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Blue Economy Implications for Canada's Maritime Security Strategy in the Arctic

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Scientific Letter

Blue Economy Implications for Canada's Maritime Security Strategy in the Arctic

Background

As part of the Royal Australian Navy Seapower Conference (October 3-5, 2017), Rear Admiral (RAdm) Gilles Couturier (Deputy Commander, Royal Canadian Navy) was invited to provide a brief on the implications of the 'blue economy' concept for Canada's ocean strategy. RAdm Couturier requested the production of this scientific letter to provide the background for the Conference presentation. Following the brief senior representatives from the Royal Australian Navy requested the research and presentation so, RAdm Couturier directed that this scientific letter should be shared with them to meet this request. The analysis contained in this scientific letter informed the production of the presentation and provides its main points, reflecting on the implications of the blue economy for the Royal Canadian Navy (RCN), the Canadian Armed Forces (CAF), and the Government of Canada in the context of the new defence policy, *Strong, Secure, Engaged: Canada's Defence Policy* (SSE).

In recent decades, human activity at sea has shown unprecedented growth, with consequences for economic development, environmental sustainability, and maritime security. In response, the blue economy promotes an approach to economic growth in the marine environment that fosters social inclusion and sustainable development in order to preserve and/or improve the livelihoods of seaside communities and protect the oceans and their littorals. From a strategic perspective, the changing nature and the increasing complexity of the maritime security environment calls for a broader approach to security and defence in Canadian waters, and especially in the Arctic. Under SSE, the CAF are mandated to pursue a greater presence in the Arctic in order to defend Canada's interests and protect Canadians. Considering climate change and its consequences on the Northern operating environment and especially on its waterways, the RCN will play a leading role in ensuring a military presence in the Arctic to defend Canada's sovereignty.

The blue economy can inform how the RCN can fulfill its mandate in Canada's upmost northern territory, not only mitigating its negative impact on the environment and coastal communities, but also contributing to environmental preservation and sustainable local and regional development. This Scientific Letter presents some of the initiatives put forward by the RCN and the CAF, and how they relate and/or can be expanded in ways that respect and promote the principles of a blue economy.



Introduction

The blue economy is the product of widespread concerns about the unforeseen consequences of a globalized economy and its growth on the marine environment. The concept emerged during the United Nations Conference on Sustainable Development held in Rio de Janeiro in 2012.¹ According to the World Bank: “the ‘blue economy’ concept seeks to promote economic growth, social inclusion, and the preservation or improvement of livelihoods while at the same time ensuring environmental sustainability of the oceans and coastal areas.”² At its core, the blue economy reconciles the imperative for economic development with the management of environmental degradation’s consequences on marine ecosystems and coast communities. Hence, the blue economy is about better understanding and managing sustainable development in the ocean environment, from fisheries to pollution and ecosystem health. Considering the holistic nature of the concept, blue economy policies can be implemented across the spectrum of government agencies with interests or operations in the maritime realm.

Considering the significance of the marine environment in Canada, activities in domestic waters have a significant impact on the security, the wellbeing, and the wealth of Canadians. *Strong, Secure, Engaged: Canada’s Defence Policy*, the most recent Canadian defence white paper, mandates the CAF to detect, deter, and defend against threats to Canada.³ In the context of climate change and the resulting increase in human activities above the 60th parallel north, the Government of Canada faces both growing opportunities and challenges in asserting its sovereignty in the Arctic and monitoring commercial and military activities in the region. As a result, the CAF is expected to increase its presence up North in the years to come, and naval forces will have an important role to play in that regard. Blue economy principles can guide both the RCN and the CAF in expanding their presence in Northern Canada in ways that protect the environment and support the wellbeing of local aboriginal communities, while defending Canada’s sovereignty.

This Scientific Letter discusses how the blue economy can inform Canada’s security and defence at home, focusing specifically on the implications of a greater RCN presence in the Arctic. First, Canada, as a maritime nation, has adopted a series of policies that compose its ocean strategy. While Canada still lacks a blue economy strategy, existing policies promote some of the principles key to sustainable economic growth in the maritime environment. Second, the new defence policy mandates the CAF and the RCN to protect Canada’s waters in the face of environmental changes and resulting increase in human activities. Fulfilling this mandate poses unique challenges for the environment and local communities, however. A greater military presence up North should seek to positively contribute to the local economy while minimizing the impact on local ecosystems. The RCN and the CAF have already taken some steps in this direction, in line with the blue economy, but there is significant potential for the RCN and the CAF to innovate in this domain. Blue economy considerations are crucial to the protection of Canada’s territory, people, and resources.

¹ John Lesperance, “The Blue Economy: Origin and concept,” *Connections*, 21, no. 2 (March 2016): 8.

² World Bank, *The Potential of the Blue Economy: Increasing Long-term Benefits of the Sustainable Use of Marine Resources for Small Island Developing States and Coastal Least Developed Countries*, 2017, Washington, DC: World Bank, iv.

³ Department of National Defence, *Strong, Secure, Engaged: Canada’s Defence Policy*, 2017, Ottawa: Government of Canada, 17.



Canada's Oceans Strategy

Canada is a maritime nation, due both to its geography and its geopolitical position. Its ocean estate covers over 7 million km², which equals approximately 70 percent of the country's landmass.⁴ Bordered by three oceans (Atlantic, Arctic, and Pacific), Canada has the world's longest coastline at 243,000 km.⁵ Much of this coastline is rugged, remote, and sparsely inhabited. Nonetheless, despite its remoteness and austerity, the Arctic is crucial to Canada's security and prosperity: the region contains a quarter of Canada's ocean estate and a significant portion of the country's fossil fuels reserves, alongside other large mineral deposits, including gold and diamonds.

Over the last 20 years, Canada has adopted a series of policies to regulate seaborne activities and protect its marine environment. The need to balance industrial and economic development with the health of the natural environment appears to be a significant factor motivating the government's ocean policies. However, the government has not yet undertaken an open and public reflection on the implications of the blue economy for the country, unlike some of its allies.⁶ Nonetheless, while the Government of Canada does not directly refer to the blue economy in official policies, key documents defining its ocean strategy reflect some of the principles defining the blue economy: promoting economic growth, social inclusion, and the improvement of livelihoods while ensuring the environmental sustainability of our oceans and coastal regions. The 1997 *Oceans Act* identified the Department of Fisheries and Oceans (DFO) as the lead agency responsible for formulating Canadian government's oceans policy. In 2002, *Canada's Ocean Strategy* unified efforts under DFO to manage the diverse interests in the marine environment and improve coordination between federal, provincial, territorial, and aboriginal governments in order to promote sustainable development and protect the environment.⁷ The *Strategy* was "guided by the principles of sustainable development, the precautionary approach and integrated management" that form the core of the blue economy.⁸ In 2016, the *Oceans Protection Plan* was largely the result of growing concerns related to the increased shipping traffic on the Pacific coast that was spurred by a growth in Canadian exports to Asia, particularly in terms of petroleum products.⁹ Overall, the *Plan* is about enhancing shipping oversight and tightening regulatory regimes, expanding aids to navigation, and augmenting the government's ability to respond to emergencies. These comprehensive policies are underpinned by 62 separate pieces of federal legislation dealing with Canada's oceans from a variety of jurisdictional perspectives, including industry, the environment and fisheries, and safety and defence.¹⁰

⁴ Fisheries and Oceans Canada, *The Role of the Canadian Government in the Oceans Sector*, <http://www.dfo-mpo.gc.ca/oceans/publications/cg-gc/page02-eng.html> (accessed Oct. 5, 2017).

⁵ Statistics Canada, *Highlights of Canada's Geography*, <http://www.statcan.gc.ca/pub/11-402-x/2012000/chap/geo/geo-eng.htm> (accessed Oct. 5, 2017).

⁶ Michelle Voyer et al., *The Blue Economy in Australia: Conceptualising the Blue Economy, its Relationship with Maritime Security, and its Role in Australian Oceans Governance*, (Sydney: Sea Power Centre – Australia).

⁷ Fisheries and Oceans Canada, Oceans Directorate, "Canada's Oceans Strategy," 2002, Ottawa: Government of Canada.

⁸ *Ibid.*, iii.

⁹ Transport Canada, "Canada's Oceans Protection Plan," 2016, <http://www.tc.gc.ca/eng/canada-oceans-protection-plan.html> (accessed Nov. 10, 2017).

¹⁰ For details see Appendix 2 in: Fisheries and Oceans Canada, Oceans Directorate, *The Role of the Canadian Government in the Oceans Sector*, 2009, Ottawa: Government of Canada, 32–42.



Canada's Defence Policy

The Canadian marine environment shapes the country's strategic interests. SSE demands strong armed forces at home to protect Canada's sovereignty and to assist other departments and agencies in times of natural disasters and emergencies. According to the Defence Policy, a robust domestic defence implies five elements: the steadfast defence of Canada, rapid disaster response, effective search and rescue, an innovative defence sector, and enhanced presence in the Arctic.¹¹ The first three elements pose significant challenges considering Canadian geography and climate. The CAF must be ready to intervene in timely and effective manners in remote and austere environments. Consequently, increasing military presence in the Arctic and developing an innovative defence sector that can anticipate, adapt, and act rapidly in this complex security environment are essential to Canadian security and sovereignty.

According to the forthcoming *RCN Strategic Plan 2017–2022*,¹² the Navy's mission is to prepare combat-ready naval forces that support Canadian interests at home and abroad. At home, it refers to supporting Canadians and other government agencies in times of need, being a strategically agile, adaptive, and innovative force able to operate in complex and uncertain environments, and defend Canada and its core values. *Leadmark 2050*, which currently stands as the RCN's strategy, outlines several ways in which naval forces can contribute to maritime security domestically and protect Canada's ocean estate in the future.¹³ For instance, naval forces can help prevent and stop unlawful activities—such as illegal fishing or waste dumping—that threaten the health of marine environments. They can also mitigate the negative impact of their own operations on the marine environment by developing appropriate procedures and practices to manage their waste and reduce their carbon footprint, which is especially important in the Arctic.

The Strategic Importance of the Arctic and its Waters

The strategic importance of the Arctic has recently increased, in large part due to the effects of climate change. The polar cap and the frozen Arctic Ocean have historically reduced the capacity of distant neighbors, such as Russia, from approaching Canada's Arctic coast by sea and has also limited the ability of commercial vessels to transit through the region. However, warmer temperatures have started to lengthen the navigation season in the Northwest Passage. The number of ships transiting through the passage every year has generally increased since the 1980s, even though it remains marginal. In 2012, the busiest year to date, 30 vessels managed to transit through the Passage.¹⁴ In comparison, approximately 40 vessels cross the Panama Canal every day.¹⁵ Even though transits between Europe and Asia through the Northwest Passage are up to 4,000 kilometers shorter than through Panama, the crossing continues to present significant risk for commercial ships that often outweighs its advantages. Dangerous waters, due among other factors to moving ice, a lack of updated navigation charts,

¹¹ Department of National Defence, *Strong, Secure, Engaged: Canada's Defence Policy*, 60.

¹² At time of writing (November 2017), the Navy is expected to release shortly the *RCN Strategic Plan 2017–2022*, which presents the Commander of the RCN's vision for the institution.

¹³ Royal Canadian Navy, *Leadmark 2050: Canada in a New Maritime World*, 2016, Ottawa: Government of Canada.

¹⁴ Government of Northwestern Territories, Environment and Natural Resources, "Trends in shipping in the Northwest Passage and the Beaufort Sea," May 29, 2015. <http://www.enr.gov.nt.ca/en/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea> (accessed Oct. 18, 2017).

¹⁵ Autoridad del Canal de Panama, "Advisory to Shipping no. A-24-2016," May 5, 2016. <https://www.pancanal.com/common/maritime/advisories/2016/a-24-2016.pdf> (accessed November 10, 2017).



and limited infrastructure, reduce the short-term attractiveness of a journey through Canadian Arctic waters.

The strategic importance of the Northwest Passage lies in the longer time horizons. Despite cold and dark winters, longer and more navigable summers will increase access and likely spark the interest of a larger numbers of players, including but not limited to Arctic nations. Both factors will stimulate activity in the North, including seaborne trade, resource extraction, commerce, and tourism. If this trend presents substantial potential for economic development in remote communities, it also poses significant risks regarding environmental hazards, disasters and other emergencies, as well as for the protection of local communities' traditions and livelihoods. Managing these risks will require concerted action from all levels of governments in Canada, including the armed forces.

As a result of these ongoing changes, the Arctic occupies a central position in Canada's current and future maritime considerations. Under policies discussed earlier, the Government of Canada has already introduced measures designed to protect its ecosystems, while also allowing for greater economic exploitation. Canada's ability to enforce these protections, leverage these benefits, and respond to emergencies will be highly dependent on improving the ability of government agencies to operate in those remote areas. Considering its current and future planned capacity to operate in austere environments and to quickly deploy significant and specialized capabilities, the RCN will play a key role in ensuring the sustainability of human activities in the Arctic.

The RCN in the Arctic

SSE mandates the RCN and the CAF to increase their presence and domain awareness in the Arctic to ensure sovereignty, as well as the good conduct of economic and military activities in line with domestic and international rules and norms. Indeed, according to the new Defence Policy, protecting and defending the Canadian North, its people, and its fragile ecosystems requires a greater presence of the RCN, alongside other components of the CAF and government agencies. Increasing domain awareness is also crucial, considering the size of the region and the risks it poses in terms of safety and defence. At the same time, the RCN, as with the rest of the CAF, is progressively taking stock of the potential environmental consequences of an increased presence in Northern Canada.

The CAF first established a permanent presence in the North in the 1970s. Today, Joint Task Force North (JTFN), one of the six regional joint task forces of the Canadian Joint Operations Command (CJOC), is responsible for maintaining constant awareness over the northern portion of Canada's territory and its air and maritime approaches. Based in Yellowknife, JTFN also offers a robust operational headquarters to plan, command, support, and execute joint operations through the Arctic.¹⁶ JTFN also collaborates with other Canadian agencies and local populations to exercise sovereignty and contribute to safety, security, and defence operations in the Canadian North.

Through JTFN and CJOC, the RCN currently maintains situational awareness in the Arctic through a system of systems approach employing space-based sensors (Radarsat II) and aircraft, which is augmented by reporting from personnel on the ground. The Radarsat II system has received recent upgrades to enhance its capacity to gather data and provide situational

¹⁶ Department of National Defence and the Canadian Armed Forces, "Joint Task Force North," July 19, 2017. <http://www.forces.gc.ca/en/operations-regional-jtf-north/jtf-north.page> (accessed Oct. 19, 2017).



awareness in real time. In 2009, project Polar Epsilon provided two new ground stations, respectively in British Columbia and Nova Scotia, to allow for constant exploitation of Radarsat II data.¹⁷ Furthermore, three additional satellites will be launched in August 2018 to implement the Radarsat Constellation Mission.¹⁸ This new capability, which should be fully operational in early 2019, will improve revisit times and overall coverage. Put simply, through these improvements, Radarsat II will provide the CAF with a more accurate, precise, and timely picture of the Arctic, thus improving Canada's awareness of activities region.

With respect to platforms, the RCN has contracted construction of five Arctic/Offshore Patrol Vessels (AOPV), with an option for a sixth. An ice-capable ship, the AOPV represents a significant addition to the RCN's Arctic capabilities.¹⁹ The Navy will be able to operate in up to first year ice without risk of damage to the vessel. In addition to its surveillance and patrol function, the AOPV is designed to support CAF and other government departments and organisations operations at sea and ashore. It is a floating, mobile base of operations that can provide temporary infrastructure to remote communities during times of crisis. Each AOPV is equipped with four boats and an oversized flight deck. It can embark a landing craft and carry up to six sea containers, which can be off loaded with its autonomous 20 tonne crane. It also has separate vehicle bays for snowmobiles and off-road vehicles. In short, the AOPV will increase the RCN capacity to operate and support other Canadian agencies in the North.

Since 2007, the CAF have organised an annual operation, Operation Nanook, in order to assert Canadian sovereignty, improve how Canada's armed forces operate in Arctic conditions and coordinate with other Canadian agencies as well as international partners, and advance research and development on questions specific to operations in the North.²⁰ While Operation Nanook was first conceived as a month-long exercise, it is now an umbrella for most CAF activities in the Arctic year round. The most recent scenarios driving Operation Nanook have focused on maritime security, natural disaster response, and search and rescue.

Operating in Arctic waters poses logistical challenges, however. The endurance of the AOPV is greatly diminished in ice conditions. Currently, there is no refuelling facility in Canadian Arctic waters, and ships must replenish in Nuuk, Greenland, which is over 1,000 nautical miles away. To address this logistical gap, naval fuelling and berthing capabilities are currently being built in the coastal community of Nanisivik located north of the Baffin Island.²¹ Nanisivik's installations will allow AOPVs to avoid a five to seven day detour to Greenland, and greatly extends the RCN's on-station time and presence in Canada's Arctic Archipelago during the navigation season. It will also prolong the overall length of the navigation season by two weeks on average. Although a Navy facility, Nanisivik will also be used by the Canadian Coast Guard to extend the range of operations for its fleet of icebreakers and research vessels. Nonetheless, replenishment poses challenges considering the size of the region, the limited availability of

¹⁷ Department of National Defence and the Canadian Armed Forces, "Polar Epsilon Project," November 07, 2013. <http://www.forces.gc.ca/en/news/article.page?doc=polar-epsilon-project/hnps1uo5> (accessed Dec. 18, 2017).

¹⁸ Canadian Space Agency, "RADARSAT Constellation," March 30, 2017. <http://www.asc-csa.gc.ca/eng/satellites/radarsat/Default.asp> (accessed Dec. 18, 2017).

¹⁹ Royal Canadian Navy, "Arctic and Offshore Patrol Ship Project," November 22, 2017. <http://www.navy-marine.forces.gc.ca/en/fleet-units/aops-home.page> (accessed Dec. 18, 2017).

²⁰ Department of National Defence and the Canadian Armed Forces, "Operation NANOOK," September 25, 2017. <http://www.forces.gc.ca/en/operations-canada-north-america-recurring/op-nanook.page> (accessed Dec. 18, 2017).

²¹ Sara Frizzel, "Nanisivik naval refuelling facility in Nunavut on track and on budget for fall 2018 opening," CBC News, July 10, 2017. <http://www.cbc.ca/news/canada/north/nanisivik-arctic-bay-naval-refueling-2018-1.4195662> (accessed Dec. 18, 2017).



basic commodities, and the potential economic and social impact of port visits on small, isolated communities.

Opportunities for the RCN

Working with aboriginal communities constitutes a significant way through which the CAF and the RCN can augment their presence and situational awareness in the Arctic, while mitigating potential negative social and economic impact on local communities and their livelihood. From an operational perspective, the 1st Canadian Ranger Patrol Group constitutes a crucial component of the Canadian military presence in the Arctic, beyond JTFN and Operation Nanook. Working with all CAF organisations, including the RCN, the Canadian Rangers provide lightly equipped, self-sufficient, mobile forces to support sovereignty and domestic operations.²² Principally originating from local aboriginal communities, the Rangers also represent a crucial source of local knowledge, expertise, and awareness for the CAF and the RCN. They often hold key positions in local communities, such as chiefs and mayors, and set a positive example for the youth.²³

The RCN is currently considering contributing to Indigenous Guardians programs through its innovation program and in collaboration with the private sector and other government agencies. These programs empower communities to manage ancestral lands according to traditional laws and values.²⁴ This initiative, currently known as the RCN Northern Guardians Innovation Initiative, has the objective of building capacity, technical competencies, and positive relationships with local communities in order to support naval operations in the Arctic. Under this initiative, the RCN would contribute to the development of responsible waste management practices and new ways to approach agriculture in austere environments. While these activities would support first and foremost coastal communities, they would provide ways for AOPVs to reduce their environmental footprint and mitigate their negative impact on resource supply, most significantly food and potable water. Ultimately, guardians in selected northern coastal communities would be responsible for the management and the maintenance of operational sustainment hubs. These hubs would provide waste management and green energy containerized systems to be used by RCN's platforms and local communities. In line with the blue economy principles, this initiative represents a meaningful way to combine defence imperatives and sustainable development.

Conclusion

In summary, Canada is a maritime nation: its ocean estate clearly shapes the country's national interest. While the Canadian government has yet to formulate a clear and government-wide blue economy strategy, the principles of the blue economy can be found in some of Canada's marine and maritime policies, as well as its naval strategy. These principles should closely guide the RCN's strategy toward the Arctic. In the context of climate change and increasing economic activities in Canada's North, the RCN and the CAF will likely augment their presence and operational tempo in the region. Considering the importance of the marine environment in the Arctic and its vulnerability, these activities will certainly have an impact on the regional ecosystem and local communities. As a result, the RCN will shape to a certain extent regional

²² Canadian Army, "1st Canadian Ranger Patrol Group," October 16, 2017. <http://www.army-armee.forces.gc.ca/en/1-crbg/index.page> (accessed Oct. 19, 2017).

²³ Id.

²⁴ Indigenous Leadership Initiative, «Indigenous Guardians Program," N.D. <https://www.ilinationhood.ca/our-work/guardians/> (accessed Oct. 19, 2017).



development. The organisation is already partially aware of its impact on the region based on previous operations, but preserving the environment and protecting the livelihood of indigenous coastal communities should be central considerations in developing operational and strategic plans.

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<http://www.enr.gov.nt.ca/en/state-environment/73-trends-shipping-northwest-passage-and-beaufort-sea> (accessed Oct. 18, 2017).

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