

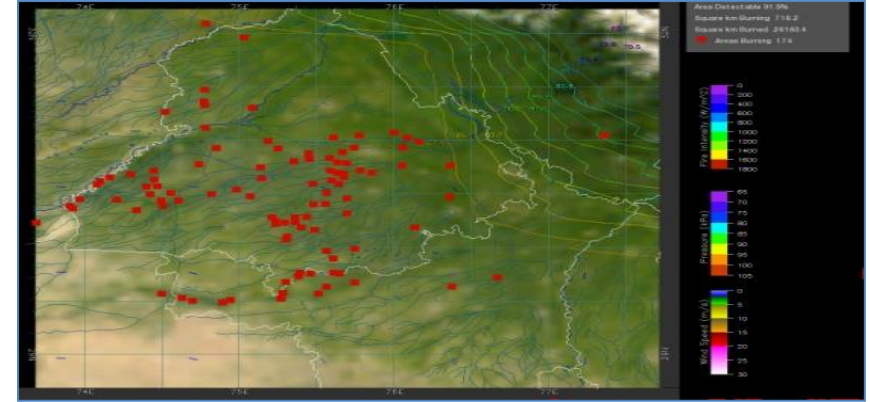
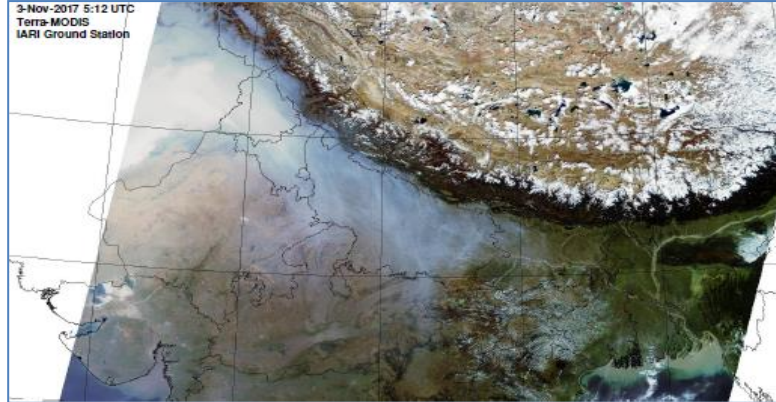


# MONITORING PADDY RESIDUE BURNING IN INDIA USING SATELLITE REMOTE SENSING DURING 2024

Bulletin  
No. 37

Events Date:  
21-Oct-2024

Issued on:  
21-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

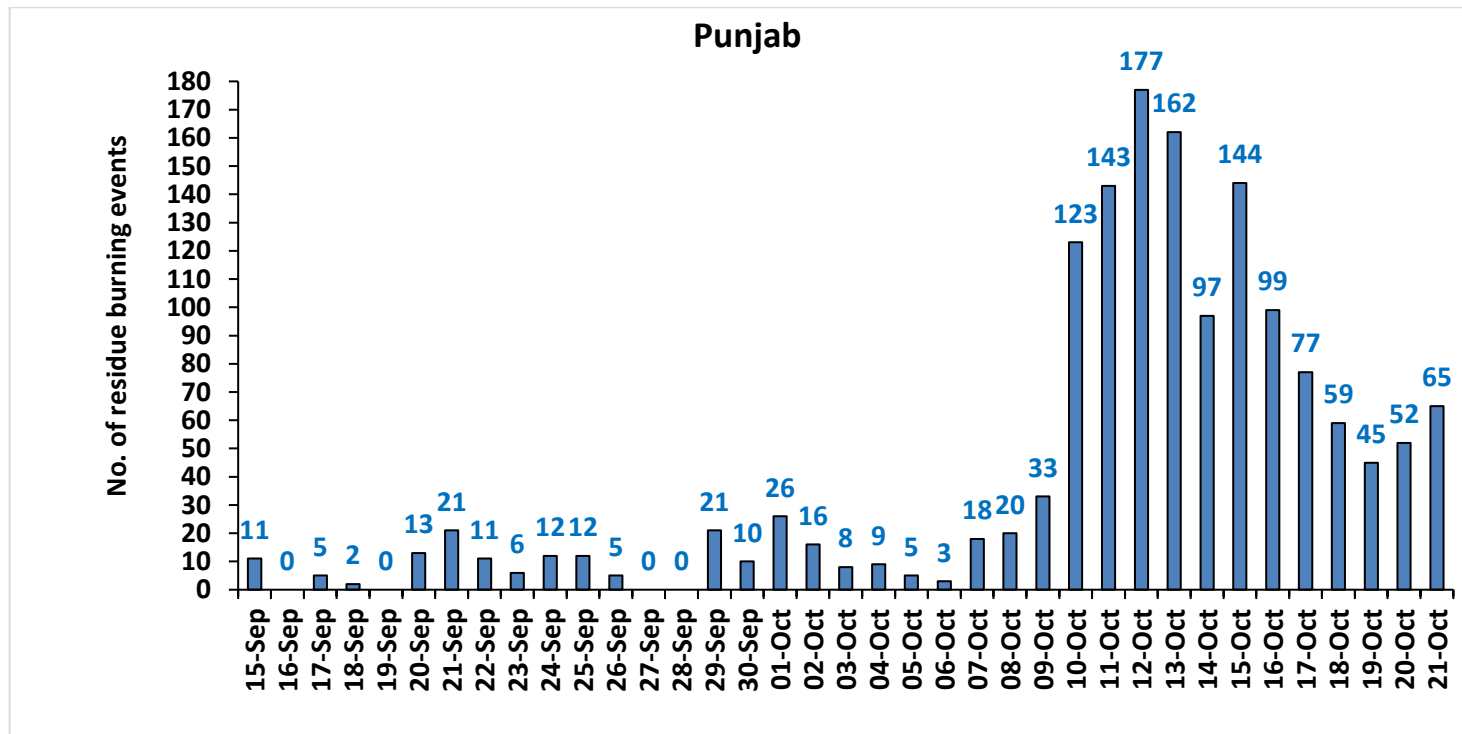
<https://creams.iari.res.in>



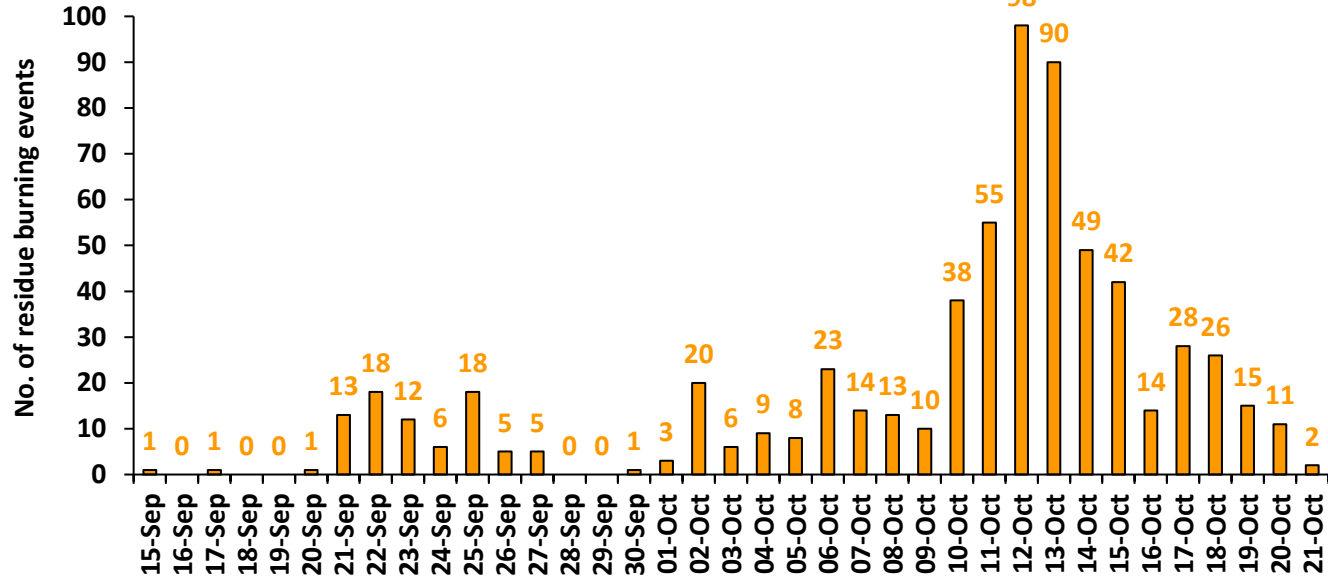
## Highlights for 21-Oct-2024

- 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 **166** residue burning events in the six study States on **21-Oct-2024**.
- The state wise events detected on **21-Oct-2024** were **65** in Punjab, **02** in Haryana, **25** in UP, **00** in Delhi, **21** in Rajasthan and **53** in MP.
- Total **3651** burning events were detected in the six states between **15-Sept-2024** and **21-Oct-2024**, which are distributed as **1510**, **655**, **723**, **11**, **296** and **456** in Punjab, Haryana, UP, Delhi, Rajasthan and MP, respectively.
- Detection of burning events was hampered by the presence of scattered clouds over Rajasthan state.

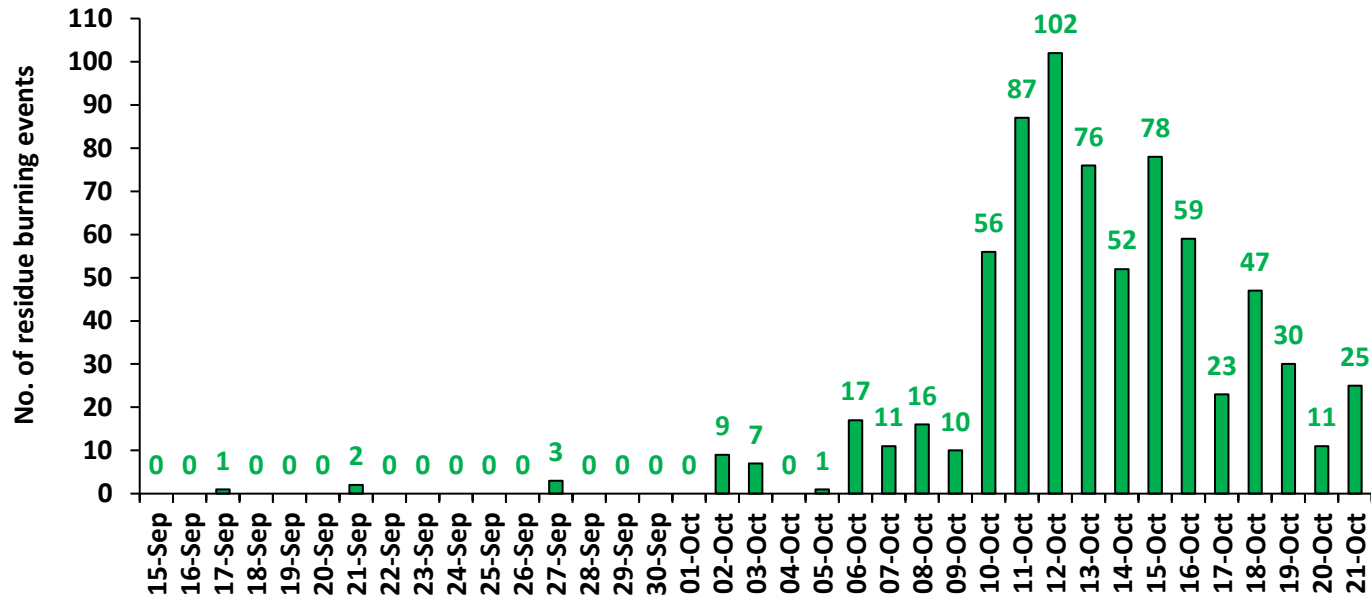
### Temporal distribution of rice residue burning events for the study States in 2024



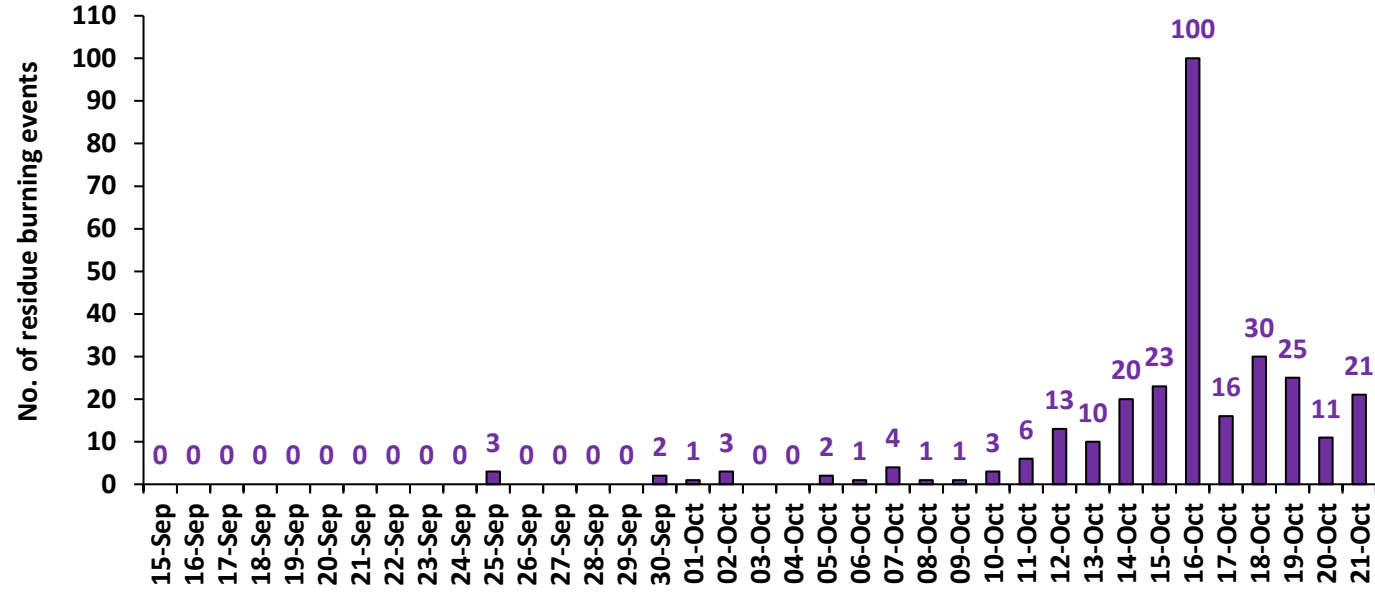
### Haryana



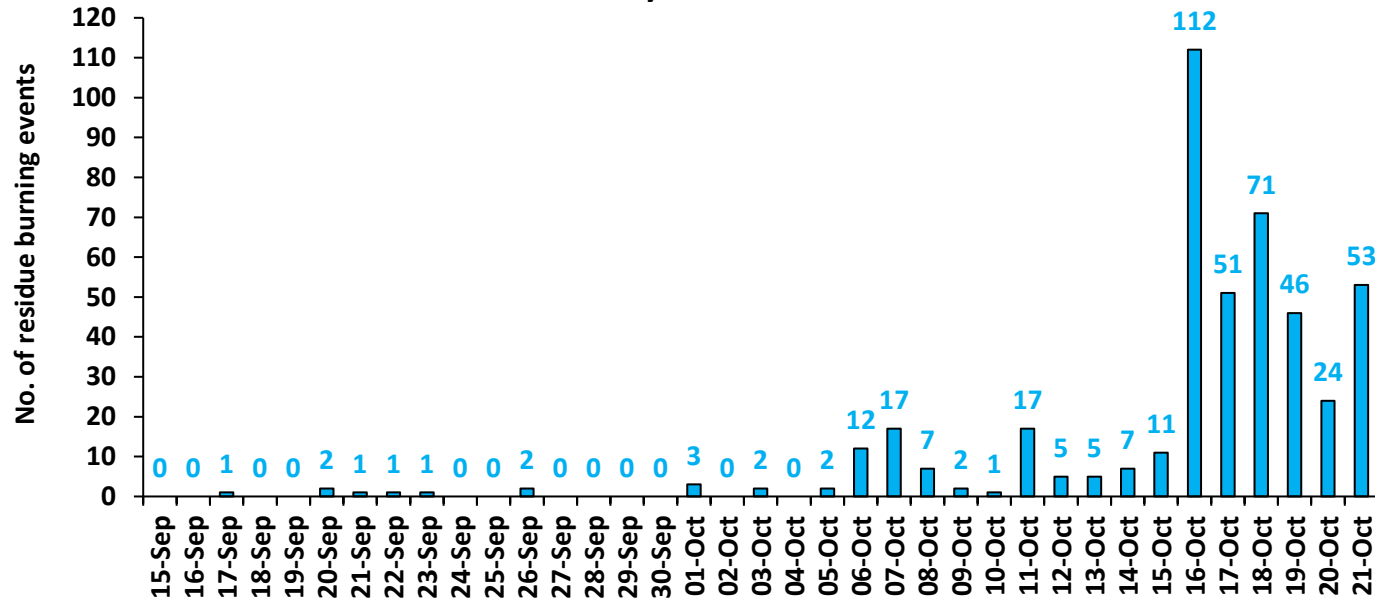
### Uttar Pradesh



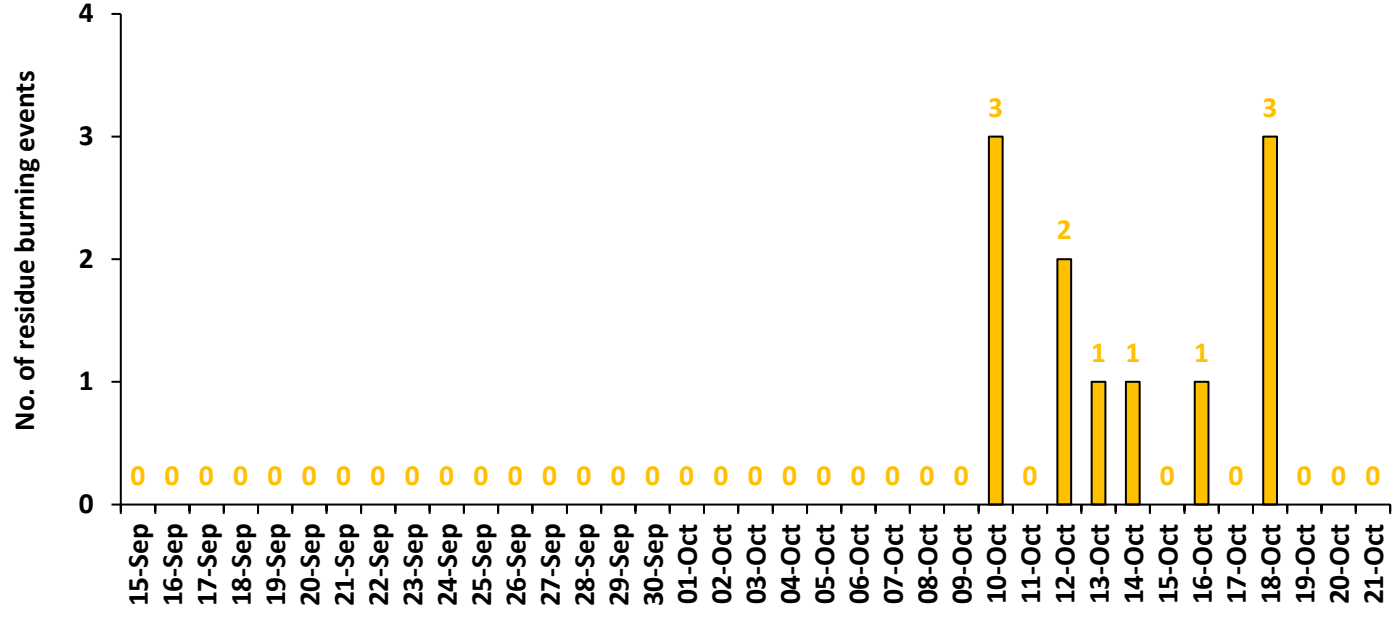
### Rajasthan



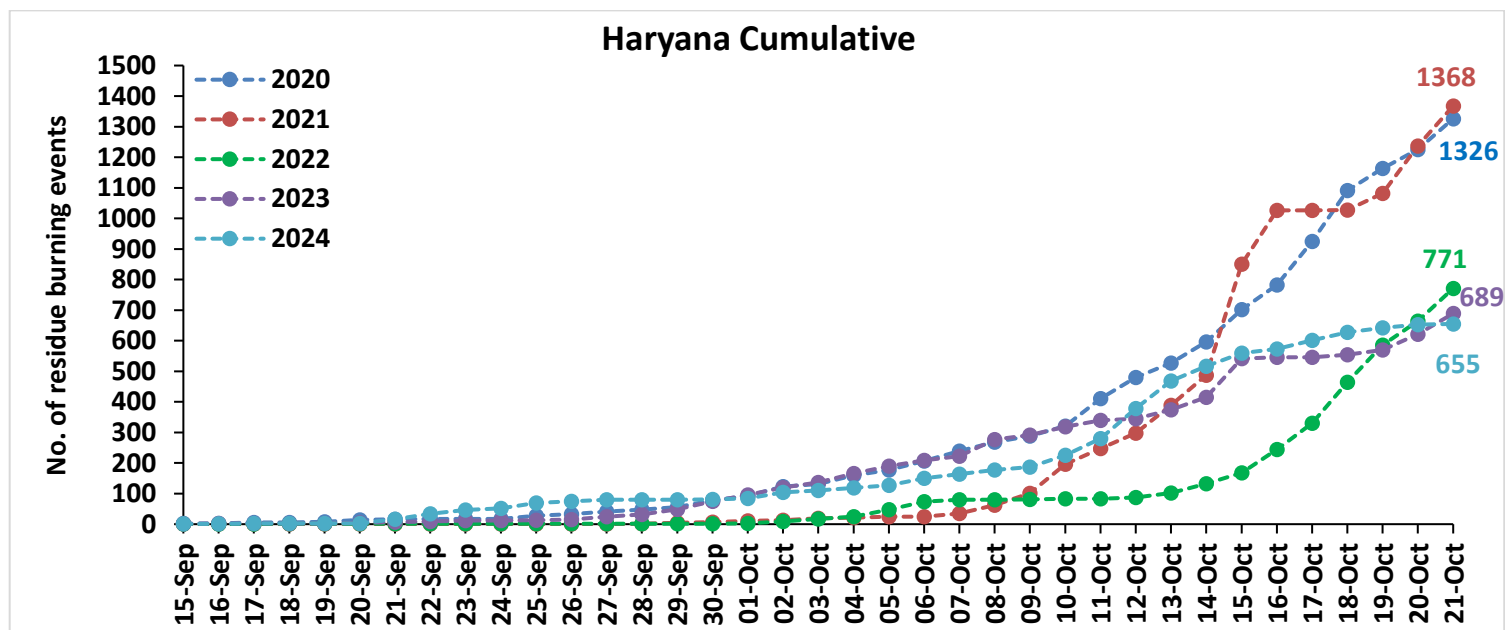
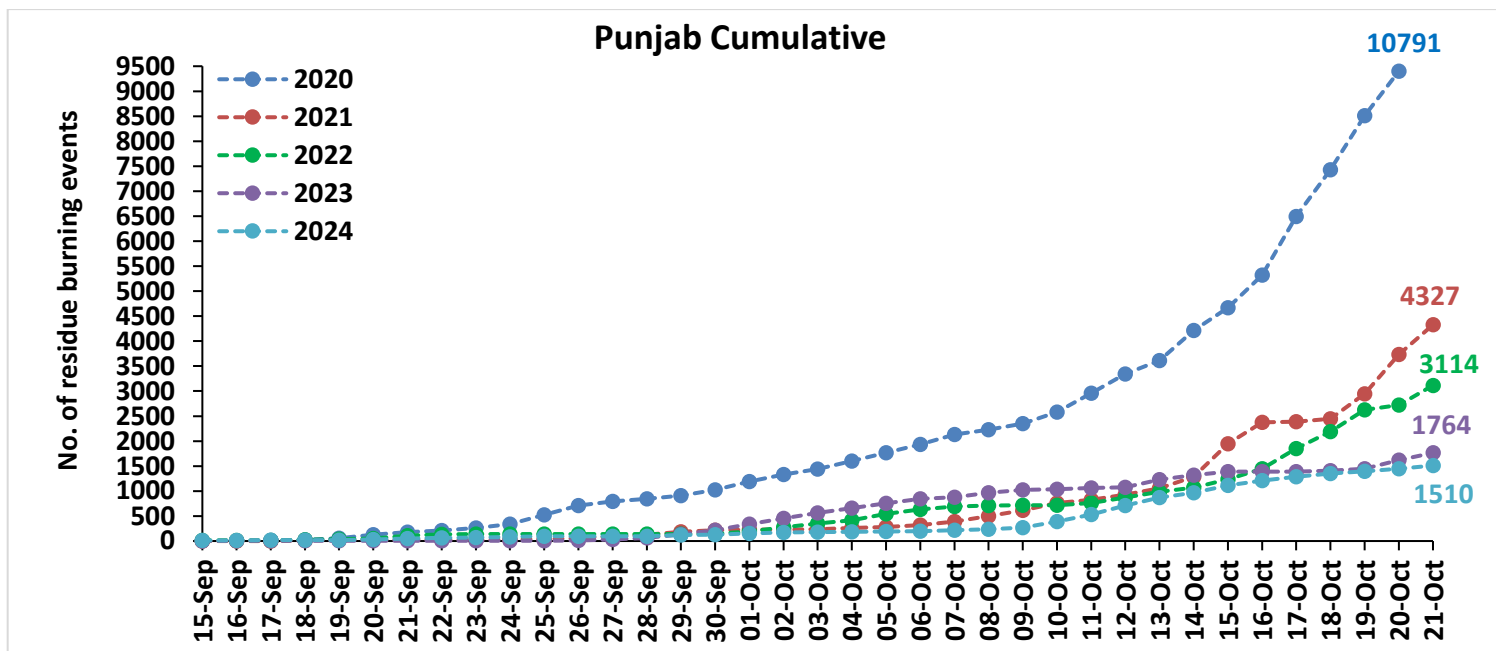
### Madhya Pradesh

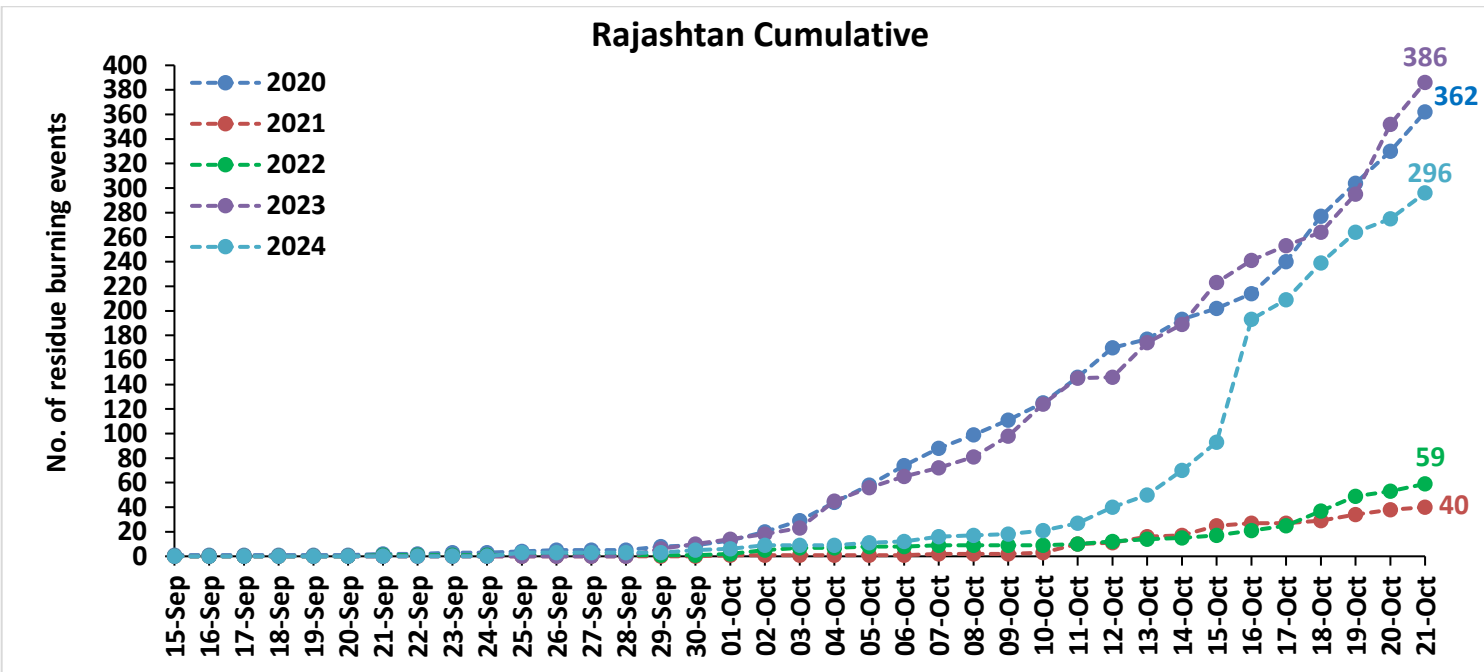
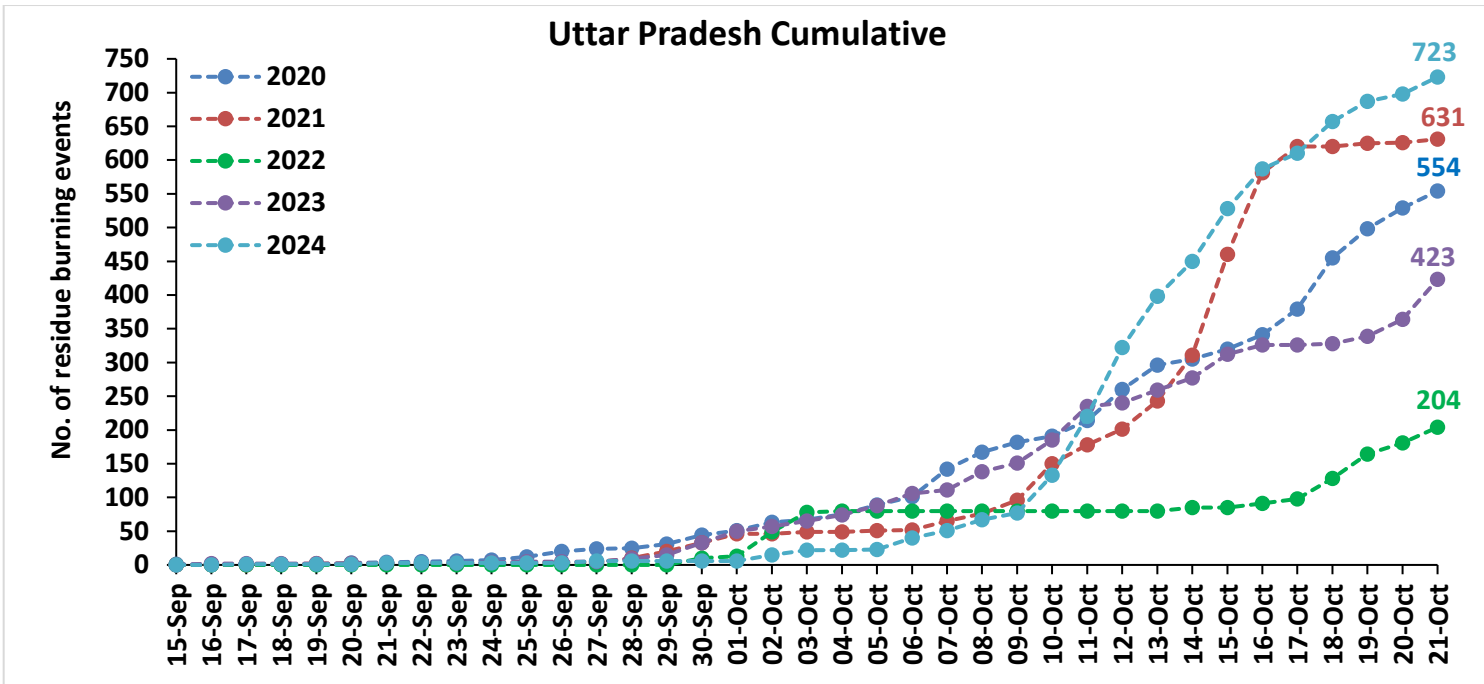


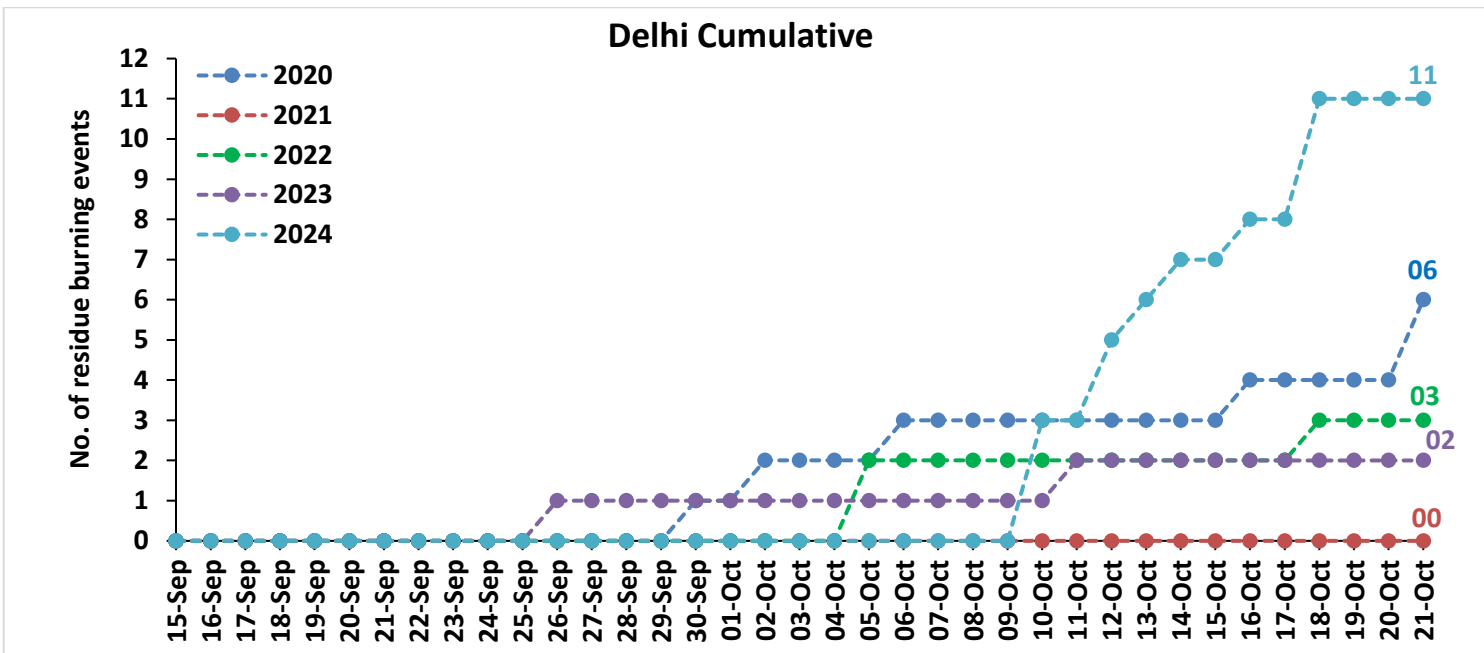
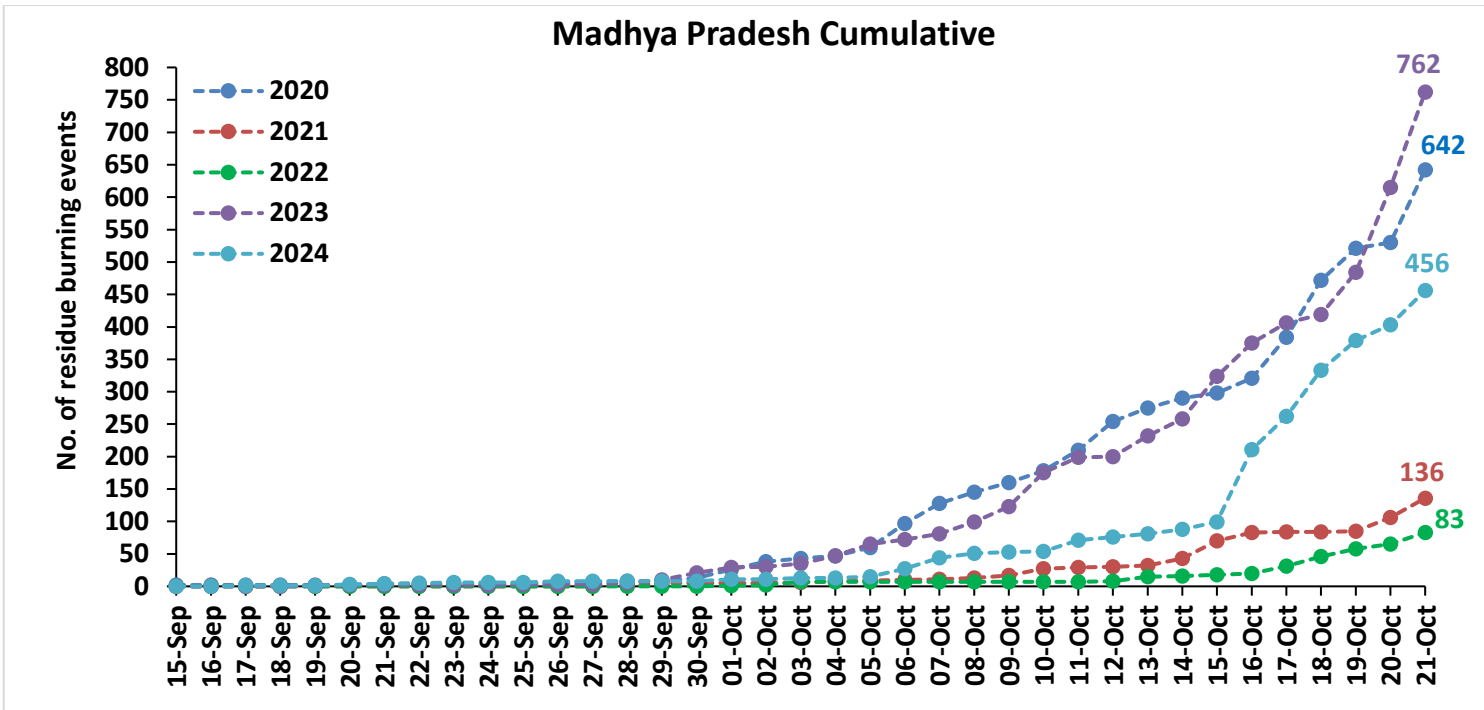
# Delhi



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

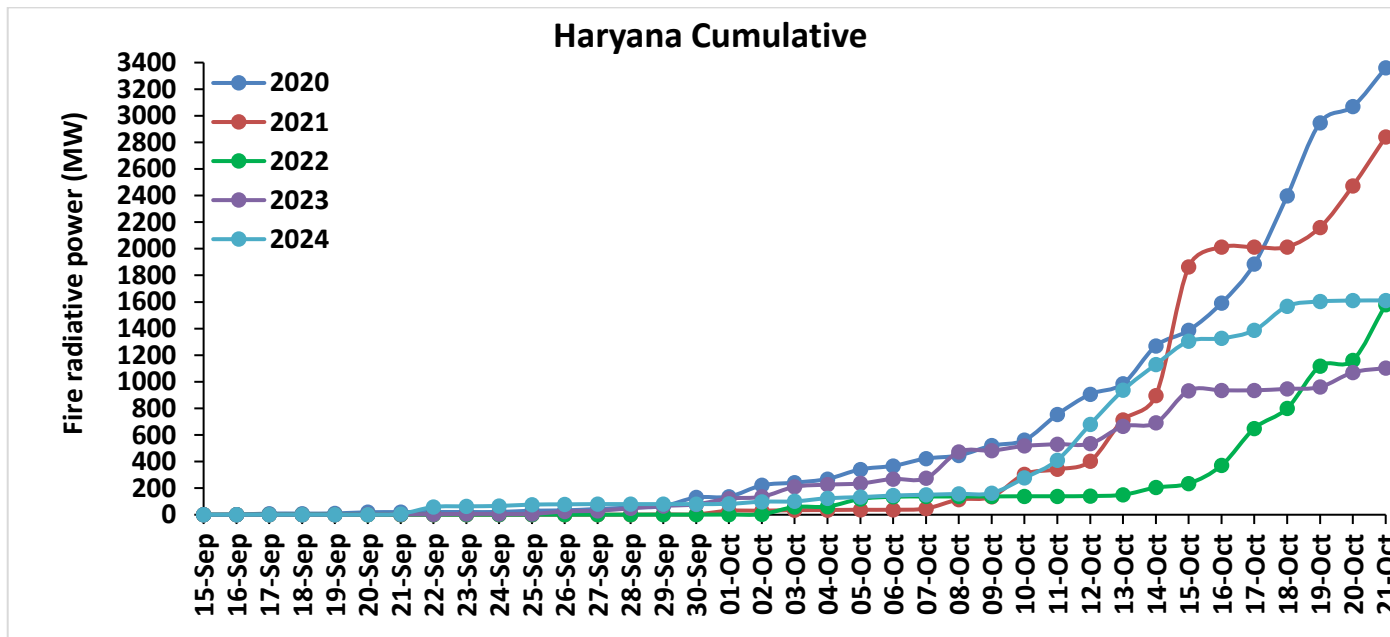
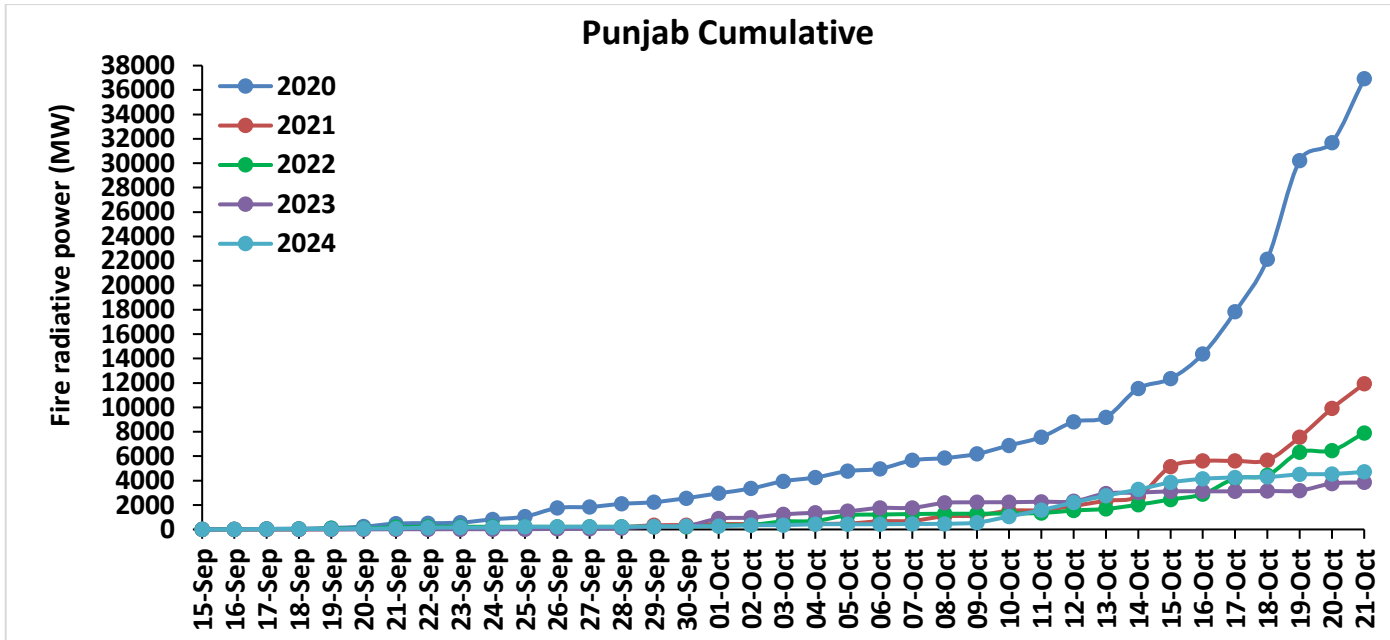




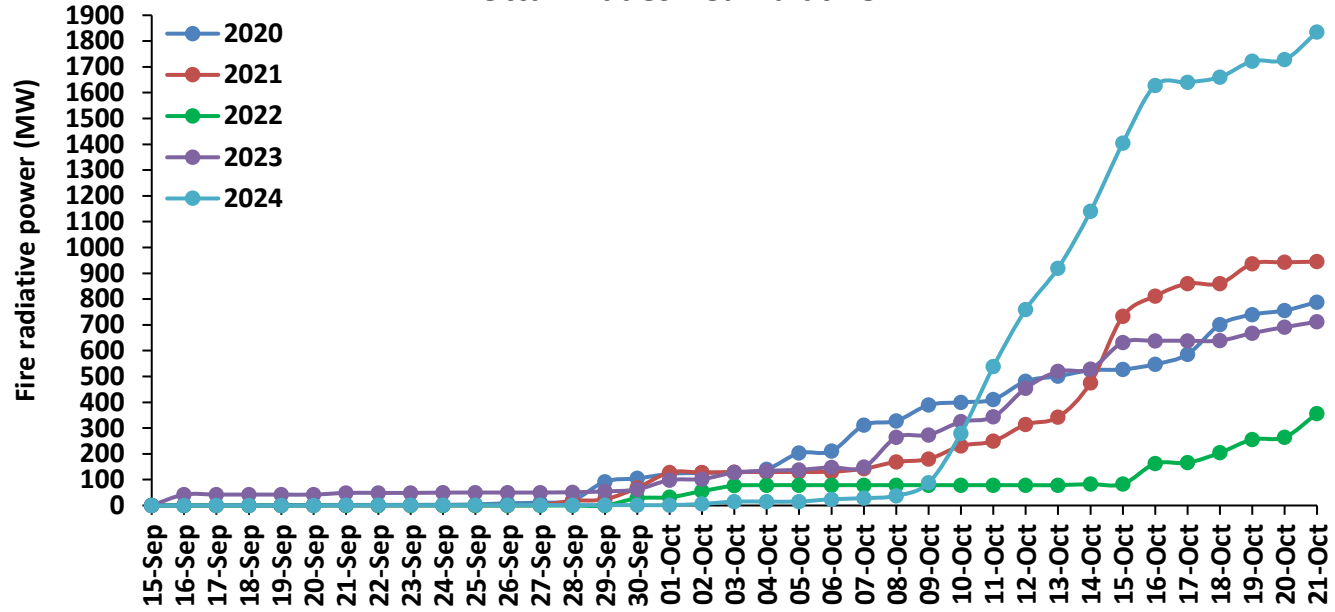




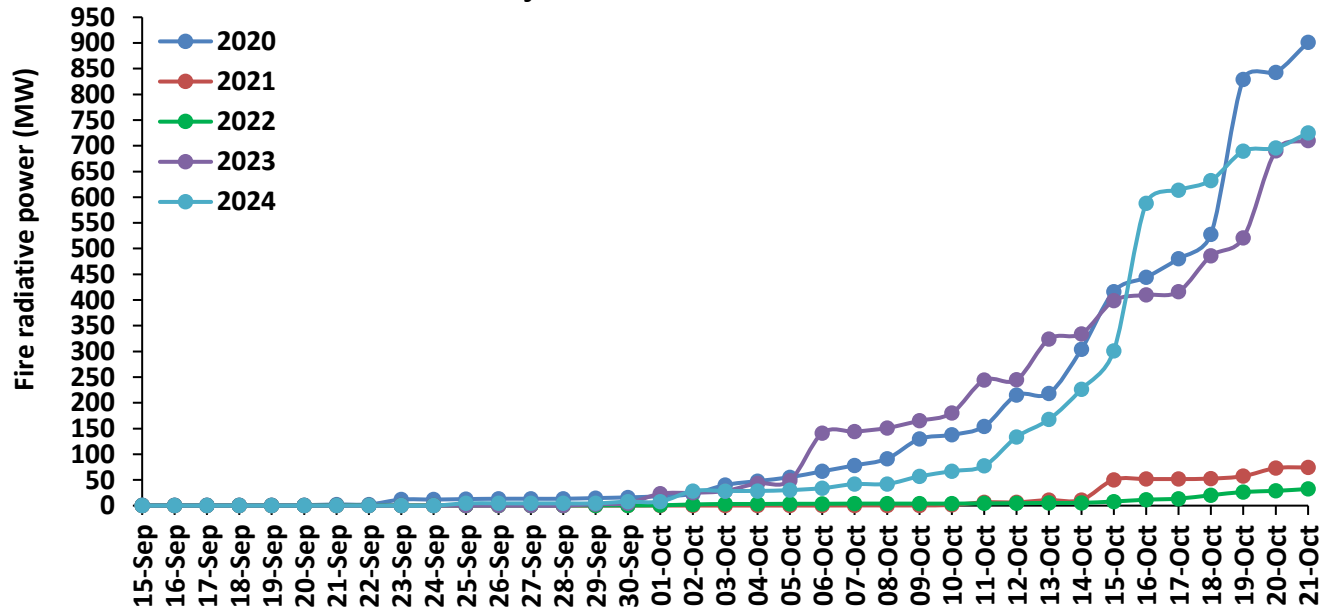
**Comparison of residue burning fire power in current year (2024) with previous years (2020,2021,2022 and 2023) for the study States**



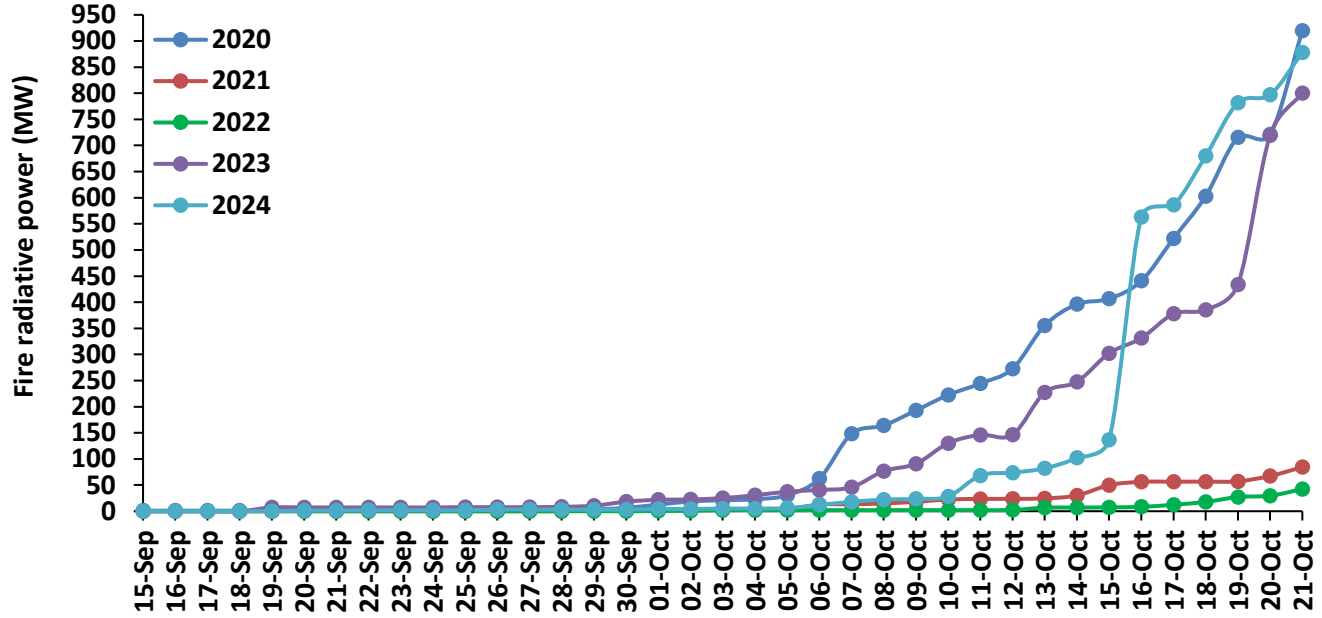
### Uttar Pradesh Cumulative



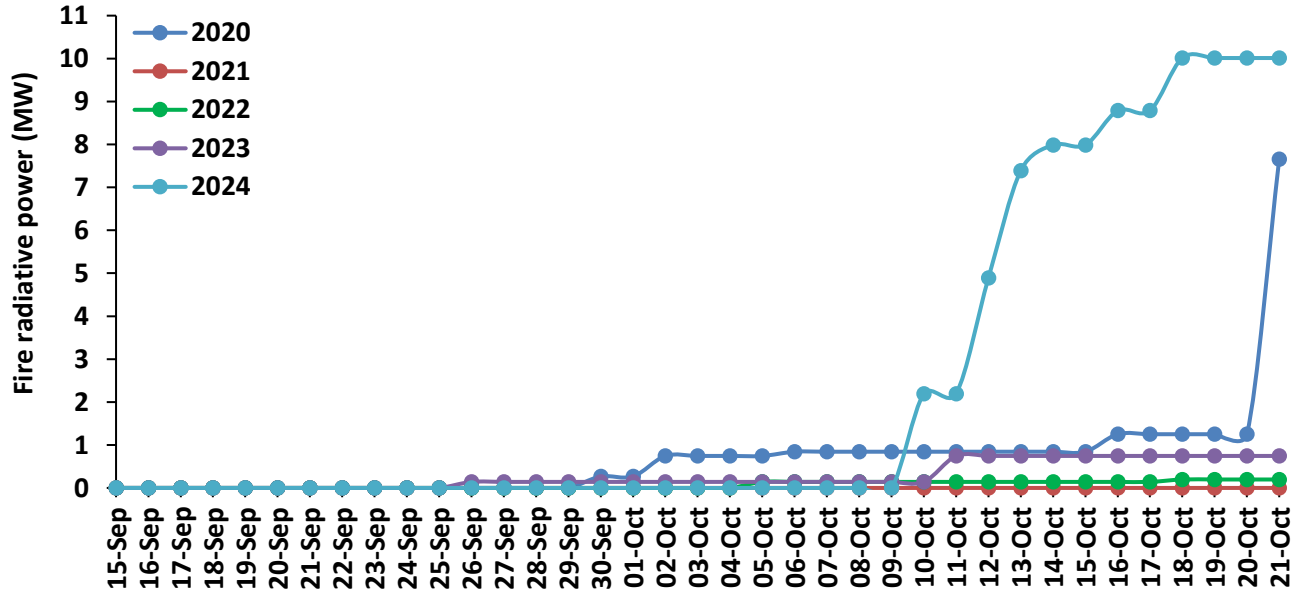
### Rajasthan Cumulative



### Madhya Pradesh Cumulative

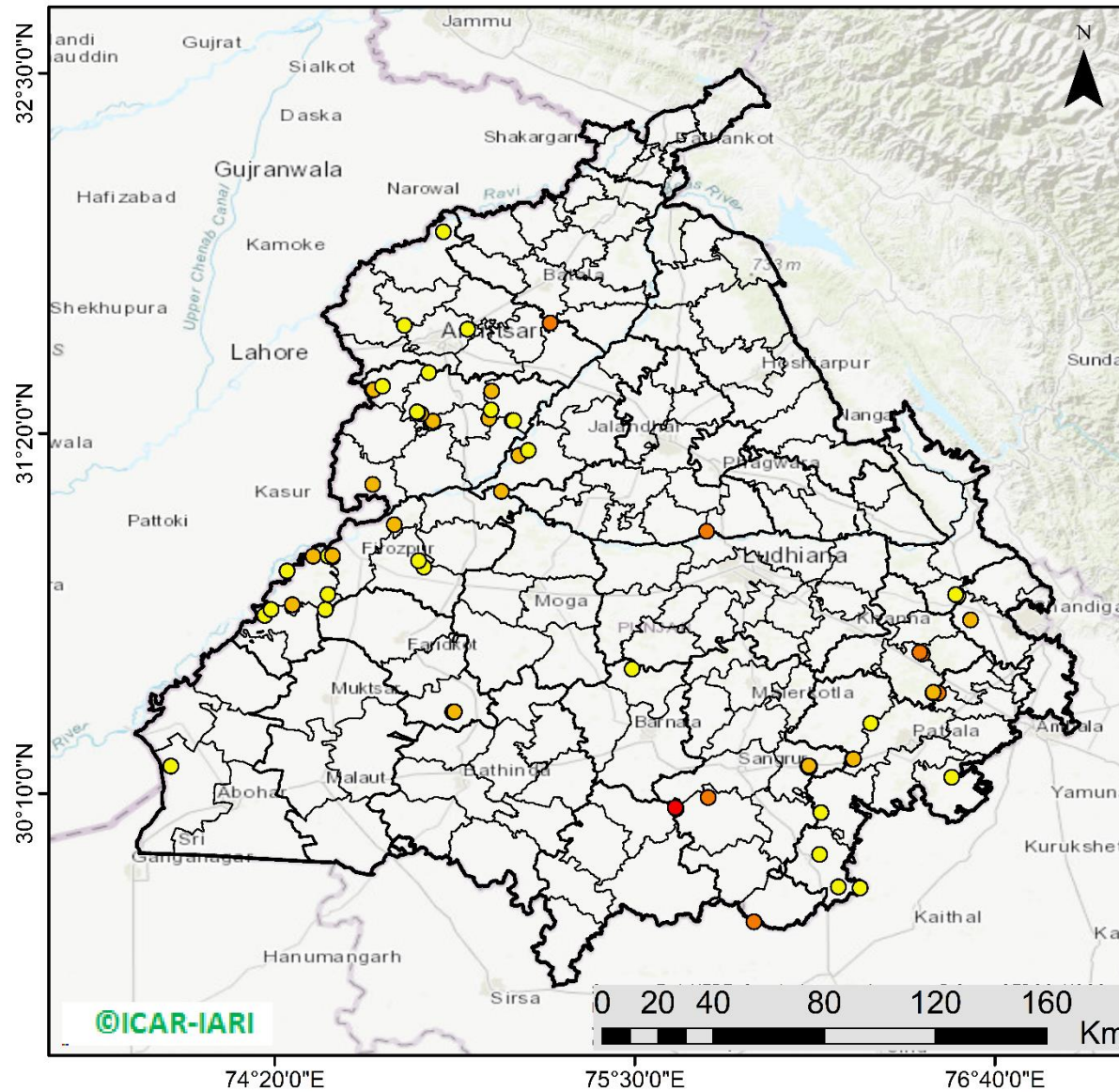


### Delhi Cumulative



# Punjab

## RICE RESIDUE BURNING IN PUNJAB



**65** burning events detected in Punjab during (21st Oct 2024)

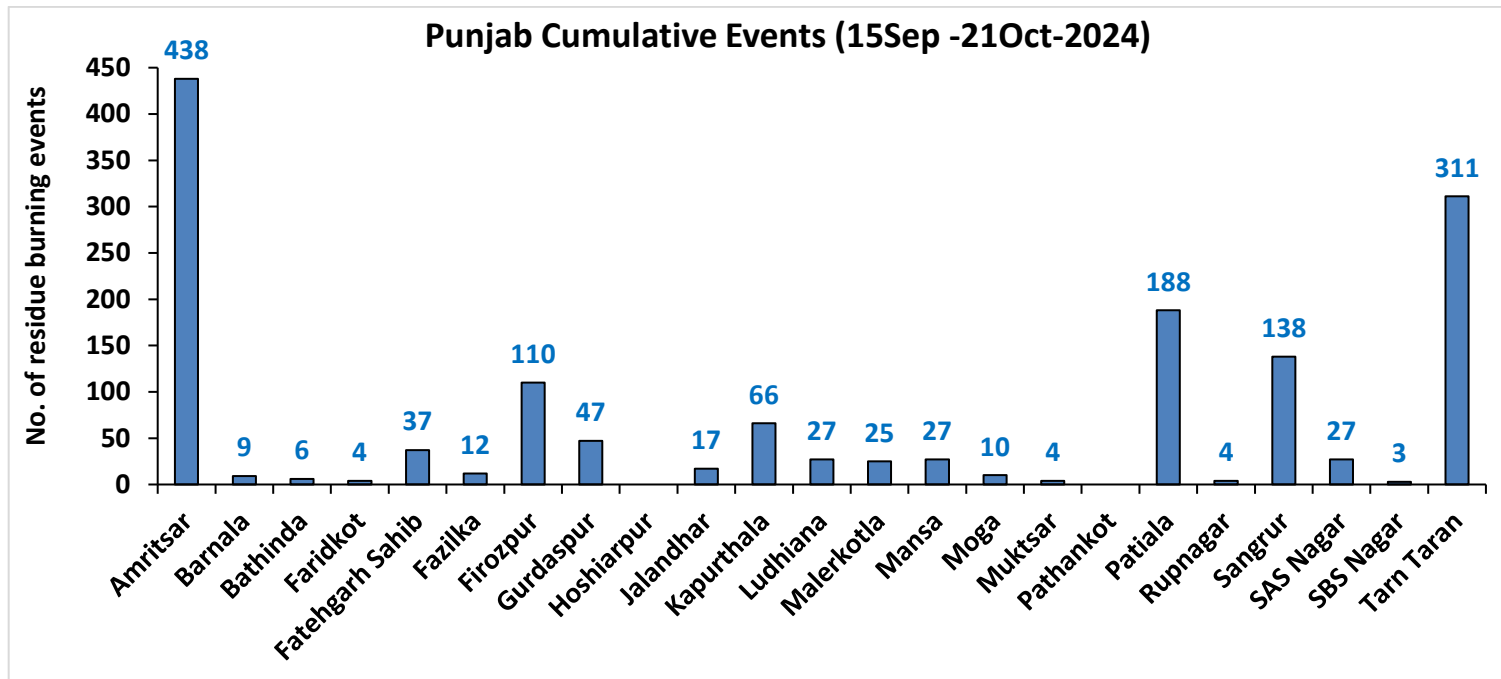
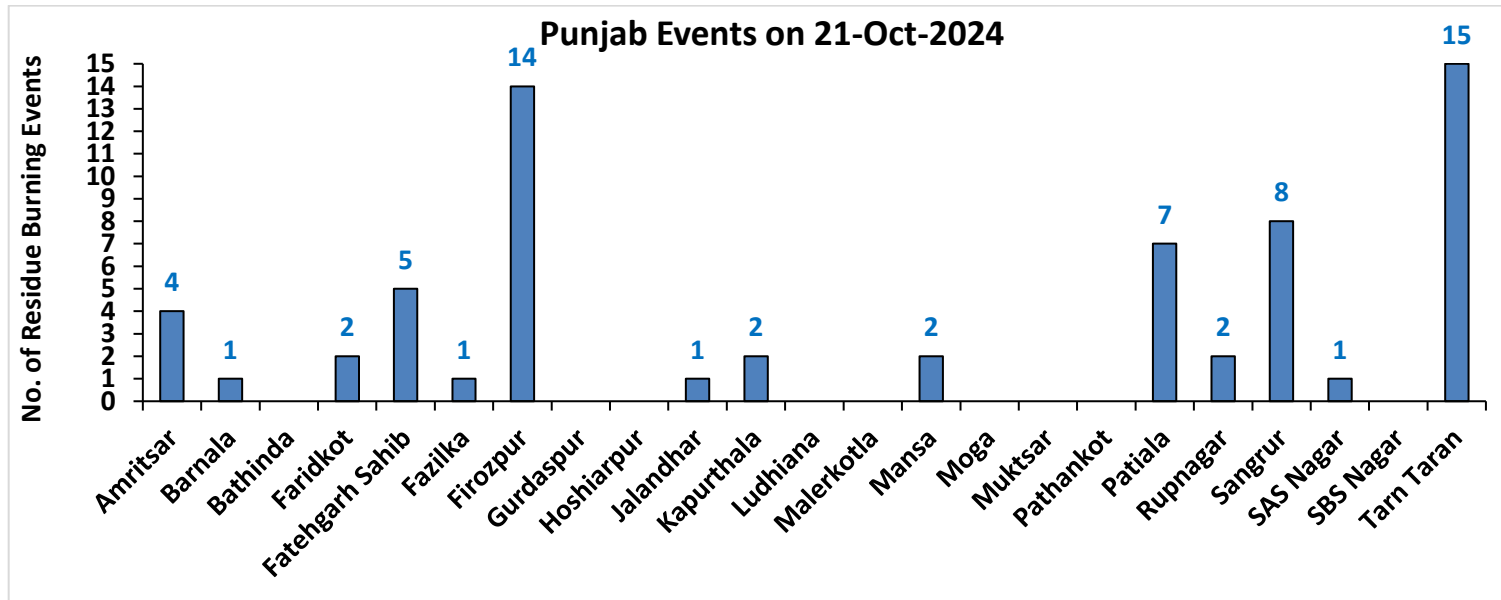
### Fire Intensity (W/m<sup>2</sup>)

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



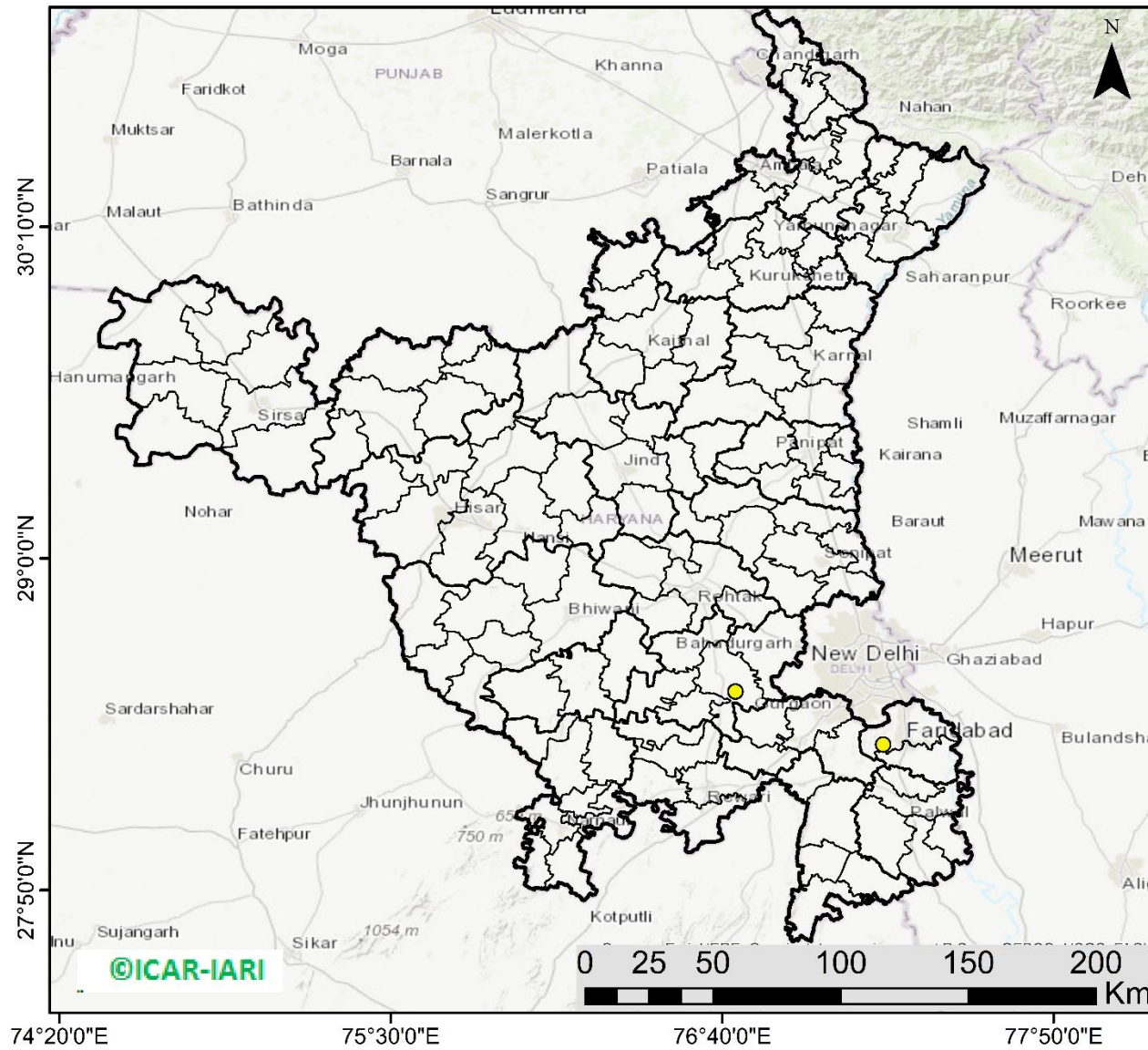
[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

## District-wise cumulative number of residues burning events in Punjab (15Sep-21Oct-2024)



# Haryana

## RICE RESIDUE BURNING IN HARYANA



**02** burning events detected in Haryana on (21st Oct 2024)

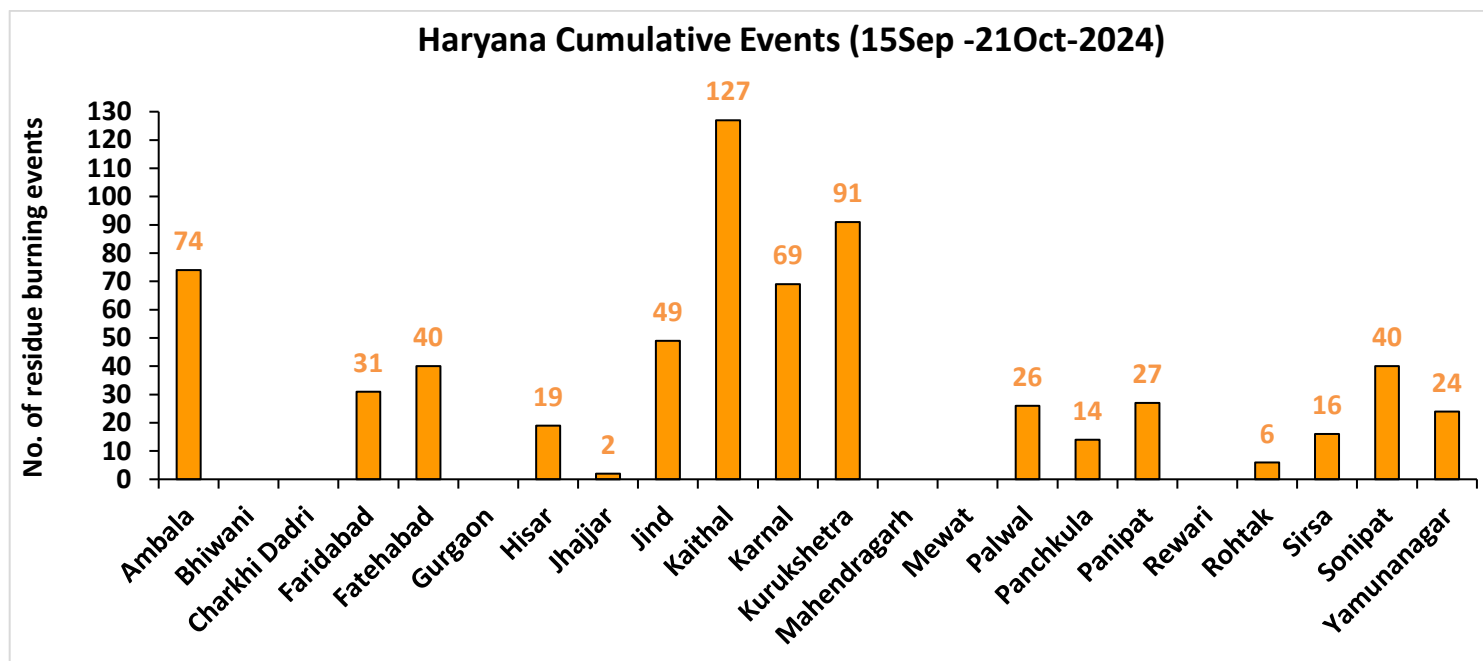
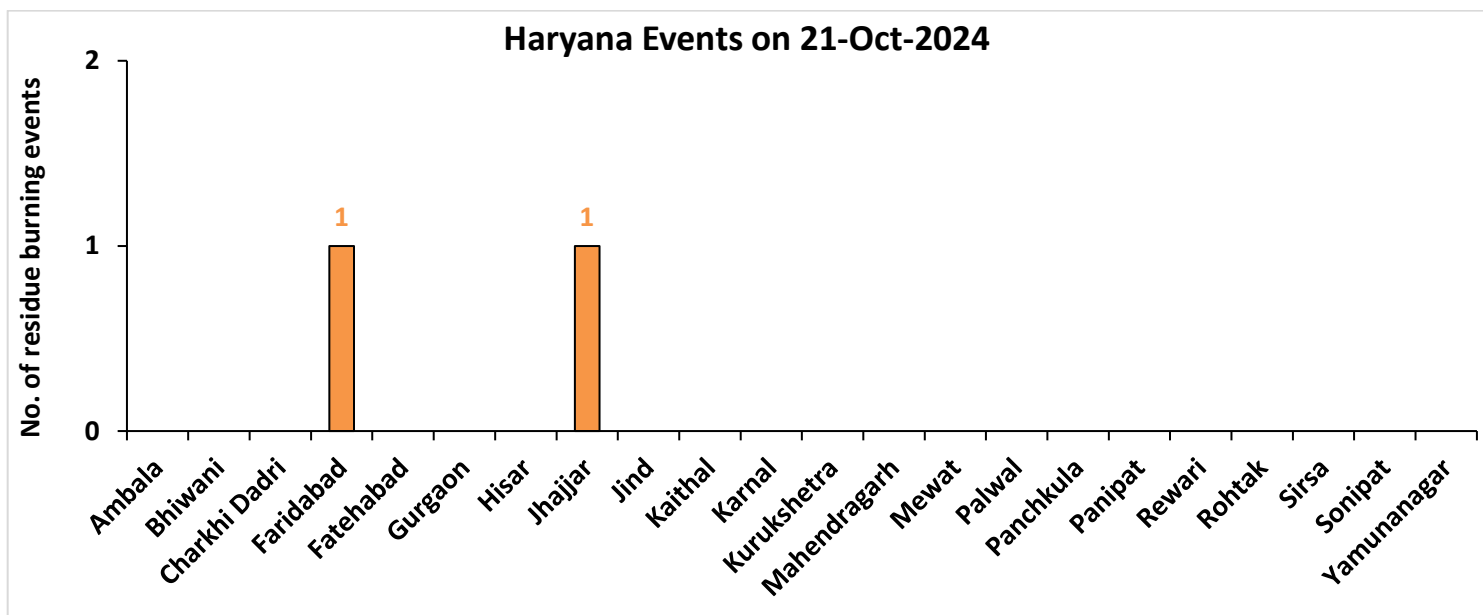
### Fire Intensity (W/m<sup>2</sup>)

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



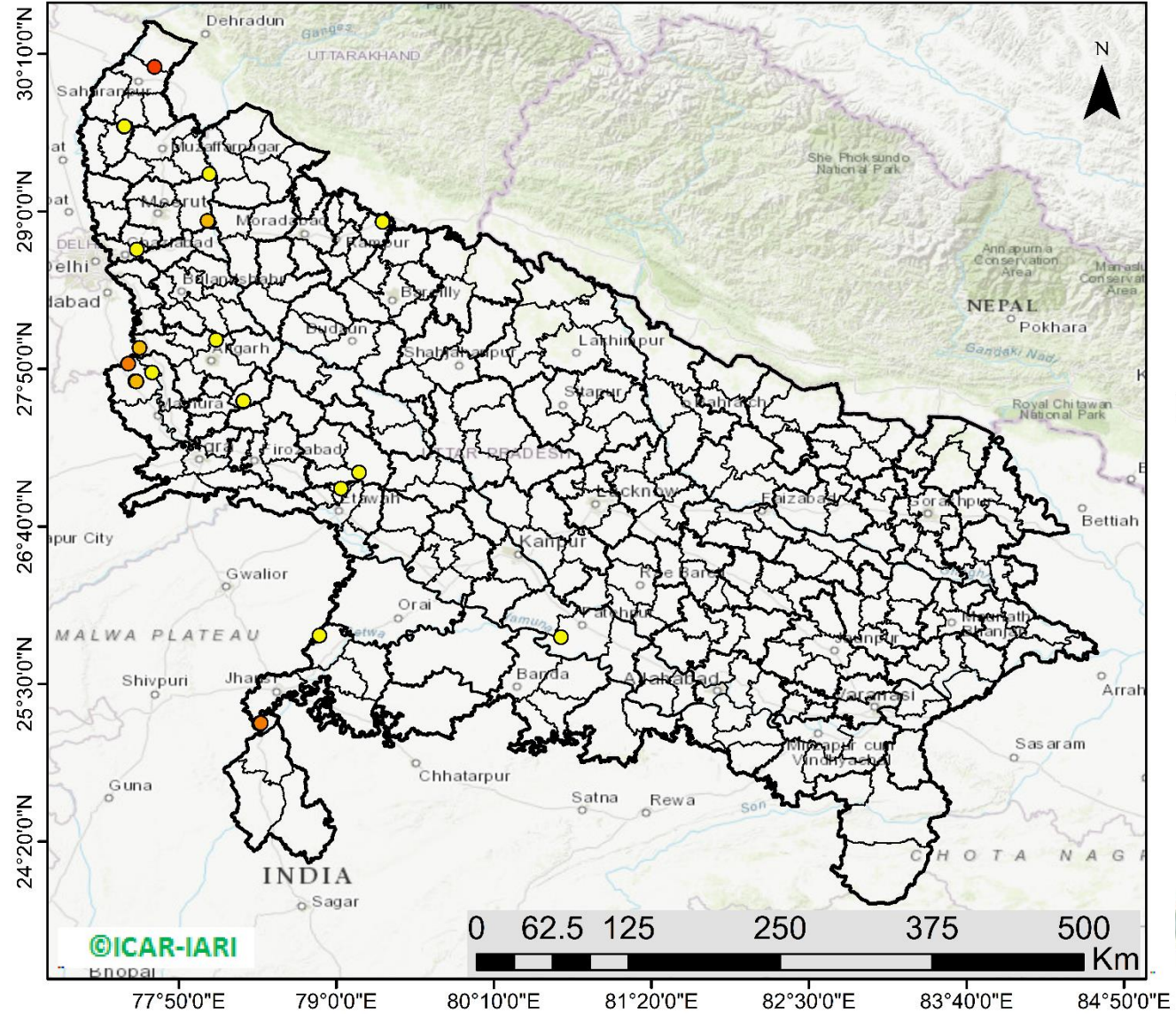
[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

## District-wise cumulative number of residues burning events in Haryana (15Sep-21Oct-2024)



Uttar Pradesh

RICE RESIDUE BURNING IN UTTAR PRADESH



25 burning events detected in Uttar Pradesh on (21st Oct 2024)

Fire Intensity (W/m2)

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

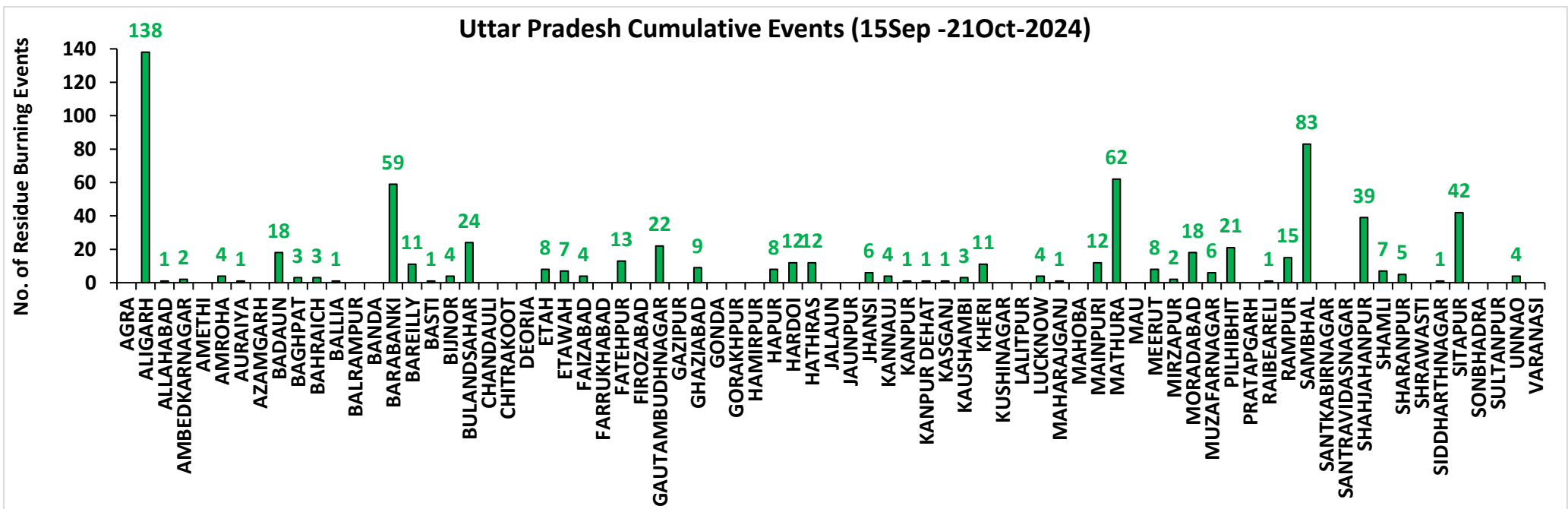
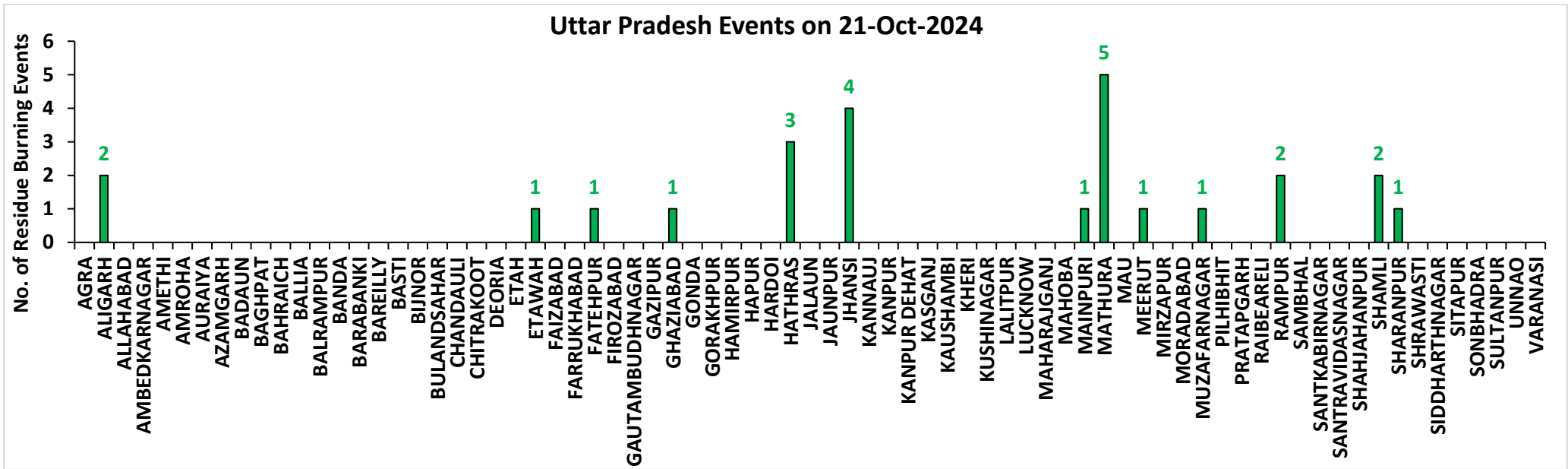


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[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

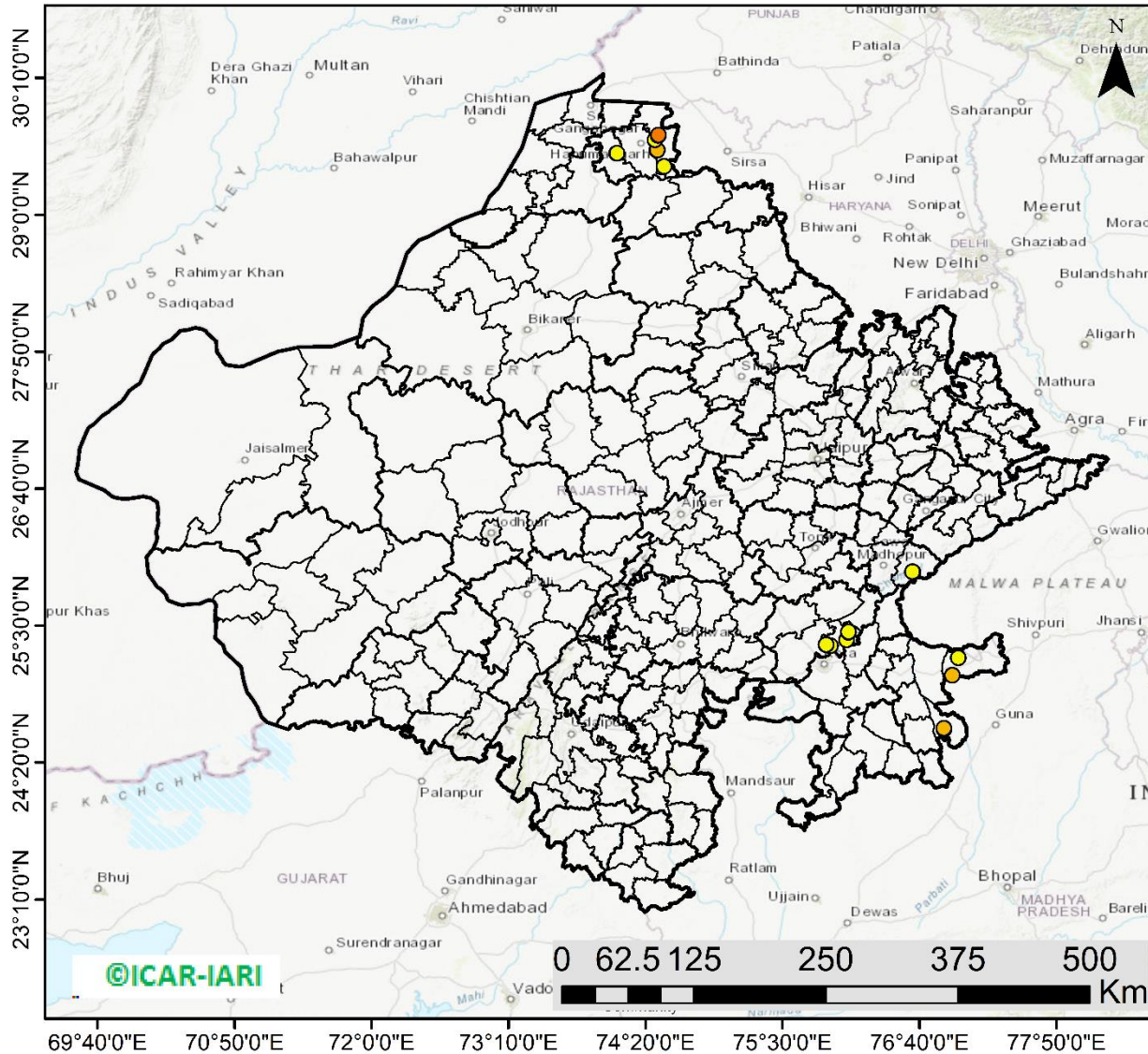


## District-wise cumulative number of residues burning events in Uttar Pradesh (15Sep-21Oct-2024)



# Rajasthan

## RICE RESIDUE BURNING IN RAJASTHAN



**21** burning events detected in Rajasthan on (21st Oct 2024)

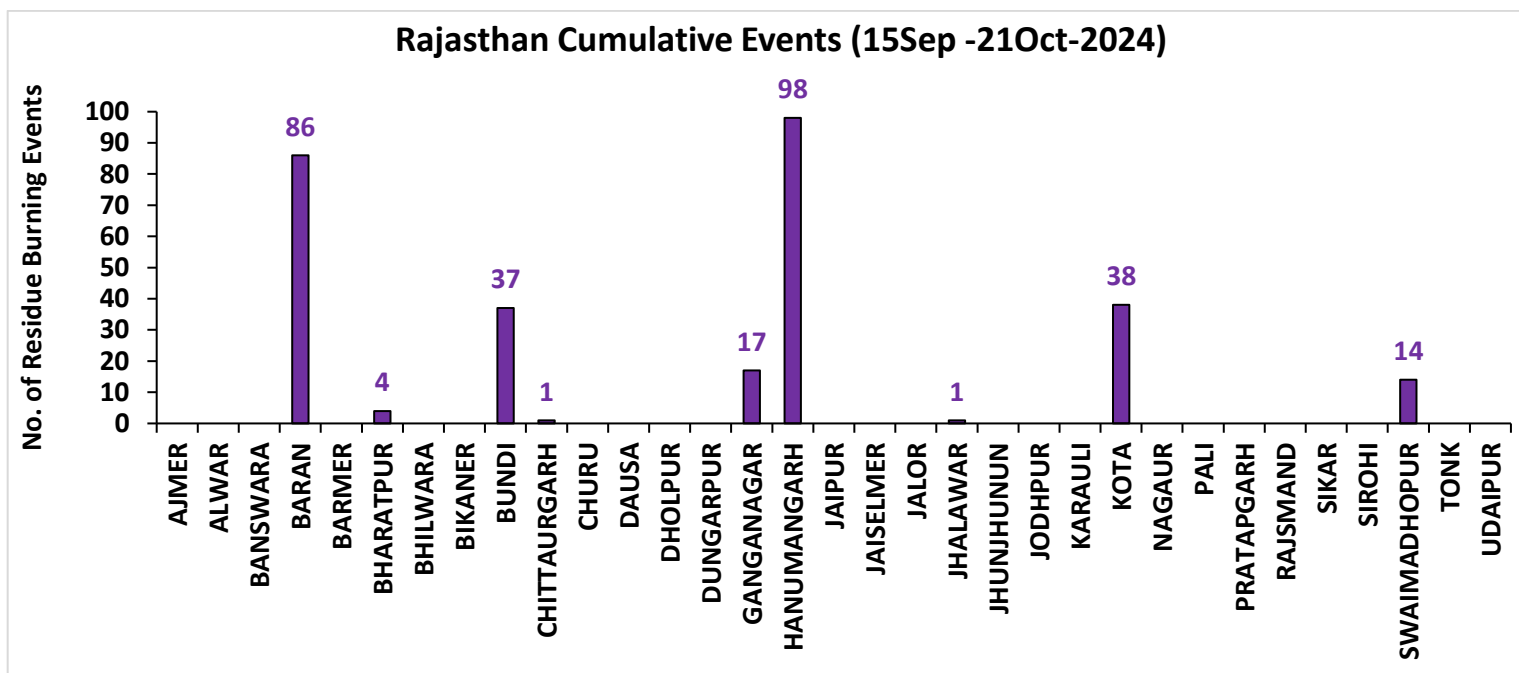
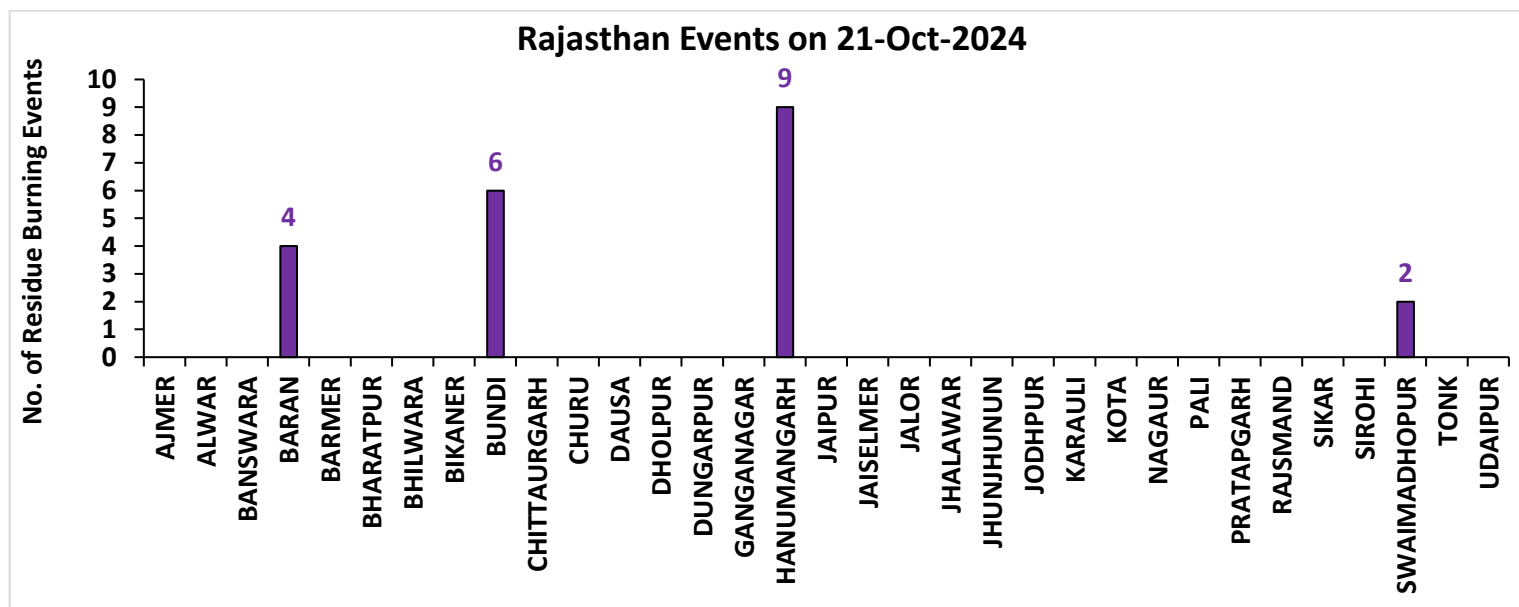
### Fire Intensity (W/m<sup>2</sup>)

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



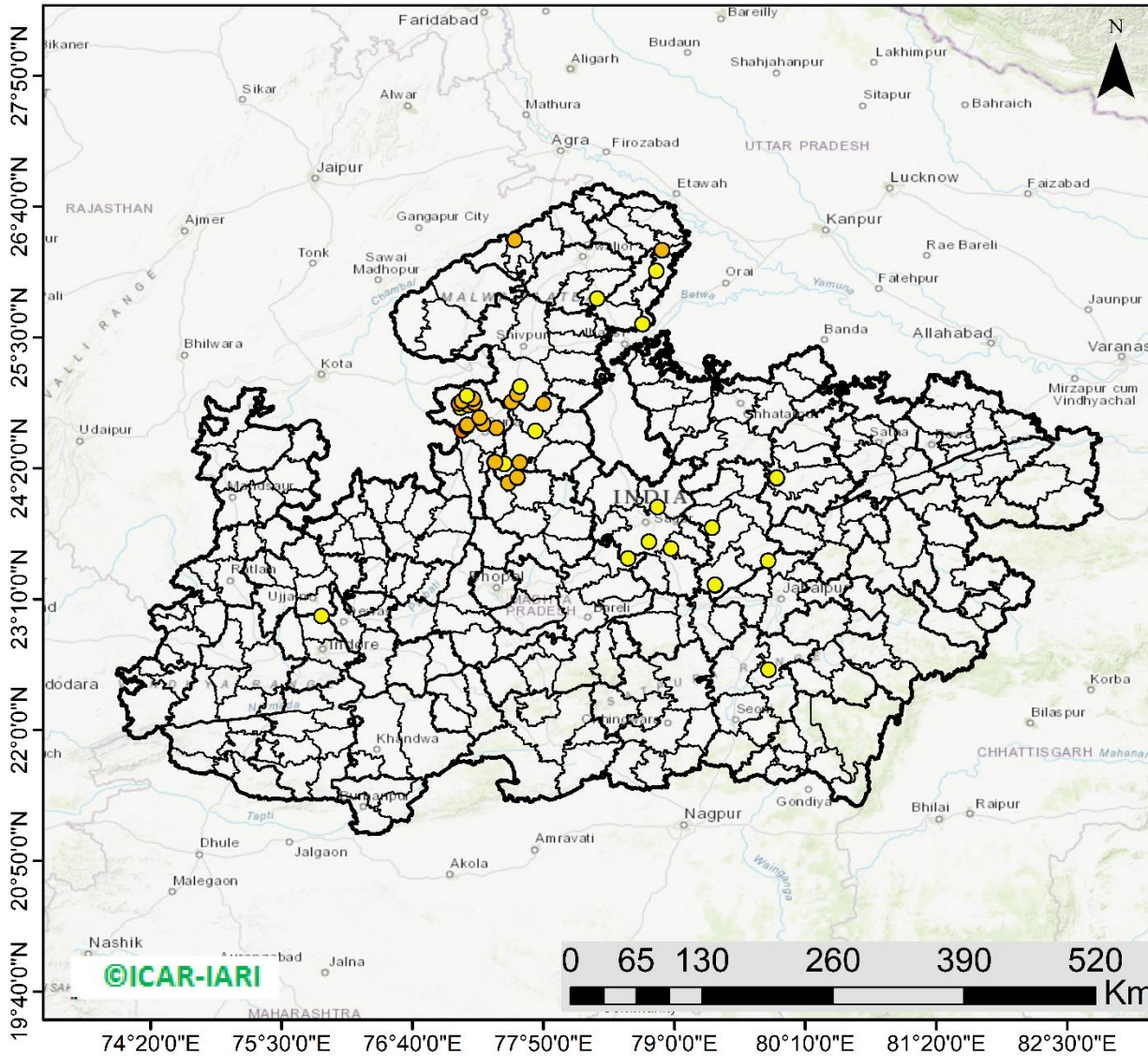
[http://103.111.37.126/icar\\_geoportal/](http://103.111.37.126/icar_geoportal/)

## District-wise cumulative number of residues burning events in Rajasthan (15Sep-21Oct-2024)



# Madhya Pradesh

## RICE RESIDUE BURNING IN MADHYA PRADESH



**53** burning events detected in MP on (21st Oct 2024)

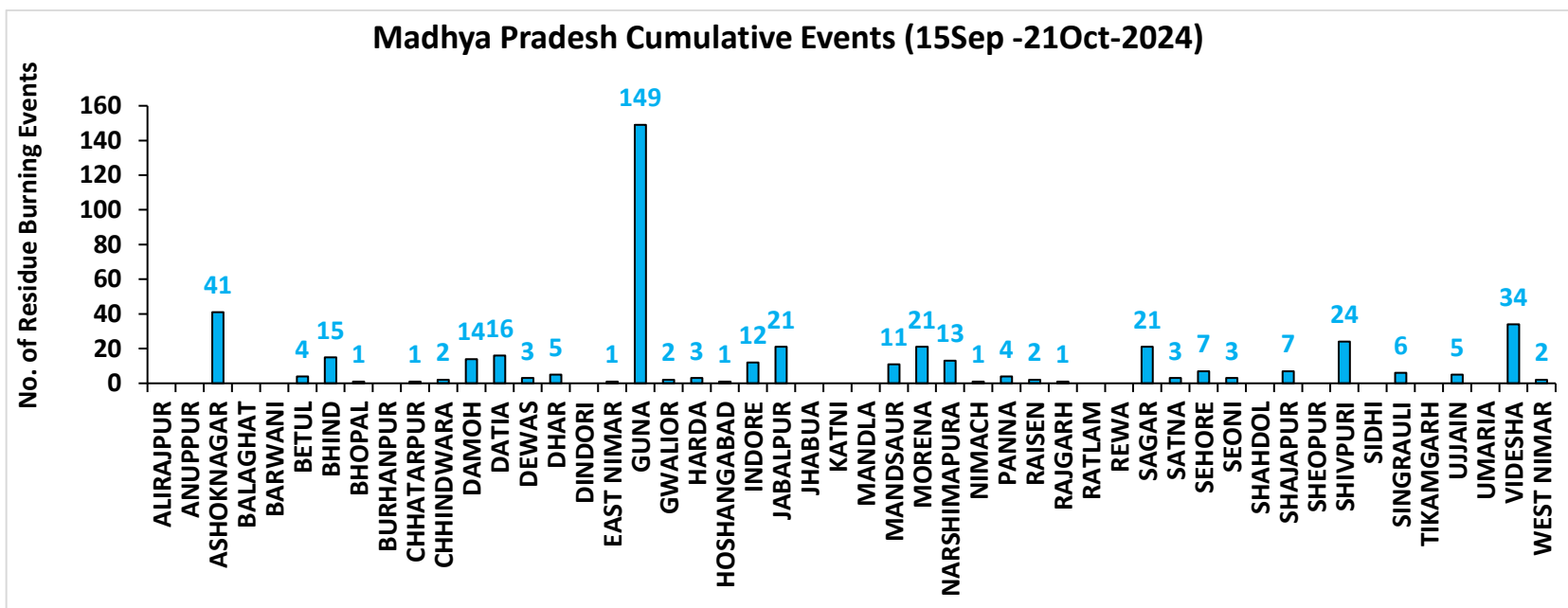
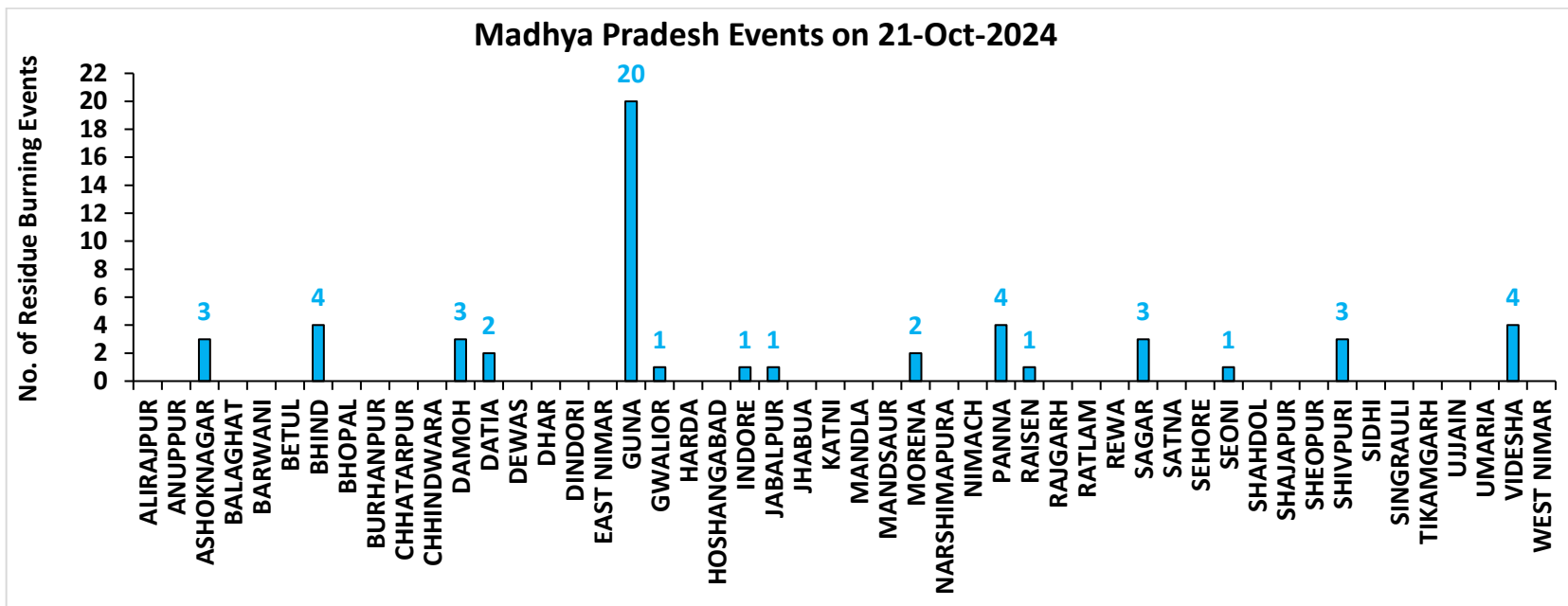
### Fire Intensity (W/m<sup>2</sup>)

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



[http://103.111.37.126/icar\\_geportal/](http://103.111.37.126/icar_geportal/)

## District-wise cumulative number of residues burning events in Madhya Pradesh (15Sep-21Oct-2024)



**District-wise cumulative number of residues burning events detected in 2020, 2021, 2022, 2023 and 2024**  
**(Period: 15 September-21 October)**

**(a) Punjab**

| District           | 15 Sep-21 Oct |             |             |             |             |
|--------------------|---------------|-------------|-------------|-------------|-------------|
|                    | 2020          | 2021        | 2022        | 2023        | 2024        |
| Amritsar           | 2185          | 804         | 834         | 699         | 438         |
| Barnala            | 36            | 38          | 15          | 8           | 9           |
| Bathinda           | 131           | 36          | 22          | 6           | 6           |
| Faridkot           | 549           | 182         | 24          | 23          | 4           |
| Fatehgarh Sahib    | 291           | 182         | 68          | 43          | 37          |
| Fazilka            | 164           | 69          | 25          | 12          | 12          |
| Firozpur           | 1278          | 253         | 142         | 97          | 110         |
| Gurdaspur          | 816           | 287         | 270         | 17          | 47          |
| Hoshiarpur         | 124           | 38          | 8           | 2           | 0           |
| Jalandhar          | 234           | 174         | 137         | 29          | 17          |
| Kapurthala         | 513           | 211         | 165         | 94          | 66          |
| Ludhiana           | 257           | 266         | 100         | 37          | 27          |
| Malerkotla         | 0             | 0           | 0           | 3           | 25          |
| Mansa              | 96            | 13          | 20          | 57          | 27          |
| Moga               | 167           | 91          | 63          | 35          | 10          |
| Muktsar            | 135           | 56          | 7           | 2           | 4           |
| Pathankot          | 4             | 0           | 0           | 0           | 0           |
| Patiala            | 889           | 375         | 194         | 200         | 188         |
| Rupnagar           | 48            | 29          | 9           | 1           | 4           |
| Sangrur            | 239           | 86          | 95          | 103         | 138         |
| SAS NAGAR (Mohali) | 58            | 40          | 16          | 61          | 27          |
| SBS Nagar          | 18            | 21          | 2           | 3           | 3           |
| Tarn Taran         | 2559          | 1076        | 898         | 232         | 311         |
| <b>Total</b>       | <b>10791</b>  | <b>4327</b> | <b>3114</b> | <b>1764</b> | <b>1510</b> |

**(b) Haryana**

| District      | 15 Sep-21 Oct |             |            |            |            |
|---------------|---------------|-------------|------------|------------|------------|
|               | 2020          | 2021        | 2022       | 2023       | 2024       |
| AMBALA        | 153           | 60          | 46         | 93         | 74         |
| BHIWANI       | 0             | 0           | 0          | 2          | 0          |
| CHARKHI DADRI | 0             | 0           | 0          | 0          | 0          |
| FARIDABAD     | 1             | 1           | 1          | 2          | 31         |
| FATEHABAD     | 73            | 77          | 67         | 105        | 40         |
| GURGAON       | 0             | 0           | 0          | 0          | 0          |
| HISAR         | 9             | 2           | 11         | 43         | 19         |
| JHAJJAR       | 1             | 0           | 0          | 4          | 2          |
| JIND          | 38            | 55          | 66         | 88         | 49         |
| KAITHAL       | 263           | 382         | 220        | 76         | 127        |
| KARNAL        | 363           | 451         | 126        | 48         | 69         |
| KURUKSHETRA   | 283           | 226         | 161        | 74         | 91         |
| MAHENDRAGARH  | 0             | 0           | 0          | 0          | 0          |
| MEWAT         | 0             | 0           | 0          | 0          | 0          |
| PALWAL        | 21            | 25          | 4          | 33         | 26         |
| PANCHKULA     | 0             | 0           | 0          | 1          | 14         |
| PANIPAT       | 11            | 19          | 11         | 16         | 27         |
| REWARI        | 0             | 0           | 0          | 0          | 0          |
| ROHTAK        | 1             | 0           | 0          | 5          | 6          |
| SIRSA         | 23            | 13          | 12         | 7          | 16         |
| SONIPAT       | 13            | 6           | 7          | 46         | 40         |
| YAMUNANAGAR   | 73            | 51          | 39         | 46         | 24         |
| <b>Total</b>  | <b>1326</b>   | <b>1368</b> | <b>771</b> | <b>689</b> | <b>655</b> |

(c) Uttar Pradesh

| District      | 15 Sep-21 Oct |      |      |      |      |                 |    |    |    |    |    |                  |     |     |     |     |     |
|---------------|---------------|------|------|------|------|-----------------|----|----|----|----|----|------------------|-----|-----|-----|-----|-----|
|               | 2020          | 2021 | 2022 | 2023 | 2024 | GAUTAMBUDHNAGAR | 2  | 7  | 2  | 7  | 22 | MUZAFARNAGAR     | 3   | 2   | 1   | 0   | 6   |
| AGRA          | 2             | 0    | 0    | 0    | 0    | GAZIPUR         | 0  | 0  | 0  | 0  | 0  | PILHIBHIT        | 8   | 108 | 28  | 44  | 21  |
| ALIGARH       | 41            | 21   | 6    | 70   | 138  | GHAZIABAD       | 3  | 2  | 1  | 9  | 9  | PRATAPGARH       | 1   | 0   | 0   | 0   | 0   |
| ALLAHABAD     | 0             | 1    | 0    | 1    | 1    | GONDA           | 0  | 0  | 0  | 0  | 0  | RAIBEARELI       | 1   | 0   | 0   | 0   | 1   |
| AMBEDKARNAGAR | 0             | 0    | 0    | 0    | 2    | GORAKHPUR       | 1  | 0  | 0  | 0  | 0  | RAMPUR           | 37  | 50  | 7   | 20  | 15  |
| AMETHI        | 0             | 1    | 4    | 1    | 0    | HAMIRPUR        | 1  | 0  | 0  | 0  | 0  | SAMBHAL          | 7   | 7   | 4   | 9   | 83  |
| AMROHA        | 1             | 0    | 0    | 2    | 4    | HAPUR           | 3  | 1  | 0  | 0  | 8  | SANTKABIRNAGAR   | 0   | 0   | 0   | 0   | 0   |
| AURAIYA       | 19            | 6    | 5    | 7    | 1    | HARDOI          | 13 | 6  | 2  | 4  | 12 | SANTRAVIDASNAGAR | 0   | 0   | 0   | 0   | 0   |
| AZAMGARH      | 0             | 0    | 0    | 0    | 0    | HATHRAS         | 0  | 0  | 0  | 2  | 12 | SHAHJAHANPUR     | 47  | 181 | 89  | 23  | 39  |
| BADAUN        | 1             | 6    | 0    | 2    | 18   | JALAUN          | 0  | 0  | 0  | 0  | 0  | SHAMLI           | 20  | 11  | 5   | 5   | 7   |
| BAGHPAT       | 3             | 1    | 1    | 1    | 3    | JAUNPUR         | 0  | 0  | 0  | 1  | 0  | SHARANPUR        | 35  | 20  | 2   | 0   | 5   |
| BAHRAICH      | 9             | 2    | 4    | 0    | 3    | JHANSI          | 12 | 6  | 0  | 10 | 6  | SHRAWASTI        | 7   | 0   | 0   | 0   | 0   |
| BALLIA        | 0             | 0    | 0    | 0    | 1    | KANNAUJ         | 3  | 1  | 0  | 1  | 4  | SIDDHARTHANAGAR  | 0   | 0   | 0   | 0   | 1   |
| BALRAMPUR     | 1             | 1    | 1    | 0    | 0    | KANPUR          | 4  | 7  | 10 | 3  | 1  | SITAPUR          | 14  | 9   | 0   | 2   | 42  |
| BANDA         | 0             | 0    | 0    | 0    | 0    | KANPUR DEHAT    | 11 | 1  | 0  | 6  | 1  | SONBHADRA        | 0   | 0   | 0   | 0   | 0   |
| BARABANKI     | 15            | 20   | 2    | 25   | 59   | KASGANJ         | 2  | 2  | 0  | 1  | 1  | SULTANPUR        | 0   | 0   | 0   | 0   | 0   |
| BAREILLY      | 19            | 15   | 2    | 11   | 11   | KAUSHAMBI       | 9  | 3  | 0  | 10 | 3  | UNNAO            | 5   | 1   | 0   | 3   | 4   |
| BASTI         | 3             | 1    | 0    | 0    | 1    | KHERI           | 46 | 54 | 12 | 5  | 11 | VARANASI         | 1   | 0   | 0   | 0   | 0   |
| BIJNOR        | 6             | 4    | 2    | 5    | 4    | KUSHINAGAR      | 0  | 0  | 0  | 0  | 0  | Total            | 554 | 631 | 204 | 423 | 723 |
| BULANDSAHAR   | 16            | 2    | 2    | 6    | 24   | LALITPUR        | 0  | 1  | 2  | 0  | 0  |                  |     |     |     |     |     |
| CHANDAULI     | 0             | 0    | 0    | 0    | 0    | LUCKNOW         | 2  | 0  | 0  | 1  | 4  |                  |     |     |     |     |     |
| CHITRAKOOT    | 0             | 1    | 1    | 0    | 0    | MAHARAJGANJ     | 0  | 0  | 0  | 1  | 1  |                  |     |     |     |     |     |
| DEORIA        | 0             | 0    | 0    | 2    | 0    | MAHOBA          | 3  | 0  | 0  | 0  | 0  |                  |     |     |     |     |     |
| ETAH          | 11            | 6    | 0    | 11   | 8    | MAINPURI        | 11 | 7  | 4  | 12 | 12 |                  |     |     |     |     |     |
| ETAWAH        | 5             | 7    | 0    | 18   | 7    | MATHURA         | 36 | 27 | 1  | 64 | 62 |                  |     |     |     |     |     |
| FAIZABAD      | 1             | 0    | 0    | 0    | 4    | MAU             | 0  | 0  | 0  | 0  | 0  |                  |     |     |     |     |     |
| FARRUKHABAD   | 0             | 0    | 0    | 0    | 0    | MEERUT          | 12 | 4  | 1  | 2  | 8  |                  |     |     |     |     |     |
| FATEHPUR      | 19            | 6    | 1    | 12   | 13   | MIRZAPUR        | 6  | 5  | 2  | 0  | 2  |                  |     |     |     |     |     |
| FIROZABAD     | 11            | 4    | 0    | 2    | 0    | MORADABAD       | 5  | 3  | 0  | 2  | 18 |                  |     |     |     |     |     |

**(d) Delhi**

| District         | 15 Sep-21 Oct |          |          |          |           |
|------------------|---------------|----------|----------|----------|-----------|
|                  | 2020          | 2021     | 2022     | 2023     | 2024      |
| CENTRAL          | 0             | 0        | 0        | 0        | 0         |
| EAST             | 0             | 0        | 0        | 0        | 0         |
| NEW DELHI        | 0             | 0        | 0        | 0        | 0         |
| NORTH            | 2             | 0        | 3        | 2        | 8         |
| NORTH EAST       | 0             | 0        | 0        | 0        | 0         |
| NORTH WEST DELHI | 3             | 0        | 0        | 0        | 3         |
| SHAHADRA         | 0             | 0        | 0        | 0        | 0         |
| SOUTH            | 1             | 0        | 0        | 0        | 0         |
| SOUTH EAST       | 0             | 0        | 0        | 0        | 0         |
| SOUTH WEST DELHI | 0             | 0        | 0        | 0        | 0         |
| WEST DELHI       | 0             | 0        | 0        | 0        | 0         |
| <b>Total</b>     | <b>6</b>      | <b>0</b> | <b>3</b> | <b>2</b> | <b>11</b> |

**(e) Rajasthan**

| District     | 15 Sep-21 Oct |           |           |            |            |
|--------------|---------------|-----------|-----------|------------|------------|
|              | 2020          | 2021      | 2022      | 2023       | 2024       |
| AJMER        | 1             | 0         | 0         | 0          | 0          |
| ALWAR        | 1             | 0         | 0         | 0          | 0          |
| BANSWARA     | 0             | 0         | 0         | 0          | 0          |
| BARAN        | 93            | 0         | 7         | 153        | 86         |
| BARMER       | 2             | 0         | 0         | 0          | 0          |
| BHARATPUR    | 2             | 0         | 0         | 2          | 4          |
| BHILWARA     | 2             | 0         | 0         | 0          | 0          |
| BIKANER      | 1             | 0         | 0         | 0          | 0          |
| BUNDI        | 12            | 0         | 22        | 51         | 37         |
| CHITTAURGARH | 0             | 2         | 2         | 8          | 1          |
| CHURU        | 0             | 0         | 0         | 0          | 0          |
| DAUSA        | 0             | 0         | 0         | 0          | 0          |
| DHOLPUR      | 0             | 0         | 0         | 0          | 0          |
| DUNGARPUR    | 0             | 0         | 0         | 0          | 0          |
| GANGANAGAR   | 3             | 0         | 1         | 9          | 17         |
| HANUMANGARH  | 188           | 37        | 11        | 52         | 98         |
| JAIPUR       | 2             | 0         | 0         | 0          | 0          |
| JAISELMER    | 2             | 0         | 0         | 0          | 0          |
| JALOR        | 0             | 0         | 0         | 0          | 0          |
| JHALAWAR     | 1             | 0         | 1         | 8          | 1          |
| JHUNJHUNUN   | 1             | 0         | 0         | 0          | 0          |
| JODHPUR      | 1             | 0         | 0         | 0          | 0          |
| KARALI       | 1             | 0         | 0         | 0          | 0          |
| KOTA         | 32            | 1         | 12        | 76         | 38         |
| NAGPUR       | 0             | 0         | 0         | 0          | 0          |
| PALI         | 1             | 0         | 0         | 0          | 0          |
| PRATAPGARH   | 4             | 0         | 0         | 0          | 0          |
| RAJSMAND     | 0             | 0         | 0         | 0          | 0          |
| SIKAR        | 0             | 0         | 0         | 0          | 0          |
| SIROHI       | 1             | 0         | 0         | 0          | 0          |
| SWAIMADHOPUR | 9             | 0         | 3         | 27         | 14         |
| TONK         | 2             | 0         | 0         | 0          | 0          |
| UDAIPUR      | 0             | 0         | 0         | 0          | 0          |
| <b>Total</b> | <b>362</b>    | <b>40</b> | <b>59</b> | <b>386</b> | <b>296</b> |



**(f) Madhya Pradesh**

| District     | 15 Sep-21 Oct |      |      |      |      |              |            |            |           |            |            |
|--------------|---------------|------|------|------|------|--------------|------------|------------|-----------|------------|------------|
|              | 2020          | 2021 | 2022 | 2023 | 2024 | PANNA        | 4          | 1          | 0         | 0          | 4          |
| ALIRAJPUR    | 0             | 0    | 0    | 0    | 0    | RAISEN       | 23         | 2          | 2         | 14         | 2          |
| ANUPPUR      | 0             | 0    | 0    | 0    | 0    | RAJGARH      | 7          | 1          | 3         | 9          | 1          |
| ASHOKNAGAR   | 24            | 1    | 3    | 43   | 41   | RATLAM       | 0          | 0          | 0         | 1          | 0          |
| BALAGHAT     | 0             | 0    | 0    | 0    | 0    | REWA         | 4          | 0          | 1         | 0          | 0          |
| BARWANI      | 0             | 0    | 0    | 0    | 0    | SAGAR        | 16         | 11         | 6         | 22         | 21         |
| BETUL        | 2             | 0    | 0    | 3    | 4    | SATNA        | 15         | 8          | 0         | 3          | 3          |
| BHIND        | 11            | 1    | 0    | 16   | 15   | SEHORE       | 12         | 3          | 13        | 16         | 7          |
| BHOPAL       | 7             | 5    | 2    | 10   | 1    | SEONI        | 40         | 33         | 5         | 19         | 3          |
| BURHANPUR    | 0             | 0    | 0    | 1    | 0    | SHAHDOL      | 0          | 0          | 0         | 0          | 0          |
| CHHATARPUR   | 4             | 0    | 0    | 3    | 1    | SHAJAPUR     | 5          | 0          | 0         | 7          | 7          |
| CHHINDWARA   | 5             | 7    | 0    | 5    | 2    | SHEOPUR      | 23         | 0          | 1         | 52         | 0          |
| DAMOH        | 21            | 7    | 6    | 16   | 14   | SHIVPURI     | 10         | 0          | 8         | 25         | 24         |
| DATIA        | 89            | 8    | 2    | 87   | 16   | SIDHI        | 0          | 0          | 0         | 0          | 0          |
| DEWAS        | 3             | 0    | 0    | 7    | 3    | SINGRAULI    | 0          | 0          | 0         | 0          | 6          |
| DHAR         | 22            | 0    | 0    | 23   | 5    | TIKAMGARH    | 1          | 0          | 0         | 2          | 0          |
| DINDORI      | 0             | 0    | 0    | 1    | 0    | UJJAIN       | 5          | 0          | 0         | 14         | 5          |
| EAST NIMAR   | 3             | 1    | 3    | 2    | 1    | UMARIA       | 0          | 0          | 0         | 0          | 0          |
| GUNA         | 17            | 2    | 6    | 161  | 149  | VIDESHA      | 65         | 8          | 7         | 33         | 34         |
| GWALIOR      | 54            | 0    | 2    | 25   | 2    | WEST NIMAR   | 7          | 0          | 0         | 7          | 2          |
| HARDA        | 8             | 10   | 1    | 16   | 3    | <b>Total</b> | <b>642</b> | <b>136</b> | <b>83</b> | <b>762</b> | <b>456</b> |
| HOSHANGABAD  | 79            | 9    | 4    | 44   | 1    |              |            |            |           |            |            |
| INDORE       | 2             | 0    | 0    | 12   | 12   |              |            |            |           |            |            |
| JABALPUR     | 14            | 4    | 3    | 22   | 21   |              |            |            |           |            |            |
| JHABUA       | 0             | 0    | 0    | 0    | 0    |              |            |            |           |            |            |
| KATNI        | 8             | 0    | 0    | 1    | 0    |              |            |            |           |            |            |
| MANDLA       | 1             | 1    | 0    | 1    | 0    |              |            |            |           |            |            |
| MANDSAUR     | 3             | 0    | 0    | 1    | 11   |              |            |            |           |            |            |
| MORENA       | 18            | 5    | 0    | 24   | 21   |              |            |            |           |            |            |
| NARSHIMAPURA | 10            | 8    | 5    | 14   | 13   |              |            |            |           |            |            |
| NIMACH       | 0             | 0    | 0    | 0    | 1    |              |            |            |           |            |            |

**State-wise and date-wise number of paddy residue burning events detected in 2020 ,2021 ,2022, 2023 and 2024**  
**(Period: 15 September-21 October)**

**Number of Paddy Residue Burning Events Detected**

| Date   | Punjab |      |      |      |      | Haryana |      |      |      |      | Uttar Pradesh |      |      |      |      |
|--------|--------|------|------|------|------|---------|------|------|------|------|---------------|------|------|------|------|
|        | 2020   | 2021 | 2022 | 2023 | 2024 | 2020    | 2021 | 2022 | 2023 | 2024 | 2020          | 2021 | 2022 | 2023 | 2024 |
| 15-Sep | 5      | 0    | 14   | 0    | 11   | 2       | 0    | 0    | 1    | 1    | 1             | 0    | 0    | 0    | 0    |
| 16-Sep | 0      | 2    | 0    | 6    | 0    | 1       | 0    | 0    | 1    | 0    | 0             | 0    | 0    | 2    | 0    |
| 17-Sep | 5      | 0    | 1    | 0    | 5    | 3       | 0    | 0    | 0    | 1    | 0             | 0    | 0    | 0    | 1    |
| 18-Sep | 17     | 9    | 7    | 0    | 2    | 0       | 0    | 1    | 0    | 0    | 0             | 1    | 0    | 0    | 0    |
| 19-Sep | 30     | 5    | 18   | 0    | 0    | 2       | 0    | 0    | 1    | 0    | 0             | 1    | 0    | 0    | 0    |
| 20-Sep | 67     | 8    | 10   | 0    | 13   | 6       | 0    | 0    | 2    | 1    | 2             | 0    | 0    | 0    | 0    |
| 21-Sep | 54     | 0    | 56   | 1    | 21   | 2       | 0    | 0    | 2    | 13   | 1             | 0    | 0    | 1    | 2    |
| 22-Sep | 34     | 0    | 30   | 0    | 11   | 1       | 0    | 0    | 2    | 18   | 1             | 0    | 0    | 0    | 0    |
| 23-Sep | 49     | 0    | 3    | 1    | 6    | 0       | 0    | 0    | 3    | 12   | 1             | 0    | 0    | 0    | 0    |
| 24-Sep | 78     | 5    | 0    | 0    | 12   | 0       | 0    | 0    | 0    | 6    | 1             | 1    | 0    | 1    | 0    |
| 25-Sep | 184    | 11   | 0    | 0    | 12   | 11      | 0    | 0    | 1    | 18   | 5             | 0    | 0    | 1    | 0    |
| 26-Sep | 190    | 19   | 0    | 3    | 5    | 5       | 0    | 0    | 2    | 5    | 8             | 0    | 0    | 0    | 0    |
| 27-Sep | 78     | 37   | 0    | 21   | 0    | 8       | 0    | 0    | 9    | 5    | 4             | 1    | 0    | 0    | 3    |
| 28-Sep | 55     | 28   | 0    | 33   | 0    | 6       | 1    | 0    | 8    | 0    | 1             | 6    | 0    | 4    | 0    |
| 29-Sep | 63     | 64   | 0    | 68   | 21   | 9       | 4    | 0    | 17   | 0    | 6             | 10   | 0    | 6    | 0    |
| 30-Sep | 116    | 27   | 8    | 81   | 10   | 22      | 2    | 0    | 26   | 1    | 13            | 13   | 10   | 18   | 0    |
| 01-Oct | 165    | 13   | 45   | 123  | 26   | 15      | 4    | 1    | 21   | 3    | 7             | 13   | 3    | 17   | 0    |
| 02-Oct | 141    | 0    | 83   | 119  | 16   | 30      | 2    | 7    | 24   | 20   | 12            | 0    | 36   | 7    | 9    |
| 03-Oct | 110    | 9    | 75   | 105  | 8    | 8       | 6    | 8    | 17   | 6    | 4             | 3    | 29   | 8    | 7    |
| 04-Oct | 162    | 23   | 65   | 95   | 9    | 29      | 2    | 7    | 29   | 9    | 8             | 0    | 2    | 9    | 0    |
| 05-Oct | 161    | 18   | 130  | 98   | 5    | 17      | 3    | 24   | 24   | 8    | 14            | 2    | 0    | 14   | 1    |
| 06-Oct | 171    | 42   | 85   | 91   | 3    | 30      | 0    | 26   | 19   | 23   | 12            | 1    | 0    | 18   | 17   |
| 07-Oct | 197    | 72   | 62   | 32   | 18   | 32      | 11   | 6    | 13   | 14   | 41            | 13   | 0    | 5    | 11   |
| 08-Oct | 95     | 108  | 19   | 92   | 20   | 29      | 27   | 0    | 55   | 13   | 25            | 11   | 0    | 27   | 16   |
| 09-Oct | 121    | 114  | 3    | 58   | 33   | 20      | 39   | 1    | 14   | 10   | 15            | 20   | 0    | 13   | 10   |
| 10-Oct | 232    | 150  | 4    | 10   | 123  | 33      | 95   | 2    | 28   | 38   | 9             | 54   | 0    | 34   | 56   |
| 11-Oct | 377    | 64   | 45   | 26   | 143  | 90      | 51   | 0    | 21   | 55   | 23            | 28   | 0    | 50   | 87   |
| 12-Oct | 388    | 97   | 104  | 13   | 177  | 69      | 51   | 4    | 5    | 98   | 46            | 23   | 0    | 5    | 102  |

|              |              |             |             |             |             |             |             |            |            |            |            |            |            |            |            |
|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 13-Oct       | 266          | 132         | 120         | 154         | 162         | 47          | 91          | 15         | 29         | 90         | 36         | 42         | 0          | 19         | 76         |
| 14-Oct       | 605          | 229         | 82          | 89          | 97          | 69          | 98          | 30         | 41         | 49         | 9          | 68         | 5          | 18         | 52         |
| 15-Oct       | 449          | 660         | 169         | 69          | 144         | 106         | 363         | 36         | 127        | 42         | 15         | 149        | 0          | 35         | 78         |
| 16-Oct       | 654          | 429         | 206         | 0           | 99          | 80          | 176         | 76         | 4          | 14         | 21         | 121        | 6          | 14         | 59         |
| 17-Oct       | 1172         | 14          | 403         | 1           | 77          | 143         | 0           | 86         | 0          | 28         | 38         | 39         | 7          | 0          | 23         |
| 18-Oct       | 938          | 57          | 342         | 18          | 59          | 166         | 1           | 134        | 8          | 26         | 76         | 0          | 30         | 2          | 47         |
| 19-Oct       | 1080         | 496         | 436         | 37          | 45          | 72          | 55          | 122        | 16         | 15         | 43         | 5          | 36         | 11         | 30         |
| 20-Oct       | 890          | 788         | 96          | 174         | 52          | 62          | 155         | 78         | 51         | 11         | 31         | 1          | 17         | 25         | 11         |
| 21-Oct       | 1392         | 597         | 393         | 146         | 65          | 101         | 131         | 107        | 68         | 2          | 25         | 5          | 23         | 59         | 25         |
| <b>Total</b> | <b>10791</b> | <b>4327</b> | <b>3114</b> | <b>1764</b> | <b>1510</b> | <b>1326</b> | <b>1368</b> | <b>771</b> | <b>689</b> | <b>655</b> | <b>554</b> | <b>631</b> | <b>204</b> | <b>423</b> | <b>723</b> |

### 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    |

|               |          |          |          |          |           |            |           |           |            |            |            |            |           |            |            |
|---------------|----------|----------|----------|----------|-----------|------------|-----------|-----------|------------|------------|------------|------------|-----------|------------|------------|
| <b>05-Oct</b> | 0        | 0        | 2        | 0        | 0         | 14         | 0         | 1         | 11         | 2          | 13         | 1          | 0         | 18         | 2          |
| <b>06-Oct</b> | 1        | 0        | 0        | 0        | 0         | 16         | 0         | 0         | 9          | 1          | 37         | 1          | 0         | 7          | 12         |
| <b>07-Oct</b> | 0        | 0        | 0        | 0        | 0         | 14         | 1         | 1         | 7          | 4          | 31         | 1          | 0         | 9          | 17         |
| <b>08-Oct</b> | 0        | 0        | 0        | 0        | 0         | 11         | 0         | 0         | 9          | 1          | 17         | 2          | 0         | 18         | 7          |
| <b>09-Oct</b> | 0        | 0        | 0        | 0        | 0         | 12         | 0         | 0         | 17         | 1          | 15         | 4          | 0         | 24         | 2          |
| <b>10-Oct</b> | 0        | 0        | 0        | 0        | 3         | 14         | 1         | 0         | 26         | 3          | 18         | 10         | 0         | 52         | 1          |
| <b>11-Oct</b> | 0        | 0        | 0        | 1        | 0         | 21         | 7         | 1         | 21         | 6          | 32         | 2          | 0         | 24         | 17         |
| <b>12-Oct</b> | 0        | 0        | 0        | 0        | 2         | 24         | 1         | 2         | 1          | 13         | 44         | 1          | 1         | 1          | 5          |
| <b>13-Oct</b> | 0        | 0        | 0        | 0        | 1         | 7          | 5         | 2         | 28         | 10         | 21         | 2          | 7         | 32         | 5          |
| <b>14-Oct</b> | 0        | 0        | 0        | 0        | 1         | 16         | 1         | 1         | 15         | 20         | 15         | 11         | 1         | 26         | 7          |
| <b>15-Oct</b> | 0        | 0        | 0        | 0        | 0         | 9          | 8         | 2         | 34         | 23         | 8          | 27         | 2         | 66         | 11         |
| <b>16-Oct</b> | 1        | 0        | 0        | 0        | 1         | 12         | 2         | 4         | 18         | 100        | 23         | 13         | 2         | 51         | 112        |
| <b>17-Oct</b> | 0        | 0        | 0        | 0        | 0         | 26         | 0         | 4         | 12         | 16         | 63         | 1          | 11        | 31         | 51         |
| <b>18-Oct</b> | 0        | 0        | 1        | 0        | 3         | 37         | 2         | 12        | 11         | 30         | 88         | 0          | 15        | 13         | 71         |
| <b>19-Oct</b> | 0        | 0        | 0        | 0        | 0         | 27         | 5         | 12        | 31         | 25         | 49         | 1          | 12        | 65         | 46         |
| <b>20-Oct</b> | 0        | 0        | 0        | 0        | 0         | 26         | 4         | 4         | 57         | 11         | 9          | 21         | 7         | 131        | 24         |
| <b>21-Oct</b> | 2        | 0        | 0        | 0        | 0         | 32         | 2         | 6         | 34         | 21         | 112        | 30         | 18        | 147        | 53         |
| <b>Total</b>  | <b>6</b> | <b>0</b> | <b>3</b> | <b>2</b> | <b>11</b> | <b>362</b> | <b>40</b> | <b>59</b> | <b>386</b> | <b>296</b> | <b>642</b> | <b>136</b> | <b>83</b> | <b>762</b> | <b>456</b> |

### Details of residue burning events in Punjab on 21-Oct-2024

| S. No. | District        | Tehsil / Block  | Satellite | Latitude | Longitude | ACQ_TIME | Day / Night | Fire Power (W/m2) |
|--------|-----------------|-----------------|-----------|----------|-----------|----------|-------------|-------------------|
| 1      | AMRITSAR        | AJNALA          | S-NPP     | 31.98631 | 74.88005  | 13:59:16 | D           | 2.40              |
| 2      | AMRITSAR        | CHOGAWAN        | S-NPP     | 31.68314 | 74.75359  | 13:59:16 | D           | 1.70              |
| 3      | AMRITSAR        | TARSIKKA        | AQUA      | 31.69100 | 75.22600  | 14:02:43 | D           | 10.10             |
| 4      | AMRITSAR        | VERKA           | S-NPP     | 31.67076 | 74.95833  | 13:59:16 | D           | 3.10              |
| 5      | BARNALA         | MAHAL KALAN     | S-NPP     | 30.57002 | 75.49136  | 13:59:16 | D           | 3.80              |
| 6      | FARIDKOT        | JAITON          | S-NPP     | 30.43074 | 74.91045  | 13:59:16 | D           | 9.70              |
| 7      | FARIDKOT        | JAITON          | S-NPP     | 30.43122 | 74.91540  | 13:59:16 | D           | 9.70              |
| 8      | FATEHGARH SAHIB | KHERA           | AQUA      | 30.61900 | 76.43200  | 14:02:43 | D           | 10.40             |
| 9      | FATEHGARH SAHIB | KHERA           | AQUA      | 30.62400 | 76.42400  | 14:02:43 | D           | 12.20             |
| 10     | FATEHGARH SAHIB | SIRHIND         | AQUA      | 30.49200 | 76.48400  | 14:02:43 | D           | 11.80             |
| 11     | FATEHGARH SAHIB | SIRHIND         | S-NPP     | 30.49255 | 76.46596  | 13:59:16 | D           | 6.30              |
| 12     | FATEHGARH SAHIB | SIRHIND         | S-NPP     | 30.49467 | 76.46706  | 13:59:16 | D           | 6.30              |
| 13     | FAZILKA         | KHUIAN SARWAR   | S-NPP     | 30.25538 | 73.99711  | 13:59:16 | D           | 3.30              |
| 14     | FIROZPUR        | FIROZPUR        | S-NPP     | 30.93302 | 74.52111  | 13:59:16 | D           | 8.10              |
| 15     | FIROZPUR        | FIROZPUR        | S-NPP     | 30.93590 | 74.50622  | 13:59:16 | D           | 2.60              |
| 16     | FIROZPUR        | FIROZPUR        | S-NPP     | 30.93736 | 74.52055  | 13:59:16 | D           | 8.10              |
| 17     | FIROZPUR        | FIROZPUR        | S-NPP     | 31.03755 | 74.72103  | 13:59:16 | D           | 5.50              |
| 18     | FIROZPUR        | GHALL KHURD     | S-NPP     | 30.89995 | 74.81682  | 13:59:16 | D           | 2.70              |
| 19     | FIROZPUR        | GHALL KHURD     | S-NPP     | 30.92061 | 74.79912  | 13:59:16 | D           | 4.90              |
| 20     | FIROZPUR        | GURUHAR SAHAI   | S-NPP     | 30.74336 | 74.30114  | 13:59:16 | D           | 4.60              |
| 21     | FIROZPUR        | GURUHAR SAHAI   | S-NPP     | 30.76279 | 74.32198  | 13:59:16 | D           | 4.70              |
| 22     | FIROZPUR        | MAKHU           | S-NPP     | 31.14525 | 75.06780  | 13:59:16 | D           | 6.90              |
| 23     | FIROZPUR        | MAMDOT          | S-NPP     | 30.76278 | 74.49771  | 13:59:16 | D           | 2.90              |
| 24     | FIROZPUR        | MAMDOT          | S-NPP     | 30.77838 | 74.39064  | 13:59:16 | D           | 5.90              |
| 25     | FIROZPUR        | MAMDOT          | S-NPP     | 30.81182 | 74.50571  | 13:59:16 | D           | 3.30              |
| 26     | FIROZPUR        | MAMDOT          | S-NPP     | 30.88749 | 74.37355  | 13:59:16 | D           | 4.40              |
| 27     | FIROZPUR        | MAMDOT          | S-NPP     | 30.93538 | 74.45805  | 13:59:16 | D           | 7.20              |
| 28     | JALANDHAR       | NUR MAHAL       | AQUA      | 31.01600 | 75.73300  | 14:02:43 | D           | 12.70             |
| 29     | KAPURTHALA      | SULTANPUR LODHI | S-NPP     | 31.26159 | 75.12483  | 13:59:16 | D           | 5.30              |
| 30     | KAPURTHALA      | SULTANPUR LODHI | S-NPP     | 31.27810 | 75.15475  | 13:59:16 | D           | 3.90              |
| 31     | MANSA           | BHIKHI          | S-NPP     | 30.11738 | 75.63397  | 13:59:16 | D           | 13.80             |

|    |            |                  |       |          |          |          |   |       |
|----|------------|------------------|-------|----------|----------|----------|---|-------|
| 32 | MANSA      | BHIKHI           | S-NPP | 30.12091 | 75.63155 | 13:59:16 | D | 25.70 |
| 33 | PATIALA    | BHUNARHERI       | S-NPP | 30.21909 | 76.52693 | 13:59:16 | D | 2.50  |
| 34 | PATIALA    | NABHA            | S-NPP | 30.39400 | 76.26459 | 13:59:16 | D | 4.00  |
| 35 | PATIALA    | PATIALA          | S-NPP | 30.27798 | 76.20502 | 13:59:16 | D | 14.60 |
| 36 | PATIALA    | PATIALA          | S-NPP | 30.27856 | 76.20866 | 13:59:16 | D | 9.60  |
| 37 | PATIALA    | PATRAN           | S-NPP | 29.86079 | 76.23004 | 13:59:16 | D | 3.40  |
| 38 | PATIALA    | PATRAN           | S-NPP | 29.86415 | 76.15955 | 13:59:16 | D | 2.20  |
| 39 | PATIALA    | PATRAN           | S-NPP | 29.96921 | 76.09844 | 13:59:16 | D | 3.40  |
| 40 | RUPNAGAR   | MORINDA          | AQUA  | 30.80700 | 76.54700 | 03:11:07 | N | 7.30  |
| 41 | RUPNAGAR   | MORINDA          | S-NPP | 30.81059 | 76.53957 | 01:09:42 | N | 2.00  |
| 42 | SANGRUR    | ANDANA           | AQUA  | 29.75100 | 75.88600 | 14:02:43 | D | 15.00 |
| 43 | SANGRUR    | BHAWANIGARH      | AQUA  | 30.25100 | 76.06500 | 14:02:43 | D | 12.30 |
| 44 | SANGRUR    | BHAWANIGARH      | S-NPP | 30.25170 | 76.06464 | 13:59:16 | D | 8.90  |
| 45 | SANGRUR    | BHAWANIGARH      | S-NPP | 30.25489 | 76.06074 | 13:59:16 | D | 7.10  |
| 46 | SANGRUR    | BHAWANIGARH      | S-NPP | 30.25543 | 76.06650 | 13:59:16 | D | 13.70 |
| 47 | SANGRUR    | BHAWANIGARH      | S-NPP | 30.25643 | 76.06408 | 13:59:16 | D | 8.90  |
| 48 | SANGRUR    | DIRBA            | S-NPP | 30.10497 | 76.10298 | 13:59:16 | D | 3.80  |
| 49 | SANGRUR    | SUNAM            | S-NPP | 30.15395 | 75.73762 | 13:59:16 | D | 11.30 |
| 50 | SAS NAGAR  | KHARAR           | S-NPP | 30.72898 | 76.58795 | 13:59:16 | D | 6.90  |
| 51 | TARN TARAN | GANDIWIND TATLA  | AQUA  | 31.47400 | 74.65100 | 14:02:43 | D | 10.40 |
| 52 | TARN TARAN | GANDIWIND TATLA  | S-NPP | 31.47377 | 74.64888 | 13:59:16 | D | 8.00  |
| 53 | TARN TARAN | GANDIWIND TATLA  | S-NPP | 31.47426 | 74.65385 | 13:59:16 | D | 8.00  |
| 54 | TARN TARAN | GANDIWIND TATLA  | S-NPP | 31.48602 | 74.68262 | 13:59:16 | D | 4.00  |
| 55 | TARN TARAN | GANDIWIND TATLA  | S-NPP | 31.53003 | 74.83234 | 13:59:16 | D | 0.80  |
| 56 | TARN TARAN | KHADUR SAHIB     | AQUA  | 31.37500 | 75.10200 | 14:02:43 | D | 20.90 |
| 57 | TARN TARAN | KHADUR SAHIB     | S-NPP | 31.37507 | 75.10761 | 13:59:16 | D | 4.60  |
| 58 | TARN TARAN | KHADUR SAHIB     | S-NPP | 31.38126 | 75.02734 | 13:59:16 | D | 9.00  |
| 59 | TARN TARAN | KHADUR SAHIB     | S-NPP | 31.47021 | 75.03642 | 13:59:16 | D | 7.40  |
| 60 | TARN TARAN | NAUSHERA PANNUAN | S-NPP | 31.40927 | 75.03442 | 13:59:16 | D | 3.10  |
| 61 | TARN TARAN | TARN TARAN       | S-NPP | 31.37304 | 74.84612 | 13:59:16 | D | 9.00  |
| 62 | TARN TARAN | TARN TARAN       | S-NPP | 31.39628 | 74.80727 | 13:59:16 | D | 6.40  |
| 63 | TARN TARAN | TARN TARAN       | S-NPP | 31.39972 | 74.79659 | 13:59:16 | D | 3.60  |
| 64 | TARN TARAN | TARN TARAN       | S-NPP | 31.40262 | 74.79501 | 13:59:16 | D | 2.20  |
| 65 | TARN TARAN | VALTOHA          | S-NPP | 31.16797 | 74.65085 | 13:59:16 | D | 7.50  |

### Details of residue burning events in Haryana on 21-Oct-2024

| S. No. | District  | Tehsil / Block | Satellite | Latitude | Longitude | ACQ_TIME | Day / Night | Fire Power (W/m <sup>2</sup> ) |
|--------|-----------|----------------|-----------|----------|-----------|----------|-------------|--------------------------------|
| 1      | FARIDABAD | FARIDABAD      | S-NPP     | 28.34510 | 77.23311  | 01:09:42 | N           | 0.50                           |
| 2      | JHAJJAR   | JHAJJAR        | S-NPP     | 28.53118 | 76.71329  | 13:59:16 | D           | 4.10                           |

### Details of residue burning events in Uttar Pradesh on 21-Oct-2024

| S. No. | District     | Tehsil / Block | Satellite | Latitude | Longitude | ACQ_TIME | Day / Night | Fire Power (W/m <sup>2</sup> ) |
|--------|--------------|----------------|-----------|----------|-----------|----------|-------------|--------------------------------|
| 1      | ALIGARH      | KHAIR          | S-NPP     | 27.98902 | 77.54352  | 13:59:16 | D           | 6.80                           |
| 2      | ALIGARH      | KOL            | S-NPP     | 28.04736 | 78.11027  | 13:59:16 | D           | 1.00                           |
| 3      | ETAWAH       | SAIFAI         | S-NPP     | 26.94678 | 79.03458  | 13:59:16 | D           | 3.40                           |
| 4      | FATEHPUR     | FATEHPUR       | S-NPP     | 25.84593 | 80.66352  | 13:59:16 | D           | 3.70                           |
| 5      | GHAZIABAD    | GHAZIABAD      | S-NPP     | 28.71706 | 77.52248  | 13:59:16 | D           | 3.50                           |
| 6      | HATHRAS      | SIKANDRA RAO   | S-NPP     | 27.58961 | 78.31293  | 13:59:16 | D           | 1.50                           |
| 7      | HATHRAS      | SIKANDRA RAO   | S-NPP     | 27.59376 | 78.31082  | 13:59:16 | D           | 3.10                           |
| 8      | HATHRAS      | SIKANDRA RAO   | S-NPP     | 27.59488 | 78.31239  | 13:59:16 | D           | 1.80                           |
| 9      | JHANSI       | JHANSI         | AQUA      | 25.20600 | 78.42800  | 14:02:43 | D           | 25.40                          |
| 10     | JHANSI       | JHANSI         | AQUA      | 25.20900 | 78.43400  | 14:02:43 | D           | 11.00                          |
| 11     | JHANSI       | JHANSI         | AQUA      | 25.20900 | 78.44100  | 14:02:43 | D           | 12.00                          |
| 12     | JHANSI       | MOTH           | S-NPP     | 25.85796 | 78.87581  | 13:59:16 | D           | 4.60                           |
| 13     | MAINPURI     | BHOGAON        | S-NPP     | 27.06540 | 79.16868  | 02:49:17 | N           | 0.60                           |
| 14     | MATHURA      | CHHATA         | AQUA      | 27.74000 | 77.52100  | 14:02:43 | D           | 12.10                          |
| 15     | MATHURA      | CHHATA         | AQUA      | 27.74200 | 77.51200  | 14:02:43 | D           | 12.70                          |
| 16     | MATHURA      | CHHATA         | S-NPP     | 27.73982 | 77.51951  | 13:59:16 | D           | 6.70                           |
| 17     | MATHURA      | CHHATA         | S-NPP     | 27.87112 | 77.46004  | 13:59:16 | D           | 10.70                          |
| 18     | MATHURA      | MAT            | S-NPP     | 27.80596 | 77.63609  | 13:59:16 | D           | 1.60                           |
| 19     | MEERUT       | MAWANA         | AQUA      | 28.92900 | 78.04700  | 14:02:43 | D           | 6.50                           |
| 20     | MUZAFARNAGAR | JANSATH        | S-NPP     | 29.27684 | 78.06036  | 13:59:16 | D           | 1.30                           |
| 21     | RAMPUR       | BILASPUR       | AQUA      | 28.92200 | 79.34500  | 14:02:43 | D           | 7.20                           |
| 22     | RAMPUR       | BILASPUR       | S-NPP     | 28.92091 | 79.34301  | 13:59:16 | D           | 3.30                           |
| 23     | SHAMLI       | SHAMLI         | AQUA      | 29.62700 | 77.42900  | 14:02:43 | D           | 12.00                          |
| 24     | SHAMLI       | SHAMLI         | S-NPP     | 29.62893 | 77.43169  | 13:59:16 | D           | 3.50                           |

|    |           |           |      |          |          |          |   |       |
|----|-----------|-----------|------|----------|----------|----------|---|-------|
| 25 | SHARANPUR | SHARANPUR | AQUA | 30.06900 | 77.65400 | 14:02:43 | D | 18.90 |
|----|-----------|-----------|------|----------|----------|----------|---|-------|

**Details of residue burning events in Rajasthan on 21-Oct-2024**

| S. No. | District     | Tehsil / Block | Satellite | Latitude | Longitude | ACQ_TIME | Day / Night | Fire Power (W/m2) |
|--------|--------------|----------------|-----------|----------|-----------|----------|-------------|-------------------|
| 1      | BARAN        | CHHABRA        | S-NPP     | 24.61538 | 76.87762  | 13:59:16 | D           | 11.40             |
| 2      | BARAN        | CHHABRA        | S-NPP     | 24.62467 | 76.87654  | 13:59:16 | D           | 6.40              |
| 3      | BARAN        | SHAHBAD        | S-NPP     | 25.07595 | 76.94759  | 13:59:16 | D           | 6.10              |
| 4      | BARAN        | SHAHBAD        | S-NPP     | 25.22523 | 76.99829  | 13:59:16 | D           | 4.40              |
| 5      | BUNDI        | BUNDI          | S-NPP     | 25.33695 | 75.87138  | 13:59:16 | D           | 4.10              |
| 6      | BUNDI        | KESHORAIPATAN  | S-NPP     | 25.32785 | 75.91051  | 13:59:16 | D           | 2.00              |
| 7      | BUNDI        | KESHORAIPATAN  | S-NPP     | 25.33710 | 75.87419  | 13:59:16 | D           | 4.30              |
| 8      | BUNDI        | KESHORAIPATAN  | S-NPP     | 25.37733 | 76.04682  | 13:59:16 | D           | 3.90              |
| 9      | BUNDI        | KESHORAIPATAN  | S-NPP     | 25.44220 | 76.06313  | 13:59:16 | D           | 7.40              |
| 10     | BUNDI        | KESHORAIPATAN  | S-NPP     | 25.44666 | 76.06257  | 13:59:16 | D           | 3.60              |
| 11     | HANUMANGARH  | HANUMANGARH    | AQUA      | 29.55100 | 74.43000  | 14:02:43 | D           | 15.00             |
| 12     | HANUMANGARH  | HANUMANGARH    | S-NPP     | 29.55096 | 74.43527  | 13:59:16 | D           | 5.10              |
| 13     | HANUMANGARH  | PILIBANGA      | S-NPP     | 29.52232 | 74.09221  | 13:59:16 | D           | 5.70              |
| 14     | HANUMANGARH  | PILIBANGA      | S-NPP     | 29.52294 | 74.08822  | 13:59:16 | D           | 3.00              |
| 15     | HANUMANGARH  | PILIBANGA      | S-NPP     | 29.52338 | 74.09251  | 13:59:16 | D           | 3.00              |
| 16     | HANUMANGARH  | SANGHRIYA      | S-NPP     | 29.63804 | 74.41534  | 13:59:16 | D           | 2.20              |
| 17     | HANUMANGARH  | TIBI           | S-NPP     | 29.41136 | 74.49249  | 13:59:16 | D           | 4.80              |
| 18     | HANUMANGARH  | TIBI           | S-NPP     | 29.67539 | 74.44234  | 13:59:16 | D           | 7.20              |
| 19     | HANUMANGARH  | TIBI           | S-NPP     | 29.67853 | 74.44384  | 13:59:16 | D           | 11.00             |
| 20     | SWAIMADHOPUR | KHANDAR        | S-NPP     | 25.95629 | 76.61143  | 13:59:16 | D           | 5.10              |
| 21     | SWAIMADHOPUR | KHANDAR        | S-NPP     | 25.95796 | 76.60757  | 13:59:16 | D           | 4.10              |



### Details of residue burning events in Madhya Pradesh on 21-Oct-2024

| S. No. | District   | Tehsil / Block | Satellite | Latitude | Longitude | ACQ_TIME | Day / Night | Fire Power (W/m2) |
|--------|------------|----------------|-----------|----------|-----------|----------|-------------|-------------------|
| 1      | ASHOKNAGAR | ISAGARH        | S-NPP     | 24.66512 | 77.76331  | 13:59:16 | D           | 4.00              |
| 2      | ASHOKNAGAR | ISAGARH        | S-NPP     | 24.90952 | 77.83592  | 13:59:16 | D           | 6.10              |
| 3      | ASHOKNAGAR | ISAGARH        | S-NPP     | 24.91031 | 77.83404  | 13:59:16 | D           | 8.90              |
| 4      | BHIND      | LAHAR          | S-NPP     | 26.09289 | 78.83952  | 13:59:16 | D           | 3.20              |
| 5      | BHIND      | MAJHGAWAN      | AQUA      | 26.27700 | 78.88800  | 14:02:43 | D           | 9.90              |
| 6      | BHIND      | MAJHGAWAN      | S-NPP     | 26.27537 | 78.88950  | 13:59:16 | D           | 3.10              |
| 7      | BHIND      | MAJHGAWAN      | S-NPP     | 26.27835 | 78.88955  | 13:59:16 | D           | 5.50              |
| 8      | DAMOH      | PATHARIA       | S-NPP     | 23.80352 | 79.33775  | 13:59:16 | D           | 1.90              |
| 9      | DAMOH      | TENDUKHERA     | S-NPP     | 23.28883 | 79.36671  | 13:59:16 | D           | 4.40              |
| 10     | DAMOH      | TENDUKHERA     | S-NPP     | 23.29387 | 79.36256  | 13:59:16 | D           | 3.50              |
| 11     | DATIA      | BHANDER        | S-NPP     | 25.61767 | 78.71855  | 13:59:16 | D           | 2.20              |
| 12     | DATIA      | BHANDER        | S-NPP     | 25.61851 | 78.71740  | 13:59:16 | D           | 1.60              |
| 13     | GUNA       | ARON           | AQUA      | 24.39000 | 77.39900  | 14:02:43 | D           | 22.80             |
| 14     | GUNA       | ARON           | S-NPP     | 24.37138 | 77.48653  | 13:59:16 | D           | 3.40              |
| 15     | GUNA       | ARON           | S-NPP     | 24.38487 | 77.62436  | 13:59:16 | D           | 5.90              |
| 16     | GUNA       | ARON           | S-NPP     | 24.38749 | 77.40408  | 13:59:16 | D           | 9.00              |
| 17     | GUNA       | GUNA           | S-NPP     | 24.67184 | 77.10870  | 13:59:16 | D           | 10.20             |
| 18     | GUNA       | GUNA           | S-NPP     | 24.69278 | 77.41524  | 13:59:16 | D           | 8.90              |
| 19     | GUNA       | GUNA           | S-NPP     | 24.70464 | 77.14894  | 13:59:16 | D           | 6.00              |
| 20     | GUNA       | GUNA           | S-NPP     | 24.71941 | 77.15271  | 13:59:16 | D           | 6.80              |
| 21     | GUNA       | GUNA           | S-NPP     | 24.72024 | 77.15518  | 13:59:16 | D           | 9.10              |
| 22     | GUNA       | GUNA           | S-NPP     | 24.72943 | 77.29688  | 13:59:16 | D           | 5.40              |
| 23     | GUNA       | GUNA           | S-NPP     | 24.78389 | 77.26505  | 13:59:16 | D           | 5.20              |
| 24     | GUNA       | GUNA           | S-NPP     | 24.87350 | 77.09578  | 13:59:16 | D           | 4.60              |
| 25     | GUNA       | GUNA           | S-NPP     | 24.89487 | 77.16559  | 13:59:16 | D           | 9.30              |
| 26     | GUNA       | GUNA           | S-NPP     | 24.91021 | 77.08043  | 13:59:16 | D           | 10.40             |
| 27     | GUNA       | GUNA           | S-NPP     | 24.91471 | 77.21917  | 13:59:16 | D           | 5.50              |
| 28     | GUNA       | GUNA           | S-NPP     | 24.93251 | 77.11102  | 13:59:16 | D           | 7.40              |
| 29     | GUNA       | GUNA           | S-NPP     | 24.93282 | 77.10811  | 13:59:16 | D           | 8.30              |

|    |          |           |       |          |          |          |   |       |
|----|----------|-----------|-------|----------|----------|----------|---|-------|
| 30 | GUNA     | GUNA      | S-NPP | 24.95172 | 77.20380 | 13:59:16 | D | 5.80  |
| 31 | GUNA     | GUNA      | S-NPP | 24.95191 | 77.20654 | 13:59:16 | D | 5.50  |
| 32 | GUNA     | GUNA      | S-NPP | 24.98036 | 77.15273 | 13:59:16 | D | 3.70  |
| 33 | GWALIOR  | DABRA     | S-NPP | 25.84661 | 78.31293 | 13:59:16 | D | 1.60  |
| 34 | INDORE   | SANWER    | S-NPP | 23.01508 | 75.85686 | 13:59:16 | D | 1.40  |
| 35 | JABALPUR | MAJHOULI  | S-NPP | 23.50816 | 79.83586 | 13:59:16 | D | 3.20  |
| 36 | MORENA   | JORA      | S-NPP | 26.36847 | 77.57442 | 13:59:16 | D | 8.10  |
| 37 | MORENA   | JORA      | S-NPP | 26.36973 | 77.57849 | 13:59:16 | D | 7.50  |
| 38 | PANNA    | PAWAI     | AQUA  | 24.25100 | 79.91200 | 14:02:43 | D | 9.40  |
| 39 | PANNA    | PAWAI     | S-NPP | 24.24279 | 79.91426 | 13:59:16 | D | 5.00  |
| 40 | PANNA    | PAWAI     | S-NPP | 24.24641 | 79.91404 | 13:59:16 | D | 10.00 |
| 41 | PANNA    | PAWAI     | S-NPP | 24.24841 | 79.91377 | 13:59:16 | D | 5.00  |
| 42 | RAISEN   | BAGAMGANJ | S-NPP | 23.52864 | 78.58769 | 13:59:16 | D | 2.20  |
| 43 | SAGAR    | BANDA     | S-NPP | 23.98675 | 78.84966 | 13:59:16 | D | 2.10  |
| 44 | SAGAR    | REHLI     | S-NPP | 23.61739 | 78.96999 | 13:59:16 | D | 2.60  |
| 45 | SAGAR    | SAGAR     | S-NPP | 23.67795 | 78.77422 | 13:59:16 | D | 3.20  |
| 46 | SEONI    | GHANSAUR  | S-NPP | 22.53702 | 79.83932 | 13:59:16 | D | 1.80  |
| 47 | SHIVPURI | KOLARAS   | S-NPP | 24.92293 | 77.54829 | 13:59:16 | D | 6.30  |
| 48 | SHIVPURI | KOLARAS   | S-NPP | 24.99225 | 77.60040 | 13:59:16 | D | 5.60  |
| 49 | SHIVPURI | KOLARAS   | S-NPP | 25.06108 | 77.62618 | 13:59:16 | D | 4.90  |
| 50 | VIDESHA  | SIRANJ    | S-NPP | 24.20146 | 77.52245 | 13:59:16 | D | 7.10  |
| 51 | VIDESHA  | SIRANJ    | S-NPP | 24.24737 | 77.60182 | 13:59:16 | D | 5.90  |
| 52 | VIDESHA  | SIRANJ    | S-NPP | 24.24890 | 77.60381 | 13:59:16 | D | 9.20  |
| 53 | VIDESHA  | SIRANJ    | S-NPP | 24.25222 | 77.60124 | 13:59:16 | D | 6.20  |

**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.     | <del>JPSS 1 (NOAA 20)</del> | <del>VIIRS</del> | <del>375</del>     | <del>Both</del>    |
| 3.     | <del>JPSS 2 (NOAA 21)</del> | <del>VIIRS</del> | <del>375</del>     | <del>Both</del>    |
| 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](#)

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