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Chapter 23

Russian Arctic Cities' Sustainable Development Strategies

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ABSTRACT

The main research objective of this chapter is to examine sustainable development strategies (SDSs) of urban centers of the Arctic Zone of Russia (AZRF). There are three specific purposes for this analysis: first, to evaluate the scope and focus of such strategies; second, to find out whether these strategies are efficient or not and whether they improve the situation in the particular city or not; third, to understand whether these policies are of short-term/single-issue character or they represent forward-looking/comprehensive strategies. The Arctic municipalities view building SDSs as an important policy priority for themselves. They have tried to create proper legal and institutional settings for the development and implementation of such strategies. They have made great strides in implementing some sustainability-related projects over the last 10 to 15 years. There was a clear shift from survival/reactive to capacity-building/proactive SDSs. Despite some residual problems and shortcomings, AZRF cities' SDSs evolve in a rather dynamic and positive way.

INTRODUCTION

In the post-Soviet era, the Arctic Zone of the Russian Federation (AZRF) experienced numerous challenges ranging from the disruption of traditional economic relations, division of labor between different industries and regions to environmental mess left by the Soviet extractive industries and military. Among the most recent challenges, global climate change should be noted. This phenomenon has rather contradictory implications for the AZRF. On the one hand, it creates greater opportunities to exploit oil, natural gas, and other mineral and biological resources as well as shipping lanes in the Arctic Ocean. In turn, this could be conducive for the revival and modernization of the AZRF industrial base and, hence, further development of the Arctic urban centers where the industrial potential is concentrated.

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On the other hand, extracting natural resources and intensive exploitation of maritime routes will require labor migration into the AZRF. The effect of climate change is amplified in the AZRF urban centers, where the presence of population, natural resource, and transport infrastructure development and other human activities exert additional pressure on Arctic ecosystems. Promoting urban sustainability in the Arctic is critical because the fragility of the environment, economy, and population makes mistakes more costly and likely to have a lasting impact than they would in more resilient environments. Policy makers and corporations focused on maximizing profit margins are not paying sufficient attention to such sustainability concerns meaning that the continuation of current practices could do irreparable damage to the Arctic environment. The growing ethnic, religious and cultural diversity of the AZRF population challenges social cohesion of local communities and calls for new social strategies to harmonize inter-ethnic and inter-confessional relations in the region.

The main research objective of this study is to examine how sustainable development strategy (SDS) is being shaped and implemented by the AZRF industrialized centers. There are three specific purposes to this analysis: first, to evaluate the scope and focus of SDSs (including environmental programs) that are implemented by AZRF cities, such as Apatity, Arkhangelsk, Monchegorsk, Murmansk, Nickel, Norilsk, Salekhard, Severodvinsk, Vorkuta, and so forth; second, to find out whether these strategies are efficient or not and whether they improve the situation with regard to social well-being or not; and third, to understand whether these policies are of short-term/single-issue character or represent forward-looking strategies that are conducive to the sustainable socio-economic and environmental development of the northern urban areas.

BACKGROUND

Conceptual Framework

According to both the Russian political leadership (Government of the Russian Federation, 2009, 2013) and expert community (Dodin, 2005; Kochemasov, Morgunov, & Solomatin, 2009; Perelet, Kukushkina, & Travnikov, 2000; Selin & Vasiliev, 2010), SDS is a key principle of Russia's national policy in the AZRF. In Russian scholarship, sustainable development is an eclectic concept, as a wide array of views fall under its umbrella. Its definition dates back to the 1987 UN Brundtland report, which defines sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987). Russian experts differ in their interpretation of the SD concept.

One school, the "economists", following the Brundtland report's approach, believes that sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present but also for future generations. For this school, SD is an economy in equilibrium with basic ecological support systems. As for the AZRF, the "economists" insist on the need to preserve its fragile ecological balance while exploring and developing the region's natural resources. They oppose an unlimited economic growth and call for a mandatory ecological expertise on all developmental projects (Dobretsov & Pokhilenko, 2010; Kochemasov et al., 2009; Kontorovich et al., 2010).

The "green" (environmentalist) school places emphasis on the ecological aspects of the SD concept. The "greens" believe that the Arctic ecosystem is unique and – at the same time – fragile. For this reason,

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it cannot be sacrificed to the AZRF's successful economic development based on the exploitation of natural resources (Dushkova & Evseev, 2011; Akimov, Kozlov, & Kosorukov, 2014). The environmentalists criticize Russia's official Arctic strategy, which aims at making the AZRF a "strategic resource base". They underline that the AZRF should avoid the "resource curse" and keep its ecosystems intact. They warn that if economic activities in the Arctic are not reduced to a reasonable minimum, the ecological implications will be catastrophic, not only for the region but also for the entire world. They note, for example, that the Arctic shapes the weather not only for the region but also for the world.

The third approach, an "anthropological"/human-centric approach, focuses on the social aspects of the SD concept, underlining the necessity to subordinate its economic and ecological components to the needs of human development. For this reason, the main attention is paid to the "human dimension" of Russia's Arctic strategy – indigenous peoples, urban populations, labor migrants, and so forth (Fomina, 2013; Laruelle, 2014; Saveleva & Savelev, 2010).

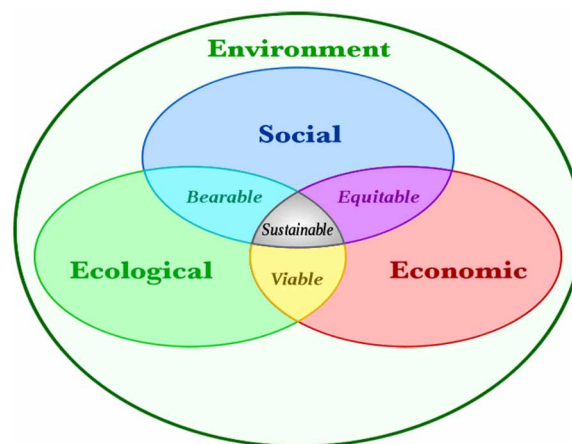
However, over the last decade, the so-called integrated approach to SD principles and strategies that has been proposed by both the UN and Arctic Council (AC) gained momentum in the Russian academic community (Heininen, Sergunin, & Yarovoy, 2014; Sergunin & Konyshchev, 2016). According to such an integrated approach, SD is conceptually broken into three constituent parts: environmental, economic, and social (Figure 1).

In principle, both the Russian government (Government of the Russian Federation, 2009, 2013, 2014a) and expert community (Dodin, 2005; Kochemasov et al., 2009; Selin & Vasiliev, 2010; Sergunin & Konyshchev, 2016) share the AC integrated approach to the SD concept in the High North. It has the following priorities for the AZRF:

- The economic dimension of sustainable development includes sustainable economic activity and increasing prosperity of Arctic communities; sustainable use of natural, including living, resources; and development of transport infrastructure (including aviation, marine, and surface transport), information technologies, and modern telecommunications.

Figure 1. Sustainable development: three dimensions

Source: Author's development



- The environmental dimension has the following priorities: monitoring and assessment of the state of the environment in the Arctic; prevention and elimination of environmental pollution in the Arctic; Arctic marine environment protection; biodiversity conservation in the Arctic; climate change impact assessment in the Arctic; and prevention and elimination of ecological emergencies in the Arctic, including those relating to climate change.
- The social dimension includes the health of the people living and working in the Arctic; education and cultural heritage; prosperity and capacity building for children and youth; gender equality; enhancing well-being; and eradication of poverty among Arctic people.

Russia's Federal Sustainable Development Strategies

Given the highly centralized nature of Russian political and administrative systems, the AZRF municipal SDSs are dependent on and interlinked to federal policies in this area. Municipal strategies are based on numerous conceptual and normative documents issued by Russia, although the federal center encourages subnational units to take into account local peculiarities and suggest solutions to the specific problems of the AZRF. That is why it is important to understand what kind of SDS exists on the federal level.

It should be noted that the Russian (then Soviet) SDSs (in their environmental form) date back to Mikhail Gorbachev's 1987 Murmansk speech, which included a section on the ecological problems of the Arctic. That speech was well received by the Nordic countries and led to various environmental initiatives, such as Finland's 1989 initiative on Arctic environmental protection cooperation, which resulted in a number of technical and scientific reports between 1989 and 1991. This ultimately led to the development of the Arctic Environment Protection Strategy (AEPS) in 1991 and the establishment of the AC in 1996 (Heininen, 2004, pp. 208-209).

Russia recognizes the challenges posed by climate change and socio-economic and environmental problems and reflects these concerns in its Arctic strategies (Government of the Russian Federation, 2013, 2014a). Russia also realizes that there is still a long way to go to create an effective multilateral system of governance to both adapt the region to climate change and prevent related conflicts between various international players in the Arctic.

As for the SD's ecological dimension, Russia is seriously concerned about the environmental situation in the AZRF. As a result of intensive industrial and military activity in the region in the Soviet period, many AZRF areas are heavily polluted, which poses serious health hazards.

The AC and Barents-Euro-Arctic Council (BEAC) have emerged as the main international fora to discuss and solve Arctic environmental problems. For example, in 2010, the BEAC, based on a report by the Nordic Environment Finance Corporation (NEFCO) and the AC's 2003 Arctic Monitoring and Assessment Program, identified 42 "hot spots" where permafrost is vulnerable to collapse in the Barents Region. All of these hot spots were in Russia. In 2013, an eight-step process to eliminate the hot spots was initiated, with the financial support of the Barents Hot Spots Facility, which is managed by the NEFCO on behalf of the governments of Finland, Iceland, Norway, and Sweden (Nordic Environment Finance Corporation, 2013).

In 2011, the Russian government launched a program worth \$700 million to clean up the AZRF, including Franz Joseph Land and the Novaya Zemlya Archipelagos. By the end of 2016, some 42,000 tons of waste were removed from these archipelagos and 349 hectares of insular land were cleaned (RIA News, 2016). In 2015, another AZRF cleaning program was launched – this time with a \$350 million funding envelope. By the end of 2016, the cleaning of Wrangel Island – including the removal

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by the Russian military of 36,477 barrels and 264 tons of scrap metal (Neftegaz.ru, 2016) – was nearly complete. A comprehensive analysis of the environmental situation in another seven major AZRF areas had been planned, but the federal government was unable to find reliable contractors for this purpose. Similarly, in 2011, the cleaning of Russian mining villages on Spitsbergen, planned for 2011-2013, was never implemented.

Nuclear safety and security in the High North is also a matter that encourages Russia and other Arctic states to cooperate. Notably, more than 200 decommissioned nuclear reactors from submarines and icebreakers from the Soviet period are stored on the Kola Peninsula – a Soviet “legacy” that is especially problematic for neighboring countries, including Norway, Finland, and Sweden. It should be noted that the U.S. Russian Cooperative Threat Reduction Program (Nunn-Lugar) of 1991-2012 (Nikitin & Woolf, 2014) and the 2003 Multilateral Nuclear Environmental Program in the Russian Federation (Organization for Economic Co-operation and Development, 2003) played a significant role in nuclear waste treatment.

The Russian government program on nuclear and radiological safety for the 2008-2015 period succeeded in dismantling 195 retired nuclear submarines (97% of the total quantum), removing 98.8% of radioisotope thermoelectric generators from service, and dismantling 86% of these generators. Centralized long-term storage facilities for spent nuclear fuel were constructed. Moreover, 53 hazardous nuclear facilities were decommissioned, 270 hectares of contaminated land were remediated, and open water storage of radioactive waste was ended (Rosatom, 2017).

In 2016, Russia launched a large-scale program to remove nuclear waste from the former Soviet submarine base in Andreev Bay in the Murmansk region. The program must reckon with some 22,000 containers of spent fuel from nuclear submarines and icebreakers currently stored in three storage tanks in Saida Bay on the Kola Peninsula, as well as approximately 18,000 cubic meters of solid waste and 3,400 cubic meters of liquid radioactive waste, which, according to Norwegian sources, are collectively as radioactive as 5,000 Hiroshima bombs (Sputnik, 2016).

Russia has supported and vigorously participated in developing all the UN-related environmental initiatives, ranging from the Intergovernmental Panel on Climate Change report (2014) and the 17 Sustainable Development Goals (SDGs) with 169 targets (2015) to the International Maritime Organization's Polar Code (2014-2015) and the Paris Agreement on Climate Change (2015). Russia has also actively participated in the AC working and expert groups involved with environmental research and assessment.

As for the SD's social dimension, Russia tried to keep its promises, both to the indigenous peoples of the North and the AZRF urban population, although budget constraints led to some postponements in social programs. For example, the problem of the so-called mono-towns or single-industry cities remains unresolved, and the socio-economic and ecological situation there is still difficult, e.g., Nickel, Monchegorsk, Norilsk, etc. (Institute for Applied Political Studies, 2016).

There are serious socio-economic problems in respect of the indigenous peoples of the AZRF, including the incompatibility of their traditional way of life with present economic systems and processes and the low competitiveness of traditional economic activities, as well as rising disease rates, a high infant mortality rate, and alcoholism. The unemployment rate among Russia's indigenous people has been estimated at between 30% and 60%, which is three to four times that of other AZRF residents (Kochemasov et al., 2009). Life expectancy is 49 years, compared to 72 years for the average Russian.

In principle, Russia's policies aim to foster favorable conditions for the sustainable development of the indigenous peoples. For example, in 2009, the Russian government approved the concept of sustainable development for the indigenous small-numbered peoples of the North, Siberia, and the Far East (Government of the Russian Federation, 2009). Among other things, the concept set forth the general

task of raising the quality of life in these regions to the Russian average and the specific task of halving the infant mortality rate (as of 2007) by 2025. However, these policies have still not come close to their targets and are harshly criticized by Russia's indigenous peoples and national and international human rights organizations (Rohr, 2014). The quality of life for indigenous peoples in northern regions such as Khanty-Mansi, Nenets, Koryakia, and the Chukotka Autonomous Area remains unacceptably low. The Yamal-Nenets Autonomous Area, perhaps exceptionally, has an indigenous economy built around reindeer herding that is booming; social programs are being implemented effectively, and major conflicts between indigenous interests and oil and gas companies are generally avoided.

There have also been significant efforts to balance industrial development plans with the needs of indigenous peoples and the Arctic environment. For example, in order not to disturb the herding of reindeer, the construction of the Yamal LNG plant project was coordinated closely with local communities (Yamal LNG, 2015) – a dynamic that is, to this day, not without its frictions and complications.

In June 2014, President Putin (Government of the Russian Federation, 2014b) signed a federal law on strategic planning that prescribed for all levels of government – national, regional and municipal – having three types of strategic documents – strategy for socio-economic development, forecast of socio-economic development and specific programs to implement the two former documents. According to this law, the municipalities should define strategic objectives for socioeconomic development and organize monitoring and control over strategic plans implementation. The law also established major principles of strategic planning, such as coherence and integrity; delimitation of powers between various levels of government; sustainability and continuity; balanced nature of the planning system; result-oriented approach and efficiency; clear responsibilities of managers; transparency of the planning process; feasibility and realistic approach; resource-based approach; measurability; relevance of indicators to objectives and program-targeted principle.

The law on strategic planning has become a legal basis for the development of various normative documents regulating the planning process at the regional and municipal levels. For example, in 2012 the Russian Agency for Strategic Initiatives (ASI) has launched an Investment Standard (Standard 1.0) to improve business climate in the Russian regions and increase their investment attractiveness (Agency for Strategic Initiatives, n.d.). Having started as a pilot project in 11 Russian regions, the Standard 1.0 became a mandatory instrument for assessment of a region's efficiency in the investment sphere since 2013.

The similar investment standard (Standard 2.0) was developed for municipalities as well. The focus was made on creation of planning and managerial structures in the city/town administrations, including the so-called investment boards; identification of proper objects for investment; building infrastructure for investment projects; training municipal officials, etc.

Initially, it was planned to launch the Standard 2.0 implementation in 2014. However, only a limited number of Russian cities and towns were able to do it. Currently, this standard is being introduced only on a voluntary basis and mainly in the regions that successfully implemented the Standard 1.0 (Emelyanova, 2014).

Although both standards were heavily criticized for their technocratic character and ignorance of local realities (especially in Russia's remote regions), it was a rather useful exercise in strategic planning which can bring some fruit in a foreseeable future.

It should be noted that, regardless of the fact that good ideas have been articulated, implementation still remains problematic – something true of many areas of Russian public policy. The path to the AZRF's modernization and innovation charted by the Russian government must begin to move from policy declarations to actual implementation of specific, realistic projects in the region. The Kremlin

appears to understand the need for constructive dialogue and deeper political engagement with all of Russia's AZRF regions, municipalities, indigenous peoples, and non-governmental organizations (e.g., the Russian Association of Indigenous Peoples of the North, as well as environmental groups and human rights activists). Moscow generally encourages these actors to work with international partners – unless, of course, such engagement assumes a separatist character or involves attempts to challenge Moscow's foreign policy prerogatives. In practice, however, the federal bureaucracy's policies and approaches will often confront the projects of subnational actors and civil society groups. Instead of using the resources of these actors in a creative way, Moscow tries to control them. In so doing, the state undermines their initiative, making them passive, both domestically and internationally.

MAIN FOCUS OF THE CHAPTER

Sustainable Development Strategies of the AZRF Urban Centers

AZRF industrial centers focus on the following aspects of the SDSs:

First and foremost, the Arctic cities aim to create and develop an effective strategy planning system. To make judgments on the administrative/management mechanism's efficiency it is necessary to examine whether the city leadership is able to acknowledge the need for SD strategy planning or not. As municipal documents show, the AZRF local governments understand the importance of having a sort of SD strategies. None of the AZRF industrial cities has a special SD strategy but there are sections in the city development plans/strategies that are relevant to this problematique. These sections can be titled differently, such as, for example, "Human/social capital development", "Sustainable socio-economic development", "Sustainable ecological development", etc.

It should be noted that only large (by the Arctic standards) cities have development strategies of their own. Relatively small urban settlements usually have the so-called 'target programs' related to the SD problematique. For example, Nickel (Murmansкая Oblast) has a municipal program on provision of urban amenities and urban development but lacks an integrated development plan (Nickel Municipal Settlement, n.d.). Interestingly, Severodvinsk, which is a rather large city with population of some 185,000, stopped to adopt complex and long-term plans of socio-economic development replacing them with some three-year forecasts/indicative plans and targeted programs (Severodvinsk City Government, 2016).

One more important question is about the nature of planning. In the Soviet era, the centralized planning and control system prevailed both in Russia's Arctic and country at large. In the post-Soviet period, new modes of more decentralized planning and control that are more sensitive to the dynamic AZRF realities have emerged. For example, 'indicative planning' loosens up the planning process: instead of setting taut and unchanging targets, it merely points in certain desired directions and recalibrates future targets in light of what past practice has shown to be realistic aspirations. More generally, the present-day Russian policymakers can rely more heavily on 'loose'/'soft' laws and regulations. Instead of tightly specifying exact performance requirements, the laws and regulations can be written in more general and vaguely aspirational terms (Moran, Rein, & Goodin, 2006, p. 18). It should be noted that most of the AZRF urban development strategies are written in the spirit of indicative planning rather than in a centralized, Soviet-type way.

It is also important to know whether a special strategy planning office exists in an Arctic city or not. Most AZRF municipalities prefer to charge their economic departments with planning functions rather

than involve units responsible with environmental or social policies. This brings a certain “economic bias” to their development programs at the expense of social/humanitarian and environmental dimensions of their SD strategies. This also may challenge the integrated/comprehensive nature of planning and make the local development plans of sectoral/single-issue character. For example, the Murmansk (Murmansk City Government, 2013) and Severodvinsk (Severodvinsk City Government, 2010) development plans include almost all aspects of the SD strategy (except food security). However, the Arkhangelsk development strategy (Arkhangelsk City Government, 2008) prioritizes only sectors, such as transport infrastructure, health care, education and cultural heritage preservation and almost completely ignores food, environmental, community, personal and political security.

Planning units are very small and normally consist of several managers even in the largest AZRF cities, such as Arkhangelsk, Murmansk, and Norilsk. For this reason, these units are often unable to fully comply with all classical requirements of the planning management algorithm, including strategy formulation and implementation. It is also very difficult for them to properly coordinate their activities with other city administrative units which are also involved to the planning and implementation process. For the same reason, it is uneasy to ‘mainstream’ urban sustainability plans in the sense that all parts of the government have some stake in achieving the goals.

Most city development programs have clearly defined goals, outcomes/expectations and implementation strategies, including indicators and benchmarks. However, they may differ by specific details. For example, while the Murmansk, Norilsk, Severodvinsk, and Vorkuta strategies have a detailed description of the implementation mechanisms and indicator systems, the Arkhangelsk and Salekhard ones limit themselves to depicting specific project management procedures and setting some general indicators.

The AZRF municipalities aim to develop a proper legal basis for SD strategies, including power-sharing with the federal and regional governments. As mentioned above, by federal law, the Russian municipalities must coordinate their development plans/programs with the regional and federal SD strategies. However, this is done by the AZRF cities in different ways. For example, in the Murmansk development plan, each strategic priority is linked to the specific regional and federal programs (Murmansk City Government, 2013, pp. 108-169). On the contrary, the Arkhangelsk, Norilsk, Salekhard, and Vorkuta development strategies mention the need to coordinate it with the higher levels of governments *in passim* (Arkhangelsk City Government, 2008, pp. 51-52; Norilsk City Government, 2012, pp. 105-107, 170; Salekhard City Government, 2007, pp. 32-33; Vorkuta City Government, 2014, p. 84).

The AZRF municipalities are rather cautious about any federal initiatives in the field of strategic planning. For example, the efforts to introduce the Standard 2.0 got a cold shoulder in the northern cities. In 2014, about 80 municipalities across the country were selected to implement the project. However, in the AZRF, only Murmanskaya Oblast, where the Standard 1.0 was fully implemented, participates in the experiment with the Standard 2.0. Four municipalities are considered pilot ones (Pechenga and Kola districts, Monchegorsk and Murmansk), other municipalities (Polyarnye Zori, Apatity, Kirovsk, Olenegorsk, and Kovdorsky, Lovozersky, Tersky, and Kandalaksha districts) implement only certain elements of the Standard 2.0. The only municipality that has fully implemented all elements of the Standard 2.0 is Murmansk itself. This can be explained by the fact that it is a capital of the region that has larger financial and human resources than other municipalities (Emelyanova, 2014).

To provide SD strategies with a proper societal setting/support transparency of the planning process as well as public input/community engagement should be ensured. Theoretically, the Russian Arctic municipalities have several instruments to organize the planning and implementation process in an open/democratic way: regular opinion polls, public discussions in the media, regular hearings in the so-called

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public chambers, dialogue with NGOs, etc. However, only Severodvinsk has a special municipal program to facilitate the local NGOs' development (Severodvinsk City Government, 2016). The Murmansk and Vorkuta development plans hardly mention the need for a dialogue with the civil society institutions; other AZRF cities simply ignore this issue resting the SD strategy planning process entirely to the governmental structures.

As far as the environmental aspect of SDS is concerned, the AZRF municipalities have the following priorities:

First and foremost, the Arctic cities now focus on prevention and reduction of pollution rather than on cleaning up the environmental mess, as was the case before (Arkhangelsk City Government, 2008, pp. 103-104; Monchegorsk City Government, 2016). Such an approach is seen as a more efficient and forward-looking strategy than mere elimination of accumulated ecological damage.

Another priority is rehabilitation of damaged natural environmental systems (damage assessment, targeting the priority areas, cleanup programs, and monitoring).

The AZRF municipalities see solid and liquid waste treatment as a serious problem that requires urgent solution. For this reason, some Russian Arctic cities included construction of waste treatment plants or safe storage in their development plans (Arkhangelsk City Government, 2008, p. 103; Monchegorsk City Government, 2016).

Some Arctic cities adopted targeted programs to protect endangered species.

Given the lack of state funds, almost all AZRF municipalities aim to develop public-private partnerships in the environment protection sphere.

Some (large) AZRF cities try to encourage environmental research by supporting local universities and research centers (Arkhangelsk City Government, 2008, p. 90).

Almost all Arctic urban centers try to develop environmental education and culture among the local population.

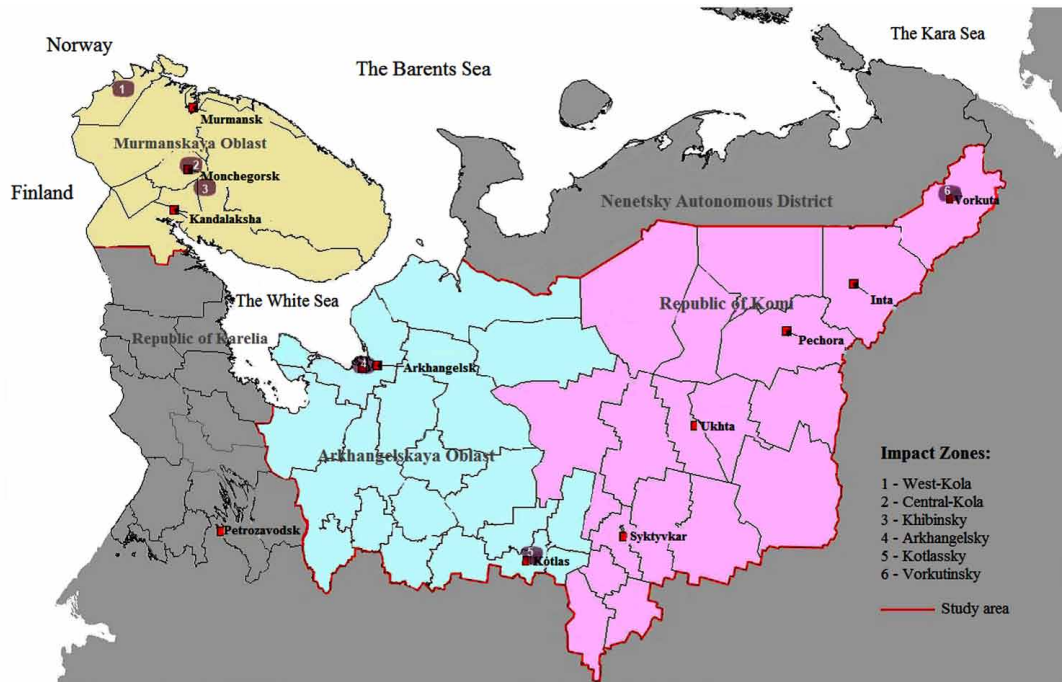
The most advanced Arctic municipalities aim at cooperating with local environmental NGOs and mass media to promote "green" projects and culture.

Some AZRF cities aspire to develop monitoring systems in various areas to prevent natural and manmade disasters, air and water pollution, endangered species, and so forth (Monchegorsk City Government, 2016).

It should be noted that the AZRF cities differ in their views on the significance of environmental problems in the SDSs. For some municipalities, such as Arkhangelsk, Murmansk, and Salekhard, environmental issues are one of several policy priorities; for Monchegorsk, Nickel, Norilsk, and Severodvinsk, where the ecological situation is rather grave, the need to solve environmental problems is really critical. These cities are traditional centers of metallurgical production and machine- and ship-building industries, and for this reason, they are heavily polluted, which poses serious health hazards. Russian scientists identified 27 so-called impact zones where pollution has led to environmental degradation and increased morbidity among the local population (Figure 2). The main impact zones include the Murmansk region (10% of total pollutants in the 27 impact zones), Norilsk urban agglomeration (more than 30%), West Siberian oil and gas fields (more than 30%), and the Arkhangelsk region (around 5%) (Dushkova & Evseev, 2011). In sum, about 15% of AZRF territory is polluted or contaminated (Kochemasov et al., 2009).

As mentioned above, the AZRF cities pay little attention to the purely human security problematique preferring to focus on the economic and environmental issues. The "human dimension" of the SD strategies is mostly represented by the municipal programs on civil defense (Murmansk City Government, 2013;

Figure 2. The map of impact zones in the Russian Arctic
 Source: Author's development based on Dushkova and Evseev (2011, p. 2)



Severodvinsk City Government, 2010; Vorkuta City Government, 2014) to protect the local population from natural and man-made catastrophes. Some development plans (Murmansk City Government, 2013; Severodvinsk City Government, 2010) also have sections on personal security, including the need to fight street violence.

Almost all city development plans mention the need for international cooperation, including venues such as the Arctic Council, Barents Euro-Arctic Council, International Polar Year, Intergovernmental Panel on Climate Change, and UNDEP and UNESCO programs, as well as country-to-country, region-to-region, and town-to-town collaborations, and so forth.

International cooperation became an important instrument of the AZRF municipalities' HS/SD strategies, and this phenomenon was dubbed paradiplomacy. The concept of paradiplomacy is used to distinguish international activities of subnational and nonstate actors that have limited capabilities and legal powers in the foreign policy sphere, as compared to national governments.

Russian Arctic local actors regard this type of external policy as an adequate and preferable response to numerous challenges that they face in their day-to-day life. Many municipalities view it as an efficient instrument not only for solving local problems but also for ensuring their sustainable development.

During the Yeltsin presidency, many Russian northern territories saw themselves as abandoned by the federal government, dependent on themselves for survival. They regarded foreign aid and investment as efficient instruments for keeping local economies afloat. Given the broad autonomy enjoyed by Russian subnational units under Yeltsin, the AZRF municipalities managed to develop rather diverse international contacts.

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Over time, as the socio-economic situation in Russia has improved under the Putin regime, subnational entities have come to regard international cooperation as an integral part of their sustainability strategy, rather than an emergency or survival strategy. There has been a clear shift in subnational units' motivation as regards paradiplomacy. Whereas, in the Yeltsin period, paradiplomacy was a survival strategy as well as an additional arm in the center-periphery tug-of-war, in the Putin-Medvedev-Putin eras, it has become a means to ensure substate units' sustainable development and improve their international image and attractiveness. Paradiplomatic activities have become less anarchical and destructive, more pragmatic and skillful, better organized and coordinated with federal diplomacy. Although clashes periodically occur, both center and periphery now tend to see paradiplomacy as a common resource rather than an area of contention.

Russian AZRF municipal actors have managed to develop an arsenal of specific methods of paradiplomacy that fall into two categories: direct (seeking legitimacy and international recognition by adopting local laws, signing partnership agreements, establishing representative offices abroad, attracting foreign investment, improving a city's international image, cooperating with international organizations, city twinning, and participating in Euroregions) and indirect (influencing federal legislation, exploiting the national parliament, capitalizing on federal diplomacy and infrastructure in the regions, and exploiting international organizations). A combination of direct and indirect strategies offers the best guarantee of paradiplomacy's success (Joenniemi & Sergunin, 2014, 2016).

Russian Arctic municipalities have managed – with and without Moscow's help – to exploit an institutional network shaped by supranational, intergovernmental, and subnational agencies and made available to the Arctic region. This rather dense network needs better coordination, organization, and division of labor to eliminate bottlenecks, bureaucratic procedures, parallelisms, and duplications.

SOLUTIONS AND RECOMMENDATIONS

The main problem for successful development and implementation of the AZRF SDSs is how to solve the “words and deeds” problem because many of the SD projects still remain on paper and have never been implemented. The weak points of the AZRF urban development strategies include a lack of comprehensive approach to SDS planning that could integrate economic, environmental and social aspects of these strategies, the lack of transparency in the policy planning process and a lack of cooperation with and involvement of civil society institutions. To a large extent, the policy planning and implementation process is still of the top-down rather than bottom-up nature. The municipalities obviously should better use existing and alternative channels of communication with NGOs and other potential stakeholders. The local governments should pay more attention to SDS planning process and staff relevant administrative units with a qualified personnel. Moreover, not all issue areas of the SD problematique are addressed, and different strategic approaches are not properly harmonized/synchronized with one another. Finally, quite often, municipal SD programs and projects are underfunded and not supported by regional and federal authorities. Hence, better coordination of SD strategies between different levels of government is badly needed.

FUTURE RESEARCH DIRECTIONS

Since various AZRF municipalities face different sustainability challenges in the future, it is important to develop more nuanced and flexible approaches to their SDSs. Particularly, specific SDSs should be developed for different types of Russia's northern urban centers – mono- or poly-industrial towns; administrative centers (capitals of the members of the Russian Federation) with no or small industries; ports/harbors or inland cities; civilian or military settlements.

It is also advisable to develop a special sustainable development index for the AZRF cities and organize a monitoring system based on such an index. Currently, an international team of experts from several Arctic countries is working on the creation of an Arctic Urban Sustainability Index under the auspices of the PIRE project funded by the U.S. National Science Foundation (Suter, Schaffner, Giddings, Ortung, & Streletskiy, 2017). More active involvement of Russia's academic institutions could be helpful for the successful completion of this project.

CONCLUSION

To sum up, the Russian Arctic municipalities have familiarized themselves with the sustainable development concept. To some extent, this concept was embedded in municipal development plans/strategies, although the AZRF cities lack special SD strategic documents, and, quite often, economic, ecological, and social dimensions are not properly harmonized with one another. The Arctic municipalities view the development of sound urban planning strategies as an important policy priority for themselves. They have tried to create proper legal and institutional settings for the development and implementation of such strategies.

They have made great strides in implementing some SD-related (mostly economic and environmental) projects over the last 10 to 15 years. There was a clear shift from survival/reactive to capacity-building/proactive SDSs.

However, there is still a long way to go, in terms of the development of adequate policies, creation of proper institutional mechanisms and SDS effective implementation.

To conclude, despite the above problems and shortcomings, the total “balance sheet” of the Arctic cities' SD strategies and general dynamics is rather positive. The AZRF municipalities are serious about solving numerous socio-economic and environmental problems and making these urban areas better and more comfortable places to live in.

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KEY TERMS AND DEFINITIONS

Arctic Council: A high-level intergovernmental forum which addresses issues faced by the Arctic governments and people living in the Arctic region, such as climate change, environment, fisheries, shipping, indigenous peoples, etc. Established in 1996 by the Canadian initiative. Includes eight Arctic

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nations (Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, USA) as full-fledged members, permanent participants (mostly indigenous peoples', environmental and scientific NGOs) and several observers.

Arctic Zone of the Russian Federation: In accordance with the presidential decree no. 246 (May 2, 2014), the following northern territories are included into the AZRF: Murmanskaya Oblast, Nenetsky Autonomous District, Yamalo-Nenetsky Autonomous District, Chukotsky Autonomous District, City of Vorkuta (Republic of Komi), five districts of the Republic of Sakha (Yakutia), Norilsk, Taimyr and Turukhansk municipalities of Krasnoyarsky Krai, cities of Arkhangelsk, Novodvinsk and Severodvinsk and three municipalities of Arkhangelskaya Oblast, archipelagos and islands in the Arctic Ocean that belong to Russia.

Barents Euro-Arctic Council: Being established in 1993 by the Norwegian initiative, the forum for intergovernmental cooperation on issues concerning the Barents Region. The BEAC meets at Foreign Ministers level in the country of the Chair at the end of term of office. The Chair rotates every second year in the autumn, between Finland, Norway, Russia, and Sweden. BEAC has seven members: Denmark, Finland, Iceland, Norway, Russia, Sweden, and European Commission.

Climate Change: A change in the statistical distribution of weather patterns when that change lasts for an extended period of time (i.e., decades to millions of years). Climate change may refer to a change in average weather conditions, or in the time variation of weather within the context of longer-term average conditions. Climate change is caused by factors such as biotic processes, variations in solar radiation received by Earth, plate tectonics, and volcanic eruptions. Certain human activities, such as greenhouse emission have been identified as primary causes of ongoing climate change, often referred to as global warming.

Paradiplomacy: A parallel diplomacy conducted by sub-state and non-state actors, including regions, municipalities, companies, NGOs, etc.

Sustainable Development: The organizing principle for meeting human development goals while at the same time sustaining the ability of natural systems to provide the natural resources and ecosystem services upon which the economy and society depend. The desired result is a state of society where living conditions and resource use continue to meet human needs without undermining the integrity and stability of the natural system. Sustainable development can be classified as development that meets the needs of the present without compromising the ability of future generations.

Urban Planning: A part of urban development strategy. It is considered an interdisciplinary field that includes social, engineering and design sciences. Urban planning guides orderly development in urban and suburban areas. Although predominantly concerned with the planning of settlements and communities, urban planning is also responsible for the planning and development of water use and resources, parks, and conserving areas of natural environmental significance.