Global Challenges Foundation

Solar geoengineering – governance

Risk Expert

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There is at present no single unified governance framework to manage risks associated with solar geoengineering, nor is there a set of interrelated elements from different governance frameworks which, together, would be able to comprehensively manage the risk. More importantly, there are no frameworks at national or international levels where the risks of solar geoengineering could be addressed together with those of other climate interventions, such as mitigation, adaptation and carbon removal, as well as the risks of non-action, such as continued high emissions of greenhouse gases.

For solar geoengineering most of the governance elements have transboundary and intergenerational dimensions, thus international and multilateral arrangements will be key1. Who will decide whether or not to deploy solar geoengineering, and when should such decision be made? What institution will control the global thermostat and ensure sustained deployment without sudden termination?

Two cases of existing governance at international levels are relevant to geoengineering: the Convention on Biological Diversity (CBD) and the London Protocol of the London Convention (LC/LP). Both can provide bases on which further governance can evolve.

A series of decisions taken by the Parties to the CBD provide broad guidance for addressing geoengineering. Building on a 2008 decision (IX/16 C) that limited use of ocean fertilization, CBD parties established a non-legally binding agreement in 2010 that provides guidance to Parties in limiting all large-scale climate engineering activities that may affect biodiversity until such time that science-based, global, transparent, and effective global governance mechanisms are developed (decision X/33). This decision was reconfirmed in 2016 at the Cancun meeting of the Conference of the Parties in decision (XIII/14), which specifically added the application of a precautionary approach and suggested the need for cross-institutional and transdisciplinary research and knowledge-sharing.

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In parallel, the London Protocol to the London Convention on Ocean Dumping was amended in 2013 to create non-legally binding guidelines to assess proposals for geoengineering research in the ocean. The amendments provide criteria for assessment of such proposals and set up a stringent and detailed risk assessment framework. This framework could also be used to address some aspects of solar geoengineering.

Decisions of Parties to conventions like the CBD or the LC/LP are non-legally binding on the Parties that have ratified the convention. There are usual reporting requirements under each of the treaties, and implementation is monitored through the regular reports prepared by the Parties. There are, however, no sanctions for lack of compliance.

Risks associated to geoengineering have not yet been broadly adopted in international forums or civil society to the same extent that climate change has, although some researchers have been developing voluntary codes of conduct for research, such as, the Geoengineering Research Governance Project at the University of Calgary. It is, however, still unclear what exact formats the global governance of geoengineering risk will take.

In the meantime, it is necessary that different intergovernmental fora begin or intensify their work to address the governance of solar geoengineering according to their respective mandates, in particular the UN Environment Assembly (UNEA), the UNFCCC, the CBD and the UN General Assembly. It is essential that nation states agree not to deploy solar geoengineering unless the risks and potential benefits are sufficiently known and the necessary governance frameworks are agreed upon. This, however, would require considerable learning processes, including society-wide discussions on the risks and potential benefits – which have not yet taken place.

At present, the majority of international civil society organizations focusing on climate have not addressed the issue of solar geoengineering out of concern for the perceived moral hazard that doing so might weaken political will for the emission reductions that are the essential first step for any credible response to climate change. This situation may change as climate impacts continue to mount and the serious insufficiency of existing emission reduction efforts becomes ever clearer.