### GOVERNMENT OF INDIA DEPARTMENT OF SPACE

## LOK SABHA UNSTARRED QUESTION NO.509

#### **TO BE ANSWERED ON WEDNESDAY, NOVEMBER 20, 2019**

#### SATELLITES TO ASSESS POLLUTION STATUS

#### 509. SHRI PARVESH SAHIB SINGH VERMA:

Will the PRIME MINISTER be pleased to state:

- (a) whether the Department has used its satellites to assess the pollution situation in Delhi, if so, the details thereof and if not, the reasons therefor;
- (b) whether the Department has calculated the contribution of stubble burning in Delhi's pollution, if so, the details thereof and if not, the reasons therefor;
- (c) whether the Department would release images of stubble burning which would have been captured by ISRO satellites and if so, the details thereof; and
- (d) whether the images released by NASA showing stubble burning in Punjab and Haryana is accurate, if so, the details thereof and if not, the reasons therefor?

#### ANSWER

# MINISTER OF STATE IN THE MINISTRY OF PERSONNEL, PG & PENSIONS AND IN THE PRIME MINISTER'S OFFICE (DR. JITENDRA SINGH):

(a) The Imager payload on-board ISRO's INSAT-3D & 3DR satellites is used to monitor Aerosol Optical Depth (AOD), which is indicator of particles and smoke from biomass burning affecting visibility and increase of PM2.5 and PM10 concentration in the atmosphere. It is found that AOD, PM2.5 and PM10 concentrations are higher over Indo-Gangetic Plain covering parts of Delhi, Uttar Pradesh and Bihar during October and November. High concentration of these pollutants is seen originating from parts of Punjab and Haryana during stubble burning.

- (b) Climatological study of satellite based fire occurrences and associated pollutant parameters reveal that fire occurrences increased by 4% over Punjab and Haryana region during October- November between 2003 and 2017. The model based analysis suggests that there is a high probability of transportation of smoke aerosols from Punjab & Haryana, towards down-wind regions of Delhi, Uttar Pradesh and Bihar.
- (c) INSAT 3D & 3DR Imager based AOD, PM2.5 and PM10 spatial maps are made available on web portals viz. <u>airquality.iirs.gov.in</u> and <u>www.mosdac.gov.in</u> along with other ancillary parameters for visualization. Using medium resolution Indian Remote Sensing (IRS) satellite data, stubble burned area maps are generated at the end of stubble burning activity in Kharif season.
- (d) ISRO has been carrying out monitoring of stubble burning since
  2015. The products generated are comparable to the NASA products.

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