

Postmodern Openings

ISSN: 2068-0236 | e-ISSN: 2069-9387

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2021, Volume 12, Issue 2, pages: 149-169 | <https://doi.org/10.18662/po/12.2/301>

Ecological and Economic Principles of Use and Reproduction of Natural Recreational Resources in the Context of the Postmodern Consciousness

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Abstract: The article highlights the importance of the worldview (postmodern) aspect in solving the problems of using and recreating Ukrainian natural recreational resources on the example of the Carpathian macro-region. It shows that ecological, economic and social principles of the use of natural recreational resources, issues of their protection, especially in the Carpathian macro-region as the main natural tourist destination of Ukraine, remain insufficiently studied. The purpose of the study is the theoretical and methodological justification of ecological and economic principles of use and reproduction of natural recreational resources and the development of practical recommendations for their implementation, taking into account the trends and contradictions of the postmodern consciousness.

The scheme of realization of process of reproduction of natural recreational resources which provides such unity of economic, social and ecological components for maintenance of sustainable development of the market of recreational services is offered. There are two areas of ecological and economic principles of reproduction of natural recreational resources: intra-industry, which characterizes their reproduction within the recreational sphere of the economy and intersectoral, which relates to recreationally attractive natural resources, which at the time of study are subject to economic activities in other areas. The article proves that the above-mentioned directions of recreating natural recreational resources will be effective under the conditions of transforming the postcolonial consciousness in the region's residents and the users of its recreational potential.

Keywords: *Carpathian macro-region, sustainable development, recreational services, production activity, degradation and exhaustion, postmodernism.*

How to cite: Kliuchenko, A., Humenyuk, H., Melnyk, V., Tkachenko, S., Bogdanets, V., & Nosenko, V. (2021). Ecological and Economic Principles of Use and Reproduction of Natural Recreational Resources in the Context of the Postmodern Consciousness. *Postmodern Openings*, 12(2), 149-169.

<https://doi.org/10.18662/po/12.2/301>

1. Introduction

Given the postmodern state of culture and consciousness, the globalized world today is much interested in the ethnic values of marginalized peoples, exotic tourist destinations and the domestication of everything natural. According to postmodernism theorists, however, an individual refuses to “walk the usual ways” and know the world by universal methods. Instead, one can observe the plurality of discourses, dialogueness, “blurring boundaries” and the high value of individual modalities as the manifestations of the subjective (Kozluk et al., 2020; Kozlovskiy et al., 2017; Kozlovskiy et al., 2019, Maksymchuk et al., 2020; Peters & Biesta, 2009; Trifonas, 2003). On the one hand, all these trends facilitate the segmentation and the development of recreational services. They create new dangers for tourist clusters and ecosystems that have not yet been destroyed by culture. On the other hand, in the conditions of market transformations, intensification of scientific and technical progress and large-scale urbanization the dynamics of development of the recreational industry is traced. This is an increase in demand for natural recreational resources, which increases the need to organize their rational use, conservation, improvement and protection.

At the same time, the leading ecologists, who consider earthly resourcefulness in the context of the postmodernism, warn against absolute approaches and focus on the transformation of the subjects’ awareness of resource conservation on the ground. In particular, Attwell and Cotterill (2000) explore the problems of human population pressure on the unique ecosystem of Africa. They indicate that the romanticization of the precolonial societies places undue emphasis on the traditional resource management systems, and one challenges the postmodern view that traditional peoples have caring for natural resources (Attwell & Cotterill, 2000). They assume that this occurs only under unlikely conditions of low human population density, lack of access to modern technology and limited impact of consumption (Attwell & Cotterill, 2000). Although the postmodernist approach to resource conservation involves delegating environmental and restorative control to local communities, they often have neither the economic, nor the knowledge-related, nor even the worldview-related abilities to do so.

Ukraine should be able to establish a constructive dialogue between the subjects, ensure effective management and develop effective marketing strategies to use and revive recreational resources. In the context of the ongoing globalization, interprofessional or paraprofessional communication is becoming more widespread, due to the information entropy and the multimodality of the participants in social dialogue. Under such conditions,

Richardson and Sheena (2006) isolate a cautious, limited, chaotic and ideal model of communication in the framework of professional interaction. This calls for certain reforms in the dialogue between conservation professionals, the provision of recreational services and those who use such services.

Another anthropological aspect which affects both the use and conservation of resources is the population's environmental consciousness closely linked to patriotic and political one. Unfortunately, the countries of the post-totalitarian space (including the analyzed macro-region) have only started to form such consciousness. Besides, the postmodernist trends, although full of communication, presuppose the uniqueness, integrity and sovereignty of each person and his or her worldview (Aleksandravičius, 2016, p. 14). These factors do not contribute to uniting people with some positive environmental goal. Therefore, it is essential to develop institutional mechanisms for regulating the use and recreation of resources in Ukraine.

Ukrainian researchers tend to consider the regulation of the recreational potential and stimulate the sustainable development of natural resources institutionally (from top to bottom). This way is economically feasible and yet ignores one's subjective involvement in the world (Herasymchuk & Polishchuk, 2011, p. 31). When it comes to the recreational potential of a particular region, Ukrainian ecologists, economists and tourism professionals are more likely to consider the pragmatic aspects of use than conservation and increase. For instance, Prais (2008) considers the conceptual foundations of recreational clusters in Khmelnytskyi region as the promising international tourist areas. Besides, Shchuryk (2011) defines some prospects for developing recreational services in the Carpathian region but does not indicate the problem of non-regenerative forests and the lack of funding for resource conservation of the macro-region. In this context, the Carpathian macro-region deserves attention, which, among other regions of Ukraine, has a strong natural and recreational potential.

The pragmatic and business-oriented approach has led to several studies on the recreational and infrastructural development of unique ecosystems, as well as on their potential in terms of macroeconomic benefits (Hulych, 2004). The economic problems of developing resort and recreational areas are seen in the investment of those aspects that prevent depletion, use and almost never preservation and restoration (Gudz, 2001).

The danger of the postmodernist attitude towards the natural, especially non-renewable resources, lies in the fact that postmodernists are deceived by "diversity", "multiculturalism", "uncertainty", "sustainability" (Klein, 2018, p. 477), whereas the use of nature involves the adoption of such categories as "variability", "certainty", "non-culture". Therefore, the

postmodernism proclaims calls, not objective guidance, for practical action in the interaction with the natural but not the anthropogenic world.

The problem of today's resource use (nature domestication) is addressed in the research by Abas et al. (2018). They note that until recently, "cultural ecosystem services (CES) have been one of the most important aspects of determining human well-being, especially for those who are called urban dwellers" (Abas et al., 2018). Many similar studies have been conducted on this particular issue. However, they have all been discussed only from the point of view of objectivism. Still, CES are determined by subjective factors, such as happiness, health, emotions, and these factors cannot be quantified to adjust the use of recreational resources.

The above-mentioned contradictions are relevant to the study on ecological and economic principles of using and recreating natural resources in the context of the postmodernist consciousness. In particular, the study on the Carpathian macro-region in its Ukrainian part is rather thought-provoking since Ukraine, a young postcolonial state, has not yet decided on a rational policy of nature management.

Today, for the studied macro-region, the tasks of developing an organizational and economic mechanism for ensuring conditions of sustainability in recreational nature management are important and especially relevant. This applies primarily to the development and implementation of such principles of reproduction of the natural resource base of recreation, which would organically combine the successful solution of social, environmental, economic and other problems of the social reproduction process.

At the stage of completion of the transition to a market model of management in the national economy is of particular importance to justify the assessment of natural recreational resources, creating conditions for their protection, restoration, preservation and protection in the development of the recreational industry.

At the same time, the ecological, economic and social foundations of the use of natural recreational resources and the issues of their protection, primarily in the Carpathian macro-region, remain insufficiently studied. They require a more specific study of the direction of implementation of environmental mechanisms in the process of formation and development of the recreational product market, taking into account the natural resource specifics of the territories in order to achieve cost-effective and environmentally friendly recreational nature management. Further research is needed on the ways of institutional, financial and innovative support for the

promotion of a recreational product, as well as a mechanism for assessing the use, storage, improvement and protection of natural recreational resources.

The purpose of the study is the theoretical and methodological substantiation of ecological and economic principles of use and reproduction of natural recreational resources and the development of practical recommendations for their implementation in the context of the postmodern consciousness, which needs transforming and reconsidering.

2. Theoretical ecological and economic principles of reproduction of natural recreational resources

The ambiguity of the scientific definition of natural and recreational potential indicates the imperfection of the existing mechanism of its use and insufficient formation in the national economy of a holistic system of recreation. The article justifies the expediency of understanding the natural and recreational potential of the territory as a set of combinations of natural resources and forms of their placement in space, which create conditions for efficient and safe use of resources for recreational purposes and the formation of the relevant economy. This definition highlights the priorities of adjacency of efficient and safe recreational use, i.e. the potential does not include all the objective possibilities of using natural components for recreational needs (which actually dominates in most existing definitions), but only the environmentally acceptable amount of resources.

In this regard, one should pay special attention to relevant studies in the Western world. Indeed, Larson et al. (2018) are engaged in modelling the behaviour of the postcolonial people in the environment. They have examined a sample of more than 1 000 recreationists and property owners in rural areas of New York City and concluded the following: (a) human resource-saving activity is closely linked to the personal closeness (kinship) of the ecosystem; b) the attachment to the place of recreation determines the balance between recreation (resource use) and environmental activities (conservation and increase of resources) (Larson et al., 2018).

The postmodern paradigm, defending human rights in every possible way, often reduces nature to use for pleasure (Hedonic and Utilitarian Motivation). Budruk and Lee (2016) use the two-dimensional utilitarian-hedonistic motivation as a parameter for measuring the attitude towards recreation in recreational areas. They note that the survey of 219 users in the field shows that it is important to manage resources to ensure greater freedom from urban life, as well as to improve mental well-being. Besides, respondents demonstrate a moderate level of the hedonistic-utilitarian motivation, as well as the commitment to resources (Budruk & Lee, 2016). Thus, human presence

in an ecosystem that does not contain urban infrastructures contributes to a favourable attitude towards resources, although external regulation is needed to preserve it.

Some scholars describe the new trends in tourism in the era of the globalization and the postmodernism as any other mass phenomenon which has undergone profound changes, closely related to social changes, in which the Internet and social media play an important role (Gómez et al., 2016). Tourism has changed both in form and content. Even though tourism used to be a kind of elite activity (high cost and culture), today it has become widespread (Gómez et al., 2016). This aspect is completely congruent with the postmodern principles of anti-elitism and massiveness, which determines the potential tourist-related suitability of large areas and not only certain outstanding places.

Rational use and protection of the natural and recreational potential of the territory in market conditions are closely related to a number of advantages and disadvantages. They mostly concern the methodology of economic development of relevant resources in the context of economic transformations. The main disadvantages are the lack of experience in market regulation of the economy of recreational nature. A significant advantage of the market model in the process of conservation and protection of natural recreational resources is the ability of market mechanisms to combine into the system all the methods, directions and mechanisms of development of the recreational sphere. The scheme of realization of process of reproduction of natural recreational resources which provides such unity of economic, social and ecological components for maintenance of sustainable development of the market of recreational services is offered (fig. 1).

It was found that the development of recreation in the Carpathian macro-region is negatively affected by production activities. The introduction of new theoretical and methodological principles, which relate to the qualitative distribution of resources suitable for recreation among consumer areas, is a conceptual basis for determining the limits of their use in order to prevent degradation and exhaustion. There are two areas of ecological and economic principles of reproduction of natural recreational resources: intra-industry, which characterizes their reproduction within the recreational sphere of the economy and intersectoral, which relates to recreationally attractive natural resources, which at the time of study are subject to economic activities in other areas.

It is proved that in the process of organizing the use and protection of natural recreational components a particularly important role belongs to the institutional support of recreation, and the institutions operating in the

recreational sphere of the macro-region do not provide a proper solution. The necessity of institutional changes is substantiated, which consists in a more decisive transition to the principles of market management model, intensification of recreational development using the gained experience, improvement of ecology of natural recreational resources, first of all Carpathian macro-region and adaptation of domestic recreation to globalization. Based on this, the structure of the institutional mechanism aimed at optimizing the use and reproduction of natural resource base of recreation, which organically combines the participation of state and non-state institutions, including organizational and managerial, regulatory, market, financial and economic, information and personnel. It is proved that the issues of organizational and legal regulation of measures for the protection of natural recreational resources within recreational areas, lands of recreational and other purposes need significant refinement.

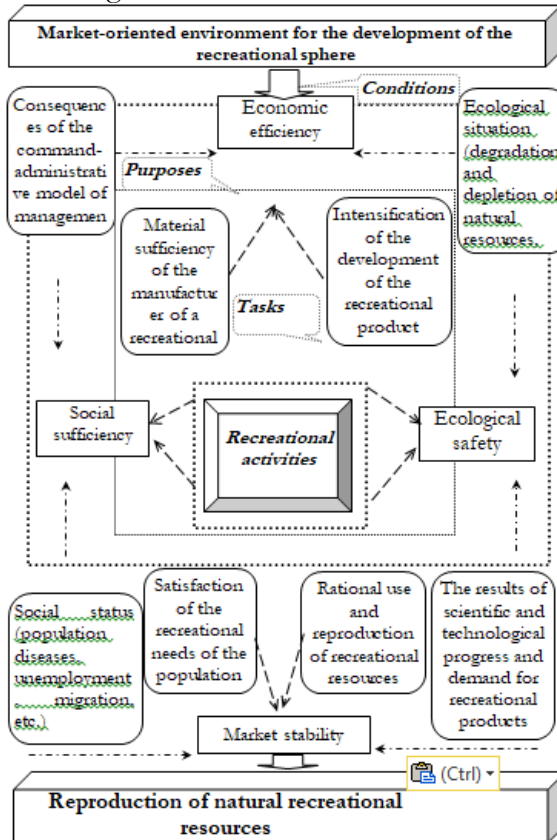


Fig. 1. The scheme of the modern market-oriented environment of realization of process of reproduction of natural recreational resources Source: Developed by the author

The important role of institutions of financial and economic system of recreation management in the process of organizing measures to preserve and restore the natural and recreational potential of the territory: institutions of investment policy, fiscal regulation (tax system, payment systems for natural recreational resources, benefits and fines), credit institutions and other financial and economic regulators of recreational nature. The main tools for optimizing the development of the recreational industry are the system of fiscal regulation, institutional changes in which can significantly affect the creation of a paradigm of rational use of natural recreational components.

3. Comprehensive assessment of the conditions of use and reproduction of the natural and recreational potential of the territory

By retrospective analysis of the development of the studied area it is established that in the field of health and recreation during the functioning of the command-administrative system formed a sufficiently organized system and effective organizational and economic mechanism for building the material and technical base of recreation. However, this has led to excessive, irrational use of natural recreational resources. The generally accepted standards of development of the recreational sphere did not provide an individual approach to the formation of the boundaries of economic development of the studied resources, which led to their degradation and exhaustion.

The development of the recreational industry of the territory depends largely on the quantitative and qualitative characteristics of natural and recreational potential, the conditions of its use and reproduction. Based on this, the analysis of exogenous, endogenous, constructive, destructive, extensive, intensive, stimulating and disincentive factors influencing the state of natural recreational resources and identified the most important conditions for their proper use, conservation, improvement, restoration and protection. Each group of factors made it possible to identify criteria for evaluating the studied processes on the basis of their systematization, based on economic, environmental and social needs.

The most influential criteria for assessing the natural and recreational potential of the territory are identified quantitative indicators, namely hydrological, balneological, climatic, orographic, speleological recreational resources, the area of recreational lands and nature reserves, as well as potential lands that can be used for rehabilitation and rest. It was found that the currently dominant individual criteria for assessing the natural and recreational potential, generalized for the country are not perfect. According

to the current methodology for assessing the natural resource and recreational potential, the Carpathian macro-region receives an average of 1.75 points out of five in terms of favorable climatic conditions for recreation, which, according to research, is somewhat contradictory because it does not take into account the conditions of winter recreation and climatic requirements for mountain recreation. In this regard, the prerequisites for a qualitatively new assessment of climatic resources of the study area, taking into account the recreational specifics of its natural resource base on the basis of a new gradation of temperature (Table 1).

Table 1. *Assessment of climatic recreational resources taking into account the gradation of the temperature regime of the Carpathian macroregion **

Region, oblast	Average duration of periods, days, with comfortable and subcomfortable for recreation average daily air temperature			
	15 ° C and above	10 ° C and above and below 15 ° C	0 ° C and below	total
Zakarpatska	126	58	78	262
Ivano-Frankivska	104	67	88	259
Lvivska	102	67	85	254
Chernivetska	117	58	86	261
Carpathian macroregion	112,2	62,5	84,25	259
Ukraine	117	58	–	175

Source: Open data portal (2019)

The necessity of taking into account the recreational specificity of the macro-region in the assessment of other natural components - orographic, balneological, etc., as well as their qualitative assessment from an environmental point of view and the social need for their recreational development is proved.

Based on the above and other criteria, a comprehensive assessment of the socio-ecological and economic needs and efficiency of reproduction of natural recreational resources of the Carpathian macro-region in the national dimension is applied. For this purpose, the algorithm of economic-mathematical model of estimation with use of 87 groups of official statistical data is constructed. The selected indicators characterize mainly the condition of recreational lands, quantitative and qualitative characteristics of water and forest resources, the state of the atmosphere, the level of population disease, the need to use medical and health natural components, economic indicators of tourism and recreation industry and etc.

The algorithm takes into account the individual economic and mathematical approach to each group of indicators in order to optimally implement them in the model system and obtain objective results. A single scoring system for all selected indicators using

$$\text{formulas: } \left\{ \begin{array}{l} \frac{\sum_{i=1}^n R w_i}{n} \\ \Pi ch(R w) = \frac{\Delta N ch(R w_i)}{n}; \\ \Delta N ch(R w_i) = \frac{N ch(R w_i)}{100}, \end{array} \right. \quad (1)$$

$\Pi ch(R w)$ – the value of $R w$ in the region, the percentage of Ukraine;
 $R w \in R$, R – a set of indicators that characterize the need (expediency) of reproduction of natural recreational resources;
 $w = 1 \dots k$, k – number of indicators;
 $\Delta N ch(R w_i)$ – one percent for $R w_i$ in Ukraine;

$$\left\{ \begin{array}{l} \frac{\sum_{i=1}^n R w_i o}{n} \\ \Pi bo(R w) = \frac{\Delta N bo(R w_i o)}{n}; \\ \Delta N bo(R w_i) = \frac{No(R w_i o)}{5}; \\ R w_i o = \frac{R w_i}{RN}, \end{array} \right. \quad (2)$$

$\Pi bo(R w)$ – score of $R w$ per person of the studied administrative unit (AU);

$N(R w_i o)$ – $R w_i o$ indicator for Ukraine;

5 - point score for each group of indicators $R w$ on average in Ukraine.

These indicators are also given per 1 km² of territory similar to formula (2).

The main advantages of the proposed evaluation model are admissible adaptation for the corresponding evaluation in the international, macro-regional and regional dimension; the possibility of using the structure of the algorithm as a preparatory basis for creating a complete software of different programming languages; application of the model for other regions and macro-regions of Ukraine, as well as other countries in order to determine thresholds for comparison with national indicators.

According to the results of the quantitative assessment of the natural resource base of recreation in the Carpathian macro-region, taking into account the natural specifics of the territory, about 25% of the natural and recreational potential of the country is concentrated here. Research has shown the need to improve the quality of environmental assessment, as the state of the environment closely affects the development of the recreational sphere. This is also indicated by the assessment of social and economic indicators due to the growing needs and opportunities to use these resources for their intended purpose. According to the proposed evaluation system, it was found that in the macro-region the social and economic need for the reproduction of natural recreational resources per capita is more than twice as high as in Ukraine and almost three times per 1 km² of territory (Fig. 2).

It is noted that the assessment is to some extent imperfect, which is caused by the lack of a complete cadastre of natural components of recreation, despite the urgent need to intensify the development of the recreational sphere of the state. Therefore, it is proposed to create a separate cadastre of natural recreational resources in Ukraine, which would take into account all the natural components, their cognitive, health, aesthetic and other recreational properties.

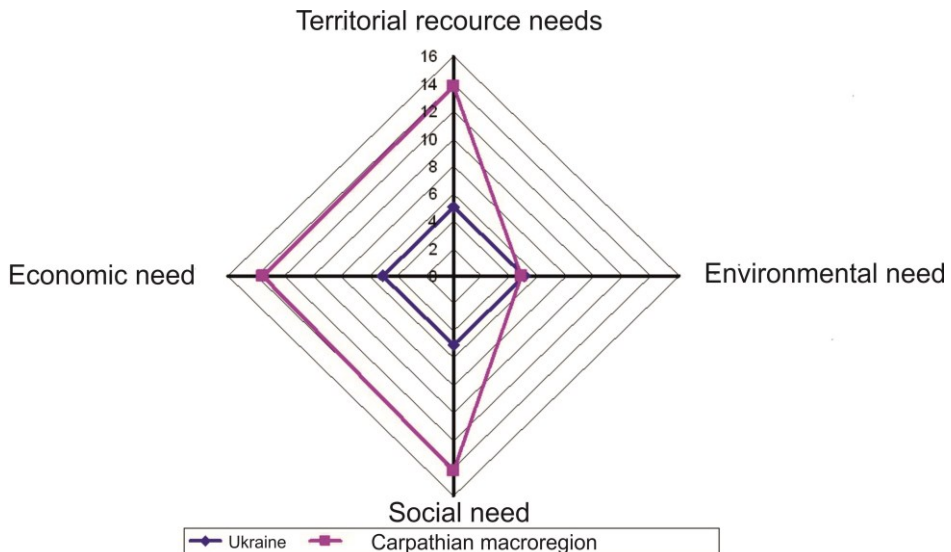


Fig. 2. Assessment of the territorial socio-ecological and economic needs of reproduction of natural recreational resources of the Carpathian macro-region in the calculation per 1 km²
Source: Developed by the author

4. Directions for improving the process of reproduction of natural recreational resources

It has been found that the issues of improvement and restoration of natural components are closely correlated with the state of the environment. In the Carpathian regions, the improvement of the ecological situation is identified as one of the most significant prerequisites for the use of natural resource potential for recreational purposes. With the help of mathematical tools revealed how and to what extent you can improve the environmental performance of the study area, as well as the threshold values of economic indicators of improving the mechanism of reproduction of natural recreational resources. This mostly concerns the financial support of environmental activities and the rational use of resources within the development of the recreational industry. The identified social, environmental and economic objectives of improving the conditions of use and protection of natural and recreational potential of the territory are based, in particular, on the results of assessing the effectiveness of its reproduction (Fig. 3).

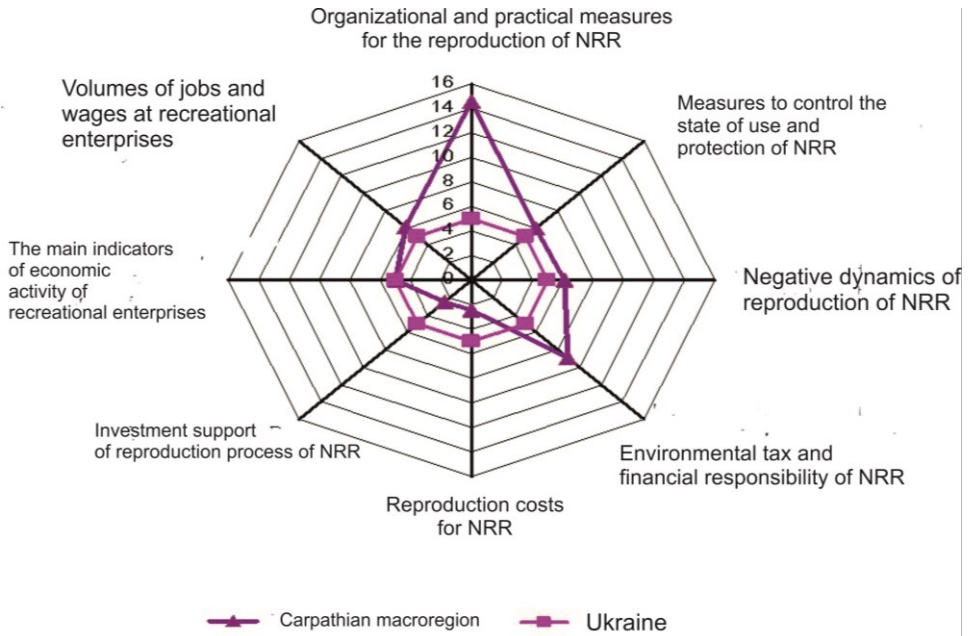


Fig. 3. *The results of the evaluation of the efficiency of reproduction of natural recreational resources per 1 km² of territory*
 Source: Developed by the author

The rating of the Carpathian macro-region according to the level of need for reproduction of natural recreational resources on the basis of such criteria as the number of social, environmental and economic tasks for the organization of the process of reproduction of the studied potential, as well as quantitative assessment of natural recreational resources.

In the context of solving the tasks and further optimizing the storage and protection of natural potential, the relevance and feasibility of determining ways to introduce an innovative product as the main direction of reproduction of natural and recreational components are substantiated. The main producers of the corresponding innovative support can be such market-oriented economic mechanisms as diversification of the recreational market, clustering of health and recreation spheres, and controlling of reproduction activities. The need for providing environmentally friendly diversification of the market for recreational services in the framework of agritourism, rural, green and ecological tourism is reasoned. In the context of rationalizing the use and protection of the natural resource base of recreation, the main goals of diversification are the search for alternatives to rational resource consumption; efficient use of limited resources; spatial

expansion of the market; commissioning of new production facilities; insurance of prospects and ensuring conditions of stability in the market.

The key area of organization of the recreational industry based on innovation in the macro-region is clustering. The formation of recreational clusters will contribute to the establishment of effective interaction of market entities, authorities and public structures in the system of reproduction of natural and recreational potential, as well as the creation of recreational ecologically safe enterprises of an innovative type, possibly based on the results of quality control of recreational nature management.

It is proved that the proposed conceptual and methodological developments will increase the efficiency of the use of natural recreational resources in the Carpathian macro-region, and the mechanisms for optimizing the system of recreational development of the territory will help ensure conditions for sustainable development in the economy of nature management.

5. Anthropological dimensions of the postmodernism and its role in the transformation of all social sciences

The primary reason for improving the reproduction directions of the studied resources is the solution of social problems, namely, overcoming unemployment, measures to improve the nation, providing a quality living environment and greening human consciousness, which can improve the level of protection and increase the worth of natural and recreational resources.

According to Sviatokho (2007), the tourist and recreational potential of the territory is considered as a set of four main components (natural resources, historical, cultural, economic, social), which interact with each other (Sviatokho, 2007, p. 32).

The article proves the importance of the ideological postmodern dimensions of tourism and recreation, which have become relevant in the last century. This correlates with the generalizations of YanJun and JiaoJiao (2017) about those different trends tourism has also undergone. In the early stages, the corresponding studies focused mainly on the economic aspect of tourism and were consistent with the ideology of development, scale and speed. However, with the development of modernism, they began to deal with the gradual accumulation of many fundamental social, environmental and individual contradictions. With the birth of the postmodernism, tourism research has also found an opportunity for renewal (YanJun & JiaoJiao, 2017). The greatest contradictions of both the mass tourism (recreation) and

postmodernism are antithetical pairs, such as authenticity – falsehood, harmony – strength, functioning – liberation, the category of strength being the key one. Understanding such categories in relation to tourism and recreation leads to the changes in the very concept of the postmodern intimacy. In the broad sense, strength is the provision of external, usually institutional resources to maintain recreational and eco-harmony.

The article shows that the reforms in the socio-ecological-economic policy and the philosophy of recreational activity are currently determined not only by external factors relative to an individual but also by his or her subjective transformational activity. This approach is associated with the postmodern idea of one's inability to have in mind other cognitive structures, apart from his or her internalized experience (Farmihani Farahani, 2010).

The scientific substantiation of theoretical and methodological principles and applied aspects of reproduction of natural and recreational potential of the Carpathian macro-region in the process of its formation, development, use, improvement and protection is carried out. It complements Beidyk's classification of Ukrainian recreational resources, his methods of cartographic visualization for distribution and popularization, as well as his original method of estimating recreational resources (Beidyk, 2001).

The obtained results show that the postmodernism reveals numerous contradictions and destructions in relation to the practical use in economics, so it is often said about "the death of the postmodernism". Studying the anthropological dimensions of the postmodernism, some researchers recognize its role in the transformation of all social sciences. However, the postmodernism ignores any definite truth, value and objectivity that runs counter to the applied realms of the world development (Fardon, 1992). Thus, the postmodern consciousness can be both a constructive and a destructive factor in resource use and conservation.

In addition to the above-mentioned aspects, the scientific value of the article is as follows:

- developed economic and mathematical model for assessing the socio-ecological and economic needs and efficiency of reproduction of natural recreational resources of the macro-region based on the calculation of adequate quantitative and qualitative indicators, as well as factors whose optimization provides conditions for rational use and protection of these resources;

- improved: a mechanism for quantitative assessment of natural and recreational potential, the use of which takes into account the natural specifics of the study area, which, in contrast to the existing, will increase the cost of underdeveloped and attracted for recreational natural resources; methodological approaches to the involvement in the economic circulation of the recreational sphere of degraded and unproductive agricultural lands, which are attractive for health and recreation of the population; mechanism of innovative provision of market instruments of nature management on the basis of ecologically oriented diversification of the recreational product market, which, unlike the existing one, will ensure further development, rational use and protection of natural and recreational potential of the macroregion; ecological and economic principles of cluster formation and introduction of controlling in recreational nature management, which, unlike the existing ones, are based on close cooperation of economic, research and other subjects of the recreational cluster with economic institutions;

- *received further development*: conceptual terminology used to characterize the level of use and protection of natural recreational resources, in particular, the content of the definitions of natural and recreational potential of the territory, reproduction of natural recreational resources, ecologically oriented diversification of the recreational product market, ecologically oriented clustering and recreational system of solving the researched problems; system of organizational and institutional support of environmental activities in the recreational industry with the use of legal, financial and economic, fiscal and personnel mechanisms; directions of substantiation of the need to create in Ukraine a separate cadastre of natural recreational resources, which would contain information on their cognitive, medical, aesthetic and other recreational properties; methods of assessing the prospects of financial and investment support for development, conservation and protection of natural resources in the process of development of the recreational sphere.

The practical significance of the results is that the main provisions, conclusions and recommendations can be used in the development of tourism and sanatorium development in the Carpathian region, projects for environmentally safe location of productive forces on the basis of sustainable development, as well as in justifying social, environmental and economic tasks to improve the organization of use, conservation and protection of natural recreational resources.

6. Conclusions

The conducted theoretical analysis proves that the effective reforms in the recreational and tourist system and their preservation should begin with solving social and ideological problems, namely, a) reconsidering the destructive aspects of the postmodernism to environmental consciousness; b) using the subject-centric and anthropocentric nature of the postmodern consciousness; c) discovering institutional mechanisms for regulating the disharmony caused by hedonism, egocentrism and hermeticism of the postmodern consciousness.

The necessity of improving the institutional mechanisms for the use, restoration and protection of natural recreational resources of territories is proved, in particular: regulatory institutions as a key segment in regulating the norms of resource use and property relations within recreational lands, recreation zones, areas of nature reserve fund and other lands .

The significance of the institutes of the financial and economic system of managing recreation in the process of reproduction of the natural and recreational potential of the territories has been substantiated: institutions of investment policy, fiscal regulation (tax system, system of payments for the use of natural recreational resources, system of benefits, fines, etc.), credit institutions and other financial and economic regulators of recreational nature management.

Systematized factors of influence on the state and conditions of reproduction of natural recreational resources according to exogenous, endogenous, constructive, destructive, extensive, intense, stimulating and destimulating signs. Based on them, an algorithm has been developed for a comprehensive assessment of the socio-ecological and economic needs of the reproduction of the natural and recreational potential of the Carpathian macro-region in the national dimension using economic and mathematical tools. The corresponding assessment was carried out on the basis of four blocks of indicators calculated according to official statistics and indicate an increased natural, environmental, social and economic need for the introduction of qualitatively new principles for the reproduction of natural recreational resources in the macro-region.

An economic and mathematical model has been developed to assess the effectiveness of the use, restoration and protection of the natural components of recreation using indicators characterizing organizational and applied environmental protection and monitoring measures, the reproduction process, its financial and investment support, and the level of development and employment in the recreational sphere of the macro-

region. According to the results of the assessment, it was proved that the level of organization of environmental protection measures in the Carpathian macro-region is much higher than the average for Ukraine. However, control measures for quantitative and qualitative components of natural-recreational potential are not effective enough.

It is proved that one of the reasons for the low efficiency of use and protection of natural components in the study area is the insufficient level of financial and investment support for environmental programs. With the help of SWOT-analysis the main opportunities and limitations, prospects and threats of improving the financial support of the use, preservation and protection of natural resources through the proper organization of the recreational sphere are clarified.

New methodological approaches aimed at improving the conditions of use, restoration and protection of natural and recreational potential of the Carpathian macro-region due to the proper solution of the social package of tasks are proposed. First of all, it concerns the most important areas of improving recreational nature through reducing unemployment, ensuring a quality living environment for locals and vacationers, improving public health and determining the appropriate use of natural recreational components for their intended purpose, greening the minds of citizens and improving health and recreation.

Methodical and practical approaches to systematization and concretization of social, ecological and economic tasks of use, preservation, improvement, restoration and protection of natural recreational resources in the context of areas with the use of basic assessment in the national dimension are developed. This made it possible to create a rating of the regions of the study area according to the level of organization of the process of reproduction of natural and recreational potential.

A thorough assessment of the directions of improving the economic mechanisms of reproduction of the natural resource base of recreation in the macro-region due to the implementation of an innovative product has been carried out. The following vectors of innovation were identified as optimal vectors, such as ecologically oriented diversification of the recreational product market, clustering of the recreational sphere and controlling of recreational nature management.

Acknowledgement

All the authors have contributed to writing the article. Indeed, Adelina Kliuchenko collected the necessary data. Valerii Nosenko and Viacheslav Melnyk theoretically and methodologically justified ecological and economic

principles of using and reproducing natural recreational resources. At the same time, Halyna Humenyuk created an economic-mathematical model for assessing the effectiveness of using, reproducing and protecting natural recreational resources. Serhii Tkachenko developed a scheme for reproducing natural recreational resources. Vyacheslav Bogdanets verified the obtained results and was responsible for the final editing of the article.

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