



Submission to the Special Rapporteur in the field of cultural rights on the call for input on the right to access and take part in scientific progress

November 2023

Executive Summary

In the context of the right to science and cultural rights, we encourage the Special Rapporteur to address the issue of geoengineering. “Geoengineering” refers to a set of large-scale technological interventions in the Earth’s natural systems to counteract some of the effects of climate change. Geoengineering technologies are extremely relevant in the context of the right to science and to benefit from scientific progress, given the dire impacts on ecosystems and human rights, including cultural rights, associated with their deployment. Given the huge potential risks associated with these technologies - not just when it comes to deployment, but also in the context of field experiments - the right to benefit from scientific progress must not be used to justify the development of approaches that would potentially irretrievably hinder ecosystems and fundamental rights across the globe. On the contrary, upholding the right to science implies putting in place measures that are scientifically proven and that address the root causes of climate change - i.e. phasing out fossil fuels and scaling up renewable energies in a way that is equitable and grounded in human rights. Research and deployment of geoengineering technologies poses important questions about effective participation, access to information and access to justice of those individuals, groups and communities that are affected by them, as well as the question of how to ensure that Indigenous knowledge is taken in consideration next to traditional Western science.

Geoengineering technologies and relevant legal frameworks

Geoengineering technologies usually include the categories of solar radiation management (SRM), marine geoengineering (MGE) or carbon dioxide removal (CDR), targeting land-based, marine and atmospheric ecosystems. Many CDR approaches rely on carbon capture and storage (CCS) as an enabling technology. Such technologies are largely hypothetical for now, but some CDR approaches are being implemented at small commercial scale and SRM and MGE proponents are rapidly moving into real world experiments. The Intergovernmental Panel on Climate Change (IPCC) has consistently warned of geoengineering’s risks to people and ecosystems, which remain poorly understood. The risks around researching SRM for potential deployment are so high that over 450 scientists are calling for a “solar geoengineering non-use agreement”.¹ Recently, the African Committee of Environmental Ministers (AMCEN) called for a global governance mechanism for non-use and cautioned against the promotion of carbon dioxide removal in light of a limited understanding of the risks of these

¹ The open letter can be found here: <https://www.solargeoeng.org/non-use-agreement/open-letter/>

technologies.² Scenarios show that if deployed at scale, geoengineering approaches could affect weather patterns, affecting the monsoon and threatening food security of billions of people.³

As a growing number of human rights mechanisms have highlighted, these technologies have the potential to hinder human rights, including cultural rights. The UN Special Rapporteur on Human Rights and the Environment warned that geoengineering technologies “could have massive impacts on human rights, severely disrupting ocean and terrestrial ecosystems, interfering with food production and harming biodiversity”. The Human Rights Council Advisory Committee prepared a report specifically on “New Technologies for Climate Protection”, highlighting that these might disrupt “the food production of peasants due to interference with natural cycles, which are likely to affect their management systems by undermining their traditional knowledge, practices and innovations.”⁴ It further noted that geoengineering technologies, by disrupting weather patterns and ecosystems, hinder rural communities and Indigenous Peoples’ culture and way of living, since “land has not only an economic function for peasants and other persons working in rural areas, but also social, cultural and spiritual dimensions.”⁵ Overall, geoengineering technologies also expose communities and Peoples to forced displacement and migration, deprivation of their lands, changes to their agricultural opportunities, and their right to freely manage their territory and resources.⁶

The Convention on Biological Diversity, the London Protocol and Convention under the International Maritime Organisation and the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques (ENMOD Convention) explicitly regulate research and deployment of geoengineering technologies.⁷

Parties to the Convention on Biological Diversity (CBD) put in place a global moratorium on geoengineering activities in 2010, with the exception for small-scale scientific research studies.

² African Ministerial Conference on the Environment, Report of the meeting of the nineteenth session of the African Ministerial Conference on the Environment, Nineteenth session (17 - 18 August 2023), AMCEN/19/6. In the Draft Decision, the Parties “urge developed-country parties and other parties to take ambitious mitigation action towards achieving the temperature goal of the Paris Agreement and to caution against the promotion of carbon removal technologies in lieu of mitigation efforts, considering the limited information and understanding of the risks associated with such technologies”, para. 13. Also see Geo-Engineering Monitor, Thoughts On Amcen’s Decision At The 19th Session On Geoengineering Technologies, 19 September 2023:

<https://www.geoengineeringmonitor.org/2023/09/thoughts-on-amcens-decision-at-the-19th-session-on-geoengineering-technologies/>

³ Solar Geo-Engineering Non-Use Agreement, “Solar Geo-Engineering Myths Debunked”, Briefing Note no. 1 (January 2023)

⁴ Human Rights Council Advisory Committee, Report on “Impact of new technologies intended for climate protection on the enjoyment of human rights (10 August 2023), UN Doc. A/HRC/54/47, p. 15.

⁵ *Ibid.*

⁶ The Submission by members of the network of academics for an International Non-Use Agreement on Solar Geoengineering is available at the following link:<https://www.ohchr.org/sites/default/files/2022-05/20220527-wewerinke-singh-leiden-university-SolargeoNUA%20.pdf>

⁷ Convention on the prohibition of military or any other hostile use of environmental modification techniques, 10 December 1976, New York. As noted by the HRC Advisory Committee (fn 4), para. 34, “The ENMOD Convention expressly prohibits “all techniques that are intended to alter – through deliberate manipulation – the natural processes, dynamics, composition or structure of the Earth, including its biota, lithosphere, its hydrosphere and its atmosphere or of outer space” for hostile purposes.

Decision X/33 on Biodiversity and Climate Change directs Parties to “[e]nsure... in the absence of science-based, global, transparent and effective control and regulatory mechanisms for geo-engineering, and in accordance with the precautionary approach and Article 14 of the Convention, that no climate-related geo-engineering activities... that may affect biodiversity take place, until there is an adequate scientific basis on which to justify such activities and appropriate consideration of the associated risks for the environment and biodiversity and associated social, economic and cultural impacts”⁸ The decision makes an explicit exception for “small scale scientific research studies that would be conducted in a controlled setting in accordance with Article 3 of the Convention, and only if they are justified by the need to gather specific scientific data and are subject to a thorough prior assessment of the potential impacts on the environment”.⁹ This decision introduces the important element of prior justification as a prerequisite for geoengineering research and deployment and adds that, even when scientific justification exists, there must be a full prior impact assessment of the risks for biodiversity and associated impacts.

Parties under the London Convention and London Protocol have taken a similar approach with regard to ocean fertilization, stating that “ocean fertilization activities other than legitimate scientific research should not be allowed”.¹⁰ In October 2023, they announced their intention to regulate four further techniques as they would have “the potential for deleterious effects that are widespread, long-lasting or severe; and there is considerable uncertainty regarding their effects on the marine environment, human health, and on other uses of the ocean”¹¹.

These above obligations are complemented by overarching human rights obligations of States and the precautionary principle, which entail that States shall not pursue research and activities that would undermine human rights and would pose serious environmental harm.¹² In their report conclusions, the HRC Advisory Committee reiterated that “[h]uman rights standards and obligations apply to all climate action and should guide decision-making and risk assessment related to the potential deployment of NTCPs. In the current circumstances, these provisions which also reflect fundamental principles of

⁸ UN CBD COP 10 Decision X/33, UNEP/CBD/COP/DEC/X/33, (29 October 2010), Para 8(w)

⁹ *Ibid.*

¹⁰ Resolution LC-LP.1 (2008) on the Regulation of Ocean Fertilization.

In 2010, referring back to the 2008 Resolution, Parties adopted an Assessment Framework for Scientific Research Involving Ocean Fertilization (LC-LP.2(2010)). We note that the 2010 Resolution states that: “Contracting Parties should use the Assessment Framework to determine, with utmost caution, whether a proposed ocean fertilization activity constitutes legitimate scientific research that is not contrary to the aims of the London Protocol or the London Convention.” The Resolution also affirms that the LCLP: should continue to work towards providing a global, transparent, and effective control and regulatory mechanism for ocean fertilization activities and other activities that fall within the scope of the London Convention and the London Protocol and have the potential to cause harm to the marine environment, particularly in light of the progress made with this resolution, resolution LC-LP.1(2008), and the Assessment Framework.

¹¹ 45th Consultative Meeting of Contracting Parties to the London Convention and the 18th Meeting of Contracting Parties to the London Protocol (LC 45/LP 18), October 2023, see: <https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/LC-45-LP-18.aspx>

¹² See, for instance, UN HRC Advisory Committee, HRC Advisory Committee (fn 4), para. 11: “This includes the duty to prevent that areas subject to its jurisdiction or control be used for acts that may cause serious adverse environmental consequences to others. Preventive measures have to be taken to avoid not only environmental damage to other States but also to areas beyond the limits of national jurisdiction, including the atmosphere and the high seas.”

humanity, advise for a precautionary approach and would justify the imposition of a moratorium to speculative technologies as long as scientific uncertainty and the risk of causing serious, extensive and irreversible environmental and human damage remain high. The scope of such regime should be defined by the pertinent expert bodies.”¹³ The Maastricht Principles on the Human Rights of Future Generations - a set of principles to explain States’ human rights obligations vis-à-vis future generations, elaborated by human rights experts - explain that States violate their obligation to protect the human rights of future generations by failing “to effectively regulate, and where appropriate prohibit, scientific research and activities that pose a reasonably foreseeable and substantial risk to the human rights of future generations, including genetic engineering and geo-engineering”.¹⁴

With regard to the precautionary principle, the Committee on Economic, Social and Cultural Rights (CESCR) explained in its General Comment on the Right to Science, that “in the absence of full scientific certainty, when an action or policy may lead to unacceptable harm to the public or the environment, actions will be taken to avoid or diminish that harm.” The potential effects of geoengineering technologies fulfill all the qualifiers of “unacceptable harm” as per the General Comment, as it includes “harm to humans or to the environment that is: (a) threatening to human life or health; (b) serious and effectively irreversible; (c) inequitable to present or future generations; or (d) imposed without adequate consideration of the human rights of those affected.”¹⁵ The huge risks associated with field experimentation and deployment of geoengineering imply that the right to benefit from scientific progress cannot be invoked as a ground for the development of these technologies. On the contrary, it implies that States should put resources and efforts into scaling up renewable energy, and phasing out fossil fuels as a just transition that is grounded in science, equity and human rights would allow addressing the root causes of climate change. This is confirmed by the CESCR, which explained that “States should endeavor to align their policies with the best scientific evidence available”.¹⁶

The right to participation in geoengineering research and deployment

The right to participation is key in the context of research and deployment of geoengineering technologies. As explained by the Committee on Economic, Social and Cultural Rights (CESCR) in its General Comment on the Right to Science, “participation includes the right to information and participation in controlling the risks involved in particular scientific processes and its applications”. Experiments and deployment of geoengineering technologies often happen without adequate

¹³ UN HRC Advisory Committee, HRC Advisory Committee (fn 4), para. 65.

¹⁴ Maastricht Principles on The Human Rights of Future Generations (3 February 2023), Principle 19f: <https://www.ohchr.org/sites/default/files/documents/new-york/events/hr75-future-generations/Maastricht-Principles-on-The-Human-Rights-of-Future-Generations.pdf>

¹⁵ Committee on Socio-Economic and Cultural Rights (CESCR), General comment No. 25 (2020) on science and economic, social and cultural rights (article 15 (1) (b), (2), (3) and (4) of the International Covenant on Economic, Social and Cultural Rights), (30 April 2020), E/C.12/GC/25, para. 56

¹⁶ Committee on Socio-Economic and Cultural Rights (CESCR), General comment No. 25 (2020), (fn 15) para 54.

participation of the affected communities. The SCoPEX case¹⁷ and the Arctic Ice Project¹⁸ are emblematic of a structural lack of participation and consultation of rights holders, including Indigenous Peoples.¹⁹ The Aarhus Convention and the Escazù Agreement provide an important framework in establishing States' obligations regarding procedural rights in the context of environmental policy making - and thus geoengineering interventions - with regard to meaningful public participation, access of information and access to justice.²⁰ As the CESCR specified, participation and transparency are essential for the precautionary principle, "because the risks and potential of some technical advances or some scientific research should be made public in order to enable society, through informed, transparent and participatory public deliberation, to decide whether or not the risks are acceptable".²¹ With specific regard to Indigenous Peoples, the CESCR and the Advisory Committee have made it clear that Free, Prior and Informed Consent is imperative when research is conducted that could have an impact on Indigenous Peoples²² or when their knowledge is used in scientific processes.²³ Procedural rights also ensure that research is conducted in a legitimate manner, including legitimate rightsholders. As the Advisory Committee has also highlighted in its report, there are huge vested interests from corporations, which tend to "exaggerate certainties of a technology in question, while underplaying uncertainties"²⁴. Providing transparent, participatory processes help ensure that the affected groups and communities are meaningfully informed and included in scientific research and progress and that conflict of interest and corporate capture are identified and addressed. Yet, given the huge scale of potential field experimentation and, eventually, deployment of technologies such as solar radiation modification or marine geoengineering that by nature have transboundary effects and would

¹⁷See The Arctic Institute, Centre for Circumpolar Security Studies, "Sámi Council resistance to SCoPEX highlights the complex questions surrounding geoengineering and consent", (20 May 2021): <https://www.thearcticinstitute.org/sami-council-resistance-scopex-highlights-complex-questions-geoengineering-consent/>

¹⁸ SCoPEX and the Arctic Ice Projects are two solar radiation management experimental projects planned in indigenous lands, which encountered Indigenous groups' resistance. The two projects are mentioned in Tonatierra, Submission to the United Nations Human Rights Council Advisory Committee in response to request for input on new climate technologies and human rights per UN HRC Resolution 48/14: <https://www.ohchr.org/sites/default/files/2022-05/20220528-tonatierra-ntcp-and-hr.pdf>

¹⁹ See Tonatierra (fn 18), on the violations of the right to free, prior and informed consent, p.5.

²⁰ In that regard, an international voluntary standard which covers geoengineering was discussed within the International Standardisation Organisation (ISO) process in 2019. NGO back then raised concerns that the highly technical and confidential nature of ISO processes prevented communication of these discussions, in breach of the Almaty guidelines. In addition, NGOs viewed the proposed standard as stepping beyond the remit of the ISO by an enabling framework for geoengineering projects, thereby pre-empting democratic discussion and public engagement with policy/law-making on the controversial issue of geoengineering in MEA frameworks. The proposed ISO standard was never agreed and instead downgraded to a technical report. See sec. II, p. 2, European ECO Forum, Submission to the 24th Working Group of the Parties to the Aarhus Convention Promotion of the principles of the Convention in international forums, raising concerns about the integration of geo-engineering within ISO processes, and its potential impacts on the procedural environmental rights protected under the Convention, available at https://unece.org/fileadmin/DAM/env/pp/wgp/WGP_24/Statements_and_Presentations/Item_8_EuECOForum.pdf

²¹ CESCR General comment No. 25 (2020), (fn 15), para 57

²² CESCR General Comment No. 25 (2020), (fn. 15), para 40; Human Rights Council Advisory Committee Report on "Impact of new technologies intended for climate protection on the enjoyment of human rights, (fn 4), para 55.

²³ Ibid.

²⁴ Human Rights Council Advisory Committee Report on "Impact of new technologies intended for climate protection on the enjoyment of human rights, (fn 4), para 21

impact global ecosystems, the question arises of whether it would even be possible to ensure adequate participation and other procedural rights of the communities affected.

Indigenous Peoples' traditional knowledge

Another essential dimension when discussing scientific research and cultural rights is the inclusion of Indigenous Peoples' traditional knowledge. First, it is interesting to note that the Special Rapporteur on Indigenous People has suggested referring Indigenous knowledge as “scientific and technical knowledge”²⁵ in lieu of traditional or customary knowledge, precisely with the aim to avoid reiterating prejudices and discrimination of indigenous People's knowledge vis-a-vis western science. The 2007 UN Declaration on the Rights of Indigenous Peoples recognizes Indigenous Peoples' “right to maintain, control, protect and develop their [...] traditional knowledge as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, among others”.²⁶ On a similar note, in its General Comment no. 25, the CESCR recognized that “local, traditional and indigenous knowledge, especially regarding nature, species (flora, fauna, seeds) and their properties, are precious and have an important role to play in the global scientific dialogue.”²⁷ The CEDAW General Comment no. 39 recommended State Parties to recognize and protect Indigenous knowledge and the contributions of Indigenous Peoples, including women, to science and technology.²⁸

With specific regard to the environment, Indigenous knowledge has been given increased attention and acknowledgement in the context of climate change and biodiversity. The 6th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) recognizes the role of Indigenous and local knowledges in global climate adaptation: “Indigenous Peoples have been faced with adaptation challenges for centuries and have developed strategies for resilience in changing environments that can enrich and strengthen other adaptation efforts (high confidence). [...] Indigenous knowledge underpins successful understanding of, responses to and governance of climate change risks (high confidence).” In the context of the United Nations Framework Convention on Climate Change (UNFCCC), the Paris Agreement significantly acknowledges a parallel role to climate science and local, traditional and indigenous knowledge systems in guiding climate adaptation. (art. 7.5.) Following the UNESCO's long-standing efforts in that sense,²⁹ and the scientific literature's call to fully recognize and integrate the role of indigenous knowledge with global scientific processes³⁰,

²⁵ Special Rapporteur on the Rights of Indigenous Peoples, Report on “Indigenous women and the development, application, preservation and transmission of scientific and technical knowledge” (9 August 2022), A/HRC/51/28, par. 8, p. 4.

²⁶ United Nations Declaration on the Rights of Indigenous Peoples (13 September 2007, A/RES/61/295, art. 31

²⁷ CESCR General comment No. 25 (2020), (fn 11), para 39

²⁸ Committee on the Elimination of Discrimination Against Women (CEDAW), General recommendation No.39 (2022) on the Rights of Indigenous Women and Girls, (2022), UN Doc no. CEDAW/C/GC/39 , par. 48

²⁹ UNESCO has been striving to include local and indigenous knowledge in global climate science and policy process through the LINKS programmes. More information and the LINKS projects outputs, can be found at the website: <https://en.unesco.org/links>

³⁰ See, among others, Ford, J., Cameron, L., Rubis, J. *et al.* Including indigenous knowledge and experience in IPCC assessment reports. *Nature Clim Change* 6, 349–353 (2016). <https://doi.org/10.1038/nclimate2954>

In the biodiversity framework, COP15 recognized Indigenous Peoples' role as "custodians of biodiversity and partners in the conservation, restoration and sustainable use" in the newly adopted Global Biodiversity Framework.³¹ The Convention's implementation must thus ensure "indigenous people's knowledge, including traditional knowledge associated with biodiversity, innovations, worldviews, values and practices [...] including through their full and effective participation in decision-making."³² Parties also committed to strengthen the integration of Indigenous knowledge into formal and informal education, by "recognizing diverse world views, values and knowledge systems of indigenous peoples and local communities."³³ It is worth noting that the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) established a Task Force on Indigenous and Local knowledge³⁴ in 2014, with the aim to enhance the recognition of and work with Indigenous and local knowledge systems. Since its establishment the Task Force has been working, among others, on the adoption of a participatory mechanism to facilitate Indigenous peoples' participation in IPBES assessments and other activities.³⁵

Building on progress under the climate and biodiversity regimes, Indigenous knowledge should be integrated into relevant scientific research, especially in the context of geoengineering technologies. On one hand, Indigenous knowledge is key in informing solutions to the climate crisis, and on the other, it helps to assess the risks and dangers of geoengineering on ecosystems and communities.

Conclusion

The issue of geoengineering technologies is extremely relevant to the right to science and cultural rights, due to its potentially irreversible impacts on ecosystems and human rights, including cultural rights. We encourage the Special Rapporteur to include this dimension in her report and clearly state that the right to benefit from scientific progress should not be invoked to justify the development of geoengineering approaches that could irreversibly harm ecosystems and fundamental rights globally, but that it rather implies States' duty to put in place measures that are in line with the best available science, namely fossil fuel phase out and scaling up of renewable energy, in a manner that is compliant with human rights. We also respectfully call upon the Special Rapporteur to highlight the significance of the right to Free, Prior and Informed Consent of Indigenous Peoples in geoengineering research, and the importance of including Indigenous knowledge into scientific research.

³¹ Conference of Parties to the United Nations Convention on Biological Diversity, CBD/COP/15/L.25, (18 December 2022), par. 8, available at

<https://www.cbd.int/doc/c/e6d3/cd1d/daf663719a03902a9b116c34/cop-15-l-25-en.pdf>

³² *Ibid.*

³³ *Ibid.*, para 22

³⁴ See their website: <https://www.ipbes.net/indigenous-local-knowledge/our-work>

³⁵ *Ibid.*