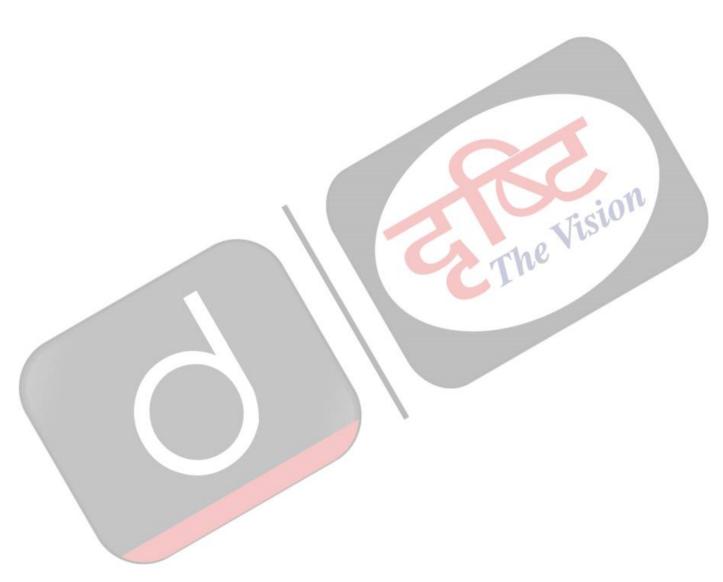


## **Geo-Engineering**

<u>IL</u>



# GEO-ENGINEERING

Geoengineering means manipulating the earth's climate to lower its temperature to counter global warming

#### TYPES OF GEO-ENGINEERING

	CARBON DIOXIDE	REMOVAL	
Technology/ Method Proposed	Proposed Effects/actions	Potential Side Effects	Feasibility/Cost Effectiveness
Land Use Management	Afforestation/ Reforestation	Minimum Side Effects	High feasibility, Low Cost
Bio-energy with carbon capture and storage (BECCS)	Biomass harvested and used as fuel	Potential land use conflict	Comparatively expensive
Direct CO <sub>2</sub> Capture	Industrial Process	Minimal	High technical feasibility
Fertilization of the ocean	Increased CO₂ absorption by promoting algae growth	High potential for adverse side effects	Feasible but not cost-effective
Accelerated Weathering	Pulverization of silicate rocks	Potential respiratory health impact	Could be combined with crop production, a feasible option at scale
	SOLAR RADIATION N	ANAGEMENT	
Stratospheric aerosol Injection	For reflecting sunlight back into space	Likely impact on the hydrological cycle	Feasible and potentially highly effective
Marine cloud	Seeding of marine clouds	Likely impact on	Low to medium cost

brighteningwith seawater aerosolprecipitation patternand feasible at scaleGiant deflectors<br/>in outer spaceMirror placed in<br/>near earth orbitRegional climate<br/>effectsCapital-intensive<br/>and long gestationSurface albedo<br/>approachesPainting the roof of the<br/>building bright white,<br/>Installing desert reflectorMajor Impact on<br/>Desert EcosystemHigh labor and<br/>maintenance cost

### REGULATION

No specific international or Indian regulations on geoengineering.

### INDIA'S EFFORTS

- S Department of Science and Technology:
  - ♦ Geoengineering climate-modelling research programme (since 2013)

#### () IISc:

 Initiative to understand the implications of solar geoengineering for developing countries

 $\diamondsuit$  Scientists simulated injecting 20 million tonnes of sulphate aerosols into the Arctic stratosphere



Read More ....

PDF Refernece URL: https://www.drishtiias.com/printpdf/geo-engineering