REINDEER, OIL, AND CLIMATE CHANGE:
PRESSURES ON THE NENETS INDIGENOUS PEOPLE IN THE RUSSIAN ARCTIC

An NCEEER Working Paper by

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Executive Summary

Indigenous reindeer herders of the Russian Arctic face many challenges in the contemporary period, including dislocation related to changing economic and political governance, significant oil and gas development on their territory, and new threats related to climate change. How do these communities understand and manage the vulnerability that is engendered by these challenges? Are they resilient and able to adapt to changing conditions? If so, what is the source of their resilience? This paper examines three reindeer herding communities in the Nenets Autonomous Okrug. These villages differ in the economic organization of their traditional livelihoods, ranging from private brigades of reindeer herders to collective farms that have survived from the Soviet period. Our research indicates that communities are more or less effective in seeking compensation for the disruptions of oil and gas development and managing their relations to the local and regional authorities based on how familiar with the process of documenting damage to the tundra and their rights under different models of corporate social responsibility and Russian law. However, even those communities that are most capable of seeking redress for damage are at risk of dependency on in-kind donations from the oil and gas sector and have little control over how the resources transferred to communities are used in practice. The effects of climate change loom as an immanent challenge that local residents and the state authorities are just beginning to recognize.
Introduction

Indigenous reindeer herders of the Russian Arctic face many challenges in the contemporary period, including dislocation related to changing economic and political governance, significant hydrocarbon development on their territory, and new threats related to climate change. In the past, scholars have analyzed adaptation to the large-scale petroleum development and climate change through the lens of the broader economic post-Soviet economic transition (Forbes and Stammler 2009). In this paper, we analyze these challenges to indigenous groups’ traditional way of life by employing the concepts of adaptation and resilience and focusing on the political-institutional and economic resources available to these communities. We ask, how do these communities understand and manage the vulnerability that is engendered by these challenges? Are they resilient and able to adapt to changing conditions? If so, what is the source of their resilience?

To investigate these questions, we examine three reindeer herding communities in the Nenets Autonomous Okrug. Forty four interviews and three focus groups were conducted in May and June of 2012, and six additional interviews in April 2013. These villages differ in the economic organization of their traditional livelihoods, ranging from private brigades of reindeer herders to collective farms that have survived from the Soviet period. Our research indicates that communities are more or less effective in seeking compensation for the disruptions of oil and gas development and managing their relations to the local and regional authorities based on how familiar with the process of documenting damage to the tundra and their rights under different models of corporate social responsibility and Russian law. However, even those communities that are most capable of seeking redress for damage are at risk of dependency on in-kind donations from the oil and gas sector and have little control over how the resources transferred to
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**Nenets Autonomous Okrug: The Impact of Soviet and Post-Soviet Regimes on Local Communities**

Nenets Autonomous Okrug (NAO) is located in the Northwestern part of Russia, bordering the Barents Sea. The NAO is an autonomous region of the Arkhangelsk oblast and the administrative center of the territory is the city of Naryan-Mar. Most of the territory of the NAO is located above the Arctic Circle and comprises tundra and forest tundra ecosystems; as a result, the NAO experiences severe climatic conditions, reaching -20°C in the winter. The total population of the okrug just over 42,000 and includes members of the Russian, Nenets and Komi ethnic groups. In 2013, the Nenets population was approximately 7,500. Under Russian law the Nenets are designated as an “indigenous small-numbered populations of the North” (*korennye malochislennye narody Severa*).

In this study we examine three villages that differ in the economic organization of reindeer herding, their traditional livelihood, ranging from brigades of private reindeer herders to collective farm institutions that have survived from the Soviet period. In addition, these communities are affected to varying degrees by oil and gas development. Finally, all Nenets villages are affected to some degree by climate change, although these shifts are just starting to be felt. The village of Krasnoe is located near Naryan-Mar. It was founded in 1956 in conjunction with Harp, a collective farm focused on the reindeer herding. Currently, the village is home to about 1,600 people. Due to Krasnoe’s proximity to Naryan-Mar, the village has more social infrastructure as compared to other NAO villages. The settlement of Khorey-Ver, on the banks of
Kolva River, is 200 km from the city of Naryan-Mar and is only accessible by plane or helicopter. It was founded in the early 1920s and has a population of approximately 800. Finally, Nelmin-Nos is situated on the Pechora river, 60 kilometers from the city of Naryan-Mar, and is home to about 1,000 residents. It was established after World War II, in the early 1950s.

In carrying out this study, we investigate how residents of these villages manage their vulnerability to externally initiated shifts in political and economic institutions and in the natural environment. Are they able to adapt in a way that allows them to continue their traditional way of life despite these deep structural changes? This research allows us to gauge their resilience or Nenets reindeer herding communities – in other words, the level of change they can accommodate while still pursuing their livelihoods and finding new ways to develop (Nelson et al, 2007). Available sources of resilience may include specific actors, institutions and their relationships, as well as learning (Folke 2005).

The Cultural and Economic Survival of the Nenets

The life of modern Nenets reindeer herders is a blend of centuries-old traditions, practices developed in the Soviet period, and responses to the economic disruptions of the post-Soviet period. Reindeer herders from the Nenets ethnic group, and a few from the Komi ethnic group or mixed heritage, make up more than 7,500 of the region’s inhabitants (Sukhanovski 2013). As they have for decades, the herders traverse the tundra with their reindeer, continuing to use some customary tools and clothing and still practicing traditional Nenets rituals. During the Soviet period, with encouragement from state officials, the Nenets people shifted from a nomadic way of life to a partially settled lifestyle in which herders lived in settlements for a portion of the year and engaged in herding seasonally. Under the Soviets, reindeer herding generally was not
perceived as a “way of life,” but merely as a job. After World War II, traditional reindeer herding communities were transformed by collective farms, and the methods of herding and processing were “modernized” to some degree.

In addition, under the Soviets the leaders of Nenets communities and Nenets shaman were sent to state labor camps, disrupting traditional Nenets practices; under pressure to assimilate, many local residents forgot or never learned the Nenets language (Golovnev and Osherenko 1999). Families were separated as the children of herders were sent to boarding schools in the villages during the academic year and rejoined their families in the tundra only during the summer. Lacking the experience of year-round herding and life on the tundra, fewer children were interested in reindeer herding following high school graduation and the number of herders began to decline. A greater number of Nenets youth attended university and settled in urban areas. This trend of education and urbanization contributed to the emergence of a Nenets intellectual elite, but it further separated urban Nenets from the tundra and the Nenets language and customs. As a Nenets journalist dwelling in Naryan-Mar commented, “Before, all of the tools and knowledge that we gained in addition to deer herding were secondary. Today, unfortunately, everything is the opposite. We learn to master deer herding society and territory as if it is not very important, even though it is our traditional way of life.”

Over the past twenty years, since the collapse of the Soviet regime, the herders’ way of life has undergone even more dramatic changes. In the 1990s, many Soviet collective farms based on fishing and fur production collapsed; only a few farms that raise and process reindeer meat for sale are still operating. These remaining farms have developed a monopoly in reindeer processing in NAO and they are able to set the price for meat. In rural areas, local residents generally support themselves through reindeer herding, fishing, and hunting, but they face many
obstacles to selling what they produce – including low prices and long distances to markets. As a result, some of the meat raised by reindeer herders is never processed. Indeed, it is common in villages to see unsanctioned landfills that include the remains of reindeer. Villagers also experience an array of problems related to alcoholism and unemployment. Unemployment is exacerbated by state policies; when the state funds local infrastructure projects, they often do not employ local residents but instead put the contract out to tender and award it to the lowest bidder, generally an outside construction firm.

Thus, due to the intervention of starkly different political and economic regimes in the past half-century, life in NAO encompasses a juxtaposition of the traditional and the modern, presenting the visitor with many contrasting images. Herders may drive a traditional sleigh pulled by reindeer or criss-cross the tundra on snowmobiles and all-terrain vehicles. Nenets homes boast traditional deerskin cloaks (*malitsa*) as well as globally-recognized brand-name products. Nenets who for part of the year still live in the tundra in a *chum* – a deerskin tent similar to a North American teepee –often equip these dwellings with modern appliances, such as washing machines, and technology, including TVs and satellite phones. The majority of *chum*-dwellers also possess a modern house in a village; others spend part of the year living in the village in a trailer or the *chum* itself. Finally, the trend of young Nenets choosing professions other than reindeer herding and relocating to the city continues.

The Nenets culture is interdependent with reindeer herding, and the profound transformation of the Nenets’ traditional way of life creates significant challenges for cultural survival. For example, the Nenets language evolved in close conjunction with the daily life of herders, so using it in a modern urban setting can be difficult. This challenge contributes to its gradual extinction of spoken Nenets and the use of the Russian language. A similar pattern
applies to Nenets traditional rituals and customs. The head of a reindeer herding cooperative in Krasnoe commented, “Civilization has had a big influence [on the Nenets] in recent years: mobile phones, TV, satellite dishes – each with 100 channels. It’s very distracting.” Thus, a gradual decline in traditional reindeer herding contributes to the erosion Nenets culture.

Representatives of the NAO state administration and local communities recognize the negative effect that “modernization” has on herding communities – culturally and economically. An official from a state agency in Naryan-Mar expressed concern that new sources of financial support for herders – whether from the state or from oil companies – could further disrupt traditional practices, stating, “Reindeer herding – it is not a job, it is a way of life. For herders, their houses in the village are like vacation homes. If this situation changes, then the children will no longer live in the tundra. It is not necessary to ‘impose’ on herders all these benefits.” However, in interviews reindeer herders do not express a sense of tension between the modern and the traditional aspects of their lives. Placing washing machines and satellite phones in traditional tents is seen as simply a way to make life in the tundra more comfortable, implying that it is a natural evolution of nomadic reindeer husbandry.

**Variation Across Villages**

The impact of the economic transformation varies depending on the different organization of deer herding in communities across the region. In the Soviet era, the village of Nelmin-Nos was the site of the Vyucherski collective farm (*kolkhoz*). The farm collapsed in a long and difficult process in the 1990s and early 2000s, during which nearly all of the livestock was destroyed. Rampant alcoholism among the residents and reindeer poaching contributed to the problem. Since Nelmin-Nos is located relatively close to Naryan-Mar, city dwellers traveled
to the village, offering to illegally exchange reindeer for vodka and other spirits. A resident of Nelmin-Nos remembers, “At night the whole poaching brigade went and slaughtered deer. So the herd was gone. Well, alcoholism crippled many. People exchanged deer and fish for alcohol.” The collective farm was eventually replaced by eight family- and tribal-based reindeer brigades – Ilebts, Tabseda, Neruta, Opseda, Wark, Seng, Vynder, and Malozemelets – that became the main producers of deer in the village. However, it was difficult for the brigades to entirely substitute for the kolkhoz, with challenges ranging from the need to re-establish the herd and obtain veterinary certificates to making meat production economically viable. The member of one Nelmin-Nos brigade stated, “We are earning almost nothing. And people live only on what they produce themselves and they produce almost nothing.” Generally, reindeer herders are not familiar with navigating the bureaucracy in Naryan-Mar. “It is so difficult to get the reindeer for a medical examination,” stated one resident. “And the city is not a place I often go. It seems better just to take my axe to hunt a bear.” To survive, residents also manufacture souvenirs and fish and hunt for their own needs. These subsistence activities are complicated by the political-legal context, such as the need to obtain documents including fishing licenses or permits for hunting rifles. In general, the standard of living in Nelmin-Nos is lower than in other communities in this study due to the severe consequences of the economic reorganization. In the current period, residents rely on state subsidies and state support for village infrastructure to survive.

In Khorey-Ver, the community has experience more continuity with the Soviet period. The local collective farm, “Put’ Ilyicha,” has continued to operate.¹ The farm is considered one of the most prosperous in the region. Overall, there is a lower level of alcoholism among the

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¹ Put’ Ilyicha can be translated as “the way directed by Ilyich [Vladimir Ilyich Lenin].”
reindeer herders and residents complain less about economic hardship. However, as described below, reindeer herders in Khorey-Ver are more likely to be negatively affected by oil development and in some cases have had to alter their herding practices.

In Krasnoe, the reindeer collective farm is called Harp. In the Soviet period, Harp possessed more than 20,000 reindeer, and also managed diverse activities such as breeding horses, fishing, and raising animals for fur. As part of the post-Soviet reorganization, some herders left the farm and formed a reindeer cooperative named Erv. These two institutions have a different management structures. Harp generally continues the Soviet practice of decision-making by the farm administrators and collective ownership of the reindeer, although the herders are allowed to keep some private stock among the herd. Herders working in Harp have retained their pensions and social benefits such as paid sick leave. In contrast, the cooperative Erv represents a collective group of private deer herders. Decisions within the cooperative are taken by vote at a general meeting of the group. Reindeer herders in Erv initially did not have access to public pensions although this has changed recently.

**Drilling and Herding: Coexistence or Confrontation?**

Indigenous Nenets people attempt to continue the traditional, semi-nomadic practice of deer herding even as a number of national and transnational companies explore the region for hydrocarbons and drill in the vast oil and gas reserves. For the state administration of the NAO, the challenge is to strike a balance between the interests of local communities whose way of life is based on a close relationship with nature and companies involved in the oil industry. The state authorities seek to preserve the traditional Nenets culture while simultaneously fostering economic development, a balance that is difficult to achieve in practice.
Oil exploration in the NAO began in the Soviet era. In the 1970s, a Soviet geological survey expedition discovered multiple oil reserves in the region and commercial oil production began in the area in the late 1980s and early 1990s. Today, Russian and multinational oil companies – Lukoil, Rosneft, Total, and Conoco Phillips, among others – are drilling in the area. According to a government brochure, 98 percent of all companies active in NAO are involved in the oil and gas sector. Confirmed reserves in the region encompass 1.2 billion tons for oil, and 525 billion cubic meters for gas. Experts estimate that by 2027 the annual oil production will be 37 million tons (Sukhanovski 2013). Taxes from the oil industry are unevenly divided, with 95 percent going to the Russian federal budget and only 5 percent to the regional budget. One exception is income from Kharyaga oil deposit, which according to a special agreement requires that ten percent of income to be paid to the okrug. As a result, the NAO budget has among the highest surpluses of Russia’s regional budgets (Sukhanovski 2013).

Challenges of Oil and Gas Development

The perception of oil companies in local communities varies widely. On the one hand, the oil industry is seen as very important to Russia’s national economic development. Residents also recognize the opportunity to obtain financial support from oil companies at the local level. On the other hand, villagers perceive the arrival of oil companies as a threat to their traditional way of life due to the loss of grazing land and damage to the tundra ecosystem due to development and pollution.

The oil and gas industry generates a variety of complaints among villagers, some related to dashed expectations. First, the NAO lacks oil and gas refining facilities; instead oil and gas are transported outside the region for processing. Gasoline prices for local residents remain high.
Second, although many oil companies have active drilling operations in the region, they employ few local people. In part, this is because locals may not have the relevant skills. However, local residents also see the practice of hiring outsiders as a way of cutting costs. A village official from Krasnoe states, “It is more profitable to recruit people from central Russia – pay them 30,000 and they are happy. In the North, we need different pay rates.”\(^2\) Over time, the oil and gas industry has introduced an influx of workers, some of whom compete with local communities for resources like freshwater fish and some of whom become involved in poaching (Kumpula 2011, p. 559).

A more central issue is land use and the decreasing availability of grazing land for the reindeer herds. Grazing land has been lost to drilling, pipeline construction, and the development of other industry infrastructure. Reindeer herders mourn the loss of land that they have traditionally used for their seasonal migrations. A resident of Krasnoe stated, “Not to be on my land any longer feels as though I have lost my home. Here we have a very respectful attitude toward the land... The oil company comes and as a result, a piece of land is taken away.” At the same time, the companies have a legal right to drill because the reindeer herders are not the owners of the land, the state is, and the companies have obtained a license from the state. An oil company manager emphasized the legal situation, “To begin doing our work, we need two licenses: one license for production and one for the land. Anyway land belongs to the state, not to the herders.” Land use issues are exacerbated by the fact that Nenets families generally have three or more children and land for grazing and home construction may be in short supply.

Pipelines also disrupt the migratory routes of the reindeer. Companies take different approaches to constructing crossing points and bridges for reindeer traversing the tundra. For

\(^2\) At the time of interviewing, 30,000 rubles equaled approximately $1000 per month.
example, in the region near Khorey-Ver, Conoco-Phillips has built passageways over and under the pipeline; residents say that these bridges are well-planned and are used by deer. However, some companies construct crossing points that are too far apart – up to eight kilometers – and it is hard for the reindeer to find them, while others build arches in the pipeline that are too low to the ground for the deer to use. “Companies make calculations as they try to make [reindeer crossings] as cheaply as possible,” stated an NGO representative in Naryan-Mar. Referring to a particular care, the representative continued, “It was important to raise the bridge above the pipeline, but [the company] did not do it. They said it was impossible. Then it turned out that it was possible, just more expensive.” An aggravating factor is that oil companies in the NAO do not share pipeline infrastructure; initially, some firms made an effort to negotiate shared pipeline arrangements, but they failed to agree. Each company has built its own pipeline, leading to irrational situations. The vice-governor of the NAO acknowledged, “Near Karataika, there are eight pipes all going parallel to one another. Each pipeline has crossings for reindeer in different places. For the deer, passage is impossible. A large territory for reindeer is lost because of that situation.”

Land use problems also arise due to oil spills that contaminate grazing land and bodies of water. In the 1990s, during the early years of drilling in the region, the negative environmental impact of the industry was significant and very visible, leading to some conflict between communities and companies. A resident of Krasnoe remembers, “It was terrible what was happening! The entire territory of grazing land was destroyed. Iron, metal, and garbage – all of it was left behind.” Another member of the village states, “These spills occur everywhere – and how they combat the spill. They just detonate an explosion and soil from the explosion covers the oil that was spilled. That way nobody can see it.”
The companies’ compliance with environmental laws and regulations is monitored by representatives of the federal Natural Resources Oversight Service (*Rosprirodnadzor*), but in practice the agency has limited ability to carry out its work. Because of the distances involved and the expense of traveling by helicopter, the agency has sufficient funds to check each company only once every three years. The villagers and reindeer herders who are frequently on the tundra are usually the first to see an oil spill and to report it to the company and the state agency. By law, these violations should be documented by the agency, yet *Rosprirodnadzor* is often not capable investigating violations due to budgetary constraints. When they do investigate, they must rely on the company itself to provide a helicopter for transportation to the spill. This practice is subject to manipulation. A leader of the Erv cooperative complains, “The company arranges the flight in such a way that the spill is invisible, or for a time when they have already covered it with soil.”

*Negotiating with oil companies*

The goal of preserving the traditional way of life of the Nenets indigenous people is one factor that shapes interactions among the state authorities, oil companies and local communities in NAO. A source of contention is how much social support the oil companies should provide for the region’s population. Generally, the oil companies conclude agreements referred to as “socioeconomic partnerships” with the NAO governor to determine the level and type of social support that they will provide to the region. Under these agreements, companies voluntarily bestow a significant – albeit variable – amount of funding for the state budget or donated infrastructure on the NAO. For example, oil companies have constructed a cultural center and museum, health care facilities, schools, sports halls, and slaughterhouses for reindeer herders.
Funding has been used to subsidize transportation from villages to the administrative center. These socioeconomic partnerships have played a role in improving the quality of life in Naryan-Mar and some villages, enhancing health care in the region, and creating educational opportunities for some NAO residents. Donations from oil companies have become a vital support for the widely scattered population.

These socioeconomic partnerships are informal, however. There are no rules that regulate the amount companies are required to contribute to the local population or formal processes that govern the negotiations. The level and type of support depend entirely on the outcome of the company’s negotiations with the governor. Factors such as the number of years that a company has been active in the region, the stage of development of its oil production, and the quantity of oil produced all influence the agreement. For example, companies undertaking geological surveys are asked for less support than those firms engaged in commercial drilling. The substance of the agreement is influenced by the attitude of oil company officials and the company’s internal corporate social responsibility policies, which may be more robust in multinational firms and more rooted in Soviet era practices in Russian state-owned companies. Personal ties and connections to the federal government in Moscow also may play a role. As one industry representative commented, “the state does not control the process [of determining social partnerships].” Ultimately, the level of funding is negotiable and discussions occur behind closed doors.

In addition to agreements at the gubernatorial level, oil companies provide support to the administration of the Polar district, a subregional administrative unit, and sometimes make agreements directly with specific villages or groups of reindeer herders. In discussions with oil companies, reindeer herders tend to frame their demands by appealing to norms of social support
from the Soviet period, while company representatives tend to justify their response based on economic necessity. Usually support for villages is relatively low and is not financial, but in-kind. Oil companies may provide assistance by purchasing specific items for villages, providing scholarships to university students, offering transportation to villagers, or building winter roads. Even more informally, individuals at oil company installations in the tundra may engage in barter with reindeer herders, provide herders medicine and food, or allow them to store equipment at the installation site. In theory, any conflicts between companies and local residents should be mediated by the state authorities. However, in practice, the parties rely on informal negotiations.

In most cases, neither the company officials nor the villagers apply formal methods for calculating the damage to reindeer herders’ income and livestock. As a result, differences in information, knowledge of the law, and relative political influence between industry officials and herders inevitably shape the outcome of negotiations.

The effects of this kind of social support are ambiguous. On the one hand, funding from oil companies helps to maintain and enhance the infrastructure of the NAO, which prior to the “oil era” was eroding due to the post-Soviet economic crisis. On the other hand, the current process of determining how much and what kind of support will be provided does not contribute to the sustainable development of the territory, the implementation of existing laws and regulations, nor public participation in long-term planning. Instead, it either leads to the construction of high profile but less essential amenities, such as an “ice palace” hockey arena in Naryan-Mar, or it contributes to the general dependence of the territory and its residents on the largesse of oil companies. Oil company representatives remark that there does not appear to be a long-term plan for the development of the NAO. They suggest that this type of plan would allow

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3 Participant observation, Ardalin; see also Kumpula 2011, p. 559.
4 Representative of the administration of the Polar region, June 2012.
companies to invest in social programs more strategically. An oil company manager comments, “We participate in okrug development programs, but we cannot assess the region’s needs to choose where to contribute.” A representative of the Naryan-Mar administration acknowledges, “When the oil ends, this level of well-being will end. People here are not accustomed to entrepreneurship. If the law changes again, this money will disappear from okrug. Right now, people take everything for granted – the subsidies, benefits, and support from oil companies. The strategy for developing the Arctic is in the hands of the oil industry.” Some villagers have even more pessimistic predictions. A resident of Krasnoe stated, “They will exhaust all the oil and abandon us with our problems. The tundra will take many years to restore itself.”

**Case Studies**

The type of interaction between deer herders and companies varies across our cases because the impact of oil development in each village is different. In Nelmin-Nos, reindeer grazing land is located far from oil industry development. For that reason, the herders to not receive direct compensation from oil companies, although they do benefit from funds provided by the industry to the NAO budget. In recent years, oil companies have provided funds for reindeer herders to build houses and a modern gymnasium in Nelmin-Nos. The lack of oil infrastructure near Nelmin-Nos is seen as an advantage rather than a disadvantage by many residents who expressed the opinion that oil drilling leads to irreversible damage to the natural environment. A villager stated, “Once, in an area with oil development, I saw reindeer there walking as though in a bad dream. Large machines were all around, immediately in the reindeer’s path, and the land all plowed under. We had the same oil companies working here in the 1970s, and the land healed only ten years ago.” Another villager remarked, “Pumping out oil
damages rivers. They all become shallow. There is no flooding, no fish. The fish move down to places where the water is constant. This happened couple of years ago.” In the coming years, however, the lands around Nelmin-Nos are also expected to be a site of oil production, creating new challenges for herders in the village.

Several large oil companies conduct operations in the grazing land around the village of Khorey-Ver. As a result, groups of herders have negotiated several socioeconomic agreements with representatives of different companies and the village administration has received occasional informal support. The head of several reindeer herding households describes their agreement, stating “We are negotiating by ourselves so these are symbolic prices. To ask a big company to buy one tractor in two years, it is almost nothing – half a tractor per year! So for them it is funny money. And we are not asking for much.” This person also acknowledges, “Through state’s social program, lots of homes have been built.” Oil companies sometimes voluntarily provide additional assistance to the village. For example, a multinational consortium of oil companies built a new school building in Khorey-Ver.

Living in proximity to oil development creates an opportunity for socioeconomic agreements, but it also negatively affects village life, including poor air quality and increased pressure on grazing land. A local resident commented, “There is strong smog from the burning. We are concerned about it. We cannot let our children go outside because there has been such a cloud over the village.” The development of oil fields and the construction of pipelines make it impossible to herd reindeer on traditional migratory routes. A reindeer herder in Khorey-Ver stated, “We have only certain amount of biological resources. We are limited. That is, our current conditions do not allow us to increase the deer population for the simple reason that we do not have enough pasture land.” Reindeer herders have been able to negotiate direct individual
compensation from companies, but the Khorey-Ver village administration and residents who are not ethnically Nenets are not entitled to compensation, although they experience adverse effects of the activities of oil drilling. “They [the companies] sent us to the okrug administration for support. All large contributions go to the okrug and we are not able to ask the companies directly,” remarked a resident of the village. Despite some on-going challenges, however, Khorey-Ver offers an example of negotiated coexistence between a local community and the oil industry informal, short-term social agreements.

In Krasnoe, reindeer herders from both the Harp farm and Erv cooperative interact frequently with oil companies that operate on their grazing territory. The leader of Erv, in particular, has become very experienced in negotiating with oil companies, using diverse mechanisms and different types of leverage. The Erv leader first learned to pursue the community’s interests – in this case, their right to sell fur products – through the courts in the 1980s, during Soviet era, when he was still a member of the collective farm. He recalled, “Then I realized that in fact some laws exist that can be used on our behalf. Then my attitude to the law was that if there is a law, we must implement it.” His exceptional experience with the legal system shapes the cooperative’s interactions with the oil companies today. The Erv leader remembers advice he was given by early oil survey teams, “When we were working with geologists, they told us, ‘Guys, we would help you, but we have no money. But when the oil companies come, they have a lot of money and they will help you more.’” When the oil industry began to develop near the village, the Erv leadership was eager to negotiate for compensation. Initially, the herders’ negotiations with oil companies were difficult, in part because of the high expectations of the local community and the oil companies’ unwillingness to interact directly with the herders’ cooperative, instead of the regional administration.
Ultimately, the herders have used the federal Land Code and the Russian Law on the Rights of Indigenous Peoples as the main tools to defend their interests in their disputes with oil companies. In order for the laws to work, however, the herders had to use a formal methodology to calculate the damage to their traditional grazing land. With the financial support of the district administration, the reindeer cooperative conducted the geological and botanical survey of their territory necessary to calculate of the impact of oil infrastructure development. The Erv leader appealed to a Moscow expert who estimated compensation for damages from land confiscated for oil infrastructure. With this estimate in hand, the leader appealed directly to companies operating on the herders’ territory. “Well, I came, saying, ‘Here is what we think you owe us. If you reckon it as less, give us an estimate as proof.’ And they had already prepared to build the pipeline.” Since the company is legally required to obtain written consent from herders, it was forced to agree to the estimate. Otherwise the reindeer cooperative could go to court. The Erv cooperative first signed a formal agreement with an oil company in 2001. Other deer herders have not been able to use this same strategy because they have not completed an assessment of their geological and botanical resources, an expensive and complicated task. Instead, in most NAO villages the amount paid by oil companies to reindeer herders is determined by ability of herders to negotiate rather than the damage sustained to their territory. The case of the Erv cooperative in Krasnoe is a rare instance in which an active leader successfully used the law to protect the rights of reindeer herders.

**Challenges of climate change**

Scientists predict that reindeer husbandry in the Nenets Autonomous Okrug could be adversely affected by climate change as vegetation distribution, amount and duration of snow
cover, and the timing of freezing. Reindeer herders perceive numerous changes to the natural environmental in recent years. They report that the direction of the wind has become unpredictable throughout the year. In the summer, herders rely on cold winds from the North to blow away clouds of mosquitoes. They also point out that lakes on their territory are shallower, and now freeze to the bottom in winter, killing fish. Some lakes have dried up completely and herders have been forced to change their migration routes to find the water that they need for the herd. Due to the changing climate, over the past few decades shrubs and brush have grown noticeably taller. The deer often get lost in them, increasing the labor of herders, and the growth of these shrubs leads to loss of grazing land to some extent (Rees et. al. 2008). Herders have begun to avoid these areas.

Most reindeer herders do not label these shifts as part of “global climate change. Herders are preoccupied with the day-to-day tasks of managing their livestock. Many of them have never heard that the climate is matter of a global concern, but they notice changing weather patterns and they are especially sensitive to precipitation (whether it is rain or snow) the timing of freezing temperatures. A herder in Krasnoe stated, “It is not good for the deer when the snow melts and then freezes again; several deer broke their legs last spring.” Another resident of Krasnoe remarked, “We needed to move the slaughtering period several years ago. We used to do it in December, but now it is at the end of January. And the deer are still here [in the village] because of the weather.”

In recent years deer herders started to learn about global climate change, primarily from scientists conducting research in the region. Several projects have been undertaken in the area, including two EU projects, “Barents Sea Impact Study” and “Global Change Vulnerabilities in the Barents Region: Linking Arctic Natural Resources, Climate Change and Economies”
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(BALANCE). Both projects focus on reindeer herders’ perceptions of the climate and its effect on human-animal relations in tundra (Forbes and Stammler 2009). Both projects concluded that the indigenous people of the tundra have a high level of adaptability to changing weather. Due to their partially nomadic lifestyle, herders and their reindeer have been able to travel to avoid damaged areas, and exploit alternative territories. Thus far, oil and gas development and nomadic pastoralism have been able to co-exist despite new pressures of climate change (Forbes et al. 2009, p. 7). In fact, in the recent past, industrial development has cause a greater impact on the tundra ecosystem’s topography and hydrology than climate change has (Forbes, 2008, Lavrinenko et.al, 2003). Tundra ecosystems have proven to be vulnerable to disturbances related to oil infrastructure development, such as damage from heavy machinery and erosion leading to sand and dust storms, as well as contamination by petrochemicals. The research shows a fairly high level of resilience of in the ecosystem. However, increasing industrialization and climate disturbances will likely contribute to a cumulative adverse effect on reindeer grazing land over time.

**Analysis and Conclusion**

This paper examines three major challenges to the way of life of indigenous reindeer herders in the Nenet Autonomos Okrug: the post-Soviet economic transition, the increasing development of the oil and gas industry, and climate change. Over the past two decades, reindeer herders have had to grapple with the manifestations of these deep structural changes – the collapse of collective farms, the loss of grazing land to oil and gas development, the rapid migration of young people to the cities, the availability of modern technology, and the increased variability of the climate. Nenets reindeer herders attempted to adapt to all three of these large-
scale changes simultaneously. Thus, they are confronted more starkly by contemporary climate contradictions than any other population. At this time, Nenets communities primarily are preoccupied with improving their current economic situation and facilitating the co-existence of reindeer herding and oil and gas development. Revenue from the oil industry, both from formal and informal channels, plays a significant role in the economic recovery of the NAO. However, in the long-term, climate change represents a real threat to viability of the Nenets traditional, nomadic way of life (Forbes and Stammler 2009). And, of course, the exploitation of carbon-based fuels also contributes to the variability in climate. Actors in the Nenets Autonomous Okrug must to strike a balance between encouraging oil development and safeguarding the interests of local residents whose livelihood is closely linked to the state of the environment – a difficult challenge.

Research carried out in Naryan-Mar and three villages reveals that these communities are still recovering from severe economic downturn caused by the shift from a planned economy to a market, the growing influence of the oil industry, and climate change. Communities have been forced to find new ways to adjust to the changing conditions of life. Despite overall similar trends, the processes of adaptation proceed differently in the villages studied. There are several factors that influence the resilience and adaptability, reindeer herding communities, including:

- The geographic location of the settlement (proximity to an urban center and available transportation)
- The institutional upheaval of economic reform (existing social infrastructure) and the organization of reindeer herding (ranging from the continuation of collective farms to the emergence private herds).
- The impact of industrial oil development around the village and on grazing lands
The willingness and ability of herding communities to effectively self-organize and negotiate with oil companies (related to the competence of local leaders)

All of these features will influence the sustainability of traditional ways of life in indigenous Arctic communities, which are dependent on surrounding natural environment. We conducted three case studies and can distinguish three different scenarios of resilience and adaption.

Of the communities studied, Nelmin-Nos was the most significantly affected by post-Soviet economic restructuring, which led to the mismanagement of the village’s collective farm, and the almost complete disappearance of the community’s reindeer herd. The village’s grazing land has not yet affected by oil development. At present, the village receives support from state subsidies and maintenance of village infrastructure funded by the social agreements concluded by the NAO governor. Oil companies have also provided limited funds for the construction of new houses for herders. Nelmin-Nos lacks a meat processing and refrigeration facility; instead, reindeer are slaughtered in the fields and butchering is heavily dependent on freezing temperatures. However, due to the slow recovery of the herd, villagers have not yet faced some of these issues developing revenue from reindeer harvesting. If and when the herd returns to full size, these issues related to sustainable adaptation will loom large.

Khorey-Ver is relatively far from Naryan-Mar and can be reached only by airplane or helicopter. The lack of roads has made it harder to maintain local infrastructure. Reindeer herding around Khorey-Ver was less affected by economic restructuring, however. The collective farm survived the Soviet collapse; it was prosperous in the Soviet era and continues to be economically viable under a market economy. Although herders’ grazing land is severely affected by oil companies, Khorey-Ver provides an example of negotiated coexistence of deer
herders with the oil companies. Herders have concluded several socioeconomic cooperation agreements with different oil companies as well as receiving funds from the NAO administration. Although they do not use formal methodologies to assess damage from oil development, herders have met their basic needs through in-kind support from the companies.

The village of Krasnoe has a significant advantage due to its proximity to and easy access by road to Naryan-Mar. Although economic restructuring seriously impacted the collective farm, reindeer herd has recovered and both the Harp, the collective farm, and Erv, the reindeer cooperative, appear to be economically viable. These institutions have negotiated several socioeconomic cooperation agreements with oil companies. The reindeer cooperative is the only entity that has tried to use formal methods of land valuation and damage estimates in its interactions with oil companies. In all other cases, the compensation was determined through negotiations between representatives of the oil companies and reindeer herders. Reindeer herders from Harp and Erv have an advantage because they have a meat processing facility and can easily transport their product to Naryan-Mar. Nevertheless, rhythm of the year – including harvesting – will have to adjust to climate change.

The coincidence of post-Soviet economic disruption, oil development, and climate change has presented NAO villagers with an unprecedented challenge and highlight their vulnerabilities. However, we see that Nenets reindeer herding villages thus far exhibit several strategies of adaptation. These varying capacities to adapt – or to undertake actions to preserve their traditional ways of life – based in part on the economic and political-institutional resources that they have at their disposal. A key source of resilience resides in the traditional practices and skills of the reindeer herding communities. Direct and indirect funding from oil companies has become a substitute for support provided by the state and state-owned enterprises in the Soviet
era. These are benefits that may be valuable in the short term, but create dependencies and reproduce paternalistic relationships in the long term. Further, oil development leads to increasing tensions between industry and reindeer herding. So far adaptive strategies used by the reindeer herders are largely informal and generally are not based on existing legal frameworks or public participation, possibly limiting their future utility. The reindeer herders of the Nenets Autonomous Okrug have demonstrated a high level of adaptive capacity, however. For this reason, as the reindeer herds recover to their earlier numbers and oil and gas development continues, they are likely to pursue negotiated coexistence, at least in the short term.
Bibliography


