

Laura Luise Wanner

In Search of Collective Action

The Case of Shipping in the Arctic Ocean



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Vorwort

Was lange währt, wird endlich gut. Ich freue mich, dass nach langen Jahren der Arbeit nun meine Dissertation erscheint, die ich zwischen 2018 und 2021 am Lehrstuhl für Internationales Wirtschafts- und Umweltrecht der Georg-August-Universität Göttingen angefertigt und 2022 unter dem Titel „The Regulatory Framework for Shipping in the Arctic“ verteidigt habe.

Ich möchte mich an dieser Stelle vor allem und zuvorderst herzlich bei meinem Doktorvater Prof. Dr. Peter-Tobias Stoll bedanken. Ich hatte das Glück seit 2015 am Lehrstuhl von Prof. Stoll zu arbeiten und bin sehr dankbar für die jahrelange Unterstützung all meiner Ideen und Aktivitäten.

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Als kleiner Hinweis vor der Lektüre gilt es noch den Hinweis zu erteilen, dass der Großteil der Arbeit vor der Abgabe im Herbst 2021 – und damit vor der russischen Invasion in der Ukraine im Frühjahr 2022 – entstand. Ich habe die Notwendigkeit gesehen, punktuell später einige Teile noch einmal zu aktualisieren. Insbesondere habe ich stellenweise noch das Kapitel

Vorwort

zur regionalen Kooperation in der Arktis angepasst, die durch den russischen Angriff auf die Ukraine grundlegend verändert wurde. Das gesamte Ausmaß dieser Veränderungen konnte jedoch nicht mehr aufgenommen werden.

Laura Wanner, Heidelberg, 2023

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Abbreviations

ABS	American Bureau of Shipping
ACIA	Arctic Climate Impact Assessment
AEPS	Arctic Environmental Protection Strategy
AIRS	applicable international rules and standards
AIRSS	Canadian Arctic Ice Regime Shipping System
AMAP	Arctic Monitoring and Assessment Programme
AMSA	Arctic Marine Shipping Assessment
Art.	Article/Articles
ASSPPR	Arctic Shipping Safety Pollution Prevention Regulations
AWPPA	Canadian Arctic Waters Pollution Prevention Act
BEAC	Barents-Euro Arctic Council
BOG	Board of Governors
BRC	Barents Regional Council
CAFF	Conservation of Arctic Flora and Fauna Working Group
CDEM	construction, design, equipment and manning
CEN, CENELEC, ETSI	European Standardisation Organization
CH ₄	methane
CII	Carbon Intensity Indicator
CLC	Convention on Civil Liability for Oil Pollution Damage
CMI	Comité Maritime International
CO ₂	carbon dioxide
COLREG	Convention on the International Regulations for Preventing Collisions at Sea
CSR	Common Structural Rules
DE	Sub-Committee on Design and Equipment
DIN	Deutsche Institut für Normung
DNV	Det Norske Veritas
ECAs	SOx Emission Control Areas
Ed/eds	editor/s

Abbreviations

EEDI	Energy Efficiency Design Index
EEOI	Energy Efficiency Operational Indicator
EEXI	Energy Efficiency Existing Ship Index
EEZ	exclusive economic zone
EPPR	Emergency Preparedness, Prevention and Response Working Group
etc.	et cetera
EU	European Union
f/ff	following
FSI	Sub-Committee on Flag State Implementation
GAIRS	generally accepted international rules and standards
GHG	global greenhouse gas
HFO	Heavy Fuel Oil
HNS Convention	International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea
HSFO	High Sulphur Fuel Oil
IACS	International Association of Classification Societies
ICC	Inuit Circumpolar Council
ICJ	International Court of Justice
III-Committee	Sub-Committee on Implementation of IMO Instruments
ILC	International Law Commission
ILO	International Labour Organization
IMCO	Inter-Governmental Maritime Consultative Organization
IMO	International Maritime Organization
IO	international organization
IOPC Funds	International Oil Pollution Compensation Funds
IPCC	Intergovernmental Panel on Climate Change
ISM Code	International Safety Management Code
ISO	International Standardisation Organization
ITLOS	International Tribunal for the Law of the Sea
LNG	liquefied natural gas
MARPOL	International Convention for the Prevention of Pollution from Ships

MDO	marine diesel oil
MEA	multilateral environmental agreements
MEPC	Marine Environment Protection Committee
MGO	marine gas oil
MOSPA	Agreement on Cooperation on Marine Oil Pollution Preparedness and Response
MoU	Memorandum of Understanding
MSC	Maritime Safety Committee
N ₂ O	nitrous oxide
NCSSR	Sub-Committee on Navigation, Communications and Search and Rescue
NF	Northern Forum
NGOs	non-governmental organizations
NLS	noxious liquid substances
NORDREG	Northern Canada Vessel Traffic Services Zone
NO _x	nitrogen oxides
NSR	Northern Sea Route
NWP	North-West Passage
OILPOL	International Convention for the Prevention of Pollution of the Sea by Oil
OPA	US Oil Pollution Act of 1990
OPRC	IMO Convention on Oil Pollution Preparedness, Response and Cooperation
P&I clubs	Protection and Indemnity Clubs
p.	page
PAME	Protection of the Arctic Marine Environment Working Group
para./paras	paragraph/s
PC	Polar Class
POLARIS	Polar Operational Limit Assessment Risk Indexing System
PPR	Pollution Prevention and Response sub-Committee
PSSA	Particularly Sensitive Sea Areas
PWOM	Polar Water Operation Manual
RFMOs	regional fisheries management organizations

Abbreviations

ROSATOM	Russian State Atomic Energy Corporation
SAO	Senior Arctic Officials
SDC	Sub-Committee on Ship Design and Construction
SDWG	Sustainable Development Working Group
SEEMP	Ship Energy Efficiency Management Plan
SMS	Safety Management System
SOLAS	International Convention for the Safety of Life at Sea
SO _x	sulphur oxides
STCW	International Convention on Standards of Training, Certification and Watchkeeping for Seafarers
STOPIA	Small Tanker Oil Pollution Indemnification Agreement
TOPIA	Tanker Oil Pollution Indemnification Agreement
TOVALOP	Tanker Owners' Voluntary Agreement Concerning Liability for Oil Pollution
UI	Unified Interpretations
UK	United Kingdom of Great Britain and Northern Ireland
UN	United Nations
UNCLOS	United Nations Convention on the Law of the Sea
UNCLOS III	Negotiations of the Third United Nations Convention on the Law of the Sea 1973–1982
UNFSA	United Nations Fish Stock Agreement
UNGA	United Nations General Assembly
UNEP	United Nations Environment Programme
UR	Unified Requirements
US	United States
USSR	Union of Soviet Socialist Republics
VCLT	Vienna Convention on the Law of Treaties
VTS	vessel traffic services
WADA	World Anti-Doping Agency

Part I: Introduction

With receding sea ice, the interest in using the Arctic for economic purposes is steadily growing. Shipping through the Arctic routes – along the Northern Sea Route and the Northwest Passage – have seen particularly widespread interest not only among the Arctic states but also by other actors from outside the region. It is thus of utmost importance to assess the comprehensive regulatory framework for Arctic shipping in order to evaluate if and how the existing regulations can offer an effective regulatory framework to not only allow for the economic use of the Arctic but at the same time to protect the Arctic marine environment against the hazardous effects of shipping. This work wants to contribute to the increasing literature by providing an assessment of the Arctic regulatory framework in general and its effectiveness to protect the Arctic environment more specifically. Furthermore, focus will be brought to the interactions between the different regulations.

Part I will give a short introduction to the Arctic regulatory framework and the analytical method chosen to assess the framework. The subsequent parts will then offer a comprehensive analysis of different regulatory tools. This analysis will begin with Part II and the international level, specifically with the law of the sea as the basis for the regulatory framework by looking at the United Nations Convention on the Law of the Sea and the work of the International Maritime Organization. Against this broad backdrop, Part III will focus on unilateral action, namely national regulations by Canada and the Russian Federation regarding the Northwest Passage and the Northern Sea Route. Part IV will examine the regional cooperation in the Arctic with a special focus on the work of the Arctic Council. Part V, being the last part of the analysis, will assess the role private law plays in the regulation of shipping. For this, the work will focus on classification societies and insurance law. Finally, in Part VI, this work will conclude with an overall and comprehensive assessment of the Arctic regulatory framework and the interactions of instruments within.

Chapter 1: Setting the Scene: The Arctic

When winter comes to the Arctic Ocean and sea ice is growing again, new ice formations and floes are formed. Because of the drifting forces of the Arctic Ocean, ice floes are moved against each other; they overlap and shift over one another; they pile up creating ridges. In the end, the Arctic Ocean is covered by sea ice, which moves and leaves polynyas open.

The so-described formation of sea ice is a good metaphor for the Arctic regulatory framework. Arctic law has been created de-centralised, and just like ice floes, regulations are combined and developed further; they might overlap, shift against each other or leave gaps.

What has sparked the new economic interest and the growth of international shipping in the Arctic, was not the growing of Arctic ice, but in fact, the opposite: the receding sea-ice of the Arctic Ocean caused by climate change. The consequences of climate change are already visible in the Arctic Ocean where temperatures are rising three times as fast as in other parts of the world;¹ where sea-ice is simultaneously receding rapidly and thinning;² and where large areas already remain ice-free throughout summer months. The Arctic is thus at the centre of climate change.³ The “frozen desert” of the Arctic Ocean is likely to lose its ice-cover during the summer months sometimes between 2050–2100 and at least once before 2050, though it is not exactly clear how often this will occur.⁴

The receding sea-ice has sparked economic interest in the Arctic Ocean. Notably, Arctic shipping has increased in recent years. Although some

1 Arctic Monitoring and Assessment Programme, ‘Arctic Climate Change Update 2021: Key Trends and Impacts’ (2021); IPCC, *Climate Change 2021: The Physical Science Basis: Summary for Policymakers* (2021), p. 20.

2 The biggest part of the Arctic Ocean is now only covered by first-year ice, see Kamrul Hossain, ‘Arctic Melting: A New Economic Frontier and Global Geopolitics’ (2017) *Current Developments of Arctic Law* 5, 40, p. 40; ACIA, ‘Impacts of a Warming Arctic: Arctic Climate Impact Assessment’ (2004), p. 8, 20.

3 This was again reiterated by IPCC, *Special Report: The Ocean and Cryosphere in a Changing Climate: Chapter 3: Polar Regions* (2019).

4 IPCC (2021), p. 20. See for the difficulty of determining the development IPCC (2019), p. 222ff.

doubts with regard to the economic benefits have been raised,⁵ the route through the Arctic is at least much shorter than traditional shipping routes.⁶ More and more ships are using the Arctic sea routes and even though traffic remains relatively low compared to other international shipping lanes, the economic potential of Arctic shipping can already be seen.

Moreover, about a quarter of all unexploited oil and gas resources are believed to lay under the ice of the Arctic Ocean⁷ and fish stocks are increasingly migrating further north as a result of climate change⁸ contributing to the overall economic interest in the Arctic that is newly sparked. Not only the coastal states such as the Russian Federation have included the Arctic in their economic development strategies, but also states outside the Arctic region such as China have made their economic ambitions for the Arctic clear.⁹

This economic potential is worrying to many and the Arctic marine ecosystem already threatened by climate change may be further damaged through increasing shipping as well as other economic uses. The Arctic ecosystem is generally much more vulnerable to environmental pollution

5 There are apparently contradictory numbers, see Adolf K Y Ng and others, 'Implications of Climate Change for Shipping: Opening the Arctic Seas' (2018) *WIREs Climate Change* 9, 507, p. 519.

6 The route Yokohama-Rotterdam is supposed to be ten days shorter than the route through the Suez Canal, see James Kraska, 'Russian Maritime Security Law along the Northern Sea Route: Giving Shape to Article 234 in the Law of the Sea Convention' in: Myron H Nordquist, John Norton Moore and Ronán Long (eds), *Challenges of the Changing Arctic: Continental Shelf, Navigation, and Fisheries* (2016), p. 601; Knut E Skodvin, 'Arctic Shipping - Still Icy' in: Myron H Nordquist, John Norton Moore and Ronán Long (eds), *Challenges of the Changing Arctic: Continental Shelf, Navigation, and Fisheries* (2016), p. 148f.

7 Scott G Borgerson, 'Arctic Meltdown: The Economic and Security Implications of Global Warming' (2008) *Foreign Affairs* 87, 63, p. 67.

8 An overview might be found in Arctic Council, 'Arctic Climate Impact Assessment' (2013), p. 692; IPCC (2019), p. 205.

9 China for example has included the Northern Sea Route in its Belt and Road Initiative, see Reuters, 'China unveils vision for "Polar Silk Road" across Arctic', Press Release, 26 January 2018, <https://www.reuters.com/article/us-china-arctic/china-unveils-vision-for-polar-silk-road-across-arctic-idUSKBN1FF0J8> (last accessed 03 July 2018); Vasilii Erokhin and Tianming Gao, 'Northern Sea Route: an Alternative Transport Corridor Within China's Belt and Road Initiative' in: Julien Chaisse and Jędrzej Górski (eds), *The Belt and Road Initiative: Law, Economics and Politics* (Brill 2018); Erik Franckx, 'The Northern Sea Route in the Context of China's Maritime Silk Road Initiative' in: Keyuan Zou, Shicun Wu and Qiang Ye (eds), *The 21st Century Maritime Silk Road: Challenges and Opportunities for Asia and Europe* (2020), p. 23ff.

and human activities than other spaces.¹⁰ The prominence of ice in the Arctic region has allowed a very special ecosystem to develop that is, however, vulnerable to oil¹¹, noise and other pollutants as well as the consequences of climate change. The ecosystem can be easily disturbed through human activities and is generally very slow to regenerate.¹² The Arctic is, furthermore, vulnerable to transboundary air pollution cumulating in Arctic haze.¹³ The hazardous substances that threaten the Arctic ecosystem and human and animal health often originate outside the Arctic region and are transported to the Arctic through the atmosphere or the rivers reaching the Arctic Ocean.¹⁴

The opening up of the Arctic sea routes undeniably holds an economic potential that will, in all likelihood, be realised. However, the dangers this economic use poses to the Arctic Ocean cannot be underestimated and need to be taken into account. This work thus aims to address the regulatory responses to the economic development and evaluate the effectiveness of the regulatory framework regarding Arctic shipping. The following part will give firstly a short general overview of the existing regulatory framework of the Arctic before the analytical framework chosen for this work will be explained.

I An Introduction to Arctic Shipping

Arctic shipping has undergone an unprecedented transformation and development with, for example, the traffic in the Canadian Arctic tripling

10 Olav S Stokke, Geir Hønneland and Peter J Schei, 'Pollution and Conservation' in: Olav S Stokke and Geir Hønneland (eds), *International Cooperation and Arctic Governance: Regime Effectiveness and Northern Region Building* (2007), p. 79.

11 The Arctic is in particular vulnerable to oil spills as the interaction between sea ice and oil is largely unknown and not predictable. Furthermore, the removal of oil in the Arctic is particularly difficult and dependent on a very short time frame. See Norwegian University of Science and Technology, 'Predicting the Fate of Oil Spills in Arctic Sea Ice', 2018, <https://phys.org/news/2018-02-fate-oil-arctic-sea-ice.html> (last accessed 10 April 2019); Talal Husseini, 'Oil Spills in the Ocean: Why the Arctic is Particularly Vulnerable', 2018, <https://www.offshore-technology.com/features/oil-spills-in-the-ocean-arctic/> (last accessed 10 April 2019).

12 Stokke, Hønneland and Schei (2007) in: Stokke and Hønneland (eds), p. 79.

13 Arne Riedel, 'Arctic Marine Environment' in: Elizabeth Tedsen, Sandra Cavalieri and R Andreas Kraemer (eds), *Arctic Marine Governance: Opportunities for Transatlantic Cooperation* (2016), p. 32ff.

14 Stokke, Hønneland and Schei (2007) in: Stokke and Hønneland (eds), p. 80ff.

between 1990 and 2015.¹⁵ Whilst the first ship sailing through the Northwest Passage (hereinafter NWP) took about three years from 1903–1906,¹⁶ the first so-called super tanker only needed seven and a half days to traverse the Northern Sea Route (hereinafter NSR).¹⁷

In large parts of the Arctic, multi-year ice is receding rapidly and more and more routes are therefore navigable by polar class vessels throughout the year. As a result of the opening up of water in the summer, the Arctic Ocean heats up more rapidly, causing more ice to melt in summer and less ice to build up again in the winter.¹⁸ The loss of multi-year ice has not only huge impacts on the world climate, but could also change the Arctic Ocean to the point that it would be similar to the Baltic Sea or St Lawrence Bay which are navigable all year long.¹⁹

1) Economic Expectations and Environmental Hazards

Nowadays, the Northern Sea Route (NSR) is already an often-used shipping line and more and more ships are traversing the Arctic. The biggest part of Arctic shipping is still destinational within the Arctic and, for example, in 2020, only 64 ships transited the entire NSR.²⁰ In the Canadian Arctic, commercial vessels are quite rare and most vessels there are tourist

15 IPCC (2019), p. 206.

16 The first ship to traverse the NWP was led by Roald Amundsen with his Norwegian team, H. C Thorup, 'Roald Amundsen' in: Editors of Salem Press (ed), *Explorers* (1998).

17 Tore Henriksen, 'The Future of Navigation in Ice-Covered Areas: A View from the Arctic' in: Richard Caddell and D. R Thomas (eds), *Shipping, Law and the Marine Environment in the 21st Century: Emerging challenges for the Law of the Sea - legal implications and liabilities* (2013), p. 9.

18 Known as the ice-albedo feedback loop, see Canada, Standing Senate Committee on Fisheries and Ocean, 'The Coast Guard in Canada's Arctic: Interim Report', June 2008, http://publications.gc.ca/collections/collection_2011/sen/yc25-0/YC25-0-392-4-eng.pdf (last accessed 11 July 2019), p. 5.

19 Canada, 'The Coast Guard in Canada's Arctic: Interim Report', June 2008, p. 6.

20 Centre for High North Logistics, 'NSR Shipping Traffic – Transit Voyages in 2020', <https://arctic-lho.com/nsr-shipping-traffic-transit-voyages-in-2020/> (last accessed 25 May 2021). The highest number of ships passing through the NSR so far has been counted in 2013 with more than 70 ships, see Hossain (2017) *Current Developments of Arctic Law* 5, p. 42; Henriksen (2013) in: Caddell and Thomas (eds), p. 13.