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## ECOLOGICAL AND ECONOMIC PRINCIPLES OF RECREATIONAL ACTIVITY IMPLEMENTATION IN SCOPES OF THE NATURE RESERVE FUND OF UKRAINE

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The approaches to the natural resources economic assessment as the starting point for arranging recreational activities within nature reserve fund territories are considered. In addition, the ecological and economic interdependencies that are taken as the basis for the complex assessment of commercial and environmental potential of recreation activities have to be researched. The article contains the author definitions of particular processes and notions that occur in the recreational environment of the nature reserve fund.

**Key words:** nature reserve fund, nature reserve territory, natural resources, mineral products, economic assessment, recreational activity.

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## ЕКОЛОГО-ЕКОНОМІЧНІ ЗАСАДИ РЕАЛІЗАЦІЇ РЕКРЕАЦІЙНОЇ ДІЯЛЬНОСТІ У МЕЖАХ ПРИРОДНО-ЗАПОВІДНОГО ФОНДУ УКРАЇНИ

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Розглянуто підходи до економічної оцінки природних ресурсів як вихідної умови налагодження рекреаційної діяльності на територіях природно-заповідного фонду. Крім того, дослідженню підлягають еколого-економічні взаємозалежності, на основі яких проводиться комплексне оцінювання комерційної та природоохоронної перспективності рекреаційної діяльності. Наукова робота містить авторські дефініції окремих процесів і явищ, що відбуваються у рекреаційному середовищі природно-заповідного фонду.

**Ключові слова:** природно-заповідний фонд, природно-заповідна територія, природні ресурси, корисні копалини, економічна оцінка, рекреаційна діяльність.

### Problem statement

Economic assessment of natural recreational resources is the primary stage of establishing recreational activity within nature reserve fund territories. Such assessment may be compared to recreational potential definition for peculiar object or territory. In the eyes of scientific staff headed by A. Holikov “natural resources economic assessment is a monetary expression of natural advantages national economy value determined by measuring efficiency of their restoration. The resources assessment application is predetermined by the need to account natural factor influence on enhancing efficiency of public production, improving its branch and territorial structures, stimulation of restoration, rational use and protection of natural resources limited both in time and space” [1].

N. Makarova, in her turn finds that “natural resources economic assessment means economic criteria application, i.e. reconciliation of natural factors features with demands that arise from human practical economic activity. The aim of natural resources assessment is improvement of their utilization, restoration, and protection. Encountering impact of regular territorial differences in natural features of these resources and their sources on

public labour performance is regarded as natural resources economic assessment. Resources space distribution unbalance makes it necessary to consider differences in scopes (reserves, areas, etc.) of assessable objects resources. It is suggested to regard the comparative economic efficiency of utilization of this resources source or their territorial combination to be the natural resources assessment criterion. The efficiency discrepancies are expressed in differentiated total expenses of living and materialized labour. It is clear that value of this or other kind of natural resources is determined by national economy effect, achieved while its use. Such an effect scale, as well as scale of expenses necessary for the majority of kinds of resources, is differentiated by territory; it reflects the territorial production structure established at each stage with specific correlation figure of needs in resources and opportunities to meet them” [2].

O. Miahchenko provides quite neat definition in accordance with which the natural resources assessment “is a monetary terms of whole economic value of natural advantages, life ecological conformability that is determined by assessment of restoration, protection, utilization, and processing natural resources. There are two major concepts of natural resources utilization assessment: cost-based, basing on expenses for natural resources development, and annuity, basing on calculation of resources utilization national economy effect as differentiated rent” [3].

While arranging the above definitions of natural resources economic assessment we shall state it is our belief that the mentioned assessment is to be regarded as defining quantitative parameters of natural resources potential of a separate object or/and territory with further establishment of public effect in monetary term from natural resources and advantages utilization in long-term time lag. Thus, natural capital economic assessment has to contain two indices groups: reflecting natural resources quantitative condition and those showing qualitative opportunities of their utilization, protection, and restoration. Finally, natural resources quantitative assessment is one of primary stages of general economic assessment. Because it is impossible to determine natural capital potential social utility not knowing its scopes.

Within the above context we shall point out that far from any natural resources are subject to economic assessment. It is explained by the fact that some natural advantages are not subject to application of techniques of their quantitative and qualitative measurement. This especially pertains not to natural resources but natural conditions.

The economic assessment objects are the following kinds of natural resources and advantages:

- natural and raw material advantages and mineral products;
- agricultural lands;
- forest resources;
- water resources.

### **Analysis of recent research and publications**

Ecological and economic aspects of natural resources economic assessment as the source platform for recreational activity implementation were studied by such scientists as A. Holikova, Z. Maniv, I. Lutskyi, L. Harmider, L. Mykhalchuk, N. Makarova, O. Hulych, O. Miahchenko, and R. Dubas.

### **Objectives**

The scientific paper aims at demonstration and justification of the most efficient approaches to natural resources economic evaluation in the context of establishing recreational activity in scopes of natural reserve fund which would boast ecological expedience and economic potential.

### **Materials**

Disregarding general ecological and economic statement let us pass on to demonstration of processes of natural resources economic assessment in scopes of objects and territories of nature reserve fund of Ukraine. In general, nature reserve fund resources economic assessment is paramount in the context of establishing economic activity by field-specific subjects of nature protection relations. It should be also noted that the above presented types of natural resources the techniques of economic assessment are applied to, are as well topical for objects and territories of nature reserve fund since economic and ultimately recreational activity within such territories and objects may be implemented on their base. Let us consider each of them in more detail.

Natural and raw material advantages and mineral products are mineral formation of Earth crust, composition and physical features of which allow to efficiently utilize them in material production. Raw materials provision is one of the powerful benefits for the national economy of Ukraine but the mentioned benefit rather indirectly deals with the non-production sphere, a constituent part whereof is nature protection. It should be stated here that natural and raw materials advantages and mineral products within nature reserve fund objects are mainly mineral water, peloids, and other recreational mineral resources. So, economic development of mineral products in nature reserve affairs by its economic potential significantly relinquish the material production. At the same time, mineral products are very often the material base for recreational activity as a major direction of economic behaviour of subjects of nature protection relations within nature reserve fund territories.

Taking the before said into account the need for economic assessment of recreational designation mineral products comes to the forefront owing to the possibility of their development. In all fairness, it should be stated that it is easier to carry out economic assessment of namely recreational mineral products than the same procedure related to natural and raw materials advantages of other branch direction. This may be explained by the fact that public effect from utilizing recreational mineral products is calculated only basing on monetary result of development of physical unit of mineral raw material of specific type aiming at resort and health improvement. Thus, major criteria for recreational mineral products economic assessment within territories and objects of nature reserve fund of Ukraine are the following:

- deposit scale predetermined by its total reserves;
- mineral product quality (mineral composition, chemical and technological qualities);
- technical conditions for exploitation;
- deposit area economics;
- scarcity of a type of resources, possibility of its substitution and social and economic value;
- protection of ecological system where the extraction of mineral products is performed.

Each of the presented criteria of economic assessment of mineral products of recreational value may have very specific quantitative parameters which provides for the ability to calculate integral monetary index that will reflect natural resource economic assessment. Mineral products economic assessment alone is not an end in itself but just an initial stage for determining the economic prospects for their development processes. Depending on economic assessment results, it is possible to find out the potential level of production and economic effect (outcome) from mineral products utilization by subjects of nature reserve aiming at recreation, health improvement, and resort.

This means that recreational mineral products economic assessment in scopes of objects and territories of nature reserve fund may be regarded an element of setting up a strategy of production and economic relations directed at financial resources deployment for their further use for performing functions of natural ecosystems protection and restoration as well as promotion of ecological way of thinking.

Agricultural lands are the second kind of natural resources that economic assessment techniques apply to. Of course, land resources economic assessment is of great importance for progression of agrarian and industrial relations but its content is leveled out in the context of recreational activity.

A different matter is with forest resources, their social and economic features reveal great role in provision prospects for both industrial and economic and recreational and tourist activity. It should be mentioned here that techniques related to determination of social and economic value of forest resources used for industrial production prevail in practice of forest fund economic assessment. The evidence whereof are scientific views of a number of scientists, namely Z. Maniv find that “forest fund lands are assessed with respect to their state (industrial) use as well as in cases of their use by different non-governmental legal entities (farmers) for meeting the needs in timber resources, products of side utilization, forest social and natural qualities” [4].

R. Dubas holds to an opinion that “ecological and economic assessment of forest resources is a necessary background for settling a wide range of issues connected to forest husbandry optimization. Its meaning is important due to transition to market relations, wide and throughout implementation of economic methods of environmental management when it is especially needed to obtain objective assessment of all production factors value, i.e. labour, production and natural funds, including forest resources...”

Forest lands economic assessment is meant as their evaluation in monetary term as the major means for forestry production. The assessments for 1 hectare of forest lands in forests of different protection categories encountering the economic effect from utilization of the whole complex of products and utilities that may be obtained at these lands under the condition of their rational use in forestry are preliminary calculated in order to obtain forest lands economic evaluation” [5].

The cited and other scientists in their author definitions indirectly mention forest resources additional features and utilities, apart from their production and industrial value. But in most cases the emphasis is laid on the ways of forest usage as timber and the accompanying materials. Following this line of reasoning, the economic and mathematical techniques of forest resources economic assessing directed at determination of public effect from forest utilization with industrial goals are being formed.

In our turn, we suggest other approach to forest resources economic assessment directed at detection of their recreational value within nature reserve subjects activity. To achieve this, in our way of thinking, a rather important index reflecting recreational power of forested area as recreational territory should be introduced into the assessment technique. In other words, the mentioned index is defined as territory recreational capacity as “ability rate of winsome for resort territory or water area to provide psycho-physiological comfort and sporting and strengthening activity for a settled number of the vacationers without degradation of environment or antropocultural complexes (agricultural, forestry, historical, etc.) within this territory (water area) and without quick wear of special equipment” [6, p. 121].

The territory recreational capacity index should be considered as a primary element for forest resources economic assessment system as an object of recreational activity of subjects of nature reserve sphere. In addition, the assessment techniques need to be complimented with other values that would encounter all parameters of recreational nature management in economic and ecological levels in more details.

Approaching the logical end of the scientific and practical characteristics of processes of recreational forest resources economic assessment it should be stated that in scopes of nature reserve fund recreational activity implementation based on the mentioned resources development is adjusted by indices of the region economics where the nature reserve object is located as well as by existence of other natural advantages having recreational potential. Under condition of recreational opportunities complex combination of natural capital different types the total economic effect from leading economic activity by nature reserve subjects could provide sufficient financial ground for implementing direct nature protection functions.

Water resources are one more type of natural advantages that economic assessment techniques apply to. The latter have powerful recreational potential that is also not always used appropriately by nature reserve subject in the context of adjusting efficient economic activity.

It is well-known that there are national parks based on powerful water objects in Ukraine. Shatsk National Park of Nature created for protection of rare natural complexes in Shatsk lakes district may be an example. There are other nature reserve territories with less powerful recreational water basis. However, the existence of recreational water resources shall not be regarded as the only supporting condition for settling efficient recreational activity within nature reserve territories. It is common that water and other resources in nature protection zones are used by private business entities with violation of the conventional ecological norms and standards. In this context it is advisable to concentrate on creating a modern system of economic relations, that would include complementary assembly of legal, organizational, administrative, economic, and financial instruments and levers directed at recreational activity provision within territories of nature reserve fund objects basing on balancing ecological and economic interests.

### **Conclusions**

It is obvious that setting up profitable recreational activity within objects and territories of nature reserve fund depends on a complex of the whole-national and internal economic actions related by the same aim and adjacent goals. One should bear in mind that the very recreational activity is only an element of the general nature protection policy both at macro and micro levels.

### **Prospects for further research**

Its implementation has to provide for sufficient financial and economic base for other functions fulfillment that is regarded to be field-oriented with respect to functioning of nature reserve fund objects and territories. This refers to the environmental protection, natural and resource potential restoration as well as to promotion of ecological way of thinking.

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