Arctic Reindeer Herding and Ecology: When Economy is Impossible without Safeguarding Ethnocultural Distinctiveness

A. Gorbunova 1, M. Zadorin 2, N. Kuprikov 3, I. Saveliev 4

1 Association of Indigenous Small-Numbered Peoples of the North, Siberia and Far East of the Russian Federation, 92 Vernadsky Prospekt, sector B, office 260, Moscow, Russia, 119571
2 Department of International Law and Comparative Legal Studies, Higher School of Economics, Management and Law, Northern (Arctic) Federal University named after M.V. Lomonosov, 58 Lomonosov Prospekt, room 406, Arkhangelsk, Russia, 163000
3 Scientific and Information Center “Polar Initiative”, 1 Volokolamskoye Shosse, Moscow, Russia, 125080, Moscow Aviation Institute (National Research University), 4-G Volokolamskoye Shosse, Moscow
4 Department of International Law and Comparative Legal Studies, Higher School of Economics, Management and Law, Northern (Arctic) Federal University named after M.V. Lomonosov, 58 Lomonosov Prospekt, room 406, Arkhangelsk, Russia, 163000

E-mail: m.zadorin@narfu.ru

Abstract. The paper considers environmental issues related to the field of agriculture in the Russian Arctic exemplified by the research into statutory regulation of economic, cultural and ecological aspects of reindeer herding by a small-numbered indigenous people called the Nenets. Using the example of the Nenets Autonomous Area, the authors provide insight into the measures implemented to control the deer-feeding capacity of pastures for the purposes of sustainable use. The article gives an estimate as to the promptness of actions taken to prevent the loss of cattle across the Yamal Peninsula due to the spread of Siberian plague. While giving prominence to the successful regional practices of Yakutia, the authors also emphasize the necessity for the introduction of amendments to the Russian legislation regarding the procedure of ethnological expert examination to the extent that it shall include the opinions given by the officials of organizations representing the interests of small-numbered indigenous peoples inhabiting the territory in question. A legislative gap in the above-mentioned field results in emergency measures replacing preventive measures in the face of potential anthropogenic disasters similar to the one which took place in Norilsk in the summer of 2020. One of the authors was born in the Kanin tundra of the Nenets Autonomous Area and represents an indigenous and nomadic Nenets people.

1. Introduction
In accordance with the Russian Government Decree as of February 13, 2019, No. 207-r “On the Spatial Development of the Russian Federation until 2025”, reindeer herding being a branch of agriculture and a specialized economic field in the Nenets, Yamalo-Nenets and Chukotka Autonomous Areas, has been
preserved in Russia as part of the unique nomadic culture of the Arctic peoples, their lifestyle and traditional economy.

The Nenets practice reindeer herding in the locations where they originally (traditionally) lived in the Yamalo-Nenets and Nenets Autonomous Areas, Taymyr Dolgano-Nenets Municipal District of the Krasnoyarsk Region, the Komi Republic, and the Arkhangelsk Region. All of these regions belong to the Arctic zone in whole or in part. For instance, around 18 thousand Nenets are leading a traditional nomadic way of life in the Yamalo-Nenets Autonomous Area. According to the data of the Russian Census in 2010, the total number of Nenets is 45 thousand people. The Constitution guarantees them a special legal status in Russia, namely that of a small-numbered indigenous people. Nenets’ entire life is related to reindeer, which are not only a source of food: clothes and canvases for traditional portable houses named chums are made of reindeer hides. It is therefore not surprising that half of the reindeer population in world belongs to the Nenets husbandry. Moreover, modern research shows that Arctic reindeer herding can be an effective environment management strategy used for preservation of open tundra landscapes in the conditions of rapid climate change.

Modern understanding of sustainable social development implies growth in three dimensions: society, economy and ecology. As far as the Nenets people are concerned, their social and economic well-being, if not their security as an ethnic group altogether, almost completely depends on ecology. Without pastures serving as reindeer food supply and without clean water bodies, reindeer herding culture defining nomadic lifestyle of the Nenets will disappear together with the people and blend into the globalization map of the contemporary world. Reindeer herding is an ethno-forming industry for the Nenets people [2].

This is why increasing anthropogenic impact on the ecosystem is perceived directly by the Nenets reindeer herders demanding immediate action based upon modern approaches in the fields of state policy and innovative technologies with due regard to the traditional knowledge accumulated in the ethnocultural communities.

2. Economic Appraisal of Current Situation in the Reindeer Herding Industry of the Russian Arctic Regions

Around 800 people, mostly those having nomadic and semi-nomadic lifestyle, are engaged in reindeer herding in the Nenets Autonomous Area. As of January 01, 2018, reindeer population amounts to 177 thousand cattle, including 149.7 thousand owned by agricultural organizations, peasant (farm) households and sole proprietorships.

The population has increased by almost 30 thousand cattle over the last ten years as evidenced by the data obtained from the Socioeconomic Development Strategy of the Nenets Autonomous Area until 2013 (approved by the Decree of the Regional Council of Deputies as of November 07, 2019, No. 256-sd).

As of January 01, 2019, total reindeer population in the Taymyr Dolgano-Nenets Municipal District of the Krasnoyarsk Region amounts to 127,507 cattle. Around 500 families in the region leading a nomadic lifestyle are involved in reindeer herding.

The reindeer population amounts to approximately 800 thousand cattle in the Yamalo-Nenets Autonomous Area. The major feature of reindeer herding in the Yamalo-Nenets Autonomous Area is that 53% of the total reindeer population is owned by the people, and only 47% are owned by agricultural companies. In Tazovsky (81.1%), Yamalsky (43.3%), and Priuralsky (70%) districts reindeer are predominantly owned by the people.

Subject to the Decree of the Komi Republic Government as of December 24, 2010, No. 469, regarding the Regional Reindeer Population Planning Scheme, different types of reindeer husbandries combined comprised more than 89.6 thousand cattle, of which 68.6 thousand were in possession of agricultural organizations, 3.4 thousand belonged to the peasant (farm) households, and 17.6 thousand were owned by private households.
Notwithstanding the above, among the main problems the industry faces in its development are non-availability of a uniform federal standard regulating the field of reindeer herding (i.e. a federal law) [3] and the existing system of disorganized state-owned reindeer farms [4].

Furthermore, the specific nature of food resources (natural forage growing in the Arctic latitudes) suggests that uncontrolled increase in population along with apparent reduction of reindeer pastures might result in degradation of the latter, complication of epidemiological situation as well as other negative consequences. In this regard, regions carry out geobotanical studies of reindeer pastures together with activities aimed at controlling the deer-feeding capacity.

In accordance with the Decree No. 268-p adopted by the Nenets Autonomous Area Government on October 04, 2019, the region shall annually estimate the efficiency of reindeer pastures use based upon the performance of reindeer husbandries during the year.

Estimation of efficiency for the use of reindeer pastures shall apply to each reindeer husbandry by means of examining the following documents:
- materials of geobotanical studies carried out on the territories of reindeer pastures;
- interfarm land management projects for the reindeer pastures;
- acts confirming reindeer count as of January 01 and July 01 of the reporting period;
- acts confirming reindeer fawning count as of July 01 of the reporting period;
- reports on reindeer population movement, both across the husbandry in general (consolidated) and broken down by each reindeer herding brigade (of a peasant (farm) household or a reindeer camp) as of July 01 of the reporting period;
- records of financial and economic performance of agricultural manufacturers for the preceding year.

The estimation in question is conducted in order to comply with the permissible levels of impact on the reindeer pastures for the purposes of their efficient use.

Results obtained from the estimation of efficiency for the use of reindeer pastures form a report comprising the conclusions based upon the estimation results. Reindeer husbandries are provided with recommendations regarding the issues of efficient reindeer pastures use and reindeer population regulation. The report also points out any violations (if found) of the guidelines regulating reindeer feeding, handling, breeding and guarding processes, as well as any non-compliances with recommendations regarding permissible reindeer population size, determined by the interfarm land management project for the reindeer pasture.

3. Agriculture and Climate Change: Global Agenda

While conducting research into the ecological problems in the field of agriculture, it is impossible to ignore such global issues as climate change.

Intergovernmental Panel on Climate Change (IPCC) established by the World Meteorological Organization and the United Nations Environment Programme (UNEP) published its Fifth Assessment Report called *Climate Change 2013: The Physical Science Basis* noting that certain alarming evidence indicate that excess of threshold values leading to irreversible changes in ecosystems and climate system of the planet has already happened. Due to the warming and droughts, the situation in the ecosystems of the Amazonian tropical rainforests and the Arctic tundra has already reached its critical mass.

However, it is of paramount importance that the issues of climate change are addressed through the lens of well-considered decisions of the global community and not from the political standpoint of particular actors. Pursuant thereto, it is impossible to say for certain whether the ecological problems touched upon in the Report (outbreak of Siberian plague in the Yamal Peninsula, diesel oil spill at Norilsk thermal power plant in the summer of 2020) are a direct consequence of the climate change, since they require a separate comprehensive research on the part of expert community.

In July 2016, an outbreak of a zoonotic disease known as Siberian plague started in the Yamalsky district of the Yamalo-Nenets Autonomous Area. In accordance with the data provided by the Federal Service for Veterinary and Phytosanitary Surveillance, the total number of reindeer infected with Siberian plague during the epizootic outbreak (July 16 - August 03) in the Yamal Peninsula amounted
to 2,650 animals (according to other sources – 2,657 [3]), 2,350 of which died and 300 were subject to forced slaughter.

Siberian plague is an extremely dangerous zoonotic infection, which *Bacillus anthracis* spores can stay alive in the soil for a long time threatening with recurrent outbursts on the exposed territories for many decades to come. The main source of infection for a human being is a sick animal or its carcass, while livestock products, soil and other natural objects serve as transfer factors.

June and July 2016 were marked with anomalous day temperatures reaching 29-34°C, which resulted in deeper seasonal thawing of permafrost and in transfer of anthrax bacteria from the underground layers to the soil surface with intrapermafrost water. Increased number of bloodsucking insects along with the negative impact of heat on the reindeer immune system against the background of ceased vaccination presumably were the cause for mass infection of reindeer with Siberian plague.

Prompt management of necessary works in the Yamalo-Nenets Autonomous Area made it possible to contain the largest focus of Siberian plague in the last 30 years. Eventually, a set of measures was developed with the purpose of preventing Siberian plague outbreaks in the future.

It shall be additionally noted that a recent comprehensive research into the biotic factor in the reindeer population inhabiting several Arctic zone regions has shown a significant increase in the number of opportunistic pathogens, which might be also related to the ration-biomass balance of pastures and epizootic conditions in the herd [6] directly linked to the climate change.

4. Ethnological Expert Examination in the Russian Arctic: Delays are Unacceptable

In order to protect the original living environment, traditional lifestyle, economic activities and folk crafts of Russian small-numbered indigenous peoples, the Federal Law of the Russian Federation No. 82-FZ “On guarantees of the rights of indigenous small-numbered peoples of the Russian Federation” as of April 30, 1999, provides for the right of these peoples and their associations to participate in ecological and ethnological expert examinations of federal and regional state programs for natural resources exploration and environmental protection in the locations where these peoples traditionally dwell and execute their economic activities. However, another Russian Federal Law No. 174-FZ as of November 23, 1995, “On ecological expert examination” does not stipulate for admission of other persons, including representatives of Russian small-numbered indigenous peoples (except experts), to the state ecological expert examination panels.

This is why it is necessary to amend Russian legislation with the following provision: in case business or other activities (subject to ecological expert examination) are intended to be carried out in the locations where small-numbered indigenous peoples traditionally dwell and execute their economic activities, materials of environmental impact assessment shall include an opinion passed by the unions (associations) of small-numbered indigenous peoples or by their representatives’ councils in regional and municipal executive bodies.

In case the intended business or other activities are to be developed, negative consequences caused by technogenic impact on the environment along with associated social and other consequences can be reduced by means of conducting ecological expert examinations, which shall be determined as mandatory in the federal legislation. The overriding priority of such tool is to minimize the negative impact of intended business activities on the indigenous living environment and to possibly elaborate alternative ways of attaining the goals of the intended activities in question (e.g. reindeer fawning grounds on the way, etc.). Ethnological expert examination is defined in the above-mentioned federal law on guarantees of the rights of indigenous peoples as follows: Ethnological expert examination is a scientific research into the influence of changes in the original living environment of indigenous small-numbered peoples of the Russian Federation and sociocultural situation on the development of an ethnic group.

Russian President Vladimir Putin instructed the Government to cooperate with the regional executive authorities on the issue of statutorization of the ethnological expert examination procedure and to submit their proposals on the matter (Clause 3 of the Russian President’s List of Instructions following the meeting of the Presidential Council for Interethnic Relations as of December 04, 2016, No. Pr-2338).
At the moment, the Federal Agency for Ethnic Affairs, being a responsible executive authority, is developing a project of a statutory instrument regulating the ethnological expert examination procedure. Nevertheless, a number of Russian regions have already gained successful experience in conducting ethnological expert examination. For instance, the regulation on ethnological expert examination is adopted by the Sakha Republic (Yakutia) Law as of April 14, 2010, 820-Z No.537-IV “On ethnological expert examination in the locations of original dwelling and traditional economic activities of indigenous small-numbered peoples of the Northern Sakha Republic (Yakutia)”. According to some researchers, however, the issue of corporate responsibility and proper compensations to the indigenous communities has not been completely resolved yet.

Ethnological expert examination is also important in case of emergencies. Specifically, the situation with the spill of about 20 thousand tons of diesel oil due to a failure of a fuel storage tank at a thermal power plant owned by Norilsk-Taymyr Energy Company on May 29, 2020, was mentioned in the public statement made by the Russian Association of Indigenous Peoples of the North (RAIPON) on June 07, 2020. According to the information available as of the beginning of June 2020, there were not any reindeer husbandries in the Taymyr Peninsula which suffered or reported direct damage. However, due to the delayed environmental impact, particularly that on the conditions of reindeer herding for the local communities as well as on the rivers and water bodies used in traditional industries, it is necessary to conduct an ethnological expert examination in order to estimate the consequences of the spill for the original living environment of indigenous small-numbered peoples, and to determine the compensatory measures aimed at reduction of negative influence on the traditional lifestyle and economic activities of these peoples.

5. Conclusion
Having regard to the above, it seems essential to take certain measures in order to underpin Russia’s economic policy in the Arctic with consideration for the distinctive features of the region:
- to adopt a federal law on reindeer herding along with federal subordinate legislation defining common methodology for the estimation of efficiency for the use of reindeer pastures with due regard to the existing experience accumulated in the regions;
- to adopt a federal law on ethnological expert examination, or amendments to the Federal Law No. 82-FZ on guarantees of the rights of indigenous peoples in order to ensure consideration of the opinions given by the communities or associations of indigenous peoples within the set of materials of environmental impact assessment;
- in reliance upon Russia’s international experience and its commitment to the global climate agenda, to adopt immediate measures for the development of a nationwide action plan containing guidelines to control the thawing of permafrost and to tackle the threats of man-made disasters in the future.

References
[1] Verma M et al 2020 Can reindeer husbandry management slow down the shrubification of the Arctic? *Journal of Environmental Management* **267** 110636
[2] Yaptik E S 2019 Quality of life of the Nenets people (an inside view of the culture) *Bulletin of Ugric Studies* **9** (1) 153–165 (In Russian)
[3] Ivanov V A 2015 State and trends of reindeer breeding in the arctic region of Russia *Regional Research of Russia* **5** (2) 122–127
[4] Konstantinov Y et al “Uncontrolled sovkhoism”: administering reindeer husbandry in the Russian far north (Kola Peninsula) *Acta Borealia* **35** (2) 95–114
[5] Selyaninov Yu O 2018 Phenotypic, biochemical and molecular analysis of Bacillus anthracis strains isolated during the outbreaks of anthrax in the Russian Federation, 2014-2016 (Review) *Sel’skohozyaistvennaya Biologiya* **53** (2) 404–413 (In Russian)
[6] Popova A Y et al 2016 Outbreak of Anthrax in the Yamalo-Nenets Autonomous District in 2016, Epidemiological Peculiarities *Problems of Particularly Dangerous Infections* **4** 42–46 (In
[7] Ilina L A et al 2018 Comparative analysis of rumen bacterial community of young and adult rangifer tarandus reindeers from Arctic regions of Russia in the summer-autumn period Sel′skokhozyaistvennaya Biologiya 53 (2) 355–363 (In Russian)

[8] Gassiy V 2019 Protecting indigenous rights from mining companies the case of ethnological expertise in Yakutia Sibirica 18 (3) 92–108