Atmospheric Climate engineering

V/S

Terrestrial geoengineering

Atmospheric climate engineering largely consists of weather modification techniques. These do not directly sequester atmospheric greenhouse gases, and therefore, do not address the immediate climate goals, laid down in the Paris Agreement.

These techniques have scope for misuse. Several densely populated South Asian countries depend on rivers originating in the Himalayas and Tibet. Any irresponsible cloud-seeding or weather modification in Tibet can affect people living in the lower riparian regions.

In contrast, terrestrial geoengineering uses techniques on the Earth's surface, such as carbon capture utilisation and storage technologies and better land-use practices, to remove greenhouse gases released into the atmosphere by industry or automobiles.

Some terrestrial geoengineering techniques rely on natural processes, such as soil organic carbon, an organic component in soil, that can be used for the sequestration of atmospheric carbon anywhere in the world. The use of soil organic carbon in this technique also helps restore soil fertility.

Terrestrial geoengineering technologies, which are aimed at the power-generation and manufacturing industries – like cement, steel, fertiliser and petroleum – that emit large quantities of greenhouse gases, are generally funded by fossil fuel-intensive extraction and power sectors, and are becoming more efficient.

GATEWAY HOUSE
INDIAN COUNCIL ON GLOBAL RELATIONS
भारतीय वैश्विक संबंध परिषद्

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