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Greening Arctic Cruise Shipping Through Law and Technology: A Role for China?

Stefan Kirchner

Increased shipping in the Arctic will mean not only increasing tourism revenue for local communities but, more importantly in the long run, increasing health risks for local residents. The overwhelming majority of ships is powered with fossil fuels and concerns over emissions have led to the creation of Emission Control Areas, such as the Sulphur Emissions Control Area (SECA) in the Baltic Sea, the North Sea and along much, but not all, of the coasts of the United States and Canada. None of the existing SECAs includes areas north of the Arctic Circle. This means that coastal communities, in particular in cruise ship destinations, are put at risk from high emissions of SO₂. The research presented here shows that China has the potential to play several roles in contributing to the protection of coastal communities in the Arctic and in safeguarding the human right to live in a healthy environment, which has long been recognized by the European Court of Human Rights. It will be shown that China has the potential to use international forms of cooperation in the context of the work of the International Maritime Organization in order to support the establishment of a SECA for the entire Arctic Ocean but can also profit from it in the long run, provided that China's shipbuilding industry becomes able to meet the needs of more environment conscious ship buyers.

Introduction

Cruise shipping is booming globally — and in the Arctic in particular (Nilsen, 2018; Wright, 2018). As the Arctic is undergoing unprecedented changes, it is becoming a desired travel destination. In light of the fragility of the Arctic marine environment and the multiple effects of cruise shipping on the natural environment as well as on coastal communities, ensuring at least a minimum level of sustainability of cruise operations requires international regulation. This will likely involve non-regional actors, in particular countries whose citizens are particularly active in Arctic tourism.

For some time, China has been pushing for more recognition and a more active role in Arctic affairs by trying to get more involved in regional decision-making processes. A case in point is China's involvement with the Arctic Council where China has gained Observer status. For the self-styled “near Arctic” state, this is an important achievement as China has long sought a seat at the

table. These efforts are not an end in themselves. China has economic and security interests in the Arctic, both of which can raise concerns among Arctic nations. In order to gain support - or at least a lack of opposition - from Arctic states for China's Arctic ambitions, it appears likely that Arctic states' governments will have to see positive sides to China's Arctic ascendance. In other words, China's involvement in the region might face resistance or at least resentment¹ unless it is seen as beneficial for Arctic states and local communities.

While China's official role in cruise tourism is still relatively limited, the large number of Chinese visitors to the Arctic give China an interest in the region and in the well-being of their citizens. Likewise, states, like China, should not overlook the impact tourism has on local communities. Accordingly, the well-being of local residents in tourism areas should also be taken into account by the home countries of visitors. While the sovereignty of the receiving states prevents tourists' home states from taking direct action, a cooperative effort aimed at safeguarding the rights and interests of local communities in tourism regions is in the interest of all sides. The sustainability of Arctic tourism can benefit from the involvement of the home countries to tourists who visit the Arctic. This can be done through raising tourists' awareness of local conditions and the needs of local communities prior to departure or by influencing international legal frameworks relevant for tourism activities. This text is concerned with the latter aspect.

It will be shown that there might indeed be a way for China to actually make a positive contribution which benefits the people who live in the Arctic. One way to do so, and the focus of this article, would be for China to take an active role in protecting Arctic coastal communities against air pollution from ships. While such action might not provide immediate benefits for China, it could increase acceptance of Chinese tourism-related activities by local communities in the Arctic. This is a factor which is not to be underestimated because for many small Arctic communities, the current tourism boom, which is to a significant degree fueled by Chinese visitors, is a mixed blessing: local economic benefits clash with the environmental and cultural costs of opening up to mass tourism of questionable sustainability. Reducing the air pollution caused by cruise vessels operating in the Arctic is one way to protect coastal communities.

In order to assess the likelihood of such a move, different aspects will be investigated, in particular the current state of international law when it comes to protecting Arctic coastal communities from vessel-source air pollution, green shipping technology and China's Arctic policies, as evidenced by the nation's 2018 Arctic White Paper (People's Republic of China, 2018).

Shipping in the Arctic

Climate Change Opens Up a New Ocean

As climate change leads to a dramatic reduction in Arctic sea ice cover, Arctic shipping is becoming more feasible both technologically and economically. While some shipping companies are using Arctic shipping routes as a marketing tool (for example in the case of the highly publicized *Crystal Serenity* cruise through the Northwest Passage (AFP, 2016)), a large part of the cargo shipping which is currently undertaken in the Arctic Ocean is regional in nature, largely concentrating on Russia's Northern coastline, for example between Sabetta and China. Trans-Arctic shipping has the potential to provide shipping companies with significant savings due to a route e.g. between Europe and East-Asia. The Arctic alternative is not only shorter than currently preferred route,

through the Suez Canal or around Africa, but also safer than waters along these routes which continue to be plagued by piracy, albeit to a lesser extent than was the case a few years ago. Such economic and security incentives and the continued reduction of Arctic sea ice cover due to climate change make Arctic shipping, including cruise shipping (cf. Sloan, 2018), more likely in the future — a development for which the Arctic is not yet prepared sufficiently (see Struzik, 2018; cf. also Steward et al., 2007).

In addition, the Arctic is an attractive destination for cruise tour operators. Next to extractive industries, including for the energy sector, maritime transport is one of the key potentials for the advancement of economic development in the Arctic (Gauthier, 2017: 2) and the current boom in cruise tourism in the Arctic is a double-edged sword. The impact of the increasing interest of the tourism industry can already be felt in many parts of the Arctic and China plays an important role in it. This role ranges from the large number of Chinese tourists who are visiting the Arctic to Chinese-run business operations, such as hotels. When it comes to cruise tourism, the impact of increasing visitor numbers is felt in particular in small locations: for small coastal communities which host passenger vessels with hundreds or thousands of tourists, the current boom is a mixed blessing: while tourists generate some income, the local economic benefit is often restricted to souvenir shops (local residents in Arctic cruise tourism destinations hope to profit from the sale of souvenirs, such as locally made works of art² (Brown, 2016). Many products needed on board the ship (including food for passengers and crew members) are sourced far from the Arctic destinations prior to departure. As a result, the potential for profit by local actors in Arctic communities is severely limited since many of the passengers' needs will already be met on board. But there are also serious environmental and health concerns (ibid.), in particular due to the air pollution caused by ships. While Arctic cruise shipping has the potential to provide income for small coastal communities in remote Arctic regions (Kassam, 2016), there are concerns about potential disasters, which could have dramatic impacts on local livelihoods (ibid.). The long-term effects of the *Exxon Valdez* oil spill not only on the environment but also on local economies have not been forgotten in the Arctic. Also ships other than oil tankers, just carrying bunker fuel, can cause significant damage to the marine environment. The sinking of the *MS Explorer* in the Antarctic Ocean in 2007, to give just one example,³ triggered a significant oil spill which negatively impacted local wildlife (Associated Press, 2007).

Air Pollution by Ships

Cruise vessels not only bring tourists but also pollution to the Arctic: in the absence of land-based energy supplies, the ships' engines have to be kept running in order to supply the ship with energy, in particular electricity. Dock-side electricity supplies remain expensive and rare, and because many of today's ships still rely on heavy fuels, ship engines are a significant source of air pollution, which leads to negative health effects for coastal residents. This problem is not restricted to cruise vessels, but due to high energy needs and stays close to the shore, cruise vessels are a particularly important source of air pollution when it comes to coastal communities in the Arctic. Among the most problematic pollutants emitted by ships are sulphur-oxides (SO_x). As will be shown below, their prevalence has already led to a number of legal responses by the IMO. Other negative health effects are caused for example by emissions of carbon-dioxide (CO₂), a problem which has come into the focus of international maritime environmental lawyers more recently.

A Role for International Law

International law has long played a role in the Arctic Ocean. Already in 1958, on the occasion of Alaskan statehood, it was noted that “[i]ncreased human activity in the [Arctic] area, particularly when great Powers are involved, naturally results in international problems” (Hayton, 1958: 746) and that international law has a role to play in solving these problems (ibid.). Specifically, international law has an important role to play in the protection of the Arctic marine environment against vessel-source pollution (Kirchner, 2017). While the establishment of Particularly Sensitive Sea Areas (PSSAs) currently still requires an existing shipping-based threat to the marine environment (see in detail Kirchner, 2017), which makes the establishment of a PSSA in waters which are not (yet) used for shipping difficult (Kirchner, 2017), environmental standards which directly target vessels are also applicable in the Arctic and can be used to protect the Arctic marine environment and the coastal communities.

The Polar Code

The International Convention for the Prevention of Pollution from Ships (MARPOL) is the central international legal instrument when it comes to regulating pollution by ships. Both MARPOL and the International Convention for the Safety of Life at Sea (SOLAS) provide the legal background for the Polar Code which entered into force on 1 January 2017. The Polar Code is meant to protect both safety at sea and the marine environment (Polar Code, Introduction, Section 1).

The Polar Code did not come out of a vacuum but was the result of many years of law-making efforts on the soft law level (on the development see Jensen, 2016). The 1989 *Exxon Valdez* disaster served as the initial point of departure for these efforts to develop specific rules which govern navigation in Arctic and Antarctic waters (Jensen, 2016). Almost three decades later, a binding legal framework exists which aims at making navigation in polar waters safer than ever before. Although vessel operations in polar waters remain inherently dangerous, the Polar Code establishes rules, which enable ship operators and crew members to take active measures to enhance safety at sea. The Polar Code is mandatory for all ships which fly the flag of states which are parties to SOLAS or MARPOL (ibid.). The Polar Code may also be considered to amount to generally accepted international rules and standards, for example in the context of Article 21 (2) LOSC or Article 211 (2) and 5 (5) LOSC (see in detail Jensen, 2016). In particular, Article 211 (5), read in conjunction with the Polar Code, will allow coastal states to impose environmental standards on vessels which are passing through their Exclusive Economic Zones (Jensen, 2016). Interestingly, it can be argued that by invoking Article 234 LOSC, coastal states can set even stricter standards than those which are laid down in the Polar Code (ibid.).

Although it is in many ways a technical document (ibid.), the Polar Code is not only about technical standards but also about people (Kirchner, 2017a). While safety of seafarers is an issue in particular for newcomers to the Arctic (Polar Code, Introduction, Section 3.1.7, cf. also Kirchner/Pääkkölä, 2016), coastal communities, which are particularly endangered by Arctic shipping (cf. Kirchner, 2016), are barely mentioned in the Polar Code (Polar Code, Preamble, para. 4; but see also Polar Code, Introduction, Section 1). However, as outlined earlier, the potential negative effects of Arctic shipping on coastal communities, are not insignificant.

SO_x and CO₂

Because the Polar Code was written from the perspective of safety and the environment, its inspirational moment, the 1989 *Exxon Valdez* disaster, remains tangible under the surface of the text. The Polar Code aims at preventing accidents which result in dangers to human life and / or the environment. Oil spills are a classical example for accident-based forms of environmental harm at sea. Air pollution by ships, on the other hand, is not the result of disasters but a consequence of the normal course of operations of vessels. It is therefore necessary to approach the issue differently.

The IMO has done so by establishing specific Sulphur Emission Control Areas (SECAs) in areas of particular concern. In these areas, many of which, for example the SECA for the Baltic Sea, also are close to population centers, ships fuels must not contain more than 0.1% sulphur m/m. In the Arctic, no such limitation exists at this time, but as of 1 January 2020, a general limit of 0.5 % sulphur m/m will be imposed on ship fuels worldwide.

This trend is noteworthy in that the next step in this development is already visible on the horizon. In early 2018, efforts were underway at the IMO to tackle the issue of CO₂ emissions by ships. This is noteworthy in particular because the shipping industry did not play a role in the 2015 Paris Climate Accords. From an international law perspective, the end of heavy fuels in shipping is getting in sight. For coastal communities as well as for passengers on cruise ships, these developments are of direct importance due to the negative health effects of ship emissions. As long as fossil fuels will be used in ship propulsion systems, the problem of emissions will persist. While there are already a number of different technical efforts to make shipping greener, from solar cells to Flettner rotors (rotating cylinders which use the Magnus effect to generate forward propulsion), the shipping industry is still far away from being environmentally friendly.

China's Contribution?

How then can China make an active contribution to the wellbeing of residents in Arctic coastal communities in a field which is of increasing interest for the People's Republic?

China in the Arctic

Although the Arctic has been of interest for legal scholars for a long time (see Hayton, 1958), interest in the region has dramatically grown, also among lawyers, in recent years. The Far North, which was long seen as inhospitable, has attracted a large number of new actors from around the world, largely due to the increased accessibility made possible by climate change. While climate change already has dramatic impacts on communities in the Arctic, in particular on indigenous communities which are dependent on the natural environment for their livelihoods, the changing climate also makes large parts of the Arctic more accessible (Tiainen et al., 2015: 132). More so than most non-Arctic countries, China has played (and continues to play) an important role in this development: Chinese demand for natural resources is a key factor in price increases and for the growing interest for example in mining in the Arctic (ibid.). In addition, the Arctic Ocean is becoming an important route for the transport of raw materials and natural resources to China (for example gas from Russia's Far North) and has the potential to provide a shorter (and therefore cheaper) route for the transport of Chinese-made products from China e.g., to Europe. While maritime transport is an important topic, for example in the context of China's One Belt – One

Road (OBOR) initiative, the economic interests of the People's Republic in the Arctic include a range of issues. Increased accessibility of the Arctic also makes investments in the region (for example in the extractive industries or in tourism) more profitable (Tiainen et al., 2015: 132). This is particularly the case because the trend of increased accessibility of the Arctic is likely to continue in the foreseeable future (ibid). It therefore appears likely that China will have a long-term interest in the Arctic. This in turn means that such economic interests are likely to take on a political and legal dimension and this can already be seen in China's increasing emphasis on involvement in the shaping of Arctic Law. One way in which China is already active today is in fisheries: together with the Arctic 5, Iceland, Japan, South Korea and the European Union, the People's Republic signed the agreement to establish a fisheries moratorium for the Central Arctic Ocean in Ilulissat on 3 October 2018.

Although in practice mainly relevant for communities in the Arctic, the Polar Code, which applies in the Arctic as well as in Antarctic waters, it was created on a global level, under the auspices of the International Maritime Organization (IMO). This means that China had a small part to play in this development, although many other states have been more active than China in the process. As Arctic shipping will likely become more important for China's economy, which depends on the export of products and the import of raw materials, it appears likely that China's interest in shaping the rules of Arctic shipping will grow.⁴ Already today, China's government, in line with China's diverse (political, economic, legal etc.) interests in the Arctic (Shi et al., 2018) wants to play a role in governing activities in the Arctic, including shipping (Wong, 2018): "By defining China as a near-Arctic state, ensuring that China has become an observer on the Arctic Council and has intensified its investments in Arctic research, China's government has increased its focus on the Arctic" (Zeuthen, 2017: 2).

Technical and Legal Options

China essentially has two options on how it can contribute to the reduction of the dangers which follow from air pollution by vessels: the technical solution could consist in China's ship-building industries trying to become competitive producers of 'green' vessels. In particular in light of the expected stricter environmental standards for the shipping industry, a conscious move towards the production of greener vessels could be an important step forward for shipbuilders in China, in particular as the industry is already a global leader in terms of volume and the Chinese shipbuilding industry is about to undergo a major consolidation, which could free up production capacities, while at the same time Chinese-built vessels are not necessarily the first choice for buyers seeking vessels for operations in the Far North. A legal approach could be two-fold, for example imposing stricter emission limits on ships flying the flag of the People's Republic or taking a more active role in shaping international legal standards which pertain to air pollution by ships.

In the following, this text will look at the likelihood of such a move towards active advocacy for the reduction of ship emissions in the Arctic by the People's Republic. Particular attention will be given to the overall vision of the Chinese government with regard to China's place in the Arctic in general, its interests, as well as China's role in legal decision-making and law-making in the Arctic in particular. In other words, the following section will look at China's role in shaping Arctic Law in a field which is particularly relevant for the health and well-being of local coastal communities in the Arctic.

Emphasis on Cooperation and International Law

China's emphasis, at least in public statements concerning the Arctic, on the importance of international law can strengthen its role in the Arctic (Koivurova, 2018). This would especially be the case if the focus would shift from regional law-making, for example in the framework created under the auspices of the Arctic Council,⁵ towards more universal legal frameworks, such as the Law of the Sea Convention (cf. *ibid.*). While China's government has disregarded international legal norms, including those of the LOSC, closer to home, in the Arctic the People's Republic of China uses international law as a tool to gain access to decision-making processes. In practice, in the Arctic, China's actions match the government's claims which have been laid out in the 2018 Arctic Policy White Paper (*ibid.*). There is therefore, despite systematic violations of international law by China elsewhere, for example in the South China Sea or on issues such as fundamental human rights, at least some reason to expect that China would honor international legal obligations in the Arctic context. This would correspond to a widely held practice between Arctic nations that cooperation has long been possible, for example during the Cold War, despite serious political differences between Arctic states over other matters. Cooperation across international borders is an essential element of Arctic governance (Davidson, 2015: 1) and often this means cooperation across political divides. The Search and Rescue exercises conducted by Norway, a NATO member state, and Russia in Spring 2018 are a reminder of the importance attached by Arctic states to reliable cooperation across political divides. By honoring international legal agreements in the Arctic, China could present itself as a reliable partner for Arctic nations. Taking an active role in reducing the effects of air pollution by ships could provide an important step in this direction.

International governance of the Arctic is – to very large degrees – based on the Arctic Council⁶ and the Law of the Sea Convention (Escudé, 2016: 49). China has a chair at both tables, albeit not a voice at the former. The law of the sea provides a framework which already today provides China with access to the decision-making which affects the Arctic. The Law of the Sea Convention is particularly relevant for the Arctic: unlike in the case of Antarctica only a small portion of the Arctic, the High Seas part of the Central Arctic Ocean, does not fall under some form of legal power wielded by Arctic states, be it land territory, waters under full coastal state sovereignty (such as the territorial seas) or parts of the sea to which coastal states hold sovereign rights (for example the Exclusive Economic Zones) (Koivurova, 2013: 443). Aside from exceptions such as Svalbard (see Koivurova et al., 2017), the presence of state actors severely limits the role non-Arctic states can play in the region. It also means that China's focus on cooperation through international law is understandable as international legal instruments which are created outside of the framework provided by the Arctic Council can be influenced by non-Arctic states. While there might be political concerns about China's increasing role in the Arctic, including in Arctic Law, in some Arctic states, this approach can actually turn out to be beneficial of coastal communities in the Arctic – in the (admittedly not too likely) event that China becomes serious about combatting air pollution (and the continued reliance on coal in China seems to indicate that this is hardly the case).

China's role as an actor in the Arctic is growing (Sellheim et al., 2017: 9) but "China's Arctic aspirations are under close scrutiny by the Arctic community" (*ibid.*: 5). If China wants to play a meaningful role in the Arctic it will need the acceptance of other actors in the Arctic, in particular Arctic states and the peoples they represent. Merely reaping economic benefits at the expense of

the Arctic natural environment and the people who live in the Arctic will not endear outside actors to decision-makers in the Arctic. Therefore, there will have to be tangible benefits for Arctic states in order to open the door to newcomers. Despite its claims, China remains a relative newcomer to the Arctic. For example, unlike other states from outside the Arctic, between 1998 and 2015 China has not played a role in preparing the reports of the Arctic Marine Assessment Programme (AMAP) (Spence, 2016: 80 et seq.), which would have been an indicator of China's bona fide willingness to be involved with protecting the Arctic marine environment.⁷

China has described Arctic issues as “trans-regional and global” (Sellheim et al., 2017: 4). This can be cause for concern if it is to be understood as limiting the reach of Arctic states. Although China recognizes the established rights of Arctic states (*ibid.*), by emphasizing the transnational dimension of the Arctic, China can create the impression that it sees its interests as competing with that of the Arctic nation states, although in other contexts the Chinese government has regularly emphasized the importance of national sovereignty.

In the Arctic, international law, rather than politics, seems to dominate China's actions (*ibid.*:9), which is a welcome departure from the behavior of the People's Republic elsewhere: China's 2018 Arctic Policy White Paper (China's Arctic Policy (CAP) 2018, see also Koivurova, 2018 and Hossain, 2018) emphasizes the protection of the Arctic environment (CAP, 2018: IV. 2. (1)), which also includes efforts “to enhance control of the sources of marine pollution, such as ship discharge, offshore dumping, and air pollution” (CAP, 2018: IV. 2. (1)). It is, however, not fully clear if the term “control” refers only to the enforcement of existing norms or also to the introduction of stricter standards and other measures aimed at protecting the Arctic marine environment.

From a legal perspective, China could take action in international fora, such as the IMO, to advocate in favor of stricter environmental and health standards for the Arctic region. While it is unlikely that China would do so directly, it could become a leader when it comes to sustainable shipping — and thereby pursue the same aim indirectly.⁸ In that way, the People's Republic of China can make a positive contribution to reducing air pollution by vessels and to the health of the people who live in Arctic coastal communities. From a technical perspective, Chinese shipbuilders have an economic incentive to compete with shipbuilders from other nations in producing vessels, which are fit for operations in polar waters. A focus on green shipping technologies would allow Chinese shipbuilding companies to catch up technically with shipbuilding companies from other parts of the world, in particular from Europe.

Concluding Remarks

When keeping in mind China's environmental policies at home as well as the disregard for human rights, including the right to health, it seems questionable at first whether China might actually pursue such a course of action. In the Arctic, however, China has to – and appears to be – following other rules. Cooperation across borders is essential in the Arctic and non-Arctic states such as China will be dependent on the cooperation of Arctic states in order to be able to do business in the Arctic. Cooperation with Arctic states will usually require predictability as a partner, which in turn will require compliance with international agreements which apply in the Arctic. So far, China appears to honor international law in its activities in the Arctic. Utilizing international law as a tool to contribute to the provision of practical benefits for Arctic communities might

provide long term benefits for China in the form of increased access to cooperation with Arctic states.

For the time being, air pollution by ships remains a significant concern for coastal communities. While steps have already been taken by the IMO, a more complete transition towards greener shipping technologies will be inevitable in the long run. China has the technical and legal means to contribute to an improvement of the situation. It remains to be seen in how far China's commitment to international law and cooperation, including in the fight against air pollution by ships, which has been affirmed in the government's Arctic Policy White Paper in early 2018, will actually be implemented with a view towards the wellbeing of the people who live in the Arctic.

Notes

1. On different attitudes towards China's increasing importance in the Arctic see Takeshima, 2013: 73 et seq.
2. This also raises concerns regarding the protection of traditional indigenous knowledge, on this see Wheelersburg et al., 2017.
3. From a human perspective, the increase of cruise tourism in the Antarctic Ocean turned out to be beneficial as 154 passengers and crew members of the *MS Explorer* were rescued by a Norwegian cruise ship only three hours after abandoning the vessel and entering lifeboats (Associated Press, 2007). On the lack of search and rescue (SAR) infrastructure in the Arctic, which remains a serious problem, see Gramer, 2018.
4. For an earlier call for China to take a more active role in standard-setting regarding Arctic shipping see Liu et al., 2017.
5. The development of binding international treaties by the Arctic states while using the framework provided by the Arctic Council is a relatively recent phenomenon. On the original idea behind the creation of the Arctic Council see Bloom 1999, on the making of Arctic Law see Sellheim et al., 2017:4 et seq.
6. On the importance of the role played by the Arctic Council in shaping norms applicable to the Arctic – initially soft law but in recent years also binding international treaties – see Escudé, 2016: 51 et seq.
7. Earlier, environmental concerns apparently were perceived by China as a possibility for cooperation rather than as a concern in its own right (cf. Ministry of Foreign Affairs of the People's Republic of China, 2010). This approach was also visible in the inactive role played by China in the drafting of the Polar Code (Bognar, 2017: 5).
8. Such an approach would be consistent with the country (which is emitting more greenhouse gases than the European Union and the United States together (Bradsher/Friedman, 2018)) in terms of climate action, at least since the election of *Donald Trump* as President of the United States (see Wong, 2018).

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