

Effective Management of Recreation Resources for Human Capital Increase

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Abstract

The region's level of social and economic development depends mostly on the quality of human capital, which in its turn is determined by the quality of life. Recreation is essential for people to restore their work capacity and plays an important social and economic role as it contributes to the labour productivity increase. Currently in Russia, and in Siberian Federal District in particular, tourism and recreation areas are being intensively developed through budget and non-budget financing. However, the majority of projects lack ecosystem services assessment, which might cause financial risks for project implementation, as well as conflicts with the inhabitants. The paper establishes that it is necessary to use a complex approach to the project development, which implies ecosystem services assessment via socioeconomic methods.

Key words: human capital, recreation, ecosystem services, economic assessment

Introduction

Economic productivity and efficiency primarily depend on the quality of human capital, most significantly, that of population in urban areas since it provides the basis for economic growth.

Quality of life in terms of sustainable development is determined by a number of indices, including that of economic development, which in its turn boosts growth of cities and industrial areas, where different services are provided, financial flows and taxes are generated, and household and local authority incomes are accumulated. As C.S. Antognelli and M. Vizzari (2016) noted, urban environment and social and communal infrastructure stipulate the quality of life in the area. The environmental parameters include the quality of dwelling, efficiency of house holding, and the anthropogenic load on the local environment.

The level of local economic and social development, as well as the quality of life, is stipulated by the municipal entities and their industrial, cultural, agricultural, financial, human, and recreation potential.

Intense urbanization causes the demand for high quality nature rest and comfortable recreation. Recreation industry is concerned with landscape conservation and is inconsistent with natural resources production. Intensively developing urban environment is becoming more and more aggressive and has negative impact on human physical and psychological health because of stress it causes. According to World Health Organization data (2014), the human health depends on a healthy environment (20%), while some experts believe that about 95% of impairments are caused by the environmental conditions.

Recreation is essential for people to restore their work capacity and plays an important social and economic role. Thus, nature rest increases labour productivity and efficient labour time. According to the research data, Sunday rest in the forests around the city accounts for a 3% increase in annual average labour productivity.

As M. Kh. Akhmatova and E. Kh. Khaniev showed, in terms of social significance of natural resources recreation, forest is more valuable than wood. The forests in Germany are estimated at 53 billion euros, while the cost of wood products is 17 billion euros, and forest water protecting capability per one ha is 2.8 times higher than the cost of wood. According to K. Kupert and H. Pabst (2013), who provided estimates of forest resources with the regard to their social functions (including water regulation, environmental recovery, and recreation), the cost of forest is 280 times higher than that of wood.

As David M. Edwards et al (2012) noted, intense urbanization stipulates natural resources recreation management based on interdisciplinary scientific approaches which imply the concept and principles of sustainable development and economic assessment of ecosystem services. M. Giergiczny et al (2015) supposed that development and implementation of natural resources recreation management system will allow reaching the compromise between social and economic development of recreation areas and landscape and biodiversity conservation. Natural resources recreation includes forest green zones around the cities, conservation areas, wild life reserves, and national parks.

Soldatov S. A. (2001) supposed that natural resources recreation accounts for social healthcare affect (increased labour capacity, decreased incidence of diseases and death rate), which in its turn becomes economic effect in other spheres since increased labour capacity leads to labour productivity growth, decreased incidence of diseases reduces healthcare costs, etc.

Kuskov A. S. (2005) pointed at important economic functions of recreation: boosting local economic development; expanding labour market as people are involved in recreation services, as well as in other industries which are connected with recreation; the impact on distribution of income and costs across the country, for the benefit of recreation areas.

As Kruzhalin V. I. et al (2011) pointed out, in terms of recreation management and local recreation resources, there are three major types of countries attractive for tourists:

1) countries with abundant and valuable recreation resources and well-developed recreation service and infrastructure (for example, Switzerland, Italy, Greece, Turkey, etc.);

2) countries with high recreation potential but poorly-developed service (for example, Russia, countries of South Caucuses, etc.);

3) countries with limited recreation potential but well-developed recreation service (for example, the majority of countries in North West Europe).

Results and discussion

According to World Economic Forum data (2014), in the global competitiveness rating, Russia in 2013 ranked 64th out of 130 countries. As for Sustainable Development index, Russia was at the bottom of the list (the index includes such parameters as efficiency of environmental law, environmental regulation, amount of carbon dioxide emissions, number of endangered species, etc.). However, Russia was ranked 37 in 2013 and 27 in 2011 in terms of valuable natural resources.

According to United Nations World Tourism Organization (UNWTO), Russia possesses a great tourism and recreation potential. In some regions of the country tourism and recreation industry is at the initial stage of its development. The RF can become attractive for tourists if there are special economic zones for tourism and recreation (SEZTR).

Since 2006, 14 tourism and recreation zones have been established in the territory of the RF. The aim of SEZTR is to boost economic development of leading regions and create the multiplier effect, which covers all connected industries, as well as human healthcare and quality of life. This can be reached through making tourism and health resort services available for Russian people, environment conservation, and preservation of natural and cultural values.

Today, the greatest intact ecosystem is located in Siberian Federal District (SFD). Siberia is famous for its nature recreation resources, cultural and historical sights, which are of local, regional, federal and even global value. For example, in the territory, there are objects of UNESCO world natural heritage (Golden Mountains of Altai, Lake Baikal, Ubsunur Hollow, etc.), which is particularly important because of growing interest in global ecotourism. The high recreation potential of SFDt is currently considered an economic development perspective.

SFD is located between Ural Federal District and Far Eastern Federal District. It is a land area of 5144953 km², which makes up 30% of total national area. The population at the beginning of 2014 was 19292740 people, with population density being 4.0 people per square kilometer. The highest population density is in big industrial cities such as Novosibirsk, Omsk, Krasnoyarsk. Over the period of 2003-2013, there has been natural population growth and life expectancy increase, with a 12% rise of disease incidence and 3% reduction of costs for healthcare.

In the course of our research, we have considered several tourist and recreation zones in operation located within SFD: the Gate of Baikal (Ikrutsk oblast), Baikal Harbour (the Republic of Buryatia), Altai Valley (the Republic of Altai), the Turquoise Katun (Altai Krai), as well as SEZTRs in Tashtagolsk area and Kemerovo oblast.

These zones were established due to the regional particularities. They are currently large-scale projects with intensive investment aimed at development of two recreation areas of global value - Altai and Baikal (this explains why these SFD units possess the status of SEZTR). Within these zones, there are particular regulations for economic activities, specially developed infrastructure, preferential treatment and incentives for management companies and other residents including those involved in recreation service (100% remission of property tax, 13.5 decrease in the income tax rate paid by companies and applied towards the local budget, etc.). There are also non-financial support (management, information, and consultation) and financial one provided within the long-term projects on local tourism development.

However, in the investment project calculations there is no information on local ecosystem services assessment and inhabitants' opinion on natural resources management. Without considering this aspect, there are significant risks of project implementation to be faced by the investors and the national government, which provides financial support for the projects. Moreover, there might be conflicts between the investors and local inhabitants. To implement the concept of sustainability into SEZTR development, it is necessary to make economic assessment of ecosystem services and then compile it with the investment assessment.

However, the economic mechanism of integrating economic interests and efficient natural resources management has been beyond the scope of attention and none of the following documents has considered this issue: the strategies for local and national development, the concepts of SEZTR and business plans of SEZTR development, national tourism regulations, preferential treatment regulations, regulations on mountain ski tourism development, etc.

Therefore, natural resources assessment needs well-developed methodology for ecosystem services assessment, as well as an efficient jurisdiction basis. We suppose that recreation potential and ecosystem capacity assessment make the first stage of land development in recreation purposes.

Recreation resources in demand stipulate recreation load on the environment. Resting people and their vehicles have a negative environmental impact. Intense anthropogenic load reduces the quality of recreation resources, leads to ecosystem degradation, loss of biodiversity and deterioration of living conditions for the inhabitants.

A. Montis et al (2016) noted that under the conditions described above it is necessary to develop recreation resources management based on the economic mechanisms. In the opinion of M. E. Mastrangelo and the coauthors (2016), natural resources and eco services assessment is necessary to develop an adequate economic policy and to make appropriate economic decisions. As M. De Salvo and G. Signorello (2015) suggested, integrated economic assessment of environment including non-market value of recreation services, will make the environment competitive in its struggle for existence and conservation. As A. Filyushkina et al noted, the economic assessment presents the value of ecosystem and biodiversity, as well as their inestimable contribution to public welfare, in terms of economy and politics. To ensure sustainable management, it is necessary to distribute natural resource rent and reinvest in natural resources conservation and further development. Rental income distribution is a key factor, which may help to solve many social problems and overcome environmental challenges. Natural resources assessment can contribute to efficient decision-making by the government and private sector, as well as to enhancement of jurisdiction.

The results of Tomsk recreation zones economic assessment (2011, 2015) made in the course of our research show that it is rather important to take into account environmental and social aspects when developing methodology for natural resources economic management. The total recreation area of Tomsk agglomeration includes 145 natural monuments, 217 monuments of architecture, 165 nature conservation areas, 163 historical monuments, 190 tourism companies. About 800 thousand people annually visit Tomsk oblast and the amount of tourism services increases. As an example, we made economic assessment of Timiryazev pine forest ecosystem services. The forest performs recreation

and healthcare functions for Tomsk population (more than 600 thousand people). The forest microclimate and landscape are favorable for all season recreation.

We made economic assessment for the following ecosystem services:

- food potential;
- recreation and culture services;
- regulatory services.

The comparison of research data obtained in 2000 and 2012 shows that the quality of ecosystem services deteriorates upon improperly managed recreation activities, which leads to the decline in the area recreation potential, makes the area less attractive, and causes the decrease in the self-regeneration capacity of the environment (table 1).

Table 1. Data on social, environmental and economic assessment of recreation resources (Timiryazevo pine forest, Tomsk)

	2000	2012
Provisioning ecosystem services: real cost of wild berries and mushrooms, million dollars per year	2.8	2.7
Regulatory services (absorbing carbon dioxide), million dollars per year	3.4	3.4
Culture services (recreation services, aesthetic pleasure) in terms of willingness to pay, million dollars per year	3.8	16.9
Visiting forest for picking wild crop, %	54	19
Visiting forest for recreation purpose, %	8	51
Visiting forest for both picking wild crop and recreation, %	32	16
Percentage of people willing to pay for the area conservation	63	80
Willingness to pay (WTP) per capita per year, dollars	0.7	42

As it can be seen from the table, the amount of inhabitants visiting forest for the recreation purpose has increased by 6.4 times since 2000, while the amount of people visiting forest for picking wild crop has reduced by 3 times. One of the reasons for the wild crop failure is the increased anthropogenic load. It is noteworthy that the percentage of people willing to pay for the pine forest conservation has risen (from 63% in 2000 to 80% in 2012).

The economic assessment of Timiryazevo pine forest ecosystem services indicates that the forest is most valuable as an ecosystem, which is proved by the total cost of ecosystem services (23 million dollars), with recreation and culture services making up the major share.

It is important to note that the integrated economic assessment combines market and non-market based approaches. This socio-economic assessment of recreation services in terms of WTP does not only present the value in financial equivalent, but also provides information on the causes for changes and the impact on the population. Also, the information obtained contributes to recreation resources management planning.

When asked the question, "Do you think that Timiryazevo pine forest has changed over the past 10 years?", 55% responded "Yes, the forest environment has degraded", 12% answered "Yes, the pine forest environment has improved", 4% said "No, the forest environment has not changed", and 29% neither agreed nor disagreed.

When asked the question, "Does Timiryazevo pine forest satisfy your recreation needs?", 16% responded "Yes, completely satisfies", 63% answered "Yes, but the forest management could see some improvements", and 21% said "No, I prefer visiting town parks".

The survey results indicate that Timiryazevo pine forest is important for inhabitants, who are aware of current challenges and are interested in the forest conservation. Therefore, when developing management mechanism, it is necessary to focus on Timiryazevo pine forest ecosystem conservation.

The example analyzed proves the importance of non-market approach to economic assessment in terms of WTP and demonstrates its integration in decision-making process.

This research contributes to clear understanding of challenges and objectives of recreation resources management, which should ensure both biodiversity conservation and efficient operation of ecosystem services. We suppose that when designing a recreation area development project, it is important to use the interdisciplinary approach. It is also necessary to make a biophysical assessment of the area (ecological capacity and environmental carrying capacity), as well as socio-ecological economic one, which provides information for management decision making. Both approaches being integrated, it is possible to make a complex assessment of social and economic aspects.

In our opinion, it is necessary to provide a legal and regulatory framework for design and implementation of recreation area development projects; the companies should make ecosystem services assessment before the project design and on the basis of the appropriate methodological approach, which implies:

- choice of ecosystem services to be assessed;
- choice of assessment methods in compliance with international assessment standards, including market and non-market methods;
- social survey to determine the value of recreational, cultural and aesthetic services for recreation purposes with the assessment of willingness to pay for area conservation and development.

The methodological approach described above will reduce the risk of government and private financial losses while implementing recreation area development projects, as well as mitigate the damage to the social and economic interests of inhabitants.

Conclusion

Recreation resources perform a number of functions in sustainable development of urban areas: social (reclamation of human resources), economic (the income from tourism and recreation industry), and ecological (biodiversity conservation and environmental monitoring).

At the stage of recreation area design, environmental and social aspects of the area development remain beyond the scope of attention, which causes risks for implementation of recreation resources development projects and leads to land degradation.

To ensure sustainable development of the recreation area and steady income from tourism business, it is necessary to make ecological-economic assessment of all ecosystem services of a particular recreation area.

To make an economic assessment of the recreation area, one should use the methodological approach based on integration of market and non-market methods, since the latter allows finding out the population preferences and estimating the ecosystem value.

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