C2G Carnegie Climate Governance Initiative

An initiative of CARNEGIE COUNCIL for Ethics in International Affairs

The Science and Governance of Climate-altering Techniques: Implications for Sustainable Development

THEMATIC TRACK SUMMARY

Venue: Magnolia Hall

Date: 23.02.2023

Time: 02.00 PM to 03.30 PM (IST)

Suggested Citation

World Sustainable Development Summit (2023), The Science and Governance of Climate-altering Techniques: Implications for Sustainable Development, Thematic Track Summary (Rapporteur: Bharat Ramachandran), New Delhi: The Energy and Resources Institute.

Actionable Messages

Message 1: Carbon Dioxide Removal (CDR) and Solar Radiation Modification (SRM) can never be a substitute for emissions reduction and to reach net zero. They can only complement the efforts to reduce emissions.

Message 2: Global South is under-represented in the governance of technologies. They need to be involved in developing and implementing the technologies by considering the socio-political implications.

Message 3: If the climate tipping points are breached, then there will be disastrous consequences to the global ecosystems. The pathways for emissions reduction are more important than the reduction of emissions.

Message 4: Multi-stakeholder approach and multidisciplinary views are essential to frame governance infrastructure for emerging technologies. Political debate must occur involving all players on these technologies.

Message 5: The Paris Agreement is the cornerstone of sustainable development and it must be implemented to its fullest. Small Island Developing States need to be included in the governance framework and capacity building must be given to them.

Message 6: The debate must focus on adaptive governance rather than mitigation efforts. The whole argument of governance must be considered under the umbrella terms of loss and damage.

Narrative

The thematic track titled, "Science and Governance of Climate-altering Techniques: Implications for Sustainable Development" was held as part of World Sustainable Development Summit, the flagship event of The Energy and Resources Institute (TERI). The session focused on addressing various governance issues and uncertainties surrounding Cardon Dioxide Removal (CDR) and Solar Radiation Modification (SRM) technologies. CDR refers to human activities removing carbon dioxide from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs, or in products. SRM seeks to deliberately change the albedo of the Earth system, reflecting solar radiation back into space to cool the planet. The moderator for the session was **Mr. Janos Pasztor, Executive Director, Carnegie Climate Governance**. The discussions focused on the various risks and uncertainties posed by the climate-altering techniques, the need for multi-stakeholder approach in designing governance initiatives, and the politics surrounding these technologies.

The session started with a keynote address by **Ms. Thelma Krug, Vice Chair, Intergovernmental Panel on Climate Change (IPCC)**. In her presentation, she defined what the terms 'Overshoot', 'Carbon Dioxide Removal (CDR)', and Solar Radiation Modification (SRM) mean according to IPCC. The role of CDR and SRM in achieving the various emissions pathways as modelled by the IPCC was also presented. She made a fundamental point by stating that CDR and SRM cannot be the primary policies or substitutes for deep emissions reductions to achieve 1.5°C under the Paris Agreement. These technologies only act complementary to other emissions reductions efforts. The Technology Readiness Level (TRL) of these climate-altering techniques was highlighted by Ms. Krug, and she also stated, there is a void in governance of these technologies at the international level.

The keynote address was followed by a recorded message from **Dr. Ajay K Sood, Principle Scientific Advisor, Government of India.** Dr. Sood talked about the importance of the climate-altering techniques like CDR and SRM in addressing climate crisis and achieving the goals of Paris Agreement. He gave information on the ongoing research initiatives in India on these technologies like Indian Oil Corporations (IOCL) to generate bio-fuel from captured carbon to setting up of various centres of excellence on climate modelling at Indian Institute of Science (IISC) and other higher education institutions. He warned about the socio-political implications that might occur from these techniques if the governance is concentrated in rich countries and non-state actors in those countries. He also highlighted that the Global South is under-represented in governance framework of CDR and SRM.

Ms. Jo Tyndall, Director, Environment Directorate, OECD began the talk on what Organization for Economic Cooperation and Development (OECD) is doing regarding these technologies. She mentioned a report which OECD has prepared on various climate tipping points and the disastrous impact that will occur when these are breached. She discussed the need for governance as currently various experiments on these techniques are unregulated and have cross-border implications. The need for having an inclusive forum on carbon mitigation and bringing in transparency and justice on climate governance was also emphasized. The importance of method of emissions reduction rather than just reduction on the socio-political setup of the world was highlighted by her.

Next, **Ms. Gabriela Ramos, Assistant Director General for Social and Human Sciences, UNESCO** addressed the crowd on the importance of ethics and multi-disciplinarity in the governance of technology. She mentioned the role of UNESCO ethics committee in studying the ethics of artificial intelligence (AI) on the world. She remarked on the uncertainties involved in accountability and liabilities arising from these technologies which are trans-boundary in nature. The need to have political debates

with experts, scientists, communities, and all other stakeholders was discussed. She concluded her talk by strongly believing in multi-stakeholder approach to governance.

The next speaker **H.E. Mr. Amenatave V Yauvoli, Ambassador, Fiji** spoke on the problems of Small Island Developing States (SIDS) related to climate change as a whole and the climate-altering techniques too. He mentioned how the island states have been left out of climate governance talks but they are the most affected by such technologies. The Paris Agreement, he believed, is the cornerstone for sustainable development and if that fails then it is difficult to achieve net zero or 1.5°C target. He mentioned how livelihoods of people and communities are threatened in SIDS more due to climate change than the conventional acts of war or weapons. He concluded by stating the need for capacity building and training of people in the Global South to enhance mitigation efforts.

The final panelist **Mr Manish K Shrivastava, Senior Fellow, TERI** added to the governance debate surrounding these climate-altering techniques. He compared the development of these technologies to nuclear energy. He said that while developing it, the horrors of such technology was never discussed but Hiroshima and Nagasaki made the world take cognizance. Similarly, these climate-altering techniques have wide-ranging implications as the effects are trans-boundary and the shortcomings must be addressed through governance. The questions of deployment of technology, responsibilities in case of failures, ownership of technologies were of concern for him. He concluded by stating that the UNFCC and its precautionary principle must be the way forward by focusing on adaptive governance instead of mitigation. He also emphasized bringing the governance debate under the umbrella theme of loss and damage.

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“	Governance challenges have a lot of uncertainty along the learning curve as the question of liability and responsibility underlies when private partnership works on these technologies. Governance of geo-engineering technologies is to put them under a broad umbrella of loss and damage, and adaptation approach rather than on mitigation. ***Manish K Shrivastava*** ***Senior Fellow, Earth Science and Climate Change, TERI***
“	Solar Reduction Modification (SRM) and Carbon Dioxide Reduction (CDR) represent a critical aspect to address global climate crisis and global warming. These technologies have potential to disrupt existing structures like UNFCC and bring a need to look at new methods like decentralized governance structure. ***Ajay K Sood*** ***Principle Scientific Advisor, GoI***
“	At the end, we need to hear what the people desire and must follow a multi-disciplinary approach along with a precautionary approach. UNESCO is developing a report on ethics of climate change and plans to launch it during COP28. ***Gabriela Ramos*** ***Assistant Director-General for Social and Human Sciences, UNESCO***
“	We have a long way to go before climate-altering techniques can become commercially viable as the infrastructure to govern at national and international levels are still not in place. Since we have limited resources to mitigate climate change, the investment must be prioritized, and we must not be path-dependent and over-prioritize climate-altering techniques. ***Jo Tyndall*** ***Director, Environment Directorate, OECD***
“	The role of Global South is very important when it comes to governance of climate change technologies. If Paris Agreement cannot deliver for us, we don’t know what can deliver to mitigate climate change. ***Amenatave V Yauvoli*** ***Ambassador, Republic of Fiji***
“	Carbon Dioxide Reduction (CDR) cannot serve as a substitute for deep emissions reduction but can only serve to reduce anthropogenic emissions. Carbon stored in ocean and geological reservoirs has a longer time period of storage and is less vulnerable than land-based storage. Solar Radiation Modification (SRM) cannot be the main policy response to climate change; it can at best complement sustained efforts to reach net zero targets. ***Thelma Krug*** ***Vice Chair, IPCC***