Sustainable shipping in a Changing Arctic is the 7th book in the series of World Maritime University (WMU) Studies in Maritime Affairs. WMU is a post-graduate maritime university funded in 1983 by the International Maritime Organization (IMO) *the United Nations specialized agency with responsibility for the safety and security of shipping and the prevention of marine and atmospheric pollution by ship***[1]**. Previous books in the series address a diverse variety of shipping and maritime issues, including *Piracy at Sea (2013), Maritime Women: Global Leadership (2015), and Shipping Operation Management (2017)*. The 7th book focuses in particular on the Arctic region and builds on the international conference *Safe and Sustainable Shipping in a Changing Arctic Environment* (ShipArc2015) held in Malmö (Sweden) in August 2015, convened by WMU, IMO, and the Arctic Council's Working Group on the Protection of the Arctic Marine Environment (PAME).

Sustainable shipping in a Changing Arctic brings together multiple perspectives – in a classical as pragmatic structure presenting key current issues, future challenges and next steps – to address matters concerning the development of a sustainable shipping industry in a changing Arctic environment. The Arctic environment is indeed changing, as highlighted throughout the book, in the sense that it is warming twice as fast as the rest of the World due to the effects of climate change. Its most tangible effects are seen on its sea-ice, including multiyear sea-ice, which is undergoing severe transformations regarding its *extent*, as vast areas once covered by sea-ice are now ice-free especially during warmer months, regarding its *thickness*, as sea-ice that still endures is often thinner and more easily breakable, and regarding its *character*, as first-year ice is now found in areas once covered by multiyear sea-ice. In addition, over the last two decades, scientists have recorded earlier break-up and later freeze-up, a trend that worsens every year, implying longer ice-free seasons in vast areas of region. Less, thinner, predominantly first-year ice and longer ice-free seasons also means that access to areas of the Arctic, hitherto inaccessible, become feasible and for prolonged periods, therefore increasing accessibility to technically recoverable natural resources, opening up maritime sea routes, and unveiling new opportunities for commercial sea-transportation. Understandably, interests in the development of such economic opportunities by Arctic and non-Arctic stakeholders is accelerating, and the pressure on the environment due to an expanding marine use is only expected to further increase.

This scenario calls, as the short but to the point blurb of the book anticipates, *for the*

adoption of a forward-looking agenda that respects the fragile and changing Arctic frontier. As a matter of facts, and in the words of Cleopatra Doumbia-Henry, WMU President in the foreword, *[t]he book series also serves as a platform for promoting and advancing the UN 2030 Agenda for Sustainable Development and the marine-related Sustainable Development Goals*, particularly goal 14 on oceans as well as the interconnected Goals 4 (quality education), 5 (gender equality), (affordable and clean energy), 9 (industry, innovation and infrastructure), 13 (climate action), and 1 (partnership)**[2]**.

If you are in the academia dealing with Arctic maritime issues or in the maritime business sector with an eye on the Arctic region, this collection of 23 articles has been compiled especially for you (or so it is announced by the President in her foreword). The aim at becoming a one-stop read, or a comprehensive vademecum of essays and information on Arctic environmental protection and sustainable maritime business development is further underlined by the choice of enclosing in the Conclusions (part 7) full texts of Arctic and shipping relevant agreements and declarations, including the *Ilulissat Declaration (2008)* and the *Agreement on enhancing International Arctic Scientific Cooperation (2017)*. Interestingly, this section also includes the *Declaration concerning the Prevention of unregulated High Seas Fishing in the Central Arctic Ocean* and the Chairman's Statement on the *Meeting on High Seas Fisheries in the Central Arctic Ocean* (Reykjavík, Iceland, 15-18 March 2017), both document serving as most up-to date information anticipating the imminent end of the negotiations of the legally binding *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean*, in fact signed in Ilulissat, Greenland, on October 3rd, on the same year of the publication of the book, i.e. 2018. Therefore, if you were eager to read a thorough analysis on prevention of commercial fishing in the high seas of the central Arctic Ocean, I am afraid you may need to wait for a possible updated of the book (or a new issue) or look somewhere else for the moment being.

The *multiple perspectives* anticipated in the introduction are presented in form of 23 articles, written by more than 40 experts in maritime issues and distributed in 7 thematic parts. The stage is set in *Part I*, where legal and regulatory frameworks relevant for Arctic marine operations and shipping are presented. As to be expected, the very first article in this part provides an insightful analysis of *the International Code for Shipping Operating in Polar Waters,* better known by its short name of "Polar Code", adopted by IMO in 2014/5 (after many years of negotiations and discussions) and entered into force on January 2017.

In addition to the analysis of the different requirements set by the Code, including safety, design, crew and environmental requirements, this part also presents key risk factors — including the uncertainty and the human factors — and encloses suggestions for future legal developments. *Part II* specifically gathers contributions addressing Arctic ship monitoring and tracking, highlighting the crucial role new technologies may play in accidents prevention in the poorly-charted areas of the Arctic. One of the contributions further support this point by presenting case studies of well-known accidents occurred in different parts of the globe, as for instance the M/V Exxon Valdez oil spill accident, M/V Rena, or the M/V Costa Concordia collision, and points out how they could have been possibly avoidable by implementing eg. virtual aids for navigation.

A completely different angle is tackled in Part III of the book. It introduces elements of Arctic Governance, including implications of the legal regime of marine insurance on safety and on the environment and a discussion on the legal status of the North-West passage. The accent is put on joint efforts for developing a sustainable shipping governance in the region, including also non-Arctic States and non-Arctic entities such as the EU. This part also introduces the readers to the following, part IV, which examines more in-depth issues regarding protection and response in the Arctic marine environment, and addresses issues as challenges in establishing Marine Protected Areas. This part includes an interesting discussion on the crucial and positive role of Traditional Knowledge in enhancing the understanding of the Arctic marine environment and the necessity of meaningfully involve Arctic indigenous communities in the decision-making process regarding Arctic vessel traffic development in the Bering Strait region (Alaska).

Part V bring up the discussion on training and capacity building only hinted at the beginning of the book. Contributions tackle several issues as e.g. education, emergency management or the industry programme improving oil spill response in the Arctic, to name but a few. To the opposite, only one article addresses Sustainable Arctic Business Development (part VI) and provides a contribution on configuration and management of offshore oil and gas operations.

The book is indeed comprehensive and tackle a vast variety of Arctic maritime issues under different angles and perspectives, indeed accomplishing the goal of serving as a “textbook” *for* academic, practitioners, environmentalist and affected authorities in the shipping

industry alike, as described in the blurb. Possibly not all contributions are as detailed and precise, but this has to be expected in collection of essays such as this one. However, the reader needs to arrive to the very end of the book, namely its Conclusion, in order to fully grasp what possibly is the correct reading key for this collection of essays. In fact, when I first got *Sustainable shipping in a Changing Arctic* in my hands, my mind associated it to the oxymoronic mantra of almost all Arctic policies and Arctic discussions, promoting a (sustainable) development combined with the protection of an environment, the Arctic, already dealing with catastrophic environmental transformations. In other word, my mind was expecting a book fully advocating for the development of the Arctic shipping industry. My initial luckily feeling was wrong. In the words of Hildebrand and Brigham, two of the three editors of this book and authors of the conclusions, Hope remains. If we can apply this same precautionary approach [as the *Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, A/N*] to Arctic oil and gas exploration and development, mining, tourism and, especially Arctic marine operations and shipping, we may indeed develop the Arctic in a sustainable way not seen in any of the world's other oceans.

Endnotes

[1] IMO website, retrieved 27 February 2021,
https://www.imo.org/en/About/Pages/Default.aspx

[2] Sustainable shipping in a Changing Arctic, Lawrence P. Hinlebrand et al. (ed.), page V.