

GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

LOK SABHA
UNSTARRED QUESTION NO. 2213
TO BE ANSWERED ON 05.08.2024

Forest Fires Alert System

2213. SMT. KANIMOZHI KARUNANIDHI:

Will the Minister of ENVIRONMENT, FOREST AND CLIMATE CHANGE be pleased to state:

- (a) the details of the breakdown of forest fire incidents reported across the country during the last five years, State-wise;
- (b) whether the current Forest Fire Alert System (FAST) has failed to generate alerts for forest fires, and if so, the reasons therefor;
- (c) the details of the coverage of the Forest Fire Alert System (FAST) 3.0, in terms of square kilometres and details of the Forest area still left to be covered, State-wise;
- (d) the details of losses incurred due to forest fires, including area impacted, number of forest fires, and economic losses, State-wise; and
- (e) the details of the modern equipment and technologies deployed under FAST 3.0 for forest fire detection and monitoring, along with their deployment in each State including the details of funds allocated since its inception?

ANSWER

MINISTER OF STATE IN THE MINISTRY OF ENVIRONMENT, FOREST AND CLIMATE CHANGE

(SHRI KIRTI VARDHAN SINGH)

- (a) Seasonal forest fires occur every year due to various natural and anthropogenic reasons including accumulations of inflammable materials such as dry leaves, twigs, pine needles, etc. Most of the forest fires in the country are ground fires in which ground vegetation, etc. are burnt. The number of incidences of forest fire in the country varies from year to year depending on the vulnerability of the forests to various forest fire risk factors.

The State-wise number of forest fire detections by the Forest Survey of India (FSI), Dehradun using satellite-mounted sensors in the last five forest fire seasons (November 2019 to June 2024) are given in **Annexure**.

- (b) & (c) No, Sir. As per the information received from the Forest Survey of India, the Forest Fire Alert System (FAST) uses hotspot data from Moderate Resolution Imaging Spectroradiometer (MODIS) with a special resolution of 1 km x 1 km and Suomi National Polar-Orbiting Partnership (SNPP)-Visible Infrared Imaging Radiometer Suite (VIIRS) sensor with a special resolution of 375 m x 375 m to generate alerts based on the sensor detections. The FAST functioned effectively during the forest fire season and disseminated more than 112.67 lakhs of forest fire alerts to registered users across the States and UTs during the last forest fire season (November 2023 to

June 2024). A new version of Forest Fire Alert System, FAST 3.0 was launched in 2019 by adding several new features to its earlier version. FAST 3.0 is operational over the entire country and no forest area is left to be covered.

- (d) The FSI has been carrying out assessment of forest resources of the country biennially since 1987 and the findings have been published in the India State of Forest Report (ISFR) series. Till the year 2023-2024, no survey of burnt forest area has been made by the Forest Survey of India, Dehradun.

However, the FSI has carried out a burnt scar assessment based on the requests received from the State Forest Departments of Kerala and Uttarakhand for the forest fire season 2021-2022 and of the State of Manipur for the forest fire season 2022-2023.

Approximately, 85.89 square kilometers were delineated as burnt scars in Kerala, and 1781.39 square kilometers were delineated as burnt scars in Uttarakhand during the forest fire season 2021-2022. For the State of Manipur, approximately 861.32 square kilometers of burnt forest area was delineated during the forest fire season 2022-2023.

No estimation of economic losses due to forest fire in the country has been made by the Ministry.

- (e) Forest fire detections by FSI are primarily based on the thermal anomalies captured by the Satellite sensors. The hotspots detected by MODIS and SNPP-VIIRS sensors are received at Shadnagar Earth Station (National Remote Sensing Centre) and processed using a standard algorithm. The fire hotspots are electronically shared with FSI, which are further processed automatically at FSI headquarters in Dehradun and alerts are generated and disseminated to the registered end users. FAST 3.0 is deployed at FSI, Dehradun for forest fire detection, monitoring and to disseminate forest fires alerts to States.

The Ministry assists the State Governments and Union Territory Administrations in undertaking various activities towards prevention and control of forest fires by providing financial assistance under the ongoing Centrally Sponsored Scheme (CSS) - Forest Fire Prevention and Management.

ANNEXURE REFERRED IN THE LOK SABHA UNSTARRED QUESTION NO. 2213 DUE FOR REPLY ON 05.08.2024 REGARDING FOREST FIRES ALERT SYSTEM ASKED BY SMT. KANIMOZHI KARUNANIDHI

State-wise number of forest fire detections by the Forest Survey of India (FSI), using satellite-mounted sensor in the last five forest fire seasons (November 2019 to June 2024).

| Sr. No | State/UT | SNPP-VIIRS Detections | | | | |
|--------|--------------------------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| | | Nov 2019 to Jun 2020 | Nov 2020 to Jun 2021 | Nov 2021 to Jun 2022 | Nov 2022 to Jun 2023 | Nov 2023 to Jun 2024 |
| 1 | Andhra Pradesh | 9,996 | 19,328 | 14,138 | 19,367 | 18,174 |
| 2 | Arunachal Pradesh | 1,786 | 3,914 | 3,449 | 2,447 | 2,053 |
| 3 | Assam | 8,924 | 10,718 | 8,158 | 9,830 | 7,639 |
| 4 | Bihar | 614 | 5,179 | 3,024 | 3,793 | 2,763 |
| 5 | Chhattisgarh | 6,360 | 38,106 | 25,792 | 20,306 | 18,950 |
| 6 | Delhi | 21 | 14 | 3 | 7 | 16 |
| 7 | Goa | 47 | 45 | 20 | 147 | 36 |
| 8 | Gujarat | 2,770 | 3,803 | 2,769 | 2,342 | 3,182 |
| 9 | Haryana | 68 | 152 | 135 | 82 | 166 |
| 10 | Himachal Pradesh | 536 | 4,110 | 5,280 | 704 | 10,136 |
| 11 | Jharkhand | 2,613 | 21,713 | 9,419 | 11,923 | 7,525 |
| 12 | Karnataka | 4,232 | 5,784 | 4,973 | 13,074 | 5,500 |
| 13 | Kerala | 864 | 296 | 504 | 1,550 | 1,110 |
| 14 | Madhya Pradesh | 9,537 | 47,795 | 32,728 | 17,142 | 15,878 |
| 15 | Maharashtra | 14,018 | 34,025 | 22,052 | 16,119 | 16,008 |
| 16 | Manipur | 8,800 | 10,457 | 5,544 | 10,127 | 4,498 |
| 17 | Meghalaya | 6,762 | 7,658 | 6,322 | 6,604 | 4,319 |
| 18 | Mizoram | 7,361 | 12,846 | 8,734 | 5,798 | 6,627 |
| 19 | Nagaland | 2,905 | 4,975 | 3,471 | 3,882 | 2,609 |
| 20 | Odisha | 10,602 | 51,968 | 22,014 | 33,461 | 20,973 |
| 21 | Punjab | 153 | 635 | 428 | 119 | 605 |
| 22 | Rajasthan | 3,461 | 3,402 | 2,703 | 2,059 | 4,352 |
| 23 | Sikkim | 47 | 63 | 26 | 49 | 101 |
| 24 | Tamil Nadu | 1,368 | 1,220 | 1,035 | 1,998 | 3,380 |
| 25 | Telangana | 12,132 | 18,237 | 13,737 | 13,117 | 13,479 |
| 26 | Tripura | 4,369 | 5,015 | 2,609 | 4,332 | 2,089 |
| 27 | Uttar Pradesh | 1,548 | 8,608 | 5,428 | 3,235 | 4,424 |
| 28 | Uttarakhand | 759 | 21,487 | 12,985 | 5,351 | 21,033 |
| 29 | West Bengal | 1,320 | 3,287 | 1,520 | 3,096 | 2,020 |
| 30 | Andaman & Nicobar Islands | 39 | 16 | 33 | 20 | 21 |
| 31 | Chandigarh | 2 | 0 | 0 | 1 | 1 |
| 32 | Dadra & Nagar Haveli and Daman & Diu | 21 | 34 | 18 | 16 | 16 |
| 33 | Jammu & Kashmir | 438 | 1,098 | 4,255 | 131 | 3,829 |
| 34 | Ladakh* | | | 27 | 20 | 32 |
| 35 | Lakshadweep | 0 | 0 | 0 | 0 | 0 |
| 36 | Puducherry | 0 | 1 | 0 | 0 | 0 |
| Total | | 1,24,473 | 3,45,989 | 2,23,333 | 2,12,249 | 2,03,544 |

* The number of forest fire detections in Ladakh are combined with the number of forest fire detections in Jammu & Kashmir for the fire season between Nov.2019 - June 2020 to Nov.2020 - June 2021.