
ENVIRONMENTAL AND ECONOMIC EVALUATION OF LAND USE ENVIRONMENTAL INCLUDED AS STRUCTURAL ELEMENTS IN SYSTEM ECOLOGICAL NETWORK UKRAINE

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Done approaches to study ecological and economic assessment of environmental efficiency of land use, which included as a structural element in the system of ecological network of Ukraine. In particular, the proposed systematic approach to evaluating three different areas of conservation land.

Keywords: *Ecological and economic assessment, environmental land use, structural elements of the ecological network, an ecological framework.*

Formulation of the problem

National Environmental Policy in Ukraine is based on the need to achieve the strategic objectives defined in the basic tasks (strategy) of the State Environmental Policy of Ukraine till 2020, approved by the Law of Ukraine № 2818-VI dated 21 December 2010. These strategic objectives are to improve the environmental situation and increasing environmental safety, reducing human impact on the environment, to achieve safe for human health of the environment, integrating environmental policies and improvement of integrated environmental management, termination losses of biological and landscape diversity and formation of ecological network to ensure environmentally sustainable natural resources, improvement of regional environmental policies.

An important practical tool for implementing strategies that take into

account the socio-economic and socio-political processes in the country, as well as national, regional and local level is to develop land use structural elements of the National Ecological Network as an ecological framework land tenure system of Ukraine. However, it should be noted that so far no thorough study of environmental-economic evaluation of environmental efficiency of land use, included as structural elements in the system of ecological network of Ukraine.

Analysis of recent research and publications

Issues related environmental and economic assessment of environmental efficiency of land use, included as structural elements in the system Econet Ukraine were not the object of study of many modern scientists. Among the scientists involved in these issues, you can call T. Halashkin [1],

V. Druhak [2] A. Tretyak [2, 3, 4, 5], J. Tunytsya [6], M. Hvesyk [7], A. Yakymchuk [8, 9, 10] and others, but resolving the issue remains relevant for today.

The study aims to study approaches to environmental and economic assessment of environmental efficiency of land use, included as structural elements in the system of ecological network of Ukraine.

Presenting main material

Ukraine taking only 6% of the total area of Europe has 35% of species biodiversity. However, the impact of human activity on his condition is very noticeable. Large-scale urbanization of nature through blowing, development and implementation of drainage works and so led to the destruction of landscapes. Over 80% of wetlands have lost

their original meaning. Natural forest ecosystems occupy 5.1 million hectares. Whereas artificial forest ecosystems – 4.3 mln. hectares. Natural Reserve Fund of Ukraine is about 3,7 mln. Ha or 6.05% of the entire territory, and should be substantially increased. This is directly related to biodiversity or conservation of ecological integrity, as only one of several environmental land use purposes, and performing other tasks related to sustainable development, poverty reduction, social justice and others. In addition, the lack of data on the environmental and social situation, its dynamics makes it impossible to evaluate the effectiveness of a unified conservation land, which is part of the ecological network. So, objective evaluation of the effectiveness of environmental land use and ecological network is a difficult task.

1. Structure methodology for design efficiency of land use areas of the structural elements of ecological networks at local level

Adequacy structure of protected areas	Management process	The impact threat: ecological integrity
1. Environmental reprezantyvnysh (plowing, forest cover, the proportion of environmentally stabilizing land etc	1. Information support: 1.1. The state registration of rights to land and other natural resources; 1.2. State registration of territorial restrictions (encumbrances) to use land and other natural resources;	1. Environmental stability (instability) land
2. Analysis of gaps in odds of species of fauna and	1.3. Administration (economic, legal, land, finance) and land-Nature	2. These pressures on land use
3. Anthropogenic factors gaps prevalence		3. threats within zones of structural elements of ecological network
4. The effectiveness of natural reserved fund for the protection of species threatened with extinction	2. The land-capitalization and Nature: 2.1. Trends in the value of land; 2.2. Trends in the value of nature	4. Integrity environmental protection areas
		5. Evaluation sizes and types of degradation under the influence of certain stress factors..
		6. Landscape stability of forest cover.
		7. Stability types within zones of structural elements of ecological network

In foreign studies on evaluating the effectiveness of conservation land pay special attention to three issues [11]:

1) How acceptable design object for the values that support it;

2) Whether or adequate and appropriate systems and processes for the management needs of the facility;

3) Or object or effective system for maintaining biodiversity, reduce risks and achieve other management goals?

These questions relate to three different areas of environmental assessment of land use, and therefore the ecological network: structure, process control and environmental integrity. The first question, concerning the structure defines the parameters for evaluating the adequacy of environmental land use structure or system of ecological networks and provides criteria for determining trends in the formation of environmental land use. The

second question concerns management processes and provides assessment of various controls. The third question relates to ecological integrity, including such elements as ecological processes and ecosystem functioning, as well as threats and pressures faced by conservation land. Table 1 shows the structure of our proposal for methodology for design efficiency of land use areas of the structural elements of ecological network as a framework of environmental land use at the local level.

Further consider methodological approaches to assessing the effectiveness of certain types of structural design elements ecological network. Evaluation of the adequacy of the structure of land within the territory of the village council Sokilske the design areas of land use structural elements of the ecological network defined by parameters given in the Table. 2.

2. Evaluation of ecological representativeness structure of land within the territory Sokilske village council Kamenetz-Podolsk district of Khmelnytsky region

Type evaluations	At the time of the project,%	of the project,%	Change + , - in%
Plow area	59,7	55,9	- 3,8
Wooded area	6,1	6,1	-
The share of ecologically stabilizing land	40,3	44,1	+ 3,8
The share of land of natural reserve fund (reserve and recreational area)	6,5		

According to the data table 2 as a result of design changes in the structure of land ecological structure reпрезантивності land within the territory of the village council Sokilske the design areas of land use structural elements of the ecological network is improving, which is a positive aspect in the evaluation of conservation land.

Evaluating the effectiveness of environmental management of land use related to the legal creation (design) of

land borders of the territories of the structural elements of the ecological network, information on rights to land and other natural resources and territorial restrictions (encumbrances) to use land and other natural resources within them and so on.

In wildlife ownership of a specific plot of land is not only legal, but also economic and environmental category. The latter factor is decisive: it is economical and ecological relationships - the basic, legal,

add-. The ownership or use of land and other natural resources in economic terms is a complex system of economic relations that exist in any activity carried out on the ground. This system includes such groups [4, p. 10-12]:

1) Relations on the appropriation of land use in the production conditions and results;

2) Relations on the economic use of land for the use of, or otherwise;

3) Economic forms of property relations to land and land rights;

4) Relations over the use of land assets capital.

This feature of land, economic and environmental relations due to specific land and other natural resources, and

land categories of land and is closely related to other natural resources, their legal regime and appropriate legal documentation of land that defines a particular regime for use, restoration and protection of them and, consequently, assigned legal procedures related to the acquisition of rights for the use of natural resources. In confirmation of the above Table 3 shows the identification of rights to land and other natural resources within the land areas of the structural elements of the ecological network of Ukraine, especially on key areas of ecological network, which is an environmental conservation land use framework.

3. Identification rights to land and other natural resources within the land areas of the structural elements of the ecological network

№ p/ p	Subtypes land	use on Earth right:				
		property (independently owned)	land lease	use permanent	easement	rent1
1	key areas:					
	conservation area Park "Podolski Tovtry"	-	-	+	No regulation	No regulation
	recreational area Park "Podolski Tovtry"	No regulation	No regulation	+	No regulation	No regulation
	economic zone Park "Podolski Tovtry"	No regulation	No regulation	+	+	+
2	Joining two territories:					
	recreational area Park "Podolski Tovtry"	No regulation	No regulation	+	No regulation	No regulation
3	Buffer areas:					
	recreational area Park "Podolski Tovtry"	No regulation	No regulation	+	No regulation	No regulation
	economic zone Park "Podolski Tovtry"	+	+	+	+	+
4	Renewable territory					
	economic zone Park "Podolski Tovtry"	+	+	+	+	+

Present evaluation of information on rights to land and other natural re-

sources in dicates no satisfactory legal environment institute rights to land and

other natural resources certainly affects the efficiency of the management areas of the structural elements of the ecological network. Whereas, within the territories of the structural elements of the ecological network set no territorial restrictions (encumbrances) to use land and other natural resources, assessment of their impact on the effectiveness of management areas not served.

Environmental land use often undergoes various threats and pressures that ultimately affect their effectiveness in maintaining ecological integrity. In this respect, two approaches used in the study of environmental efficiency of land use.

The first approach includes research on the prevalence of threats and pressures affecting land use as a regional local level. In this respect, we offer to evaluate the ecological stability (instability) land use, anthropogenic load, etc. [5]. The second approach examines environmental sustainability different criteria, such as not shamanist for change of land use, land degradation and habitat species, the level of appropriation of land and other natural resources and other factors. Table 4 shows the assessment of the impact of land for environmental stability Sokilske territory of the village council for the land project structure.

4. Calculation of environmental sustainability within the territory Sokilske village council Kamenetz-Podolsk district of Khmelnytsky region for the project land structure

The site	coefficient of ecological stability land (K_l)	Building lands (P)	$K_l \times P$	coefficient environmental sustainability area (K ek.st.)
Builtup areas and roads	0,00	146,8	0,0	
Arable	0,14	1831,0	256,3	
Vineyards	0,29	0,0	0,0	
Belts	0,38	11,1	4,22	
Fruit orchards, shrubs	0,43	34,3	14,8	
Gardens	0,50	66,4	33,2	
Hay	0,62	324,2	201,0	
Pastures, fallow	0,68	157,5	107,1	
68Ponds and marshes natural origin	0,79	603,5	476,8	
The forests of natural origin	1,00	166,3	166,3	
Total		3274,7	1259,6	0,38

* Source: Calculated Methodological Recommendations assess environmental sustainability of agricultural landscapes and agricultural land [5] and to the form of 6-Zemo State Land Cadastre of Ukraine

According to the data table 4 ecological stability of land although improved (environmental sustainability ratio increased from 0.36 to 0.38) but not significantly. Similar changes have occurred in relation to anthropogenic load (tab. 5).

Thus, the threat to environmental stability of the territory remains, indicating the lack of changes in the structure of land in the projected structural elements of ecological network as environmental measures. In this connection, for certain types of land use within the territories of the structural elements of the ecological network set appropriate restrictions (encumbrances) to use land and other natural resources related to threat assessment and environmental impacts on the integrity

of the land area of ecological network. However, environmental and economic assessment of restrictions (encumbrances) to use land and other natural resources is a separate issue that requires further research.

5. Calculation of anthropogenic load Sokilske within the territory of the village council Kamenetz-Podolsk district land under the project structure

The site	coefficient anthropogenic load factor	area lands (P)	$K_j \times P$	area lands anthropogenic load area (K a.н.)
anthropogenic load area	5	146,8	734,0	
Arable	4	1831,0	7324,0	
Vineyards	4	0,0	0,0	
Belts	2	11,1	22,2	
Orchards	4	10,6	42,4	
Bushes	2	23,7	47,4	
Orchards	4	66,4	265,6	
Hay	3	324,2	972,6	
Pastures, fallow	3	157,5	472,5	
Ponds and swamps naturally occurring	2	603,5	1207,0	
Forests naturally occurring	2	166,3	332,6	
Total		3274,7	11420,3	3,49

* Source: Calculated Methodological Recommendations assess environmental sustainability of agricultural landscapes and agricultural land [5] and to the form of 6-Zemo State Land Cadastre of Ukraine

Conclusions

The methodological basis of modern methodological approaches to environmental and economic assessment of the effectiveness of environmental land use that are included as structural elements in the system of ecological network of Ukraine: a systematic approach to three different areas of evaluation of environmental land use, and therefore the ecological network, land use structure, process management and environmental the integrity of areas of structural elements of the ecological network in Ukraine. The first question relates to the structure of land use structural elements of the ecological network, which defines the parameters for evaluating the adequacy of environmental land use structure or system of ecological networks and provides

criteria for determining trends in the formation of environmental land use. The second question concerns the land use management processes and structural elements of the ecological network involves evaluating various controls. The third issue concerns the environmental integrity of the ecological network areas of structural elements, such as elements such as ecological processes and ecosystem functioning, as well as threats and pressures faced by conservation land within them.

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Лобунько Ю.В. – аспірант¹, Державна екологічна академія післядипломної освіти та управління Мінприроди України
ЕКОЛОГО-ЕКОНОМІЧНА ОЦІНКА ЕФЕКТИВНОСТІ ПРИРОДООХОРОННОГО ЗЕМЛЕКОРИСТУВАННЯ, ЩО ВКЛЮЧЕНО В ЯКОСТІ СТРУКТУРНИХ ЕЛЕМЕНТІВ У СИСТЕМУ ЕКОМЕРЕЖІ УКРАЇНИ

Здійснено обґрунтування підходів до еколого-економічної оцінки ефективності природоохоронного землекористування, яке включається в якості структурних елементів у систему екомережі України. Зокрема, запропоновано системний підхід до трьох різних сфер оцінювання природоохоронного землекористування.

Ключові слова: Еколого-економічна оцінка, природоохоронне землекористування, структурні елементи екомережі, екологічний каркас.

Лобунько Ю.В.
ЕКОЛОГО-ЕКОНОМІЧЕСКАЯ ОЦЕНКА ЭФФЕКТИВНОСТИ ПРИРОДООХРАННОГО ЗЕМЛЕПОЛЬЗОВАНИЯ, ВКЛЮЧЕН В КАЧЕСТВЕ СТРУКТУРНЫХ ЭЛЕМЕНТОВ В СИСТЕМУ ЭКОСЕТИ УКРАИНЫ

Осуществлено обоснование подходов к эколого-экономической оценке эффективности природоохранного землепользования, которое включается в качестве структурных элементов в систему экосети Украины. В частности, предложено системный подход к трем различным сферам оценивания природоохранного землепользования.

Ключевые слова: Эколого-экономическая оценка, природоохранное землепользование, структурные элементы экосети, экологический каркас.

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