

# Climate Change Responses: Is UNCLOS fit for purpose?

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## The Context

- Climate change has both direct and multiplier effects on existing challenges for marine species and habitat; potential to act synergistically with current anthropogenic threats
- Such threats include the potentially negative aspects of human responses to climate change such as ocean iron fertilization (OIF) and its impact on the marine environment
- OIF field trials have already taken place; recent large-scale (100 metric tonnes of iron sulphate) OIF incident off the west coast of Canada
- Concerns highlighted, inter alia, during UNGA debates on Oceans and the Law of the Sea in annual reports by UNSG on the law of the sea
- 2007 4<sup>th</sup> Assessment Report of the IPCC identified potential mitigation measures including ‘geoengineering options, such as ocean fertilization to remove CO<sub>2</sub> directly from the atmosphere’ whilst also noting that such methods remain ‘largely speculative and unproven, and with the risk of unknown side-effects’

- OIF one form of ‘geoengineering’, which may be defined generally as all methods which involve **deliberate intervention in the working of the Earth’s natural systems intended to counteract anthropogenic climate change and its impacts**
- E.g. 2009 UK Royal Society Report *Geoengineering the Climate: Science, Governance and Uncertainty* divides methods between **direct carbon dioxide removal (CDR)** such as ocean iron fertilization and air capture, and **solar radiation management (SRM)** to decrease warming eg. space sunshades, cloud brightening, stratospheric particulates (‘aerosols’).

- Despite significant impacts on the oceans, key climate change legal texts (UNFCCC and KP) have little to say about them
- No mention of climate change (nor of marine geoengineering/OIF) in UNCLOS, for obvious reasons
- Nonetheless this ‘living instrument’ clearly of general application both to geoengineering activities taking place in, and launched from the oceans
- Provides general framework for responses *outside* UNCLOS, particularly by the parties to the London Convention and Protocol (LC/LP) and to the Convention on Biological Diversity (CBD)

## From Ocean Iron Fertilization to Marine Geoengineering? The 1972 London Convention (LC) and 1996 Protocol (LP)

- the question of control over geoengineering research and experimentation has already arisen
- In 2008 the parties to the global 1972 LC (replaced by the 1996 Protocol for States party to both), adopted a resolution agreeing that ocean fertilization is governed by the treaty but that **legitimate scientific research** is exempted from its definition of dumping. Ocean fertilization activities apart from such research ‘should not be allowed’, are not exempted from the definition of dumping, and ‘should be considered as contrary to the aims of the Convention and Protocol’
- Resolution to be reviewed in the light of new and relevant scientific knowledge and information

- The assessment framework tool developed by the Scientific Groups under the LC/LP (2010) provides the parameters for assessing whether a proposed ocean fertilisation activity is ‘legitimate [reasonable] scientific research’ consistent with the aims of the Convention. It includes:
  - Requirement for environmental assessment, including risk management and monitoring
  - No ‘exemption’ threshold below which experiments exempt from assessment provisions, i.e. the Assessment Framework applies regardless of the size or scale of the project (but differentiation as to extent of information required)

- **Intersessional Working Group** established to focus on legal options in order ‘to provide a global, transparent and effective control and regulatory mechanism for ocean fertilization activities *and* for activities that fall within the scope of the London Convention and Protocol and have the potential to cause harm to the marine environment’
- Some options extend beyond OIF to embrace marine geoengineering more widely (‘future proof’)
- In discussion of options, consistency with UNCLOS/the law of the sea has been raised as a critical factor

- 4 options on the table in 2012:
- (1) Australia/Korea: New LP article on marine geoengineering with two new annexes, one (new annex 4) that lists those marine engineering activities that are regulated and another (new annex 5) referring to the Generic Assessment Framework for marine geoengineering activities [but definition of marine geoengineering not agreed and various alternative texts proposed][‘sea and sky’ issue]
- (2) US,with Japan: proposed a new option to regulate OF only (new article and annex)
- (3) ACOPS: amend annex 1 to the Protocol (not discussed further but retained as ‘fall back’ option)
- (4) Interpretative resolution (not discussed further as viewed to reflect status quo)
- Further Chinese 1+1 proposal: amendment + interpretative resolution (to address issue that LC parties not bound by amendment to LP)
- ‘The Meetings also noted that the final proposal for amended text would need to be consistent with international law in general and UNCLOS in particular’

- (Some) UNCLOS issues which have been raised:
- Extension of LP to ‘placement’ activities for which UNCLOS establishes certain rights and obligations (building installations, laying of submarine cables and pipelines, marine scientific research); potential restrictions on ‘kit’ employed in marine geoengineering experiments (e.g. pipelines - Article 87(1)(f))
- Articles 210 and 216 addressed to ‘dumping’; extension of coastal state legislative and enforcement jurisdiction to a ‘placement’ permitting regime [living instrument vs mission creep; however, other examples of placement]
- Within and beyond LC/LP context, wider question raised regarding the compatibility of regulation of scientific research with its freedom under UNCLOS
- Such freedoms not absolute (conditional); must be exercised with due regard for the interests of other States and in accordance with the provisions of UNCLOS (eg. to protect and preserve the marine environment) including Part XIII on marine scientific research (e.g. Art 240 requirement to conduct research in compliance with all relevant regulations adopted *in conformity with* UNCLOS, including those for the protection and preservation of the marine environment)

## Geoengineering and the 1992 Convention on Biological Diversity (CBD)

- In 2008 the parties to the 1992 CBD first debated adopting a moratorium on all ocean fertilization activities but ultimately followed the LC/LP approach
- States parties are requested (and other governments ‘urged’) to ensure that ocean fertilization activities do not take place until there is an adequate scientific basis on which to justify such activities *and* a ‘**global transparent and effective control and regulatory mechanism is in place for these activities**’. An exception is made for small-scale research studies within ‘coastal waters’ for scientific purposes, without generation or selling of carbon offsets or for any other commercial purposes (CoP 9 Decision IX/16 2008). [extensive criticism e.g. by IOC of legally indeterminate ‘coastal waters’]
- **2010 CBD SBSTTA 14 Report (to CoP) calls on the Parties to** ‘[e]nsure, in line and consistent with [this decision]... and in accordance with the precautionary approach, that **no climate-related geo-engineering activities 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’ [transition to addressing ALL geoengineering]

- Nagoya COP 2010 Decision X/33 on biodiversity and climate change which, inter alia:
- “Invites Parties and other governments, according to national circumstances and priorities... **to [e]nsure...in the absence of science based, global, transparent and effective control and regulatory mechanisms for geo-engineering ...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, with the **exception of small scale scientific research studies** that would be conducted in a controlled setting...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”
- Acknowledges LC/LP work on ocean fertilization
- Decisions of COP not legally binding; decision uses soft language (“invites”); treaty mandate extends (only, albeit significantly) to conservation of biodiversity and sustainable use of biological resources [no ‘one stop shop’ either for (marine) geoengineering]

**CBD COP 11 (8-19 October 2012) reaffirmed Decision X/33**  
para. 8 and noted, inter alia:

- the lack of science-based, global, transparent and effective control and regulatory mechanisms for climate-related geo-engineering (most necessary for activities with potential to cause significant adverse transboundary effects and/or deployed in areas beyond national jurisdiction & the atmosphere)
- noted that the application of the precautionary approach, as well as customary international law, including States' general obligations with regard to activities within their jurisdiction or control and with regard to possible consequences of those activities, and environmental impact assessment requirements, may be relevant for geo-engineering activities **but would still form an incomplete basis for global regulation**

## Non-binding general principles of conduct or guidelines

- A general governance framework(s) for research needn't *necessarily* be legally binding; start with formulation of general principles (cf Oxford Principles)
- Royal Society Report recommended a **voluntary research governance framework**, eg code(s) of conduct for scientific research into geoengineering techniques, drafted by scientific community through existing organisations (eg WMO, IOC, ICSU, IPCC) [Conclusions, Recommendation 7]
- bottom-up, 'user group' orientation and can be adopted 'instantly' (but issues of trust, transparency, control and enforcement)
- Could sit against backdrop of a moratorium on deployment/large-scale research (defined by activity and/or by impact) piggy-backing on LC/LP and CBD resolutions and/or pursuant eg to ENMOD or UNGA resolution [dsb mining analogy?]
- options not necessarily mutually exclusive; 'twin-track soft-hard' rules

## Final General Remarks....

- Currently no existing treaty provides a blanket prohibition on all geoengineering [unless for military/hostile purposes- ENMOD]; questions of scope, competence to do so [CBD example]; treaty and *ci* constraints even in the absence of bespoke geoengineering agreement [e.g. Art 192/cil]
- CDR relatively well-regulated (or capable of being so) by existing local, national, regional and international governance structures; gaps for SRM (though customary norms apply) and for coordination amongst the methods (e.g. cumulative direct/indirect impacts) to avoid the dangers of regulatory fragmentation
- Strong consensus (including under LC/LP and CBD) on the need for a governance framework to be in place BEFORE (if) deployment (could be local, national for contained technologies; international for large-scale/transboundary methods/impacts) and, in short term, **governance frameworks for research** [however, issue of scale and boundaries between research and deployment]
- Will need flexibility to respond to changes in scientific knowledge and to unintended consequences of research and (if ever) deployment [LC/LP language: flexibility and future-proofing]