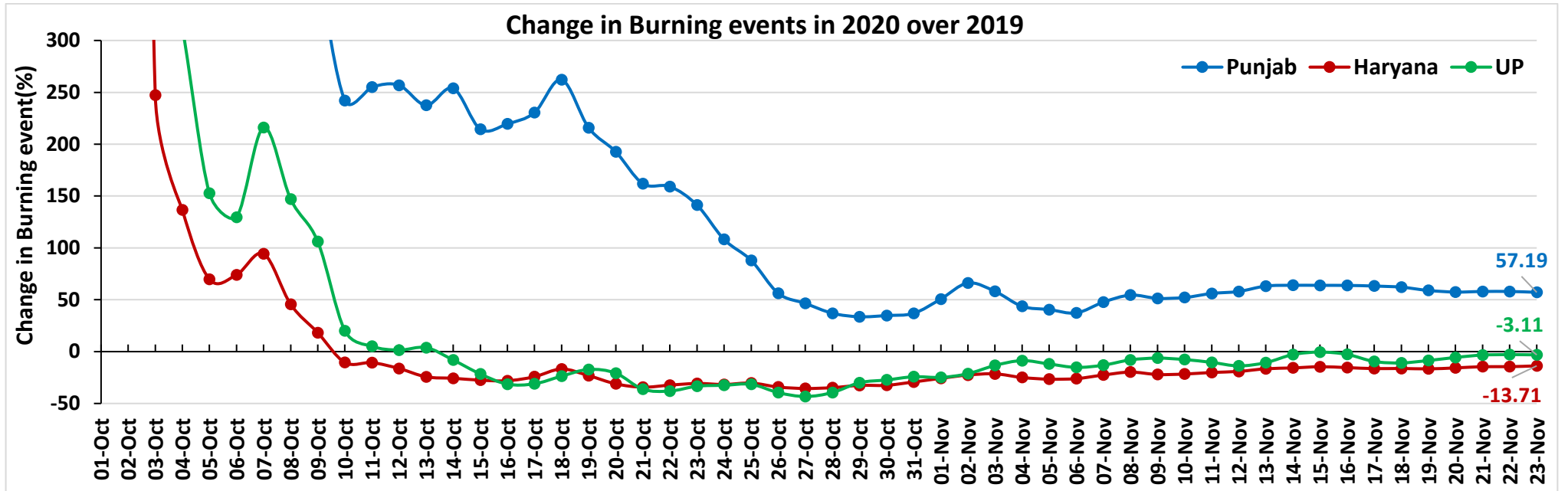
Comparison of Fire Intensity of residue burning events in current year (2020) with previous year (2019)
For the three study States

(01-Oct to 23-Nov)

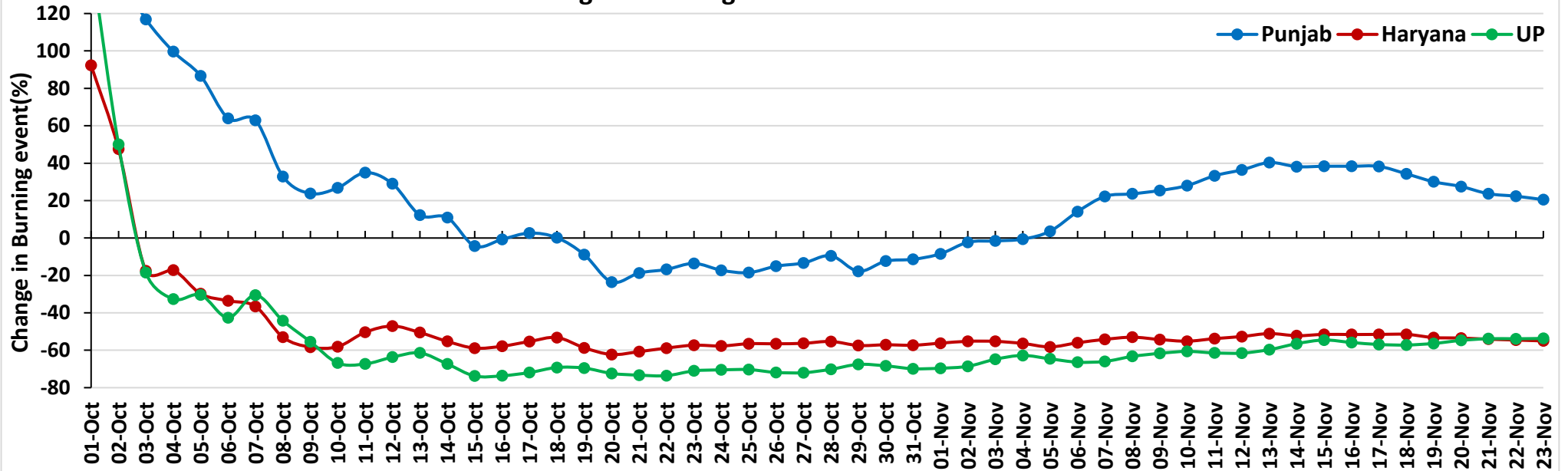




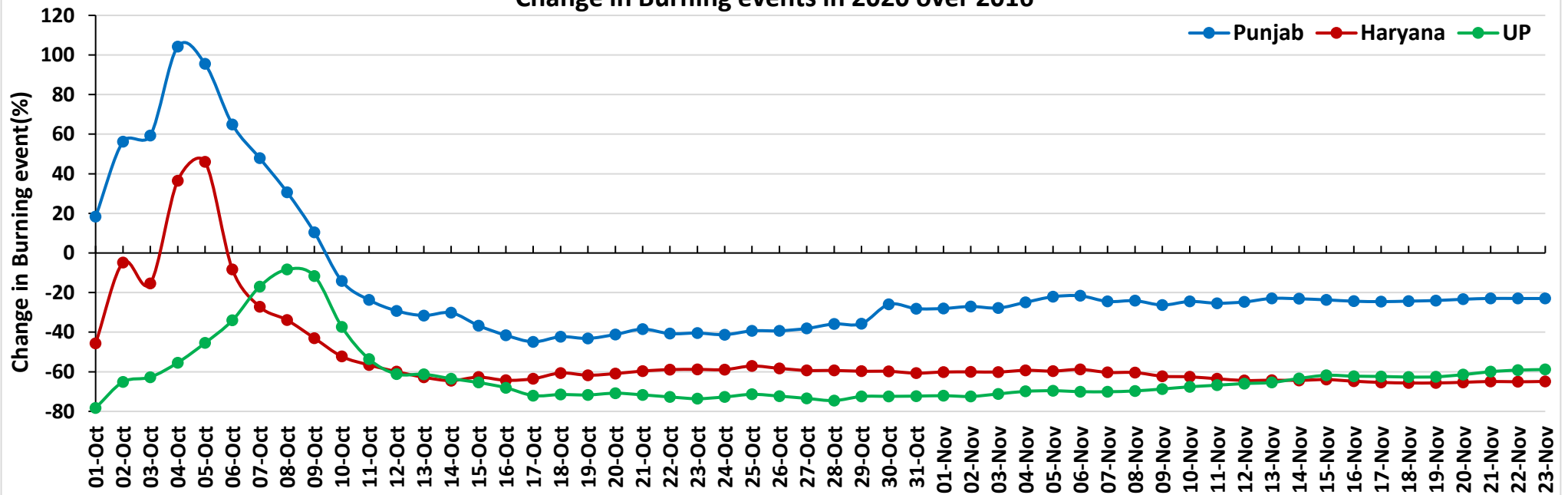
Percent Change in Burning events in 2020 over 2019, 2018, 2017 and 2016 (Daily Cumulative)



Change in Burning events in 2020 over 2017

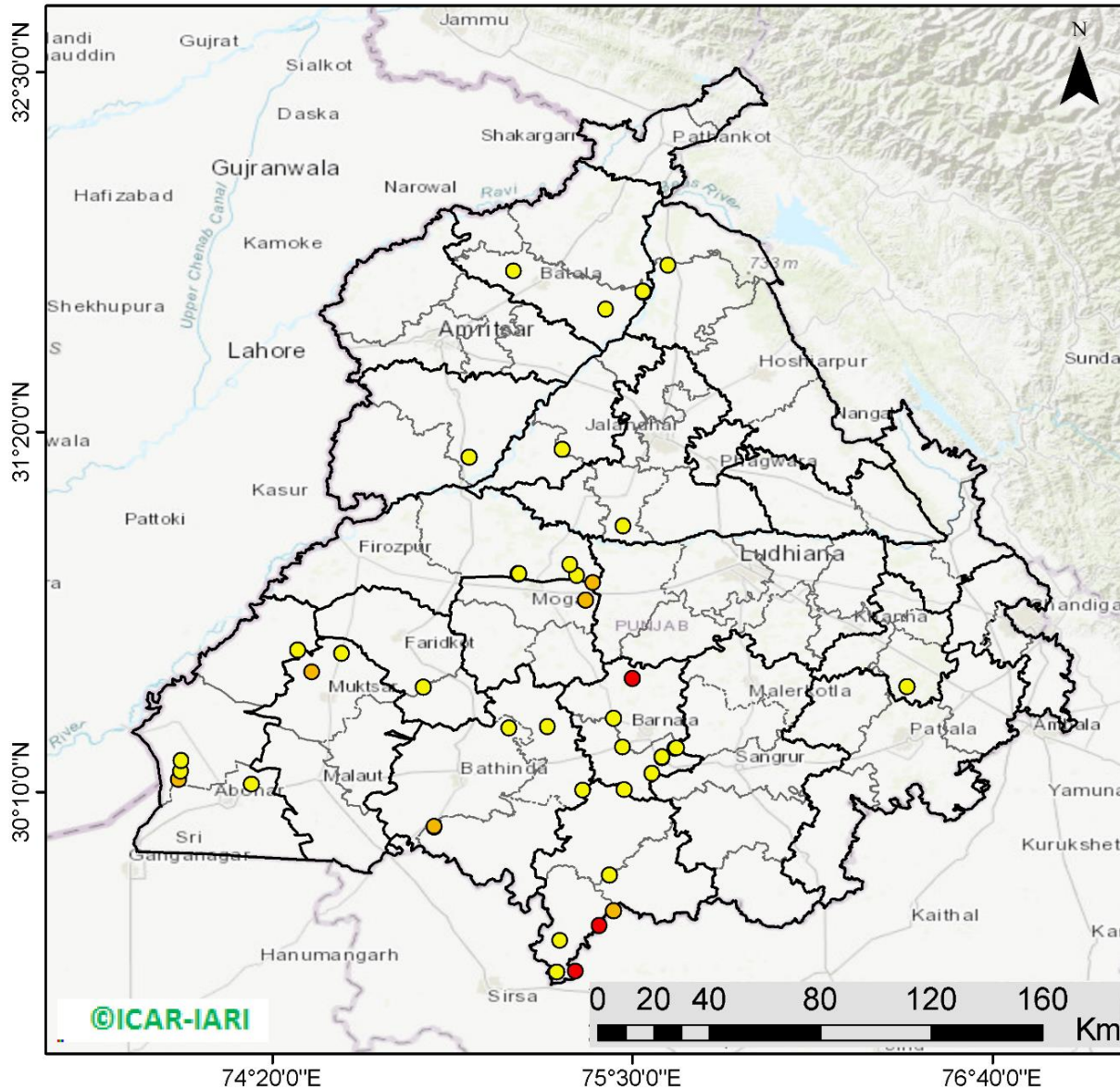


Change in Burning events in 2020 over 2016



(a) Punjab

RICE RESIDUE BURNING IN PUNJAB



46 burning events
detected in Punjab on
23rd November 2020

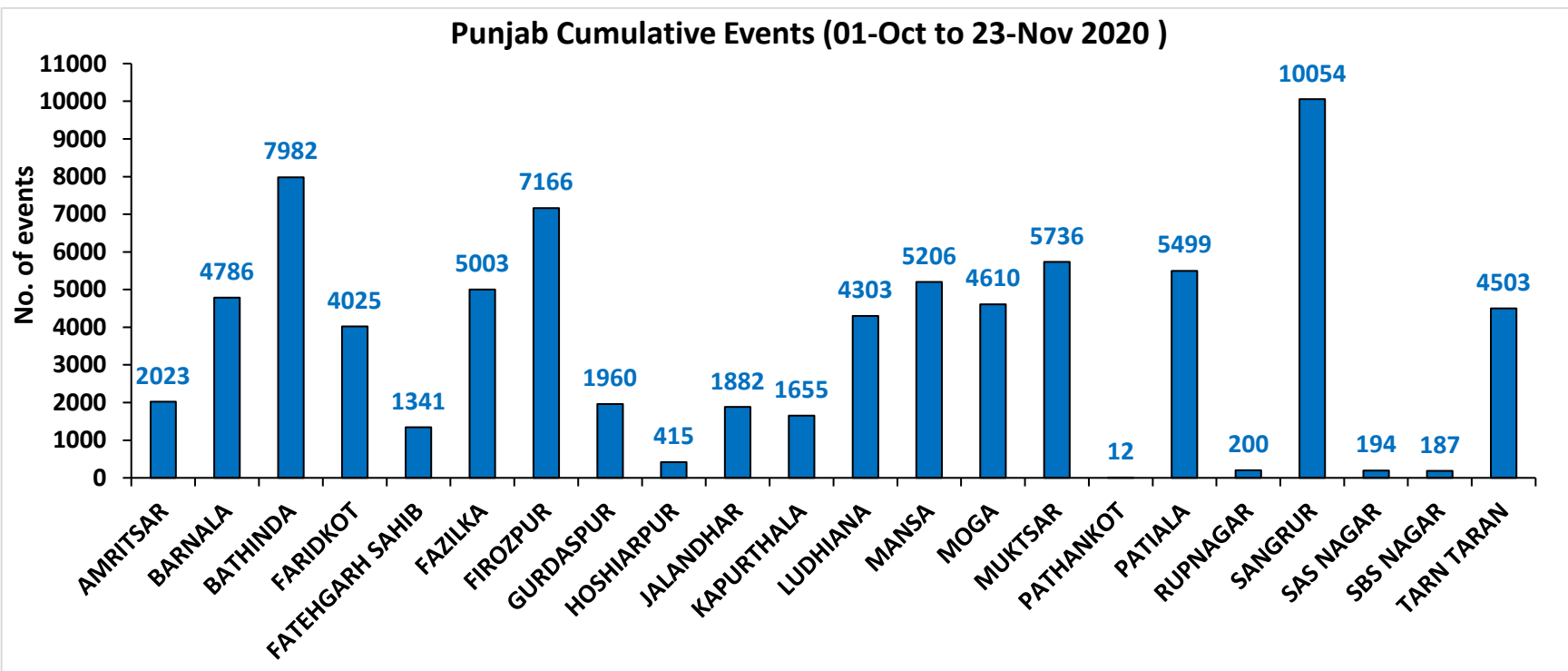
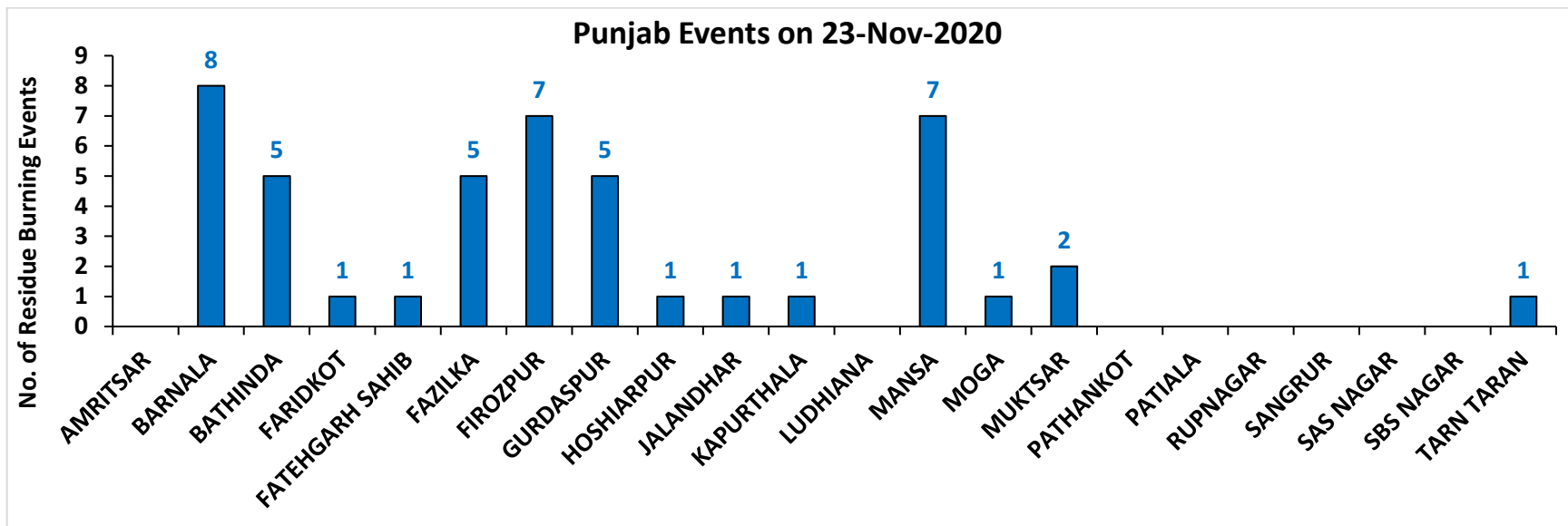
Fire Intensity (W/m²)

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



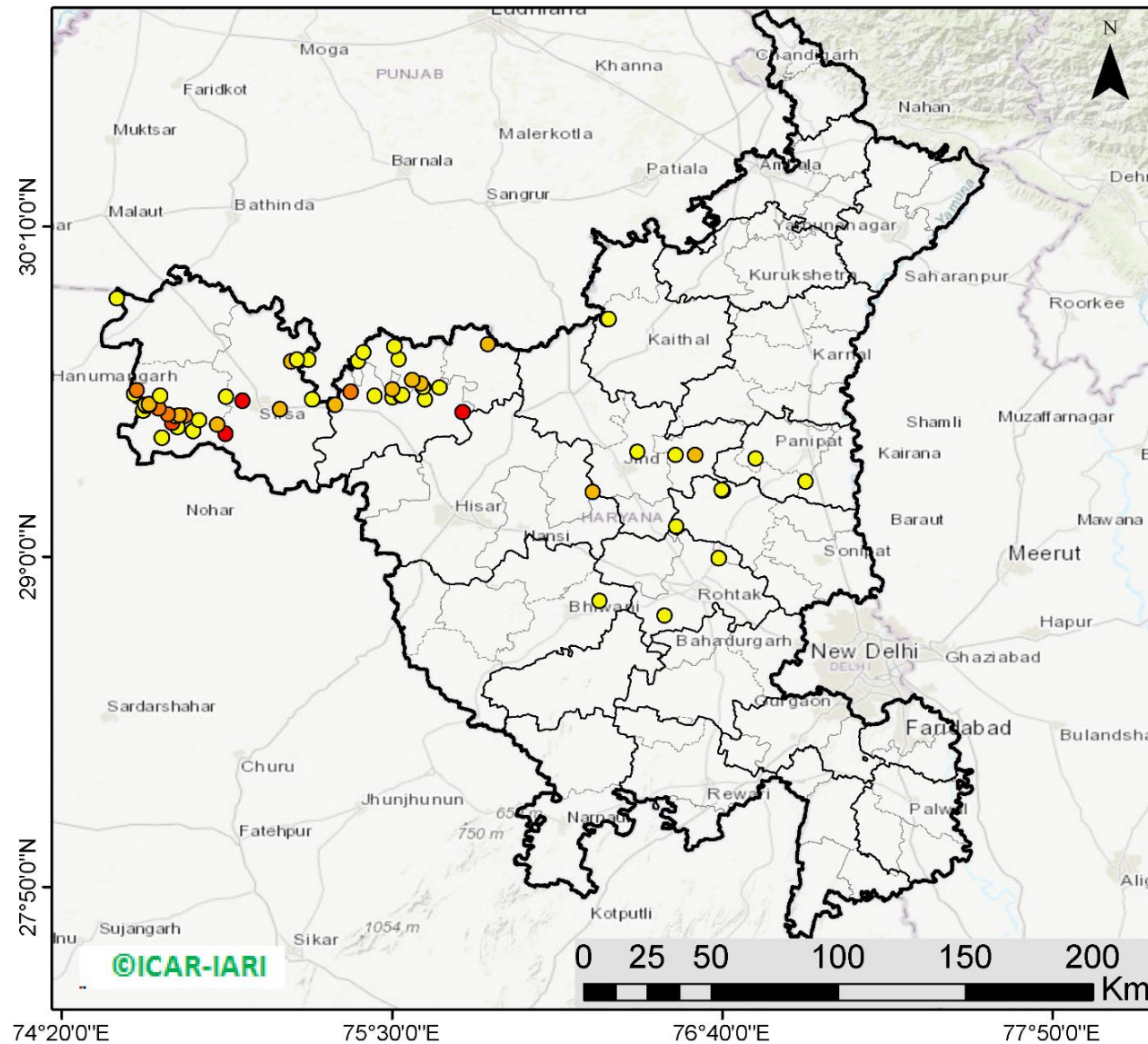
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise number of residue burning events in Punjab (01-Oct to 23-Nov 2020)



(b) Haryana

RICE RESIDUE BURNING IN HARYANA



62 burning events detected in Haryana on 23rd November 2020

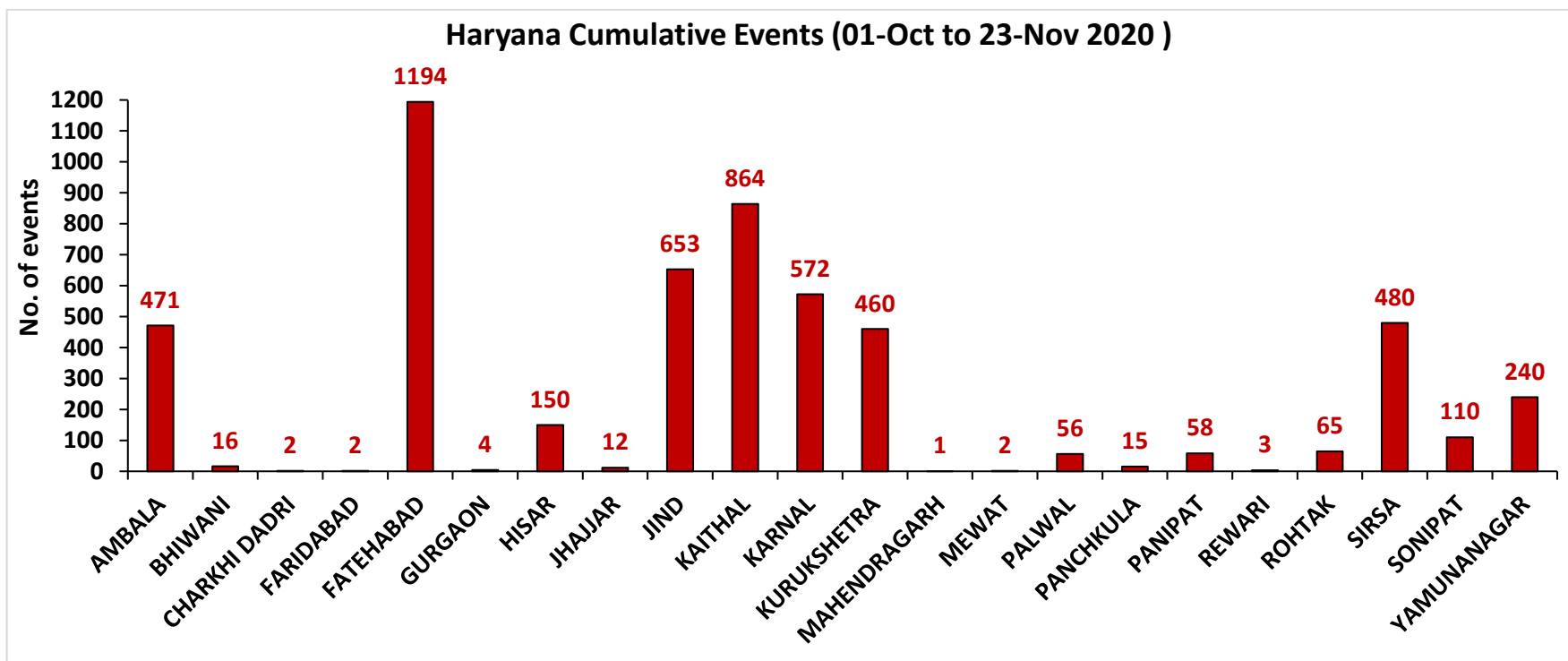
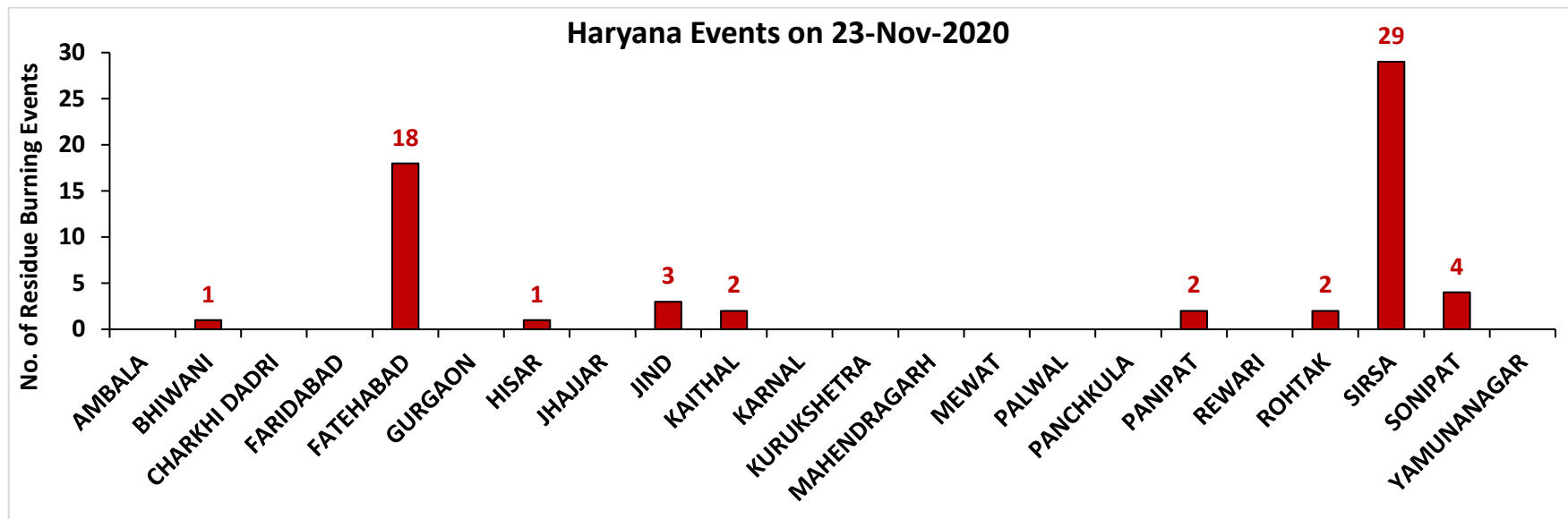
Fire Intensity (W/m²)

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



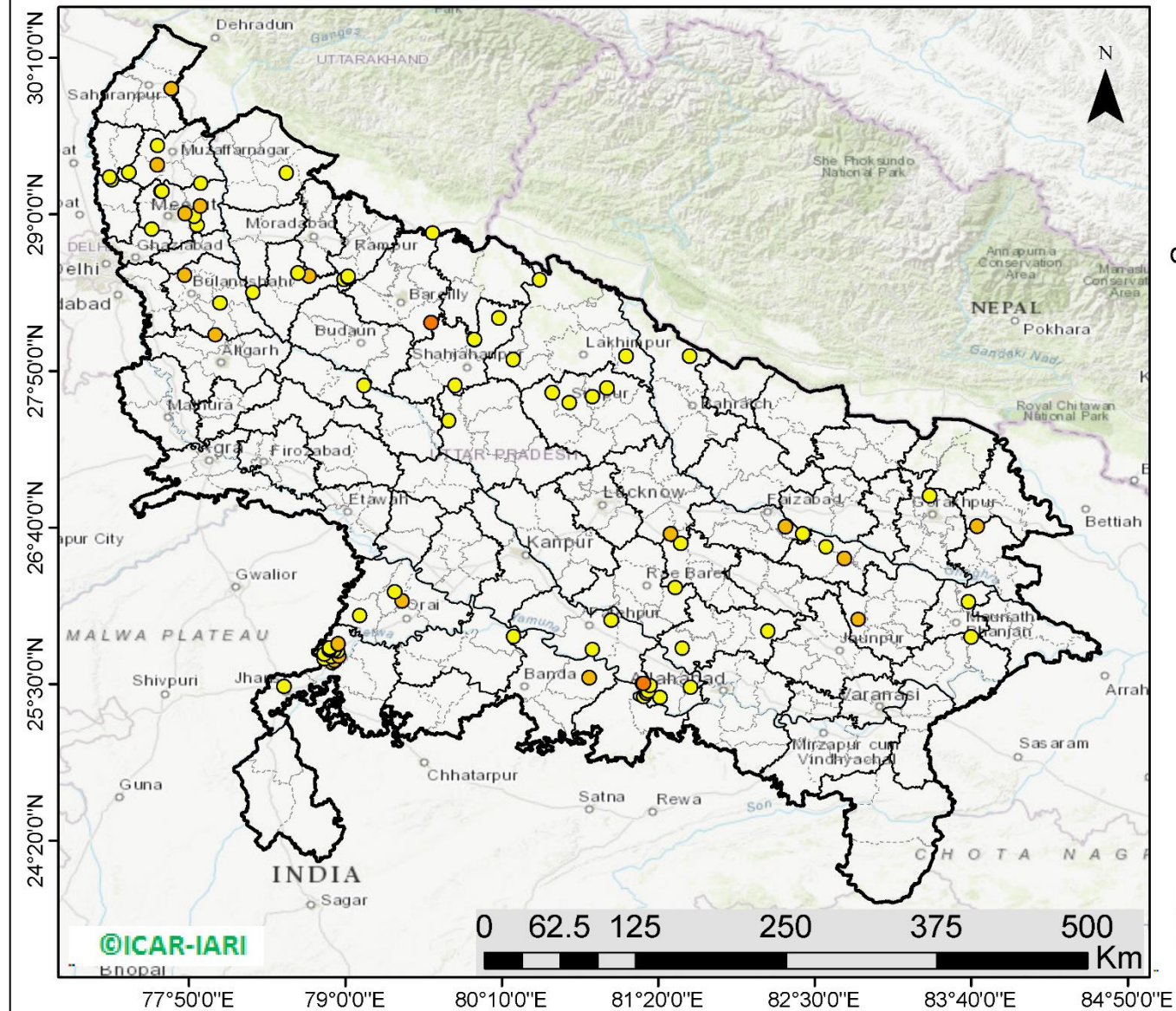
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise number of residue burning events in Haryana (01-Oct to 23-Nov 2020)



(c) Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



89 burning events detected in Uttar Pradesh on 23rd November 2020

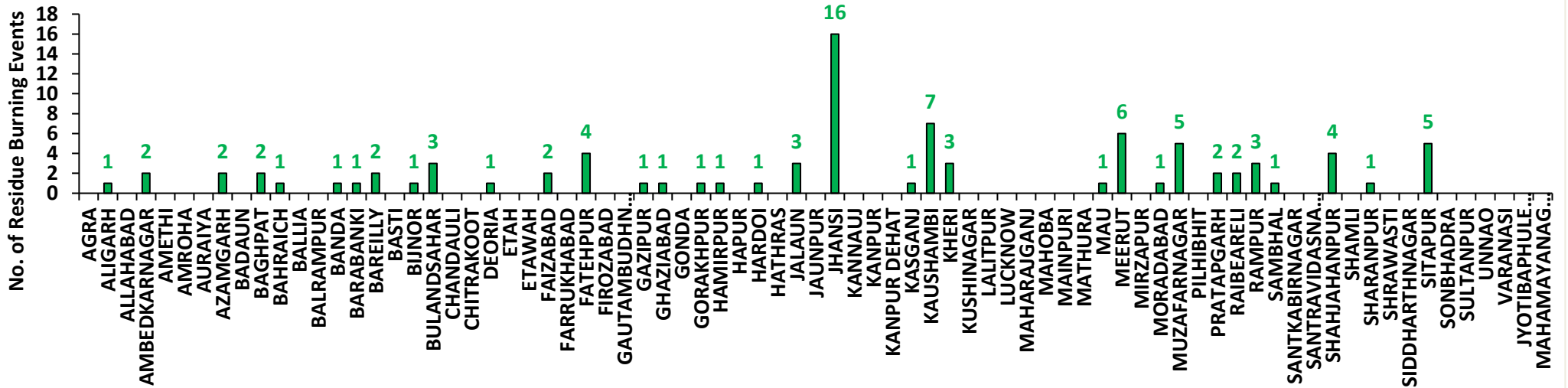
Fire Intensity (W/m²)

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

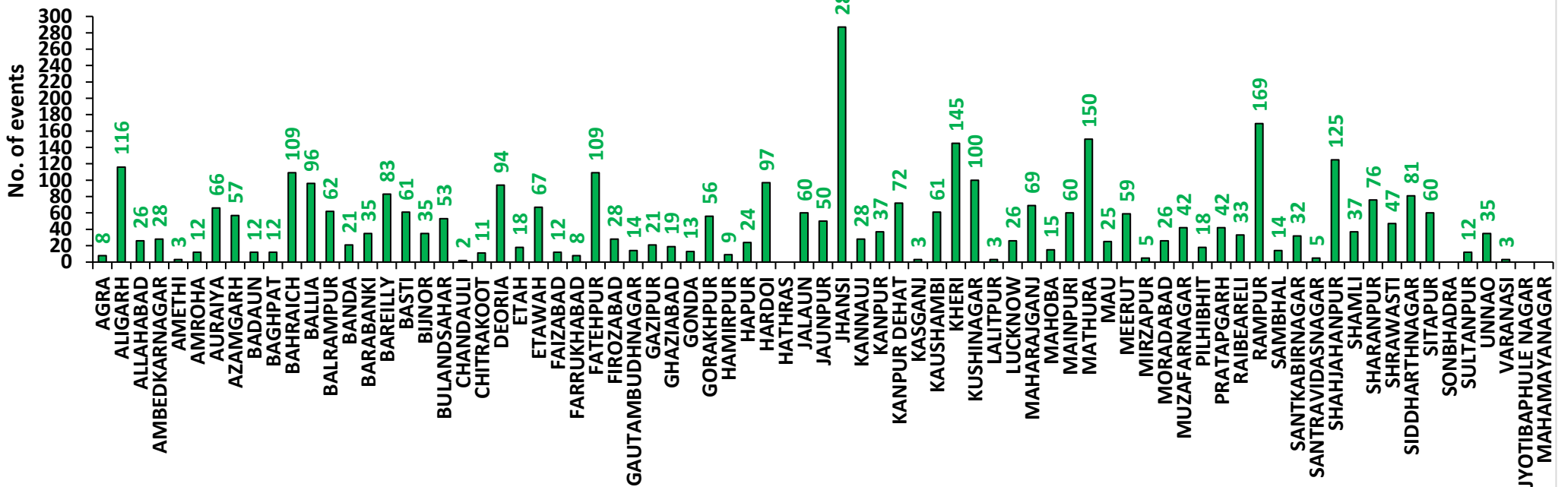
<http://geoportal.icar.gov.in:8080/geoexplorer/composer/>

District-wise number of residue burning events in Uttar Pradesh (01-Oct to 23-Nov 2020)

Uttar Pradesh Events on 23-Nov-2020



Uttar Pradesh Cumulative Events (01-Oct to 23-Nov 2020)



State-wise and date-wise number of residue burning events detected in 2016, 2017, 2018, 2019 and 2020
(Period: 01-October to 23-November)

Date	Punjab					Haryana					UP					Total				
	2020	2019	2018	2017	2016	2020	2019	2018	2017	2016	2020	2019	2018	2017	2016	2020	2019	2018	2017	2016
01-Oct	129	3	16	54	109	25	1	9	13	46	5	1	11	2	23	159	5	36	69	178
02-Oct	121	20	9	50	51	34	2	23	27	16	10	0	21	8	20	165	22	53	85	87
03-Oct	110	37	4	62	66	07	16	9	40	16	07	3	12	17	16	124	56	25	119	98
04-Oct	177	3	32	103	37	50	30	16	60	7	11	4	5	22	15	238	37	53	185	59
05-Oct	163	16	56	106	95	30	37	30	68	15	15	11	10	20	14	208	64	96	194	124
06-Oct	141	0	87	138	152	42	22	63	75	105	14	8	13	39	6	197	30	163	252	263
07-Oct	166	27	162	105	171	53	16	180	97	126	36	4	69	33	24	255	47	411	235	321
08-Oct	100	59	39	215	166	40	69	40	218	94	23	18	54	76	14	163	146	133	509	274
09-Oct	126	93	75	163	270	30	70	47	148	121	15	17	32	88	22	171	180	154	399	413
10-Oct	238	172	23	164	597	65	157	37	151	242	07	53	21	126	74	310	382	81	441	913
11-Oct	333	78	30	177	652	112	126	78	87	336	22	38	24	74	128	467	242	132	338	1116
12-Oct	362	99	67	342	694	98	154	133	123	338	37	42	22	51	164	497	295	222	516	1196
13-Oct	247	108	62	470	467	64	159	147	207	284	39	33	61	69	102	350	300	270	746	853
14-Oct	616	141	112	582	812	87	133	153	333	328	08	39	57	137	60	711	313	322	1052	1200
15-Oct	487	262	90	943	1215	129	203	110	458	248	13	63	35	237	76	629	528	235	1638	1539
16-Oct	594	168	174	465	1478	100	148	138	186	385	20	77	20	71	125	714	393	332	722	1988
17-Oct	966	250	272	807	2173	167	152	268	244	399	38	53	94	69	261	1171	455	634	1120	2833
18-Oct	850	100	263	970	1065	197	103	255	306	270	64	39	163	108	204	1111	242	681	1384	1539
19-Oct	912	529	254	1591	1762	67	220	208	541	276	35	3	108	128	132	1014	752	570	2260	2170
20-Oct	933	490	496	2653	1175	104	360	141	597	188	31	62	49	255	62	1068	912	686	3505	1425
21-Oct	1415	852	618	1139	1726	153	339	217	233	257	30	185	66	168	152	1598	1376	901	1540	2135
22-Oct	1343	555	656	1356	2837	157	158	134	186	309	35	78	149	151	194	1535	791	939	1693	3340
23-Oct	1267	827	1113	994	2040	133	131	232	155	313	71	48	193	72	331	1471	1006	1538	1221	2684
24-Oct	921	1220	844	1714	1836	86	165	166	244	221	61	79	192	171	152	1068	1464	1202	2129	2209
25-Oct	1515	1463	1247	2104	1813	188	212	182	303	229	55	67	142	175	83	1758	1742	1571	2582	2125
26-Oct	2065	2861	1173	1715	3390	119	366	132	276	434	32	189	33	240	195	2216	3416	1338	2231	4019
27-Oct	2112	2135	2040	2069	2904	111	249	252	224	417	37	145	154	145	255	2260	2529	2446	2438	3576
28-Oct	2926	3007	2864	2318	3493	186	238	330	292	458	79	45	290	99	435	3191	3290	3484	2709	4386
29-Oct	1487	1504	1321	4184	2258	87	0	124	502	278	134	1	243	180	237	1708	1505	1688	4866	2773
30-Oct	4266	3017	2008	3152	1076	155	222	103	307	395	51	19	158	238	175	4472	3258	2269	3697	1646
31-Oct	3616	2325	2715	3743	6132	162	36	229	413	575	47	4	148	321	153	3825	2365	3092	4477	6860
01-Nov	3524	293	4140	2736	4843	187	50	306	250	362	70	105	161	199	223	3781	448	4607	3185	5428
02-Nov	3528	6	3550	1246	4183	139	2	306	145	332	80	33	142	131	345	3747	41	3998	1522	4860

03-Nov	2349	2646	972	2109	3806	104	68	202	240	375	174	56	181	75	409	2627	2770	1355	2424	4490
04-Nov	4965	6001	882	4603	4477	132	383	77	499	146	144	75	183	168	265	5241	6459	1142	5270	4888
05-Nov	4905	4199	2989	2876	4137	108	253	129	625	345	54	124	163	367	125	5067	4576	3281	3868	4607
06-Nov	5235	4642	3071	171	6303	207	243	222	26	322	40	118	130	357	215	5482	5003	3423	554	6840
07-Nov	4464	189	4033	420	8575	184	2	568	46	821	70	33	108	149	244	4718	224	4709	615	9640
08-Nov	3448	462	4450	2256	4129	164	16	313	128	432	151	54	338	43	419	3763	532	5101	2427	4980
09-Nov	1756	2003	2083	675	4857	30	199	96	311	608	124	96	294	107	205	1910	2298	2473	1093	5670
10-Nov	3463	2046	1675	1642	2468	144	151	85	509	484	106	147	125	131	109	3713	2344	1885	2282	3061
11-Nov	2950	783	1364	103	5040	149	78	196	29	716	94	174	45	358	129	3193	1035	1605	490	5885
12-Nov	1729	520	1256	33	1477	113	68	122	3	634	99	210	45	269	129	1941	798	1423	305	2240
13-Nov	2422	10	1563	237	885	160	16	146	7	389	154	79	94	109	338	2736	105	1803	353	1612
14-Nov	339	0	765	1101	692	50	1	189	340	171	234	22	128	95	247	623	23	1082	1536	1110
15-Nov	123	92	1480	5	871	91	29	107	40	107	176	111	146	123	154	390	232	1733	168	1132
16-Nov	9	23	1250	8	911	0	59	204	17	318	13	79	112	218	123	22	161	1566	243	1352
17-Nov	266	332	1132	217	638	15	85	289	12	299	38	265	103	249	130	319	682	1524	478	1067
18-Nov	693	740	1400	2147	568	67	70	356	139	312	58	113	111	180	217	818	923	1867	2466	1097
19-Nov	438	1221	752	2200	168	44	82	159	471	125	112	39	3	122	273	594	1342	914	2793	566
20-Nov	838	1007	385	1857	240	120	74	88	325	204	160	64	243	101	183	1118	1145	716	2283	627
21-Nov	507	151	480	2310	112	104	37	161	378	115	160	84	107	205	86	771	272	748	2893	313
22-Nov	41	21	287	719	99	18	19	122	154	118	127	116	72	281	148	186	156	481	1154	365
23-Nov	46	286	317	1033	54	62	14	180	259	97	89	100	106	163	151	197	400	603	1455	302
Total	78742	50094	59198	65352	102245	5430	6293	8809	12067	15458	3609	3725	5789	7790	8771	87781	60112	73796	85209	126474

District-wise and date-wise cumulative number of residue burning events detected in 2016, 2017, 2018, 2019 and 2020
(Period: 01-Oct to 23-Nov)

(a) Punjab

Districts	01-Oct to 23-Nov				
	2016	2017	2018	2019	2020
AMRITSAR	2170	1340	1326	1396	2023
BARNALA	5697	3343	3264	2963	4786
BATHINDA	8838	5554	6328	5294	7982
FARIDKOT	4626	3439	3048	2305	4025
FATEHGARH SAHIB	2461	1633	857	820	1341
FAZILKA	0	0	0	2505	5003
FIROZPUR	13608	9591	9915	4621	7166
GURDASPUR	2215	1575	1153	1472	1960
HOSHIARPUR	900	488	198	311	415
JALANDHAR	4660	2088	1380	1511	1882
KAPURTHALA	3134	1608	747	1352	1655
LUDHIANA	9535	4539	2973	2269	4303
MANSA	5640	4440	4300	3561	5206
MOGA	6393	2605	2721	2147	4610
MUKTSAR	7025	5198	5722	3534	5736
PATHANKOT	0	0	0	6	12
PATIALA	6539	5028	4213	3851	5499
RUPNAGAR	717	326	86	118	200
SANGRUR	11860	8394	7772	6357	10054
SAS NAGAR	115	107	104	150	194
SBS NAGAR	1609	812	381	264	187
TARN TARAN	4503	3244	2710	3287	4503
Total	102245	65352	59198	50094	78742

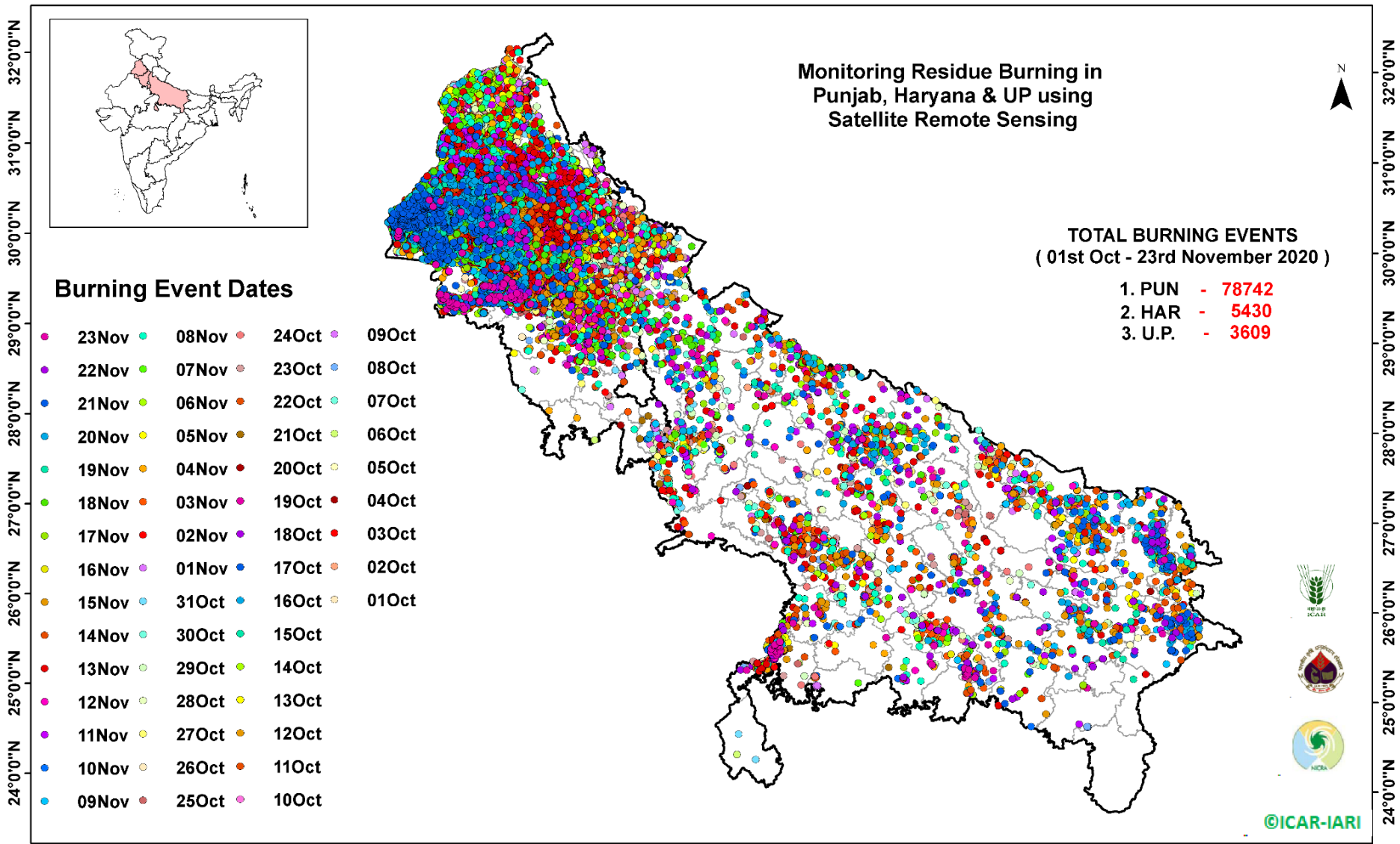
(b) Haryana

Districts	01-Oct to 23-Nov				
	2016	2017	2018	2019	2020
AMBALA	531	495	329	338	471
BHIWANI	85	35	15	11	16
CHARKHI DADRI	0	0	0	0	2
FARIDABAD	288	341	185	10	2
FATEHABAD	4808	3554	2453	1191	1194
GURGAON	0	0	0	4	4
HISAR	396	178	195	116	150
JHAJJAR	33	18	26	4	12
JIND	854	936	871	576	653
KAITHAL	1748	1512	1290	1258	864
KARNAL	1626	1503	848	1081	572
KURUKSHETRA	1078	1146	680	738	460
MAHENDRAGARH	0	0	0	2	1
MEWAT	0	0	0	3	2
PALWAL	0	0	0	188	56
PANCHKULA	0	0	3	21	15
PANIPAT	92	94	58	39	58
REWARI	0	0	0	3	3
ROHTAK	92	70	31	21	65
SIRSA	3497	1807	1601	407	480
SONIPAT	87	68	33	32	110
YAMUNANAGAR	243	310	191	250	240
Total	15458	12067	8809	6293	5430

(C)
Uttar Pradesh

Districts	01-Oct to 23-Nov																
	2016	2017	2018	2019	2020	GAUTAMBUDHNAGAR	25	42	12	19	14	MUZAFARNAGAR	133	146	45	33	42
AGRA	0	0	0	4	8	GAZIPUR	13	14	17	11	21	PILHIBIT	940	723	431	352	18
ALIGARH	53	80	92	90	116	GHAZIABAD	77	51	35	15	19	PRATAPGARH	39	51	31	19	42
ALLAHABAD	5	13	13	14	26	GONDA	46	34	18	8	13	RAIBEARELI	96	90	43	24	33
AMBEDKARNAGAR	69	50	16	8	28	GORAKHPUR	63	112	121	16	56	RAMPUR	619	628	223	314	169
AMETHI	0	0	0	10	3	HAMIRPUR	0	0	1	37	9	SAMBHAL	0	0	0	9	14
AMROHA	0	0	0	8	12	HAPUR	0	0	0	12	24	SANTKABIRNAGAR	55	61	51	14	32
AURAIYA	238	211	59	48	66	HARDOI	244	200	109	82	97	SANTRAVIDASNAGAR	0	0	0	1	5
AZAMGARH	37	41	28	4	57	HATHRAS	0	0	0	1	0	SHAHJAHANPUR	1141	684	381	351	125
BADAUN	7	7	11	22	12	JALAUN	0	0	0	119	60	SHAMLI	0	0	0	24	37
BAGHPAT	0	0	0	11	12	JAUNPUR	19	25	18	11	50	SHARANPUR	107	125	62	67	76
BAHRAICH	71	40	58	44	109	JHANSI	0	0	2	177	287	SHRAWASTI	32	31	36	21	47
BALLIA	18	37	17	18	96	KANNAUJ	33	18	6	10	28	SIDDHARTHANAGAR	246	184	464	48	81
BALRAMPUR	34	27	41	8	62	KANPUR	16	9	13	9	37	SITAPUR	124	73	42	43	60
BANDA	2	17	9	15	21	KANPUR DEHAT	59	63	21	40	72	SONBHADRA	15	14	11	0	0
BARABANKI	214	166	171	60	35	KASGANJ	0	0	0	5	3	SULTANPUR	69	44	33	15	12
BAREILLY	247	218	114	114	83	KAUSHAMBI	26	45	42	18	61	UNNAO	63	54	40	35	35
BASTI	142	184	116	29	61	KHERI	440	275	202	177	145	VARANASI	2	0	0	0	3
BIJNOR	58	54	13	15	35	KUSHINAGAR	53	140	129	29	100	JYOTIBAPHULE NAGAR	11	13	4	0	0
BULANDSAHAR	29	30	15	27	53	LALITPUR	0	0	0	7	3	MAHAMAYANAGAR	2	2	8	0	0
CHANDAULI	11	9	1	1	2	LUCKNOW	61	30	26	22	26	Total	8771	7790	5789	3725	3609
CHITRAKOOT	0	0	0	6	11	MAHARAJGANJ	646	994	968	254	69						
DEORIA	61	74	55	6	94	MAHOBA	0	0	0	9	15						
ETAH	18	31	26	5	18	MAINPURI	87	90	47	45	60						
ETAWAH	150	120	48	54	67	MATHURA	1454	1083	1048	463	150						
FAIZABAD	14	12	8	7	12	MAU	12	18	12	7	25						
FARRUKHABAD	0	0	0	6	8	MEERUT	81	83	20	27	59						
FATEHPUR	66	53	78	55	109	MIRZAPUR	5	13	6	3	5						
FIROZABAD	23	18	9	17	28	MORADABAD	50	36	13	16	26						

Map of Cumulative Burning Events (01-Oct to 23-Nov 2020)



[\(http://geoportal.icar.gov.in:8080/geoexplorer/composer/\)](http://geoportal.icar.gov.in:8080/geoexplorer/composer/)

©ICAR-IARI

Details of residue burning events in Punjab on 23-Nov-2020

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	Time (IST)	Day / Night	Fire Power (W/m ²)
1	BARNALA	BARNALA	S-NPP	30.53529	75.49960	13:36:00	D	26.60
2	BARNALA	TAPPA	S-NPP	30.22756	75.56400	13:36:00	D	3.70
3	BARNALA	TAPPA	S-NPP	30.27705	75.59719	13:36:00	D	1.40
4	BARNALA	TAPPA	S-NPP	30.28042	75.59657	13:36:00	D	1.60
5	BARNALA	TAPPA	S-NPP	30.30774	75.63853	13:36:00	D	3.30
6	BARNALA	TAPPA	S-NPP	30.30831	75.64267	13:36:00	D	3.30
7	BARNALA	TAPPA	S-NPP	30.31158	75.46844	13:36:00	D	1.90
8	BARNALA	TAPPA	S-NPP	30.40523	75.43886	13:36:00	D	3.90
9	BATHINDA	BATHINDA	S-NPP	30.05230	74.85838	13:36:00	D	6.70
10	BATHINDA	BATHINDA	S-NPP	30.05561	74.85773	13:36:00	D	6.70
11	BATHINDA	BATHINDA	S-NPP	30.37442	75.10076	13:36:00	D	1.30
12	BATHINDA	RAMPURA PHUL	S-NPP	30.17175	75.33885	13:36:00	D	3.70
13	BATHINDA	RAMPURA PHUL	S-NPP	30.37850	75.22530	13:36:00	D	1.50
14	FARIDKOT	JAITO	S-NPP	30.50627	74.82317	13:36:00	D	1.90
15	FATEHGARH SAHIB	FATEHGARH SAHIB	S-NPP	30.50807	76.38919	13:36:00	D	2.70
16	FAZILKA	ABOHAR	S-NPP	30.19102	74.26607	13:36:00	D	1.40
17	FAZILKA	FAZILKA	S-NPP	30.20600	74.02996	13:36:00	D	6.00
18	FAZILKA	FAZILKA	S-NPP	30.23420	74.03658	13:36:00	D	3.50
19	FAZILKA	FAZILKA	S-NPP	30.26840	74.03790	13:36:00	D	4.30
20	FAZILKA	JALALABAD	S-NPP	30.62605	74.41558	13:36:00	D	2.40
21	FIROZPUR	ZIRA	S-NPP	30.84508	75.37183	13:36:00	D	5.50
22	FIROZPUR	ZIRA	S-NPP	30.86888	75.32063	13:36:00	D	4.60
23	FIROZPUR	ZIRA	S-NPP	30.87265	75.12968	13:36:00	D	2.80
24	FIROZPUR	ZIRA	S-NPP	30.87324	75.13377	13:36:00	D	2.80
25	FIROZPUR	ZIRA	S-NPP	30.87408	75.12967	13:36:00	D	3.20
26	FIROZPUR	ZIRA	S-NPP	30.87466	75.13377	13:36:00	D	3.20
27	FIROZPUR	ZIRA	S-NPP	30.90450	75.29726	13:36:00	D	2.70
28	GURDASPUR	BATALA	S-NPP	31.73178	75.41349	13:36:00	D	1.60
29	GURDASPUR	BATALA	S-NPP	31.85454	75.11486	13:36:00	D	2.50
30	GURDASPUR	GURDASPUR	S-NPP	31.78663	75.53416	13:36:00	D	2.20
31	GURDASPUR	GURDASPUR	S-NPP	31.78722	75.53844	13:36:00	D	2.40

32	GURDASPUR	GURDASPUR	S-NPP	31.79002	75.53353	13:36:00	D	2.40
33	HOSHIARPUR	DASUYA	S-NPP	31.87419	75.61511	13:36:00	D	1.90
34	JALANDHAR	NAKODAR	S-NPP	31.02986	75.47069	13:36:00	D	4.30
35	KAPURTHALA	KAPURTHALA	S-NPP	31.27678	75.27203	13:36:00	D	2.80
36	MANSA	BUDHLADA	S-NPP	29.78114	75.43888	13:36:00	D	5.70
37	MANSA	MANSA	S-NPP	29.89751	75.42579	13:36:00	D	3.60
38	MANSA	MANSA	S-NPP	30.17345	75.47282	13:36:00	D	4.50
39	MANSA	SARDULGARH	S-NPP	29.58295	75.25465	13:36:00	D	2.10
40	MANSA	SARDULGARH	S-NPP	29.58501	75.31622	13:36:00	D	28.50
41	MANSA	SARDULGARH	S-NPP	29.68557	75.26522	13:36:00	D	3.90
42	MANSA	SARDULGARH	S-NPP	29.73355	75.39362	13:36:00	D	22.60
43	MOGA	MOGA	S-NPP	30.78857	75.34784	13:36:00	D	6.40
44	MUKTSAR	MUKTSAR	S-NPP	30.55556	74.46227	13:36:00	D	5.60
45	MUKTSAR	MUKTSAR	S-NPP	30.61641	74.55772	13:36:00	D	4.10
46	TARN TARAN	KHADOOR SAHIB	S-NPP	31.25138	74.97112	13:36:00	D	3.30

Details of residue burning events in Haryana on 23-Nov-2020

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	Time (IST)	Day / Night	Fire Power (W/m ²)
1	BHIWANI	BHIWANI	S-NPP	28.84389	76.23328	13:36:00	D	1.60
2	FATEHABAD	FATEHABAD	S-NPP	29.51108	75.74998	13:36:00	D	25.00
3	FATEHABAD	FATEHABAD	S-NPP	29.53822	75.30018	13:36:00	D	5.20
4	FATEHABAD	FATEHABAD	S-NPP	29.55580	75.61668	13:36:00	D	0.90
5	FATEHABAD	FATEHABAD	S-NPP	29.56372	75.50266	13:36:00	D	2.30
6	FATEHABAD	FATEHABAD	S-NPP	29.56844	75.43945	13:36:00	D	3.60
7	FATEHABAD	FATEHABAD	S-NPP	29.57110	75.53043	13:36:00	D	3.60
8	FATEHABAD	FATEHABAD	S-NPP	29.57167	75.53448	13:36:00	D	4.00
9	FATEHABAD	FATEHABAD	S-NPP	29.58356	75.35372	13:36:00	D	12.10
10	FATEHABAD	FATEHABAD	S-NPP	29.59105	75.50175	13:36:00	D	7.00
11	FATEHABAD	FATEHABAD	S-NPP	29.59737	75.66762	13:36:00	D	4.90
12	FATEHABAD	RATIA	S-NPP	29.59937	75.60866	13:36:00	D	2.70
13	FATEHABAD	RATIA	S-NPP	29.61219	75.60211	13:36:00	D	7.00
14	FATEHABAD	RATIA	S-NPP	29.62490	75.57054	13:36:00	D	6.40
15	FATEHABAD	RATIA	S-NPP	29.69182	75.38008	13:36:00	D	3.50
16	FATEHABAD	RATIA	S-NPP	29.69872	75.52449	13:36:00	D	4.50
17	FATEHABAD	RATIA	S-NPP	29.72202	75.39938	13:36:00	D	2.90
18	FATEHABAD	RATIA	S-NPP	29.74294	75.50856	13:36:00	D	1.90
19	FATEHABAD	TOHANA	S-NPP	29.74993	75.83884	13:36:00	D	7.40
20	HISAR	NARNAUND	TERRA	29.22800	76.20900	11:10:00	D	8.90
21	JIND	JIND	TERRA	29.37000	76.36700	11:10:00	D	4.90
22	JIND	SAFIDON	TERRA	29.36000	76.50100	11:10:00	D	3.90
23	JIND	SAFIDON	TERRA	29.36000	76.57000	11:10:00	D	6.70
24	KAITHAL	KAITHAL	S-NPP	29.83963	76.26010	13:36:00	D	4.10
25	KAITHAL	KAITHAL	S-NPP	29.84022	76.26435	13:36:00	D	4.10
26	PANIPAT	PANIPAT	S-NPP	29.34719	76.78440	13:36:00	D	4.70
27	PANIPAT	SAMALKHA	S-NPP	29.26656	76.96229	13:36:00	D	2.00
28	ROHTAK	ROHTAK	S-NPP	28.79204	76.46391	13:36:00	D	1.60
29	ROHTAK	ROHTAK	S-NPP	28.99540	76.65368	13:36:00	D	3.40
30	SIRSA	DABWALI	S-NPP	29.91253	74.52859	13:36:00	D	2.80

31	SIRSA	ELLENABAD	S-NPP	29.42149	74.68774	13:36:00	D	1.80
32	SIRSA	ELLENABAD	S-NPP	29.44452	74.79728	13:36:00	D	2.00
33	SIRSA	ELLENABAD	S-NPP	29.45674	74.74193	13:36:00	D	2.30
34	SIRSA	ELLENABAD	S-NPP	29.46730	74.88267	13:36:00	D	6.20
35	SIRSA	ELLENABAD	AQUA	29.47300	74.72400	14:20:00	D	18.50
36	SIRSA	ELLENABAD	S-NPP	29.49642	74.73428	13:36:00	D	1.80
37	SIRSA	ELLENABAD	S-NPP	29.49841	74.77060	13:36:00	D	12.60
38	SIRSA	ELLENABAD	NOAA-19	29.49940	74.74988	18:50:00	N	6.00
39	SIRSA	ELLENABAD	S-NPP	29.50283	74.70869	13:36:00	D	14.00
40	SIRSA	ELLENABAD	S-NPP	29.51624	74.62135	13:36:00	D	3.90
41	SIRSA	ELLENABAD	S-NPP	29.52448	74.67679	13:36:00	D	14.10
42	SIRSA	RANIA	S-NPP	29.48170	74.81868	13:36:00	D	3.30
43	SIRSA	RANIA	S-NPP	29.53453	74.63001	13:36:00	D	1.70
44	SIRSA	RANIA	S-NPP	29.53630	74.64189	13:36:00	D	10.00
45	SIRSA	RANIA	S-NPP	29.53784	74.62937	13:36:00	D	4.90
46	SIRSA	RANIA	S-NPP	29.53960	74.64126	13:36:00	D	6.90
47	SIRSA	RANIA	S-NPP	29.56923	74.68036	13:36:00	D	3.80
48	SIRSA	RANIA	S-NPP	29.57608	74.58936	13:36:00	D	4.60
49	SIRSA	RANIA	S-NPP	29.58776	74.59930	13:36:00	D	10.30
50	SIRSA	SIRSA	S-NPP	29.43486	74.91304	13:36:00	D	23.40
51	SIRSA	SIRSA	NOAA-19	29.52186	75.10415	18:50:00	N	7.50
52	SIRSA	SIRSA	S-NPP	29.53764	75.29617	13:36:00	D	3.10
53	SIRSA	SIRSA	S-NPP	29.55208	74.97279	13:36:00	D	24.30
54	SIRSA	SIRSA	S-NPP	29.55717	75.21825	13:36:00	D	3.80
55	SIRSA	SIRSA	S-NPP	29.56620	74.91364	13:36:00	D	2.90
56	SIRSA	SIRSA	S-NPP	29.69114	75.14494	13:36:00	D	8.20
57	SIRSA	SIRSA	S-NPP	29.69648	75.20583	13:36:00	D	5.00
58	SIRSA	SIRSA	S-NPP	29.69736	75.16439	13:36:00	D	1.90
59	SONIPAT	GOHANA	S-NPP	29.10769	76.50459	13:36:00	D	1.70
60	SONIPAT	GOHANA	S-NPP	29.23383	76.66624	13:36:00	D	4.50
61	SONIPAT	GOHANA	TERRA	29.23400	76.66900	11:10:00	D	18.50
62	SONIPAT	GOHANA	S-NPP	29.23727	76.66563	13:36:00	D	4.50

Details of residue burning events in Uttar Pradesh on 23-Nov-2020

S. No.	District	Tehsil / Block	Satellite	Latitude	Longitude	Time (IST)	Day / Night	Fire Power (W/m ²)
1	ALIGARH	GABHANA	TERRA	28.10100	78.03100	11:10:00	D	5.70
2	AMBEDKARNAGAR	JALALPUR	S-NPP	26.43535	82.72029	13:36:00	D	8.50
3	AMBEDKARNAGAR	TANDA	S-NPP	26.51968	82.58608	13:36:00	D	4.20
4	AZAMGARH	PHULPUR	S-NPP	25.97977	82.82533	13:36:00	D	5.30
5	AZAMGARH	SAGRI	S-NPP	26.15033	83.41201	02:18:00	N	0.30
6	BAGHPAT	BARAUT	S-NPP	29.25898	77.25850	13:36:00	D	1.30
7	BAGHPAT	BARAUT	S-NPP	29.27834	77.24148	13:36:00	D	3.70
8	BAHRAICH	NANPARA	S-NPP	27.94439	81.56779	13:36:00	D	4.30
9	BANDA	BABERU	S-NPP	25.54719	80.81707	13:36:00	D	6.70
10	BARABANKI	HAIDARGARH	S-NPP	26.61986	81.42593	13:36:00	D	5.20
11	BAREILLY	BAHERI	S-NPP	28.86032	79.65026	02:18:00	N	1.00
12	BAREILLY	FARIDPUR	S-NPP	28.19369	79.63969	13:36:00	D	13.40
13	BIJNOR	DHAMPUR	S-NPP	29.30980	78.55972	13:36:00	D	3.20
14	BULANSAHAR	ANUP SHAHR	S-NPP	28.41725	78.31135	13:36:00	D	2.50
15	BULANSAHAR	BULANSHAHAR	S-NPP	28.54673	77.80341	13:36:00	D	6.50
16	BULANSAHAR	SHIKARPUR	S-NPP	28.33785	78.06466	13:36:00	D	3.50
17	DEORIA	DEORIA	S-NPP	26.67414	83.71142	13:36:00	D	6.50
18	FAIZABAD	FAIZSBAD	S-NPP	26.61785	82.41010	13:36:00	D	1.60
19	FAIZABAD	FAIZSBAD	S-NPP	26.67336	82.28120	13:36:00	D	6.20
20	FATEHPUR	FATEHPUR	S-NPP	25.75594	80.84517	13:36:00	D	3.60
21	FATEHPUR	FATEHPUR	S-NPP	25.97281	80.98244	13:36:00	D	2.40
22	FATEHPUR	KHAGA	S-NPP	25.50299	81.21801	13:36:00	D	4.10
23	FATEHPUR	KHAGA	S-NPP	25.50346	81.22213	13:36:00	D	11.10
24	GAZIPUR	MUHAMMADBAD	S-NPP	25.85146	83.66572	13:36:00	D	4.60
25	GHAZIABAD	MODINAGAR	TERRA	28.88700	77.55600	11:10:00	D	4.90
26	GORAKHPUR	GORAKHPUR	S-NPP	26.90208	83.35649	13:36:00	D	4.10
27	HAMIRPUR	HAMIRPUR	S-NPP	25.85295	80.25439	13:36:00	D	4.50
28	HARDOI	SIWAIJPUR	S-NPP	27.46186	79.77330	02:18:00	N	0.40
29	JALAUN	JALAUN	S-NPP	26.11862	79.42567	13:36:00	D	5.90
30	JALAUN	JALAUN	S-NPP	26.18460	79.36705	13:36:00	D	2.60
31	JALAUN	KONCH	S-NPP	26.00951	79.10784	13:36:00	D	2.70

32	JHANSI	JHANSI	S-NPP	25.48049	78.54073	02:18:00	N	0.40
33	JHANSI	MOTH	S-NPP	25.65664	78.90265	13:36:00	D	4.80
34	JHANSI	MOTH	S-NPP	25.67367	78.91920	13:36:00	D	8.50
35	JHANSI	MOTH	S-NPP	25.67367	78.92087	13:36:00	D	11.40
36	JHANSI	MOTH	TERRA	25.67500	78.91900	11:10:00	D	6.00
37	JHANSI	MOTH	S-NPP	25.68613	78.84252	13:36:00	D	4.60
38	JHANSI	MOTH	S-NPP	25.70050	78.89759	13:36:00	D	4.40
39	JHANSI	MOTH	S-NPP	25.70396	78.95470	13:36:00	D	7.60
40	JHANSI	MOTH	S-NPP	25.71946	78.84218	13:36:00	D	2.80
41	JHANSI	MOTH	S-NPP	25.74359	78.94384	13:36:00	D	3.50
42	JHANSI	MOTH	S-NPP	25.75153	78.91858	13:36:00	D	2.30
43	JHANSI	MOTH	S-NPP	25.75400	78.87986	13:36:00	D	8.90
44	JHANSI	MOTH	S-NPP	25.75764	78.87931	13:36:00	D	2.90
45	JHANSI	MOTH	S-NPP	25.76895	78.88461	13:36:00	D	4.30
46	JHANSI	MOTH	S-NPP	25.79543	78.94790	13:36:00	D	4.30
47	JHANSI	MOTH	S-NPP	25.79909	78.94734	13:36:00	D	6.10
48	KASGANJ	PATIALI	S-NPP	27.72474	79.14111	13:36:00	D	4.40
49	KAUSHAMBI	CHAIL	S-NPP	25.47459	81.57274	13:36:00	D	2.20
50	KAUSHAMBI	MANJHANPUR	S-NPP	25.39818	81.34550	13:36:00	D	3.10
51	KAUSHAMBI	MANJHANPUR	S-NPP	25.40567	81.22691	13:36:00	D	4.20
52	KAUSHAMBI	MANJHANPUR	S-NPP	25.43020	81.24447	13:36:00	D	8.30
53	KAUSHAMBI	MANJHANPUR	S-NPP	25.43066	81.24860	13:36:00	D	9.90
54	KAUSHAMBI	MANJHANPUR	S-NPP	25.44448	81.25931	13:36:00	D	3.30
55	KAUSHAMBI	MANJHANPUR	S-NPP	25.48789	81.27036	13:36:00	D	3.20
56	KHERI	DHAURAHRA	S-NPP	27.94256	81.09480	13:36:00	D	2.60
57	KHERI	MOHMADI	S-NPP	27.91819	80.25379	02:18:00	N	0.90
58	KHERI	PALIA KALAN	S-NPP	28.51155	80.44769	02:18:00	N	1.50
59	MAU	MADHUBAN	S-NPP	26.11294	83.64828	13:36:00	D	2.80
60	MEERUT	MAWANA	S-NPP	28.91712	77.89523	13:36:00	D	2.40
61	MEERUT	MAWANA	S-NPP	28.98525	77.87241	13:36:00	D	3.20
62	MEERUT	MAWANA	TERRA	29.06100	77.92100	11:10:00	D	5.10
63	MEERUT	MEERUT	S-NPP	29.00639	77.80666	13:36:00	D	9.40
64	MEERUT	SARDHANA	S-NPP	29.16956	77.62616	13:36:00	D	8.30
65	MEERUT	SARDHANA	TERRA	29.17100	77.63100	11:10:00	D	4.60

66	MORADABAD	BILARI	NOAA-19	28.54180	78.73025	17:10:00	N	6.00
67	MUZAFARNAGAR	BUDHANA	S-NPP	29.31124	77.38371	13:36:00	D	1.60
68	MUZAFARNAGAR	JANSATH	S-NPP	29.22865	77.92350	13:36:00	D	2.30
69	MUZAFARNAGAR	KHATOLI	S-NPP	29.36826	77.59959	13:36:00	D	6.50
70	MUZAFARNAGAR	KHATOLI	S-NPP	29.36983	77.59618	13:36:00	D	7.50
71	MUZAFARNAGAR	MUZAFFARNAGAR	S-NPP	29.51031	77.59899	13:36:00	D	3.50
72	PRATAPGARH	KUNDA	S-NPP	25.76543	81.51323	02:18:00	N	0.80
73	PRATAPGARH	PATTI	S-NPP	25.89609	82.15267	13:36:00	D	3.20
74	RAIBEARELI	SALON	S-NPP	26.21799	81.46061	13:36:00	D	4.20
75	RAIBEARELI	TILOI	S-NPP	26.54682	81.50069	13:36:00	D	4.80
76	RAMPUR	SHAHBAD	S-NPP	28.51469	78.99120	13:36:00	D	3.60
77	RAMPUR	SHAHBAD	S-NPP	28.53278	79.01898	02:18:00	N	0.70
78	RAMPUR	SHAHBAD	S-NPP	28.53681	79.02004	02:18:00	N	2.20
79	SAMBHAL	SAMBHAL	S-NPP	28.56143	78.64719	13:36:00	D	2.80
80	SHAHJAHANPUR	PUWANYA	S-NPP	28.06221	79.96061	02:18:00	N	1.20
81	SHAHJAHANPUR	PUWANYA	S-NPP	28.06651	79.96177	02:18:00	N	1.20
82	SHAHJAHANPUR	PUWANYA	S-NPP	28.22851	80.14515	02:18:00	N	0.40
83	SHAHJAHANPUR	SHAHJAHANPUR	S-NPP	27.72638	79.81799	13:36:00	D	3.70
84	SHARANPUR	SHARANPUR	NOAA-19	29.93343	77.70072	17:10:00	N	6.00
85	SITAPUR	LAHARPUR	S-NPP	27.63825	80.84372	13:36:00	D	1.20
86	SITAPUR	LAHARPUR	S-NPP	27.70511	80.95203	13:36:00	D	3.20
87	SITAPUR	SITAPUR	S-NPP	27.59455	80.67107	13:36:00	D	2.40
88	SITAPUR	SITAPUR	S-NPP	27.59615	80.67046	13:36:00	D	1.80
89	SITAPUR	SITAPUR	S-NPP	27.67218	80.54368	13:36:00	D	3.10

The study used images received from following Satellites at IARI Satellite 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
4.	NOAA – 18	AVHRR	1000	Night
5.	NOAA – 19	AVHRR	1000	Night
6.	Metop - 1	AVHRR	1000	Night
7.	Metop - 2	AVHRR	1000	Night

Study Team

ICAR – HQ	Dr K. Alagusundaram	DDG (AG. ENGG.)	ddgengg@icar.org.in
	Dr S. Bhasker	ADG (NRM)	adgagroandaf@gmail.com
	Dr K.K. Singh	ADG (AG. ENGG.)	kanchansingh044@gmail.com
ICAR - IARI	Dr V.K. Sehgal	Professor & Nodal Scientist	iaricreams@gmail.com
	Dr Rajkumar Dhakar	Scientist	raidhakar.iari@gmail.com
	Mr Rakeswer Verma	Chief Technical Officer	rakeshwar.verma@icar.gov.in
	Mr Mohd Jahangir	Lab Assistant (KRISHI)	mjahangir198@gmail.com
ICAR - ATARI	Dr Rajbir Singh	Director ATARI (Zone-I) Ludhiana	rajbirsingh.zpd@gmail.com
	Dr S.K. Singh	Director ATARI (Zone-II) Jodhpur	sushilsinghiipr@yahoo.co.in
	Dr Atar Singh	Director ATARI (Zone-III) Kanpur	zpdicarkanpur@gmail.com
ICAR - IASRI	Dr Rajender Parsad	Director IASRI	rajender.parsad@icar.gov.in

Softcopy of this report and latest statistics can be seen on <http://creams.iari.res.in>

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)
