Drivers Shaping Russia’s Arctic Cities

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Several change drivers are combining to shape the future of northern cities. (e.g. Gore, 2013; Sustainability of Arctic Communities Project\(^1\); Smith, 2011). The most important of these are:

- Energy development,
- Political centralization and state intervention in corporations, and
- Climate change

All of these forces intersect in the cities of the Russian North, leading to a dynamic, though uncertain future.

Energy

The economy of Siberia has long centered on exporting resources to the more populated regions of Russia and the rest of the world, though the commodities for export have changed over time. The discovery of large oil and gas resources in Western Siberia in the 1960s transformed the Soviet economy, and energy resources have since become the most valuable export for Russia. As the older fields that were heavily exploited during the 1960s and 1970s decline in productivity, the industry has gradually moved northwards, increasing its presence in the Arctic and Subarctic regions of the country. The industry’s impact on northern urbanization has been marked, and changes in the industry will greatly affect northern urbanism in the coming years.

The Soviet model of industrial expansion into Siberia and the Far North called for the construction of cities to support industry, so planners built centers such as Novy Urengoy (1975) and Nefteyugansk (1967) from the ground up, while others such as Surgut and Salekhard were expanded once oil and gas fields were discovered nearby. These energy cities have been some of the few urban areas in the remote regions of Russia to continue to experience growth after the collapse of the Soviet Union, demonstrating their importance to the energy industry as a whole. Despite this, no large settlements have been constructed since the dissolution of the USSR. Rather than constructing new cities in virgin territory, the strategy for the large energy companies has been to rely increasingly on shift workers to supply labor to the fields of the north.

Recent expansions of the energy industry in the far north have moved away from the previous urban centers established during the height of Soviet energy exploration, with special focus being on the more remote reaches of the Yamal Peninsula. The new projects in the region have brought large infrastructural investments to assist in the expansion of development, though the towns of the region have yet to expand prodigiously. The Obskaya-Bovanenkovo Railway, which connects the Bovanenkovo gas field to Labytnangi, has been one of the largest investments to date, and the presence of permanent transport infrastructure in this previously unsettled area could allow for a degree of urbanization as the local oil and gas industry continues.

\(^1\) [http://www.taiga.net/sustain/about.html](http://www.taiga.net/sustain/about.html)
to expand. Further plans, such as Novatek’s approved plan to build a large liquefied natural gas (LNG) export facility at Sabetta could provide the impetus to lead to a greater degree of settlement.

**Politics**

Throughout the settlement of the Arctic and Russian Far North, the role of the state has been one of the most important factors from the imperial period to the present. The near-withdrawal of the Russian state from industrial cities of the far north after the disintegration of the USSR was a catastrophic blow for the region, as subsidies and state companies had been the lynchpin of the economy. With the renewed strengthening of federal power under Vladimir Putin, the state has once again become a major player in the cities of the far north.

While regions may in theory have a degree of control over their own affairs, federal policy up through the 2013 “Strategy on the Development of the Arctic Zone of the Russian Federation” leaves little room for independent decision making at a local level (Pravitelstvo RF, 2013). Concurrently with increasing the power of Gazprom and the central government in Yamal, there has been an increase in funding for social projects and infrastructure improvements that has likely resulted from increased cooperation with Moscow. Increased energy revenues and tighter ties with the federal government may facilitate a degree of urban redevelopment in the far north, though progress has been more limited in more economically-depressed regions.

The Russian federal government has become more directly involved in the affairs of northern cities and regions in recent years, particularly since Russia’s regions lost the ability to directly elect governors in 2004, triggering a number of high-profile shifts in regional administration. The removal of the longtime governor of the Yamalo-Nenets A.O., Yuri Neelov, and his replacement with the less independent Dmitry Kobylkin is a prominent example of the Kremlin’s desire to maintain a tighter degree of control over the economically-important provinces of the country (Kuszner, 2006).

In addition, the Kremlin effectively maintains a proxy presence in certain regions through the representation of state companies. In the parliament of the Yamalo-Nenets Autonomous Okrug, 36.4% of seats are held by representatives with direct ties to Gazprom, for example, and state companies have generally been subjected to either low tax rates or complete tax exemptions in many cases (Ibid). The incredible energy resources of regions such as Yamal make a tight relationship with the central government inevitable; the okrug supplies more than 80% of Gazprom’s total extractive wealth, while tax revenue from energy companies makes up in excess of 90% of the region’s budget (Ibid).

**Climate**

The interaction between the energy industry and the federal government has been and will certainly continue to be a major force shaping the Russian Far North, yet the future of cities in the region is certain to be driven by the more uncertain outcomes of climate change. Climate change has already begun to make its presence felt in the Arctic due to its increased speed and
strength there, the so-called “Arctic amplification” (Jeffries et al, 2012). While it is clear that climate change is taking place, the exact ways in which it will influence urban life in the far north are not as well understood. Certain effects of warming promise to increase transit accessibility and mitigate some of the difficulties of Arctic settlement, yet others have more ominous implications for the future of northern cities.

While the effects of temperature on the livability of the Arctic may prove to be a significant driving force for change in the future, one of the most immediately apparent climatic factors in the Arctic and Far North is the way in which transit accessibility is changing. The lack of affordable and reliable transit access to the Arctic has been a crucial obstacle to development of the region, with transit and supply subsidies from the Soviet and Russian governments, the so-called “Northern Shipment,” consuming up to 6% of the national budget at different points in history (Heleniak, 2001). The partial loss of these subsidies after 1992 and the resulting economic and demographic decline is indicative of how crucial the provision of transport is to the Russian Far North. Climate change is certain to play a defining role in the changing nature of transit, though it is unclear how two diverging trends, the increasing sea access and decreasing land access via ice roads, will combine in terms of their effects on cities.

Sea transit along the Northern Sea Route (NSR) has been a consistent drain on resources in the USSR and Russia since the route was first used. Icebreakers are required for safe and reliable transport, leading costs in cities lacking other transit alternatives to remain consistently high (Hill and Gaddy, 2003). The progress of climate change has already reduced sea ice along the NSR significantly during much of the year, leading to increased accessibility, and predictions of warming by 2050 show that sea-based transit in the Arctic may be greatly facilitated (Stephenson et al, 2011). The energy and mining industries of the far north already rely heavily on the western NSR for much of their economic livelihood, but the costs of icebreaking and the seasonality of transport are significant economic drains (Ragner, 2000). Whether or not this increased accessibility will result in a greater degree of urbanization in the far north is difficult to tell, though reduced sea transit costs will certainly benefit industry in the region.

Tempering the increased sea accessibility of the far north is the reduction in land access, which is currently largely dependent on ice roads, as much of the region lacks permanent road or rail infrastructure (Hill and Gaddy, 2003). Warmer temperatures have begun to reduce the length of time during the year when ice roads can be used for transport in remote areas, and the significantly warmer temperatures predicted by most climate models are certain to exacerbate this effect. In the marshy tundra areas, ice roads are the only alternative to air transport for much of the year, and industrial activities such as oil and gas drilling are often completely dependent on ice roads to operate. According to climatic analysis and forecasting, Russia is expected to lose 618,000 km² of ice road capability in the coming decades, a decline of 13% of the national total (Stephenson et al, 2011). Regions in which ice roads remain viable will still contend with a transport season that becomes shorter as warming progresses, further compounding the already problematic seasonality of northern industry. A decline in the ice road season could induce a steady rise in transit costs for many northern settlements, unless mitigated by cheaper and more
reliable sea access. Non-coastal settlements are likely to be the hardest-hit by this trend, as air transit is prohibitively expensive for larger urban centers. Predicting how the differing changes in access will affect urban centers is difficult, and will be determined by the scale and pace of warming, as well as local geographic variation.

In addition to drastically changing the accessibility of northern cities, climate change promises to severely impact the physical integrity of the cities themselves. For cities constructed on permafrost (as many major cities of the Russian North, such as Norilsk, Yakutsk, and Vorkuta are), warming temperatures promise to increase the pace of permafrost thaw, with grave consequences for physical infrastructure. As the ground warms, the stability of building and road foundations decreases rapidly, leading to building deformation and even outright structural collapse (Mazhitova et al, 2004). The pace of deformation increases with the scale of warming, so the projected increases of the coming decades are ominous for northern cities. For example, Norilsk alone has had 250 major deformations or collapses by 2003 alone, most of which have required complete building demolition (Ilichev et al, 2003). An analysis of bearing capacity change in Igarka and Norilsk for 2041-2060 predicts declines of 61.5% and 40%, respectively, which would result in a catastrophic number of building collapses and deformations (Streletskiy, 2012). For the extant larger cities of the far north, the rapid decline in infrastructural stability may be the most difficult and expensive problem to overcome in the coming decades. Despite the awareness of the progression and risks of climate change within the academy, engagement with the topic has been sparse within the federal government. In the most recent Russian policy document on Arctic development, climate change is acknowledged as a potential factor in the region, though no steps are outlined to mitigate its effects or adjust development accordingly (Pravitelstvo RF, 2013).

References


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