

TIIVISTELMÄRAPORTTI (SUMMARY REPORT)

SIIRTYMINEN YHTEYKSIEN GEOPOLITIikkaAN: Suomelle oleellinen merellinen kriittinen infrastruktuuri arktisella alueella ja Itämerellä

TOWARDS THE GEOPOLITICS OF FLOWS: Critical Maritime Infrastructures in the Arctic Region and the Baltic Sea

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Abstract

The research project "Towards the Geopolitics of Flows" analyzes the transformation global geopolitics towards the geopolitics of flows. The research highlights the importance of the global commons and especially the global maritime commons domain. Stemming from this, the project analyzes Finnish maritime environment, with a special focus on the new and opening Arctic region.

1. Introduction

The research project "Towards the Geopolitics of Flows: Critical Maritime Infrastructures in the Arctic Region and the Baltic Sea" ("Siirtyminen yhteyksien geopolitiikkaan: Suomelle oleellinen merellinen kriittinen infrastruktuuri Arktisella alueella ja Itämerellä") is the first of two interrelated research projects funded by the Scientific Advisory Board for Defence (MATINE) and the National Emergency Supply Agency (NESA).

This MATINE research project is premised on the assumption that global geopolitics is transforming towards the geopolitics of flows. This entails a strategic shift of balance from the primarily territorial geopolitics focused on sovereign states/territory towards the geopolitics of global commons and flow security. This entails a growing emphasis on the importance of various flows – and their stability, reliability and security (or lack thereof) – that rely on and use the various common domains, i.e. the high seas, airspace, space and cyberspace. All sovereign actors are reliant on global flows to a growing degree. The maritime domain is of particular importance as various maritime contexts (e.g. critical maritime corridors) are essential to global trade flows of goods, resources, and energy as well as to the security of various littoral or maritime nations. This applies also to Finland. The research project analyzes the geopolitical changes in the Finnish maritime environment with special focus on the Arctic region.

2. Research objectives and accomplishment plan

The starting point of the MATINE-project study was to (1) analyze the shift in international geo-strategic thinking away from territorial geopolitics towards the geopolitics of global flows

and global commons, and (2) to analyze the implications of this geo-strategic and geopolitical change to Finland.

Following this, the goal of the MATINE-study was to increase Finnish geo-strategic understanding concerning (1) global geopolitical trends, (2) the growing importance of the maritime domain in the international geo-strategic thinking, and (3) the geo-strategic changes in the Finnish maritime proximity.

The MATINE-project lays foundations for the continuance of the National Emergency Supply Agency funded project that aims to increase the Finnish understanding concerning the possibilities of domestic security of supply actions in an inter-connected world of global flows.

3. Materials and methods

The research was conducted as a conceptual analysis based on vast literature and policy document sources. A number of expert interviews were also conducted during the project.

4. Results and discussion

i. Global Flows, Flow Security and Power

The contemporary geo-strategic and geopolitical thinking is going through transformation. Global and regional orders are increasingly premised on and shaped by global flows. Many of these flows have a hub and spoke mobility dynamic. Namely, the mobility of people, goods, and services differentiate localities depending on their ability to act as hubs and relay nodes for the defining global activities, such as trade, resource, and financial flows. This means that the local intensity and regularity of the flows is increasingly crucial indicator of locality's economic viability and of the national political strength.

Comparing the situation to older more territorial understanding of the international order, the securing of a steady access to the global flows poses a different set of domestic and foreign policy challenges to states in general and especially to small states like Finland. At the moment, small states have to cope with the cross-current between two co-existing realities: the more dynamic flow-centric one emerging and the territorial state-centric one receding, or at least transforming. The general trend is that the global mobilities and circulations are increasingly challenging the state/territory-based geopolitics and rendering old policy solutions—e.g. national self-reliance—increasingly ineffective. Of course, states will not disappear from the political map, nor will some of them stop contesting global flows and the architectures and practices that support them, but their meaning and role will transform. Most likely, states will remain security providers, but their focus is likely to emphasize the (in)security of flows as opposed to national territory as a whole.

This research project was premised on a research question: How to understand contemporary political space? The traditional if not paradigmatic answer to it can be found in the world map. The political world map usually points out two types of human artifacts: borders encircling sovereign states and land-based logistics networks, i.e. roads and railways. Much of modern geopolitical and geostrategic thought has so far been fixed on borders and territories in particular. This amounts to the traditional 'billiard ball' model of international geopolitics: states are unitary actors with a monopoly of violence in a given defined territory and they engage in international affairs as powerful territorial wholes, pushing and pulling each other

in the whirlpool of politics. The traditional world map is the perfect visual metaphor of this insofar as it tells pretty much everything about which actors matter and over what there ought to be a political concern in international politics: territorially bounded, bordered and separated sovereign states.

However, this prevalent political imagery of discrete and mutually exclusive blocks of space can be contrasted with alternative 'imperial' geopolitical visions that have old roots and are again becoming more relevant. One alternative can be exemplified by the imperial Rome's territorial imagination. The limits of the Roman Empire were not precise in a sense of modern day state's clearly demarcated and secured borders. To an important degree, the limits of Rome were its main roads and various access routes, including those in the seas. Most of the legions were based along these main arteries of the empire. In a similar vein, albeit primarily in the maritime domain, the territorial imagination of the British Empire put a special focus on (securing) the free and open international maritime highways—one of the so-called 'global commons'—that supported the exploitative economy of the Empire and made possible the flexible projection of maritime power in distant places.

It may be argued that the increasing transformation of the contemporary world order towards a system of circulatory flows is predisposed to rediscover these old Roman and British meanings of geopolitics and security. Today and in the foreseeable future, there is a growing focus not only on global flows but to the security of flows—i.e. the sites, spaces, technologies, and practices of flows. The aim of this flow security is to control the access to and from the main global flows that connect, on the one hand, global remote extremities to the regional centers or spokes and, on the other hand, the spokes with the main global hubs. Securing the access to the regularity of flow changes the meaning of security: traditionally, spatial or territorial entities—e.g. states—were secured. Now, the temporal flow-like processes and practices are increasingly being secured. Regularity of flows' tempos and steadiness of their pulse indicate a high level of security.

In this mobility paradigm, the scenarios of interdependence are developing beyond the static spatiality inherent in the term "network" towards conceptualizing global processes in terms of flows and circulations. The visions for the global structure are less and less static; instead the imagery is more dynamic and fluid, yet paradoxically often also stable and regular. They bring into focus flows—both regular and unstable—that are becoming increasingly significant. It is based on a system where even the key nodal points may move, though their movement is not typically random. This imagery's specific, empowered fluidity and flexibility is far from the geopolitical maps of the Cold War times.

The key to understanding the wider ramifications of global flows and their securing is to examine their intimate relationship with power. Flows characterize the crosscutting feature of the interconnected global domain. Directly commanding the flows, directly or indirectly controlling their paths and practices, and finding ways to adapt to them are actions that signify power or its lack. Arguably, the global dynamic of interconnection is increasingly the basis of modern life irrespective of state boundaries. However, this mobile fabric is not evenly spread throughout the global sphere. Rather its corridors of are highly differentiated and structured in ways that mirror the world order and distribution of power.

Global flows themselves can turn into new contexts of crises. The ongoing piracy on the coast of West Africa or in the waters of Indonesia demonstrated the potential ramifications of a flow disruption and, on the other hand, the resilience-practices of the maritime shipping. In the same way, the problems with under-water digital cables have caused spread disruptions, for example, in the banking systems. Thus, it is clear that problems in flows can lead to wide

societal disruptions and even crises.

Moreover, the flow-paradigm also offers a new perspective to older more traditional forms of crises. Namely, the flow dimension is increasingly present in the more traditional "local" crises. This dimension can manifest itself in the following ways: First, at the same time, there is an increasing recognition of the flow-related dynamism of any local crisis. They create particular political economies that rely on transnational circulations of, e.g., soldiers, funds, weapons, blood resources (minerals, drugs, etc.), and refugees. It should be noted that both the licit and illicit or shadow flows can and often do take place in the same flow corridors. Second, there is a growing awareness over the various ways in which a territorial political crisis may spillover to disrupt the steadiness of the global flows. The more traditional types of crisis can become re-contextualized as they interfered with the regularity of the sanctioned global flows. This scenario was exemplified when the state failure in Somalia spilled over to the Southern maritime corridor of the global economy that runs through the Gulf of Aden. The piracy problem and the multinational/EU operation as a response to it can be seen as portents of how the future flow crisis management might look like. Third, as the access to the global flows is becoming imperative to states, different sanction regimes imposed on them are in fact part of emerging flow politics. The sanctions for example against Iranian nuclear program are forcing it out of the global flow dynamics and, therefore, denying it important sources of financial and political capital. Contrasted with the "carrot" of having access to the global flows, the "stick" of sanctions gains its conditioning power.

ii. Global Flows and Global Commons

Global interconnectedness and flows take place in areas that are generally understood as beyond traditional sovereignty and sovereign jurisdiction, and consequently also open and available for use by anyone. These so called "global commons" include the high seas, international airspace, space, and most recently the human-made cyberspace. These areas, even if outside the direct responsibility and governance of sovereign entities, are of crucial interest for the contemporary world order. In fact, so great is their importance that they are said to be the connective tissue around our globe upon which all nations' security and prosperity depend. In a sense, then, the global commons constitute the arteries that enable the heightened states of global connectivity and circulations of the US-led liberal world order.

Today, in a world that is perceived to be increasingly interconnected and interdependent, the command and security of these critical flow arteries (i.e. critical infrastructures) is of crucial interest for the US. The U.S. has not only defined the global commons as a key feature of the current and future strategic environment, but also maintained that the assured access to the global commons and cyberspace constitutes a core aspect of US national security and that global security and prosperity are increasingly dependent on the free flow of goods shipped by air or sea. Because of this political, strategic and economic imperative, the US has stated that it will seek to protect freedom of access through the global commons and will continue to lead global effort to assure access to and use of the global commons, both by strengthening international norms of responsible behavior and by maintaining relevant and interoperable military capabilities.

iii. Global Maritime Environment: Global Flows and Contestations?

From the perspective of this study, the global maritime environment – i.e. the maritime common - is the key context in which many of the global flows take place. Most of the vital maritime flows of trade and energy in particular travel along a limited number of highly congested and easy to disrupt maritime routes: A southern corridor, connecting the Mediterra-

near with the Gulf of Suez, the Red Sea and the Gulf of Aden, where it branches out into connections with East Asia and the Arabian Gulf; an eastern corridor, stretching from the East and South China Seas through the Malacca Straits into the Indian Ocean, where it connects with other traffic bound for Europe; and a western corridor, casting a wide arc over the Atlantic to connect Europe with the Americas. For this study, in particular, perhaps the most interesting maritime route is the opening of a northern corridor, running along the Russian Arctic coast and through the Bering Straits into the Pacific, that could take on similar geo-strategic significance for various global players in the East as well as in the West.

However, the important global maritime environment is in the process of transformation. From a historical perspective, it has been dominated by the United States ever since the end of the Second World War. Despite Soviet challenge and limitation, it was the United States and NATO that controlled and regulated access to, and use of, the maritime commons and provided maritime security across a large swath of the world's oceans. The end of the Cold War and the collapse of the Soviet Union meant, effectively, that the United States came to dominate the high seas – a fact that also contributed to the period of American unilateralism on land. Today, the new maritime environment is becoming more complex, connected but also contested. This entails a certain amount of friction between two key logics: global flows and the local territorial (or other) claims.

There are a number of factors that continue to work towards an increasingly complex and contested maritime domain. We highlight here three in particular. First, the so called "rise of the rest" has resulted in the global diffusion of maritime power. Over the last decade, a number of emerging and resurgent powers – most notably China - have initiated a series of ambitious fleet building programmes while at the same time various Western actors are facing severe budgetary challenges. Various non-state actors have also gained new anti-access and area-denial (A2/AD) capabilities, which has raised questions over the future viability of large surface fleets. The US maritime power, however, still remains superior in absolute terms. Secondly, emerging powers – especially China but there are fears over Russia, too – are challenging the existing maritime legal order and actively seek to expand their own sovereign jurisdiction in international waters (e.g. the existing limits of territorial waters and the regulation of exclusive economic zones). This "re-territorialisation" of the seas may become problematic *viz-à-viz* global flows and their freedom, stability and assuredness. Thirdly, the maritime environment is an object of growing commercial interest, especially due to the urge to exploit maritime resources, such as deep-sea energy reserves and minerals as well as fishery.

iv. The Finnish Maritime Environment: Baltic Sea and the Arctic

The Baltic Sea

A common phrase is that geopolitically speaking Finland is an island isolated by the Baltic Sea. Approximately 90 percent of Finnish exports and 70 percent of imports are conducted through the Baltic Sea. The maritime logistics cannot be replaced by any other means of transportation due to geography and large cargo volumes. It is thus clear that any disruptions in these maritime flows would be a serious threat to the Finnish economy and to the critical functions of the Finnish society.

The Baltic Sea is highly trafficked: as much as 15 percent of global maritime traffic takes place at the Baltic Sea. There are approximately 2000 vessels operational at the Baltic Sea at any given moment. This means that there exists a constant threat of a serious environmental or other major accident.

Although the security situation at the Baltic Sea region should be approached from a comprehensive security point of view, there exist also traditional military-strategic issues that need to be taken into consideration. Politically more assertive and militarily more capable Russia has grown some concern especially when seen together with the U.S. “rebalancing” between its European and Asian commitments (i.e. U.S. “pivot to Asia”). The Baltic Sea is also the third biggest energy corridor in the world, with only the straits of Hormuz and Malacca surpassing it in volume. Approximately 40 per cent of Russia’s energy exports are conducted through the Baltic Sea, including maritime oil tanker traffic and Nord Stream pipeline gas flows. In addition, the strategic importance of the St. Petersburg area for Russia is considerably high.

The Baltic Sea region has military presence and exercises inter alia by NATO, NORDEF and Russia. One can expect that regional military cooperation will further increase as a result of intensifying and broadening Nordic defence cooperation. However, the possibility for any major military conflict in the Baltic Sea region is very small.

It is highly significant also from a security policy point of view that the Baltic Sea region is characterized by the regional inter-state economic interdependency. For instance, 70 percent of the foreign direct investment flows (FDI) to Finland come from the Baltic Sea countries and 40 percent of the Finnish FDI’s go to the Baltic Sea countries.

Although the Baltic Sea region is highly standardized and governed - as a good example one can highlight the common Nordic maritime situational awareness system (SUBCAS) - there exist some new factors in the region that may also have geopolitical implications. For instance, changes in the Baltic Sea states’ security of energy solutions – including the German energy transformation, EU’s internal energy market transformation, the future of Russian energy exports, the future of European shale gas development and an increasing use of LNG – all may change the region’s energy policy situation. The planned new data cable connections – e.g. between Germany and Finland – may somewhat change the strategic setting of the region. Also the implications of the EU’s sulphur directive for the maritime logistics and security of supply considerations remain to be seen.

All in all, it is clear that the Baltic Sea is the most important maritime area for Finland. At the same time, the Baltic Sea is well studied, well known and there exists relatively high level of consensus regarding the current geopolitical state of the Baltic Sea region. Instead, the most severe knowledge gaps concerning the Finnish maritime environment are related to the opening Arctic region. Thus, the study’s focal point has been on the transforming Arctic and its implication to Finland.

The Opening Arctic

During the last decade or so, the Arctic has re-emerged as a component of contemporary global high politics. As a result of climate change and technological innovations the Arctic is becoming more accessible for human activities. These enabling factors suggest that the forces of globalization – e.g. global trade, financial and logistic flows – may dislocate many Arctic localities away from their older places in the geographical map towards global hub-and-spoke modality. At the same time, the Arctic is potentially emerging as a global space of flows.

The transformation of the Arctic region may have significant implications for Finland. Finland, a peripheral “island” isolated by the Baltic Sea, might face geopolitical relocation if the emerging Arctic maritime environment (i.e. the Northern corridor) opens up and the Arctic resource bases will be exploited in more significant volumes. That is, the Finnish political

geography could become significantly altered if the Arctic region transformed into a major part of emerging global resource and logistics hub-and-spoke structure. From this perspective, the study critically analyzes the opening Arctic region and its implications for Finnish geopolitics and for the Finnish positioning within the global flow structure.

Political will, economic viability, and lack of conflict (i.e. the existence of a stable riverbed where global processes could take place) are all needed in order to a certain region to become a major constitutive part in the global flow structure. Stemming from these premises, the research project has elaborated the key enabling factors of the Arctic region's geopolitical change – i.e. the climate change and the economic potential following this. It has also investigated the growing Arctic interests of the major global players (Russia, China, the USA and the EU) in order to analyze the region's potential to become a point of gravity in global geopolitics and flows. Lastly, the project has analyzed the Arctic region's ability to facilitate global flows by investigating the stability and conflict potential of the region.

While global functions and processes flow across the borders increasingly without any single state having actual capability to control them in full, the flow structures are still differentiated in a ways that mirror the world order and distribution of power. When it comes to the Arctic region, states still have a major role to play in commanding the flow infrastructure and determining in many respects the flow practices and the level of flow security. In this, major states have a strong role to play in determining the potential Arctic trajectories. By investigating the key Arctic interests of the aforementioned four major global players, the research illuminates some of the key political drivers behind the "globalization" of the Arctic, thus also offering some insights of the possibility of the Arctic to transform as a major point of gravity for global geopolitics and global flows.

First, does there exist enough of political interest for the Arctic to transform itself into a globally interesting geopolitical region and a space of global flows? The US, the EU and China, in particular, have defined and expressed their growing Arctic interests in recent years. However, these global players and their Arctic interests are primarily future-oriented and the region still plays a relatively minor role in their respective foreign policy equations. For Russia, however, the Arctic is very much a current issue. Russia is the most important player in the Arctic, with significant economic, security and governance interests in the region. Oil and gas alone account for roughly 20-25% of Russian GDP. Russia's domestic social programs, infrastructure investments, and military modernization are all critically dependent on revenues from natural resource export. Similarly, hydrocarbons provide important leverage for Russian foreign influence. The Arctic is increasingly seen as a strategically vital resource base for Russia. Russia's inclination alone to develop the Arctic pulls the region towards global networks of flows and processes. Growth in Arctic interest elsewhere enhances this.

Secondly, will the Arctic region be an area of cooperation or conflict, and how stable a riverbed will it be for global flows? The research project concludes that the possibility for a major Arctic inter-state conflict is low. While there will be intensifying economic competition among major commercial corporations, Arctic states have little to gain by letting the Arctic dynamics slip into a conflict state that would create an unfruitful investment and development environment for Arctic exploitation. Arctic states have committed to follow existing international law (UNCLOS), expressed their interest in international cooperation, and have backed this up with high-profile confidence-building measures. While certain Arctic states (e.g. Norway, Russia, Canada) have increased their military presence and capability in the Arctic, there is widespread agreement that Arctic states are primarily interested in monitoring and governing the opening area and their respective sovereignties in the region (in addition to increasing their global engagement in the case of Russia). As such, there is little indication of a hostile

re-militarization of the Arctic. The Arctic seems to provide a stable river-bed for the global flows.

Third, what are the practical challenges for the Arctic economic development? The Arctic trajectories remain uncertain and a comprehensive understanding of these change dynamics is still in many respects limited. For instance, while there *is* huge potential for economic opportunity in the Arctic, it is not at all clear *how* – to what extent and in what pace – this potentiality will indeed actualize. The project has analyzed the key drivers of the contemporary “Arctic economic boom” and illustrated existing key challenges that need to be tackled for the Arctic economic and logistic flows to become economically viable, more intense and more regular. This has been done by providing an overview of the challenges in two main economic domains of the Arctic: maritime transport and hydrocarbon extraction.

The project concludes that it will take a considerable amount of investment in Arctic capabilities and infrastructure as well as major changes in the security and economic rationale of the “traditional” global trade dynamics and passages for the Arctic maritime routes to become a significant option for global maritime (trade and resource) flows. However, it is likely that increasing economic activities in the High North will increase Arctic maritime flows, but to a large extent only in certain key regions in the foreseeable future. Moreover, if changes in the world market logic moved manufacturing south of Hong Kong in 20 years the Arctic maritime routes would lose much of their economic viability. In any case, trans-Arctic transport is more of a possibility for tomorrow than a reality of today.

Also the potential for Arctic energy exploitation is not easy to cash in on. Conducting oil and gas development projects in the Arctic is complex. Their feasibility depends to a large extent on the global supply and demand dynamics, namely on the energy price and security of supply considerations. Arctic oil and natural gas extraction involves serious technical problems and requires huge investments, especially related to the offshore projects. Actors also have to mitigate the risk of environmental accidents. So far the developments in the Arctic energy sector haven’t been as rapid as expected 10 years ago. It seems that due to the multi-dimensionally complex challenges, the Arctic region may lack strong enough economic rationale for the region to emerge as a major part of the global flow structure.

This is particularly significant because the major enabler of the region’s transformation is, de facto, the money to be made. The overall Arctic development is still difficult to forecast. The Arctic has many potential trajectories and uncertainties. These include at least the following: changes in future hydrocarbon demand and price; developments in global trade dynamics; the future of traditional maritime routes; potential environmental catastrophes; global effects of climate change; technological development; domestic political dynamics (e.g. in Russia); the future of Arctic multilateral governance; the reduction of knowledge gaps (e.g. hydrographic mapping, weather forecasts); future infrastructure development; trade-offs between different economic activities (e.g. fishing, tourism, oil, gas); and development in operational and environmental risk mitigation. However, it is safe to say that the Arctic is transforming and re-emerging as an increasingly important region when compared to the last two decades.

If conflict was to surface in the Arctic, the most likely source would be extra-Arctic, stemming from (flow-related) dynamics outside the region. On the one hand, the forces of globalization and climate change manifest themselves in the contemporary Arctic as regional, sub-state disputes. When the stakes are getting higher in the Arctic, the region has experienced – and is likely to experience increasingly – local disputes between economic/state and environmental actors, multinational companies and indigenous people as well as difficult trade-

offs between various economic sectors. On the other hand, disputes between Arctic stakeholders over other issues and in other parts of the world might also spill over to the region. By far the most significant exogenous source of a potential conflict in the Arctic is, however, global climate change.

While the paradigm shift from the “new Cold War” to “Arctic cooperation” has aptly captured the intra-Arctic economic reality, there might be an increasing need for another paradigm shift. The next step for policy-makers and social scientists alike is to deepen and popularize the understanding of the Arctic as a part of complex, global dynamics. In order to understand the Arctic, one needs to look increasingly elsewhere.

5. Conclusions

This research project has analyzed the transformation of global geopolitics from territorial geopolitics towards the geopolitics of flows, and highlighted the importance of the global common domains (sea, air, space, cyber) in this context. The maritime domain in particular plays a key role in terms of global flows (e.g. trade, military projection) even if the free and assured access to the major maritime flow corridors may be increasingly contested. In terms of the Finnish maritime environment, the project concludes that while Arctic geopolitical interests are rising and conflict potential is low, it is likely that it will take at least two decades for the geopolitical stakes to rise to a level that would make the region central to global geopolitics. Similarly, due to serious challenges, the Arctic economic boom will probably keep itself waiting, at least for a decade or two. Thus, there is no indication that the Finnish geopolitical positioning would change considerably in the near future due to Northern developments. The Baltic Sea region will continue to be the most important - and relatively stable - maritime region for Finland in the foreseeable future.

The Baltic Sea is among the first global maritime environments that is highly regulated. Looking into future, it is important to note that the Baltic Sea is not about ships and water alone. It is about increasingly complex human activities. In several ways, these activities are transnational. Namely, the actors themselves often are multinational corporations. The activities are by definition cross-border trade related. Furthermore, the sea as a context conducts information and resources that are not tied to the containers ships. The activities are inter-domain, i.e. highly integrated into the existence of space-dependent navigation and cyber-based inventory -as well as other critical systems.

Baltic Sea, as a meaningful social entity, is dependent on a complexity of activities. From a security policy point of view this complexity of actions supports more resilient interdependency-dynamics, which are challenging the state-based and regional solutions. Moreover, the global flows of production, finance, knowledge, and security embody the race to find adaptive mechanisms, innovation capacity, and societal resilience to the coming changes. However, the overall effect is differential in that small states face stronger adaptive pressures. The slogan of the day seem to be that, for small states in particular, the securing of access to the main arteries of global commerce, finance, and knowledge is a crucial imperative.

While having no Arctic Ocean coastline, Finland, situated between the opening Arctic Ocean and the strongly trafficked and economically significant Baltic Sea, has a potential to increase its importance as a facilitator for global logistics and data flows, for example, if the announced plans for new railway connections in the Arctic Ocean-Baltic Sea nexus and new datacenters and data-cable connections were to materialize. However, at the moment, the northern railway corridor to the Arctic Ocean lacks economic rationale. Lapland’s mining in-

dustry does not produce in large enough volumes to compensate the costs of major railway investment and there is no indication that Finland could be a major logistic transition route between the Arctic Ocean and mainland Europe. Also the security of supply element in the railway consideration seems dubious, since the heart of the Finnish logistics system is situated in the Helsinki metropolitan area, and the northern railway corridor could not substitute the Baltic Sea route in big enough volumes and remain undisrupted in a major crisis scenario.

If, on the other hand, the planned data-cable connection linking Europe and Asia through the Northern Sea Route materialized, Finland would increase its geopolitical relevance. This is the case only if also the planned data cable connection from Finland to Germany materialized and Finland could attract more data center and cloud computing services. In this case, Finland could have some role in the global data flows as a relevant connector. However, one should note that while the new connections could increase the diversification and resilience of the Finnish data connections, the increased role as a major connector would also increase Finland's relevance as a strategic target.

Following this, the research project highlights contestation between two scenarios:

1. Security as defense
2. Security as resilience

That what in the second scenarios appears as a rational strategy of diversification can in the first seem as a security risk. When Finland turns itself into a connector (in the inter-domain sense of the word), it exposes itself as a strategic target – in the same way that the Suez Canal can be a problem.

The scenarios are partially contradictory. What in first makes Finland important as a cross-road, in the second, turns Finland into a difficult to manage cross-current. However, there is a detectable trend away from the first scenario towards the second. This is caused by the flows. The business models of production (goods, materials), finance (capital), knowledge (information and innovation), and security (military and societal) are increasingly interdependent and dynamic. So, it increasingly makes sense for Finland to adapt the second resilience scenario in order to make it attractive for the flows. But, this leads to increasing geopolitical and geo-economic insecurity in terms of the first security scenario.

What is the best possible Finnish solution to the global challenges? How does this strategy relate to the maritime contexts? Is this adaptive schema applicable in the case of other small states or even bigger states? Agility is seen as a virtue for small states, which are relatively more dependent on global inter-linkages due to their more specialized economies. At the same time, there are demands for resilience and societal stability as the differentially exposed small states face global circulations' accumulative and potentially disruptive effects. As some regions and sub-regions become linked to the global flows, the political geography is significantly changed. These 'privileged' places become re-contextualized as parts of emerging global hub-and-spoke structure rather than in their traditional national or regional context.

Following these observations and because of geopolitical and geo-economic implications of the gradual Arctic transformation during the following decades, it is highly important to maintain a precise, comprehensive and inter-domain sensitive situational awareness in Finland concerning not only the more "traditional" Baltic Sea, but also concerning the opening Arctic region that may – or may not – be going through significant changes in the Finnish

back-yard. Moreover, it is important that Arctic visions – also related to the security and defence policy - are based on a comprehensive evaluation of Arctic development based on extensive and up-to-date knowledge of Arctic dynamics and associated risks.

6. Scientific publishing and other reports produced by the research project

Publications:

Aaltola, Mika (2013) Finland should aim to be a cyber connector: Finding the right balance between security and privacy calls for careful consideration. *FIIA Comment* 15/2013.

Aaltola, Mika; Mikkola, Harri; Käpylä, Juha; and Behr, Timo (forthcoming in 2014) Towards Geopolitics of Flows. *FIIA Report*.

Käpylä, Juha and Mikkola, Harri (2013) Arctic Conflict Potential: Towards an Extra-Arctic Perspective, *FIIA Briefing Paper* 138.

Käpylä, Juha and Mikkola, Harri (2013) The Global Arctic: The Growing Arctic Interests of Russia, China, The United States and The European Union, *FIIA Briefing Paper* 133.

Mikkola, Harri and Käpylä, Juha (2013) Arctic Economic Potential: The Need for a Comprehensive and Risk-Aware Understanding of Arctic Dynamics, *FIIA Briefing Paper* 127.

Käpylä, Juha ja Mikkola, Harri (forthcoming) Globalisoituvaa arktinen alue murroksessa, *Tiedepolitiikka*.

Events:

Huoltovarmuuden haasteet ja merellinen toimintaympäristö, *FIIA Round table*, The Finnish Institute of International Affairs, 30.8.2013.

Numerous presentations, including in the Finnish Parliament, Edistyksenpäivät 2013, Aleksanteri Conference 2013, The Finnish Institute of International Affairs.

Numerous domestic and international media appearances.