

## **1. Dust as a Solar Shield**

### **Why in News?**

- A team of Researchers have recently published a study titled- “Dust as a Solar Shield,” proposing that launching Moon Dust into the stratosphere can slow down Global-Warming.

### **Highlights**

- They proposed the regular transport of moon dust to a gravity point (Lagrange Point) between Earth and Sun to temper the ravages of global warming.
- They called it Solar Radiation Management (SRM) or Stratospheric Aerosol Injection, because by spraying aerosols in the stratosphere, it controls the Radiation of Sunlight reaching the Earth.
- Ideas for filtering solar radiation to keep Earth from overheating have been kicking around for decades, ranging from giant space-based screens to churning out reflective white clouds.
- Artificially spraying Moon Dust into the stratosphere has been motivated from the fact that a sufficiently powerful Volcanic Eruption can spew sulphates and other aerosols into the stratosphere and thus cool the air there.
- Aerosols in the stratosphere, especially radiation-scattering ones such as sulphates, do have a cooling effect.
- Dimming of the amount of incoming sunlight with stratospheric aerosols will have similar outcomes as compared to the Moon Dust.
- When Mount Pinatubo in the Philippines blew its top in 1991, it lowered temperatures in the northern hemisphere by about 0.5C for nearly a year.
- Spraying dust in the Stratosphere may cool summer but can lead to widespread Drought across the earth, sending crop yields plummeting, leading to disease and starvation.
- Any projections related to changes in rainfall, as a result of throwing dust into the atmosphere or in space to block sunlight, will be highly uncertain.
- Other climate mitigation strategies, such as the use of Renewable Energy, emissions reductions schemes, Carbon-Capture Technologies, and bioenergy, are not expected to have any dangerous unintended consequences. On the other hand, spraying aerosols even in a small pocket of the stratosphere will have global consequences that can't fully be quantified at present.