ASIS MODEL UNITED NATIONS 2026

Al Saad Indian School, Al Ain

UNEP STUDY GUIDE

Committee	United Nations Environment Programme (UNEP)
Agenda	Geoengineering & Solar Radiation Modification: Regulating Unilateral Climate Interventions and Marine Cloud Brightening Experiments
Prepared by	ASIS MUN Policy Department

I. Introduction to the Committee

The United Nations Environment Programme (UNEP) was established in 1972 following the Stockholm Conference on the Human Environment and is headquartered in Nairobi, Kenya. It is the leading global authority on the environment: it sets the global environmental agenda, promotes sustainable development and supports countries in implementing environmental policies. Its work covers climate change, biodiversity and pollution, often described as the "triple planetary crisis".

UNEP's governing body is the **United Nations Environment Assembly (UNEA)**, in which all 193 UN Member States participate. UNEA meets every two years and adopts resolutions that guide UNEP's work and the global environmental agenda. In this committee, delegates take on that role.

This session focuses on the governance of geoengineering and Solar Radiation Modification (SRM). As climate impacts accelerate, the world faces growing risks from unregulated experiments and from the possibility that a single state or private actor could try to alter the Earth's climate without international agreement. Delegates must decide how these high-stakes, cross-border interventions should be regulated.

II. Understanding the Agenda

A. The Climate Crisis and the Rise of Geoengineering

As efforts to cut emissions fall short of the Paris Agreement goals, there is growing pressure to consider technological interventions in the climate system. **Geoengineering** covers two broad families: carbon dioxide removal, which takes CO2 out of the atmosphere, and **Solar Radiation Modification**, which aims to cool the planet by reflecting a small share of sunlight back into space. SRM does not address the cause of climate change. It carries large uncertainties, including possible disruption of rainfall and monsoon patterns, and creates a "moral hazard" that could weaken commitments to cut emissions. UNEP's 2023 independent expert review, *One Atmosphere*, concluded that SRM is not ready for deployment and called for an international scientific assessment and governance discussions.

B. Focus 1: Solar Radiation Modification

The most discussed SRM technique is **Stratospheric Aerosol Injection (SAI)**: releasing reflective particles into the upper atmosphere to reduce the amount of sunlight absorbed by the Earth. Because it would work on a global scale, it raises profound risks:

- **Climate and ecological disruption:** SAI could alter rainfall patterns, affect agriculture and disrupt regional climate systems, with the heaviest impacts likely to fall on vulnerable populations in the Global South.
- **Moral hazard:** relying on a technological fix could divert political attention and money away from cutting greenhouse gas emissions.

C. Focus 2: Regulating Unilateral Climate Interventions

The danger of SRM is linked to its accessibility: deploying it could cost far less than transforming entire energy systems, which creates a real risk of unilateral action.

- **The unilateral threat:** a single state, private company or wealthy individual could start a solar modification programme without international consent, changing weather patterns across borders and causing geopolitical conflict.
- **Real examples:** in 2022 a start-up released sulphur-filled balloons in Mexico without permission, and Mexico banned solar geoengineering experiments in January 2023. Harvard University cancelled its planned SCoPEx stratospheric experiment in 2024 after opposition from Indigenous Sámi groups and others.
- **Termination shock:** if a deployment programme were stopped suddenly, because of war, sabotage or technical failure, global temperatures could rise rapidly back to unmitigated levels within a few years, causing severe ecological shock.
- **Governance gap:** there is no binding multilateral framework to authorise, monitor or prohibit such interventions.

D. Focus 3: Marine Cloud Brightening Experiments

Marine Cloud Brightening (MCB) involves spraying fine sea-salt particles into low marine clouds to make them more reflective over a targeted ocean area. Unlike large-scale SAI, MCB is already being tested outdoors.

- **Field trials:** researchers have run MCB trials over the Great Barrier Reef in Australia since 2020 to explore whether it could reduce coral bleaching. In 2024, the city of Alameda in California halted a small MCB test by the University of Washington over safety and transparency concerns.
- **Regulatory gaps:** outdoor experiments take place without standard international oversight, environmental impact assessments or permitting rules.
- **Transboundary risks:** larger tests could affect marine ecosystems and shift rainfall over neighbouring coastal states without their consent.
- **Path to deployment:** without oversight of small experiments today, uncontrolled tests could grow into uncoordinated interventions tomorrow.

III. Major Conventions and Frameworks

These instruments form a fragmented but evolving legal landscape. Each covers part of the problem, but none provides a comprehensive, binding regime for SRM or MCB.

1. **Environmental Modification Convention (ENMOD, 1977):** prohibits the military or hostile use of environmental modification techniques with widespread, long-lasting or severe effects. It does not cover peaceful climate interventions such as SRM.
2. **Convention on Biological Diversity (CBD), Decision X/33 (2010):** invites parties to ensure that no climate-related geoengineering activities that may affect biodiversity take place until there is an adequate scientific basis and effective regulation, except small-scale scientific research in controlled settings. Later CBD decisions reaffirmed this position.
3. **London Convention and London Protocol:** a 2008 resolution restricted ocean fertilisation to legitimate scientific research, and a 2013 amendment to the London Protocol created a framework to regulate marine geoengineering. The amendment, which is not yet in force, currently lists only ocean fertilisation; whether other techniques, such as MCB, should be added remains under discussion.

4. **United Nations Convention on the Law of the Sea (UNCLOS, 1982):** obliges states to protect the marine environment and to assess activities that may cause significant harm (Article 206). In its advisory opinion of May 2024, the International Tribunal for the Law of the Sea (ITLOS) found that greenhouse gas emissions constitute marine pollution under UNCLOS, reinforcing states' duties to prevent transboundary harm.
5. **International Court of Justice advisory opinion (July 2025):** clarified states' obligations under international law in relation to climate change, including the duty to prevent significant harm to the environment of other states.
6. **UN Environment Assembly discussions:** proposals on geoengineering and SRM were tabled at UNEA-4 (2019) and UNEA-6 (2024), but both were withdrawn after states could not reach consensus. At UNEA-6, the African Group called for an international non-use agreement on SRM.

IV. Past Action

- **2010:** CBD Decision X/33 established the de facto moratorium on geoengineering affecting biodiversity.
- **2013:** London Protocol amendment on marine geoengineering adopted.
- **2019:** a Swiss-led UNEA-4 resolution requesting an assessment of geoengineering was withdrawn.
- **2023:** UNEP published the *One Atmosphere* expert review on SRM; Mexico banned SRM experiments.
- **2024:** a UNEA-6 proposal for an expert group on SRM was withdrawn; ITLOS delivered its climate advisory opinion.
- **2025:** the ICJ delivered its advisory opinion on climate change obligations.

V. Country Perspectives

A. Developed nations (e.g. United States, European Union member states, United Kingdom)

- **Research capacity:** developed countries host most climate modelling institutes and SRM research, often supported by philanthropic funding.
- **Cautious stance:** most governments say SRM cannot replace emission reductions, and support tightly regulated research while opposing outdoor deployment without global agreement. The United Kingdom has funded research into SRM, while the European Union has warned against deployment and supports international discussion of governance.
- **Security concerns:** major powers worry about uncoordinated deployment by other states or private actors.

B. Climate-vulnerable and developing nations (e.g. Small Island Developing States, African Union members, South Asian states)

- **Disproportionate exposure:** these countries face the worst impacts of warming, which can make cooling technologies attractive, but they also face the greatest risk if SRM disrupts monsoons, rainfall and agriculture.
- **Calls for non-use:** many, led by the African Group, support a non-use agreement or moratorium on SRM deployment and outdoor experiments.

- **Inclusion:** scientists and policymakers from the Global South demand an equal role in research, assessment and decision-making so that decisions about the planet's climate are not made by a few wealthy countries.

C. Key actors

Country or group	Likely approach
United States	Hosts much of the world's SRM research; supports research but no deployment without broad agreement.
United Kingdom	Funds research into climate cooling while opposing deployment.
Germany and France	Follow the EU's cautious approach, supporting international discussion of governance and opposing deployment.
China and India	Highly exposed to changes in monsoon and rainfall; stress equity, the responsibility of developed countries and the priority of cutting emissions.
Australia	Has hosted marine cloud brightening research trials over the Great Barrier Reef.
Nigeria, South Africa and Egypt	The African Group has called for an international non-use agreement on SRM.
Bangladesh and Pakistan	Among the most climate-vulnerable countries; cautious about interventions that could disrupt monsoon rainfall.
Saudi Arabia and the Russian Federation	Fossil-fuel producers that may be more open to technological options and wary of measures that increase pressure to cut emissions.

Other key actors (not currently in this committee)

Mexico banned solar geoengineering experiments in 2023, Switzerland led the 2019 and 2024 UNEA proposals, and small island developing states such as Tuvalu and Fiji are among the most exposed to climate impacts. Delegates may refer to their positions.

VI. Key Challenges

- **Fragmented governance:** no single binding treaty covers SRM or MCB, only a patchwork of soft-law decisions (CBD, UNEA discussions) and sectoral treaties (London Protocol, UNCLOS).
- **Risk of unilateral deployment:** low technical and financial barriers mean a single state or private actor could act alone.
- **Uneven impacts:** SRM could create winners and losers by shifting rainfall, weakening monsoons or causing droughts, raising human rights and equity concerns.
- **Unclear jurisdiction at sea:** MCB could take place in national waters, exclusive economic zones or the high seas, with no clear authority to permit, monitor or stop it.
- **No liability mechanism:** people harmed by SRM or MCB have no clear path to compensation under current law.
- **Moral hazard:** the prospect of a quick fix could weaken political will for emission cuts.

- **Research versus deployment:** existing rules do not clearly distinguish permissible small-scale research from large-scale deployment.
- **Lack of transparency:** there is no mandatory public registry of SRM or MCB research, funding or experiments.

VII. Possible Areas of Debate

1. Should UNEP establish a mandatory public registry of SRM and MCB research, funding and field tests?
2. What criteria should distinguish legitimate small-scale research from prohibited deployment, and who should authorise experiments?
3. How could a liability and compensation mechanism for transboundary harm from SRM or MCB work?
4. Should the London Protocol be clarified or amended to cover MCB explicitly, with binding risk-assessment criteria?
5. How should states apply UNCLOS duties, such as environmental impact assessment under Article 206, to MCB?
6. Should SRM and MCB proposals require human rights impact assessments?
7. Should UNEP support negotiations on an international non-use agreement for SRM deployment?
8. How can governance ensure that SRM never substitutes for emission reductions and carbon removal?
9. Should an independent international scientific body, similar to the IPCC, review SRM and MCB proposals?
10. Should regional seas conventions adopt guidelines for MCB within their regions?

VIII. Guiding Questions

1. Should UNEP recommend a binding global framework or moratorium on SRM, or should regulation remain under existing conventions such as the CBD, the London Protocol and UNCLOS?
2. What reporting and enforcement mechanisms could prevent states or private actors from carrying out unauthorised, cross-border climate interventions?
3. How can the international community manage the risk of termination shock if any deployment were ever started?
4. What environmental impact assessments and oversight should be required before outdoor MCB testing is allowed?
5. How can UNEP ensure that geoengineering research does not divert funding, attention or momentum from cutting emissions?
6. How can developing nations, which face the greatest risks, be guaranteed an equal voice in decisions about planetary climate intervention?

IX. Key Terms

Term	Meaning
Geoengineering	Large-scale, deliberate intervention in the Earth's climate system to counter climate change.
Solar Radiation Modification (SRM)	Approaches that cool the Earth by reflecting more sunlight back into space.
Stratospheric Aerosol Injection (SAI)	An SRM technique that releases reflective particles into the stratosphere.
Marine Cloud Brightening (MCB)	An SRM technique that sprays sea-salt particles into low marine clouds to increase their reflectivity.
Unilateral climate intervention	Deployment of SRM or other geoengineering by a single state or private actor without international consent.
Termination shock	Rapid warming that would follow a sudden halt to an SRM deployment.
Transboundary harm	Damage caused in one country by activities carried out in another.
Moral hazard	The risk that the availability of SRM reduces political will to cut emissions.
Non-use agreement	A proposed international commitment not to deploy SRM.
Monitoring, Reporting and Verification (MRV)	Systems to track activities and impacts to ensure compliance and transparency.

X. Committee Procedure

- This committee follows the **ASIS MUN 2026 Rules of Procedure (ROP)**. Where this guide and the ROP differ, the ROP applies.
- **Position papers** are compulsory and must be submitted to the Executive Board during the **first committee session**. Maximum two pages, excluding the bibliography, in the format given in **Appendix A of the ROP**. Wikipedia must not be cited.
- **Working papers** may have up to 5 authors and are voted on by simple majority. Only a passed working paper can be developed into a draft resolution.
- **Draft resolutions** may have a maximum of **3 authors per bloc** and must follow the format in **Appendix C of the ROP**. The committee opening line is *The United Nations Environment Programme,*
- **Voting on draft resolutions:** a draft resolution passes with a **two-thirds majority of Yes over No votes** (abstentions are not counted), unless the Chair announces a different threshold before voting procedure. Draft resolutions are voted on by roll call.
- **Mandate:** UNEP sets the global environmental agenda, assesses environmental science and coordinates the UN's environmental work. It cannot itself create binding treaties, but it can recommend frameworks, assessments, registries and negotiations to Member States and other bodies such as the CBD, the London Protocol and the UNFCCC.

- **Use of AI** by delegates is allowed but results in a deduction of marks, with a greater deduction for paperwork.

XI. Conclusion

Geoengineering and solar radiation modification present a profound governance challenge: planetary-scale technologies with transboundary risks, but no binding global framework to regulate them. Unilateral deployment by a single state or private actor could shift climate patterns, harm vulnerable populations and trigger geopolitical conflict. Existing instruments, including the CBD, the London Protocol and UNCLOS, offer partial limits but leave critical gaps in liability, transparency and enforcement, and marine cloud brightening adds further complexity because of unclear jurisdiction over the oceans and the air above them. Delegates must work towards a legitimate and inclusive approach that prevents uncontrolled interventions while ensuring equity, accountability and continued commitment to cutting emissions.

XII. References

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8. SRM360, independent explainers on solar radiation modification. https://srm360.org
9. Legal Planet (2024), "The global conversation about solar geoengineering just changed at the UN Environment Assembly." https://legal-planet.org/2024/03/08/the-global-conversation-about-solar-geoengineering-just-changed/

Note on the preparation of this guide

Artificial intelligence (AI) tools were used in the preparation of this study guide. The content has been reviewed by the ASIS MUN Policy Department, but delegates should verify key facts and figures against the original sources before using them in debate or in their position papers.

If you find any errors, please email **asis.mun@student.bhavansalain.com**.