

Розділ 5

Екологічний маркетинг та менеджмент

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MECHANISM OF THE ENVIRONMENTAL MANAGEMENT IMPLEMENTATION ON THE FORESTRY ENTERPRISES

The article presents scientific and methodical approaches to the implementation and operation of environmentally oriented forest management, on the basis of a common ecomangement methodology and the main provisions of ISO 14001, which take into account sectoral characteristics and principles of environmentally sustainable forest management, and application of ecological-economic management technologies. Essentially-content basis of environmentally oriented forest management and its specific typical forms (such as ecosystem and environmental management) have been outlined. Principles and functions of environmental management of forestry enterprises and the basic stages of its implementation and functioning have been considered.

Keywords: environmental management, forestry, environmentally sustainable forest management, forestry enterprises, center of ecological and economic governance.

Setting of the task in general form. Implementation of the environmentally forestries sustainable development model requires creation of the environmental management system. Environmentally sustainable social and economic development of forestries is the process to harmonize and grow their economic and environmental development regarding the forestry ecosystems use, preservation and reproduction, ensuring satisfaction of the necessary needs for various forestry resources functions and services, given preservation and gradual improvement in the environmental quality and nature's capacity, based on certain structured principles [1].

Ecosystem based forestries management is intended to ensure normal functioning of all forestries ecosystems components and their ability to reproduction, based on interconnection with environmental situation. Forestry management in terms of ecosystems is based on the

optimal balance of sustainability and forestries productivity, as well as environmental quality. Time is very important in forestry, since it determines forestries reproduction and uses systems. Mistakes, committed at the early stages of reproduction processes, can not be corrected and can cause considerable environmental and economic losses in future.

Therefore, there is the violation of the sustainable development concept – current generation must ensure the next generations with highly qualitative environment and adequate natural resource capacity.

The implementation of the forestry effective environmental and economic, ecosystem-based management should provide the formation, development and constant improvement of environmentally oriented forest management. It should be noted that the current approach to solve environmental and economic businesses problems in different economy sectors is based on the environmental management system [2-4]. The agenda for twenty-first century, the UN Conference on the Environment (Rio-1992) (Earth Summit 92 The United Nations Conference on Environment and Development) emphasized that environmental management should be attributed to the dominant key of sustainable development, while higher priority industry and entrepreneurship.

Thus, there is a need to form and develop ecosystem and environmental management in activities of integrated forestry companies. It should be conducted in order to harmonize environmental and economic forestry and forestry industries for sustainable environmentally oriented multipurpose forest management on the intersectoral basis in market conditions of forestry.

Analysis of the recent research and publications. It should be noted that the existing theoretical and methodological proposals to apply certain elements of environmental management in forestry [5-8] require further systematic deepening from the perspectives to form provisions of applying organizational and economic mechanisms and instruments with market orientation in the forest management on environmental and economic grounds.

The aim of the article is to deepen the theoretical and methodological foundations concerning mechanism of the environmental management implementation at the forestry enterprises.

Main material. While implementing the environmental management system, it is necessary to take into account the following interconnected principles of environmental, forest, organizational, economic and social fundamentals for forestries sustainable development:

- maximum and priority use of forestries protective and transformational functions from the perspectives of domestic and international interests;
- optimal maintenance of the forestries' ecosystems homeostasis based on their components spatial and temporal balance;
- preservation of the crops genepool as the basis for biodiversity and reproduction of forests;
- integrated use of forestries on the sustainability principles;
- considerable decrease in the levels and scale of various man-made impacts on the forestries ecosystems;
- forestries consecutive and comprehensive ecologization based on proactive and wide use of environmentally friendly technologies;
- development of environmentally oriented market economic mechanism, based on forestries, as well as the ecosystem, based on forestries management;

- environmental certification of the forestries systems;
- development of the organizational, economic and legal responsibility mechanism;
- development of environmental entrepreneurship;
- development of the environmental insurance system;
- stimulation of public participation to harmonize the economic and environmental forestries goals.

The main functions of the ecosystem and environmental management in forestry according to the ISO 14000 standard and the specificity of forestry are:

- justification of the environmental policy as the integrated forest policy component for sustainable forest management and environmentally sustainable forestry ecologization;
- planning of the forestry ecologization while using technological, managerial and market-oriented innovations;
- organization of the environmentally sustainable forestry and forestry industries and their respective ecological and economic harmonization;
- managing employees on ecological and economic foundations;
- management of the environmentally destructive factors, parameters in the system of forestry and sustainable environmentally oriented forest management on the basis of social and ecological and economic management technologies;
- internal monitoring and control of the forest, economic, social and environmental factors, forestry parameters;
- forestry environmental analysis and assessment, ecological, economic and social benefits under the existing criteria and indicators for sustainable forest development;
- viewing and continuous improvement of environmental and economic, ecosystem management.

Environmental forestry management system, as a part of the overall forest management economic mechanism should include organizational structure, planning activities, should share responsibilities of management personnel, procedures and resources to develop and implement forestry environmental projects. It leads to the revision, development and support of the sustainable environmentally oriented and balanced policy of forest enterprises (Figure 1). One of the key steps to organize the ecosystem and environmental management is to identify forestry environmental, ecological, economic and social parameters and forest management problems. It is necessary for the analysis and actualization of sustainable environmentally oriented forest management, as well as the software measures defining for the forestry ecologization. The environmental destructivity identification of reproduction processes in forestry is necessary to:

- develop legal mechanisms of ecological, economic and social and environmental responsibility;
- develop monitoring systems of forestry environmental, ecological and economic orientation;
- improve the environmental control;
- determin the ecological and economic losses in forestry;
- form the informative analytical basis for the environmental audit efficiency in forestry.

Content stages to implement environmentally oriented (environmental, ecosystem) management at the forestry enterprises are presented in Table 1. Implementation and operation of the environmental management system requires to form internal and external motivational factors that will encourage managers and employees to implement the system of environmental (ecosystem) management “step by step” on the principles of ecological efficiency and environmental justice.

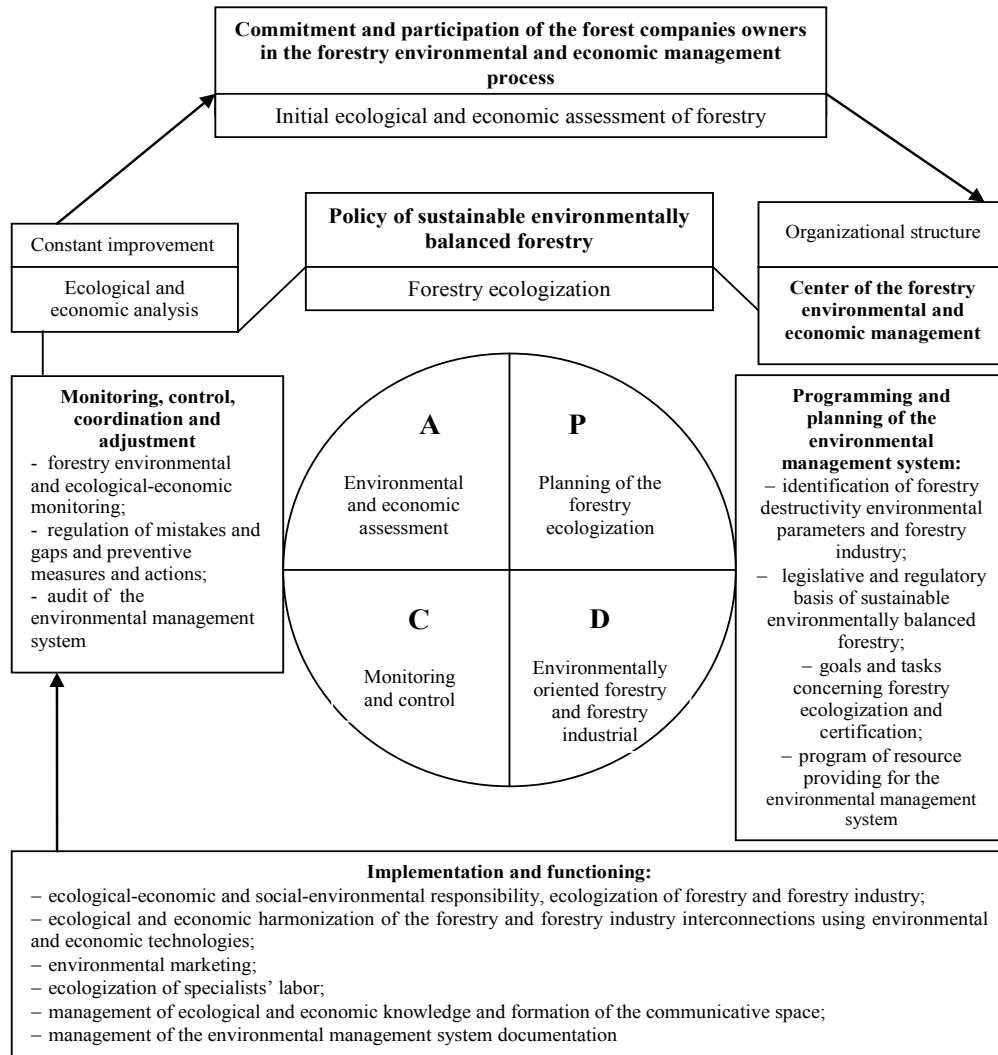


Figure 1 – Stages of implementation and functioning concerning the environmentally oriented forestry management on the basis of ISO 14001 main foundations, (based on [4; 9])

The system of personal manager resources in the environmentally oriented forest management mechanism is defined by the following components: administrative, professional and psychological resources.

Effective and efficient management of environmentally oriented forestry requires certain forest management organizational structure. Forestry enterprises should be developed to promote employee's participation in the forest management on environmental and economic grounds.

Table 1 – Stages of the environmentally oriented (ecosystem) management elements implementation at the forestry enterprises, (based on [2; 4; 9])

1. Formation and justification of the sustainable environmentally oriented forestry development policy	
1	2
Internal environmental activity	External environmental activity
<p>1. Creation of enterprises internal motivative mechanism to implement ecologically based forest management in accordance with ecologization processes and directions and forestry market reform.</p> <p>2. Formation of the environmentally based strategy in forestry, which involves the environmental policy development, environmental and economic, social and environmental objectives and targets determining, based on the ecosystem, preventive, environmentally safed approach for sustainable use and restoration of the forestry potential.</p> <p>3. Regulatory mechanisms to identify economic, social and environmental responsibility, which should be available forestry managers', professionals' and workers' perception and understanding.</p> <p>4. Taking into considiration employees' interests, requests, demands and concerns of the main forestry areas</p>	<p>1. Informative and analytical materials preparation concerning environmental purposes and tasks for a wide range of interested parties (stakeholders) in the forestry ecologization process.</p> <p>2. Taking into account opinions and suggestions of local government, nonprofit organizations, local communities through public debates, information leaflets distribution concerning the environmental policy development content and the basic aspects in the forestry enterprises</p>
2. Organization of the environmentally oriented management system	
Internal environmental activity	External environmental activity
<p>1. The definition of responsible individuals for environmental management procedures.</p> <p>2. The definition of environmental management organizational structure based on the forestry ecological and economic management center.</p> <p>3. Distribution of job descriptions and responsibilities.</p> <p>4. Providing for labor, financial, and information resources.</p> <p>5. Formation of requirements and internal documents for the environmental management system implementation.</p> <p>6. Organization and support of ecologically oriented business and social initiatives</p>	<p>1. The forest users' and consumers' involvement into forestry activities on environmental and economic grounds (cooperation, integration, contractual relations, etc.).</p> <p>2. Inclusion to the program the i of environmental management, measures and actionsmplementation aimed at active collaboration with a wide range of stakeholders (external audits)</p>

Table 1 (continued)

1	2
3. Programming and planning of the environmentally oriented management system	
Internal environmental activity	External environmental activity
<p>1. Identification of ecological, economic, social and environmental issues and forestry parameters that make up and define the major foundations of environmental management.</p> <p>2. Analysis and evaluation of organizational and institutional frameworks, legislative and regulatory requirements and obligations for forest management priority of ecological, social and environmental aspects.</p> <p>3. Development of the long-term programs of the environmental management system</p>	<p>1. Involving stakeholders in the process of environmental target forestry programs.</p> <p>2. Inclusion into the program and the planning of ecologically oriented forestry management measures and actions aimed at active collaboration with a wide range of stakeholders</p>
4. Implementation and operation of the environmentally oriented management system: organizational and managerial aspects	
Internal environmental activity	External environmental activity
<p>1. Implementation of ecological and economic, social and environmental responsibility mechanisms for the forestry.</p> <p>2. Improvement of criteria and indicators for assessing and stimulating work taking into account environmental factors. Implementation of financial, social and psychological incentives for workers in forestry.</p> <p>3. Planning the implementation of preventive measures for pollution, creation of environmentally sound technologies for the production and use and forestry potential reproduction.</p> <p>4. Organization of <i>ecological and economic knowledge management</i> for the sustainable forest management implementation.</p> <p>5. Operational management of ecologically oriented production under conditions of environmentally educated specialists on environmental and economic management technologies.</p> <p>6. Development of internal environmental reporting concerning the socially responsible management results for environmental forest management activities, including recommendations and suggestions for improvements, adjustments and additions for environmental policies</p>	<p>1. Implementation of social and environmental responsibility principles.</p> <p>2. Formation of stakeholders' motivation on the forest enterprises interaction in the environmental management system.</p> <p>3. Creating an enabling of company environment ("green") image</p>

Table 1 (continued)

1	2
5. Internal monitoring, control and coordination and adjustment	
Internal environmental activity	External environmental activity
1. Organization of the current monitoring and the forestry ecologization and forestry production control in accordance with the objectives and tasks. 2. Assessment of environmental and forestry integrated management economic effectiveness and efficiency. 3. Coordination and establishment of deviation certain corrective actions and measures from established laws or business requirements for forestry socio – ecological – economic level	1. Publication of environmental ranking results among forestry enterprises. 2. Environmentally focused social accounting development, reproduction, and distribution of environmentally responsible forestry management for the general public
6. Environmental and economic analysis and assessment	
Internal environmental activity	External environmental activity
Implementation of various environmental-economic analysis kinds: management analysis, diagnostics, environmental marketing analysis, situational analysis	Implementation of the external environmental audit
7. Reviewing and continuous improvement of the environmental management system based on the assessment of ecological and economic performance of forestry, and in conjunction with the possibility of obtaining preferential treatment of certain financial-credit and tax guidance	

Organizational structure should define the scope of authorized and responsible persons for the implementation and successful development of the management program at all and environmental management. Their ecological and productive economic activity requires:

- to provide necessary resources;
- to develop procedures, jobs and technical manuals;
- to define and implement actions, which lead to compliance with the environmental legislation and regulations requirements, defined environmental policy and the development of the social and environmental responsibility mechanism;
 - timely management analysis of forestry environmental, ecological, economic, social and environmental problems diagnosis;
 - to develop specific recommendations for the decision to identify environmental and economic problems;
 - to monitor the implementation of planned activities, events and programs within ecologically oriented forestry management;
 - to define timely and effective organizational measures to prevent economic, social and environmental conflicts and problems.

The organizational structure of environmental forestry economic management, including environmental management, can be performed as:

- organizational and management schemes of the environmentally oriented forest management in the context of the forests sustainable development and ecosystem management principles;

- units and departments activity descriptions in the process of the forestry and forestry industries ecologization;
- clear structuring of environmentally oriented reporting;
- control systems of the environmentally oriented organizational, managerial, technological and innovative characters work activities.

Efficiency of environmentally oriented forestry uses and reproduction is determined through compliance and ensuring of certain logics, forestries and environmental management: managers' actions from the perspective of managerial decisions ecologization – environmentally responsible economic behavior or certain employees (labor processes of ecologization) – environmentally oriented economic operations of a team – environmental and economic performance, production and labor efficiency.

Environmental management in forestries is a process of efficient managerial decision making in order to use ecologization and recreate forestries; it is the system of managerial levers, which provides environmental and economic effect of forestries' employees coordinated actions in the environmentally oriented forestries use and recreation. Close interconnections of all forestries components, as well as environmental and economic parameters, show the elements of environmental management in all forestries management fields. Environmental management in forestries is based on initiatives and entrepreneurship, and also includes voluntary environmental activities. Environmental management in forestries is a set of principles, forms, methods and instruments, which determine the environmental management of forests and forestries' employees in order to increase the environmental friendliness of forestries uses.

Implementation of environmental management for forestries includes environmental and economic assessment based on forestries' use and reproduction various directions [10, p. 68-69]. Forestries management comprehensive analysis may be based on the system of economic and environmental indicators. The fundamentals of the forestries management environmental and economic level should reflect: principles and criteria; mechanisms of ecosystem based on forestries management; patterns of socially responsible forestries use and certified forestries management processes.

It's worth mentioning, that forestries certification is restricted by the lack of domestic certified auditing firms, which are entitled to certify forestries products according to international standards, as well as regionally adapted assessment criteria [11]. There is a need in support by state in the process of certification, particularly through proactive state agencies participation in development of regulations and preparation for a voluntary certification. Regional programs of forestries certification should be developed and funded.

State agencies, responsible for forestries management, should implement insurance mechanisms in forestries: insurance of forests as a property; insurance of forested areas (which are leased, for example); insurance of civil liability for the economic and environmental losses to the forests. Insured risks include: fire; pests; diseases; blow downs; flooding; emergency pollution; unauthorized tree cutting [12].

Therefore, creation of the system (or elements) of environmental management regarding use and recreation of forestries demonstrated the ecologization of economic relations in this area. This can be interpreted as follows: forestries' commodities and services include forest's goods, which possess environmental and social value for various sectors of the economy, society and individuals.

The system of environmental-economic management should be integrated into the system of complex forest enterprises production and economic management. Organizational scheme

of ecologically oriented forestry management should provide a hierarchical mechanism of forest management (environmental monitoring of forestry in relation to the hierarchy) rationalization and to determine the scope (area) where the consequences or gaps and “environmental spaces bottlenecks” in the productive structure and forest management. Gradually, step by step introduction of environmental management elements in forestry requires to create a center of forestry ecological and economic management, which should operate at the regional level. It also aims to integrate environmental management system in the mechanism of ecological and economic management and forest management general system to enhance the forest management ecological and economic efficiency. It is necessary to apply administrative, economic, social and psychological of managing.

It should be noted that the forestry and forest production in integrated forest companies have different forestry environmental, economic, ecological and economic, social and environmental interests. Implementation of environmentally and socially responsible forestry management, therefore, needs to resolve conflicts that arise while using and reproducing forest resources between different departments of forestry enterprises. There is a necessity for the environmentally oriented management of forestries’ employees to increase in their environmental and economic performance, improve in relative criteria and measures of employees’ work, material and moral incentives for their activities, taking into account nature protecting factors. Ultimately, forestries specialists and managers must ensure implementation of the environmentally oriented economic strategies goals and tasks.

Conclusions and directions of further researches. Thus, the process of the environmental management implementation mechanism at the forestry enterprises must take into consideration specific characteristics and principles of the environmentally sustainable forestry; use environment and economic technologies of management (forest certification and insurance mechanisms). “Step by step” implementation of environmental management elements in forestry requires the creation of the ecological and economic forestry management center, which should operate at the regional level.

1. Mishenin E. Environmental and economic principles of integration process management for forestry and agriculture / Eugeny Mishenin, Inessa Yarovaya // Ecological economics and sustainable forest management: developing a transdisciplinary approach for the Carpathian Mountains : monograph. – Edited by I.P. Soloviy, W.S. Keeton. – Lviv : Ukrainian National Forestry University Press, Liga-Pres, 2009. – P. 317-332.

2. Галушкіна Т.П. Экономические инструменты экологического менеджмента (теория и практика) / Т.П. Галушкіна. – Одесса : Институт проблем рынка и экономико-экологических исследований НАН Украины, 2000. – 280 с.

3. Бородин А.И. Эколого-экономическое управление предприятием : автореф. дисс. ... д-ра экон. наук : спец. 08.00.05. «Экономика и управление природным хозяйством: региональная экономика, предпринимательство» / А.И. Бородин. – Калининград, 2006. – 40 с.

4. Лукьянихин В.А. Экологический менеджмент : монография / В.А. Лукьянихин, Н.Н. Петрушенко. – Сумы : ИТД «Университетская книга», 2004. – 408 с.

5. Дейнека А.М. Лісове господарство: еколого-економічні засади розвитку : монографія / А.М. Дейнека – К. : Знання, 2009. – 350 с.

6. Максимив Л.И. Менеджмент устойчивого лесного хозяйства в контексте постулатов экологической экономики / Л.И. Максимив, И.П. Соловий, Л.Д. Загвойская // Экономика природопользования. – 2008. – №6. – С. 107-114.

7. Соловий І.П. Політика сталого розвитку лісового сектору економіки: парадигма та інструменти : монографія / І.П. Соловий. – Львів : РВВ НЛТУ України, Вид-во ТЗОВ «Ліга – Прес», 2010. – 368 с.

8. Харионовская И.В. Развитие элементов экологического менеджмента в лесопользовании / И.В. Харионовская // Лесное хозяйство. – 2004. – №3. – С. 30-32.
9. Бельмане Инга. Системы экологического менеджмента: от теории к практике. Руководство по внедрению СЭМ в соответствии с требованиями Международного Стандарта ИСО 14001 / Инга Бельмане, Карл Далхаммар. – Лунд (Швеция) : МИИЭЭ, Лундский Университет, 2002. – 197 с.
10. Мишенін Е.В. Еколого-економічні проблеми природопольовання в лісному комплексі : монографія / Е.В. Мишенін; под ред. Коваля Я.В. – Суми : ВВП «Мрія – 1» ЛТД, 1998. – 272 с.
11. Артемьев И. Лесная сертификация и экономика лесопользования / И. Артемьев, А. Блейкли, А. Птичников, Д. Парк // Устойчивое лесопользование. – 2006. – №2(10). – С.39-46.
12. Петров В.Н. Лесные ресурсы как объект страхования / В.Н. Петров // Лесное хозяйство. – 1997. – №4. – С.25-26.

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Механізм реалізації екологічного менеджменту на підприємствах лісового господарства

У статті сформовані науково-методичні підходи до впровадження та функціонування екологічно орієнтованого лісогосподарського менеджменту, на основі застосування загальної методології екоменеджменту, положень ДСТУ ISO 14001, враховують галузеву специфіку та принципи сталого еколого-економічного збалансованого лісокористування, а також передбачають застосування еколого-економічних технологій управління. Окреслено сутнісно-змістовну основу екологічно орієнтованого лісогосподарського менеджменту та його видові форми (зокрема, екосистемний та безпосередньо екологічний менеджмент). Визначено принципи та функції екоменеджменту лісогосподарських підприємств, сформовано етапи його впровадження та функціонування.

Ключові слова: екологічний менеджмент, лісове господарство, екологічно орієнтованого лісогосподарський менеджмент, лісогосподарські підприємства, центр еколого-економічного управління.

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Механізм реалізації екологічного менеджменту на підприємствах лісового господарства

В статье сформированы научно-методические подходы по внедрению и функционированию экологически ориентированного лесохозяйственного менеджмента, на основе использования общей методологии экомеджмента, положений ISO 14001, учитывают отраслевую специфику и принципы устойчивого экологически сбалансированного лесопользования, а также предусматривают использование эколого-экономических технологий управления. Очерчено сущностно-содержательную основу экологически ориентированного лесохозяйственного менеджмента и его видовые формы (в частности, экосистемный и непосредственно экологический менеджмент). Определены принципы и функции экомеджмента лесохозяйственных предприятий, сформированы этапы его внедрения и функционирования.

Розділ 5 Екологічний маркетинг та менеджмент

Ключевые слова: экологический менеджмент, лесное хозяйство, экологически ориентированный лесохозяйственный менеджмент, лесохозяйственные предприятия, центр эколого-экономического управления.

1. Mishenin, Ye. (2009). *Environmental and economic principles of integration process management for forestry and agriculture/ Ecological economics and sustainable forest management: developing a transdisciplinary approach for the Carpathian Mountains*. I.P. Solovii, W.S. Keeton. (Eds). Lviv: Ukrainian National Forestry University Press, Liga-Pres [in English].
2. Halushkina, T.P. (2000). *Ekonomicheskie instrumenty ekolohicheskoho menedzhmenta (teoriia i praktika) [Economic instruments of the environmental management (theory and practice)]*. Odessa: Institute of Problems of the market and economic and environmental researches NAS of Ukraine [in Russian].
3. Borodin, A.I. (2006). *Ekoloho-ekonomicheskoie upravleniie predpriiatiiem [Enviromental and economic enterprise management]*. Kaliningrad [in Russian].
4. Lukianikhin, V.A. (2004). *Ekolohicheskii menedzhment [Environmental management]*. Sumy: Universitetska knyha [in Russian].
5. Deineka, A.M. (2009). *Lisove hospodarstvo: ekoloho-ekonomichni zasady rozvytku [Forestry: ecological and economic foundations of its development]*. Kyiv: Znannia [in Ukrainian].
6. Maksymiv, L.I., Solovii, I.P., & Zahvoiskaia, L.D. (2008). *Menedzhment ustochivoho lesnoho khoziaistva v kontekste postulatov ekolohicheskoi ekonomiki [The sustainable forestry management from the perspectives of postulates of the environmental economics]*. *Ekonomika pryrodopolzovaniia – Environmental economics*, 6, 107-114 [in Russian].
7. Solovii, I.P. (2010). *Politika staloho rozvytku lisovoho sectoru: paradyhma ta instrumenty [Policy of sustainable development of the forest sector: paradigm and tools]*. Lviv: ICD National Forestry University of Ukraine Publishing House Ltd. «League-Press» [in Ukrainian].
8. Kharionovskaia, I.V. (2004). *Razvitiie elementov ekolohicheskoho menedzhmenta v lesopolzovanii [Development of elements of the environmental management in the forestry]*. *Lesnoie khoziaistvo – Forestry*, 3, 32 [in Russian].
9. Belman, I. (2002). *Sistemy ekolohicheskoho menedzhmenta: ot teorii k praktike [Systems of environmental management: from theory to practice]*. Guide of implementation of the environmental management in accordance with the Requirements of ISO 14001 standards. Lund (Sweden): MYYEE, Lundskyi University [in Russian].
10. Mishenin, E.V. (1998). *Ekoloho-ekonomicheskie problemy prirodopolzovaniia [Ecological and economic problems of nature in forestry]*. Sumy: LTD «Mriia-1» [in Russian].
11. Artemiiev, I., Blaikly, A., Ptichnikov, A., & Park, D. (2006). *Lesnaia sertifikatsiia i ekonomika lesopolzovaniia [Forest certification and forestry economics]*. *Ustoichivoie lesopolzovaniie [The sustainable forestry]*, 2 (10), 39-46 [in Russian].
12. Petrov, V.N. (1997). *Lesnyie resursy kak obiekt strakhovaniia [Forest resources as an insurance object]*. *Lesnoie khoziaistvo – Forestry*, 4, 25-26 [in Russian].

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