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How does the WGIII report address SRM and its governance?

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Coverage of solar radiation modification (SRM) in the WG3 report

No mention in SPM (Summary for Policymakers)

Technical Summary (TS)

(international cooperation is emerging but inadequate)

Main text

- **Chapter 3: SRM and scenarios**
- **Chapter 14: cross WG box on SRM**
 - Proposed Solar Radiation Modification Schemes
 - Which scenarios?
 - SRM risks to human and natural systems and potential for risk reduction
 - Public perceptions of SRM
 - Ethics
 - Governance of research and of deployment
- **Chapter 14: international governance on SRM (and CDR)**

Definition and key characteristics of SRM (cross WG box in Chapter 14)

Definition: Solar Radiation Modification (SRM) / solar geoengineering refers to proposals to increase the reflection of sunlight back into space to counteract human-induced warming and some of its harmful impacts.

SRM risks: SRM would not address the root cause of climate change, the increasing concentration of CO₂ in the atmosphere and bring in novel risks

Climate risk reduction and role in human responses: “SRM cannot be the main policy response to climate change and is, at best, a supplement to achieving sustained net zero or net negative CO₂ emission levels globally.”

If emissions reductions and CDR are insufficient, SRM may be seen by some as the only option left to achieve the 1.5K / 2K temperature goals.

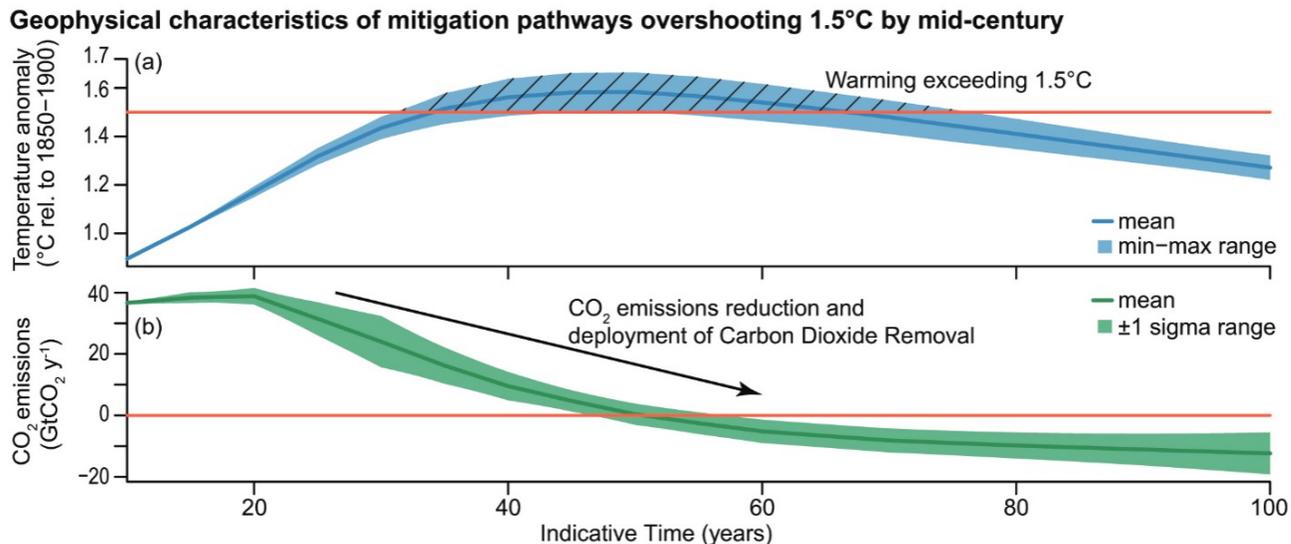
(SAI is relatively inexpensive)

SRM is an umbrella term and there are different options, with SAI most studied (Cross-WG Box 4, Table 1)

SAI (stratospheric aerosol injection)	MCB (marine cloud brightening)	OAC (ocean albedo change)	GBAM (ground-based albedo modifications)	CCT (cirrus cloud thinning)
Injection of reflective aerosol particles directly into the stratosphere or a gas which then converts to aerosols that reflect sunlight	Spraying sea salt or other particles in marine clouds, making them more reflective	Increase surface albedo of the ocean (e.g., by creating microbubbles or placing reflective foam on the surface)	Whitening roofs, changes in land use management (e.g., no-till farming, bioengineering to make crop leaves more reflective), desert albedo enhancement, covering glaciers with reflective sheeting	Seeding to promote nucleation of cirrus clouds, reducing optical thickness and cloud lifetime to allow more outgoing longwave radiation to escape to space

SRM risks and climate risk reduction depend on the way SRM is used (scale, timing, type, etc.)

Small-scale, temporary SRM might contain SRM risks while reducing climate risks.
Large-scale SRM may bring about substantial SRM risks.



de Coninck et al. (2018)
IPCC 2018
Special Report on
Global Warming of 1.5K
Chapter 4

https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_Chapter4_High_Res.pdf

Public perception and ethics (cross WG box in Chapter 14)

Public perception

The publics are largely unaware of SRM

They tend to reject deployment for the foreseeable future

They conditionally and cautiously tend to agree on the need for more research to better understand its risks and benefits

Studies are biased toward Global North

Ethics

There is a concern about “moral hazard” (knowing about SRM could reduce ongoing and future mitigation) but empirical evidence is limited

There is also a worry about “slippery slope” (lock-in of SRM)

Need to involve Global South and vulnerable communities

SRM governance of research and deployment

(14.4.5.1 Global governance of solar radiation modification and associated risks)

No international law that directly governs SRM. There are relevant international treaties such as the Convention on Biodiversity (CBD) and the London Convention (LC) and London Protocol (LP)

Too much flexibility / restriction would not be beneficial because science is at the early stage

Co-evolution of science and governance is expected

Near-term priorities

- (1) Guard against potential risks and harm
- (2) Enable appropriate research and development of scientific knowledge
- (3) Legitimize any future research or policymaking through public and expert engagement
- (4) Ensure that SRM is considered only as a supplement, with the priority for mitigation

Thank you

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