



# The Yamal LNG Project and the Nenets Reindeer Nomads

Impacts, Survival and Indigenous Opposition  
to Gas Exploitation in Russia's Arctic

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Front cover: Setting up a traditional nenets tent  
(chum) on the tundra. In the traditional nenets culture, a woman decides where to set up a chum.

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Page 5: By Ezhiki – Yamal-Nenets Autonomous District on the map of Russia as of January 1, 2008.  
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Page 6: By Pticy – Yamal Peninsula.  
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We were flying over the seemingly endless white space of permafrost for over an hour when my companion, a woman in her mid-thirties, pulled me towards the helicopter window: “Look over there, to the right.” She paused. There, in the distance, I saw a red-yellow flame rising high above the ground, filling the sky with black smoke. “They burn all day long,” she added. As we continued towards the village of Seyakha, one of the northernmost settlements in the northeast of the Yamal Peninsula, drilling rig followed drilling rig. Connected by webs of roads and pipelines, these iron rigs penetrated the tranquility of the seemingly endless white landscape of the tundra, which was once exclusively populated by Nenets reindeer herders, and which is still home to one of the largest reindeer herds in the world.

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## INTRODUCTION Gas and reindeer

Located in the northern part of western Siberia, the Yamal Peninsula is probably one of the most detached parts of the Russian Federation. It stretches roughly 700 km (435 miles) along the Kara Sea and Baydara Bay to the west, and the Gulf of Ob to the east. Administratively, the Peninsula forms part of the Yamal District (*raion*) of the Yamal-Nenets Autonomous Okrug (YNAO) of Tyumen Area (*oblast*). Covering an area of 117,410 km<sup>2</sup>, Yamal District is the second largest in the YNAO, with a total territory of 750,300 square kilometres.

Seen from the window of a helicopter, this 700 km long, flat, sparsely populated stretch of land consisting mostly of permafrost, serpentine rivers and dwarf shrubs, covered by snow and ice for the most part of the year, seems strikingly unspoiled at first glance. Yet, with some of the largest untapped natural gas deposits in the world lying beneath the permafrost<sup>1</sup>, the peninsula has become the site of the largest development of Arctic gas this decade, and the most significant gas region in the world.

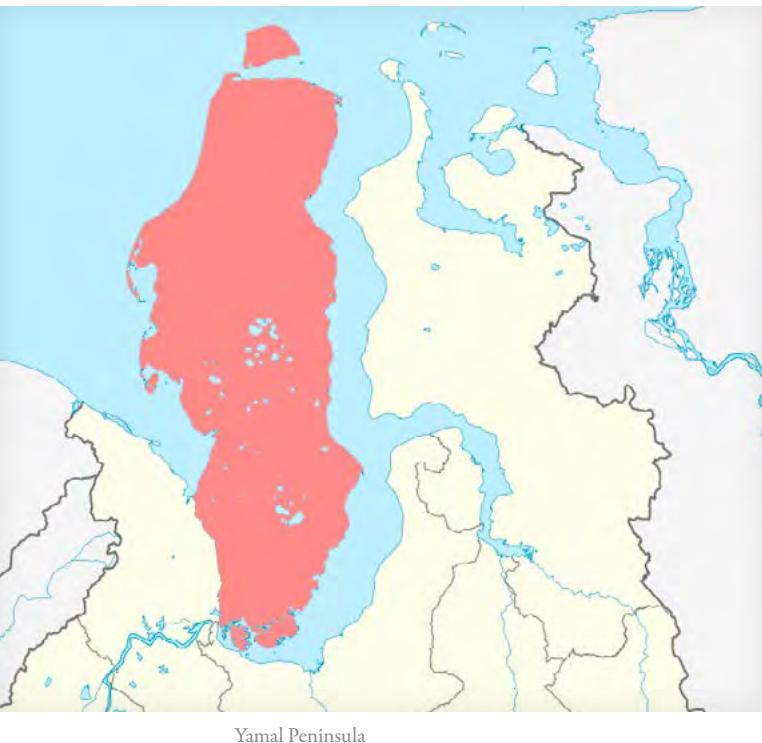
The main concession areas of Yamal natural gas are the gas turbine power plant located at Bovanenkovo gas field, and the South-Tambey Gas Condensate Field (STGCF) and Sea Port located at Sabetta (Figure 1). The Bovanenkovo gas field, developed by Gazprom, started production in October 2012. It has proven reserves of almost 5 trillion cubic metres of natural gas<sup>2</sup>, and is scheduled to reach output of 140 billion cubic metres of natural gas per year<sup>3</sup>. Proven and probable resources in the South-Tambey deposit were put at 907 billion cubic metres as of December 31, 2012, of

which proven reserves are around 481.4 billion cubic metres<sup>4</sup>.

In 2013, in order to feed the growing European and Asian demand for natural gas, Russia's largest independent gas producer, Novatek, in cooperation with the French energy giant Total, launched the Yamal Arctic liquefied natural gas project, known as Yamal LNG Project. The Project is aimed at upstream production, as well as processing, liquefaction and offloading of natural gas and stabilised condensate from the Project Site near the South-Tambey Gas Condensate Field on the east coast of Yamal Peninsula. It includes the construction of a major integrated complex for the liquefaction of natural gas, consisting of three process lines, each with an annual production output capacity of 5.0-5.5 million tonnes of LNG (15-16.5 million tons per annum) along with facilities for the production of one million tons of gas condensate per year, plus the sea port and an ice-class tanker fleet located in Sabetta, aimed at providing year-round delivery of LNG to markets in Europe, North America, and the Asia-Pacific regions<sup>5</sup>.



Yamal-Nenets Autonomous Okrug



Yamal Peninsula

For over a thousand years, the project's licence area has been inhabited by Nenets reindeer herders who, like the Sámi and the Chukchi people, have developed large-scale reindeer breeding in the tundra. Yamal is, in fact, the only region in Arctic Russia where reindeer husbandry did not decline after the collapse of the Soviet Union. On the contrary, it steadily grew in the post-Soviet years, from 195,000 in 1996 to 280,000 in 2014, mainly due to a rapid growth in private reindeer herding, outside of the state-owned enterprises, which were the successors to the Soviet *sovkhоз*<sup>6</sup><sup>7</sup>. By January 1, 2016, the number of reindeer in Yamal District, which is congruent with the Peninsula, was estimated at 254,020 head. That is 35% of the total number of reindeer (approx. 700,000) in Yamal-Nenets Autonomous Okrug, or Area<sup>8</sup> (YNAO). Today, more

than 5,000 indigenous people in the district are engaged in year-round nomadic reindeer herding. More than 60% of the reindeer population is owned by private herders and indigenous *obschinas* (cooperatives)<sup>9</sup>. The rest are state-owned enterprises.

The area licensed to the project is one of the key areas for the Seyakha herders who live and migrate with their herds in the tundra. The migration routes are connected to seasonal pasture needs and climatic conditions, and are more or less fixed according to the former clan division of the pastures, which means that each brigade and family migrates within a particular corridor (Figure 2)<sup>10</sup>. One of the main distinctive features of reindeer herding in Yamal is its maximum use of land resources through the migration of families along with their herds. Nomadic families live in traditional tents on the tundra and move through the territory with their families and herds to designated pastures in a six-season rotational cycle<sup>11</sup>.

The territory currently occupied by the rotational village (in Russian: *vakhtovy poselok*)<sup>12</sup> of Sabetta – one of the main concession sites of the Project, located 6 km south of the South-Tambey LNG Plant – used to be a trading post (Russian: *faktoriya*) for the Seyakha reindeer herders, local communities and families migrating throughout the Seyakha tundra<sup>13</sup>. In autumn, the indigenous *obschinas* ‘Tusyada’, ‘Khabyakha’, and ‘Ilebts’, and the 4th reindeer herder brigade of LLC ‘Valama’, migrate through the concession area with their herds. The area also forms part of the migration route of the majority of the herds of the northeast of Yamal on their way to the slaughtering facilities in Seyakha village. In

the immediate vicinity of the site, the 2nd brigade of the Municipal Reindeer Herding Enterprise ‘Yamalskoye’ regularly migrates with its herds to the slaughtering facility in Seyakha. In 2015, the Seyakha facilities accepted 17,000 reindeer for slaughter, the majority of which came from private herds (field notes). The reindeer herders also use the area for hunting, gathering and subsistence fishery when en route in their seasonal migrations<sup>14</sup>. The Tambey Trading Post, which is part of the inter-settlement territory<sup>15</sup>, serves as a transient post for reindeer brigades, private herders and hunters who migrate through the area on a seasonal basis to secure food and basic supplies. It also provides facilities for the preparation and processing of the reindeer harvest (meat, antlers, skins), as well as the communication and distribution of local news. And it typically serves as a place for seasonal gatherings of the herders and for medical check-ups. According to the current available data, the overall size of the migrating population using the Tambey Trading Post is about 600 people (120 nomadic households), of which nearly 100% are Nenets indigenous reindeer herders<sup>16</sup>.

Researchers have pointed out that Nenets' mobility (geographical remoteness and size of the territory, combined with the way it shapes values, behaviour and economic complexity), embedded in their traditional lifestyle, is the major factor in Nenets' ability to adapt to climate and social change; and it has “enabled them to maintain control along with their unique culture and language in a way other peoples could not”<sup>17</sup>. They stress that alienation of the pastures as a result of gas extraction and similar for the development of infra-

structural facilities for the construction work affects herders' mobility and, hence, their ability to adapt to climate and social change. At the same time, growing competition for land resources increases the risk of overgrazing of the tundra, which in turn puts the ecological sustainability of the pastures at risk and hence endangers the herding culture<sup>18</sup>. In her analysis of the Environmental and Social Impact Assessment (ESIA) of the Yamal LNG Project, Olga Murashko has specifically pointed out that implementation of the Yamal LNG Project bears “substantial risks to the future survival of the Nenets, their rights and their existence as a distinct group.”<sup>19</sup>

It is also evident that, as a result of the development of oil and gas industries, the anthropogenic impact on the environment has grown. Increasing pollution puts the local biodiversity and ecological stability of the region at risk. The German anthropologist, Florian Stammle, who did his research in Yamal in 2005, observed that lakes in the concession areas have a tendency to dry out. For instance, Lake Tui-To, near the road to Bovanenkovo, which used to be rich with fish, has greatly decreased in size, and there is now no fish in it. Another lake died out after a Dutch company used it as a sand quarry<sup>20</sup>. Other independent researchers and NGOs have likewise expressed their concern at the impact the implementation of the Project may have on the local ecosystem of the already depleted tundra<sup>21</sup>. In 2013, in an open letter to President Putin, Belgian Greenpeace national officers urged him not to allow the extraction of soil directly from the dredging sites and warned him that it could endanger the ecosystem of Ob' Bay. In April 2015, during the discussion with stake-

holders in the town of Salekhard, the representatives of the local population likewise expressed their concern at the consequences of the dredging operations' impact on the fish stock. Along these lines, in June 2015, WWF-Russia vented a similar concern regarding the negative impact the Project could cause to the ecosystem of Ob Bay, pointing out that dumping over 40 million cubic metres of soil, removed in the course of dredging work, on the bottom of the Gulf of Ob could lead to massive fish mortality and also cause erosion of the shores, due to a more intense inflow of salty sea water<sup>22</sup>.

Despite the many risks it holds, the Yamal LNG Project is still being implemented. According to Chairman of the Board and co-owner of Novatek, Leonid Mikhelson, as of November 2016, 68% of the plant had been already built, including 85 % of the first line. It is planned to launch the line in late 2017, with the first shipment due by October 2017 and the long-term supplies expected in 2018<sup>23</sup>. On March 29, 2017, the first icebreaker, the 300-metre-long Arc7 (currently the largest icebreaking tanker in the world with a capacity of 172,600 cu m gas and the ability to break through 2.1 metre/6.9 foot thick ice) arrived at Sabetta, ready to carry gas east via the Northern Sea route<sup>24</sup>.

In the present report, I address some of the critical issues related to implementation of the Yamal LNG Project. The data presented in this report are grounded in short-term field-work in Yamal, conducted in May 2016 in the village of Seyakha and the city of Salekhard. The report singles out and discusses some of the critical trends observed in the area. It also

shows what the main concerns of the indigenous population are and it discusses the role of civil society, equal political participation, and indigenous voicing in Yamal.

## **THE RESEARCH OBJECTIVES AND METHODOLOGY**

The field trip for this research was commissioned by The Institute for Ecology and Action Anthropology (INFOE) as part of its work conducted within the ECA Watch Network aimed at documenting the changes brought about by the implementation of the Yamal LNG Project, and of identifying the views and attitudes of the indigenous population towards these changes: what changes have already taken place and what are expected? Has the implementation of the Project affected the socio-cultural and ecological environment of the area, and if so how; and how has it affected the indigenous peoples, their local economy, food security, health, traditional culture, etc.? How do the indigenous people perceive the already occurring change, and what are their concerns and positions, both in regard to the Yamal LNG Project and the social and ecological situation in the area?

The principal place of my research was the village of Seyakha. Located 120 km south of Sabetta, Seyakha is the largest settlement within the proximity of the concession areas. Seyakha is also the northernmost village in Yamal. It is located 373 km north of the administrative centre of the district, the settlement of Yar-Sale, and some 560 km north of the Okrug's regional centre, the city of Salekhard.

The only all-year-round transport connection between Salekhard/Yar-Sale and Seyakha is helicopter. However, heavy snowstorms and 80-90 days of dense fog per year, with visibility at less than 100 metres in the areas of Yamal adjoining Kara Sea and its gulfs, make helicopter flights irregular and highly dependent on the weather. In winter (November to April), it is possible to reach the reindeer herders on wheeler trucks and snow machines using temporary winter roads (*zimnik*). In June-September, travelling via Ob Bay and the rivers is also possible. In between, however, the reindeer herders and the villagers find themselves completely cut off from each other.

In practical terms, this means that although it takes only a four-hour regular flight to get from Moscow to Salekhard, travelling to remote parts of the region is often a time-consuming and weather-dependent matter. Accessing the tundra in May-June is practically impossible: the ice on the rivers and lakes, predominant over the surface of the peninsula, has begun to break, making the winter roads no longer safe for travel. Hence, although I did plan to visit the tundra dwellers, at this time of the year, the majority of herds have migrated far away from the village and, hence, were unreachable because of the considerable distances and climatic conditions. The main part of the research was therefore conducted in the village of Seyakha.

Altogether, I spent ten days in Seyakha, and a little less than a week in the regional centre, the city of Salekhard. I recorded 17 interviews. Four interviews were conducted in the city of Salekhard. The remaining 13 interviews and an additional 14 off-the-record face-to-face

conversations were conducted in the village of Seyakha. All in all, the research involved 34 people, most of whom were natives. Among my informants were a Seyakha-born carver Viktor and his wife Inna, who live in Salekhard permanently, two former tundra herders who now live and work in Seyakha, two individual Seyakha entrepreneurs (*chastniki*), the former head of the Seyakha administration N. L. Okotetto, a younger tundra couple who were recently forced to move to the village with their four children, an (older) couple who moved to the village due to health issues, and a reindeer herder who was stuck in the village because of the weather. I also interviewed (some off-the-record) two native school teachers, a local shoemaker, a Byelorussian journalist, a veterinarian and the acting director of the Seyakha meat processing plant, a social worker, a young mother on maternity leave, and a former tundra-dweller, a Nenets woman in her fifties who was unemployed and who regularly stopped by my apartment. Apart from that, I visited the local administration, where I talked to the head of administration, I.N. Okotetto, the statistics office and the social services office, and I participated in an open meeting on the ecological situation in Seyakha village, held in the village on 24 May 2016.

This report therefore first of all presents the views and opinions of the Seyakha villagers that were revealed to me in interviews and (even more so) in face-to-face conversations which, at times, seemed to be compelled by the people's urgent need for help and their belief in my ability to "go out there and tell their story." A few, however, were unwilling to talk because of their scepticism regarding the intentions of my research, and for fear of being harassed or fired from their job afterwards.



View from indigenous people's housing in Seyakha into the tundra.

The village of Seyakha is situated on the eastern shore of Yamal Peninsula near Ob Bay of Kara Sea. It was established in the 1930s on the basis of primary associations of reindeer breeders merging with trading posts, which appeared in Seyakha in 1927. In 1933, Seyakha became the centre for the Nei-to Rural Council (renamed into Seyakha Council in 1976), and by 1935, an elementary school located in a small wooden building had opened its doors to 40 students. At the turn of 1961-1962, Seyakha became the central estate of the state enterprise (*sovkhоз*) 'Yamalskii'. At that time there was only one building on the settlement territory: a wooden hut for two families, which simultaneously served as the office and central manor of the sovkhoz and the administration of the Nei-to Village Council. By 1963, 178 state families were working for the sovkhoz. Altogether, there were twenty brigades: nine

reindeer herders, ten hunting and one fishing brigade. The reindeer herd counted 17,000 heads.

With the beginning of exploration works in Yamal in 1968 (and until its closure due to a financial crisis in 1991), the village became a base for the Polar Exploration Expedition, which stimulated the construction of a number of facilities in the village: a residential town, a boiler plant, a warehouse, a fur farm, a library, a bakery, and a hostel (transferred in 1990 to an area hospital)<sup>26</sup>. With the collapse of the Soviet system, all of the activities in the village, including the work of the Polar Exploration Expedition, ceased and the village became gradually depopulated, becoming in Florian Stammler words, "nothing more than the remotest outpost of a development model which was not able to



New School buildings in Seyakha, with the old soviet indigenous housing in the front row.

survive in difficult conditions of political and economic change”<sup>27</sup>.

In the past few years, in the wake of the industrial development in the area, the village has rapidly grown, both in size and in population, mostly due to the influx of Russian-speaking population from central parts of Russia. Note that I am not talking about the fly-in-fly-out workers, with whom the indigenous people have an irregular relationship, characterised by occasional confrontations as well as by a barter economy: exchange of reindeer meat, fur and fish for bread, clothing, oil, etc. but about the number of professional (state-hired) workers: constructional workers, teachers, medical and administrative personnel, who settle in the village for a prolonged period of time. According to the 2002 census, 2,318 people were registered in the village. In 2010, the permanent

population of Seyakha was 2,605<sup>28</sup>. As of January 1, 2016 the total population of the village came to 2,952 people. Of these, 2,460 (83.3%) were registered as Nenets; the rest 492 (16.7%) comprising one-third of the settled population of the village, were incomers (local statistics)<sup>29</sup>.

Note that although, administratively, all families ‘belong to’ Seyakha, the current Nenets population of Seyakha is divided between the villagers living on the line between indigenous tundra and urban societies, and nomads living on the tundra. According to the Seyakha statistics office, of the 2,952 people registered in Seyakha in 2016, 1,423 people were living permanently in the village. 1,529 people were tundra dwellers (*tundroviki*) living the traditional way of life of nomadic reindeer herders. These comprised 318 independent husbandries: 258 privately-owned (including 1094 people), and 60 employed by municipal enterprises (comprising 435 people).

## **NOMADIC REINDEER HERDING AS A WAY OF LIFE**

According to the 2010 national census, the indigenous peoples form 8.2 % of the total population of the Okrug (522,904 in 2010 and 534,104 in 2016). Of these, the Nenets are by far the largest in number. They make up 5.9 % (29,772 people) of the population, followed by Khanty with a population of 9,489 people and Selkup with a total of 1,988 people. 44% of the indigenous people of the Okrug are concentrated in Yamal District<sup>30</sup>.

In Yamal District, the indigenous people constitute more than 70% (11,235 people) of the total population<sup>31</sup>. Roughly half of the indigenous population (approx. 5,500 people) are engaged in nomadic reindeer husbandry. In contrast to forest and taiga zones, where hunting and fishing areas can be reached from the villages, reindeer herders need to move with their herds to constantly watch them. They live with their families on the tundra, in traditional tents, and move with their herds to designated pastures along migration corridors. The migration corridors may stretch from 600 to 2,000 km. In the north, however, the migration corridors are shorter and migrations are less frequent and, typically, along the banks of the rivers and lakes. The time and routes of migrations are connected to seasonal pasture needs and are more or less fixed according to the clan division of the pastures, which was formed in the 19th century, i.e. each family migrates within a particular corridor<sup>32</sup>. Nenets mobility also encompasses spiritual aspects, as the herders cross the sacral places of the spirits, which are connected to the souls of dead relatives as well as to places and spirits of the natural phenomena. All Nenets clans have their own spirit patrons (*haehae*)<sup>33</sup>. Communication with the spirits happens in sacral places, which ensures locals of the spirits' protection<sup>34</sup>.

Reindeer breeding embraces the economic, social, ecological, cultural and spiritual aspects of the Nenets, constituting "the backbone of Nenets' economy and culture", from local diet to monetary income; and it is the key aspect of the physical and cultural survival of the Nenets people<sup>35</sup>. Reindeer form the

source of indigenous peoples' food, clothing, transportation and housing. In recent years, with the market integration of *panty* (young 'velvet' reindeer antlers that are cut off in the early summer, and which are sold to China and Korea for medical purposes) and the commercialisation of the meat business, reindeer herding has also become an important source of monetary income for individual families and local entrepreneurs<sup>36</sup>.

Reindeer meat and skin also play an important role in the local barter economy, and can be exchanged for consumer goods, including bread, tea, petroleum, fuel, tobacco, etc. For instance, I was told that shift workers at Sabetta offer herders their food provisions and petrol in exchange for reindeer meat and skins.

Reindeer also define the wealth and prestige of the people and herders. Traditionally, the clan leaders are chosen from among wealthy herders, while size of herd necessary to sustain a household on Yamal is estimated at 200-250 head.<sup>37</sup> The herders therefore strive to own a sufficient number of deer to secure their families' well-being. The number of reindeer in the district has doubled over the past 40 years, mainly due to private herders. Since the 1980s, when the Soviet government abolished the law strictly limiting privately-held herds, the number of private herds in Yamal has been steadily growing. In the 1980s, 29% of the reindeer population of the district was owned by the private sector while in 2007 the private herd encompassed 82% of said population.<sup>38</sup>

## FISHING

The migration routes are also linked to hunting and fishing possibilities. Hunting polar fox, waterfowl, seal, and especially fishing, which constitutes a significant part of the diet of indigenous people, are important means of survival for the herders during their seasonal migrations.

Altogether, the Okrug has some 48,000 rivers and 300,000 lakes, including one of the biggest rivers on earth, the Ob River, which forms the Gulf of Ob – the bay of Kara Sea. Rich in fish, most of the rivers and lakes have traditionally served as fishing places for the indigenous people, with more than 70% of fish being caught in the streams of the Ob River, its tributaries and the southern part of the Gulf of Ob<sup>39</sup>. Of the 36 species of fish found in the Okrug's fresh waters, 26 are used for consumption and commercial fishing. Fish is one of the most important components of the indigenous peoples' diet. *Muxun* (whitefish), which is caught in the Bay of Ob and in the Ob river system, is also important for the barter economy and as a means of monetary income (in winter, whitefish is sold directly on the streets). It is also used as a form of "payment" (and bribery). For instance, it was not uncommon, as I observed, to pay a helicopter pilot with whitefish in order to get on board an otherwise sold-out helicopter flight.

Although the biggest concentration and diversity of fish is found in Ob Bay, two lake systems (of the regions more than 50,000 lakes) are of particular importance for subsistence fishing: Yara-to system in the south and Nei-to in the north. Yara-to is also important for commercial fishery, while most intensive

commercial fishing taken place along the eastern shores, near Novyi Port and Yaptiksale.

Commercial fishing, which emerged in the area in the 19th century and has been developing rapidly in the post-Soviet years, is one of the most important forms of employment of indigenous people. On the eastern coast, the Nenets account for roughly 100% of the fishing brigades (ESIA, Section 8.3.3.3.).

## SEDENTARY NENETS POPULATION

While the nomadic families live year-round on the tundra, the majority of sedentary Nenets live permanently in the villages. Nonetheless, they keep in close contact with their relatives in the tundra, who supply them with meat and fur throughout the year. Many still keep their own reindeer in the tundra and pay regular visits to their herds. In the summertime, many Nenets families move to the nearby tundra areas where they set up traditional summer tents (*chums*) and where they spend time hunting, fishing and picking berries and mushrooms. Like their nomadic relatives, most of the settled Nenets define their culture in terms of reindeer herding and, when in the tundra, they all claim to adhere to customs and rituals based on the religious and ethical behavioural norms of the traditional day-to-day practices.<sup>40</sup>

## **SHRINKING PASTURELAND**

As noted above, the herders' ability to adapt to changing climatic conditions throughout the year is highly dependent on their geographical mobility (maximum use of land by means of migration) and the sustainability of the pastures, and that overgrazing of the pastures as a result of increasing competition for land resources represents "the most imminent threat to the herding culture."<sup>41</sup>

In the course of years of exploration work in Yamal, tens of thousands of hectares of pasture have already been taken out of agricultural use. The ways in which oil and gas extraction are implemented and operated often ignores local needs and the existing local practices of reindeer herders' land use. The companies usually explore elevated, well-drained parts of the tundra first, with the potential for developing transport infrastructure. These areas also play a key role for the nomadic reindeer herders<sup>42</sup>. Consequently, significant areas of pasture used for the seasonal grazing of reindeer are being alienated/seized by the gas companies. Other pastures are taken out of use as they get covered by sand and road dust as a result of construction work. "The sand quarries", a local woman and an employee at the Seyakha Reindeer Enterprise explained to me, "are elevated high above the ground and, when the wind blows, the sand gets spread all over the tundra, making the pastures unsuitable for grazing." In the area around Bovanenkovo gas field alone, 170,500 hectares of pastures were destroyed, or 3.5 % of the total pastureland of the Yarsalinskii Municipal Reindeer Enterprise<sup>43</sup>.

## **LAND ALIENATION DUE TO THE YAMAL LNG PROJECT**

Hundreds of hectares of pasture have already been destroyed due to the implementation of the Yamal LNG Project. The territory currently occupied by the rotational village of Sabetta used to be a trading post for the Seyakha reindeer herders, local communities and families migrating throughout the Seyakha tundra. Today, due to the regulations, the herders are not allowed to enter the concession area within a radius of 30km<sup>2</sup>, and breaking this rule is considered 'a threat to national security' and is punishable by law. According to the local residents of Seyakha, however, the families who traditionally grazed in the area have nowhere to go. The herders therefore still roam within the concession area, and the animals are grazing on drills, approximately 15 km from Sabetta. The vegetation has been destroyed within a 10km<sup>2</sup> radius of Sabetta, people told me, and within the concession area itself there are a few dozen open pits and a network of pipelines leading from the drilling rigs to the Port of Sabetta. "When we lived near Sabetta in the 1990s," a local woman told me, "even then we thought it was bad. We migrated close to Sabetta, and what I did not like was... when you migrate there, towards the rivers, there were so many tracks, from tractors and cars, left by the workers. Everything was chewed up, and we had to go through all of this, and it was impossible to get through, especially in the autumn, when it all got filled with water. Everything got stuck, even the reindeer. Now the pastures around Sabetta have been left. No one migrates there now because they say it is not possible to live next to Sabetta, either for the herders or for the reindeer. I've heard the herders say

that the vegetation and moss have disappeared around those areas. In a radius of ten kilometres everything disappears, probably because of the poison.” “And what happened to the families who were forced out of the area?” I asked. “Nothing happened,” she told me. “They still graze there. They circulate in a radius of 10-15 km around Sabetta.”

Others pointed out that since implementation of the project, the Tambey Trading Post, which secures food and basic supplies for reindeer brigades, private herders and hunters migrating through the area on a seasonal basis, provides facilities for the preparation and processing of reindeer harvest (meat, antlers, skins), the communication and distribution of local news, and typically serves as a place for seasonal gatherings of the herders and for medical check-ups, has dramatically decreased in population and there are almost no nomadic families left there. “Before, there was a whole village in Tambey, around fifteen families, and they even wanted to build a school there,” a former Tambey herder Liova, who now lives and works in Seyakha, told me. “But now, there is a trading post, there are only three local families, otherwise mostly Russians, newcomers.” According to Yamal LNG’s Stakeholder Engagement Plan (SEP), the overall number of migrating population using the Tambey Trading Post, which is part of the inter-settlement territory, is some 600 people (120 nomadic households), of which nearly 100% are Nenets indigenous reindeer herders.<sup>44</sup>

In addition, there are several dozen sand quarries and a dense network of pipelines

leading from the drilling to the Port of Sabetta, which causes further pollution and fragmentation of the tundra. Yet, from what I was told, the crossovers (*perekhody*) for the reindeer are still few in number. In one place, the passage was made across a Nenet sacred place, which was then destroyed.

## OVERGRAZING OF THE PASTURES

One of the most salient issues facing Yamal reindeer herders is overgrazing of the available pasture, which has been caused by several factors, including the legacy of the Soviet command-and-control economy with its disregard for indigenous traditional knowledge of land and ecosystem management. It should be noted that, in the traditional cosmology of the Nenets, there was an understanding of clan territories and their borders, and that “it was necessary to take care of these”. Humankind in general was seen as a part of nature, and their activities controlled by higher powers and host spirits of certain places, which require certain behaviour of them, not only spiritually but also in economic terms. As a result, there was an aspiration to strive for a harmonious coexistence of humankind with nature. “In the practice of environmental management, the Nenets therefore held the principle of sufficiency: people caught precisely as much fish, animals, and birds as was needed for the sustenance of the family. To catch more than was needed was considered reprehensible beyond measure”<sup>45</sup>.

Collectivisation forced reindeer nomads into state-owned enterprises, where they were

expected to take orders from above rather than ensure the preservation of land and ecosystems for future generations of their people. Compulsory education and the boarding-school system, introduced by the Soviet government, likewise ignored the indigenous knowledge. As the Soviet domination lasted for seven decades, it produced several generations of Nenets who had very little traditional knowledge, and this eroded the herders' ability for self-regulation. Some pointed out that the herders today are losing their capacity for self-regulation. "People are getting greedy," a Nenets elder told me. "They want to have more reindeer to have more money."

Others, however, considered reindeer breeding to be a matter of security. Since more reindeer means more power, people wish to own a sufficient number of reindeer to secure their family's well-being. The traditional kinship structure of the Nenets is also changing. "Before, families lived together," a local woman in her fifties told me. "Today, the young people do not want to live together with their parents anymore. They all want their own chums and their own reindeer." As a result, the number of privately-owned reindeer and private herds keeps growing. The problem, however, is that there is no pastureland. "Young people want to live on the tundra, and they want to have their own reindeer," a young woman told me, "but they have nowhere to go, there are no pastures."

The dramatic shrinking of the pastureland to half its prior size since the development of the peninsula's gas reserves has greatly aggravated the issue and continues to do so. The shortage of pastures and growing competition

between the herders leads to an unsustainable use of resources, but also to increased violence in the tundra, harassment and banishment, in particular of private herders with smaller herds, from their lands. "In the tundra, the laws are harsh," a young Nenets couple, who had to move to the village after being chased out by another family, told me. "Even knives and axes are used. There are fewer pastures, more herders, and there is no law. The police do not want to get involved, so the herders force each other out." Some seek shelter with their relatives in the village and eventually move to a settled way of life. Others, still trying to co-exist in the tundra, end up roaming within the concession areas and grazing on rigs. "Well, they just live on dredging holes," an employee at the Seyakha Statistics Department told me. "What else should they do? They have nowhere to go. So they keep grazing between the drills."

While alienation of pastures reduces the herders' nomadic mobility and may diminish their resilience to climate change, it also provokes overgrazing of the pastures due to excessive use of the remaining land resources by the herders, which challenges the ecological stability of the region.

In an area where the number of reindeer already exceeds the capacity of the pastures by 200,000 (the number recommended by livestock experts is 110,000<sup>46</sup>), further alienation of pastures is highly problematic. In fact, in recent years, one of the largest known die-offs of reindeer in Yamal has taken place. In the winter of 2013-2014, the formation of a dense ice crust on the pastures as a result of sudden shifts in temperature prevented the reindeer

from extracting food from under the snow, causing one of the largest starvations of deer in the last 100 years, and taking the lives of almost 80,000 deer. A similar situation occurred in the winters of 2001-2002 and 2007-2008, when about 70,000 reindeer perished of starvation. In July 2016, the first outbreak of anthrax in 75 years took the lives of more than 2,300 reindeer, 90 people (including 53 children) were hospitalised and one child, a twelve-year-old boy, died of infection.<sup>47</sup>

While the causes of death in all cases have been linked to abnormal changes in the climate conditions (abnormally warm winters and extreme summer heat), some experts believe that what happened in the tundra is directly related to the excessive number of reindeer in Yamal along with the significant reduction in pastures. According to the director of the Institute of Plant and Animal Ecology of the Ural Branch of the Russian Academy of Sciences, Vladimir Bogdanov, cited in *Rossiiskaja Gazeta*, the massive death of reindeer in Yamal in 2014 was inevitable.<sup>48</sup> The herds were never that large before. Reaching 700,000 heads, the domestic reindeer population of Yamal is the largest in the world. At the same time, another 30-40 years ago, the local pastures were almost twice their current size, the newspaper says. Now, with more pastures being turned into construction sites, others into desert, covered by sand instead of reindeer moss, it is getting harder for the animals to get enough food. (NB: the rehabilitation of the soil destroyed by reindeer takes two to three decades, and requires that this place is not touched in the meantime). Consequently, animals leave for the winter without the necessary fat reserves. Healthy and strong reindeer tolerate tempo-

rary hunger and bad weather relatively easily, while weakened deer have very few chances.<sup>49</sup>

These issues are not addressed in the ESIA, and nor has there been any attempt to actually solve the problem jointly with the herders. Instead, the decisions are taken from the top-down by the regional administration and the gas companies, and the 'solution' is simply to remove the herders from the land, either by destroying their lands through gas exploitation or by killing the herds. Hence, after the anthrax outbreak, the regional government proposed the slaughter of 250,000 reindeer. According to the Governor of Yamal-Nenets Autonomous District, Dmitry Kobylnik, this mass slaughter is necessary because there are too many reindeer in Yamal, resulting in a shortage of fodder. Consequently, the animals are taken out to graze on prohibited areas, where the risk of infection with anthrax is high. Dmitry Kobylnik noted that the authorities "will regulate these processes, buy reindeer, process meat and ship it to consumers."<sup>50</sup> The proposed solution to kill the herd and resettle these herders, who then end up being unemployed, however, seems nothing but a kludge to cover the actual problem: the abuse of land, power and indigenous rights by the regional administration and the gas companies. What is more, the proposal was made in a complete rush, without any consultation with the herders themselves. What is also interesting, however, is that, so far, all attempts to link the epidemics to gas exploration in Yamal have been rejected. And yet, implicitly, Kobylnik does recognise that there is a link, and that alienation of pastures and overgrazing of the remaining ones (including the polluted areas with a high risk of infection) is highly problematic.

## IMPACT ON THE LOCAL ECOSYSTEM OF THE TUNDRA

The ecosystem suffers no less from the overgrazing. “Lichen functions as an ecological skeleton for Yamal. If it disappears, the permafrost below it will start to melt. Then, it is not far from an ecological catastrophe,” *Rossijskaja Gazeta* writes.<sup>51</sup> In fact, according to some locals, the peninsula is already starting to melt and is sinking. A local resident of Seyakha, Stas, explained: “They [the gas companies] are extracting the gas out of the ground, and gas is the cold. They are getting the cold out of the ground and it gets warmer. But we need the cold, the land, the lichen, and the reindeer moss needs the cold. But they think they can pull it out and fill it [the holes that are formed] with water. But then, it all just floats.”

“In places, where the gas companies are pulling the gas out of the ground,” the local people would tell me, “the land collapses and large sinkholes are formed”. “First, the ground swells like a balloon,” a local woman explained, “and then it explodes and the ground collapses.” The first such sinkhole, 60-metre diameter and 70-metre deep crater, was discovered by helicopter pilots in 2014, about 30 km from Bovanenkovo natural gas field.<sup>52</sup> Recently, another large sinkhole was discovered not far from the village of Seyakha (30-40 km). According to TASS, the explosion happened on June 28, 2017 just a few kms from one of the chums, and was reported by a nomadic family who saw the explosion.<sup>53</sup>

According to the scientists who examined the Bovanenkovo sinkhole, the hole was formed as a result of the significant increase in permafrost warming after 2012. Higher than normal temperatures allowed ice to melt beneath the frozen ground, releasing gas and resulting

in an effect similar to a popping champagne cork.<sup>54</sup> A senior researcher from the Scientific Research Center of the Arctic, Andrei Plekhanov, believes that the sinkhole is likely to be the result of a “build-up of excessive pressure” underground because of warming regional temperatures in that part of Siberia. Tests conducted by Plekhanov’s team showed unusually high concentrations of methane near the bottom of the sinkhole. The destabilisation of gas hydrates, containing huge amounts of methane gas, is believed to have caused the craters on the Yamal Peninsula.<sup>55</sup>

Methane is a potent greenhouse gas, like carbon dioxide. It damages the climate when it is released during natural gas production and distribution. If it is allowed to leak into the air before use, it absorbs the sun’s heat, warming the atmosphere, and is far more devastating to the climate because of how effectively it absorbs that heat. In the first two decades after its release, methane is 84 times more potent than carbon dioxide.<sup>56</sup> It should be noted that “while natural gas emits much less carbon dioxide (CO<sub>2</sub>) when combusted in an efficient natural gas power plant, compared with emissions from a typical new coal plant, emissions from smokestacks and tailpipes do not tell the full story. The drilling and extraction of natural gas from wells and its transportation in pipelines results in the leakage of methane, which is the primary component of natural gas and is 34 times stronger than CO<sub>2</sub> at trapping heat over a 100-year period and 86 times stronger over 20 years.”<sup>57</sup>

As the matter of fact, the majority of people I talked to in Yamal were convinced that the sinkholes are directly related to gas explora-

tion in Yamal. According to the locals, there were seven or eight sinkholes in Yamal, all in the proximity of the extraction sites, and many more earthen knobs. (NB: recently, the Russian scientists discovered 7,000 earthen knobs, or small hills of explosive nature, erupting from the Siberian Arctic<sup>58</sup>).

The existing sinkholes are filled with water, which according to the locals, only exacerbates the situation. “Because then, it all just floats,” Stas told me, and added: “If the extraction work continues, the entire peninsula will sink.” According to him, within the past few years alone, the sea level in Seyakha has increased by 1-1.5 metres and there have been no tides (supposedly as a consequence of the dredging of the bay of the Gulf of Ob, which results in a more intense inflow of salty seawater and causes erosion of the shores – such salination processes are well-known in a number of rivers in North America, Europe, and China). Others have emphasised that the riverbank at Seyakha is slowly being washed out. As a result, the front-row houses that are situated on the bank of the Se-Yakha River, as I was able to observe, are starting to slide and are now leaning heavily forward, towards the riverbank.

## **“ALL THE FISH ARE GONE!” – THREAT TO FOOD SECURITY**

During the field work in May 2016, the major concern of the local population of Yamal, from Salekhard to the northernmost parts of the Yamal Peninsula, was the massive disappearance of fish from the Ob Gulf and surrounding lakes and rivers. There were literally no fish.

A few also told me that the fish sometimes had deformities or worms in them.

It is important to note here that the eastern coast of the Yamal Peninsula near Ob Bay of Kara Sea has always been a place of valuable and rare fish species: sturgeon, nelma (white salmon), and muxun (white fish). Some of the main freshwater fishing grounds of the region are found along the eastern coast: Lakes Libkomto and Nareito, the Tirvyyakha, Vanuimueyakha, Sabetayakha, Varyakha rivers and the lower reaches of the Tambey river, with the key areas being the mouths of the Tambey, Sabetayakha and Vanuimueyakha rivers. Here, in the late autumn period, the private reindeer herders and members of indigenous *obshchina* from northern Yamal, along with the municipal enterprise Yamalskii, meet for seasonal fishing (ESIA, section 8.4.3).<sup>59</sup> “The place where Sabetta is, in the rivers, in our rivers, we usually fished,” a local woman in her mid-fifties told me. “We fished the Arctic cisco and we conserved it in barrels for the winter. There was so much fish. But three-four years ago, the fish started to disappear. And now, there are no fish.”

Four years ago, when the fish started to disappear, the governor of YNAO, Dmitry Kobylkin, ascribed it to uncontrolled catching and poaching, and he hastily banned all fishing of whitefish and white salmon<sup>60</sup>. And yet the local residents of Yamal are in no doubt as to the reason behind the disappearance of the fish. “It began when they started the dredging,” a local woman told me, “and now, all the fish are gone.” A local entrepreneur, who now runs one of the trading posts, confirmed: “There are no fish. There are too many ships in

the harbour near Sabetta. So the cargo ships sailed further and load further downstream. It affects the fishing. There is too much noise. The fish leave because of the noise." Another local elder attributed the disappearance of fish to gas pollution: "This is gas," he explained to me. "It goes into the water, and it poisons the fish eggs." Overall, although people had various perceptions and very little information of what the connection between the Yamal LNG project and the loss of fish was, they all noted the clear temporal correlation between the two: the dredging near Sabetta and the disappearance of fish.

At the same time, even in 2012, when implementation of the Yamal LNG Project had only just begun, scientists estimated the preliminary loss of aquatic biological resources to exceed 8 thousand tons<sup>61</sup>. Just one dredging at the bottom in the Gulf of Ob, they argued, causes a change in the salinity of the water, and seriously impacts the entire surrounding ecosystem. And the fact is that through the shallow-water zone of the gulf, towards the seaport, a 50-km-long and 300-metre-wide gas carrier channel is being installed. As a result, the fish have lost their original wintering places and spawning grounds.<sup>62</sup>

It is important to understand that this massive disappearance of the fish from the surrounding lakes and rivers poses a serious threat to the food security of the local population, and in particular to the nomadic families, who live off the tundra year-round and whose access to food supplies throughout the year is extremely limited. In the tundra, people live off fish, and whitefish is a particularly important part of the annual diet of the indigenous people. Accord-

ing to some locals, a family of 6-7 people needs approximately 300 kilos of fish a year to survive and, usually, the fewer reindeer a family has the more it relies on fish as food and as commodity.

A lack of fish in the lakes and rivers may also force herders to change their migration routes. "The fish disappear, so what should the herders do?" N. L. Okotetto explained to me. "People have to eat. So they are forced to move to other pastures." According to him, forced changes to migration routes may result in a loss of reindeer such as that experienced in the winter of 2013-2014.

Finally, the massive disappearance of fish is also a big problem for the fishing industry, which is a major sector of employment for sedentary fishers. According to the ESIA, indigenous people account for nearly 100% of the fishing brigades in Yamal (Section 8.3.3.). Massive fish mortality may thus lead to massive unemployment among the indigenous people, and negatively affect the social situation of the villages. "Before," a young teacher from Seyakha boarding school told me, "people could survive just on fish, but now with all the fish gone they need to seek employment in other places."

Despite these critical tendencies in the Gulf of Ob, on May 25, in a video broadcast over channel 1 of the Russian state television, Vladimir Putin personally launched the opening of year-round oil exports via the Northern Sea Route through 'The Arctic Gates' terminal<sup>63</sup>, and the first cargo vessel of Yamal oil was shipped from Novy Port. The acceleration of cargo traffic and increased risk of oil spill<sup>64</sup> significantly endangers the already fragile ecosystem of Ob Bay,

and may pose further risks to the food security of the indigenous people.

So while Russian media are busy claiming that the project has major financial benefits and is of crucial importance with regard to Russia “conquering the status as key transit route between Europe and Asia,”<sup>65</sup> the people of Yamal are worried, to say the least.

The ESIA materials fail to provide an analysis of the cumulative impact, possible accident scenarios of oil spill and weather conditions, etc. (although they do mention that by the beginning of the LNG plant operation an Oil Spill Response Plan will be developed to ensure these problems are resolved).

In an interview, the head of administration of Yamal District, A. Kugaevskii, pointed out that over the past two to three years, the people of Yamal have “experience[d] growth in the main socio-economic indicators: increases in the monetary income of the population, there are good demographic indicators.”<sup>66</sup> While it is true that the economy of the region is heavily dependent on income from oil and gas production, and the local communities “benefit from this income through the regional subsidies,”<sup>67</sup> the livelihood of the indigenous peoples in Yamal is characterised by low life expectancy (less than 10% are people of retirement age)<sup>68</sup>, while the rates of infant mortality are the highest in the country (60.2 per 1,000 live births, which is five times higher than the average for the neighbouring Nenets Autonomous Okrug). This is even more striking considering the fact that the overall population in Yamal is among the youngest in the country.<sup>69</sup>

## IMPACT ON HEALTH



Two local girls, Seyakha.

Infant death, tuberculosis, especially among children, and cancer (in particular stomach and lung cancer) are among the most critical illnesses in the area. In fact, practically everyone I talked to has lost someone to cancer, and the people were concerned at the lack of studies in the area. The local population linked the high incidence of cancer to the bad ecological situation in Yamal, due to decades of environmental pollution of the area by industrial waste, chemicals and nuclear testing. It is no secret that the Soviet government has transported persistent organic pollutants (POPs) into the tundra, along with heavy metals, and that radioactivity has come from the mining, metallurgical, chemical, nuclear, and military industries of Yekaterinburg, Chelyabinsk, Omsk, etc. The largest releases of radioactive

waste in the world over the last few decades have been recorded at sites on rivers that flow into the Ob. From 1960 and into the 1980s, the Soviet Union “dumped container barges, as well as ships and submarines containing nuclear reactors both with and without spent fuel, into the Kara Sea off of Novaya Zemlya. [...] Between 1955 and 1990 the Soviet military conducted 132 nuclear tests on Novaya Zemlya,” including atmospheric, underwater and underground tests.<sup>70</sup>

Among the factors affecting their health mentioned by the local population were the existence of the ozone hole (and hence, exposure to high UV), a high level of radiation (the close proximity to Novaya Zemlya island, where 94% of all the Soviet Union’s nuclear tests were conducted), environmental pollutants left by industrial workers in the tundra, and the impact of gas extraction work on the quality of the air and water.

While no investigation has been undertaken specifically for Yamal, tests conducted in the Russian Federation have shown that air pollution is the cause of 17% of children’s deaths and 10% of all adult deaths. Air pollution causes 41% of respiratory diseases, 16% of diseases of the endocrine system, 2.5 % of cancer<sup>71</sup>. Natural gas is a fossil fuel, and burning natural gas thus produces nitrogen oxide (NOx), which contributes to smog. Gas extraction can therefore affect local and regional air quality. According to the California Environmental Protection Agency<sup>72</sup>, some areas where drilling occurs have experienced increased concentrations of hazardous air pollutants and of two of six “criteria pollutants”, which have harmful effects not only on the environment but also

on health. Exposure to elevated levels of these air pollutants can, for instance, lead to adverse health outcomes, including respiratory symptoms, cardiovascular disease and cancer.<sup>73</sup>

## **COMPLIANCE WITH THE INDIGENOUS PEOPLES' DEVELOPMENT PLAN: COMPLAINTS FROM THE VILLAGERS**

The relationship between the companies and the indigenous people is based on the “Conceptions of Regional Politics” and the “Cooperation Agreement between the Administration of the YNAO and Oil and Gas Enterprises”. The latter, as a rule, includes socio-economic agreements with local administrations and collaboration with organisations of the indigenous peoples of the North<sup>74</sup>. However, since there is a regulatory gap concerning what has to be in those agreements (and hence, no actual institutional framework for accommodating individual agreements between the gas companies and the people), the gas companies, as a rule, unilaterally define what they compensate and how. The only room for a local agency is to negotiate compensation, as well as the details of monitoring and impact assessment, and social investments by the companies. The majority of the payment is therefore usually used for developing the infrastructure of the settlements.<sup>75</sup>

In June 2014, as part of its scheme for “improving the living conditions and quality of life of

the local population”, the Indigenous Peoples’ Council (*Konsultativny Sovet*, literally: *Advisory Council*) of YNAO approved the Indigenous Peoples’ Development Plan (IPDP) for the Yamal LNG Project. Among the measures provided in the IPDP was the construction of housing and social infrastructure facilities in Seyakha with a total area of over 18,000 m<sup>2</sup> as well as over 20,000 m<sup>2</sup> of housing stock, including the commissioning of six 3-storey residential apartment blocks, two 1-storey residential apartment blocks, a diesel power station with 5.6 MW capacity, a boiler plant with 12 MW capacity, a bakery-store, a trade/retail unit, water treatment facilities, as well as water supply and heating supply utilities (SEP, section 6.2.6; section 6.2.7. in the Russian version).

By the end of May 2016, seven of the eight 3-storey residential blocks had been finished and occupied, while the last one was under construction. The village had a diesel power station, a boiler, water treatment facilities, water and heating supply utilities, as well as a small bakery-store and a newly-built sausage plant (along with the meat processing plant, built in 2011). The village also had a newly-built hospital, a kindergarten with all modern facilities and an outdoor playground, and a boarding school with facilities for more than 500 children.

When asked about this ongoing change, the local population of Seyakha generally acknowledged that the living conditions in the village (for those living in the village) had improved. “Before, we had toilets outside with holes in the ground. Now, we have running water and sanitary units. In the apartments, we have

everything,” a local woman in her fifties told me. However, when it came down to it, many were actually dissatisfied with the houses. In fact, those indigenous families who still lived in old one- and two-family houses were not willing to move into the new houses at all. Many pointed out that the apartments did not take the needs of the indigenous population into account. For instance, the apartments have no store or dressing room for the storage of traditional clothing, food, or outdoor equipment: boots, coats, skins, ropes, rifles, etc. And yet, the majority of the settled Nenets still engage in reindeer breeding, subsistence fishing and hunting, for which traditional clothing and equipment are used. Moreover, because of the central heating system, the temperature inside the apartments cannot be regulated individually, and it is generally very hot inside the apartments during the winter. I was told that traditional clothing, which is made of reindeer skins, cannot tolerate these high temperatures and starts to rot.

Others have also complained about the extreme heat in the apartments and bad ventilation system. In an interview with one local reindeer herder, Ivan, from the northernmost part of the Peninsula, whom I happened to interview in Seyakha, he complained about “the heat” (жара) in his relatives’ apartment that he was staying in. “I get headaches,” he told me. “We, the Nenets people, like reindeer, need the cold.” Although - apart from Ivan - none of my informants linked heat and bad ventilation to health problems, studies have actually shown that the sudden change in temperatures (and in this case, the outside and inside temperatures can vary from minus 50 to an almost tropical plus 30, respectively) can in

fact have a serious effect on human health: it can exacerbate coronary heart diseases, vascular cardiac, vascular brain diseases and peripheral vascular [artery and vein] diseases, and asthma. Likewise, if the air in homes is poorly circulated or contains allergens, people may suffer from allergies, itchy eyes, headaches, dizziness or difficulty breathing<sup>76</sup>.

At a meeting held at the Local Culture House on May 25, 2016 on the ecological situation in Seyakha, the local people raised a number of serious issues regarding the new houses and current construction work in the village. These included bad insulation, bad kitchen extractor hood systems, problems with septic tanks for sewage disposal (according to the people, the septic tanks, installed outside of the houses, are neither installed nor emptied properly, which is why they produce a bad smell and float), the bad quality of the tap water, and general problems with industrial waste in the village. According to one of the participants, the tap water is often dirty and smells. Others confirmed: "The water is especially bad in the springtime, when the ice on the Seyakha river breaks up. Then, it has almost the same colour as Coca-Cola". In fact, all of the homes that I visited in Seyakha had privately installed water purification systems, used to improve the quality of the drinking water, although the water still had a particularly unpleasant taste.

Another major problem in the village was the growing amount of rubbish and industrial waste. People complained that the industrial waste is not taken out of the village completely, but is left by the industrial workers directly on the streets, or it is dumped directly on the tundra, along with the rest of

the rubbish. Despite all the promises, as of May 2016 there was still no waste recycling facilities in the village. Rubbish was picked up by trucks, transported to and piled up in the tundra: "There are piles of rubbish now," one of the local residents of Seyakha told me. "They drive it to the tundra and they just leave it there, and then the wind blows and it all scatters across the tundra. And the reindeers are eating it all, which makes their stomachs swell." Others have also pointed out that industrial waste such as nails, screws, and other sharp metal items and plastic, which are often left on the rigs, injures the animals, which then get infected and have to be slaughtered<sup>77</sup>. Some blamed the industrial workers and their indifference towards the tundra. Others, however, blamed the tundra dwellers, who "no longer know how to care for the tundra." Meanwhile the problem remains, along with a hope that the contract with a waste recycling company will be signed this year<sup>78</sup>. During the Seyakha village meeting, the Representative of the Head of Yamal District, M.M. Romanov, assured the villagers that the agreement with a waste recycling company was about to be finalised and that it would be signed this year. However, rumour has it that the construction work has already expanded the allocated budget, and there is ample experience of cases where promises like this were not kept. For instance, I was told that the people of Seyakha voted for (and were promised) the construction of brick houses but they got prefabricated three-storey cross-wall panel buildings instead.

In light of this, it is in fact highly doubtful whether the new housing facilities will take any account of those nomads who will be

forced to move to the villages as a result of the loss of their pastures. Rather, as the research shows, they are aimed at providing better living conditions for the Russian-speaking incomers and for those Nenets who already settled in the village. According to the local residential services responsible for administration of the apartments in the village, the waiting lists for the apartments are unreasonably long, and priority is usually given to the state-hired incomers. "As a rule, they are at the front of the line," a woman at the Seyakha housing unit confirmed. The nomadic families, once they are forced out of the tundra, find themselves in a less favourable position, without a home, money or skills to provide for themselves and their families in the villages. They often end up forcing themselves on their relatives, or (as I have observed) renting small rooms in a shabby hotel that has remained in the village since the Soviet times, and which is today privately owned.

ments available for the tundra people, and now there are rumours that no apartments will be given for free at all, but they only can be bought. But where will the herder get the money?" A. N. Ugrinchuk also believes that, in the future, more nomadic families will have to move to the village: "They will have nowhere to go, because of all the dredging work."

And yet, at this current time, there are not enough homes to cover the needs of those who already live in the village, and it is highly doubtful that there will be housing – not to speak of occupations or income - for those who will have to give up their nomadic life and move to the village. With the budget assigned to housing already used up, it is uncertain whether more houses will be built anytime soon. In fact, it seems that the government is already planning a bigger resettlement plan as an alternative solution to the problem. During his visit to Salekhard on May, 25 2016, a chair of the regional parliament, S. Korepanov, told the regional newspaper *Krainii Sever* that the governments of Yamal and Tyumen were trying "to improve the housing conditions of the Arctic families" by assigning 200 allotments in Kamenka region, situated 30 km from the city of Tyumen, to extended Yamal families.<sup>79</sup> (NB: the distance between the allocated area and the city of Salekhard is more than 2,000 km). It is only logical to assume that this is directed and deliberately aimed at the indigenous families, most of whom fit the category of "extended families", while most of the incomers' families do not. Since the indigenous people gain little recognition from the government, and are often seen by the regional administration as "a people in the way of progress", a permanent resettlement of

## **ADJUSTING TO A SETTLED WAY OF LIFE**

According to the Seyakha Department of Social Protection, over the past year, 10 nomadic families have moved to the village. According to A. N. Ugrinchuk at the Seyakha statistics office, a lack of housing in the village is partly the reason why herders choose to remain in the tundra, even when they lose their reindeer and their territory. "So far," she told me, "there are no nomadic families from the tundra here. Well, maybe a few, because in order to move from the tundra, you have to have an apartment. But there are no apart-

the nomadic families on an “out of sight, out of mind” principle would seem a perfect solution to the problem.

Many locals have, in fact, mentioned that, for the tundra dwellers, adjusting to a settled way of life in the village is both a challenging and a painstaking process. Involuntary sedentariisation in particular is a gross violation of the rights set out in the UNDRIP. Cases have been observed, such as in Varandei in the neighbouring Nenets Autonomous Area, where a nomadic community that had to give up its way of life due to pipeline construction through their migration corridor, lost their inherited way of life after settling down and most of the former herders had died within the space of a few years from accidents, alcohol and disease. As of today, there are no jobs or housing available in the villages, and the majority of the tundra dwellers lack both professional training and education. Some ended up as security guards or janitors or, after roaming around for several months, returned to the tundra. In Seyakha, I met up with and talked to two families who had recently moved to the village from the tundra. One (elderly) couple and their disabled grown-up son were forced to move because of the health issue. Another, younger family was forced out of the tundra, and had to move to the village with their three small children after losing 200 reindeer. Both families were living below the poverty line (although according to the local statistics, there were no families in this situation). Each family was renting a single room in a shabby building, what once was a local hostel (today, the shed is privately owned by a Nenets woman from Seyakha Municipal Enterprise), with old iron beds, and with kitchen and toilet facilities shared by all twelve

of the hostel's residents. Although the living conditions of the two families were extremely poor, the younger couple had managed to adjust to this new way of life. Natasha, a young woman in her mid-twenties, was helping to run the hostel, which paid their rent. She was also earning a little money preparing skin and doing laundry. After spending half a year in Sabetta, her husband Oleg was now working as a guard in the local kindergarten. For the elderly couple and their disabled grown-up son, life in the village (with Russia's highly bureaucratic system) seemed to have little meaning. For the past couple of months, the old man had in vain been trying to apply for a disability pension for his sick wife. And yet the existing regulations, requiring the sick wife to complete a health check in Yar-Sale (a trip which will cost around 40,000 roubles and which the couple could not afford), made it practically impossible for the couple to move the request forward. The hospital, built in the village in 2014 as part of the Yamal LNG Project IPDP, had no capacity to locate bedridden patients. In fact, all five bedridden persons living in Seyakha were living with their families and received no medical care.

## **COMPLAINTS FROM THE TUNDRA: SUPPLY OF COMMODITY GOODS AND FIREWOOD PROBLEM**

According to the Project's Stakeholder Engagement Plan (SEP), the company also promises to compensate for any unavoidable damage to the natural environment and marine ecosystem

that may be sustained as a result of the Project's activities, and to cooperate with the Municipal Administration of Yamal District on the supply of firewood, fuel, foodstuffs, equipment and machinery for the local population (SEP, Section 6.2.4).

Introduced by the soviets, the practice of supplying firewood to the tundra is well established. The firewood is usually delivered to specific firewood posts all across the tundra, from where it is picked up by the herders on sledges. Firewood is necessary to heat their tents, and is of particular importance for the herders in the northern parts of the Yamal Peninsula, whose migration routes do not cross forest territories. During the winter of 2014–2015, however, firewood was not delivered to the firewood posts. On February 15, 2015 the herders filed a complaint. According to the complaint, only 4 cartloads of firewood had been provided, all of which were brought to the same trading post, and not to the assigned firewood points. Instead, they were dropped off at one of the trading posts. "But if it is a hundred kilometres away, then you cannot go and pick it up by reindeer," an elderly herder whom I met in Seyakha told me. "As a result, families were left without firewood." According to A.Y. Soboleva, who works in the village administration, the delivery is as a rule coordinated by several parties, including the trade stations' management and the contractors. The problem, she explained, was that "the contractors were paid to deliver the firewood, and the paperwork saying that firewood was delivered was signed, but there was no firewood."

The problem of communication is still crucial in the tundra. The satellite phones provided

by Novatek were too few and they were not divided equally between the herders, with some of the families remaining only within several days' reach of a phone. As a result, medical workers do not always arrive in time for childbirth, which may result in infant mortality. Cases of children dying of pneumonia and tuberculosis are also common. As the example with the outbreak of anthrax in the area around Tarko-Sale trading post in July 2016 shows, lack of communication between the private herders and administrative centre (which has a connection to the mainland) also plays a critical role in emergency epidemic situations. It is known, for instance, that the first reindeer died on 7 July, near the mouth of the Nerosaveyakha River in the area of Lake Pisjoto. Herders travelled for several days between reindeer camps in order to report the outbreak before they reached Tarko-Sale trading post and could report the outbreak to the mainland. Veterinarian help arrived at the site more than a week later, on 16 July, and the evacuation did not begin until 25 July, which resulted in the death of more than 2,000 reindeer, plus 23 nomads were infected and a young boy died of the infection.<sup>80</sup>



Lichen is the main food for reindeer.

## **SOCIAL RESPONSIBILITY AND FREE, PRIOR, AND INFORMED CONSENT**

The UN Declaration on the Rights of Indigenous Peoples (UNDRIP) states that before taking measures that affect indigenous peoples and their territories, their Free, Prior and Informed Consent has to be obtained.<sup>81</sup> Russia is one of the few states in the world which still has not endorsed the UNDRIP, even though it has claimed in several official reports to UN bodies that informed consent is required prior to extractive industry operations. A large number of international institutions, including development banks such as the World Bank group and the European Bank for Reconstruction and Development (EBRD), have included free, prior and informed consent (FPIC) in their requirements. And, although internationally there is no exclusive definition of what FPIC entails, FPIC is best understood as a process of relationship building between an indigenous community and a company, based on mutual respect and where consent has to be renegotiated and renewed whenever the situation changes significantly. There is likewise a shared understanding that a one-time signature, by which an indigenous community effectively waives all future rights to its territory without being aware of the consequences, does not count as FPIC.<sup>82</sup>

On the Yamal LNG homepage, under the rubric of Social Responsibility, it says that the company has “obtained free, prior, and informed consent for the implementation of the Project and approval of the Indigenous Peoples’ Development Plan that was signed by all the authorised representatives of the nomadic population that lives in the area directly and indirectly affected by the Yamal LNG Project.”<sup>83</sup> It is, however, uncertain, who the representatives are, whether they were legit-

imate and whether there had been a genuine FPIC process, i. e. whether it was obtained in a culturally appropriate manner and whether it was both free and informed. My own observations, as well as the locals’ statements, point towards the opposite. For instance, during the village meeting held in Seyakha on May 25, 2016, one of the village’s incomers, a woman in her forties, raised a concern about the way the people’s consent was obtained. She said that when the company was gathering information regarding the new houses, she had filled in and signed a form, and then, when she looked on the back of the form, there was written: “I have no complaints”. “What is it I gave my consent to then?” she asked resentfully. It is also doubtful whether the company is complying with its obligation - which it states on its own homepage - to “facilitate public awareness and cooperation with the stakeholders and local communities” by holding “regular on-site workshops throughout the region, during which key business unit managers meet and converse with people from the tundra,” as it is claimed on the official homepage of the project (*ibid*). In fact, although the majority of the Seyakha residents acknowledged that district officials and the Yamal LNG’s representatives did conduct occasional hearings in the village of Seyakha, none of my informants had any recollection of the project’s representatives ever travelling to the tundra dwellers. It is also highly questionable whether the nomadic herders attend the meetings that are held in the village. According to the herder from Malygin area, who happened to get stuck in Seyakha for several months due to the weather, nomadic herders do not attend those meetings. “Even if I did,” he told me, “I probably wouldn’t understand.” It should be noted

## **WHO BENEFITS? CIVIL SOCIETY AND A LACK OF INDIGENOUS VOICE IN YAMAL**

that all of the hearings are held in Russian, while the majority of the nomadic herders are principally Nenets speaking. According to another Nenets woman who lives and works in Seyakha, the representatives of the Yamal LNG project come to the village to inform the people of the progress, regulations or laws that have been passed. “That is why I do go to the meetings,” she said. “But they often speak in their own language, kind of scientifically,” she added. “There are many things I don’t understand. The herders don’t stand a chance. So they don’t go.” “Well, in those meetings, they just put us before facts,” a local entrepreneur and a former herder, Volodya, told me. “No one asks what we think.”

In fact, the level of information in the tundra (and political participation of the nomadic people) remains extremely low and highly problematic: “Young women do not even know how they get pregnant, and there is no information in the tundra.” According to the residents of Seyakha, there were no information boards at the trading posts. When I asked a former herder, who now worked at the local fire station, how the nomadic families were informed about the implementation of the project, he laughed: “Well, through our own people, through relatives. The information spreads across the tundra faster than by television, and here and there it gets added and embellished, and at times quite exaggerated.” Because of their way of life, physical isolation from the village and lack of information in the tundra in general, many nomadic families remain physically isolated. Since the rights of the indigenous population are not fixed or protected by law, and herders have no legal rights on their lands, they are excluded from the majority of political decisions.

According to the Russian Federal Law on turnover of agricultural land,<sup>84</sup> reindeer pastures are excluded from any privatisation. Consequently, although a total of 70% of the land of the district is classified as reindeer pastures, officially all of the land is owned by the state, divided between three municipal enterprises (former *sovkhоз*): Panaevsky in the south, Yarsalinsky Unitary Enterprise which occupies the central part of the Peninsula’s western coasts, and Yamalsky Enterprise, which covers the northern part of the Peninsula, stretching from Kharasavei in the west, to Belyi Island in the north and the village of Seyakha in the east<sup>85</sup>. So even though the majority of the herders in the northern part of the peninsular are private herders, officially the municipal enterprise holds the rights to these lands. The herders are thus not eligible for any monetary compensation for the loss of their pastures.

In an interview with Russian anthropologists, the head of the indigenous *obshchina* “Kharp”, A. S. Serotetto, justified the absence of monetary compensation for the herders as follows. In Canada, he said “people were given the money, and they forgot how it was. In Canada, people drink. They do not need to work, because the money just comes. They do not think about their generation or the next. Financial investments destroy not only culture, but also the people. We came to a different conclusion – one has to be cautious with reindeer, if we give money to the herders, there’ll be no reindeer”<sup>86</sup>.

Nonetheless, the herders are given monthly subsidies, as a way of compensating them for the damage. Until recently this was 2,000

roubles. In 2016, however, the amount was raised to 3,000 roubles a month - that is 36,000 roubles a year (roughly 632 US dollars), which is half the average monthly income in Yamal (70,620 roubles, or 1,200 US dollars for 2016<sup>87</sup>), and three times lower than the minimum living wage in Russia (estimated at 9,779 roubles, or approximately 155 US dollars a month for 2017<sup>88</sup>). According to the former head of Seyakha village, N. L. Okotetto, subsidies are exactly what makes drinking possible: "I asked them what should the people do when they lose their reindeer? They told me, that they would give subsidies. And they gave and now what? People drink instead of working. The subsidies are enough for a bottle only."

At the same time, a majority of the Seyakha residents agree that monetary compensation to those nomadic families who have lost their lands and reindeer as a result of the project would help the families to settle in the villages and to have a decent life. "They could buy an apartment, or save for a pension, so that they would have a decent life," A. N. Ugrinchuk from the local statistics office told me. "Without money, people have nowhere to go, so they roam the tundra, live on rigs, and drink."

International human rights monitors such as the UN treaty bodies and the UN Special Rapporteur on the rights of indigenous peoples have written extensively on the issue of restitution and compensation for damages, both of which are stipulated i.a. by the UNDRIP. The UN Committee for the Elimination of Racial Discrimination (CERD), for instance, clearly notes in its General Recom-

mendation XXIII that when indigenous peoples "have been deprived of their lands and territories traditionally owned or otherwise inhabited or used without their free and informed consent", states should "take steps to return those lands and territories. Only when this is for factual reasons not possible, the right to restitution should be substituted by the right to just, fair and prompt compensation." The human rights experts in CERD are clearly against purely monetary compensation, as they recommend: "Such compensation should as far as possible take the form of lands and territories."

It should also be noted that the situation in Yamal is rather different from the North American model, "where dialogue has been institutionalised and there is a formalised structure of indigenous councils of elders speaking on behalf of their respective communities"<sup>89</sup>. In Russia, the legal framework is unstable; laws can be easily manipulated and even changed by those in power for their own benefit.

The current legislation does not provide space for equal dialogue between the indigenous people, gas companies and the state. The state organisations that deal with the economic and legal development of the indigenous people (such as, for instance, the Agency for the Affairs of the Indigenous People of the North of YNAO) usually cooperate with municipal state-owned enterprises, which are registered land-using entities. They help with laws, regulation, and grant applications, and they are responsible for disseminating information about activities and regulations. As a rule, they also support the

registered indigenous enterprises (*obschinas*). The indigenous enterprises (such as, for instance, indigenous obshchina “Ilibetz”<sup>90</sup>) are formed on the basis of the clan-division principle and, hence, they represent the interests of particular clans. Individual herdsmen who are not part of the clan are therefore not represented by the *obschinas*. Since most of the private herders do not belong to a registered land-using entity – municipal or private enterprise – they are not represented in the political decision-making (it should be noted that on March 24, 2016, the legislative assembly of the YNAO passed a regional law on “Reindeer herding in YNAO”, which acknowledged the category of “private reindeer husbandry”).

The individual expression of opposition to state policies is provided by indigenous organisations such as the Russian Association of Indigenous Peoples of the North (RAIPON) and its regional branch “Yamal - Potomkam!” (under the leadership of Eduard Yaungad). It should be noted that these organisations take part in the decision-making process regarding which of the territories are given to the companies, while the final decision regarding the areas are taken by a regional commission in which the native leaders are also represented. And yet civil society in Russia under President Putin has been characterised by top-down order, strengthened control and a frequent change of laws regarding non-governmental organisations (NGOs), as well as continuous harassment and expulsion of NGOs and individuals voicing opposition<sup>91</sup>. As a result, the indigenous organisations (and leaders), as well as the local administration, often find themselves under the thumb

of the state (area and regional) officials. In fact, some of my interview partners pointed out that the local administration of Seyakha does try to mingle but, when “the order comes from the region, then, you know, you have to obey.” In a society that is structured according to top-down principles, and where people are not protected by law, the indigenous people who are actually affected by the gas industries have “virtually no influence over whether or not land is designated to be exploited for hydrocarbon development.”<sup>92</sup> In Yamal, “the people do not decide anything,” N. L. Okotetto told me. “There is no law. We are not regarded as people. They decide silently and then they just tell us as a matter of fact.”

Moreover, since the economy of the district (and of the district officials) is heavily dependent on income from gas companies, critical opinions of the Project are usually downplayed and overlooked by the regional officials. Instead, the locals are “reminded” that they should be grateful to Novatek for all it has done for them, and not complain. For instance, during the village meeting in Seyakha, the representative of the regional administration, M. M. Romanov, in response to the local population’s critical views of the new houses, noted, rhetorically: “You have been given new houses. What are you dissatisfied with? You should be grateful.” As my own longstanding research in the Arctic shows, this opinion is way too common a view among the regional officials and educators all across the Russian Arctic. It imposes a feeling of indigenous peoples’ dependence on government and on industrial companies, and sustains views of the indigenous people

as backwards, inferior and powerless<sup>93</sup>.

To my question “How are the problems of the indigenous peoples and the herders solved?”, the secretary at Seyakha administration office replied: “How they are solved, as usual, they do not solve them in any way. People write to Salekhard, from there it goes to Yar-Sale, and then, they call us and tell us to fix the problem.” As a result, the problems are not solved but covered up. A manager of the trading post Nei-te, R. A. Okotetto, told me for example that when they wrote a statement about the negative effects of industrial dust and sand quarries on pastures, a commission was sent. “They came when it was raining and they saw nothing, because you cannot see it when it rains. So nothing was done about that.” According to Stas, “whether you complain or not, it doesn’t matter. Even if people are saying something, no one listens. They keep doing what they have been doing. All they [the administration] think about is filling their own pockets.”

This opinion is barely surprising. Indeed, the salaries of the team of Governor of the YNAO, Dmitry Kobylkin, do cause some bewilderment, to say the least. The deputy governor, the head of the Department of International Relations, Alexander Mazharov, earns 45.2 million roubles, which is 11 million more than he earned in 2014. The chief financier of the Okrug, Albina Svitsova, earns 41.2 million roubles. In 2015, the deputy head of the region, the head of the governor’s office, Natalya Figol, earned 34.2 million roubles. Deputy Governor for Social Affairs Tatiana Buchkova’s salary for 2015 was 32.3 million roubles. The income

of the vice-governor, Irina Sokolova, in 2015 was 27.6 million, twice her income for the previous year. And the list goes on. The record holder for raising the level of income is the deputy governor, the Head of the Department of Education, Irina Sidorova, whose income in 2015 reached 42.4 million roubles, up from 9.6 million roubles in 2014, of which 30 million is a one-time subsidy for the construction of a new home (while Sidorova already has three apartments with a total living area of 192m<sup>2</sup>, as well as office accommodation with an area of 106 “squares”<sup>94</sup>). In 2016, YNAO’s regional per capita GDP had grown to the second highest in Russia – a level more than twice as high as the capital, Moscow. Yet most of the indigenous people still find themselves at the bottom of the scale. Given the fact that the income of the majority of the Yamal population is lower than the average salary, the numbers above leave little doubt as to who is benefiting from the Yamal LNG project in Yamal.

As a result, there is very little (if any) cooperation and trust between the indigenous people and the regional administration (who, according to local opinion, “have all been bought” by the gas companies). Previous experience has shown that a lack of cooperation and trust may (and often does) result in substantial hardship for the reindeer herders, leading to broken promises and lengthy renegotiation of agreements, such as, for instance, the case of the development of Varandei oil terminal in the Bolshezemel’skaya Tundra<sup>95</sup>. In the case of the Yamal LNG Project, it has already led to broken promises: people were promised brick houses but got the panel houses instead; were promised crossovers for

reindeer to cross pipelines but got them in the wrong places; were promised waste recycling facilities but no facilities have yet been built. Moreover, the solutions proposed by the regional government so far do not seek an equal and sustainable solution to the problem. Instead, the approach being followed seems to involve simply removing the people from their territories, either by killing their reindeer or chasing them from the land.

## CONCLUSION

It is clear that the Yamal LNG's Environmental and Social Impact Assessment (ESIA) underestimated the risks that implementation of the Project and its cumulative impact could have on the local environment and its people. Already, at this stage, the pressure on the regional environment is massive, and while herds continue to grow in numbers, the lives of some individual herders have been destroyed.

So far, reindeers have been the key aspect of the physical and cultural survival of the Nenets people. Yet, as I hope to have shown in this report, implementation of the Yamal LNG Project is reducing the Nenets' ability to adapt to climate and social change. Implementation of the Project has already had some vital consequences for the indigenous people in Yamal. The increasing pressure on the tundra as a consequence of competition for land resources between the gas companies and the indigenous people, growing pollution and anthropogenic pressure, has already had a crucial impact on the local ecosystem and biodiversity of the region, affecting indigenous people's food security, economy, health,

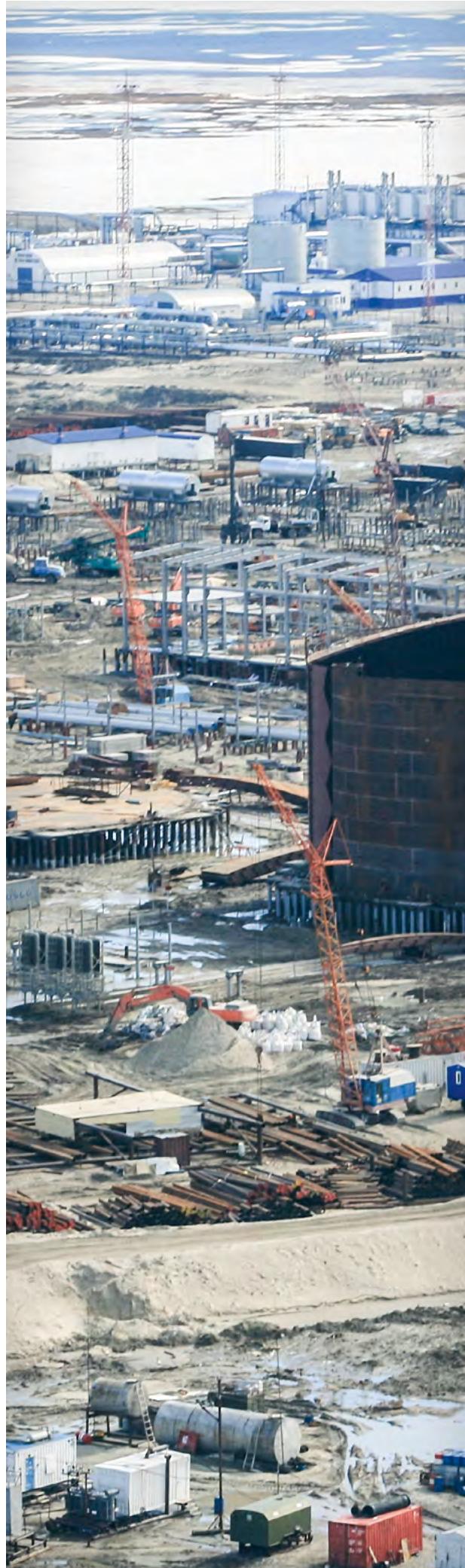
everyday practices, well-being and way of life. The spiritual environment of the Nenets and their traditional worldview are also changing.

While the regional government is still ignoring many of the concerns, and there seems to be a stunning persistence in their opinions and attitudes towards the native population, the project and the system itself, many indigenous people are worried about their future and the impact the project may have on their future. Loss of territories, disappearance of fish, pollution and erosion of tundra, implausibly high rates of cancer and mortality, and increasing violence in the tundra with no law to regulate it, in one way or another, all seem to affect each and every indigenous family in Yamal. This causes anxiety. As the fear of what might happen to the peninsula and to them grows, so does the indigenous people's suspicion of the Project.

So far, the needs of the indigenous people who are affected by the project are not being met, their rights are ignored, their voices bottled-up, and the problems themselves are 'covered up' by the regional administration. What is indeed perceived as provoking is that the majority of the decisions seem to be governed by money and personal gain, such that a cheaper solution (such as, for instance, dredging in the Gulf of Ob) is often "preferred to a sustainable and ecologically sound one."<sup>96</sup>

The nomadic families are seen by the gas companies, the state and the regional officials (and even by some of the villagers) as an impediment to Russia's industrial progress. This leads to a lack of respect and lack of dialogue between those who are in charge of the

strategic decisions and those people who are actually affected by the gas industry. Instead of benefiting from the project, the nomadic reindeer herders are subjected to forcible relocation, social injustice, harassment and violence. Banned from their lands, the nomadic families often find themselves left to the mercy of fate, without shelter, money, skills or resources. So far, the Nenets' mobility has enabled them to maintain control, along with their unique culture and language. Yet, while Novatek is preparing to expand its power and its territory (there are rumours that more pastures are going to be assigned to the project), the Nenets' mobility, and consequently their ability to sustain their cultural uniqueness and way of life, are shrinking along with their pasturelands. The indigenous people today are worried about their future. Many believe that the tundra "will eventually take what is hers." Their question, however, is whether the peninsula will withstand the pressure, and whether the people will survive along with it.



Gas and Oil production  
at Mys Kamennyi



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