Harnessing Indigenous and Traditional Forest Related Knowledge: The Case of North Eurasian Countries

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Cover photo: Indigenous (kety) hunter's hut (Central Siberia, Russia).

Executive Summary

Northern Eurasia occupies one sixth of the total global land mass. Formerly the territory of the Soviet Union, Northern Eurasia now consists of Russia and 14 independent states established in Eastern Europe, Central Asia and the Caucasus region. The region contains vast forested areas, and the exploitation of forests and forest-related resources is essential for many economies and livelihoods within the region. As elsewhere, there are significant threats undermining the long-term health and viability of the forests. However, there are also many, and diverse, Traditional Forest Related Knowledge based practices throughout the region that have helped local/indigenous people sustainably interact with forests for generations.

This case study focuses on the key features of traditional uses of forest-related resources practiced by Indigenous Peoples and local communities in different regions of Northern Eurasia with a goal of highlighting indigenous forest-related practices that can help to mitigate current forest problems in the region.

The study focuses specifically on Russia a country inhabited by over 100 indigenous peoples with unique material and spiritual cultures.

Historically, indigenous knowledge has enabled the survival of communities settling throughout the study area. Researchers note that, while some cultural traditions see human societies as being opposed to nature, the traditional uses of forests and indigenous cultures of Northern Eurasia have been indivisible from nature. For Indigenous Peoples, traditional uses of forests are strongly related to livelihood security. Indigenous Peoples' understanding of forests also often includes a spiritual component. Traditional knowledge carefully honed throughout centuries of practical experience is passed from generation to generation. Animistic beliefs of aboriginal populations have supported the idea of mutual respect between humans and nature. Indigenous Peoples have accumulated important traditional forest-related knowledge (TFRK) related to certain objects and forest species, based on their everyday experiences.

Traditional use of forests in Northern Eurasia reflects a rich history of hundreds of communities. There are substantial differences in development of indigenous knowledge between the densely populated areas of Europe and the sparsely populated mountain and taiga (boreal) forest landscapes of Northern Asia. Therefore, the choice of model areas was influenced not only by natural conditions, but also by the density of the population. Examples of Ukraine and the Caucasus region demonstrated the way TFRK historically developed in Europe. This analysis is followed by examples from Central Asia and the European North, Siberia and the Far East, with an emphasis on greater levels of detail from Russia.

The study argues that indigenous knowledge is critical in helping to mitigate some key forest-related problems experienced in Northern Eurasia today. Finally, conclusions and recommendations follow the presentation of the findings.

INTRODUCTION

Northern Eurasia is an area with extremely diverse traditional uses of forest-related resources. Natural forests have been maintained here in remote Northern and Eastern areas of the sub-continent. They border on landscapes modified by peoples living in the Western and Southern areas. The territory recently occupied by the former Soviet Union is invaluable for comparing results of traditional uses of forest resources, and evaluating the modern uses of traditional knowledge within Europe and Asia.

Northern Eurasia comprises one sixth of the total global land mass. Economic, cultural, and political relationships are still maintained among many of the former republics of the Soviet Union. Adding to their shared history, the countries within this geographical area often seek to preserve the common system of natural resource use and share good practices of wildlife conservation.

However, there are many differences among these countries as well, as a result of varied political and economic histories and geographical specificities. Therefore, this case study will focus on the key features of traditional uses of forest-related resources practiced by Indigenous Peoples and local communities in different regions of Northern Eurasia with focus on the Russian Federation. The study highlights particular practices that have the potential to mitigate current problems experienced in forests in the region.

Eurasia is the Earth's largest continent. It represents a great diversity of ecosystems. In Northern Eurasia, these differing ecological areas represent a variety of natural landscapes including boreal forests (taiga), temperate forests, steppes, semi-deserts, and deserts. Key regions of Northern Eurasia have been selected to describe and reflect the contemporary state and future prospects of indigenous/traditional forest related knowledge. These regions were chosen on the basis of their geographical and biotic significance. Study areas have been selected to describe indigenous knowledge common to the whole area with a specific focus on practices that have beneficial impacts on the forests in the region.

AIM and SCOPE of the STUDY

The aim of the case study is to investigate indigenous/traditional forest knowledge in the countries of Northern Eurasia from a historical perspective and to describe the current status and future prospects of that knowledge. The study includes the geographical area of Northern Eurasia, with a particular emphasis on indigenous traditional forest-related knowledge in Russia. While there are many common features of TFRK within the geographical area covered by the

study, there are also specifics to each indigenous community. The study aims to highlight key knowledge and practices, and make conclusions regarding the applicability of indigenous forest-related knowledge to current forest issues.

BACKGROUND to the STUDY

The indigenous knowledge of the peoples of Northern Eurasia is related to the geographical and natural conditions of the area. This knowledge has enabled the survival of communities settling throughout the area for thousands of years. Wild plants and forest resources have provided humans with such crucial things as food, medicines, dyes, tanning agents, tools, utensils, clothing and construction materials.

In indigenous societies knowledge is focused on particular objects as a result of centuries of practical experience with the natural environment. Therefore, traditional knowledge is rich in expression and detail and often reflects a dependence on a diversity of natural resources for indigenous livelihood security. As a result of their dependence on nature for survival, indigenous peoples often developed spiritual traditions which were related to hunting and daily livelihoods. Peoples in different areas accumulated knowledge regarding efficient uses of forests. Communities across vast areas often had similar hunting and gathering practices and exchanged their valuable knowledge with communities both near and far (Taksami and Kosarev, 1986).

The vast indigenous knowledge related to seasonal ecosystem changes and conservation of forest resources is still maintained by Indigenous Peoples and local communities (Podmaskin, 2001). Indigenous knowledge is now gaining significance as a potential solution to problems associated with declining biodiversity and unsustainable use of natural landscapes.

METHODS of DATA COLLECTION

Model areas were chosen in light of the specific indigenous knowledge used in the area. I focused on particular areas where indigenous knowledge has the potential to be applied to current forest conservation challenges. Botanical, ethnographical and ecological data were collected during field expeditions in different regions of Northern Eurasia. Historical, sociological and geographical information was gathered through a literature review and web-based research. Western science is based on the narrow specialization of knowledge. However, the application of traditional forest-related knowledge (TFRK) does not easily conform to such narrow categories. Therefore, for the purposes of this case study, I used a multi-method approach to gather information from a variety of different fields. Questionnaires and other interviews were also used to gather data. Indigenous knowledge is usually holistic and often it

includes theological aspects and cultural traditions. Indigenous Peoples' knowledge reflects a respect for nature and traditional regulations regarding the overuse of resources. My data collection was based on the premise that there are merits to combining knowledge obtained through the use of Western science methods with the knowledge obtained through traditional Indigenous means.

PRESENTATION and ANALYSIS of DATA

Part I: Importance of traditional knowledge and beliefs to Indigenous Peoples and local communities

As data were gathered for the study, Indigenous Peoples repeatedly identified the connection between their cultures and the natural environment. Animistic beliefs of aboriginal populations supported the idea of mutual respect and esteem between humans and nature. It was believed that not only humans but also plants and animals were endowed with spirit forces. In the past, peoples of the Amur River area in the Russian Far East considered species such as moose, otters, wild hogs, bears, and tigers to be totems and strictly regulated the hunting of these animals. Similar prohibitions and restrictions existed for certain birds, snakes, frogs, and turtles which were considered sacred. Some trees represented protective spirits including birch, larch, and oak trees. The animistic system of beliefs transformed with time into a sound cultural tradition and served to establish a foundation for sustainable use of resources.

In the southern areas, where elders have been greatly respected, the study found that there was a common practice of naming certain areas after important people. Typically, winter huts were named after a specific man who had settled there. Even some trees were given specific names. These trees were not allowed to be cut. Indigenous peoples in many segments of walnut forest in Central Asia point with pride to trees that were allegedly planted by Aleksander Makedonsky or by his soldiers. One can find springs that indigenous peoples feel had been created by or visited by a sacred being. Such mechanism of denomination was widely spread in Central Asian countries that encouraged preserving some natural and cultural monuments, because this territory had original status of protected objects. Use of the area such as tree cutting or pasturing of animals has been prohibited.

Indigenous societies have accumulated traditional forest-related knowledge related to certain forest resources based on thousands of years of everyday experiences. In many places TFRK maintains Indigenous livelihood security. The study revealed that there have been innovative trends developed in TFRK that ensure sustainable use of forest resources. Many

scientists, politicians, and NGOs have recently focused on the problem of sustainable development, due to the need to generate national strategies for sustainable development.

Indigenous Peoples' rights to protect their environment and sustainably use natural resources have to be recognized, since indigenous lands and livelihoods are increasingly impacted by ecosystem degradation. The urgency of this issue has been recognized on a global level. For example, in May 2000, the Convention on Biological Diversity developed and approved Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessments (Akwe:Kon Guidelines). Using these Guidelines, one could establish which parties must be held responsible for negative environmental impacts. This agreement holds both nation states and industries responsible for the ways in which they affect the environment, biological diversity, and sacred sites of Indigenous communities.

More and more sacred sites have recently been negatively impacted by transnational corporate and industrial activities. Therefore, some actions have been taken to ensure the protection of sacred sites. Designation of Indigenous Peoples' sacred sites is extremely important in terms of maintaining the integrity of Indigenous cultures , since sites of cult ceremonies (the sites for spiritual integrity with the elements/spirits) have always been carefully protected from strangers. Nature protection finds it expression in conservation of sacred localities and natural objects, such as rocks, springs, lakes, forests, stones, etc. It is the most ancient type of the wilderness conservation, dating back to the historic past of the Earth's peoples.

PRESENTATION and ANALYSIS of DATA

Part II: Geographical and historical aspects for development the traditional forest knowledge in Northern Asia

Traditional use of forests in the Northern Eurasia reflects a rich history of hundreds of communities of Indigenous Peoples developed over millennia. Unique experiences of interactions with the natural environment are reflected in traditions, customs, and use of forest resource that have persisted among contemporary communities in the area. There are substantial differences in development of indigenous knowledge between densely populated areas of Europe and sparsely populated mountain and taiga forest landscapes of the Northern Asia. Examples of Ukraine and Caucasus region can show the way TFRK historically developed and maintained in Europe. Then I put examples from Central Asia and then examples of the European North, Siberia and the Far East show the way TFRK historically developed and maintained in Russia.

a). Ukraine

The geographical area now called Ukraine is the country "through which the greatest number of European peoples approached the eventual homeland" (Davies, 1996). Located in the centre of the great European plain, Ukraine is the largest country in Europe between the border with Russia and the Atlantic Ocean. Ukraine represents different ecosystems starting with mixed and broad-leaved forests in the north and finishing with forest steppe and steppe in its central and southern parts. The Carpathian and Crimea Mountains represent altitudinal transformation of ecosystems. The Carpathian Mountains and Polesye (swamped woodlands) in the west and north of the country have the most forests and are of most interest for studying traditional uses of forests.

Intensive forest exploitation began in the 18th century, and along with railway building forest industry started to alter forest landscapes completely. Comparing with natural potential cover, the area of forests in this zone diminished in 4-4,5 times (Hensiruk et al., 1995). Paramount changes in forest land distribution occurred at the end of the 19th century after the abolishment of serfdom. In many villages, the landowners took control of many common lands, such as pastures and forests, that had been used by local communities. The right to use such resources as forests, pastures, and ponds was called "servetut" (Lasurenko, Krohmal', 2004). In the beginning of the 20th century, the majority of the forested areas in Ukraine belonged to private owners (65.7%) and state forests occupied 21.8% of the total forest cover. During the Soviet time, forests belonged primarily to the State. In addition, collective farms owned small areas of forest. However, the socialist system of land use and ideology radically changed the traditional land use system that had been in place in both Eastern and Western Ukraine (Hensiruk, Furdychko, Bondar, 1995).

Forest restoration started in the midst of 19th century on small areas in steppe and forest-steppe zones of Ukraine, as well as in the Carpathian Mountains (Vakaluk, 1971). Focusing on sustained yield production of wood there were created monoculture plantations of Norway spruce (Picea abies) in the Carpathians and Scots pine (*Pinus sylvestris*) in Polesye. Today clearcutting is prohibited in over a half of the forested area, and a total area of 12% is under protection. This area is constantly increasing, which forces some forestry units out of business, especially under the current economic recession (Synyakevych et al., 2009).

Now Ukraine provides a good example of pursuing an education policy that involves traditional forest knowledge. It is a comprehensive curriculum called "Mountain school. Current State. Problems and Prospects", developed by a research collective in Ivano-Frankovskiy region.

b). Caucasus region

The Caucasus region is rich in biological diversity. It has a complex system of altitudinal belts and varied humidity from subtropical landscapes in the west to semi-deserts in the east. The forest was not only a resource but it also had ecological, aesthetic, recreational, cultural significance (Gulisashvili, 1956). Plant diversity in this region exceeds 5000 species making the local flora the richest in the Northern Eurasia.. Armenia and Georgia provide good examples of traditional uses of forests.

The Republic of Armenia occupies an area of around 29 700 km^2 and is situated in the southern Caucasus. From a high of more than 30 % forest cover in the historical past, today Armenian forests cover is less than 10 % of total area, and forests are located very un-evenly. The richness of flora and vegetation of Armenia gives the population an opportunity for the wide use of plant resources.

Georgian forests are divided by landscape conditions into mountain and plain forests. Their total area is 2 million 988 thousand hectares. Mountain forests cover 98% of the total wooded area whereas plain forests cover just 2%. Georgia territory absolute height average is 1,508 m. Forest has always played a significant role in the life of a country, and vegetative cover of Tbilisi's suburbs was used as fuel wood for many centuries. Hence, present cover is of secondary origin and in most parts its species composition is changed due to anthropogenic activities.

Traditional knowledge in the Caucasus countries has a long history. As early as in XII century during the reign of Queen Tamar there existed a position of a forest disposer. Data on green construction are found in many historic sources of V-X centuries.

Care of forests rooted to Armenian Van kingdom from 9-6 centuries B.C. Still in 4 century A.D. Armenian king Khosrov Kotak established and preserved large forest patch in Ararat valley for breeding wild animals and hunting, which in 1958 became the first State nature reserve in Armenia. Historically Armenia was known by high art of decorative gardening. Sacred trees for ancient Armenians were silver poplar, plane tree, walnut, violet, etc. Decorative gardening was considered as honorable craft in ancient Armenia. At that time the primitive methods of selection were known by gardeners. Cutting, irrigation and inoculation were used already in old times. It was applied different methods of struggling against pests and diseases of plants. Many of these methods are used now for organic agriculture.

Historically, a wide range of wild-growing fruit and edible plants were collected. Some of those plants have since been more broadly cultivated through agricultural practices rather than simply collected from wild sources. More than 200 wild-growing plants in Armenia are used as

food products. However, from 300 edible species of mushrooms only 10 are used on a regular basis used by local residents (Ter-Ghazaryan K. et al., 1995). Medicinal plants in Armenia are the basic operating agent in national medicine and are used both separately and in composition of various gatherings. Theoretically, about 800 species of Armenian flora could be used for medicinal purposes (Gabrielyan E. et al., 2004). About 10 % of all plants in Armenia have some medicinal value and for many years have been used in traditional medicine. However, gathering of some herbs has diminished natural stocks of these plants to a critical level.

The crossroad geographic position, continuous wars, and loss of independence through centuries caused considerable loss of Indigenous knowledge with respect to forest management. In the beginning of the 19th century, when most of the Southern Caucasus region became a part of the Russian empire, new forest management practices were developed, particularly charcoal preparation for copper mining industry and fuel-wood gathering for increased population. After independence in 1991, economic and transportation crises created forest degradation. As a result, forest management has been non-effective, as traditional knowledge is not practiced by state forest managers in forests of Georgia and Armenia.

c). Central Asia

The sub-region of Central Asia includes the territory covering approximately four million sq. kilometers, situated at the junction of Europe and Asia. In administrative and political respect there are 5 new sovereign states – Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan, which declared their independence in 1991 after disintegration of the Soviet Union. The population of the Central Asia sub-region makes up more than 59 million people, and average density – almost 15 people on 1 sq. kilometer (Integrated Assessment, 2007)
There is a large diversity of ecosystems on the territory of Central Asia including deserts, steppes, meadows, forests, water ecosystems, etc. Cultural diversity and accumulated experience make up wealth of traditional knowledge and technologies of sustainable nature management of Central Asian nations. Forest and bushes ecosystems nowadays take up 2 % of the territory of Central Asia (Shukurov, 2008). Presence of different types of forests in countries of Central Asia is dissimilar, for example, there are spruce, spruce-and-fir, juniper, walnut, pistachio, maple, poplar-and-willow and birch forests in Kyrgyzstan (Golovkova, 1957), and in Kazakhstan the forest areas are consisted of pine, birch, aspen, saxaul and other types of forests (Mirhashimov, 2005).

During a period of active trade on the Great Silk Road, Central Asia countries exchanged not only goods, but also traditional knowledge in the sphere of nature management. In later periods – Soviet and post-Soviet – these links were preceded and developed. Considering

traditions of nature management, particularly forest exploitation, in pre-Soviet period - two types of forest treatment can be marked out, that first of all connected with a life style.
Nomads used forests directly, for heating, making some parts of the yurts (houses) and household utensils. Forest areas belonged to certain communities and families. Permission from the community was necessary for cutting down of trees. Another type of nature management was developed among settled people. So, for example, people of not numerous permanent settlements in a desert have a strict ban on cutting down of trees in nearest neighborhood areas. Cutting trees in the areas of 3-5 km around the settlements could result in expulsion from a community. For settled people it was permitted to gather only branches and stems (Information Digest, 2006). For such communities forest plantations became one of the best methods for stabilization of slopes. Stepped terraces in Tajikistan have thousand-year history. The method of slopes terracing and cultivation of fruit and nut gardens has been known to inhabitants of mountains since ancient times. A tradition to use forest belts to stop blown sands was also saved in some places.
Integrative and disintegrative processes in the territory of Central Asia led to continual mixing of people, their traditions and cultures, connected both with natural resources and forest exploitation. For example, migrated families from Russia brought their traditions and knowledge in the sphere of nature management, and particularly in forest exploitation. That peasants, migrated from the black soils zone of Russia, were convinced that forest can be cut down anywhere and in any amount – it will be renewed by itself, that's why they dealt with forest like with enemy (Knize, Romanyuk, 2005). This approach also influenced forest exploitation in Central Asian countries during Soviet and post-Soviet periods.

Nations of Central Asia had advanced folk medicine, based on animal and vegetable products. For example, more than 200 species of plants were used by Kazakhs for treatment of different human and animal diseases. For hygiene purposes people used soaps made of ashes of different herbs and saxaul which have antibacterial properties. For example, such plants as karakol aconite (Aconitum karakolicum Rapes.) – growing in the zone of spruce forests of Issyk-Kul lakeside in Kyrgyzstan – were used by local people from the earliest times as a treatment of rheumatism, pulmonary tuberculosis, etc. Local population used large amount of forest plants for food. Unique methods of conservation and drying of fruits and berries were saved. Beside this, there are large amounts of national recipes of meals that contain forest plants. Some herbs are used as spices. Such plants include Marshall's thyme (*Thymus marschallianus*), common origanum (*Origanum vulgare*), ziziphora (*Ziziphora clinopodioides*).

Nowadays traditional knowledge is practically not used in the system of forest management in Central Asia. There are only isolated cases of usage one or another traditional

mechanisms in forest management at the local level. Among all used technologies several traditional practices of forest exploitation and management in Kyrgyzstan and Tajikistan were identified. For example, we can point out terracing of slopes during tree-planting and a technology of “hanging gardens”. This “hanging gardens” technology is used by mountain dwellers in conditions of poor soils, shortage of land and lack of water for irrigation. The technology allows creating small oases with fertile soil on poor lands, where it is possible to plant trees, which will not dry during summer period. This technology was widely used in mountain villages of Tajikistan during the pre-Soviet period but largely disappeared during the Soviet reign.

PRESENTATION and ANALYSIS of DATA

Part III. Indigenous knowledge in the Russian Federation

The Russian Federation is the largest country in the world. It is inhabited by over 100 Indigenous Peoples’ communities. Each of them has a unique material and spiritual culture, finding expression in the traditional uses of natural resources, indigenous knowledge, and practical skills.

Until the 12th century the use of the forests and forest lands in Russia and Ukraine was not regulated. In deeds and decrees of the Kyev Rus the forest as a land category was rarely mentioned. Rather, lands having greater significance at the time, such as ploughed fields, meadows, hay fields, bee-keeping and beaver hunting were referred to (Hrushevsky, 1907; Teplyakov et al., 1998). The first Forest Code, which also included a law about the forest ownership, was adopted in 1649 by Tsar Aleksei Mikhailovich in Russia, and thus of the Eastern Ukraine which was a part of the Russian Empire. One of the first Russian laws about forest protection was issued in the 17th century, during the time of Peter I. It became prohibited to do logging and hunting along the big rivers and country’s borders (Hensiruk ,1964, 1992).

Since the 18th century during the period of Catherina II the laws were only about state forests, and the private owners were allowed to do whatever they wanted with their forest property. Most of the forests belonged to the state (Hensiruk, 1964, 1992; Hrushevsky, 1907). Private forests were used for bee-keeping, hunting, to produce tar and tannin. The first record about the sustainable use of forest was made in the law from 18th century, adopted under Catherine II, which called: commercial and state interests demand that the future abundance of the forests be insured by a precise relationship between harvesting and reforestation (Teplyakov et al., 1998).

In the beginning of the 20th century a concern about deforestation within the European North of Russia was voiced for the first time, even though it was often perceived as a region of boundless taiga forests with only small patches of populated and intensively used land. The foresters were concerned with the fact that the northern Russian forests were declining, losing valuable timber supplies of large pines and spruces. Unregulated selective cuttings of the 19th century together with wildfires following them have gradually turned taiga northern forests (formed mainly of large old trees) into thin-tree ones (Knize, Romanyuk, 2005). Those forests had a lot of damaged and unproductive trees, that wouldn't be logged by the forest industry. Forest industry people and the most of the northern population depended on supplies of the valuable timber, which has declined. As a result, saw mills were forced to use thinner and thinner trees. Many factories closed, having become unprofitable. There remained quite few large patches of natural forests in the European Russia that were most valued by the forest industry. At the same time these patches are the last remnants for the natural biological diversity of the taiga forests. Thus, one can see the way the most valuable forests declined. It resulted in a current situation of few remaining natural stands in European Russia, despite the fact that there used to be many valuable and accessible forests. In fact, the majority of loggers are cutting down the remains of the natural taiga that have survived in the most remote areas, hard for access in the former times. As to the denser populated regions of Europe the industrial deforestation had occurred there several centuries before.

Over the last two decades, the vast area of the northern part of the Asian Russia has seen unfavorable economic conditions. With the worsening social conditions less population remained in such harsh environment. For example, the vast Russian Arctic regions are populated by almost 10 million people, with the most numerous group now being the 'alien population' (the first generation living in a new area). In the north of Russia, besides the alien population, one can single out two more large groups – the so-called old-timers and Indigenous Peoples. Often Indigenous Peoples are forced away from their traditional lands by recent migrants involved in mining of non-ferrous metals, coal, oil and gas explorations. Needless to say, that all of these impacts were negative for the environment.

Hunting and fishing has been an important source of knowledge about the environment. The success of craft and consequently Indigenous Peoples' lives themselves depended not only on knowledge of specificity of natural environment manifestations (particularly negative and dangerous), but also depended on a lot of specific knowledge such as information about the migratory routes of animals, birds, fish, natural disasters, catastrophes, etc. This information was based to a large extent on intimate knowledge of habits and way of life of the inhabitants of

forests, rivers, mountains and coasts. Hunting for wild animals was the most important source of food for aborigines' lives. The survival of the whole peoples in the vast territories of the North, Siberia and the Far East of Russia depended on its success.

Types of traditional hunting husbandry were closely related to environmental conditions. Any type of hunting accumulated a variety of natural history knowledge, and a hunter, who did not know the habits of dangerous predators, could die. Hunting methods were developed on the basis of the knowledge of the animals' peculiarities. Siberian hunters were famous as skilled forest professional hunters. The useful skills connected with craft were consolidated in national experience, and were supplemented with such everyday information as an ability to choose a place for a long stay in winter and summer, construction of temporary shelter from bad weather, search of a suitable fuel for a campfire, an ability to kindle and maintain a campfire in any weather; quick search of food raw materials and cooking in the field. There is also an amazing breadth of craft methods, hunting tools and options for the use of special transport during hunting: Orok people rode on reindeers during hunting, Kety people - on skis dragging special hunting sledges, in South Siberia horses were widely used, but in the north - dogs were widely used.

The culture of hunters has been clearly shown in a harmonious system of care for game animals. The rule of conservation and wise utilization of resources of wild plants and animals has been existed from time immemorial. The environmental experience has being accumulated gradually by trial and error. The elders held an idea that any offense to the environment leads to problems caused by real "owners"- the spirits of forests, hills, rivers, lakes, seas and other characters, organized on the basis of generic feature.

The views on the interaction of animals, humans and plants, preserved in the aboriginal linguistic names are reflected here. According to the views of peoples in Amur river region and Sakhalin Island, plants have "a soul" that's why it is prohibited to break trees, gather grasses without using at farming. Special knowledge about plants was shown also in culture: hunters found out the plants, which kept sound for long time and gave a special sound when playing the original folk instruments.

Nowadays in connection with the study and conservation of biodiversity the knowledge of Indigenous Peoples acquires the exceptional importance. For example, in the process of searching for useful plants, the Tungus-Manchurian and Nivkhi peoples accumulated knowledge about the local flora (Podmaskin, 2001). At the same time indigenous peoples classified the species of plants according to the potential for utilization - food, medicines, plants for production of handicrafts and utensils. Tungus-Manchurian people were well acquainted with plants, which

were the main fodder for animals, birds and fish. This knowledge was necessary for a successful hunting of large animals which were connected with these plants. Seasonal phenomena in life of plants helped to decide on the craft periods in forest: some trees (for example, larch) was a "starting point" for beginning the fur trade for Udege and Orochi peoples; florescence of wild rose helped to know about the beginning of salmon spawning time, the yield of nuts - about bumper bag of furs and ungulates.

The Indigenous Peoples of Russia are very careful with forest resources. Nivkhi and Orochi peoples harvested firewood by using not axe, but timber hitch for breaking deadwood. Brushwood, wind-fallen trees, driftwood used for fuel and trees were cut with an axe just in case of emergency (Taksami and Kosarev, 1986). Udege, Ulchi and Nanai peoples believed that water pollution was the greatest sin, and it was considered as a norm to clear berry plantations from wind-fallen trees and to burn last year's grass.

Indigenous peoples see the biological diversity in their environment as a significant precondition for the maintenance of their cultural diversity and survival potential. They depend heavily on natural resources of their own localities because within the context of their practices they use the local resources for their own benefit. It is assumed that biodiversity conservation is the indirect outcome of these practices (Berkes et al., 1993). The Indigenous Peoples are among those groups that are most affected by the efforts to protect their environment and measures that disturb their activities. However, their stakes and aspirations are not yet taken fully into account (Jentoft et al., 2003). The Indigenous cultures have specific features and manifestations that enrich the cultural diversity of humanity.

Nowadays there is a serious, and ongoing loss of traditional knowledge and skills (Podmaskin, 2001). The reduction of traditional activities of indigenous peoples and the usage of objects of forest trade is a serious contemporary problem in most parts of Russia that are inhabited by indigenous peoples. Only urgent set of measures, including economic, social, environmental and legal measures to some extent can stop this negative process. In the indigenous territories of Siberia and the Far East just a few traditional uses are practiced, such as berry gathering, some hunting for meat and fur, fishing, and harvesting of just a few medicinal plants.

Conclusions

Northern Eurasia is one of the world's largest polyethnic regions, inhabited by many indigenous peoples. Each of them has a unique material and spiritual culture, finding expression in the traditional uses of natural resources, indigenous knowledge, and practical skills.

In the indigenous territories of Siberia and the Russian Far East only a small number of traditional practices continue , such as berry gathering, some hunting for meat and fur, fishing, and harvesting of just a few medicinal plants. Environmental problems of the remaining taiga forests in the European Russia are also complex and diverse. The most urgent problem is one of the forest resources decline in the European North of Russia, which has caused environmental, economic, and social concerns for over a century among foresters and forest managers.

Unfortunately, we are losing the indigenous heritage on conservation and the sustainable use of biodiversity and forest resources due to a decline in traditional uses of forests and indigenous and community livelihoods, intensive use of natural resources, and urgent social and economic problems faced by all the states of the former USSR.

Urgent actions need to be taken in the most of the North Eurasia to conserve and restore the traditional sustainable uses of forest-related resources. Traditional nature use is one of the major components of traditional livelihoods of the indigenous peoples of Russia. The indigenous peoples' philosophy has always viewed forests as part of their lives. Aboriginal people knew it for sure that their livelihoods and well-being depend on the environment conservation.

Recommendations

1) Conserve indigenous uses of natural resources to ensure traditional livelihoods of the Indigenous Peoples;
2) Develop and improve traditional livelihoods of all the Indigenous Peoples inhabiting Eurasia;
3) Improve the quality of life of bearers of indigenous knowledge and experiences;
4) Improve social conditions for village residents, who practice traditional livelihoods, to increase their birth rate;
5) Ensure access of Indigenous Peoples, practicing traditional livelihoods, to education facilities, based on their ethnic features;
6) Assist the development of communities and other self-government entities of the Indigenous Peoples.

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