Climate Change and the Oceans: Navigating Legal Orders

Karen N. Scott
Professor of Law
University of Canterbury, New Zealand
Climate Change and the Oceans: Navigating Legal Orders

Abstract

Climate change may be characterised as the greatest global long-term threat to the health of the planet. Until relatively recently, its impact on and potential implications for the oceans has generated little concern, at least in comparison with the atmosphere and biosphere. This is changing however, as the impacts of a warmer ocean on ecosystems and biodiversity, sea level rise and ocean acidification are better understood. Its subordinate status nevertheless is perpetuated by the climate change regime, which pays relatively little attention to both the impacts of climate change on the oceans and the capacity of the ocean to mitigate climate change as a carbon dioxide sink. Moreover, the characterisation of the ocean as a sink to be exploited to mitigate climate change demonstrates the complex legal and moral relationship between the oceans and atmosphere and between organisations with responsibility for the oceans and atmosphere. This paper will explore that complex legal and moral relationship, and will examine how linkages and connections between regimes with responsibility for the oceans and for the atmosphere can – indeed must – be developed in order to develop ecologically and legally coherent responses to climate change.
Climate Change and the Oceans: A Complex Legal and Ethical Relationship

- The oceans perform a key function in the carbon cycle and have absorbed approximately 50% of anthropogenic CO₂ released since the onset of the Industrial Revolution.

- These natural processes can be artificially enhanced through sequestration of geoengineering, representation a potential mechanism to mitigate climate change.

- But climate change is simultaneously impacting negatively on the oceans.
Climate Change and the Oceans
Three Regulatory Themes

Mitigation

Adaptation

Exploitation
Climate Change and the Oceans
Selected Impacts

Environmental Change
- Sea Temperature Rise
- Acidification
- Deoxygenation
- Sea-level Rise

Security
- Food Security
- Maritime Security – e.g. refugee influxes, safety of navigation
- Territorial Security – maritime and territorial boundary implications

Future Generations
- The oceans as a resource to be exploited for climate change mitigation
- How we value the oceans
Climate Change and the Oceans
Mitigation: UNFCCC

• The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

  Article 2, 1992 UNFCCC

• Note – ‘climate system’ is defined as the ‘totality of the atmosphere, hydrosphere, biosphere and geosphere and their interactions’ (Article 1(3)).
Climate Change and the Oceans
Mitigation: UNFCCC

• The 1997 Kyoto Protocol set emission reduction targets for Annex 1 states. Those states could select which emissions from a basket of 6 (extended to 7 in 2012) GHGs (Article 3).
  • No specific target was set in relation to CO₂.

• The 2015 Paris Agreement provides even greater flexibility in how states mitigate emissions, relying on Nationally Determined Contributions (NDCs) (Article 3).

• It is clear that the original target established under Kyoto (5 % reduction of emissions below 1990 levels) was woefully inadequate in relation to mitigating the impacts of climate change on the oceans (and atmosphere).

• It is far from clear that the 2015 Paris Agreement target of ’holding the increase in the global average temperature to well below 2°C’ (preferably to no more than 1.5°C) (Article 2) will be effective in avoiding significant negative impacts on the oceans.
Climate Change and the Oceans
Mitigation: UNCLOS

• Can additional obligations to limit greenhouse gases (particularly CO\textsuperscript{2}) be found under 1982 UNCLOS?

  • CO\textsuperscript{2} arguably constitutes ‘pollution’ for the purposes of Article 1(4)

  • Article 212(1) obliges states to ‘adopt laws and regulations to prevent, reduce and control pollution of the marine environment from or through the atmosphere, applicable to the airspace under their sovereignty and to vessels flying their flags or vessels or aircraft of their registry, taking into account internationally agreed rules, standards and recommended practices and procedures and the safety of air navigation.’

  • More general obligations to prevent pollution and to protect and preserve the marine environment under Articles 192, 193 and 194.

• But...
Climate Change and the Oceans
Mitigation: MARPOL

• Ships contribute 4.5 % of global GHG emissions

• Annex VI 1973/78 MARPOL
  • Sets limits on sulphur oxide, nitrogen oxide emissions and ozone depleting substances from ships exhausts in addition to designating emission control Amendments were made in 2011 to address operational and efficiency matters aimed at reducing GHG emissions from ships.
Climate Change and the Oceans

Adaptation

• From 2009 adaptation has increasingly dominated climate change law and policy discourse and, in contrast to mitigation, is relevant to the operation of many international, regional and domestic instruments.

• 1992 UNFCCC
• Multiple MEAs such as 1992 CBD, 1979 CMS, 1971 Ramsar Convention
• Regional Seas Conventions
• RFMOs
Climate Change and the Oceans
Adaptation and the Oceans

Integration of climate change impacts into ocean planning e.g. ICZM, MSP

Integration of climate change impacts into fisheries management

Enhancing ecosystem resilience e.g. designating MPAs, minimizing other threats, genetic selection

Managing implications for maritime boundaries and baselines
The 1992 UNFCCC encourages parties to enhance sinks (Article 4(2)(a)). A ‘sink’ is defined as ‘any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere’. This obligation is developed in Article 2(1)(a) of the 1997 Kyoto Protocol, with particular emphasis on forestry management.

Despite the importance of the oceans as a CO\textsubscript{2} sink they have benefited from minimal attention under the UNFCCC.

Ocean vegetated habitats – mangroves, salt marshes and seagrasses for example, account for between 50 and 71 % of carbon stored in ocean sediments. But they cover less than 5 % of the seabed and are being destroyed 4 times as fast as rain forests. Between 2 and 7 % of these habitats are lost annually.
Climate Change and the Oceans

Exploitation: Dumping Regime

**CO₂ Sequestration**

- The 1996 Protocol to the 1972 London Convention was amended in 2006 to expressly permit and regulate sub-seabed disposal of CO₂ (further amendments in 2009 to enable parties to share geological formations for CO₂ disposal).

**Geoengineering**

- The 1996 Protocol to the 1972 London Convention was amended in 2013 to cover (and define) geoengineering for climate purposes and to regulate the placement of matter for ocean fertilization purposes. It incorporates the risk assessment framework adopted in 2010. The UK became the first state to ratify the amendment in 2016.
Climate Change and the Oceans
A Lack of Leadership & Coordination

- 1982 UNCLOS provides a constitutional framework for the law of the sea but it does not provide policy leadership in contrast to MEAs such as the UNFCCC.

- There are a plethora of organisations that do have a leadership role including (but not limited to) the UNGA, IMO, UNFAO, UNESCO (IOC), UNEP, the UN Open-Ended Informal Consultative Process, UN-Oceans and the Oceans Compact. Additionally, there are regional organisations, and organisations for which the oceans comprise only a part of their mandate. For example, the 1992 CBD (and the Aichi Biodiversity Targets).
Climate Change and the Oceans

Proposal: *Declaration on Climate Change and the Oceans*

- Setting out key targets such as maximum temperature rise based on likely ocean impact and maximum increase in ocean acidification.

- Setting out clear principles relating to the exploitation of the ocean ‘sink’ to mitigate climate change including the protection of vegetated oceans areas (with appropriate incentives) and manipulation of that sink through geoengineering.

- Setting out clear principles relating to adaptation with clear references to climate justice issues including access to fisheries and loss of territory.

- Providing a framework for coordinating the activities of multiple international and regional agencies.

- Providing scope for states and agencies to set their own targets and priorities for managing and mitigating the impacts of climate change on the oceans.