

Potential implications of SRM for achievement of the Sustainable Development Goals

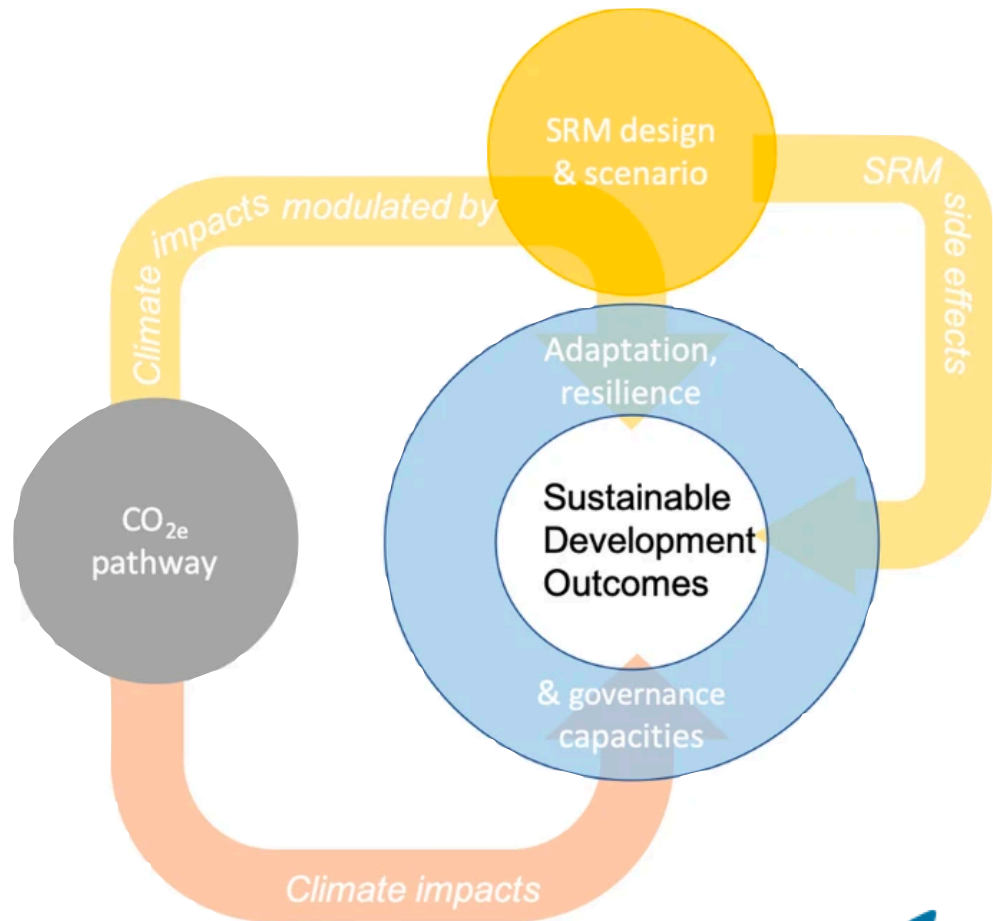
STI Forum 2023 - Side Event
“Managing the Risks of a Lack of Governance Around Solar Radiation Modification”

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Why examine SDG implications of climate overshoot and SRM?

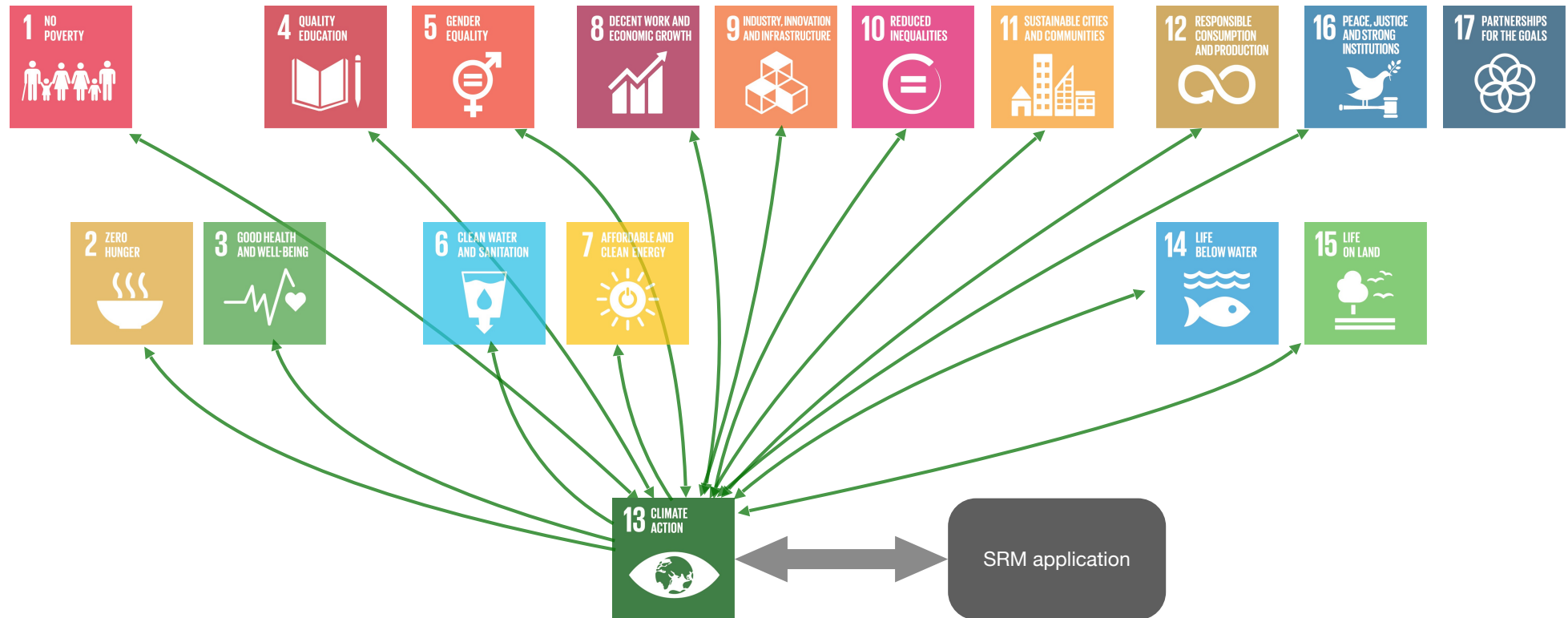
- **Climate impacts on 17 SDGs!**
- **SRM affects SDGs through**
 - altered climate impacts
 - and side effects



3 types of climate overshoot and SRM implications (for SDG achievement)

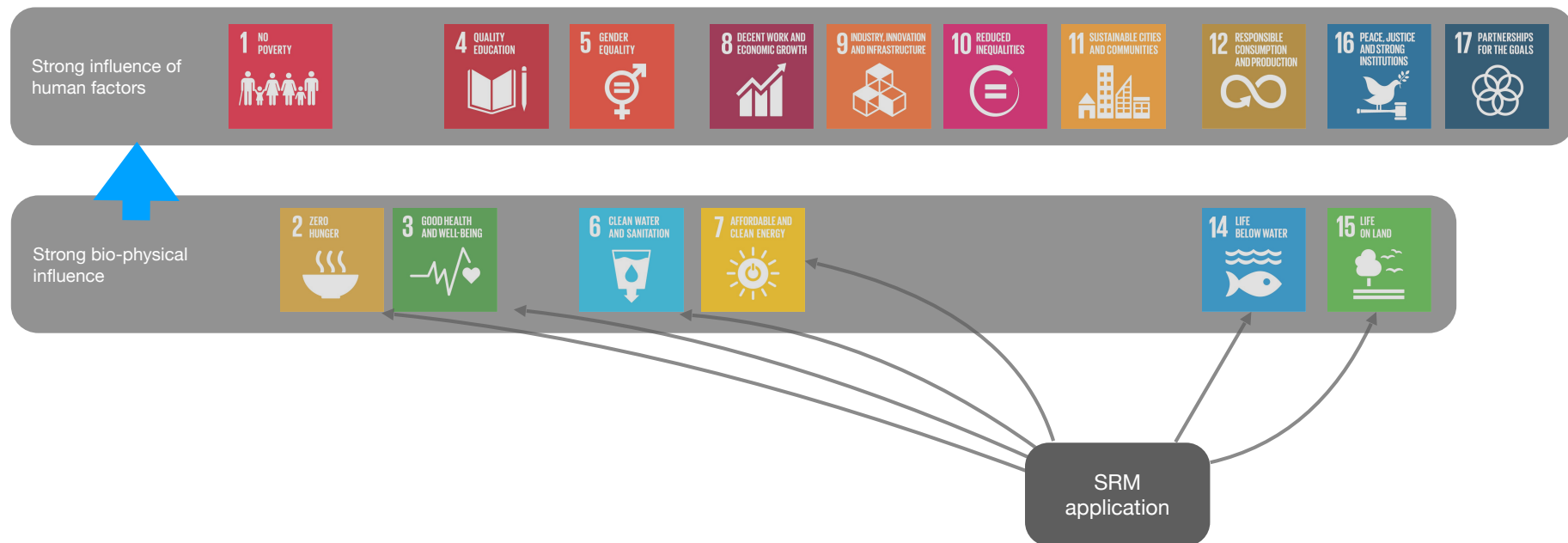
- Climate risk (attenuation)?
- Physical Side Effects of SRM?
- Non-physical implications of SRM?

First causal chain: Limiting change across **climate** variables, everywhere



“How well would SRM deployment achieve reduction across climate variables, everywhere?”

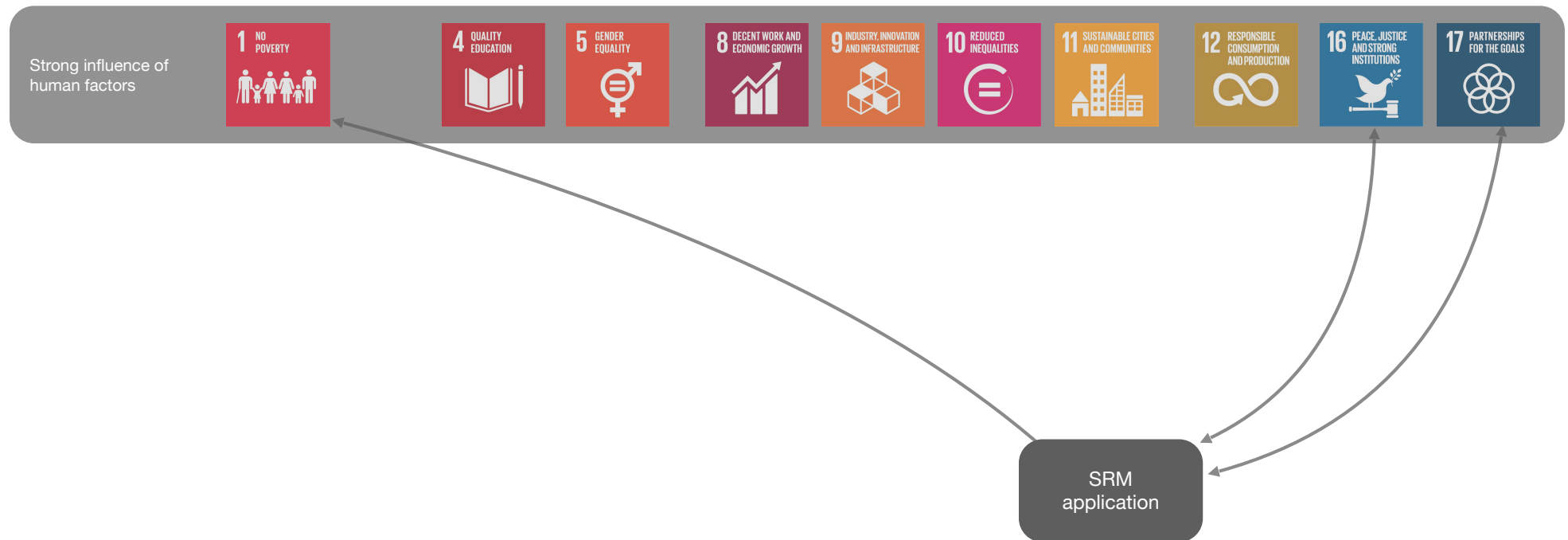
Second causal chain: Physical **deployment** mechanism **side-effects**



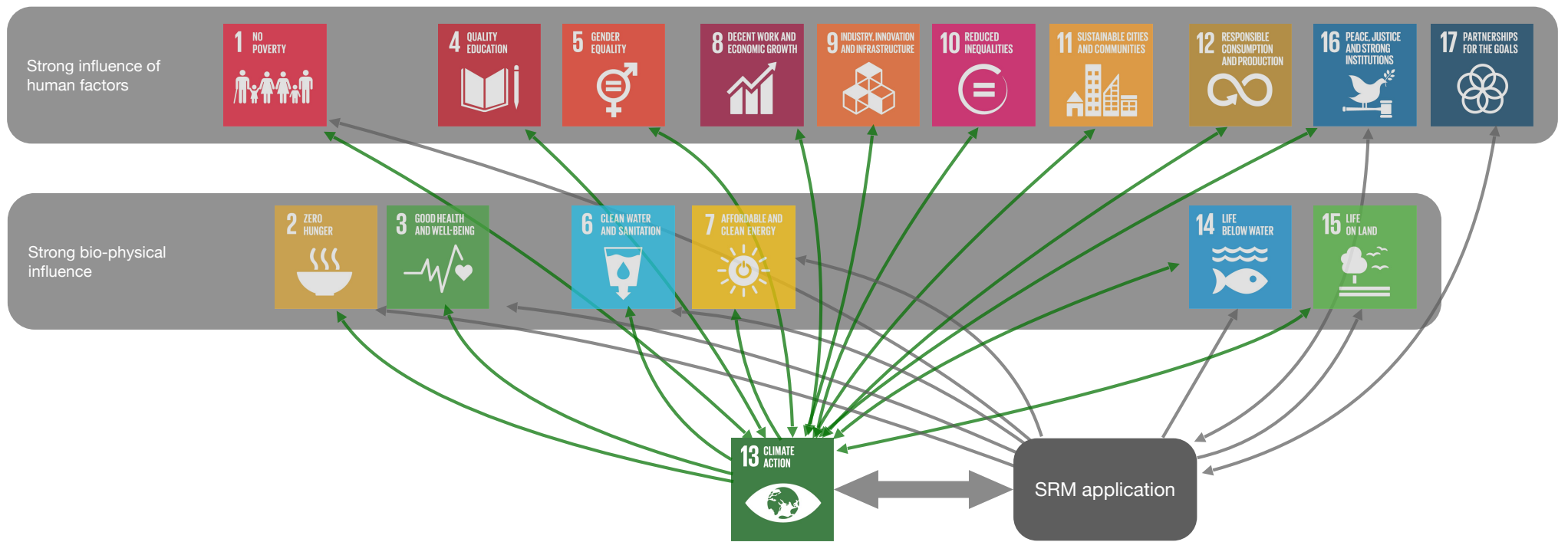
“What (non-climate) physical side-effects could deployment mechanism(s) have?”

- **with direct physical effect**
- **and indirect human-modulated effects)**

Third causal chain: Socio-economic, political, and cultural effects

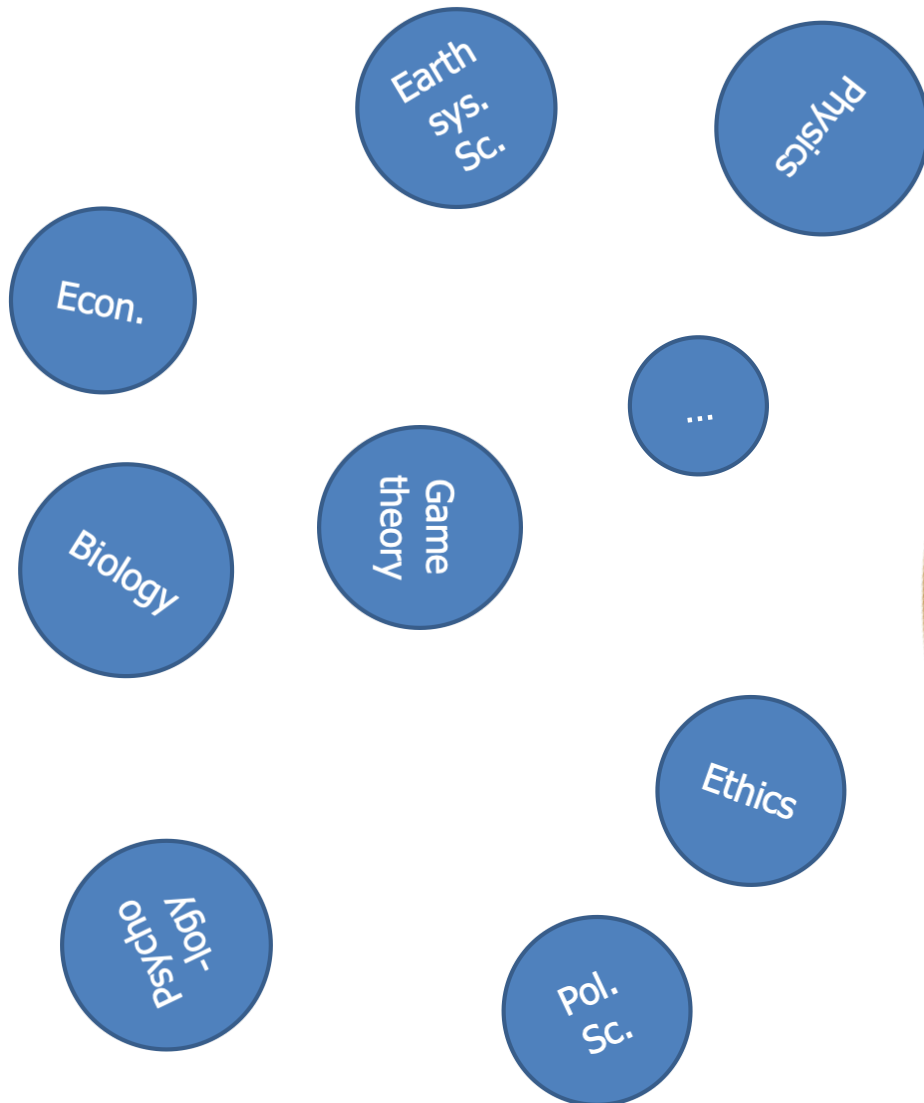


“What socio-economic, political, and cultural implications could deployment have?”



Scattered scientific evidence

Multiple societal objectives



Transdisciplinary review

Honegger, M., Michaelowa, A., & Pan, J. (2021). Potential implications of solar radiation modification for achievement of the Sustainable Development Goals. *Mitigation and Adaptation Strategies for Global Change*, 26(5), 1-20.



A few examples of potential implications

- full list in supplementary materials



SDG-1: End poverty in all its forms everywhere

1. causal chain (limiting change across climate variables, everywhere):

disproportional improvement or risk to the poorest and most vulnerable.

2. causal chain (physical deployment mechanism side-effects):

likely affect poorer populations disproportionately.

3. causal chain (socio-economic, political, and cultural):

Pursuit of SRM could have positive and negative indirect effects on spending to eradicate poverty



SDG-17: Strengthen the means of implementation and revitalize the global partnership for Sustainable Development

3. Causal chain (socio-economic, political, and cultural):

- Regional redistribution of side-effects of SRM could challenge **trust and collaboration** in international institutions.
- Emergence of new **coordination challenges** requiring global cooperation and strengthened processes ensuring inclusivity (challenge and an opportunity)

Publications

- [Honegger, M., Michaelowa, A., & Pan, J. \(2021\). Potential implications of solar radiation modification for achievement of the Sustainable Development Goals. Mitigation and Adaptation Strategies for Global Change, 26\(5\), 1-20](#)
- [IRGC Report: International governance issues on climate engineering](#)
- [Michaelowa, A. \(2021\): Solar Radiation Modification - A “Silver Bullet” Climate Policy for Populist and Authoritarian Regimes?](#)