

Northern Domestic Reindeer Husbandry of the Republic of Sakha (Yakutia): Retrospective Analysis and Development Trends

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Abstract

Northern domestic reindeer husbandry of the Republic of Sakha (Yakutia) is concentrated in 21 ulus (nomad camp) out of 35, is the basis of the way of life, economy, culture, and employment of the indigenous small-numbered peoples of the North, and creates the socio-economic profile of the Northern settlements. Reindeer husbandry also serves a locomotive for the development of hunting, fishing, arts and crafts, the collection of wild plants, as well as is a consolidating factor of the Northern peoples.

In terms to the industry specifics, in the course of the annual production cycle, reindeer husbandry covers large areas and performs an important state function to ensure employment of the population of the North and the development of the vast empty territories of the country. Out of the 196 million hectares of reindeer pastures identified in the territory of Yakutia, 66 million hectares meet the requirements of reindeer farms, of which possession of 37 million hectares is delivered to reindeer farms, which include natural pastures of the tundra, forest tundra, and Northern taiga zones.

As of January 1, 2017, all categories of farms in the Republic of Sakha (Yakutia) contain 156,814 heads of Northern domesticated reindeer of the Even, Evenk, and Chukotsk (hargin) breeds. The industry includes 110 reindeer farms, which employ 1,792 reindeer herders and chum-keepers (employees performing economic activities in chums; chum is the reindeer skin tent). To date, the following breeding farms are enrolled in the State breeding register of the Russian Federation Ministry of Agriculture: JSC ISNPN “Khatystyr” of Aldansky ulus – pedigree breeding farm involved in breeding of Evenk reindeer breed, MUE (Municipal Unitary Enterprise) “Oleneksky” of Olenek ulus – pedigree breeding farm dealing with breeding of Evenk reindeer breed, MUE “Primorsky” and MUE “Borogonsky” of Bulunsky ulus – pedigree breeding farm for the breeding of the Even reindeer breed.

The article provides information on the state of domestic reindeer husbandry of the Republic of Sakha (Yakutia) for the period from 1986 to 2017, as well as the analysis results and evaluation of the development potential of domestic reindeer husbandry of the Republic of Sakha (Yakutia). The authors have developed scientifically grounded proposals aimed at achieving strategic goals and objectives of long-term socio-economic development of the Northern reindeer husbandry of the Republic of Sakha (Yakutia).

Keywords: actual accretion of reindeer fawns, breed, herd, indigenous communities, Northern domestic reindeer, servicing bull, she-deer, viability of adult livestock.

INTRODUCTION

The development of the Northern domestic reindeer husbandry in the Yakut ASSR (Autonomous Soviet Socialist Republic) was the most sustainable and efficient during the years from 1986 to 1992. Over these years, the need of the national economy in the sled reindeer husbandry has significantly decreased, and reindeer husbandry started developing towards specialization of meat production [1].

MATERIALS AND METHODS

Research methods involve the analysis of statistical data, reports, information and analytical systems and databases of the Republic of Sakha (Yakutia) as well as other sources of information, including Strategy of socio-economic development of the Republic of Sakha (Yakutia) for the period up to 2030 with the definition of the target vision up to 2050.

RESULTS AND DISCUSSION

At the beginning of 1986, in 52 farms of the Republic, the number of reindeer amounted to 369.5 thousand heads, including she-deer (49.9%). Reindeer herding teams involved more than 2,000 reindeer herders (Table 1). Preservation of the adult reindeer population in the Republic in 1990 amounted to 89.1%, while in 1991 it reached 89.9%. Actual accretion of fawns in 1990 amounted to 63%, while in 1992 it decreased to 57%, nonproductive losses of reindeer in 1990 amounted to 31,858 heads, while in 1991 – to 32,067 reindeer. This year was characterized by maximum annual reindeer meat production which amounted to 5.0 thousand tons of reindeer meat.

At the end of the 80-s, the training of agricultural specialists with secondary and higher education for the Far North regions, including those among the indigenous small-numbered peoples of the North, was significantly improved. In 1986, the

Yakut Agricultural Institute was established on the basis of the agricultural faculty of the Yakut State University. This was due to the serious economic and technological policy pursued by the Soviet Union in relation to the development of the Northern territories, agricultural and fishery sectors, and especially reindeer husbandry [2].

The state has assumed the costs of capital construction, acquisition of technical equipment, maintenance of social infrastructure of settlements, organization and maintenance of production areas of fishermen and nomadic reindeer herding teams. Also, payment and material incentives' system of reindeer herders was harmonized, while the prestige of reindeer herders and the industry as a whole was greatly raised. At the same time, great efforts have been made to solve the problems of eradicating the nomadic lifestyle of population [3].

In the following decade, from 1994 to 2003, large reindeer farms were denationalized and fixed assets and the property of large state farms were distributed to the shares of state farm workers. Thus, at the beginning of 1994, 170 indigenous communities were formed in the Northern regions of the Republic on the basis of the former reindeer-breeding state farms. Indigenous communities, as a distinctive form of traditional nature and economy management, were formed to the benefit of preserving and developing the way of life of the small indigenous peoples of the North, but in the market conditions turned out to be unsuitable and unviable [4]. Thus, for 1995, in the Republic, 57.5 thousand heads of offsprings were obtained, at the same time nonproductive losses of reindeer amounted to 60.3 thousand heads that had resulted in decrease of meat production down to 3.4 thousand tons (Figure 1).

As of January 1, 1996, there were only 96 indigenous communities, 15 state unitary enterprises, 14 collective farms, 4 subsidiary farms, one agricultural firm, and one experimental

production farm. Sharp reduction of the reindeer-head resulted in a fact that as of 01.01.1996, the absolute reduction in the number of reindeer in comparison with 1990 was 121252 thousand heads, which was about 33% of the total reindeer population. During this time, the reduction of reindeer in public farms amounted to 187,430 heads (58%), while the number of reindeer owned by the population and indigenous communities had increased at the expense of their ownership by 66,797 heads and made up 110,910 animals.

Reindeer husbandry begins to lose its commercial importance, which adversely affects the financial state of economic entities engaged in reindeer husbandry; the profitability of the industry is reduced, thereby reducing the motivation for the work of industry workers [5].

In this regard, since 1995, the Government of the Republic of Sakha (Yakutia) has adopted a number of Laws and Regulations aimed at preserving the industry and improving its provision.

In 2002, in order to stabilize the industry, the government of the Republic has developed the regulatory framework and implemented the transition to program-target management methods. The "Presidential program of socio-economic development of the village of the Republic of Sakha (Yakutia) for 2002-2006" was adopted, according to which the financing of reindeer husbandry had significantly increased.

Besides, the Resolution "On remuneration and material incentives for workers employed in reindeer husbandry" was adopted on October 24, 2002, No. 536 [7].

The implementation of Resolution No. 536 and the organizational and economic measures taken on its basis have made positive changes. For the first time over 12 years, the number of reindeer in the Republic increased from 138,914 heads in 2003 to 144,449 heads in 2004. Also, all target indicators have improved, namely, meat sales in all categories of farms has increased from 3,620 up to 4,106 quintals, viability of adult livestock has increased from 71 to 77%, while actual accretion of fawns has increased from 48 to 58%.

Since 2003 the Institute of Advanced Studies at Yakut State Agricultural Academy began to conduct special courses for brigade leader of the reindeer herds, reindeer husbandry specialists, and heads of ulus departments of agriculture, and since 2015 activity has started on organizing field training courses.

Due to the measures taken, in 2010, the number of reindeer in all categories of farms increased to 200,825 heads, the viability of adult livestock reached 83.7%, actual accretion of fawns amounted to 57%, nonproductive losses amounted to 29,389 reindeer, sold meat amounted to 14,483 quintals in live weight. The pastoral teams employed 2,157 reindeer herders; at that the average load per the reindeer herder was 84 reindeer (Figure 2 and 3).

Table 1. Dynamics of reindeer population in all categories of agricultural enterprises of the Republic of Sakha (Yakutia) since the beginning of 1986 through 2017

Years	All categories of agricultural enterprises	Including			
		Agricultural enterprises	Indigenous communities, peasant farms	Subsidiary farming	Private subsidiary farming
1980	384,523	345,601	-	38,000	
1981	380,028	332,211	-	2,829	37,998
1982	371,814	329,106	-	2,433	40,271
1983	359,162	319,200	-	3,299	36,663
1984	357,368	317,180	-	3,315	36,873
1985	359,591	319,300	-	3,681	36,610
1986	369,538	329,067	-	3,731	36,740
1987	377,866	335,126	-	3,686	39,054
1988	373,872	332,119	-	3,586	38,162
1989	375,938	331,944	-	3,643	40,351
1990	368,102	323,189	-	3,069	41,044
1991	361,556	317,356	-	2,908	41,292
1992	350,187	303,029	-	2,648	43,730
1993	342,888	291,862	1,724	2,336	47,440
1994	334,272	208,375	74,556	2,636	48,705
1995	298,705	165,352	84,276	2,229	46,672
1996	246,850	135,759	67,835	784	42,291
1997	215,764	102,577	70,860	828	41,397
1998	196,367	158,738	64,025	913	37,629
1999	177,141	145,589	59,340	948	31,552
2000	165,070	133,860	39,871	1,133	31,210
2001	156,237	127,022	40,885	887	29,215
2002	141,540	115,633	39,975	861	25,907
2003	138,914	114,450	56,813	742	24,464
2004	144,449	123,018	56,858	709	21,431
2005	141,873	122,389	56,813	329	19,484
2006	153,731	132,866	69,104	171	20,865
2007	168,918	144,696	102,033	415	23,668
2008	181,673	157,343	93,402	433	24,330
2009	188,921	167,125	86,442	152	22,681
2010	200,825	181,327	89,050	720	19,689
2011	200,280	180,395	45,531	148	20,033
2012	194,903	174,188	52,729	270	20,280
2013	191,070	169,766	50,503	1,958	17,952
2014	177,431	161,974	-	-	-
2015	165,270	152,738	21,018	-	-
2016	156,011	145,409	-	-	-
2017	156,835	150,185	-	-	-

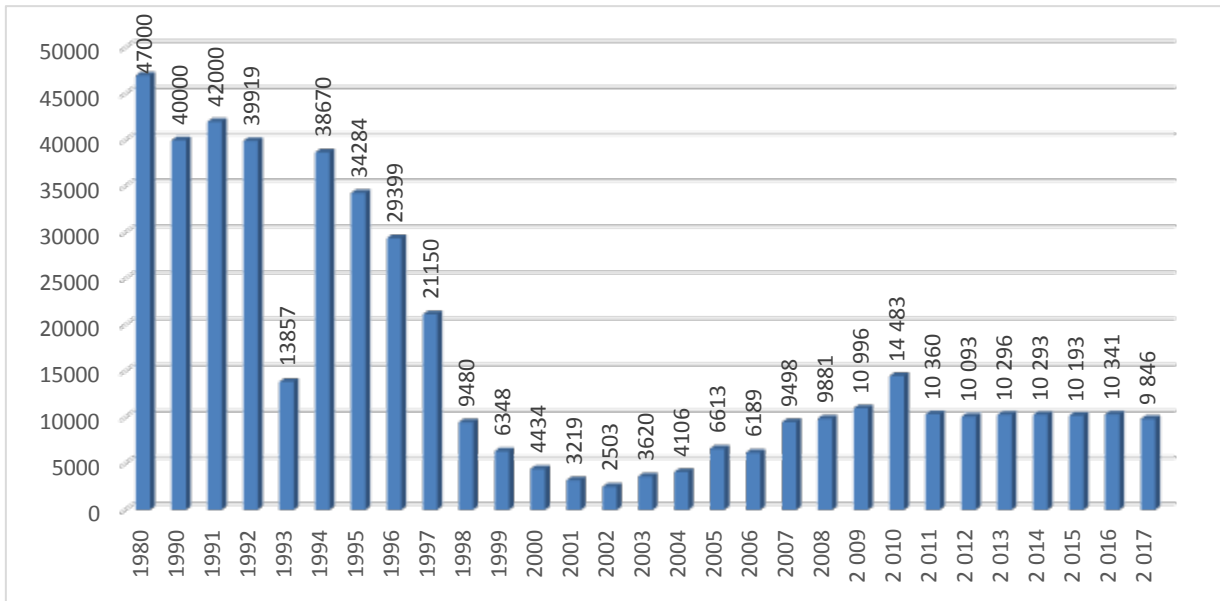


Figure 1. Dynamics of meat sales at the beginning of the year, quintals.

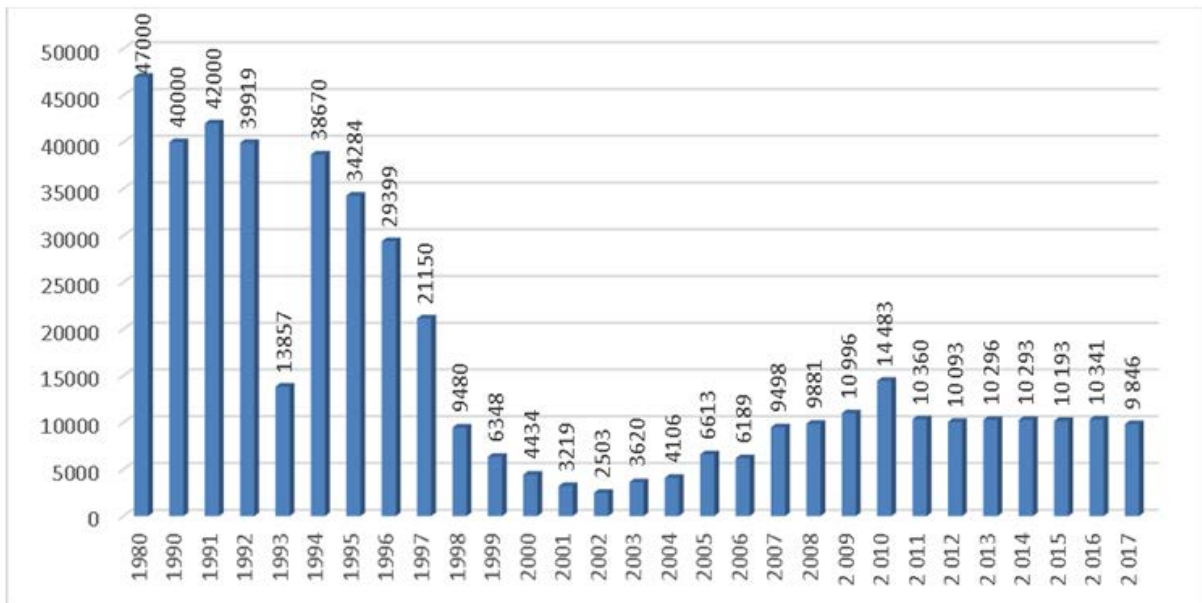


Figure 2. The dynamics of the adult livestock viability, %.

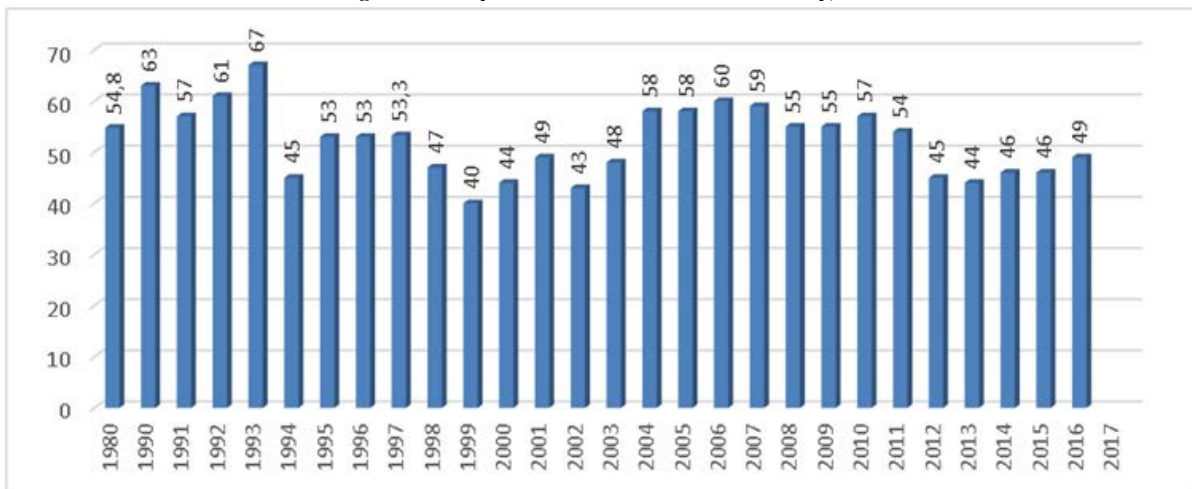


Figure 3. The dynamics of actual accretion of fawns at the beginning of the year.

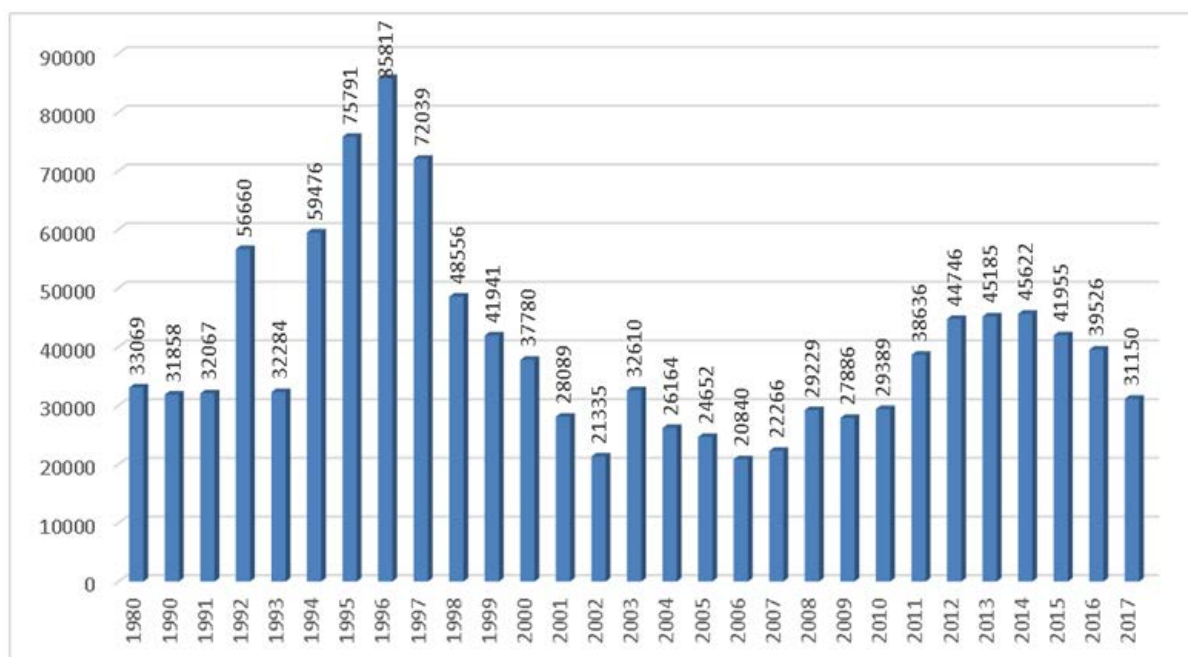


Figure 4. Dynamics of nonproductive losses of reindeer on an annual basis.

Since 2012, the general business performance indicators of reindeer husbandry of the Republic reduced. The main reasons for that were mass losses (split off reindeer from the main herd), noncompliance with the traditional reindeer grazing and maintenance technology, the lack of experienced reindeer herders and specialists of zootechnical and veterinary service working in reindeer herds, as well as the increase in the number of predatory animals. By 2015, the reindeer population in all categories of farms amounted to 165,270 heads.

At the beginning of 2017, the nonproductive losses of reindeer in the Republic still remained high, which amounted to 31,150 heads including damage caused by wolves – 11,691 heads, death losses – 5,090 heads, and other losses – 14,369 heads. The viability of adult livestock was 79.2% that showed insufficient organization of work in reindeer herding teams and insufficient efforts in combating wolves (dispersal of domestic reindeer). The number of wolves in the country is increasing, despite the annual shooting of these animals (Figure 4).

The acute problem is the relationship of domestic and wild reindeer which split off from the main herd, and get driven by wild reindeer. Domestic reindeer constitute the bulk of the increase in populations of wild reindeer, and in populations of wild reindeer, they are becoming leading animals. In this regard, there are numerous overlays of herd routes and migrations of wild reindeer. Therefore, there is a definite need to study the regime and system of rational exploitation of wild reindeer populations [6].

To determine the level of state support to reindeer husbandry of the Republic under the state contract, FSBIS (federal state budgetary scientific institution) Yakut Scientific Research Institute of Agriculture has performed in 2015 research entitled "Development and improvement of the techniques for compiling flow process chart, and the calculation of the standard costs of herd maintenance of reindeer of the Republic of Sakha (Yakutia)". The technique for compiling a flow process chart is intended for standard herds and for farms that do not meet the size of standard herds. The calculation of the normative costs of reindeer herd maintenance is drawn up based on actual reporting data of reindeer husbandry farms located in reindeer breeding areas. The staff number of reindeer herders per one herd is determined as at least 8 staffing positions (1 foreman of reindeer breeders, 1 chum-

keeper, 1 veterinary herder, and 5 reindeer herders). The herd turnover and structure are determined taking into account the number of reindeer, the load norms per 1 reindeer herder, and the annual demand for meat for self-consumption.

The development directions of Northern domestic reindeer husbandry in the Republic of Sakha (Yakutia) are as follows:

1) *Preservation of the traditional domestic reindeer husbandry* on the basis of the traditional nomadic way of life of indigenous small-numbered peoples of the North, preservation of the native habitat, and cultural values. Historically, domestic reindeer husbandry, from the viewpoint of the general policy of the state, has the right to further existence, since the technology of the XVII-XVIII centuries cannot be competitive in today's market conditions; thus, this direction of domestic reindeer husbandry must be supported by the state.

2) *Developing large-scale commercial reindeer husbandry* that requires restoring the population of reindeer and stabilizing the industry. By the end of 2030, it is necessary to increase the number of reindeer up to 210-230 thousand heads, while by 2050 - to increase the reindeer population up to 250 thousand heads. For this purpose, it is necessary to strengthen breeding work on improvement of qualitative indicators of reindeer breeds in the Republic, create Associations on reindeer breeds, and start working on creation of new breeds and intrabreed types of domestic reindeer, meeting challenges of time, as well as organize breeding farms in various natural and climatic breeding zones.

3) *Implementation of innovative reindeer maintenance technology*. Taking into account transport schemes and availability of building materials, the prospect of taiga reindeer husbandry consists in creating a fundamentally new technology for reindeer breeding, the essence of which lies in the rejection of forced nomadic production, as well as creating conditions for production at high-tech level, meeting the world standards based on fence-based (park) maintenance of the Northern domestic reindeer, the so-called industrial reindeer breeding. In other words, domestic reindeer husbandry should be directed not only to the production of meat, but also to the production of products derived from live reindeer. Under certain conditions, industrial reindeer husbandry can meet the market demand for biologically

active additives produced from antlers, reindeer horn and blood, as well as new types of dairy products, etc. At the same time, the organization of the industry should be ensured at the highest technological level that would meet the most stringent requirements of the world market [8-11].

CONCLUSIONS

Adhering to three main development directions of the Northern domestic reindeer husbandry will serve the basis for increasing the reindeer population not only in the Republic of Sakha (Yakutia), but also in other areas of the Far North of the Russian Federation.

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