

# Climate engineering and international law: Challenges for scientists and scholars

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# CLIMATE ENGINEERING AND INTERNATIONAL LAW: CHALLENGES FOR SCIENTISTS AND SCHOLARS

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Climate engineering (CE) has become a topic of hot debate in Germany, particularly since the 2011 publications by the German Federal Environment Agency (Ginzky et al.: *Geoengineering – effective climate protection or megalomania?* 2011) and the German Federal Ministry of Education and Research (Rickels et al.: *Gezielte Eingriffe in das Klima? Eine Bestandsaufnahme der Debatte zu CE.* 2011). CE efforts ultimately affect every discipline, aiming at several extremely controversial technologies designed to mitigate or compensate for human-induced climate change by removing carbon dioxide (CO<sub>2</sub>) from the atmosphere or by managing solar radiation. The debate has now also reached the field of law. The overwhelmingly transnational character of CE technologies means that they mainly concern the part of international law that can be defined as intergovernmental law.

Because almost every CE technology poses risks to at least one type of environmental media, one can ask if it is even admissible to address the issue from a legal perspective. I believe that the answer to this question must be “yes,” despite the risk that any closer research into CE could help secure the future use of these technologies (the “self-fulfilling prophecy”

argument.) Or the worst-case scenario; that it could significantly reduce efforts to control emissions (the “moral hazard” argument). In my opinion, however, the risks posed by a unilateral and/or unregulated, or even commercially-focused use of CE technologies far outweigh those posed by research into it. Scholars of international law must therefore work closely with the other disciplines to assess applicable law for its relevance and suitability for CE, and to develop proposals for the future form of an effective regulatory framework that takes account of distributive justice and sustainability.

If we look more closely at applicable international law, we find that there are currently no standards for broadly and comprehensively regulating research into and/or use of CE. No international treaty has been passed to limit the admissibility of these kinds of activities. However, many treaties concerning very specific environmental problems are formulated in such an “open” and at times “vague” way that they can incorporate developments that the original intention of the treaty does not actually cover.

Particularly within the context of the requirements of the United Nations

Framework Convention on Climate Change (UNFCCC), no general ban on CE exists under international law. What international law does do, is stipulate that anyone involved in researching and/or using CE must give due consideration to existing laws, to the territorial integrity of other countries, and to the environment of areas beyond national jurisdiction (international waters, space). A purely unilateral approach would not guarantee that these requirements were being respected.

The comparatively general nature of these conclusions shows that international law does not provide a sufficiently effective or tailored framework for regulating CE. The question therefore arises of how we can develop applicable law to respond to the requirements outlined in the introduction. There is no indication that it would be possible to negotiate a globally applicable and comprehensive system that is binding under international law in which – similar to the UNFCCC – every country in the world would participate. The interests of individual countries and groups of countries are too different, the socio-cultural contexts and assessments too varied, the methods and technologies classified under CE too diverse. Even the “First World” developed countries do not take a unified approach to the CE issue. Germany, for example, justifiably favors a reserved approach, according to which research should be carried out solely for CE technology-assessment purposes, and not with a view to their future use. Overall, developments indicate that the admissibility debate on CE research and deployment will, for now, be held within

the framework of the Conferences of the Parties of existing multilateral agreements – above all the UNFCCC, the Conference on Biological Diversity (CBD) and the London Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter.

In analysing individual treaties and customary international law, however, two things stand out. On the one hand, the provisions of international environmental law state that the admissibility of certain human activities always depends on whether they will or could damage the environment. This is not a question that lawyers can answer. Interdisciplinary collaboration, especially in researching comparatively new technologies such as CE, is therefore absolutely crucial. It becomes particularly necessary in light of the precautionary principle, which has become a standard part of numerous international treaties: scientific uncertainty on the risk of environmental damage cannot automatically lead to approval of the activity in question.

On the other hand, most treaties are designed to protect a very specific environmental good, such as the marine environment. But they ignore the fact that certain activities and technologies found to have a negative impact on one area of the environment could actually be beneficial to another. This is precisely the case with CE. After all, the idea (at least according to its proponents) is that the technologies in question should be researched and used as necessary to combat or mitigate the negative effects of climate change. This

question arises of how international law should deal with these kinds of conflicting environmental goals in future. By seeking answers, scholars of international law can make a decisive contribution to the CE discussion.

In my opinion the scientific uncertainty – which will continue for the foreseeable future – surrounding the possible negative environmental effects of CE and the consequences of climate change, suggests that we need regulatory approaches that allow a relatively high level of flexibility in addressing new findings and developments. Declaring wide-reaching moratoria on research – which in any case would hardly be feasible, given the existing divergence of interests in the international community – is not the way to achieve this. Rather, decisions on the pros and cons of CE research (and ultimately of its use) must always involve risk assessments. In the future we will therefore need to weigh up what environmental damage we are willing to risk when it comes to the potential suitability of a CE method. The task of international law would then be to ensure that a risk assessment forming the basis of a national or supranational decision is carried out in line with proper procedure.

I suggested earlier that the precautionary principle, which in its most rudimentary form can represent a lowest common denominator in almost all treaties relevant to CE, should be used in the future – and to disrupt the selective understanding that currently dominates – as a link and procedural basis for risk assessments. The

results of assessment would then depend on individual case circumstances. Specific aspects in each case would have to be considered: the extent of the potential damage to the environment; the degree of scientific uncertainty on the possible negative consequences of the CE measure in question; the formulation of the precautionary principle in the applicable treaties. Here again, interdisciplinary collaboration is absolutely essential. The degree of scientific uncertainty and the formulation of the precautionary principle in the treaties applicable to a given case would show whether researching a specific CE method is admissible. Given the existing uncertainties, the (probably commercially focused) use of a CE technology would be out of the question for the time being, even in cases where an assessment has been made.

It is true that this suggestion does not provide a basis for achieving clear results that are certain from the outset. This is why the assessment must be officially embedded in the context of the treaty that is specifically affected or most likely to be affected. This would therefore involve adapting the assessment parameters (which would probably also include transparency obligations for the research findings) and the general obligations under customary international law on consultations for and implementation of environmental impact assessments to the specific nature of the CE methods in question, and then effectively implementing them. This task would have to be carried out by the Conference of the Parties of the existing multilateral

agreements. For now, however, the decision to approve a CE research project, which would always require a risk assessment based on the internationally agreed parameters, would lie with the relevant national authorities.

The Assessment Framework for Scientific Research Involving Ocean Fertilization, passed at the London Convention in 2010, could serve as a model. Among the most interesting aspects of this framework are the additional procedural regulations that were added in the last round of negotiations. These regulations provide at least partial scope within the decision-

making process for weighing up the existing environmental risks of ocean-fertilization experiments against the potentially positive effects of the research. This is all the more significant because ocean fertilization is currently the only CE method subject to comparatively precise regulation under an international treaty. In view of this, one of the main future tasks will be to establish similar frameworks for research into other CE methods. I believe that we will gain more from this kind of approach than by insisting on a "blanket solution", whose implementation appears very remote.

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