

РОЗДІЛ 1

Економіка природокористування і еколого-економічні проблеми

The Risk-Management in the System of Recreational Land-use

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The study conducted diagnosis of the current state of various kinds of incidents and the risks of their occurrence. The essence and typological features of risks of recreational land use are researched; organizational and economic aspects of management decisions and risk management of environmental hazards in the prevention and reduction of risks of recreational land use as the direction of practical implementation of conservation and restoration of land resources of the state are defined. It's proved that recreational land use requires sophisticated risk management mechanism to ensure appropriate ecologization process. The problem of recreational land use can be solved by providing preventing occurrence of risk events. The appropriate process is possible only if implementation of risk management of environmental hazards. Therefore, to ensure sustainable management of land use effects on the risks should be carried out through a well-established, adequate system of government and business organizations. To improve performance management solutions functional diagram of risk-management and environmental hazards classification risk-management decisions of land use is proposed.

Keywords: risk-management, recreational land-use, ecologization, environmental hazard, management decision.

Abbreviations:

RMEH – risk-management of environmental hazards;
RM – risk-management;
ES – emergency situation;
EU – European Union.

УДК 338.24: 330.131.7: 332.2

JEL codes: O13, R14, Q26

Introduction. Strategy of formation of rational land use is aimed to identify negative factors to some natural geographic and socio-economic area. Another situation occurs in

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formation of the system of recreational land use, because, on the one hand, liberalization of land relations, reduce and overlapping of state agencies, unresolved issues of clearly defined boundaries of the respective territories and a number of other factors greatly enhance the variety of manifestations of risk, and on the other – in fact is translated “the burden of uncertainty” occurs due to the risk of the state on land users and landowners. Therefore, problems related to the risk was subject to deepening economic reform.

The current relationship between environmental and economic components of land developing is marked by extremely fast dynamic and variability. As a result, almost impossible is absolute security of environmental and economic activities. Therefore there is a need to search for acceptable levels of co-existence of environmental and economic factors in the system of land-use.

Formulation of the problem. In the scientific literature are widely covered ecological and economic problems of rational use and protection of land at the present stage of land reform. It should be noticed scientific works of Babmindra D. I., Bohira M. S., Bystryakov I. K., Horlachuk V. V., Dobriak D. S., Dorosh O. S., Krivov V. M., Novotorov O. S., Tretyak A. M. and other. Issues of environmental RM are researched Bashkin V. M. [1], Bozhkov V. V., Doroguntsov S. I. [3], Illyashenko S. M. [5], Stepanov V. M. [6], Melnyk L. H., Andryeyeva N. M. and others – also a question of identifying and managing risks in recreational use of land is relatively new and unexplored area of environmental economics.

The purpose of the article is to study the nature and development of the typological features of recreational land use risks; determine organizational and economic aspects of management decisions and RMEH in the prevention and reduction of risks of recreational land use as the direction of practical implementation of conservation and restoration of state land resources.

Research results. Deterioration of the ecological state of the environment on the one hand, the need for economic growth on the other, and the need for recreational areas constitute from the third – make major conflict in the implementation of organizational and economic mechanism of rationalization of recreational land. This requires identifying threats and dangers of relevant process. The level of natural and technological security in Ukraine is largely caused by excessive anthropogenic pressure on the environment. Industrial areas are areas with a very high risk of accidents and disasters caused by man, as a consequence - the risk of environmental and social emergencies appears. This risk increases due to use of obsolete technology and equipment, low rate of ecologization, restoration and modernization of production. These require careful zoning and separation of lands of recreational purpose.

According to the Ukrainian Research Institute of Civil Security in 2014 in Ukraine were registered 143 emergencies, of which, according to the National Classifier, 74 ES are man-made disasters; 59 ES – natural disasters; 10 ES – social issues (Table 1).

Relevant in our view, are researches of risks of recreational areas development as those that can reduce the likelihood of a man-made, natural, and social emergency in conditions of sustainable development. Appropriate areas are used for as recreation and environmental, so economic and social functions. And one of the main directions of rationalizing their use is ecologization. In this respect, to determine the risk of emergencies important step is classification of environmental hazards (Fig. 1).

Considering the above aspects, a prerequisite is to define the conditions to prevent and reduce the risks of land-use.

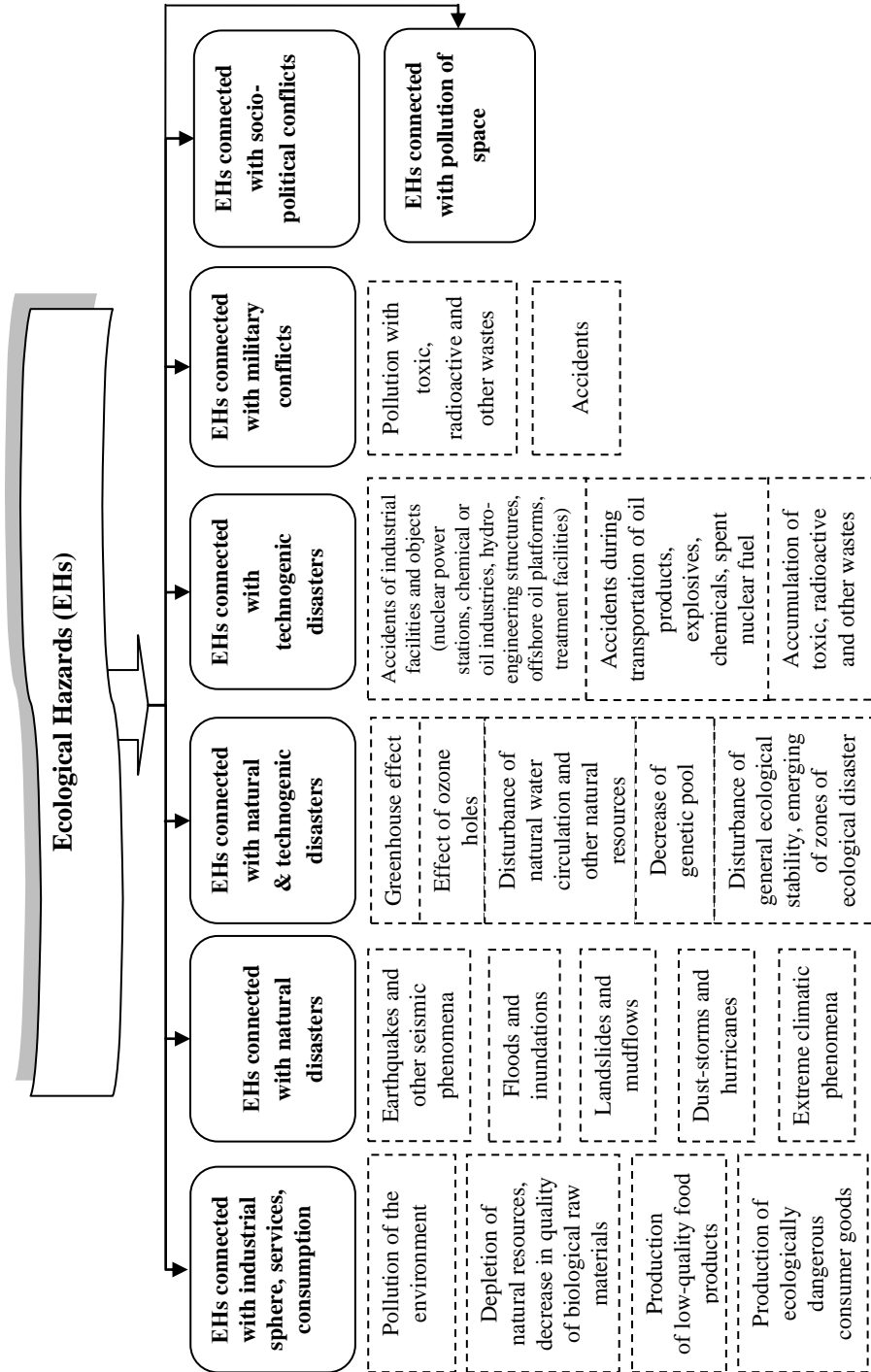


Figure 1. Classification of ecological hazards
 [Authors' own method]

The risk in its content - is the probability of uncertain (random) events and the probability of a negative result in the use of land that is a numerical value of dangers that are associated with its loss or unintended consequences that can become real.

Owner or tenant of land faces to risk at different stages of their activities, because there are many reasons that are the causes of specific risk situation. The risk of land can lead not only to loss of expected profit, but also to certain emergencies associated with significant economic losses, loss of health and even of life [2].

In our view, the RM of the land-use is a system of economic, environmental, social, political, institutional, technical and other types of risk, which includes strategy and tactics of land management aimed at achieving major socio-environmental and business objectives of land-use management.

Table 1

Information on emergencies that have arisen in Ukraine in the period from 2004 to 2014
(developed by [4])

Year	Number emergencies by type			Total ES.	Number of injured, persons		The average value of individual risk $R_i \cdot 10^{-6}$ per year
	Technogenic character	Nature character	Social character		deaths	injured	
2004	156	100	30	286	412	2330	8,9
2005	212	129	27	368	456	1580	9,7
2006	207	137	20	364	463	1046	9,9
2007	196	152	20	368	614	1377	13,2
2008	165	126	21	312	587	959	12,7
2009	130	117	27	264	356	1511	7,7
2010	130	108	16	254	361	753	7,9
2011	134	77	10	221	355	985	7,8
2012	120	71	18	212	301	861	6,6
2013	75	56	12	143	253	854	5,6
2014	74	59	10	143	287	680	6,7

Effective RM includes: system of management; identifying and measuring system; system of support (monitoring and control). At the same time the RM is the process by which risks are identified, their value is assessed, monitoring and control of risk positions are made, as well as takes into consideration relationships between the different categories (types) of risks.

The complex of actions on RM aims to reach following purposes:

- risks have to be realized by subjects of recreational activities;
- risks should be within the tolerance levels set in the recreational land use;
- decisions on risk taking must meet the strategic objectives;
- decisions on risk-taking must be specific and clear;
- the expected return should compensate adopted risk;
- incentives to achieve high performance should be consistent with the level of risk tolerance.

In all areas of land, there are many risks that need to be classified by type, subject them to comprehensive analysis and develop a common methodology for service risks. In this study, we propose to distinguish four groups of risks that may arise in the process of land use:

- natural that due appear to the deterioration of land as a result of insurmountable natural disasters;
- economic, directly connected with the economic activities of enterprises and regulated market sphere;
- anthropogenic – caused by deterioration of land as an object of property rights as a result of acts or omissions user of land that led to the decline or deterioration of soil fertility quality properties of the earth;
- social (organizational and legal) caused by failure of landholders' responsibilities, they are prescribed by law or contract.

Classification of risk groups and the need to improve their management process can provide their characteristic features, be possible to reduce risk in decision making (Fig. 2).

RM of land use is made in three stages:

- research phase: a comprehensive study of risks, collection and analysis of information about them, risk assessment;
- preparatory phase: comparison of characteristics and the probabilities of risk derived from analysis and risk assessment; identification of alternatives in which the value of risk is socially acceptable; setting priorities, allocation of problems and issues that require priority attention, ranking alternatives; choosing of alternatives on the principle of acceptable risk and screening of alternatives of unacceptable risk;
- organizing stage: the choosing of specific measures to facilitate the elimination or minimization of possible negative consequences of risk; Development of organizational and operational procedures of preventive nature; Preparation specific recommendations or implementing risk solutions.

Measures of eliminating and minimizing risks include the following stages: assessment of the admissibility of the resulting risk level; evaluation of opportunities to reduce risk or increase it; choosing methods to reduce (increase) risk; feasibility assessment and selection of options to reduce (increase) risk.

In terms of the imperfection of organizational and economic mechanism of recreational land base we proposed the organization of RMEH (Fig. 3).

In the organization of RM of recreational land use we should emphasize the following recommendations:

- improving the legal basis in the regulation of use and development of recreational lands (adoption of the law “On the recreational lands” with regard to institutional changes, the adoption of the Town Planning Code of Ukraine stating clear standards for the use of recreational lands, etc.);
- shaping innovative structures which will provide the opportunity for recreational development projects based on public-private partnerships;
- modernization of Information basis of quantitative and qualitative assessment of the state of recreational land use and creation of a data bank of relevant areas;
- improving the system of property relations in recreational land use towards strengthening ties of public-private partnership in view of the need to increase recreational areas;
- elaboration and adoption of national and local programs and plans of action for the sustainable development of recreational areas of urban agglomerations. This aspect must

be considered direction of existing programs and cross-border transactions: Aalborg Charter, EU directives, activate the Comprehensive Program of implementation at national level the decisions taken at the World Summit on Sustainable Development (Johannesburg, 2002) for 2000–2015;

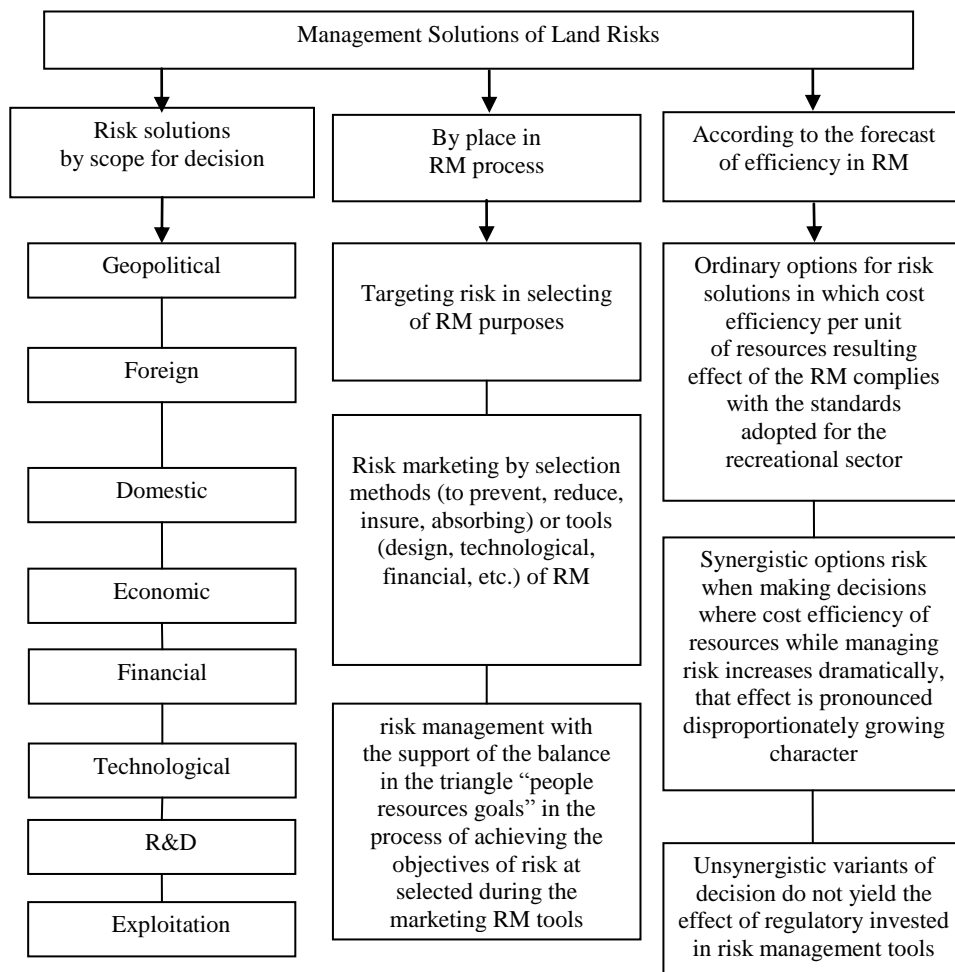


Figure 2. Classification of RM decisions in recreational land use
 [Authors' own method]

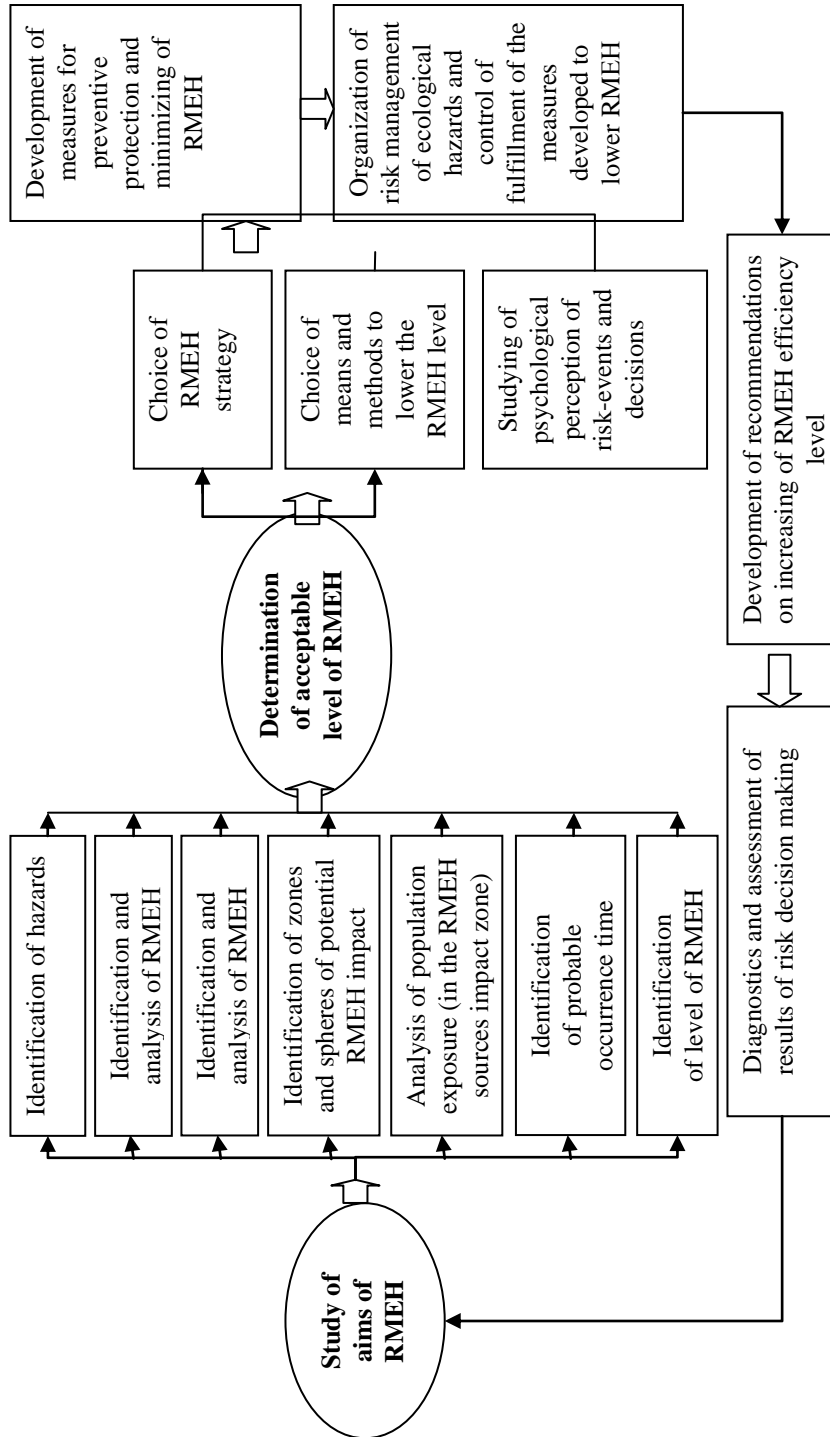


Figure 3. Scheme of RMEH
 [Authors' own method]

- ensuring interest in the financing of major stakeholders' recreational projects, providing constant information to potential investors;
- ensuring access to foreign markets in providing recreational services;
- public hearings, seminars and other informational activities on the development and implementation of strategies for development of recreational areas;
- orientation of environmental policy on recreational land not to eliminate, but to prevent negative phenomena. Need to focus on new, promising environmental and legal mechanisms currently emerging in the EU;
- public involvement in issues of ecologization the recreational lands.

The above argument indicates the need to reorient land use process management foundation of agglomeration areas and consider socio-environmental and economic aspects of these areas development.

We consider only the general scheme of recreational areas' RM. The nature and content of these stages and activities, innovative methods that will be used at the same time (Foresight studies, crowdsourcing platform, etc.) and their performance largely depends on the specific organizational, economic activity and the nature of the risks.

Conclusions and recommendations for further research. The problem of recreational land use can be solved providing preventing occurrence of risk events. The corresponding process is possible only in the case of implementation of RMEH. Therefore, to ensure sustainable management of land use effects on risk must be done through well-established adequate system of government and business organizations.

To improve performance management decisions in the research is proposed functional scheme of RMEH and classification of risk management decisions of land use.

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Manuscript received 10 April 2017

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В дослідженні проводиться діагностика сучасного стану надзвичайних подій різного характеру та ризиків їх настання. Розроблені типологічні ознаки ризиків рекреаційного землекористування, визначені організаційно-економічні аспекти, управлінські рішення ризик-менеджменту екологічних небезпек та надано авторське визначення поняття «ризик-менеджмент землекористування». Обґрунтовано схему організації ризик-менеджменту рекреаційних територій та класифікацію екологічних небезпек, пов'язаних з: сферою виробництва, обігу та споживання; природними катастрофами; природно-техногенними катастрофами; техногенними катастрофами; військовими конфліктами; проявленнями соціально-політичних конфліктів.

Доказано, що рекреаційне землекористування потребує досконалої механізми ризик-менеджменту для забезпечення екологізації відповідного процесу. Приведено пропозиції щодо вдосконалення організації ризик-менеджменту екологічних небезпек та класифікації управлінських рішень ризиками рекреаційного землекористування та екологічних небезпек.

Ключові слова: ризик-менеджмент, рекреаційне землекористування, екологізація, екологічна небезпека, управлінське рішення.

*Mechanism of Economic Regulation, 2017, No 2, 6–15
ISSN 1726-8699 (print)*

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Доведено, що рекреаційне землекористування потребує досконалого механізму ризик-менеджменту для забезпечення екологізації відповідного процесу. Наведено пропозиції щодо вдосконалення організації ризик-менеджменту екологічних небезпек та класифікації управлінських рішень ризиками рекреаційного землекористування і екологічних небезпек.

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JEL Codes: O13, R14, Q26

Table: 1; Figures: 3; References: 6

Language of the article: English

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