

CANADIAN ARCTIC MARINE TRANSPORTATION ISSUES, OPPORTUNITIES AND CHALLENGES

Frédéric Lasserre

KEY MESSAGES

MELTING SEA ICE

Although ice will always be present in the Arctic in winter, global warming induces a steady decline of the extent of sea ice and a rapid decrease in the share of multi-year ice, giving way to younger, thinner sea ice and giving credence to modelled scenarios of ice-free summers during the 21st century. However, ice remains a hazard and an impediment to navigation. Thinner and more fragmented ice moves faster and in patterns that are difficult to predict. It also seems more prone to building compression ridges. In Baffin Bay, accelerated iceberg calving from Greenland is likely to increase the number of growlers, which pose a serious risk for navigation. From this emerges a nuanced picture of shipping conditions in the Canadian Arctic. There are opportunities for sustained expansion but risks remain high and warrant a robust regulatory framework.

EXPANDING COMMERCIAL SHIPPING

Shipping in the Canadian Arctic is mainly driven by fishing, mining activities and community resupply, while transit shipping remains marginal. Fishing, mostly carried out by vessels based in Newfoundland and still less developed than in Greenland, is gradually moving north to Baffin Bay. As extraction sites open, mining generates heavy traffic, in terms of both voyages and tonnage. Inland mining sites, faced with complex and costly land transportation due to melting permafrost, may further drive marine transportation. However, fluctuating world prices for commodities, not the extent of sea ice, are the main driver — or constraint — of mining activities. Community resupply is expanding as well, but strategies pursued by the four shipping companies involved differ. Coastal Shipping Ltd., Desgagnés and NEAS all expanded westwards and opted for larger, heavier vessels without expanding frequency of service.

CO-ORDINATION OF ACTIVITIES IN THE FRAME OF CORRIDORS

Designing corridors can act both as a regulatory tool and as a way to concentrate development assets to promote more effective transportation. Low impact shipping corridors are being designed within the Canadian Arctic archipelago as a tool to regulate ship movements to reduce navigation hazards, and concentrating navigational aids along these corridors is a way to improve safety and efficiency. Land infrastructure may be developed in co-ordination with shipping patterns and economic projects such as mining ventures. Here, too, the geographic concentration of community resupply and mining logistics may both sustain and further develop transportation activities that could support the profitability and viability of corridors in the Canadian Arctic.

FUTURE SHIPPING TRENDS

Due to the constraints to shipping, destination traffic is likely to remain dominant in the foreseeable future. Traffic generated by mining activities is likely to keep expanding, provided no severe collapse of world commodity prices occurs. Community resupply may also experience continued expansion, partly fuelled by mining ventures, provided operators can take advantage of improved port facilities in the Canadian archipelago.

Mining projects and community resupply may both benefit from the development of northern corridors, but these would face the challenge of their profitability.