

FUR ANIMAL HUNTING OF THE INDIGENOUS PEOPLE IN THE RUSSIAN FAR EAST: HISTORY, TECHNOLOGY, AND ECONOMIC EFFECTS

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1. Who are the Indigenous People of the Russian Far East?

A general definition of “indigenous people” does not exist. Therefore, I focused on “the indigenous people of Far East Russia” in this report. “Far East Russia” is defined by the administration of the present Russian Federation as the region consisting of the Republic of Sakha, Amur region, Magadan region, Kamchatka region, Sakhalin region, Chukchi autonomous district, Koryak autonomous district, Khabarovsk region, and the Primor’e region. “The indigenous people” in these regions are the inhabitants who have lived there since before the 17th century when the Russians invaded Siberia and the Far East. When referring to the Primor’e and Sakhalin regions and the southern part of the Khabarovsk region, we are speaking of the inhabitants who have lived there since before the Beijing Treaty of 1860. Their descendants are divided into the administrative categories of *Natsiya* and *Narodnost’*. The authorized *Natsiya* and *Narodnost’* are Yakut (Sakha), Dolgan, Evenki, Even, Chukchi, Koryak, Itelmen, Yukagir, Nivkh, Nanai, Ul’chi, Orochi, Udehe, Orok (Uilta). Interestingly, most of them speak Russian as their mother tongue, even the people who are authorized as *Narodnost’* on their family registration. Mixed marriages among them or with Russians has prevented the preservation of their unique genetic heritage. Because it is very difficult to describe the many kinds of people living in such a vast area at once, I will first introduce the ancestors of the Udehe and the Nanai who live the closest to Japan.

2. Fur Animal Hunting of Inhabitants of the Primor'e Region

For a long time, the inhabitants of the Russian Far East have hunted wild animals for their beautiful fur as well as for nutritional sustenance. We can find evidence in Chinese historical documents that some groups of people who were engaged in the hunting of animals for fur have been sending pelts to China since the ancient times (ex. Sushen, Yilou, Wuji, Mohe, Jurchen, Gilemi). The Chinese recognized sable as the most beautiful fur animal. Bobcat and silver fox have also been hunted for their luxurious fur. The hunting of these animals still plays a significant role in the economy, society, and culture of their descendants.

According to information about the hunting traditions collected through interviews with old hunters and restorations of the traps, the indigenous people of the Primor'e region adapted the traps using available material such as logs, willow branches, and vines while on the hunt for animals. For example, the Udehe on the Bikin river basin used many kinds of traps such as the *Dui* (hang a log and drop it), *Kafari* (support a log with sticks and drop it), *Langi* (the same as *Kafari* but set at a stump), *Hanada* (set a log vertically and drop it), *Huka* (snare trap using fine string), *Nyo ajiri* (net traps), and *Sengmi* (automatic bows). The trap chosen would vary according to the animal species, seasons, land shapes, and other conditions. These traps were not unique to the Bikin River as we can see the same types of trap in the vast area ranging from northeast China to Sakhalin through the Amur River basin. They can be found in the history of other ethnic groups in Primor’e and the Amur basin. For example snare trap and automatic bows were mentioned in “Hokui-bunkai-yowa (Description of the Island of Northern Yezo)” with figures authored by Rinzo Mamiya in the early 19th century in Japan. The net traps for sable can also be found in the description in “Liu bian ji lue” written by Yang Bin in the end of the 17th century in China. The names of the traps are common among the inhabitants who speak the language of Manchu-Tungus. The historical record shows the names of traps such as “*Huka*” (snare traps) and “*Langi*” (log drop traps) are common from the Manchu language in the south to the Evenki and the Even language in the north.

3. Trap Techniques of the Inhabitants in Primor'e

The traps used before the spread of steel traps (so called jaw traps) can be categorized into four types based on the way the animals were captured. The prey were either crushed and beaten to death using a heavy object such as a log, hung around the neck with a fine string, wrapped by a net or felled by automatic bows.

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The traps such as *Dui*, *Kafari*, *Langi* and *Hanada* belong to the first category mentioned above. Based on the way of holding an animal body, *Dui* and *Langi* are the traps that hang a log parallel with the direction of the approach of the animal. *Dui* holds the whole body of the animal. On the other hand, *Kafari* is set against the direction of approach or vertical direction of the body and will hold or strike the neck or a part of the chest. On the *Hanada*, a log is stood vertically and is intended to drop and push the neck muscle of the animal. The *Dui* is usually used in the autumn when the leaves of trees start falling and the creeks are not yet frozen. This trap would capture sable who habitually cross creeks using fallen trees. When a suitable natural fallen tree is not available, the hunter might cut down a tree nearby to where the trap is set. However, once creeks are frozen in winter, the trap cannot be used because the animal will not cross the bridge. *Langi* is fixed at a nest of sable in a stump. The *Kafari* which is usually set near a village is intended to protect the village against the animal's attack on a crop. The *Hanada* is fixed on the pits of tree that is difficult to know the size and drive the animal out by smoke (See Figure 1-4).

The snare trap belonging to the second category is set differently depending on the specific animal target and condition of usage. For example, its location and shape are different when trapping sables and musk deer. *Huka* for a sable is set on a log fallen over a creek like a bridge like that of the *Dui*, but for a musk deer the hunter blocks the animal tracks by fences and makes a hole in the fence that allows the animal to pass through. Then he sets a trap above the hole. When creeks are not frozen, the snare trap for a sable is tied to a stone. Thus, the trapped animal is dropped into the creek and drowned. Once creeks are frozen, the trap is set to hang up the sable by the spring of a willow branch. These two methods of trapping sable were confirmed by Rinzo Mamiya in the beginning of the 19th century and were used effectively by the Ainu in the Sakhalin (Hokui-bunkai-yawa). This fact suggests that these traps had spread widely from Primor'e region to Sakhalin through the Amur river basin.

The sable net belonging to category three is an old type trap that can be seen in 17th century documents such as the "Liu bian ji lue". This method is employed when a sable has run into the pit of a tree. The hunter will first affix a big net around the tree to cover the hole. Then he checks the condition of the tree, and will set to work covering the pit with twigs or mud excluding two pathways. *Nyo Ajiri* is put at one of the pathway and he smokes another pathway using smoke producing tree leaves such as fir. Consequently, the sable is not able to endure the smoke, comes out from the pathway and is caught. When a pit is too large to set the net, Udehe hunters usually use *Hanada*.

The widespread application of the automatic bow technique as mentioned in category four is far reaching. It is common in Eastern Siberia regardless of the way of cultural exchange. However, the shape of the trigger and the way of setting it up are different according to the regions. The common feature of the automatic bow in the Primor'e, the Amur region, and Sakhalin is that the trigger holding the bowstring is strongly curved. However, some of the Nanais on the Amur used a straight trigger usually found among the Yakuts in the Republic of Sakha. Among the Udehes on the Bikin River, the names of the trap differ according to the size and they had specific arrows for various animals such as lapin and bear. There are three ways of setting the trap. The first is to put the trap parallel to the ground, to slant a trap to the ground, or to stand a trap vertical to the ground. Several factors, such as the size of the bow, intended animal target, and the geographical features around animal tracks, influenced the way the trap was set. The automatic bow has been prohibited since the beginning of the 20th century when the number of immigrants increased greatly because this kind of trap was quite dangerous for passers-by. However, the hunters might have used it in secret in violation of the laws. This hypothesis is likely true considering that this particular trapping technique has been handed down over time among the hunters in the region.

The difference between the old type traps mentioned above and the modern jaw traps is that the former was developed and set up under the principle of avoiding damage to the animal's body as much as possible. In contrast to this method, the latter fastens the animals' front-feet, hurts their legs, and gives them unnecessary pain as they are left to die a slow, agonizing death. Damages on the body bring about a reduction in fur quality. Moreover, captured animals will sometimes chew through their front-feet and run away bringing about useless wounding and killing. It is a waste of precious resources. What makes this method of trapping attractive however is that steel traps are small and easy to carry and set up. Modern hunters tend to ignore the loss from damages, as those losses are weighed against the advantages of steel traps. It seems that they are willing to choose quantity over quality. The quality of furs is better with old-style traps, but their application requires a greater degree of knowledge and technique. Hunting strategies are generally determined by the quality of the product desired and/or the skill of the hunter. Sadly, it is here we find a common thread that is woven into modern society: that the popular trend towards mass production for greater profit has come at the expense of

skilled workers, which in turn has led to a reduction in the quality of the said product, even amongst the indigenous people of the Russian Far East.

4. Political and Economic Background as a Means to Compare the Similarity of the Traps

Strong commonality of the shape, kinds, and usage of the traps within a vast region from Northeast China to Sakhalin (bearing in mind that all kinds of traps were not simultaneously used by the whole area) cannot be explained only from the viewpoint of cultural exchange. The reason should be garnered from the political and economic situation of the region from the beginning of the 19th century to the beginning of the 20th century, when these traps were widely used. Several factors such as political restrictions on the Amur, the Primor'e and Sakhalin under the Qing dynasty, involvement of these areas into the Chinese economic system, and trade with Japan through the Ezo (i.e. the Ainu) involving the Sakhalin and Matsumae clan, forced the inhabitants of the region to hunt with vigor high grade furs like sable. According to the official documents of the regional government of the Qing dynasty, the area in the Lower Amur and northern Primor'e supplied 2644 sable furs annually to the treasury of the dynasty. I believe that the hunters adopted excellent hunting techniques and measures in order to maintain or to improve the harvest of sables. This was in keeping with a long-standing tradition, even at the beginning of the 19th century. Sable hunting to meet Chinese demand can be traced back to the 13th century at least.

Enormous economic, social, and cultural profits have led the inhabitants to pursue sable hunting and trade to China. In the beginning of the 19th century, China fixed the purchase price of the sable's fur for at two silver Liangs. This equated to two rolls of cotton cloth of uncertain length. But the Qing dynasty collected the sable as a tribute, and the dynasty prepared expensive silk cloths to the contributing person. Furthermore, a given amount of food was also provided as a travel expense for persons visiting the dynasty for such a purpose. Such a reward provided large profits for the sable hunters. In addition, silk fabrics and cotton textiles brought into the Primor'e and the Lower Amur were welcomed by the Japanese. The Matsumae clan bought these products for an extremely high price in Sakhalin Island. Therefore, a person who obtained silk fabrics and cotton textiles by selling sable furs to merchants or supplying them to the Qing dynasty, was able to get two to three times the profit. At that time there was a system, whereby these new profiteers were allowed to become relatives of the Manchurian nobles. Therefore, wealth brought fame in this society. It can be said that the spread of old type traps such as *Dui*, that would preserve the fur of the animal, was closely tied to a political and economic demand as hunters would strive to deliver a fixed amount of high quality furs to the dynasty.

It is said that the degradation of forest resources in the Russian Far East began when Russia took possession of the majority of the land as per the treaty of 1860. The main cause of deforestation was new demand for timber and land to cultivate. Large-scale deforestation did not occur prior to the period of the Qing dynasty. However, animal stocks had been actively exploited and resources had begun to diminish by 1860 due to fur and commercial hunting pressure.

5. Conservation Strategies on Hunting and Forest Use of the Indigenous People in the Post-Soviet Era

Today's forest conservation issues can be traced back to the Beijing Treaty of 1860 which established the Amur region and the Primor'e as territories of Russia. This event brought a modern land tenure system into the region. However, this did not dramatically impact the lifestyle of the inhabitants. Through the 1870's the supply of fur to the Qing dynasty continued. Though the population of immigrants surpassed the number of indigenous people, they lived in base towns such as Khabarovka (the former name of Khabarovsk), Nikolaevsk na Amure and Mariinskoe, or in reclaimed villages. The Amur basin and the mountainous area in Primor'e was home to the indigenous people. Fishing as a profession came about as immigrants increased in the fishery ground along the Amur River in the early 1900's, just before the revolution. However, the population of the residents continued to decrease until the 1920's as a result of the epidemic brought by the immigrants, a decrease of hunting and fishing grounds due to deforestation, conflict between the inhabitants and newcomers, and mental stress related to a new social system.

At the start of the Soviet era of the 1920's, the rivers and forests were in good condition. After the revolution, compulsory collective farms had been developed. This incorporated all the fishing and hunting activities of the inhabitants. However, they did not need to change their living situation immediately as their unit of groupings still depended on old villages. The statistics of 1959 show that they had still kept their original territories since on the main part of the Amur River as they had since the 19th century. On the Bikin river basin,

where our survey on traps was carried out, the villages and the Kolkhoz of the Udehe people established bases on the original villages along the branches of the Bikin river. Such conventional social organizations were gradually integrated into modern villages. We noted that there were several villages along the Bikin River until the 1950s, such as Olon, Tahalo, Metaheza, Laohe, Ulunga, etc. Each village organized their own Kolkhoz. Though the life style of the inhabitants that was based on conventional social structure had already been lost during the period of the collectivization in the 1930s, the original feature, that the inhabitants had their house near productive hunting and fishing grounds, was preserved until the 1950s.

Such lifestyles were drastically changed by a policy of the Soviet Union in the 1960s, which promoted the expansion of the scale of the Kolkhozs and integration into a Sovkhoz. The government combined small-scale Kolkhozs into a large Kolkhoz, and some of them, were transformed into full state organizations. This reform was a national policy such as Sovkhoz or Gospromkhoz. The Soviet government intended not only to integrate the past Kolkhoz's, but also to regulate the products more efficiently by placing a strong emphasis on centralization. The government forced groups of people to move from the original land to a new base village, where it created a production organization. In 1959, most of the Udehe people on the Bikin moved to a base village named Krasnyi Yar where a national organization called Gospromkhoz was established. In the beginning, the village Soviet in Krasnyi Yar consisted of the members of other villages known as Olon, Yasenevii, Sobolynii and Okhotnichii. However, all inhabitants in Olon migrated to Krasnyi Yar. Yasenevii and Sobokynii were home to the region's forest workers. In Okhotnichii, only workers at the weather station and their families were permitted to reside. As a result of this, most of the inhabitants lived in Krasnyi Yar together.

The development of transportation facilities was the main driving force of drastic changes, such as the integration of settlements on the Bikin River, integration of several Kolkhozs into one Gospromkhoz, unified management of hunting, gathering and fishing activities. New methods of transport such as boats with outboard motors, helicopters, and snowmobiles, made it possible for the inhabitants to live far from their hunting grounds. These modern machines could not function without the stable supply of gasoline and oil as fuel, and maintenance of these machines was of utmost importance, but the central/local government or Gospromkhoz guaranteed them that this would not be a problem. Gospromkhoz functioned well and was good for the inhabitants during the cold-war 1960's and 70's as a result of the stable fuel-supply and the able maintenance of equipment. These two factors were critical points as the entire production system was based on the internal combustion engine and related transportation measures. In fact, after the collapse of the Soviet Union, the malfunction of the system brought about the serious management crisis of Gospromkhoz in Krasnyi Yar.

The appearance of the large-scale state enterprises like Sovkhoz and Gospromkhoz made central control extremely efficient, and forest exploitation became easier than before. While the protected areas for the hunting and fishing of the state enterprises were completely conserved, forests for logging were fully developed. As a result, protected forests were left to look like patchworks. The forest left on the Bikin river basin was one such place, where hunting and gathering activities were the main industry and forestry was recognized as a secondary industry. However, when the importance of forestry increased, like in the Hor river and the Iman river basins, even the forests designated for hunting were exploited. In 1991, under the Soviet Union the sales related to the hunting-gathering industry such as fur production, and products for medicine and other products, occupied 74.5 percent of total sales of Gospromkhoz in Krasnyi Yar. Sales from forestry was only 10.9 per cent. The percentage of fur products from the hunting industry was 33.8 percent, products for medicine and the other products were 13.1 and 27.6 percent respectively. These shares were much higher than the percentage of products from forestry (Table 3 and Figures 1). In short, it can be said that this state enterprise was dependent on the hunting-gathering industry. The enterprise provided a sound measure of support for the indigenous people (the Udehe and the Nanai), who recognized that hunting was a noble way to live.

Since 1970, the Russian Far East suffered notable development and strong deforestation like other areas in Siberia, but natural resource exploitation was still under the control of central planning. When the socialist planned economy system shifted to the market economy system with the collapse of the Soviet Union in 1992, the development once bound by a central plan availed itself to the market and specific business people. Thus the control of the development was lost. Such changes directly affected the logging plans on the upper basin of the Bikin, proposed by a joint venture between South-Korean *zaibatsu* and Primor'e regional government in 1992. However, the logging plan was so strongly connected with the profit of private companies and specific bureaucrats, and against local interests as well as the land use plan in the Soviet era, that it was interrupted by strong opposition from the inhabitants in Krasnyi Yar and public opinion for forest conservation. As a result, "Territoriya Traditsionnogo Prirodopol'zovaniya", TTP for short, the territory for traditional nature usage in English, was established on the Bikin river basin in order to protect the wilderness of the Russian Far East and its

inhabitants.

The direct cause of the logging problem on the upper basin of the Bikin river was the consequence of a 30-year logging concession agreement between timber industries, the Hyundai *zaibatsu* in South Korea and Primor'e regional government in 1991. From the beginning, thoughtless and hasty logging plans without sufficient scientific research were viewed with disdain by experts from various fields and the Regional council. There were several reasons for this devastating agreement: a depression of the forest industry in the Far East, a request for the immediate use of naturally deteriorated fir trees on the upper basin of the Bikin river at the end of the 1980's, and an profit-minded regional government that was feeling the effects of the political and economic disorder of Perestroika.

However, the awareness of the crisis and the opposition of the inhabitants against the concessions was quite strong with even non-indigenous inhabitants supporting such attitudes. Such an atmosphere was closely related to the rapid development of northern minorities' rights, which arose in 1988 and reached their peak in 1989. These movements had the power to pull M.S.Gorbachov, who was then the most important politician in the Soviet Union. In 1989 the Association of the Northern Minorities was established and the organization brought in new laws and ordinances to allocate TTP into the area of inhabitants defined as Northern Minorities (in 1990 or 1991). The trial was brought to the Russian Federation Supreme Court in 1992 and was decided in favor of the inhabitants; thus logging was prohibited in the upper basin of the Bikin. About 1,250,000 hectares of the upper and middle basin of the Bikin were registered as the TTP. The area registered as the TTP was specified as hunting grounds for the professional hunters in the Gospromkhoz, "Pozharskii". Nowadays this area is for the hunting grounds of the National Hunting Enterprise "Bikin" succeeded from the Gospromkhoz. One of the reasons why the area was registered to the TTP was that a lot of the Northern Minority people (i.e., the indigenous people) such as the Udehe and the Nanai worked for Gospromkhoz as hunters and fishermen. In 1991, the organization employed 50 professional hunters including 27 Udehe hunters and 8 Nanai hunters, and indigenous hunters made up 70 percent of the workforce. In other words, the biggest factor of the registration might be that the area had been based on the "traditional" producing activities of the inhabitants such as hunting, gathering and fishing as shown in the figures of 1991. However, after 1992, the national enterprises succumbed to hard management because of the collapse of the socialism.

When the constraints from the Federal Plan were slackened, the people faced a new situation. They would have to manage their business by themselves. Most importantly, they would need to maintain a stable fuel and material source as well as finding a market for their products. Moreover, the introduction of a market economy brought about an increase in the price of machine parts for equipment maintenance, and the fuel needed to run these machines. To further complicate matters, the price of fur dropped sharply because of the anti-fur campaign in Europe and America, and severe competition within the fur industry among Russian markets. Referring to the recent annual sales statistics of Gospromkhoz, "Pozharskii", it is understood that the percentage of sales of the forestry product stood out with 41.0 percent of total sales in 1992, just after the collapse of the Soviet Union. The output of sable's fur in 1992 was more than 745 over the previous year, but the percentage of sales stayed at 26.2 percent. I guess that they tried to sell more timber to make up for low fur prices. In 1993 the percentage of fur sales decreased even more and the sales of timber products also dropped sharply. New items and service fees stood out with a 51.5 per cent share of the market. The depression in the forest industry might be as a result of past overexploitation of forest resources. It seems that they had to cover the deficit by looking to other profit-generating activities. In 1994 the share of both sales for fur and timber recovered. Consequently, these activities along with the service fees, became a main profit source in the enterprise. Medicinal products, and hunting products excluding fur and processed goods, which reached high share in 1991, lost their economic relevance. It can be said that high-level manipulation of the production field occupied was a kind of management strategy to ensure the survival of the enterprise.

The state enterprise of Gospromkhoz "Pozharskii", in Krasnyi Yar re-established its organization to the Joint-Stock Corporation with the name National Hunting Enterprise "Bikin". This restructuring was authorized by the "Pozharskii" district government. The "Bikin" was recognized as an official successor of Gospromkhoz "Pozharskii". At that time, when the state enterprise was modified into private enterprises, the companies often exchanged their property for stock and distributed the stock to their employees. In some cases the employees exchanged the distributed stock (in fact, not the stock but exchange tickets to the stock were given to individuals) for the property: hunting grounds, pastures and domestic animals, and they opened their enterprises on an individual or family basis. In many cases however, the management right was consigned to the representative, and many employees were engaged in previous jobs in similar organizations as in the period of Kolkhoz and Gospromkhoz. The employees belonging to the stock company "Bikin" held 56 percent of the stocks and sold

44 percent of them to a stock brokerage firm, Pacific Securities, in order to purchase investments. In Russia there are two types of stock companies: a publicly held stock company and a closed-door type stock company. This company selected the former because this system might make it easier to procure capital.

The latest statistical data of sales since the establishment of the stock company "Bikin" is not certain because we do not have sales data after 1995. We will have to wait for another investigation. But I believe that the hunting of animals for furs is a significant income source, and sable's fur is the most important product of the fur industry. The inventory data of 1996 suggests that the region still supports a large population of sable. Another data book also reports that the annual average population from 1989 to 1996 and population of 1996 were 5,044 and 6,248 respectively. We also found that annual allowable harvest of sable was around 1400.

However, it is not only the professional hunters belonging to the enterprise but also non-professional hunters (the exclusive hunting grounds for the non-professionals are set near Krasnyi Yar) who have the right to hunt sable. There were 170 hunters in 1992. The high population of hunters might cause the depletion of wildlife resources in the region without appropriate regulation. The harvesting of several animals, such as lapis and squirrel have increased recently because these animals are easy to hunt. It has been noted that the population of lapis has sharply decreased in the last few years. But the unit prices of these animals are quite low and therefore are not likely to emerge as a significant income source for the enterprise; overexploitation will cause a depletion of these resources.

A lot of sables supplying premium fur products still inhabit the region. However, from the viewpoint of a management strategy and public opinion, strong dependence on fur animal hunting is not an appropriate choice considering the recent depression of fur markets and the growing wildlife conservation movement. In the long term, I believe that the promotion of diversification based on non-timber use and non-fur animal hunting, like in the period of the Soviet Union (namely, to swap biased resource exploitation with well-balanced resource use) would be a wise choice. This sustainable strategy can be adapted to other forest-related industries and enterprises in the Russian Far East as well as in the Bikin river basin.

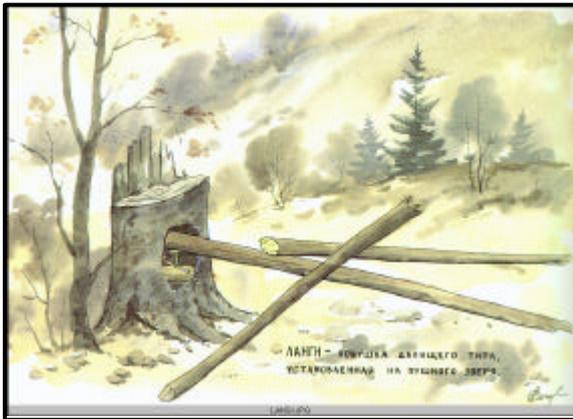


Fig 1 . Sketch of *Dui* (by A.F. Startsev)



Fig 2. Sketch of *Langi* (by A.F. Startsev)

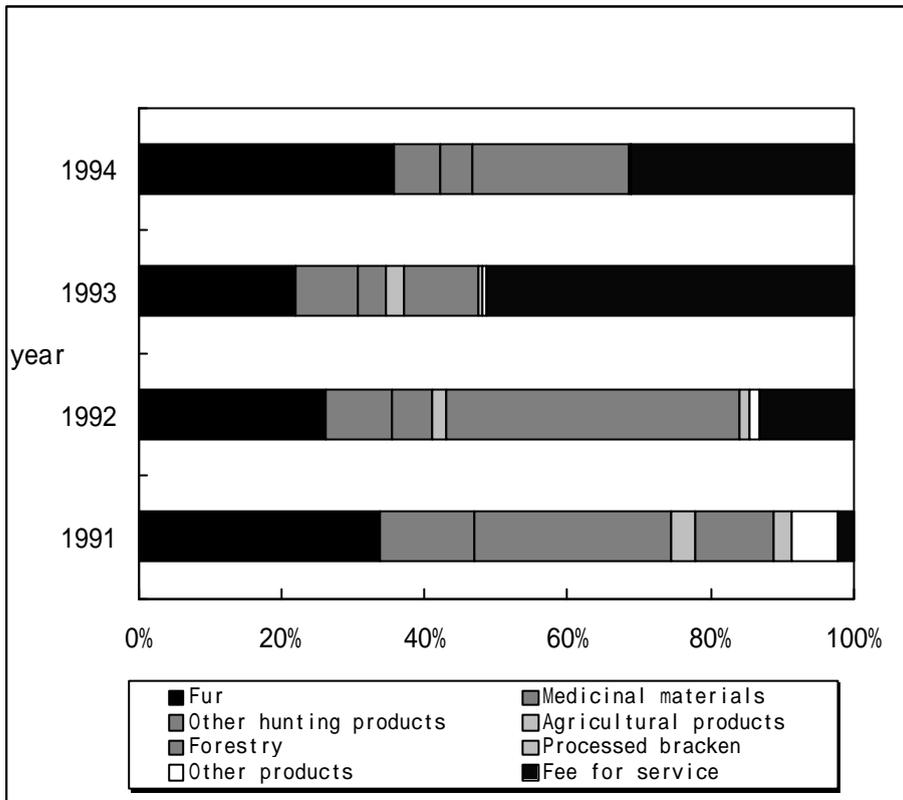
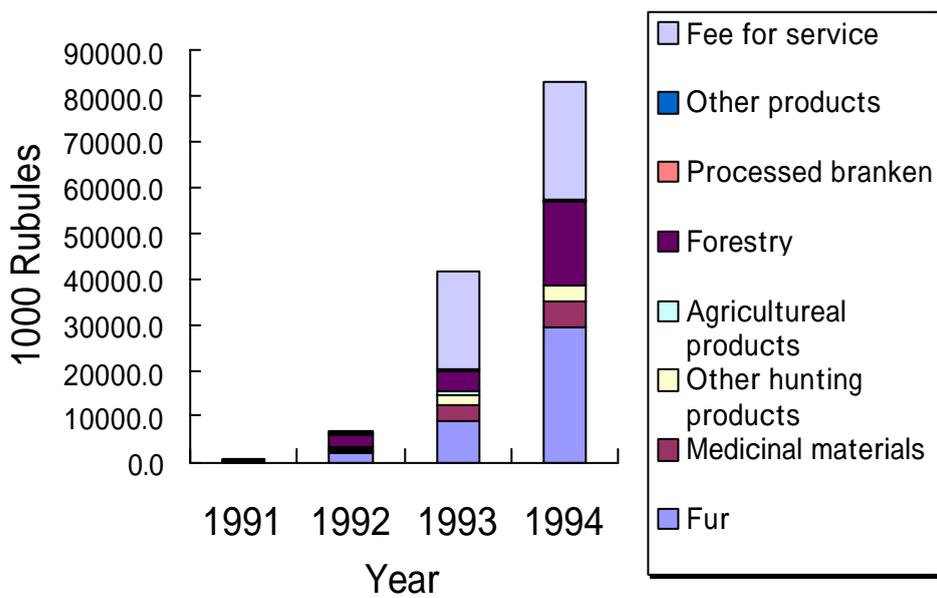


Fig. 2.a Changes on sales of products in the Gospromkhoz "Pozharskii" from 1991 to 1994 in Rubles



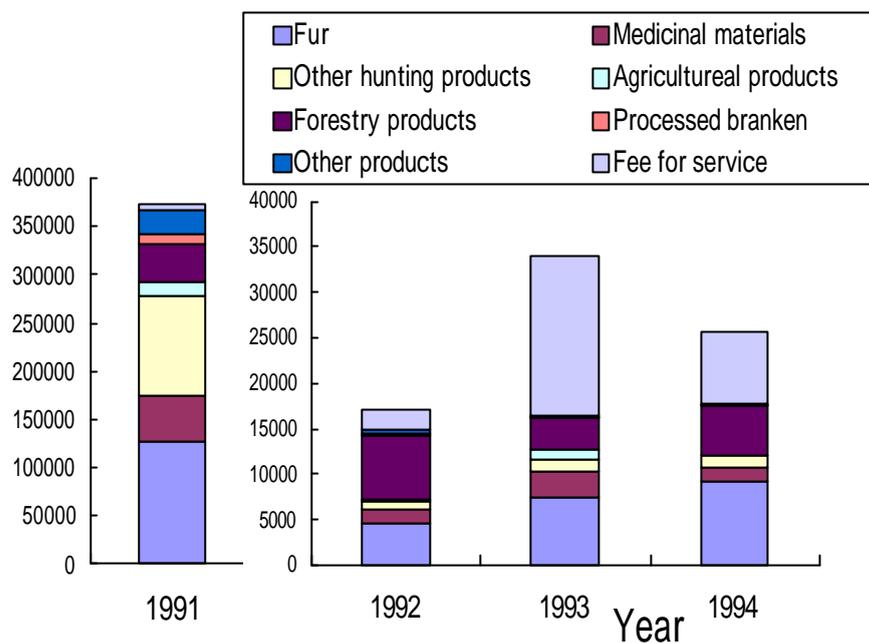


Fig.3-a Changes of sales of products in the Gospromkhoz "Pozharskii" from 1991 to 1994(in US dollars)

Table 3 Percentages of the sales of each products

| | 1991 | 1992 | 1993 | 1994 |
|------------------------|-------|-------|-------|-------|
| Fur | 33.8 | 26.2 | 21.8 | 35.7 |
| Medicinal materials | 13.1 | 9.1 | 8.7 | 6.5 |
| Other hunting products | 27.6 | 5.6 | 3.9 | 4.5 |
| Agricultural products | 3.5 | 2.0 | 2.7 | 0.0 |
| Forestry products | 10.9 | 41.0 | 10.3 | 21.9 |
| Processed bracken | 2.4 | 1.4 | 0.5 | 0.3 |
| Other products | 6.6 | 1.6 | 0.6 | 0.2 |
| Fee for service | 2.1 | 13.0 | 51.5 | 31.0 |
| Sum | 100.0 | 100.0 | 100.0 | 100.0 |

Table 4. Sales of products in the Gospromkhoz "Pozharskii" from 1991 to 1994 (in Rubles)

| | 1991 | 1992 | 1993 | 1994 |
|------------------------|-------|--------|---------|---------|
| Fur | 217.7 | 1864.9 | 9130.0 | 29672.7 |
| Medicinal materials | 84.0 | 649.1 | 3620.8 | 5387.6 |
| Other hunting products | 177.8 | 401.4 | 1651.6 | 3705.8 |
| Agriculture products | 22.3 | 140.0 | 1123.5 | 0.0 |
| Forestry products | 70.0 | 2910.0 | 4304.9 | 18223.0 |
| Processed branken | 15.4 | 101.7 | 229.3 | 268.0 |
| Other products | 42.6 | 113.1 | 243.4 | 152.0 |
| Fee for service | 13.6 | 924.6 | 21518.6 | 25789.3 |
| Sum. | 643.4 | 7104.8 | 41822.1 | 83198.4 |

Table.5 Sales of products in the Gospromkhoz "Pozharskii" from 1991 to 1994 (in US dollars)

| | 1991 | 1992 | 1993 | 1994 |
|------------------------|-----------|----------|----------|----------|
| Fur | 126621.30 | 4472.18 | 7416.73 | 9132.87 |
| Medicinal materials | 48857.09 | 1556.59 | 2941.35 | 1658.23 |
| Other hunting products | 103414.18 | 962.59 | 1341.67 | 1140.60 |
| Agriculture products | 12970.39 | 335.73 | 912.67 | 0.00 |
| Forestry products | 40714.24 | 6978.42 | 3497.08 | 5608.80 |
| Processed branken | 8957.13 | 243.88 | 186.27 | 82.49 |
| Other products | 24777.53 | 271.22 | 197.73 | 46.78 |
| Fee for service | 7910.20 | 2217.27 | 17480.58 | 7937.61 |
| Total | 374222.07 | 17037.89 | 33974.09 | 25607.39 |

Table.6 Harvests, sales and unit price of main fur animals

| Harvest | 1991 | 1992 | 1993 | 1994 | exchange rate for US dollars |
|----------|------|------|------|------|---|
| badger | 1 | 2 | 19 | 2 | 1991 1\$ = 1.719R (commercial rate on December)* |
| squirrel | 2206 | 1340 | 4597 | 5884 | 1992 1\$ = 417R** |
| wolf | 0 | 1 | 0 | 0 | 1993 1\$ = 1231R*** |
| otter | 0 | 1 | 1 | 0 | 1994 1\$ = 3249R**** |
| raccoon | 1 | 1 | 6 | 0 | * Source:" Soren Geppou" Vol.570 (Dec.1991) |
| lapin | 11 | 6 | 2 | 0 | ** Source:"Rosia Geppou" Vol.594 (Dec.1992) |
| weasel | 198 | 133 | 152 | 222 | ***Source:"Rosia Geppou" Vol.606 (Dec.1993) |
| marten | 1 | 0 | 2 | 0 | ****Source:"Rosia Geppou" Vol.618(Dec.1994) |
| mink | 74 | 199 | 246 | 161 | |
| muskrat | 0 | 0 | 3 | 9 | |
| sable | 607 | 745 | 408 | 498 | |

| Sales | 1991 | | 1992 | | 1993 | | 1994 | |
|----------|-------------|----------|-------------|---------|-----------|---------|-----------|---------|
| unit | 1000 Rubles | US \$ | 1000 Rubles | US \$ | 000 Ruble | US \$ | 000 Ruble | US \$ |
| badger | | | 1.5 | 3.60 | 34.1 | 27.70 | 13.5 | 4.16 |
| squirrel | 8.5 | 4943.87 | 34.0 | 81.53 | 1719.6 | 1396.91 | 7461.2 | 2296.46 |
| wolf | | | 0.1 | 0.24 | | | | |
| otter | | | 2.2 | 5.28 | 7.5 | 6.09 | | |
| raccoon | 0.1 | 58.16 | 0.3 | 0.72 | 34.5 | 28.03 | | |
| lapin | 0.0 | 0.00 | 0.0 | 0.00 | 0.1 | 0.08 | | |
| weasel | 3.1 | 1803.06 | 20.8 | 49.88 | 147.9 | 120.15 | 605.3 | 186.30 |
| marten | | | | 0.00 | 4 | 3.25 | | |
| mink | 4.0 | 2326.53 | 207.3 | 497.12 | 1331.8 | 1081.88 | 1488 | 457.99 |
| muskrat | | | | 0.00 | 4.8 | 3.90 | 10.2 | 3.14 |
| sable | 129.4 | 75263.19 | 977.1 | 2343.17 | 2802.4 | 2276.52 | 10203.6 | 3140.54 |
| Sum. | 145.1 | 84394.81 | 1243.3 | 2981.53 | 6086.7 | 4944.52 | 19781.8 | 6088.58 |

| Unit price | 1991 | | 1992 | | 1993 | | 1994 | |
|------------|--------|--------|---------|-------|---------|-------|----------|-------|
| unit | Rubles | US \$ | Rubles | US \$ | Rubles | US \$ | Rubles | US \$ |
| badger | | | 750.00 | 1.80 | 1794.74 | 1.46 | 6750.00 | 2.08 |
| squirrel | 3.85 | 2.24 | 25.37 | 0.06 | 374.07 | 0.30 | 1268.05 | 0.39 |
| wolf | | | 100.00 | 0.24 | | | | |
| otter | | | 2200.00 | 5.28 | 7500.00 | 6.09 | | |
| raccoon | 100.00 | 58.16 | 300.00 | 0.72 | 5750.00 | 4.67 | | |
| lapin | | | | 0.00 | 50.00 | | | |
| weasel | 15.66 | 9.11 | 156.39 | 0.38 | 973.03 | 0.79 | 2726.58 | 0.84 |
| marten | | | | 0.00 | 2000.00 | 1.62 | | |
| mink | 54.05 | 31.44 | 1041.71 | 2.50 | 5413.82 | 4.40 | 9242.24 | 2.84 |
| muskrat | | | | 0.00 | 1600.00 | 1.30 | 1133.33 | 0.35 |
| sable | 213.18 | 123.99 | 1311.54 | 3.15 | 6868.63 | 5.58 | 20489.16 | 6.31 |

Annex 1. Breakdown list of Income of the Gospromkhozin 1991
(Harvest, production and sales)

| Products items | Number | Sales (1000 Rubles) |
|---|--------|------------------------|
| Hunting/gathering products (materials and semi-products) | | 479.5 |
| Fur materials | | 217.7 |
| Fur from hunting | | 217.6 |
| Fur materials | | 0.1 |
| Wildlife meat, fish and wild plants | | 13.0 |
| meat | 3.2 | t 12.7 |
| bracken | 3.2 | t |
| fern | 5.7 | t |
| bore meat | 215 | heads 0.3 |
| berries, mushroom nuts, etc. | | 143.2 |
| berries | 31.2 | t 143.2 |
| nuts | | |
| honey (by individual) | 1.05 | t 21.0 |
| beeswax | 20 | kg 0.5 |
| Medicinal materials | | 84.0 |
| leaf of Ezo-alaria | 3.3 | t 39.5 |
| aralia | 0.403 | kg 3.3 |
| musk from muskdeer | 3/34 | 0.2 |
| root of Ezo-alaria | 8.2 | t 34.5 |
| leaf o fcowberry | 720 | kg 5.8 |
| greater celandine | 60 | kg 0.2 |
| aralia | 140 | kg 0.5 |
| dried bear's gall bladder | | |
| broom made from white [silver] birch | 200 | 0.1 |
| Agricultural products | | 22.3 |
| honey | 1.1 | t 22.3 |
| beeswax | | |
| vegetable | | |
| Hunting/gathering products (materials and semi-products) | | 128.0 |
| Forestry products | | 70.0 |
| wood chip | 5500 | 0.3 |
| construction material | | 3.3 |
| board | | |
| round wood | | |
| fuel woods material | 1602 | m3 16.0 |
| fuel woods | 1946 | m3 37.9 |
| sawn woods | 85 | m3 12.5 |
| pillar | | |
| Juice | 1.7 | t 34.0 |
| processed bracken | 210 | kg 7.3 |
| processed fern | 420 | kg 8.1 |
| boat | 1 | 0.2 |
| Fur products | | 5.5 |
| Wild rose juice | 270 | kg 0.8 |
| Wild garlic plant | 500.0 | kg 0.9 |
| chair | 36.0 | 0.3 |
| wood frame for beekeeping | 500 | pieces 0.2 |
| ski | 10 | sets 0.3 |
| grip of ax | 400 | pieces 0.4 |
| fish | | |
| wood barrel | | |
| seeds | | |

Annex 1. (continue)

| | | |
|------------------------------------|----|-------|
| fee for service | | 13.6 |
| Grand total | | 643.4 |
| Sales of ash by cooperative | | 543.7 |
| The number of areas for production | 1 | |
| The number of fulltime stuff | 52 | |
| The number of part-time stuff | 27 | |

Annex 2. Breakdown list of Income of the Gospromkhoz in 1992
(Harvest, production and sales)

| Products items | Number | Sales (1000 Rubles) |
|---|----------|---------------------|
| Hunting/gathering products | | 2915.4 |
| (materials and semi-products) Fur materials | | 1864.9 |
| Fur from hunting | | 1864.9 |
| Fur materials | | |
| Wildlife meat ,fish and wild plants | | 135.1 |
| meat | 2.5 t | 135.0 |
| bracken | 3.0 t | |
| fern | 3.1 t | |
| bore meat | 39 heads | 0.1 |
| berries, mushroom nuts, etc. | | 198.3 |
| berries | 3.1 t | 90.3 |
| nuts | 900 kg | 108.0 |
| honey (by individual) | 0.68 t | 68.0 |
| beeswax | kg | |
| Medicinal materials | | 649.1 |
| leaf of Ezo-alaria | 370 t | 7.4 |
| aralia | 1151 kg | 181.1 |
| musk from muskdeer | 2/40 | 4.0 |
| root of Ezo-alaria | 18.4 t | 368.7 |
| leaf o fcowberry | 50 kg | 1.6 |
| greater celandine | 20 kg | 0.1 |
| aralia | 4.3 kg | 86.2 |
| dried bear's gall bladder | | |
| broom made from white [silver] birch | | |
| Agricultural products | | 140.0 |
| honey | t | |
| beeswax | 20 | 2.0 |
| vegetable | | 138.0 |
| Hunting/gathering products | | 3124.8 |
| (materials and semi-products) Forestry products | | 2910.0 |
| wood chip | 2500 | 2.0 |
| construction material | | 14.9 |
| board | 3500 | 2.5 |
| round wood | 2496 | 1166.3 |
| fuel woods material | 2654 m3 | 530.9 |
| fuel woods | 2047 m3 | 399.2 |
| sawn woods | 413 m3 | 749.2 |
| pillar | 150 | 45.0 |
| Juice | 1.52 t | 88.2 |
| processed bracken | 1900 kg | 96.5 |
| processed fern | 130 kg | 5.2 |
| boat | | |
| Fur products | | 7.0 |
| Wild rose juice | 110 kg | 5.5 |
| Wild garlic plant | kg | |

Annex 2.(Continue)

| | | | |
|------------------------------------|---------------------------|-----------|--------|
| | Wild garlic plant | kg | |
| | chair | | |
| | wood frame for beekeeping | pieces | |
| | ski | 1 sets | 0.1 |
| | grip of ax | pieces | |
| | fish | 80 kg | 3.0 |
| | wood barrel | 75 pieces | 2.3 |
| | seeds | 50 kg | 7.0 |
| fee for service | | | 924.6 |
| Grand total | | | 7104.8 |
| Sales of ash by cooperative | | | |
| The number of areas for production | | | 1 |
| The number of fulltime stuff | | | 51 |
| The number of part-time stuff | | | 20 |

Annex 3. Breakdown list of Income of the Gospromkhoz in 1993
(Harvest, production and sales)

| Products items | Number | Sales (1000 Rubles) |
|---|-----------|------------------------|
| Hunting/gathering products (materials and semi-products) | | 14402.4 |
| Fur materials | | 9130.0 |
| Fur from hunting | | 9130.0 |
| Fur materials | | |
| Wildlife meat, fish and wild plants | | 1283.9 |
| meat | 2.7 t | 1278.5 |
| bracken | 3.5 t | |
| fern | 0.13 t | |
| bore meat | 104 heads | 5.4 |
| berries, mushroom nuts, etc. | | 80.0 |
| berries | t | 40.0 |
| nuts | 50 kg | 40.0 |
| honey (by individual) | 0.53 t | 287.7 |
| beeswax | kg | |
| Medicinal materials | | 3620.8 |
| leaf of Ezo-alaria | 30 t | 2.7 |
| aralia | 1345 kg | 2905.6 |
| musk from muskdeer | 3 | 47.5 |
| root of Ezo-alaria | 0.52 t | 415.0 |
| leaf o fcowberry | kg | |
| greater celandine | kg | |
| aralia | kg | |
| dried bear's gall blad | 3 | 250.0 |
| broom made from white [silver] birch | | |
| Agricultural products | | 1123.5 |
| honey | 1.12 t | 1123.5 |
| beeswax | | |
| vegetable | | |
| Hunting/gathering products (materials and semi-products) | | 4777.6 |
| Forestry products | | 4304.9 |
| wood chip | 21000 | 140.0 |
| construction material | | 228.5 |
| board | 1300 | 40.5 |
| round wood | 572 | 625.2 |
| fuel woods material | 972 m3 | 1261.0 |
| full woods | 1028 m3 | 964.0 |
| sawn woods | 287 m3 | 1036.1 |
| pillar | 2400 | 9.6 |
| Juice | t | |
| processed bracken | 2.24 kg | 224.3 |
| processed fern | 5 kg | 5.0 |
| boat | | |
| Fur products | | |
| Wild rose juice | 200 kg | 31.4 |
| Wild garlic plant | kg | |
| chair | | |

Annex 3. Continue

| | | | |
|------------------------------------|---------------------------|----|---------|
| | wood frame for beekeeping | | pieces |
| | ski | | sets |
| | grip of ax | | pieces |
| | fish | | kg |
| | wood barrel | 53 | 212.0 |
| | seeds | | kg |
| fee for service | | | 21518.6 |
| Grand total | | | 41822.1 |
| Sales of ash by cooperative | | | |
| The number of areas for production | | | 1 |
| The number of fulltime stuff | | | 46 |
| The number of part-time stuff | | | 20 |

Annex 4. Breakdown list of Income of the Gospromkhoz in 1994
(Harvest, production and sales)

| Products items | Number | Sales (1000 Rubles) |
|---|--------------------------------------|------------------------|
| Hunting/gathering products | | 38766.1 |
| (materials and semi-products) Fur materials | | 29672.7 |
| | Fur from hunting | 29672.7 |
| | Fur materials | |
| Wildlife meat, fish and wild plants | | 2098.5 |
| | meat | 0.7 t |
| | bracken | t |
| | fern | 40 t |
| | bore meat | heads |
| berries, mushroom nuts, etc. | | 100.0 |
| | berries | t |
| | nuts | 70 kg |
| honey (by individual) | 820 t | 1507.3 |
| beeswax | kg | |
| Medicinal materials | | 5387.6 |
| | leaf of Ezo-alaria | t |
| | aralia | 0.98 kg |
| | musk from muskdeer | |
| | root of Ezo-alaria | 6.32 t |
| | leaf o fcowberry | kg |
| | greater celandine | kg |
| | aralia | kg |
| | dried bear's gall bladder | |
| | broom made from white [silver] birch | |
| Agricultural products | | |
| | honey | t |
| | beeswax | |
| | vegetable | |
| Hunting/gathering products | | 18643.0 |
| (materials and semi-products) Forestry products | | 18223.0 |
| | Wood chip | |
| | construction material | |
| | board | 600 |
| | round wood | 11.5 |
| | fuel woods material | 395.0 m3 |
| | fuel woods | 522.0 m3 |
| | sawn woods | 113.0 m3 |
| | pillar | |
| Juice | t | |
| processed bracken | 160 kg | 228.0 |
| processed fern | 50 kg | 40.0 |
| boat | | |
| Fur products | | |
| Wild rose juice | 130 kg | 85.0 |
| Wild garlic plant | kg | |
| chair | | |

Annex 4. Conitnue

| | | | |
|------------------------------------|---------------------------|--------|---------|
| | wood frame for beekeeping | pieces | |
| | ski | 2 sets | 7.0 |
| | grip of ax | pieces | |
| | fish | kg | |
| | wood barrel | 4 | 60.0 |
| | seeds | kg | |
| fee for service | | | 25789.3 |
| Grand total | | | 83198.4 |
| Sales of ash by cooperative | | | |
| The number of areas for production | | 1 | |
| The number of fulltime stuff | | 46 | |
| The number of part-time stuff | | 20 | |
