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The Biodiversity's Preservation Public Administration Mechanisms

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The study of the concept of sustainable development as the most promising in terms of biodiversity has been investigated. The main methods and tools of biodiversity conservation, the best practices of biodiversity conservation have been learned. The basic measures improving governance biodiversity of Ukraine in accordance with the concept of sustainable development have been ordered. The experience of international financing of biodiversity conservation through environmental funds has been studied, funds of NGOs and grant projects. Scientific and practical interest in the work is the proposed funding mechanism for biodiversity conservation in the current economic climate of Ukraine. The organizational structure of government biodiversity conservation of Ukraine has been investigated. The effectiveness of government biodiversity conservation has been investigated. The functions of the Ministry of Ecology and Natural Resources of Ukraine as a central body of executive power in the field of biodiversity conservation have been studied and analyzed. The staffing Ministry of Ecology and Natural Resources of Ukraine has been investigated, the system of placement and examined staffing departments of the Ministry, responsible for biodiversity Ukraine, has been analyzed. The best foreign practices of biodiversity public administration and recommendations for its implementation in Ukraine have been ordered.

Keywords: *sustainable development, public administration, ecology politics, biodiversity, state.*

Introduction. In recent decades, the problem of the need to preserve the environment and biodiversity, natural and recreational resources is felt very acutely. Manage Saved biodiversity must be systemic, based on methods of public administration, innovative instruments of best international experience. Biodiversity creates a safe and healthy environment, provides the population with food, medicines, raw materials for industry. It also supports the ecosystems functioning, including circulation and purification of natural waters, soil conservation and climate stability. In the last two decades mankind began to feel the threatening climatic changes. Special problems are caused by the state of atmospheric air, its extraordinary pollution by harmful substances and above all by carbon dioxide. The improvements of the situation may become possible only with the introduction of nature protection projects, energy saving production and ecologically clean equipment. However such products are too expensive for Ukraine which only starts building its stable economy. In this aspect the introduction of the Kyoto Protocol can hardly be overestimated. Therefore, the theme, chosen for the study is extremely important.

Recent research and publications analysis. Question governance mechanisms widely covered Koretsky, D. Dzinchuk, Kravchenko, V. Martynenko, A. Datsiy, R.Larina, F. Fedorchak and many others. However, in terms of biodiversity conservation issue insufficiently studied. Biodiversity is studied in a number of scientific papers, including T. Andrienko, Toddler, AJ Alexandrova, O. Veklych, O. Wroblewska, L. Hryniv, Y. Remarks the P.Gamana, L. Miller, I. Sinyakevich, A. Sohnych et al. However they are mainly concerned with the maintenance of the ecosystems ecological state, but administrative and economic elements remain insufficiently studied.

Paper objective. The purpose of the article – the rationale of what constitutes a systematic approach to biodiversity conservation on the basis of the best national and international experience. The object of study is the effectiveness of biodiversity conservation major components Ukraine. The subject of the research the process of a systematic approach as the basic method in preserving biodiversity. In passing, the question arises, what constitutes a systematic approach, and how to understand this concept in the classical sense. The purpose of this paper is to analyze the biodiversity actual management system, identify gaps in the system and develop the measures to eliminate them. On February 4, 2004, Ukraine ratified the Kyoto Protocol. It is known that carbon as a biogenic matter is mainly

stored for a long time in the forests. That is why in this work basic attention is concentrated on the comparison of forest areas and the ability of Ukraine's and its country neighbours' forest ecosystems to deposit carbon and at the same time on the determination of perspective economic benefits which some of them can receive as strategic partners while the Kyoto Protocol is being realized.

Paper main body. On February 4, 2004, Ukraine ratified the Kyoto Protocol. It is known that carbon as a biogenic matter is mainly stored for a long time in the forests. That is why in this work basic attention is concentrated on the comparison of forest areas and the ability of Ukraine's and its country neighbours' forest ecosystems to deposit carbon and at the same time on the determination of perspective economic benefits which some of them can receive as strategic partners while the Kyoto Protocol is being realized.

Systems approach – an approach to the study of the object (problems, phenomena, processes) as a system in which the selected items, internal and external communications, the most significant impact on the studied results of its operations and objectives of each of the elements based on the general purpose object. Thus, the traditional approach to the proceeds from the premise that the best of the enterprise can be achieved by a simple summation of its parts in best mode of operation. Systems principle states that for complex systems, this condition is not satisfied. The model of consistency in the management of biodiversity can be regarded as the United States and Canada.

Let us consider a system of state executive bodies responsible for the conservation of biodiversity at the national level. Today the state policy in the field of rational use and reproduction of natural resources implements Ministry of Ecology of Ukraine. As part of the Ministry responsible for biodiversity conservation State Environmental Inspectorate, Department of national parks and nature reserve management, environmental management, State Environmental Inspectorate of the Black and Azov Seas. In this area also involves the Ministry of Agrarian Policy of Ukraine, State Committee on Forestry and Fisheries, State Committee for Land Resources and Water Management. Important role played by scientific institutions, sanctuaries and national parks. Ministry of Environmental Protection of Ukraine pays special attention to the adaptation of national legislation of Ukraine in the conservation of wildlife and to the European Union. Ukraine is a party to more than 50 international agreements aimed at the conservation of biological and landscape diversity. But so far Biodiversity

management system can not be considered effective as a whole, that is positioned as a complete system.

The research showed that in the modern practice of biodiversity cost-effectiveness evaluation, there are not any elaborated methodological approaches, due to the following reasons: there is not any real market value of natural and social resources, and as a result, the use of subjective assessments designed on economically unsound manner; the lack of legal framework in evaluation of this kind in general and biodiversity in particular; the Departmental approach to the assessment, development methodology was done by organizations subordinate departments, engaged in the use and reproduction of this type of resource.

By definition, M. Koretsky mechanism of state regulation of the economy – a system of tools, instruments, methods and incentives by which the state regulates economic processes, provides the implementation of socio-economic functions. RR Larin, AV Vladzmyrskyy, O. Balueva note that the control mechanism is integral, but the most active part of the control system, which ensures action at the factors that affect the state of the result of the controlled object. In their view, the control mechanism is rather complex category management and includes: management objectives, criteria management – quantitative analogue of management objectives, management factors – elements of facility management and their relation to which the action is carried out for achieving the goals, methods of management actions on factors, management resources - material and financial resources, social and institutional capacity, which is realized when using my method of management and ensures the achievement of this goal. Today, Ukraine cannot stay away from the prevailing world market ecosystem services due to the threat of global ecological crisis.

The national economy formation delay leads to the annual loses of foreign investment in the environmental performance development. The following areas of the market ecosystem services: Genetic resources market of country-members of the Convention «On Biological Diversity» (Article 15). Access to genetic resources and equitable sharing of benefits from their use (strains of microorganisms, including industrial, pharmaceutical raw materials of plant and animal breeding resources, materials cryobanks); quotas market for carbon emissions and carbon sequestration by promoting forest regeneration (Kyoto, 1997). According to this Ukraine can receive \$7.5 billion. Every year; «debt for nature» market. (Poland, Bolivia, Costa Rica, Madagascar) The restructuring of external debt (\$ 104 billion or 88,9 % of GDP). The ecotourism development investment, restructuring of enterprises which damage the unique natural objects (World Bank, World Resources Institute, the United Nations); ecosystem services market associated with the contribution of natural ecosystems to the global stability of the biosphere. The idea of international mutual payments for maintaining of global stability was signed by developed countries in Rio de Janeiro and leads to the payments of 0,7 % of GDP. In Ukraine such compensation may be between 2-6 % of GDP.

Calculated the share of natural capital in the structure of the state budget of Ukraine, which is about 5% in the structure of GDP – 2%. To these figures became more clear, for comparison, the annual cost-effectiveness of the operation of forest and wetland ecosystems of Ukraine of 12 budgets, for example, Rivne region. This is a significant finding that should be the basis for investment in conservation. Calculation results are presented in Table. 1.

Table 1.

The share of the costs of biodiversity conservation the structure of the state budget of Ukraine

№ з/п	Funded event with State Budget of Ukraine	Amount, million.		Excess effect on the functioning of biodiversity Ukraine compared to budget investment, times	
		2009 p.	2013 p.	2009 p.	2013 p.
1.	The cost of the Ministry of Environmental Protection of Ukraine	1608,35	4130,25	9,4	3,6
2.	Applied scientific and technical developments, works for state targeted programs and public order in the area of environmental protection, financial support for scientific staff	2,7	8,08	5572,4	1862,1
3.	Measures for the establishment and preservation of natural areas, maintaining inventories of flora and fauna, the Red Book	66,48	112,4	226,3	180,4
4.	The National Ecological Network	15,0	22,6	1003,0	860,2
5.	The share of natural capital in comparison with the state budget%	5,2	3,6	-	-

Consequently, the total annual economic effect of the functioning of forests and wetlands Ukraine, estimated at more than 1880 million. U.S. and equal to 5.2 % of the total revenues of the state budget of Ukraine in 2012, and 2% of GDP is necessary to support the functioning of forest and wetland tracts Ukraine in its natural state. Occupying only 19.1 % of the territory of one hectare wetland array according to conservative estimates brings benefits to society of more than 316 dollars. U.S. and forests – \$ 150. United States (excluding the effect of the collection of medicinal plants and by-products). An important feature is a wetland ecosystem as a natural water filter, because society does not even think that through this annual saving to install water treatment plants worth more than \$ 85 million. USA. Moreover, it is impossible to consider all envi-

ronmental economic and social functions of forest and wetland ecosystems, in particular this applies to recreational fishing, sport hunting, leisure, recreation, gathering medicinal plants and by-products, etc. This is a powerful argument in the reflection ecological and socio-economic value of functioning of forest and wetland ecosystems in national accounts state that the experience of developed countries.

A comparison showed that the effective functioning of forest and wetland ecosystems in more than 9 times the budget investments in environmental protection level in 2012 and about 4 times in 2013, research – 5 thousand times (2009) and about 2 thousand times the level of 2013, protected areas – about 200 times the National Ecological Network – about 1000. This is a real argument for in-

creased funding maintenance of biodiversity resources from the state budget of Ukraine in view of the actual socio-ecological-economic efficiency of the functioning of natural ecosystems.

Knowing that on the average one hectare of the forest educes annually 5 tons of oxygen and soaks up 20 tons of carbon dioxide and also the oxygen consumption norm per capita, in this research we have calculated the annual mass of carbon deposition by the forests and have defined general quantity of the population the vital functions of which will be provided with oxygen. It turned out that Poland, Ukraine, Romania, Czech, Slovakia, Hungary and Russia are the oxygen donors for other countries. Thus, there was calculated the surplus of nominal quantity of population of these countries which can be provided with oxygen in the countries where forest ecosystems are in a deficit. For example, as my calculations prove, above its own quantity of population, Poland provides oxygen for 68.7 million persons, Ukraine – 67.3 million, Romania – 59.7, Czech and Slovakia – 41, Hungary and Russia accordingly 9.4 and 3 million persons.

In Byelorussia and Moldova 9.7 and 4.1 million persons accordingly lack oxygen. It means that these countries have to compensate its lack at the expense of the higher mentioned states. It is clear that according to the Kyoto Protocol they would have to pay the costs or invest money into nature protection technologies. In this work an economic effect from annual absorption of carbon dioxide by the forests has been calculated. Thus, Russia is the leader (177300 million), the second place is taken by Ukraine (1880 million), the third place by Poland (1740 million), further on goes to Romania (1340), Slovakia and the Czech Republic– 920, Hungary – 320, Byelorussia – 10,2 and Moldova only 3,6. I consider that the expected economic efficiency of forest ecosystems must be taken into account in the National Domestic Product in every country, as it works, for example, in Japan.

The best way to protect biodiversity is a creation of preserved territories. This work is devoted to the improvement of the process of economical stimulation development of the natural-protected fund (NPF) of Ukraine in the transferred economy. In this work the social-economic end ecological essence of NPF have been investigated, the main directions and measures of economic stimulation of the NPF have been offered.

The necessity of increasing of square of the NPF has been grounded in the work (it must be near 20 % of the total square of Ukraine). The new methodic of economic estimation of evaluation of the NPF functioning, as a basic of economic stimulation has been developed. This methodic allows to take into account climate-creating, atmosphere-saving, water-purifying, health-protecting functions of natural ecosystems of biodiversity and is an important instrument in the realization of Kyoto Protocol mechanisms.

The new methodic of economic estimation of evaluation of the biodiversity's functioning has been based on the conception of total economic value (TEV) and consists of such components:

$$TEV = DV + IV + OV + EV \quad (1)$$

where *DV* – direct using value; *IV* – indirect using value; *OV* – value of future information; *EV* – estimation value of biodiversity.

The economical estimation of natural preserves and national natural parks of the NRU has been done in this investigation. The results of such calculation: economical effect of functioning 1 ha of preserve has been near 250 dollars and more every year. Therefore it is important to save biodiversity in natural condition.

The system of efficiency management estimation of the NPF has been improved. Rational System of Management Natural Reserved Fund will be created due to:

- effective management;
- financing of state and local budgets (substantiation of expense standarts);
- selling of literature on Natural Reserved Fund (publishing of booklets, tourism);
- to extend of network of privileges (tax on land);
- improvement of mechanism of economical ensurance of Reserved Territories;
- involving of all categories of Natural Reserved Fund into the sphere of market;
- working out of management plans for Regional Landscape Park.

The conservation, enhancement and sustainable use of the diversity of organisms, ecosystems, landscapes, as strategic principles of the development of the world community in the XXI Century, became the essence of state environmental policy in Ukraine. Defending the constitutional rights of Ukrainian citizens for having a high-quality environment, the President of Ukraine, has signed 30 Decrees since 1994 resulted in the considerable extention of the network of protected areas.

Conclusions. The materials of this research have passed both wide theoretical and practical approbation in educational establishments of Ukraine and nature-protection establishments. In particular, there was created a new economic estimation of the functioning of nature-protected territories. The latter was done according to the state budget theme on the order of Department of Education of Ukraine, Ministry of Natural Environment of Ukraine, State Environment Administration of Rivne Region. The estimation method allows to take into account climate-creating, atmosphere-saving, water-purifying, health-protecting functions of natural ecosystems and is an important instrument in the realization of Kyoto Protocol mechanisms.

Consequently, the State Environmental Policy is integral part of the strategy of control and indisputable condition for the existence of society. In Ukraine in modern conditions exceedingly rewarding experience of developed countries to conduct and improve environmental policy. The study revealed some systematic approach to biodiversity conservation at the national level. Specifically, the state policy in the field of rational use and reproduction of natural resources implements Ministry of Ecology of Ukraine. Issues of dual subordination of the Ministry of Environment and Forest Resources State Agency of Ukraine some nature reserves and national parks. Forest Resources State Agency of Ukraine is primarily industrial structure and ministry – on the contrary, environmental. This is contrary to all the dogmas of systematic state administration. In addition, there aren't standards of environmental financing from the state budget of Ukraine. It has large differences by region of Ukraine. The results obtained allowed the study concluded that a systemic approach provides the best methodological effectiveness of biodiversity conservation of Ukraine, as based on the scientific integrity of the knowledge of reality. Biodiversity is an unconditional prerequisite for life support and functioning society. Eco-

conomic efficiency calculation of the biodiversity components is the basic tool of evidence necessary to increase in annual funding. Biodiversity preservation in Ukraine has a complex hierarchical structure of government and is characterized by some non-systematic, unclear division of roles and responsibilities. Only 4% of the total number of regions of Ukraine the function of biodiversity preservation is reflected in the organizational structure of state environment authority. The largest share (56%) belongs to regions with combined functions of state administration in the field of biodiversity conservation. All this requires further scientific study and improvement of organizational management structure preserving biodiversity in Ukraine.

In order to improve management of biodiversity preservation we will use Poland experience, concerning the

taxation of land preservation, involvement of local authorities (communes) to address issues of biodiversity preservation management at the community and state authorized territory.

Creation of Natural Reserved Fund territories is means of successful preserving of natural richness of our state. It is necessary to extend the preserved network, to save rare kinds of plants and animals. Nowadays, as never before, D. Darrel's words are very important and actual: "Remember! Plants and animals haven't got deputies, they can't write and complain to anybody, nobody can defend for them, except us, people, which together with them are inhabitants of this planet".

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Якимчук А. Государственные механизмы сохранения биоразнообразия

Аннотация. Проведено исследование концепции устойчивого развития как наиболее перспективной с точки зрения сохранения биоразнообразия. Изучены основные методы и инструменты сохранения биоразнообразия. Рассмотрен лучший международный опыт. Предложены основные мероприятия усовершенствования системы государственного управления сохранением биоразнообразия Украины в соответствии с требованиями концепции устойчивого развития. Рассмотрены основные подходы к оценке эффективности сохранения биоразнообразия на основе лучшего зарубежного опыта. Осуществлена экономическая оценка ресурсов биоразнообразия Украины и доказана необходимость увеличения объемов ежегодного государственного финансирования сохранения биоразнообразия. Изучен опыт международного финансирования сохранения биоразнообразия за счет экологических фондов, средств общественных организаций и грантовых проектов. Научный и практический интерес в работе составляет предложенный механизм финансирования сохранения биоразнообразия в современных экономических условиях развития Украины. Исследована организационная структура государственного управления сохранением биоразнообразия Украины. Проанализирована эффективность государственного управления сохранением биоразнообразия. Изучены и проанализированы функции Министерства экологии и природных ресурсов Украины (Минприроды Украины) как центральный орган исполнительной власти в области сохранения биоразнообразия. Исследованы штатное расписание Минприроды Украины, проанализирована система расстановки кадров и исследованы штатное расписание структурных подразделений министерства, что ответственные за сохранение биоразнообразия Украины. Рассмотрен лучший международный опыт государственного управления сохранением биоразнообразия и разработаны рекомендации по его имплементации в Украине.