Financing the Activities of Environmental Institutions in Poland and Ukraine to Preserve Ecosystems: Historical, Political and Managerial Aspects

Alina Yakymchuk
National University of Water Management and Environmental Engineering, Ukraine
ORCID: 0000-0002-5038-5215, e-mail: alinayakim@ukr.net

Victor Byrkovych
Uzhansky National Nature Park, v.Velykyi Bereznyi, Zakarpattia, Ukraine
ORCID: 0000-0003-2263-9895, e-mail: uzhanskij@gmail.com

Liudmyla Valyukh
Rivne State Humanitarian University, Ukraine
ORCID:0000-0002-0212-5400, e-mail: lydmullav@gmail.com

Oleh Yakymchuk
Business Systems Calculations Department of LLC, Rivne Regional Energy Supply Company, Ukraine
ORCID ID: 0000-0002-0960-8835, e-mail: oleg.yakymchuk@roe.vsei.ua

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Abstract: Preservation of the natural heritage for both Poland and Ukraine has been priority of sustainable development and public policies. Historically, both countries have a deep interest in the preservation of reserves, national nature parks and other categories of nature-protected fund and have had international cooperation for many years. However, the effectiveness of ecosystem conservation depends on the economic and financial instruments of public policy, which determined the relevance of this research topic. The basic principles of the state ecological policy of Ukraine for the period up to 2030, approved by the Law of Ukraine of February 28, 2019 № 2697-VIII, mention the possibility of development ecosystem services to ensure the sustainable development of society and the preservation of ecosystems. It is assumed that the biological diversity provided by ecosystem services should be preserved, assessed and restored accordingly. The State Forest Management Strategy of Ukraine until 2035 already provides for the monetization of ecosystem services in forestry, but only by reorganizing the system of calculation and use of environmental tax to allow the use of local and state environmental funds to pay for forest ecosystem services, measures maintaining the ecological sustainability of forests and preserving biodiversity in forests. For Ukraine, the positive experience of Poland in preserving ecosystems and monetizing the services and functions of ecosystems is important, which will be essential for the development of regulatory environmental policy of both countries. The main objectives of this work are to create a platform for cross-disciplinary dialogues that integrate different knowledge and research from diverse sectoral, geographical, historical, political, managerial and institutional perspectives and to develop an efficient system of preserving ecosystems, in particular to implement of international experience and to improve the socio-cultural development level of Ukraine.

Keywords: financing, economy, environmental institutions, income, GDP, macroeconomic factors, historical, political and managerial aspects, sustainable development.

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Introduction

Poland of today is inhabited by near 40 million people and is a modern country situated in Central Europe, as well as a Member of the European Union since 2004. Poland successfully implements its ecologically sustainable development policy, in which natural resources are the pillars of sustainable development, both economic and social. The rational use of natural resources and their protection for the sake of both present and future generations form the foundations for the National Environmental Policy of Poland.

The successes in the area of sustainable development, improved quality of life and health of the population, effective protection of its resources and their rational use are the result of the system of financing environmental protection functioning in Poland, which has been flexibly adaptable to new challenges and based on both national and international sources of funding (The system of Financing Environmental Protection in Poland, 2020).

The specific nature of the Polish system of financing environmental protection involves a purposeful, strictly defined disbursement of funds originating from charges and fines for the use of the environment in the area of sustainable development. In Poland, the «polluter pays» principle has been implemented from the beginning of its political transformation and funds thus obtained are earmarked for projects that limit environmental pollution. Environmental funds, both the national and regional ones, also play a fundamental role in the distribution of foreign funds earmarked for environmental protection. The System of Funds constitutes a financial instrument and organizational tool for the Minister of the Environment that supports implementation of the National Environmental Policy of Poland. Ukraine has its own experience in financing environmental activities for the preservation of ecosystems, has formed its own concept of ecosystem management, but the experience of Poland is extremely interesting and relevant for it as a partner of the European Union.

The main objectives of this work are to create a platform for cross-disciplinary dialogues that integrate different knowledge and research from diverse sectoral, geographical, historical, political, managerial and institutional perspectives and to develop an efficient system of preserving ecosystems, in particular to implement of international experience and to improve the socio-cultural development level of Ukraine in the context of sustainable development.

Materials and Methods

The methods of evaluating the effectiveness of conservation have been used to better analyze the actual state of natural ecosystems and to investigate the dynamics of the cost of ecosystem preservation by various sources (state budgets of Poland and Ukraine, the costs of regional state administrations and local self-government). For improving management of ecosystem preservation, we have proposed to use the experience of Poland, concerning the taxation of land preservation, involvement of local authorities (communes) to address issues of ecosystem preservation management at the community and state authorized territory. The Poland's best practices of ecosystem preservation administration and recommendations for its implementation in Ukraine have been given.

The following general scientific methods have been applied in the research: systematization – to analyze the economic and legal principles of the of preserving ecosystems in Ukraine and European countries; cause and consequences – to study the causes and consequences of the financial crisis for the preserving ecosystems. The special methods used in the research are a method of expert poll – to collect estimates and judgments of competent persons on interests, roles and relationships in the interests of stakeholders in the field of preserving ecosystems; a method of analysis of hierarchies – to choose the optimal mechanisms of state regulation scenario of preserving ecosystems of the state; analytical tools, cost and benefits analysis – to assess the economic efficiency of the optimization budget financing of preserving ecosystems and implementation of Poland's best experience in Ukraine.

Literature review

In recent decades, scientists have been paying growing attention to the topics like the study of the problems and condition, prospects of preserving ecosystems, the rationalization of institutional activity, as well as the opportunities to use the cultural, historical and religious heritage development. The authors examined sustainable development comprehensively by the theoretical and applied dimensions of contemporary global perspective. In particular, R. Olaczek (2008), in the monograph "The Treasures of Nature and Landscape of Poland", proposes the modifications and models of existing management mechanisms based on adaptive (active), preventive (crisis), innovative, and quality management, which are

directed at ensuring competitiveness in each of the segments of the preserving ecosystems. Fung, I., Doney, S., Lindsay, K., and John, Ja (2005) have investigated the evolution of carbon sinks in a changing climate based on research from the National Academy of Sciences of the United States of America and showed the significant impact of greenhouse gas emissions on the state of ecosystems. Important aspects of financing the ecosystems of nature reserves have been raised in their work by well-known scientists, A. Babczuk and M. Kachniarz (2005), on the example of the financing system of national parks in Poland. Aspects of sustainable development in the context of nature conservation has been studied by E. Symonides (2008) and M. Rupert (2007). They have taken the reader through all aspects of sustainable development from the emergence of the paradigm to sustainability issues and all components of nature protection. But their studies should be defined as descriptive in nature with elements of constructive financial analysis of preserving ecosystems.

National Funding in Poland

In Poland, one of the national institutions financing energy efficiency has been the Environmental Protection and Water Management Fund (EPWMF), which is the main source of financing ecoinvestments in this country. Its offer includes both domestic and foreign funds (including funds of EU). Funds dedicated to activities related to improving energy efficiency are part of programmes aimed at protecting the atmosphere, including improving air quality and cross-domain. It derives revenues mainly from fees and penalties for using the environment, exploitation and concession fees, energy sector fees, resulting fees from the Act on the recycling of end-of-life vehicles and from sale of assigned greenhouse gas emission units. This National Fund conducts independent financial management, acting on the basis of the Environmental Protection Act and in accordance with the EU principle that «the polluter pays». The National Fund has a rich financial offer tailored to the expectations of a wide range of beneficiaries: local governments, enterprises, public entities, social organizations and individuals (National Funding in Poland, 2021).

People and economy exist and function in nature and thanks to nature. In environment management this concept comprises both the management subject and the entities influenced by management instruments. Environmental management instruments comprise several dozen positions. This is a diversified spectrum of detailed management instruments.

There are several classifications of these instruments. The most frequently used one comprises the division into the following instruments: economic, administrative, legal, voluntary and instruments of social influence. Management subject is the widely perceived natural environment, i.e., the following levels of life: ecosystem, bio-geographical, species and genetic, as well as environment elements – space and land surface, waste, atmospheric air, noise and vibrations, water as well as pollutions, radiation and ionizing radiation. The main management instruments could be: economic entities and various organizational units, individuals, groups and communities (Environment Management in Poland, 2012).

The rapid degradation of the natural environment of the Earth has been one of the most serious problems of today. In the beginning of the XXI century, the global community faces numerous threats and problems, local, regional and worldwide challenges. The following can be may pointed out: the 2019 Covid-19 pandemic, crisis of debts, the threat of global finances' collapse, uncontrolled demographic development, poverty and social inequality as well as drug abuse and present-day civilization diseases. In the short term, all these problems will not fade away, being mostly of a structural character and will require ceaseless handling. Ecological threats may be appeased only due to mutual and coordinated activities undertaken by organizations and institutions, governments, social groups, enterprises and households on different levels, beginning with the global one on to the microeconomic level for the protection of the environment and the promotion of balanced development principles.

Risk assessment in environmental activities

Financial resources always belong to limited resources, so their effective use is of paramount importance. Environmental and social risks can be mitigated through compliance with environmental and social regulations and international environmental and social standards. Risk assessment in environmental activities has been one of the most important areas in the optimization of environmental costs. A financial institution's environmental and social risks are those of their clients (investees) and are inherent in the nature of a client's (investee's) operations. These risks are not static, but rather are dynamic over time and subject to change.

A financial institution can achieve best results in the case of developing and implementing an Environmental and Social Management System (ESMS) to systematically

assess the environmental and social risks and opportunities arising from their clients' (investees') operations and manage its exposure to risk. Some potential social and environmental risks may not seem significant or relevant at the time of approval of a financial transaction, but may become so during execution of nature-protection measures. Social and environmental risks, such as spills or explosions, may seem unlikely to occur, but when they do, the environmental and social impact can potentially be extremely high. All this requires proactive assessment, identification and management of environmental risks before they become significant or result in an adverse outcome on the investee (Environmental and Social Risk for Financial Institutions, 2021).

2020, before the coronavirus pandemic

Before the coronavirus pandemic outbreak hit the global economy, Poland was among the fastest-growing economies in the whole European Union. Household consumption, fueled by increases in budgetary expenditures, a tight labor market, and rising wages, continued to grow. This, together with continuing low interest rates and the execution of European funds-related investments, helped Poland's economic growth prospects. However, with the pandemic, the situation has deteriorated significantly: the cost of nature protection is significantly reduced, especially from the state budget. Small and medium-sized businesses have difficulty with environmental investments as well.

In the short-term, however, the main challenge is to mitigate the social and economic impact of the COVID-19 pandemic. Although the full impact of the virus remains uncertain, a prolonged outbreak would significantly curb economic activity, strain the health care system, affect supply chains, and depress investor sentiment and consumer demand, ultimately impacting the supply side and leading to a deeper recession. Under such a downside scenario, the economic and fiscal impact in 2020 was more severe, with implications for jobs and poverty (Protection in Poland, 2020).

Such activities are achievable provided adequate financing is ensured – and this is not easy with a deficiency of financial resources. On the positive side, Poland has the fiscal and monetary space to mitigate the adverse effects of lower global and domestic demand and shield its financially vulnerable populations, potentially leading to a quicker rebound in 2021 and 2022 (The World Bank, 2021).

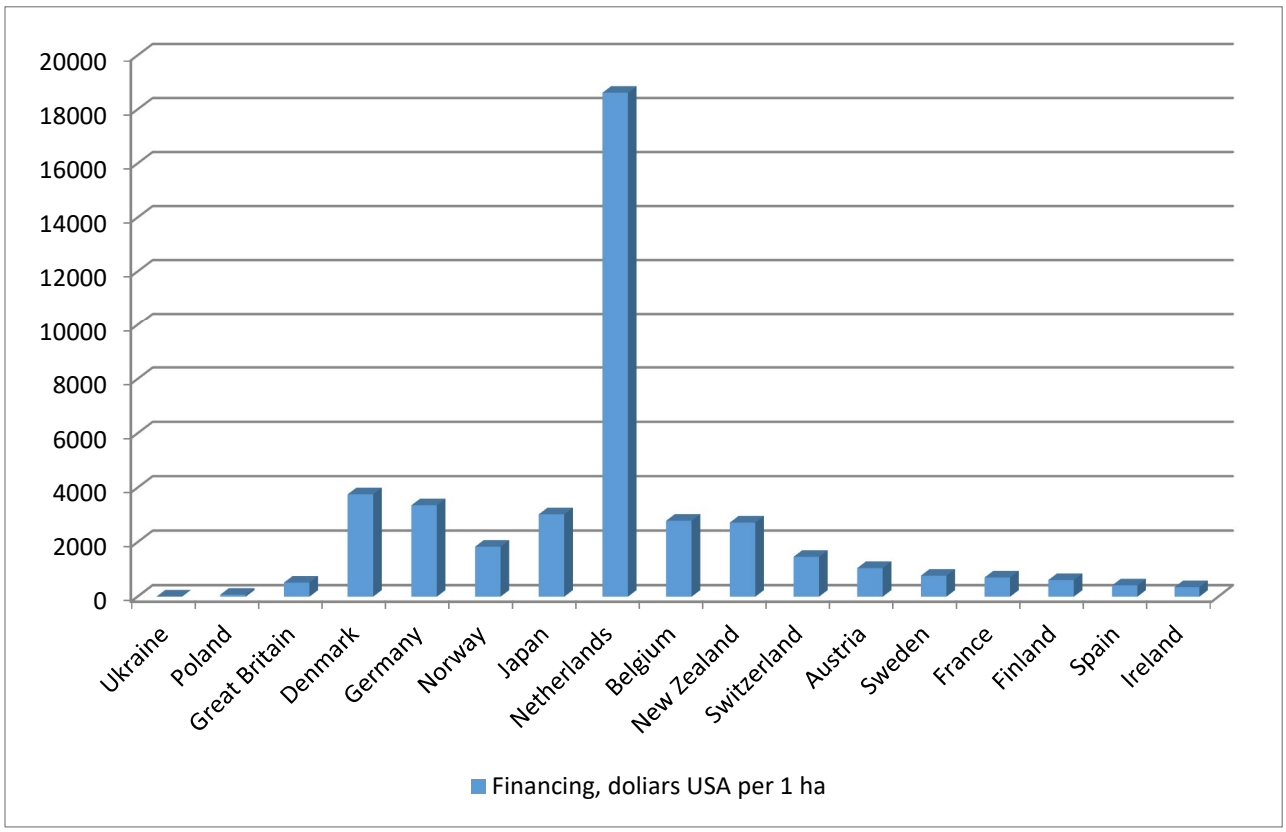
Table 1. Analysis of the ecosystems conservation financing of developed countries

Country	Area of the country, km2	State protection indicator, %	Financing, million dollars total	Number of plant species in all categories of the red list of endangered species	Number of species of animals in all categories of the red list of endangered species	Area of nature reserves and objects, ha	Financing per 1 hectare, dollars per year
Netherlands	41,526	19	14,690	275	211	788,994	18,619
Denmark	43,094	18	2,980	99	55	792,929.6	3,758
Germany	357,168	23	27,560	211	115	8,214,864	3,355
Japan	377,944	13	14,410	86	112	4,765,874	3,024
Belgium	30,528	23	1,958	211	192	702,144	2,789
New Zealand	268,021	11	8,000	114	189	2,940,190	2,721
Norway	385,178	13	9,120	143	163	4,964,944	1,837
Switzerland	41,285	26	1,590	133	127	1,085,796	1,464
Austria	83,855	25	2,200	242	211	2,090,505	1,052
Sweden	449,964	11	3,830	99	128	4,949,604	774
France	640,679	10	4,470	235	160	6,310,688	708
Finland	338,424	12	2,490	186	142	4,061,088	613
Great Britain	243,610	19	2,390	229	156	4,618,846	518
Spain	504,645	7	1,450	144	167	3,502,236	414
Ireland	70,273	9	220	180	102	625,429.7	352
Poland	312,679	8	120	205	128	2,345,093	75
Ukraine	603,628	6	12	541	382	3,259,591	7

Source: summarized by the authors on the basis of (The World Bank in Poland, 2021).

In this paper, based on data from the World Bank, a study of the costs of preserving ecosystems in developed countries is conducted. According to the results, Netherlands spends the most on one hectare of ecosystems – more than 18 thousand dollars, second place went to Denmark – more than 3.7 thousand dollars, in third place is Germany – more than 3.3 thousand dollars. Ukraine ranks last in the overall ranking of countries and has only about USD 8 funding per hectare. In the Republic of Poland, annual funding for ecosystem conservation is just over USD 75 per year (fig. 1).

Fig. 1. Per hectare costs for biodiversity conservation financing in developed countries



Source: summarized by the authors on the basis of: (The World Bank in Poland, 2021).

This situation requires the search for new tools for financing the conservation of ecosystems in Ukraine and the Republic of Poland, taking into account the positive experience of developed countries.

Situation in Ukraine with ecosystem financing

The State Strategy for Regional Development of Ukraine for the period up to 2020, approved by the Resolution of the Cabinet of Ministers of Ukraine of August 6, 2014 № 385, provides for an increase in the National Protected Fund relative to the total area of the country until 2021 to 15% in Ukraine and Donetsk region to 8,9%. However, the balance of natural areas in the Steppe zone of Ukraine does not exceed 10%, despite the fact that these areas are no longer intact, but are in a state of varying degrees of degradation. These areas have been used primarily as pastures and are located in water protection zones on the slopes of river valleys and gullies. Since 2012, state-owned agricultural lands have been managed by the Main Departments of the State Geocadastre in the oblasts. During this time, the share of

virgin lands has decreased significantly, as the State Geocadastre officially distributes these lands for commercial agricultural production or for personal farming, while, as a rule, bypassing the law changes the purpose of pastures for plowing, although the vast majority of these lands is located on slopes with an incline of more than 7 degrees, so in accordance with Article 47 of the Law of Ukraine «On Land Protection», plowing of such slopes is prohibited. According to part 2 of Art. 111 of the Land Code of Ukraine, the State Geocadastre could impose restrictions on the use of such sites, but this is not practiced.

Per one hectare of the nature reserve fund of Ukraine, the conservation of biodiversity will cost USD 732 per year, which is much less than in developed countries. Therefore, it is profitable for foreign countries to invest in the conservation of biodiversity in Ukraine, as it is much cheaper than preserving nature at home. Such foreign investment will quickly pay for itself with global effects from the functioning of Ukraine's forest and wetland ecosystems. The transfer of land ownership to local communities is unlikely to remedy this situation at the moment, so regardless of who disposes of virgin land, a nationwide moratorium on plowing and transfer to private ownership should be introduced. As a solution to this problem, it is possible to refer all virgin lands to the category of especially valuable such as forest lands, because in the steppe and forest-steppe zones steppes and meadows are natural landscapes and play a key role in biodiversity conservation, climate change mitigation, recreation, etc.

There are many places of unique ecosystem confluence in Ukraine; here are a few of them. Ukrainian Carpathians, in the latest years, became an incredibly popular recreation spot not only for locals but also international tourists, who come to Ukraine seekin untouched nature and desolate hiking spots to reconnect with nature. The unique nature of Gorgany, a mountain range of the Outer Eastern Carpathians in Western Ukraine, was recognized by the government officials way back in the 1940s. Unfortunately, WWII prevented organizing the dutiful protection of the area. Roztochya Biosphere Reserve is one of the hidden natural reserves in Ukraine, located 20 kilometers from Lviv, but the spot is usually skipped in favor of the more touristic locations like the Zhovkva Castle. Medobory Natural Reserve often pops up when tourists seek places to visit the Podilski Tovtry Natural Park in Chemerivstsi. The reason behind it is that Medobory was created for the same reason – preservation and popularization of the unique natural beauty. Tovtry is a local name for a chain of lime hills that extends for 200 km from Lviv Oblast to Moldova. However, today, in order to preserve these

ecosystems and beautiful nature, it is necessary to develop financial instruments that work well in developed countries.

Due to environmental degradation, ecological systems in today's world are threatened. There have been introduced payment for ecosystem services (PES), broadly characterized as any payment that is aimed to incentivize conserving and restoring ecological systems. These systems could include any ecosystem, such as a river or forest, that facilitates vital environmental processes (Payments for Ecosystem Services Getting Started: A Primer, 2015). Forests, for instance, serve multiple functions in this regard, provide environmental goods, such as food, facilitate nutrient cycling and many other biological processes (Yakymchuk A. et al., 2020).

Conclusions

Netherlands spends the most on one hectare of ecosystems – more than USD 18 thousand dollars, second place goes to Denmark – more than 3.7 thousand dollars, in third place is Germany – more than USD 3.3 thousand. Ukraine ranks last in the overall ranking of countries and has only about USD 7 funding per hectare. In the Republic of Poland, annual funding for ecosystem conservation is just over USD 75 per year. Per one hectare of the nature reserve fund of Ukraine, the conservation of biodiversity will cost USD 731.9 per year, which is much less than in developed countries. Therefore, it is profitable for foreign countries to invest in the conservation of biodiversity in Ukraine, as it is much cheaper than preserving nature at home. Such foreign investment will quickly pay for itself with global effects from the functioning of Ukraine's forest and wetland ecosystems.

As a solution to this problem, it is possible to refer all virgin lands to the category of especially valuable - areas such as forest lands, because in the steppe and forest-steppe zones, steppes and meadows are natural landscapes and play a key role in biodiversity conservation, climate change mitigation, recreation, etc.

Nowadays, conservation finance is an important task for the governments of Poland and Ukraine, and over the years, many mechanisms have been developed and tested. To that end, rigorous approaches have been developed to determine, validate and monitor the conservation impact of such efforts, such as the Theory of Change Approach promoted by WWF. Yet, for majority of the last 25 years, the discussion has been geared toward the

conservation objective and focused on how to meet the financing demand for conservation programs and strategies, i.e., finding investments to activate particular conservation mechanisms and scaling them up to broader programs and eventually whole markets. Using financial incentives, payments for ecosystem services are a form of conservation finance that rewards people for maintaining these ecosystem services. In order to facilitate these transactions, the service provider must clearly define the service and secure an ecosystem which needs those particular resources. In addition, service purchasers carefully monitor the providers to ensure that conversation has been efficiently carried out.

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