

MIND THE GAP: GEOENGINEERING AND THE LAW OF THE SEA

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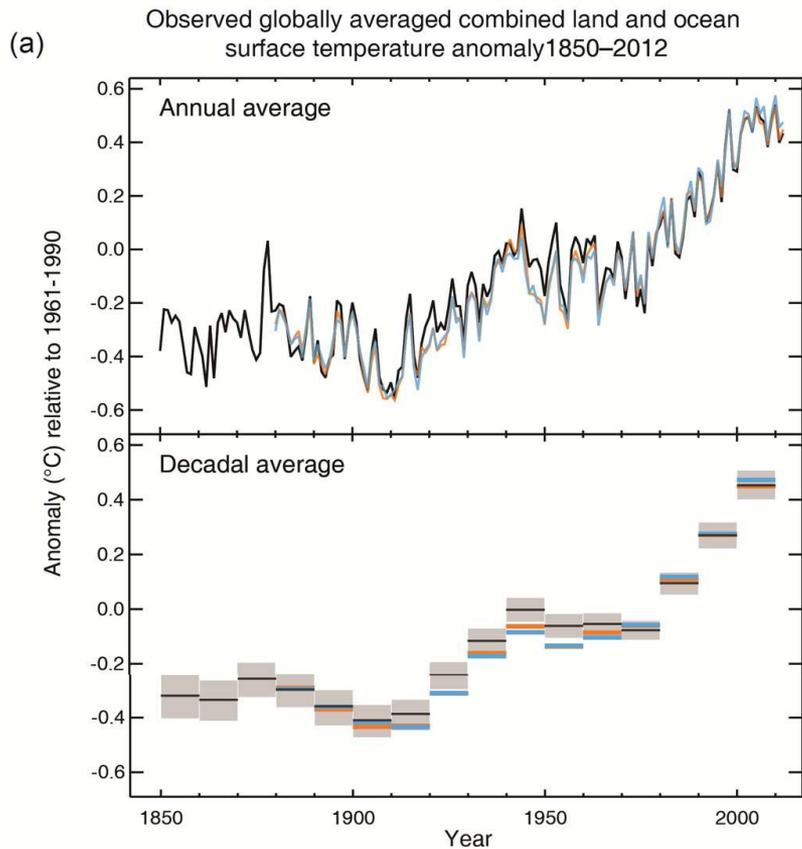


GEOENGINEERING AND THE LAW OF THE SEA

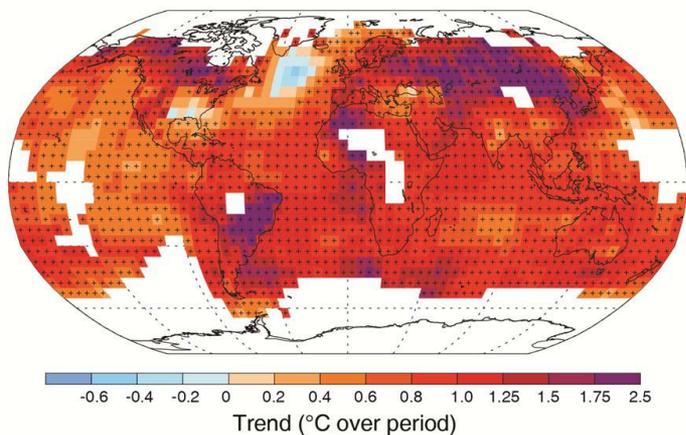
- Marine Geoengineering demonstrates the gaps, the promise and the limitations of the modern law of the sea.

ABSTRACT

- This paper will explore the themes of this conference – gaps and challenges in the law of the sea – through a study on the emerging regime for the regulation of marine geoengineering. Geoengineering is the deliberate manipulation of natural environmental systems for primarily (although not exclusively) climate change mitigation purposes. Taking advantage of its status as a natural sink for carbon dioxide, it is unsurprising that much geoengineering research to date has focused on the oceans, and, equally unsurprisingly, regulators and policy-makers have begun to respond to this new activity. This paper will explore whether the approach of ‘plugging the gaps’ in regulation using existing instruments such as the 1996 Protocol to the 1972 London Dumping Convention is an appropriate long-term response to the challenge of geoengineering the marine environment. It will conclude with a brief discussion of two options for future regulation, namely, addressing geoengineering through the prospective Agreement on the Conservation and Sustainable Use of Marine Biological Diversity of Areas Beyond National Jurisdiction currently under negotiation and the adoption of a United Nations General Assembly resolution on oceans and climate change.



(b) Observed change in average surface temperature 1901–2012



CLIMATE CHANGE AND THE OCEANS

- Temperature increase;
 - Sea level rise;
 - Ocean acidification
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- In 2015 the WMO confirmed atmospheric concentrations of CO₂ reached 400 ppm on average, across the year as a whole.

CONTEXT OF UNCERTAINTY AND INACTION

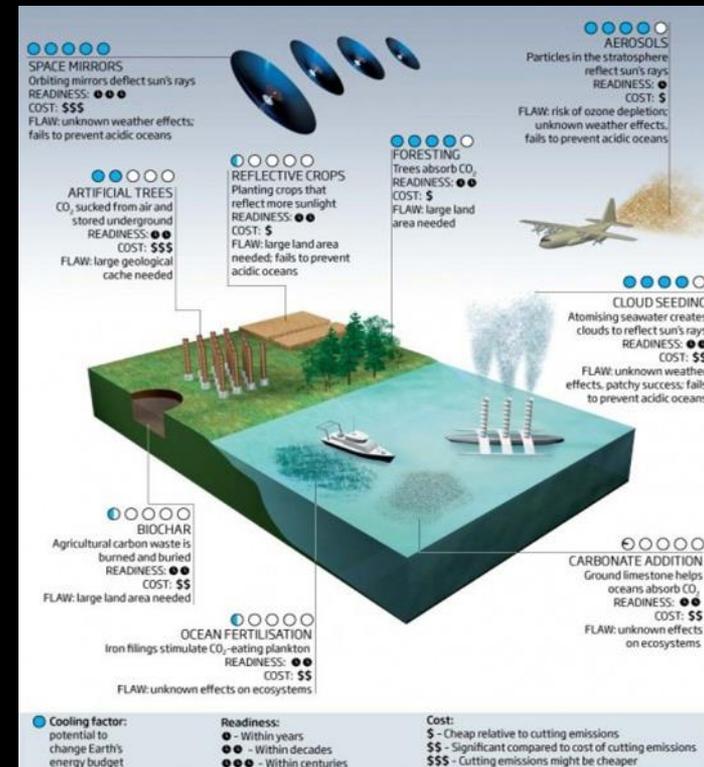
- Global emissions increased by 40 % between 1992 and 2008 despite global and individual commitments under the 1992 UNFCCC and the 1997 Kyoto Protocol.
- Far from certain whether the NDCs agreed by 143 states under the 2015 Paris Agreement will limit the global temperature increase to 2°C.
- Not clear what the impacts of a 2°C increase in global temperature will be in any case.

GEOENGINEERING

- The intentional large-scale manipulation of the environment.

David W Keith, "Geoengineering the Climate: History and Prospect" 25 (2000) *Ann. Rev. Energy & Env't* 245 at 247

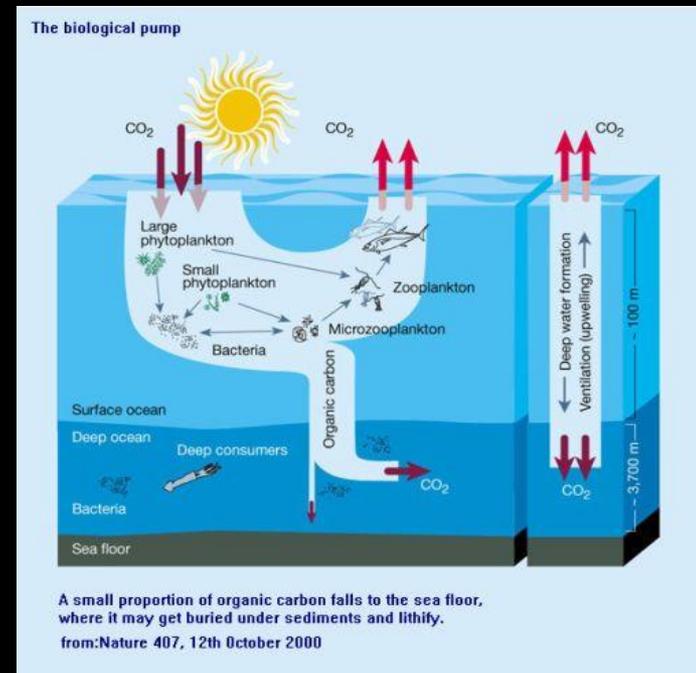
- "Marine geoengineering" means a deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change and/ or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long lasting or severe.



OCEAN (IRON) FERTILIZATION

- “Given me half a tanker of iron and I will give you an ice-age.”

J. Martin, “Glacial – Interglacial Change: The Iron Hypothesis” 5 (1990) *Paleoceanography* 1 at 10.



GEOENGINEERING AND THE 1982 UNCLOS

- The 1982 UNCLOS establishes a largely permissive regime for maritime activities with the ultimate aim of balancing the rights of coastal and other states according to location (zone) and activity (function).
- Activities of coastal states within their maritime zones and any state exercising high seas freedoms must have due regard to the interests of other states and comply with Convention requirements relating to scientific research and environmental protection.

GEOENGINEERING, UNCLOS AND MARINE ENVIRONMENTAL PROTECTION

- Article 192 UNCLOS creates a general obligation of environmental protection and preservation and the sovereign right of coastal states to exploit their natural resources, which arguably includes the capacity of the oceans to sequester CO₂ under Article 193 is limited by the duty to protect and preserve the marine environment, including, under 194(5) rare and fragile ecosystems.
- Precaution
- Environmental Impact Assessment
- Obligation to take all measures to prevent, reduce and control pollution from *any* source.

GEOENGINEERING AND ARTICLE 210 OF UNCLOS

- Can geoengineering be classed as 'dumping'?
- Can Resolution LC.LP.1 (2008) be used to interpret 'placement of matter for a purpose other than mere disposal thereof, provided that such placement is not contrary to the aims' of the LC/ LP?
- Which rules on dumping apply under Article 210: the 1972 Convention or the 1996 Protocol?



GEOENGINEERING AND MSR UNDER UNCLOS

Parts XIII and XII of UNCLOS establish a broadly permissive regime relating to scientific research.

2013 AMENDMENTS TO THE 1996 LONDON PROTOCOL

- “Marine geoengineering” means a deliberate intervention in the marine environment to manipulate natural processes, including to counteract anthropogenic climate change and/ or its impacts, and that has the potential to result in deleterious effects, especially where those effects may be widespread, long lasting or severe.

1996 London Protocol, Article 1(5bis) (not yet in force)

- Contracting Parties shall not allow the placement of matter into the sea from vessels, aircraft, platforms or other man-made structures at sea for marine geoengineering activities listed in annex 4, unless the listing provides that the activity... may be authorized under a permit.

Article 6bis (1)

- Must issue a permit.
- Must undergo assessment to determine pollution is prevented or reduced to a minimum.

Article 6bis (2)

2013 AMENDMENTS TO THE 1996 LONDON PROTOCOL

- Annex 4
 - Ocean fertilization is any activity undertaken by humans with the principal intention of stimulating primary productivity in the oceans.
 - Ocean fertilization may only be authorized by a permit if it is legitimate scientific research according to the assessment framework set out in Annex 5.



2013 AMENDMENTS TO THE 1996 LONDON PROTOCOL: ITS LIMITS

1. Scope – of limited application to date: the amendment has been ratified by 1 party; the Protocol applies to 48 states; it is unclear when, and if at all, the standards could be incorporated under Article 210 UNCLOS.
2. Does the Protocol provide a mandate to regulate other forms of geoengineering, in particular, those which do not involve the introduction of matter into the oceans?
3. Does the Protocol provide an appropriate forum to discuss the broader moral and ethical issues associated with geoengineering?

RESPONDING TO THE CHALLENGE: TWO PROPOSALS

1. Addressing marine geoengineering and climate change and the oceans more generally in the *Legally Binding Instrument on the Conservation and Sustainable Use of Marine Biological Diversity of Areas beyond National Jurisdiction* currently under negotiation.
2. Adopting a UN General Assembly Resolution on oceans, climate change and geoengineering.