



Monitoring Aerosol Optical Depth

The imager payload onboard ISRO's weather satellites **INSAT-3D & 3DR**, is being used to monitor Aerosol Optical Depth (AOD).

- **AOD is an indicator of particles and smoke from biomass** burning affecting visibility and increase of PM2.5 and PM10 concentration in the atmosphere.
- It has been 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 originate from parts of Punjab and Haryana during stubble burning.
- Fire occurrences have increased by 4% over Punjab and Haryana region during October- November between 2003 and 2017.
- ISRO has been using satellite data since 2015 to monitor **stubble burning and to generate** the maps of stubble burned area in Kharif season.

Note:

- **Aerosol Optical Depth** is a measure of the extinction of the solar beam by dust and haze.
- Particles in the atmosphere (dust, smoke, pollution) can block sunlight by absorbing or by scattering light. AOD tells us how much direct sunlight is prevented from reaching the ground by these aerosol particles.

INSAT-3D & 3DR satellites

- India gets weather updates every 15 minutes through INSAT-3D & 3DR weather satellites.
- INSAT 3DR was launched in 2016 as a follow up on INSAT-3D which was launched in 2013.

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