Solar Geoengineering and Carbon Removal Through the Lens of Justice

Public Lecture, Kleinman Center
November 29, 2022

Shuchi Talati Ph.D., Founder, DSG
Visiting Scholar, Kleinman Center

The Alliance for
Just Deliberation on Solar Geoengineering

Lecture Overview

What are SG and CDR?

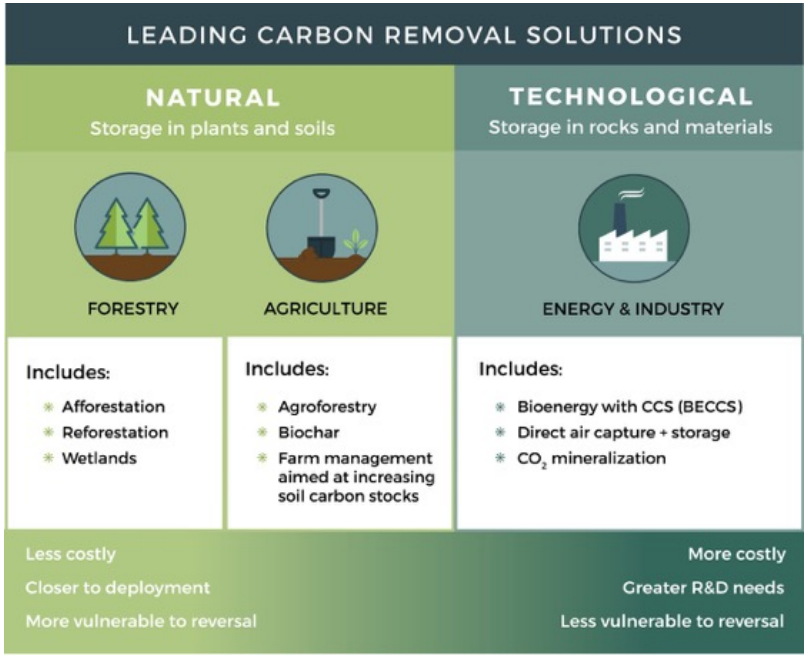
Why are we talking about them?

How should we be talking about them?

How should we be making decisions?

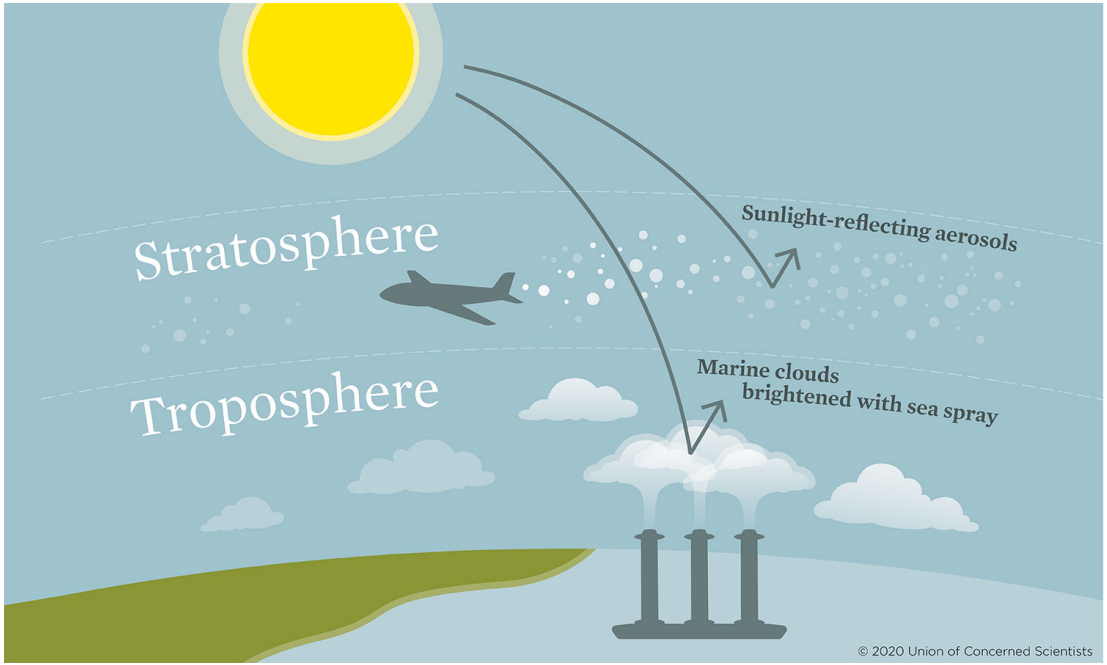
Definitions

CDR: a set of techniques that aim to remove CO2 directly from the atmosphere by either (1) increasing natural sinks for carbon or (2) using chemical engineering to remove the CO2, with the intent of reducing the atmospheric CO2 concentration. (IPCC)



Definitions

SG: Large scale methods to reflect sunlight to reduce global mean temperatures



In Context

- Mitigation: Actions limiting the magnitude and rate of future climate change by reducing greenhouse gas emissions (US EPA)
- Adaptation: The process of adjustment to actual or expected climate and its effects (IPCC)

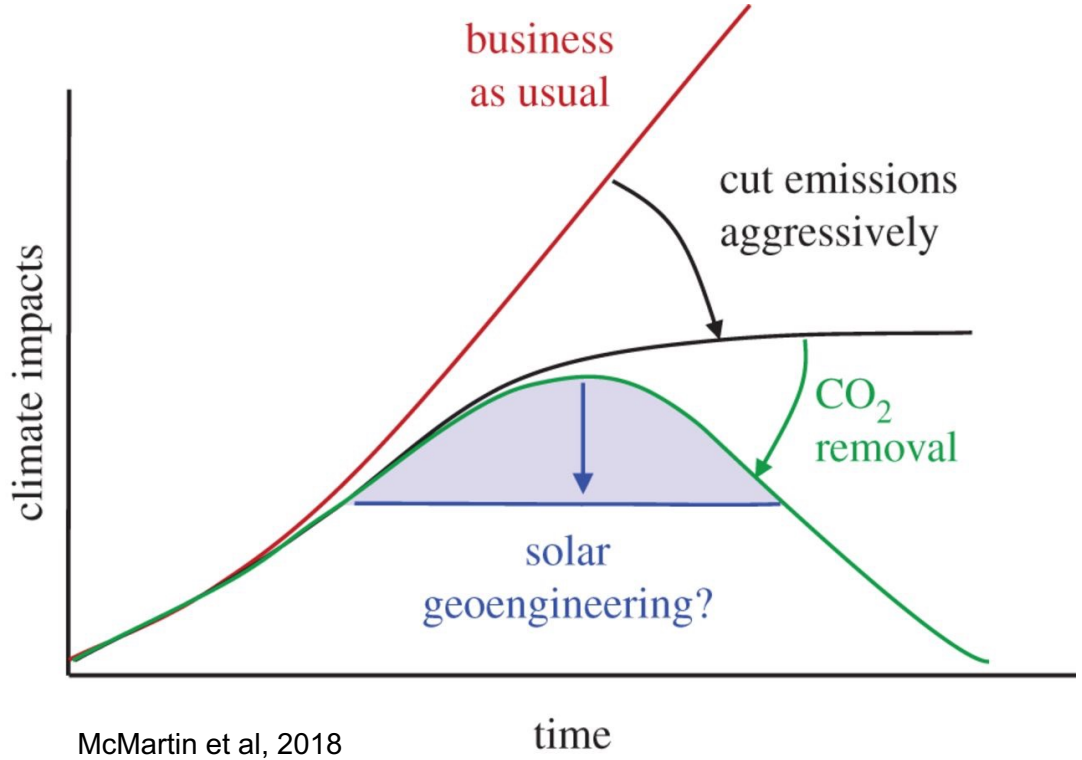
3 Important Considerations

→ CDR and SG exist because the ideal options and outcomes for addressing climate change are no longer enough.

→ CDR and SG should only exist in the context of mitigation & adaptation as part of a portfolio of responses. Mitigation & adaptation must always be prioritized – the notion that there is a mutually exclusive choice that must be made is false.

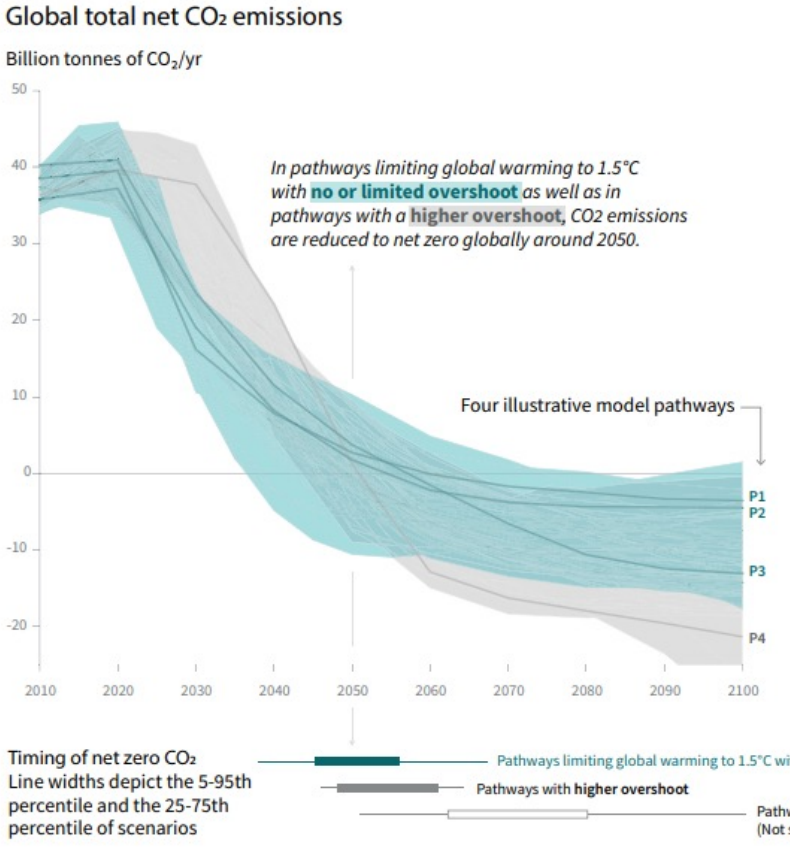
→ CDR and SG should only be considered in the context of climate change itself. Risks of use can only be weighed in the context of risks of climate change.

In Context



McMartin et al, 2018

Why are we talking about them?



"All pathways that limit global warming to 1.5°C with limited or no overshoot project the use of CDR on the order of 100–1000 GtCO2 over the 21st century"

→ CDR is necessary, but likely not sufficient to limit harm

A Justice Lens

- Justice demands the protection of basic rights, the fair treatment of individuals, and equal opportunity of all to participate in the decision-making processes that govern their lives.
    - 3 types of justice: Distributive, Procedural, Restorative
- Climate Justice is the application of these areas to climate change to protect and lift up the most vulnerable
- The intersection of CDR, SG and climate justice:
    - There are justice reasons as to why we must consider CDR/SRM, as well as justice risks in outcomes of potential use
    - Seeking justice in outcomes asks the question: If research advances, how it would occur, by whom, and what political structures and institutions will it exist within?
    - Larger and richer countries, along with people from more socially advantaged demographics, have so far played an outsized role in the development (or non-development) of SG and CDR, often speaking on behalf of Global South nations.
    - Legitimacy in research and potential deployment outcomes will require just and participatory decisionmaking frameworks

How are decisions made?

What is Governance?

The structures, processes, and actions through which private and public actors interact to address societal goals. This includes formal and informal institutions and the associated norms, rules, laws and procedures for deciding, managing, implementing and monitoring policies and measures at any geographic or political scale, from global to local. (IPCC AR6)

Examples include: non-binding resolutions, codes of conduct from research institutions, civil society advocacy, funding mechanisms

Actors

Scientists, academic institutions, funders, civil society organizations, intergovernmental organizations, public sector at different scales

How *should* we make decisions?

Good Governance is the intersection of Justice & Governance. It should:

- **Align with and promote justice:** frameworks are inclusive with robust public participation, climate vulnerable and marginalized communities are empowered to represent their interests
- **Begin early:** early development of norms and standards are built that can address potential risks and harms relevant across a range of scenarios
- **Build legitimacy:** equitable processes are put in place that promote responsibility, transparency, and diversity of thought
- **Ensure alignment within climate response portfolio:** the field is built in such a way that research or potential deployment does not deter emissions reductions, CDR, and adaptation efforts

Overarching Gaps in Good Governance

01

Knowledge

Foundational knowledge in science and policy is required across the global north and south as a baseline to move the solar geoengineering conversation forward

02

Participation

Participation across sectors and geographies is needed to set research priorities, generate research questions, develop policy priorities, advocate for regional preferences

03

Decisionmaking

Frameworks for equitable decisionmaking are needed for both research and deployment to create norms, standards, and oversight

DSG

State of things

- CDR:
  - Cross-agency efforts
  - Major legislation passed
  - Large private sector push
  - Growing civil society involvement
  - Increasing international development and governance
- SG:
  - Rising on the radar of climate mainstream (e.g. recent Bill McKibben article)
  - Increasing research & support (e.g. US funding, NASEM report, SCoPEx)
  - White House research agenda underway
  - Developing UN interest

DSG

What is needed

- Capacity building for both research and governance across CDR and SG
- Increasing civil society and policymaker involvement
- Strengthening of participation in climate vulnerable or host communities
- Increasing GN-GS collaboration
- Increasing participation of international institutions and intergovernmental organizations

NASA

Contact Information

- Email: stalati@sgdeliberation.org
- Twitter: @sktalati