



InsSciDE Work Package 7:	
Environment: Monitoring as an Arena for Science Diplomacy	
Case Study n°7.2	Co-production of science and diplomacy in environmental monitoring: the case of the UN Convention on the Law of the Sea
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Abstract

The United Nations Convention on the Law of the Sea (UNCLOS) provides an InsSciDE case study analyzing how scientists and diplomats have forged important synergies that shape environmental monitoring exercises and practices. With discussions and negotiations spanning over a decade UNCLOS is considered one of the most important pieces of international law drafted in the 20th century. Although not entirely concerned with science diplomacy, science features prominently reflecting the rapid growth of new knowledge of the oceans during the late 20th century and emerging capabilities in marine science and technology for exploitation of the seas. The historical episodes that led to the creation of the UNCLOS are still relevant, as initial disputes (in particular those relating to the Arctic) are still being negotiated through scientific surveys and the regulation of environmental monitoring. Yet there is no scholarly account of this period. Using archival records, we aim to establish how the scientific aspects of the UNCLOS were negotiated, by, with, and for scientists for the global benefit of humankind.

Introduction

Thirteen years of discussions to prepare UNCLOS led to the UN Law of the Sea (III) – one of the most ambitious reconfigurations of international law undertaken by the United Nations. Although the UNCLOS is often observed as being primarily concerned with the delineation of boundaries between the national and international jurisdiction of ocean space, almost a third of the law's articles (100/320) relate in some capacity to marine pollution, science, and/or technology.

The negotiations began with a series of “uses of the seabed” discussions in 1967, prompted by Arvid Pardo, Permanent Representative of Malta to the United Nations. This led to the creation of a Committee on Peaceful uses of the Sea-Bed and the Ocean Floor beyond the limits of National Jurisdiction that met between 1968-1973. Ultimately the committee’s discussions expanded into a series of conferences on the Law of the Sea conducted between 1973 and 1982. Here the role and control of science and technology drew serious consideration for the first time, with negotiations occurring in a context of rapid global expansion of the marine sciences and in the capabilities of ocean technologies to exploit resources of the deep sea. Oceanography had been a relatively small specialised field, but in the aftermath of the Second World War both the East and West funneled financial and material resources to the geosciences in general, producing rapid growth in the number of institutions, scientists, and research vessels studying the oceans. Simultaneously the powerful navies of the US and the USSR had conducted a submarine arms race with the



creation of the first true submarines powered by nuclear reactors, and latterly the deployment of nuclear-equipped missiles in submarines.

Greater capabilities to exploit deep sea resources brought two wildly divergent groups into conflict. Technologists (including science fiction writer Arthur C. Clarke) argued that unlimited ocean resources offered humankind's salvation, while environmentalists pointed out that the science did not support such a claim. The end result of this tension between exploiters and conservationists was the development of ocean environmental monitoring systems whose global extent was made possible by the UNCLOS negotiations.

As UNCLOS moved into the ratification stage, Europe maintained a strong position in the global pursuit of ocean environmental monitoring. The Intergovernmental Oceanographic Commission (IOC) is based at UNESCO in Paris, European oceanographic institutes are world leading, and EU science has strengthened relations and modes of collaboration with the Global South. Discussion on science diplomacy in the global ocean continues to be shaped by Europe. The European Union currently contributes to the UNCLOS through a working party that seeks to merge and amalgamate national viewpoints. In this way, UNCLOS offers an example of how differing national approaches to science can be harmonised to find common agreement on how science and in particular technical exploitation of resources can be equitably controlled. Finally, the global monitoring systems deployed in the 1990s have two benefits for Europe: they provide early warning of climate change – considered one of the EU's greatest security threats – and they contributed to curtailing militarisation of the ocean environment, with ocean science now predominantly conducted by scientists in civilian institutions and shared openly.

Actors

The UNCLOS was a strategic effort on the part of the United Nations to create a global law of the sea for the post-colonial age, involving numerous actors.

Our study will concentrate exclusively on negotiations of the articles of the UNCLOS that concern science, focusing on the marine pollution, science, and technology discussions within sub-committee III and special conferences as sites for science diplomacy. We will also analyse those individuals and groups providing “expert” knowledge to these bodies with specific reference to the Intergovernmental Oceanographic Commission (IOC). The IOC was a UNESCO funded body founded in October 1961, an organisation designed to bring together ocean scientists to co-ordinate large scale international research.

The creation of the IOC was a reflection of the growth in the number of qualified oceanographers in the post-war period. Early in UNCLOS negotiations Lord Ritchie-Calder tried to quantify this growth: he claimed that in 1950 there were 750 oceanographers in 48 countries – or 2 qualified scientists for every million cubic miles of ocean space. It was estimated that by 1975 there would be 12,000 in 130 countries.¹ This increase in the scientific workforce would determine how humans perceived, utilised, and interacted with the ocean environment. It meant a shift from national exploitation by a small group of powerful nations to a collaborative transnationalist approach to ocean science, which included the newly independent nations of the Global South.

On the political level, the UNCLOS involved various institutions. At international level were the UN conferences themselves and their national diplomatic missions. Additionally, each delegation reported back to foreign ministries who channelled opinion from the national navy, coastguard, and various lobbies such as fishing, oil companies, etc. The negotiations brought wider diplomatic tensions into the realm of science diplomacy. Early in the UNCLOS conferences, a new North-South conflict driven by Latin American nations and newly decolonised African and Asian states emerged, upstaging the East-West conflict that had shaped post-war international relations. These new actors faced environmental problems of their own, and despite geographical challenges – such as Africa having the most (13) landlocked states of any continent – sought

¹ Lord Ritchie Calder, 'Perspectives on the Sciences of the Sea', *Ocean Yearbook* 1:1 (1978), 271-292.



access to potential benefits offered by the new science and technologies of the sea. The need to conduct marine science to strengthen the legitimacy and position of the developing nations saw the emergence of new oceanographic programs around the world.

Regarding scientific institutions, a similar multi-level multi-actor landscape existed. The UNCLOS was of interest to the IOC – historically seen as being closely related to government interests and those of the Scientific Committee on Oceanic Research (SCOR) founded in 1957 by the International Council of Scientific Unions. During the 1960s SCOR pioneered sizeable multi-national ocean research efforts such as the International Indian Ocean Expedition. However, by the 1970s it was the IOC who co-ordinated global ocean monitoring efforts. A major focus of our study will be the work of the IOC in framing debates around ocean science and technology and the emerging Law of the Sea from 1967-1982.

Fields and disciplines, interfaces with technology

The UNCLOS defines oceanography as all activity of ocean scientists and their ability to access controlled Exclusive Economic Zones of sea space. The UNCLOS was devised to democratise collaborations between wealthy first world nations and those in the developing world. This was done under the need to develop ocean technologies for the “Common Benefit of Mankind” as set out by Pardo who drove an agenda for scientific research of the marine ecosystem and careful ocean exploitation. The need to protect the ocean from technological development was in direct response to the positivist but naïve postulations from science fiction writers and technologists during the 1960s when the ocean appeared able to be exploited to any degree required by human society because its resources were so vast as to be limitless. Following several high profile pollution incidents, such as the Torrey Canyon in 1967, it was obvious that the ocean would not rebound quickly from careless actions by humans, and furthermore its resources and capacity were finite. Emerging, and prophesied, technology became central to debates at the UNCLOS, and trying to assess its potential future power frustrated diplomats and lawyers.

Networks and communication

Science Diplomacy in the marine and ocean sciences, for and by its practitioners, has primarily involved forming research blocs with other friendly nations, and/or gaining access to specific ocean sites falling under other national jurisdictions. Of note, ocean science research activities often take place in “international waters”, as well as at sites of heightened geopolitical tension, such as in sea straits or areas where mineral resources are assumed to lie. (See Camprubí & Robinson, 2016)

Our case study will focus on revealing the interfaces between science and diplomats in the following sites:

- Intergovernmental Oceanographic Commission (UNESCO) – central consulting group between diplomats working at UNCLOS and ocean scientists.
- UNCLOS conferences
- Seabed negotiations and later commissions
- Various fringe meetings to discuss particular aspects amongst specific groups of experts and actors.

Politics and policies

Informal coordination and collaboration between European states and scientists with regard to the issues and initiatives of the Law of the Sea and ocean science remains to be studied. Of note is the fact that most of the world’s maritime organisations – especially those co-ordinating international law and regulation – are today based in Europe. While they address regional geopolitical challenges they also set global agendas and policy, and drive worldwide environmental initiatives.

The national, international, and transnational levels were constantly in fluid articulation in the development of the UNCLOS. This has been widely discussed in existing major histories of ocean science during the Cold War, such as Hamblin (2005) and Robinson (2018). But it can also be observed in wider discussions of the



geosciences in the Cold War, such as in the work of Hecht (2012), Oreskes & Krige (2014), and Turchetti & Roberts (2014). Our case study clarifies differences between science 'diplomacy' and 'cooperation' through four aspects. Firstly, UNCLOS rendered cooperation mandatory – that is, it made scientific cooperation inherently political, so as to even out national and regional inequalities in research capabilities. Secondly, the law anticipated future scientific and technological developments and capabilities, negotiating their application even before they properly emerged. Thirdly, the dialogue between naval, political, and scientific actors sought to negotiate rules and solutions rather than simply arrange for cooperation. Finally, UNCLOS brought forward no scientific research as part of its processes and development; the research was enabled later in part because of these negotiations.

Policy and political outcomes of the UNCLOS as science diplomacy include the emergence of global systems of ocean monitoring pioneered by IOC during the 1980s in line with the early work of the IPCC. Among these are the Global Climate Observing System (est. 1992) and Global Ocean Observing System (est. 1993), both products of scientific collaborations such as the World Ocean Circulation Experiment. Clearly, the notion that marine science and the deployment of marine technology should be globally co-operative for the “common benefit of humankind” has also shaped recent structures of oceanographic science diplomacy, leading to new marine science research being undertaken with increased government resources.

Disciplinary/methodological approach

This research will be undertaken through a combination of archival research, oral history interviews, and a comprehensive literature review. It will be an interdisciplinary study that draws from the historical fields of diplomacy studies, history of science and technology, and global history – all of which focus upon questioning existing national narratives and institutional histories. It will expose the concurrent formation of international law and modes of science diplomacy.

Archives for consultation:

- United Nations Archives, New York, NY, USA
- Dalhousie University Archives in Halifax, NS, Canada
- Institute for Advanced Legal Studies, Senate House, London
- Intergovernmental Oceanographic Commission, UNESCO, Paris

Essential bibliography

Borgese, E.M., *The Oceanic Circle: Governing the seas as a global resource* (Tokyo: The United Nations University Press, 1998).

Hamblin, J.D., *Oceanographers and the Cold War: Disciples of Marine Science* (Seattle: University of Washington Press, 2005).

Hecht, G., *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge, MA: MIT Press, 2012).

Miles, E.L, *Global Ocean Politics: The Decision Process at the Third United Nations Conference on the Law of the Sea 1973–1982* (Leiden: Martinus Nijhoff Publishers, 1998).

Oreskes, N. and Krige, J. (eds.), *Science and Technology in the Global Cold War* (Cambridge: MIT Press, 2015).

Robinson, S.A, *Ocean Science and the British Cold War State* (London: Palgrave, 2018).

Camprubí, L., Robinson, S.A. 'A Gateway to Ocean Circulation: Surveillance and Sovereignty at Gibraltar,' *Historical Studies on Natural Sciences* (2016)

Turchetti, S., and Roberts, P. (eds.), *The Surveillance Imperative: Geosciences during the Cold War and Beyond* (London: Palgrave, 2014).