

## THE USE OF ECONOMIC INSTRUMENTS OF LAND MANAGEMENT TO CONSERVE BIOLOGICAL DIVERSITY: INTERNATIONAL EXPERIENCE

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*Studied international experience of using economic instruments to stimulate land users to preserve biodiversity.*

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### **Formulation of the problem.**

Globally, the use of economic instruments for land administration in biodiversity conservation has received great support. This is due to the need to ensure the economic well-being of people living within and around areas rich in biodiversity, mainly, protected areas, such as parks, reserves, recreational areas etc. At the same time, factors of economic development in these areas are the main threats to biodiversity. That is, given the dual and often contradictory relationship of economics and biodiversity conservation policy using economic instruments used based on the individual characteristics of the region. The study of their use in terms of a global perspective is essential to facilitate the analysis of the results arising from their implementation. Analysis of economic instruments using the classification of supply and demand suggests that more economic instruments in this field are focused on increasing the volume of supply biological resources for humans.

**The article aims** to explore the international experience of using economic instruments of land management to preserve biological diversity and bringing it in Ukraine.

### **Presenting main material.**

The overall objective of policy framework for managing environmental land use should be achieving effective long-term conservation and sustainable use of biodiversity and associated resources – as well as equitable sharing of benefits, which is consistent with national and international law. To achieve this, it is important to choose specific tools. It is complex and depends on the specific institutional, economic and social needs. As market instruments are often profitable (cost effective) – and do not use – they need more encouragement. However, in many cases it is also necessary to use non-market instruments in an effective combination of policies – in order to achieve an effective level of long-term conservation and sustainable use of biodiversity.

Properly designed and applied economic tools are an important part of stimulating approach based on sustainable management of environmental land use aimed at preserving biodiversity. Economic instruments should also be considered in the wider context of market approach to promote biodiversity objectives. Therefore, the agenda is the creation of a market that will be an important element of effective and efficient management mechanism in the field of biodiversity. Part of the agenda will include the establishment of rules and procedures that work effectively in a market economy. Framing access agreements that facilitate market exchange resources related to biodiversity, are examples of initiatives in this direction.

For biodiversity, economic instruments can be defined as mechanisms to change the behavior of economic agents/internalization of costs through the use of natural resources. Their use is based on the assumption that the social costs or benefits of biodiversity, degradation and recovery can be internalized in the price activity that causes such damages and losses to profit or biodiversity [1]. This is because it is assumed that economic agents/entities will use natural capital for activities that are most productive (under D.Rikardo's rent theory), which argues that economic rent (price) for fixed factor of production such as land, will be higher for the more productive land. Natural capital is generally a high discounts, thus creating economic feasibility convert them into playable at present capital. Therefore economic instruments aimed at reducing the discount rate to people who pay the direct cost for maintaining the resource could save at longer time periods [2]. These processes can be explained by understanding the underlying causes of biodiversity loss.

Examples of such economic instruments can be measures such as regulation of property rights, taxes, security easements, grants, environmental fees, create market funds, loans, issue bonds, deposit systems, payment systems and ecosystem services support livelihoods. They are intended to change the behavior of people in decision-making, making sure that they take into account the real value of biodiversity and the full range of costs associated with the loss [3]. In many parts of the world economic instruments used to supplement, not replace other strategies for biodiversity conservation, such as the existing rules and programs to purchase land to preserve habitats of species and their diversity. [4]

Experts state that currently use several kinds of economic instruments for biodiversity conservation. The classification of such instruments is quite relative and different organizations and experts use different criteria for the classification of ecological and economic instruments.

International Union for Conservation of Nature (IUCN) classifies ecological and economic tools that are used for biodiversity conservation, to market and non-market (Table. 1) [5]. At that time, as an international organization "Defenders of Wildlife" (Table 2) [4] classifies them into innovation in property rights, market institutions, financial incentives and governmental tax benefits.

Areas of economic instruments listed in the classification of "Defenders of Wildlife" [4] are used primarily in the US. The researchers explain this list [6] increased interest in market approaches to environmental conservation. In their view, this approach caused the creation of incentives for resource managers and/or owners that their actions

**Table 1: IUCN classification of economic instruments for biodiversity conservation. [6].**

Classified group	Examples
Market-based mechanisms	<ul style="list-style-type: none"> <li>• Markets for watershed services</li> <li>• Biodiversity offsets and mitigation</li> <li>• Conservation banking</li> <li>• Markets for recreation</li> </ul>
Non-market-based mechanisms	<ul style="list-style-type: none"> <li>• Global environment facility</li> <li>• Debt-for-nature swaps</li> <li>• Conservation trust funds or environmental funds</li> <li>• Taxes</li> <li>• Compensation to communities for opportunity cost and damages</li> </ul>

**Table 2: Defenders of Wildlife classification of economic instruments for conservation.**

Classified group	Examples
Property rights innovations	<ul style="list-style-type: none"> <li>• Conservation easements</li> <li>• Covenants and deed restrictions</li> <li>• Stewardship exchange agreements</li> </ul>
Market-oriented institutions	<ul style="list-style-type: none"> <li>• User fees</li> <li>• Ecotourism</li> <li>• Eco-labeling and certification</li> <li>• Mitigation banking</li> <li>• Conservation banking</li> <li>• Transferable development rights</li> <li>• Ecosystem services markets</li> </ul>
Financial incentives	<ul style="list-style-type: none"> <li>• Compensation programs</li> <li>• Insurance</li> <li>• Cost-share incentives</li> <li>• Conservation stewardship incentives</li> <li>• Land and water rental leases</li> <li>• Conservation contracts</li> <li>• Debt forgiveness</li> </ul>
Public tax incentives	<ul style="list-style-type: none"> <li>• Income tax incentives</li> <li>• Property tax incentives</li> <li>• Estate tax incentives</li> <li>• Capital gains tax</li> </ul>

are aimed at supporting environmental measures such as carbon sequestration, watershed protection, conservation of habitat for vulnerable and endangered species of wildlife, maintaining landscape wealth. Tools incentives can take the form of direct payments for ecosystem services or ecosystem markets, trade permits or quotas, eco-labeling or certification schemes [6].

One example of the introduction of market-based instruments was the adoption of the Framework Convention of the United Nations on Climate Change in 1992 and the signing of the Kyoto Protocol in 1997, which aim to reduce the increasing emissions of greenhouse gases such as carbon dioxide and methane. The Kyoto Protocol was defined targets to reduce

emissions for countries, providing the basis for rights trading system for carbon – carbon market. Although such large polluting countries like the US and China have not ratified the Protocol, a voluntary carbon credits market and was likely to continue to grow, both inside and outside the Protocol [6]. This market includes the industrial sector, project developers, consumers, and even some registries exchanges such as climate Chicago exchange [7].

Compensation for damage caused to biodiversity and mitigation and ecosystem banking apply to protected areas are created and managed as a means of compensation for the loss of habitats due to development of land use. So land explorers purchase loans approved by banks for each ecosystem types of destroyed habitat. These funds are used to support species and measures to preserve the environment and the habitats of species in surrounding areas. For example, the US used the ecosystem mitigation banking, conservation banking, as well as the right to development, which can be transmitted.

Recreational markets related to the fact that alternative forms of tourism (ecotourism, rural tourism or nature tourism) is the fastest growing segment of the tourism sector, which today is about 30 percent of the world tourism market. [6] Western researchers note that in recent years a host of other market mechanisms for financing biodiversity, including bio-geological exploration, certification scheme for sustainable development, eco-labeling for organic products and payment for users.

The survey of IUCN [6] substantiates the need for non-market mechanisms, as the goods and services provided by biodiversity are important both for society and for individuals, but because the market can not provide the value of public goods. Thus, public investment (in the form of various taxes, funds and other measures) are necessary to finance the conservation of biodiversity.

Another classification of ecological and economic instruments biodiversity offered by Edem Kodzo Ekpe [3], based on the economic principle of “supply-demand” (Table 3).

**Table 3: A demand and supply classification of economic instruments.**

Demand instruments	Supply instruments
<ul style="list-style-type: none"> <li>• Ecotourism</li> <li>• Markets for recreation</li> <li>• Eco-labeling and certification</li> <li>• User fees</li> <li>• Markets for carbon sequestration</li> <li>• Markets for watershed services</li> <li>• Compensation programs for opportunity cost and damages</li> </ul>	<ul style="list-style-type: none"> <li>• Biodiversity offsets and mitigation</li> <li>• Conservation banking</li> <li>• Conservation easements</li> <li>• Covenants and deed restrictions</li> <li>• Stewardship exchange agreements</li> <li>• Mitigation banking</li> <li>• Transferable development rights</li> <li>• Tax cuts</li> <li>• Insurance</li> <li>• Cost-share incentives</li> <li>• Conservation stewardship incentives</li> <li>• Land and water rental leases</li> <li>• Conservation contracts</li> <li>• Property and estate tax incentives</li> <li>• Capital gains tax</li> <li>• Debt conversion mechanisms</li> </ul>

The author stresses that biodiversity is seen in the economy as a source of biological resources that can be consumed according to the security or to meet the needs of human welfare. Thus, the relationship between supply and demand is the basis of factors that affect the distribution of natural resources that a person receives from biodiversity. The degree of success of the application of certain economic land use administration tools biodiversity depends on the consideration of supply and demand for resources. The basis of this classification assigned, according to the author, the basics of economics. Although tools affect both the demand and to provide biological resources, criteria based on the fact that these two factors depends on economic tool. The main criterion for classification in this thesis is that the tools directly reduce demand or increase demand for biological resources, while offers tools directly increase or decrease the supply of biological resources.

For example, ecotourism is a tool of demand. Ecotourism in the forest zone will reduce the needs of local communities that benefit from revenue from tourism in obtaining biological resources such as venison and wood for livelihoods. Eco-labeling and certification also increase demand for products through sustainable management of the resource base. The essence of the concept of economy and recreational land use in environmental management addressed in the work of A.M. Tretyak "Economic and environmental aspects of human relationships to natural resources and recreational land use in terms of land relations." [8]

On the other hand, tax incentives for landowners create the possibility of preserving biological resources

on their lands, which directly reduces the supply of resources such as wood markets. In addition, debt restructuring mechanisms such as exchange of debt for environmental measures, encourage poorer countries to protect their natural resources, and this directly reduces the supply of biological resources from their natural areas.

### **Conclusions.**

Used instruments to ensure the preservation of biodiversity in the land in foreign countries can be divided into three groups. The first is based on the use of financial and economic incentives for land users. The second are based on restrictions and prohibitions. The third rely mainly on environmental labeling and certification of products or services. The possibility of their use for the institutional environment of Ukraine will be considered in future studies.

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### **References**

1. Organisation for Economic Cooperation and Development. (2004). Recommendation of the council on the use of economic instruments in promoting the conservation and sustainable use of biodiversity. Retrieved from <http://acts.oecd.org/Instruments/ShowInstrumentView.aspx?InstrumentID=50&InstrumentPID=47&Lang=en&Book=False> 32 Consilience.
2. Edem Kodzo Ekpe, A Review of Economic Instruments Employed for Biodiversity Conservation, – Consilience: The Journal of Sustainable Development Vol. 9, Iss. 1 (2012), Pp. 16 – 32.
3. International Union of the Conservation of Nature (IUCN). (2008). Economic instruments for financing conservation and poverty reduction. Retrieved from <http://>

- [www.iucn.org/about/work/initiatives/sp\\_cprihome/index.cfm](http://www.iucn.org/about/work/initiatives/sp_cprihome/index.cfm)
4. Defenders of Wildlife. (2006). Incentives for biodiversity conservation: an ecological and economic assessment. Defenders of Wildlife, Washington D.C.
  5. International Union of the Conservation of Nature (IUCN). (2007). IUCN Red List of Threatened Species, State of the World's Species. Accessed December 1, 2008. Available at: [http://cmsdata.iucn.org/downloads/state\\_of\\_the\\_world\\_s\\_species\\_factsheet\\_en.pdf](http://cmsdata.iucn.org/downloads/state_of_the_world_s_species_factsheet_en.pdf).
  6. International Union of the Conservation of Nature (IUCN). (2008). Economic instruments for financing conservation and poverty reduction. Retrieved from [http://www.iucn.org/about/work/initiatives/sp\\_cprihome/index.cfm](http://www.iucn.org/about/work/initiatives/sp_cprihome/index.cfm).
  7. Bayon, R., Hawn, A., & Hamilton, K. (Eds). (2006). Voluntary carbon markets: an international business guide to what they are and how they work, Earthscan, 164.
  8. AM Tretiak, Budzelovych G.V., "Economic and environmental aspects of human relationships to natural resources and recreational land use in terms of land relations." Land law in Ukraine. Theory and Practice. – №4, 2014.

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**Демиденко Л.Г.**

**ВИКОРИСТАННЯ ЕКОНОМІЧНИХ ІНСТРУМЕНТІВ УПРАВЛІННЯ ЗЕМЕЛЬНИМИ РЕСУРСАМИ, ЗБЕРЕЖЕННЯ БІОЛОГІЧНОГО РІЗНОМАНІТТЯ: МІЖНАРОДНИЙ ДОСВІД**

*Досліджено міжнародний досвід використання економічних інструментів для стимулювання землекористувачів з метою збереження біорізноманіття.*

**Ключові слова:** економічні інструменти, стимули, біорізноманіття, охоронювані території.

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**ИСПОЛЬЗОВАНИЕ ЭКОНОМИЧЕСКИХ ИНСТРУМЕНТОВ УПРАВЛЕНИЯ ЗЕМЕЛЬНЫМИ РЕСУРСАМИ, СОХРАНЕНИЯ БИОЛОГИЧЕСКОГО РАЗНООБРАЗИЯ: МЕЖДУНАРОДНЫЙ ОПЫТ**

*Исследован международный опыт использования экономических инструментов для стимулирования землепользователей с целью сохранения биоразнообразия.*

**Ключевые слова:** экономические инструменты, стимулы, биоразнообразия, охраняемые территории.