

THE DEVELOPMENT PERSPECTIVES OF THE ENVIRONMENTAL TAX SYSTEM IN THE REPUBLIC OF MOLDOVA IN ORDER TO ENSURE THE DEVELOPMENT OF A SUSTAINABLE ECONOMY

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Abstract: *Encouraging environmentally friendly practices or products and discouraging harmful ones is the main aim of the environmental tax system. However, the Republic of Moldova's current environmental tax system has some drawbacks. This article analyzes the current state of environmental taxes in the country and looks at potential solutions to ensure the sustainable development of Moldova's economy.*

Keywords: *sustainable development, green economy, environmental taxes*

JEL: Q01, H23

2. Introduction

The negative impact of economic development on the environment has been recognized fact for a long time. Against the backdrop of the multiple challenges generated by the need to protect the environment, governments are facing increasing pressure to identify new ways of reducing the impact of human activities on the environment, without affecting economic growth.

To address this, global mechanisms are being implemented to prevent polluting activities and to provide compensatory measures. The most effective of these are the economic mechanisms that drive industries with high environmental impact to implement energy-efficient, zero-waste, or low-waste technologies.

Environmental taxation is a tool specifically designed to address the effects of climate change and global warming, as well as to promote the efficiency of resource allocation. Each country creates its own environmental tax system, adapted to the particularities of its own economic processes. Environmental taxation is an essential tool for ensuring the country's environmental security.

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Thus, the research on the ecological taxation system, its elements, and its operational efficiency has an important scientific and practical value.

The aim of this research is to determine the perspectives and role of environmental taxation, in order to ensure the development of the environmental taxation system, based on the analysis of the current ecological taxation. This research aims to analyze the characteristics of environmental taxation in the Republic of Moldova and the EU and to suggest ways to enhance the environmental tax system in the Republic of Moldova.

3. Methods

In the research, various methods of reasoning were employed, including historical analysis, logical analysis for synthesizing scholars' opinions, comparative analysis for studying different specialists' positions and national/foreign legislative acts, and synthesis to generalize analyzed aspects and provide the author's recommendations. Statistical data were gathered from the Ministry of Finance's Reports on the Execution of the State Budget and the State Fiscal Service's Information on Revenues categorized under the national public budget classification

The following reasoning methods were used in the research: the historical analysis method; the method of logical analysis, used to synthesize the opinions of different scholars in the field; the method of comparative analysis, necessary for the comparative study between the positions of different specialists in the field, but also between different national and foreign normative acts; the synthesis method, used to generalize the aspects under analysis and to establish the author's recommendations and proposals.

The statistical data were collected from the Reports on the execution of the state budget, developed by the Ministry of Finance, and from the Information on the receipts to the national public budget corresponding to the classification of budget revenues, developed by the State Fiscal Service, but also from the EUROSTAT platform.

4. Results

Environmental taxation is one of the most important incentives for the sustainable management of nature. The main idea behind the introduction of environmental taxes (also called ecological taxes or "green" taxes) is to establish a direct correlation between the amount of tax and the negative impact on the environment caused by economic activity. The action mechanism of "green" taxes encourages polluting industries to find innovative solutions to reduce harmful emissions, adopt innovative solutions for environmental protection, and implement ecological technologies. As a result, environmental taxes have

significant support at a global level, being more and more widespread throughout the world.

The concept of environmental taxation was first introduced by Arthur Pigou (Pigou, 1985). He found that producers are polluting the environment as a result of their efforts to maximize their profits. While these activities may not directly affect producers, the costs of pollution are transferred to other economic agents and society as a whole, leading to a decline in living conditions, increased health risks, reduced productivity, and more (Pigou, 1985, p. 26). Pigou considered taxes as a tool to influence the behavior of polluters and as an incentive for environmental preservation.

Modern environmental taxes were first implemented in the 1970s by many countries as an environmental protection tool and as a legal principle that " a person who pollutes the environment - must pay." (Nischymna & Anishchenko, 2017, p.174). During this time, concepts such as "ecological taxation", "environmental fiscal policy" and "green fiscal policy" were introduced, and were used with the same meaning.

There was a growing recognition in the late 1980s of the need to introduce the so-called environmental tax, also known as an ecological tax, based on the principle of "the polluter pays". The European Union implemented environmental taxes based on this principle in 1973(Kalinichenko, 2002), and several European countries included payments for harmful substance emissions into their tax systems in the early 1990s.

This period marked a distinct stage in fiscal policy development called "greening of fiscal policy", characterized by technological advancements and a shifting focus towards environmental protection. Environmental fiscal policy is now an integral part of any country's economy.

In the early 21st century, reforming the environmental tax became a priority in economic policy in connection with the updating of the anti-carbon policy. Taxing natural resource outcomes serves as an incentive to ensure their rational use and reduce polluting emissions.

Various challenges such as economic slowdowns, the global debt crisis, the COVID-19 pandemic, the war in Ukraine, and the energy crisis have complicated the functioning of the global economic system, affecting low-income countries and underdeveloped industrial production. These negative trends led to a change in the development of the global economic system. The digital sector of the economy is experiencing rapid growth. The IT sector, the market of financial instruments, and the service sector are actively developing. This has led to the requalification and transfer of skilled personnel to other economic activities due to reduced production, military-political conflicts, and environmental circumstances. To address these negative trends, authorities must develop and implement effective measures, including supporting the development of high-tech

industries that reduce energy consumption and harmful emissions. Taxes and fees represent the most comprehensive tool through which the authorities can influence the behavior of economic agents and the population toward the environment.

The tax base has a crucial role in defining environmental taxes, which are also known as green taxes. The concept of environmental taxes originated from the practices followed in the European Union. The European Commission (EC) operates with a concept that derives from international practice and is based on international guidelines on environmental tax statistics. Thus, the EC considers *an environmental tax a tax that has as its fiscal base a physical unit or a proxy for a physical unit, which refers to "something" with a negative effect on the environment* (Eurostat, 2013). According to the Organization for Economic Cooperation and Development (OECD), *green taxes are pricing mechanisms that explicitly reflect the costs and benefits of environmental protection for goods and services, related to pollution taxes, resource taxes, transport taxes, or other fiscal instruments*. Likewise, the United Nations Environment Program (UNEP) defines green taxes as fiscal measures designed to promote sustainable environmental activities and protect the environment by internalizing the costs of environmental damage associated with economic activities.

These definitions emphasize that the recognition of an environmental tax depends on its impact on the expenses and prices incurred by polluters, rather than its purpose, whether fiscal or environmental. Environmental taxes encourage the more efficient use of natural resources, help reduce pollution, can lead to reductions in taxes in other areas like labor, and can also be an incentive for technological innovation. Often, when the objective is not to prohibit a product but only to limit its usage, additional taxes that raise its cost can achieve this goal.

According to Duțu (Duțu, 2007, p.439), taxes can be classified into the following forms based on their purpose:

- taxes imposed on the quantity or quality of pollutants released into the environment;
- taxes imposed on products that are polluting during their manufacturing or use, or that have become obsolete and are in the process of disposal;
- tax imposed on outdated and phased-out products, differentiation of taxes to promote cleaner products;
- royalties used for community expenses like waste treatment;
- administrative fees paid for various administrative services.

The combination of these taxes varies from one country to another and aims to achieve two main functions:

1. supplementing the state treasury for financing environmental programs and

2. promoting environmentally friendly behavior to environmental protection issues.

In the Republic of Moldova, the legal framework for environmental regulation includes the use of fiscal-budgetary instruments. For instance, *Law No. 1515/1993 on the protection of the environment* establishes the collection of taxes and fines for non-compliance with environmental legislation, which is used to combat pollution, depletion of natural resources, hazardous geological processes, and environmental restoration. *Law No. 1102/1997 regarding natural resources* regulates payments for the use of natural resources and environmental pollution. *Law No. 239/2007* and *Law No. 439/1995* provide an economic mechanism for the rational use of plant and animal resources, including payments for acquisition and export. Law no. 1041/2000 addresses the financing of afforestation and rehabilitation works on degraded lands. The amount and details of tax usage are also specified in the Fiscal Code and *Law No. 1540/1998 on payment for environmental pollution*.

In the Republic of Moldova, the term "environmental taxes" is not explicitly defined in legislation. However, based on EUROSTAT methodology, these taxes can be categorized into four groups, as identified by the UNDP (UNDP, 2018, p. 10-11):

I. Energy taxes represent payments made on energy products used both in transportation and for the operation of special equipment. This includes taxes on gasoline, diesel, natural gas, coal, and electricity. The source of formation of the fiscal-budgetary funds is excise duties on liquefied gases and excise duties on petroleum products, as specified in the Tax Code of the Republic of Moldova in Title IV Excise Duties.

II. Transport taxes refer to taxes related to vehicle ownership and those related to the use of motor vehicles. Special payments on other transport equipment or transport-related services are included in this category when they are in line with the general approach to environmental taxes, which include car excise, road use charges, and vignette. The formation of funds for this category comes from excise duty on imported cars, road usage fees, and the vignette, as detailed in the Tax Code in Title IV Excise Duties and Title IX Road Taxes.

III. Pollution taxes consist of payments for environmental pollution and a tax on goods that contribute to pollution during their use. The formation of funds for this category includes payments for five types of pollutants: emissions into the atmosphere from stationary sources, discharge into water bodies and sewage systems, disposal of production waste, packaging materials (such as plastic bags and packaging), and specific goods that cause environmental pollution (such as batteries, hazardous chemicals, pesticides, and tires). The amount of these taxes is outlined in Law No. 1540/2008 on payment for environmental pollution.

IV. Natural resource taxes are payments imposed on the exploitation of natural resources that are not utilized as energy sources, such as wood, construction materials, and aggregates. It also includes fees for water extraction from various sources and payments for valuable minerals, standing timber, prospecting, and geological exploration. The amount of these payments is determined by the Tax Code in Title VIII Natural Resource Taxes.

In addition to these taxes, there are various payments that are imposed as a result of activities that have an impact on the environment. These payments include fees for issuing environmental permits, fines for violating environmental laws, prohibited actions like poaching and illegal logging, as well as compensation for pollution damages. They are part of the damage recovery mechanism. The methods for calculating environmental damages are specified in laws and regulations such as the Law of the Animal Kingdom, the Law of the Plant Kingdom, and the Law on Environmental Pollution Payment. These payments are not classified as environmental taxes but rather parafiscal taxes, which are deposited into the accounts of public institutions and/or organizations of public interest (EaP Green, 2016, p.17). Thus, fiscal and parafiscal payments have a central role among the economic instruments applied for the implementation of environmental policies.

In the Republic of Moldova, the revenues from environmental taxes as a percentage of GDP are comparable to those in the European Union. In 2021, environmental tax revenues accounted for 2,43% of Moldova’s GDP, while in the EU this indicator was 2.24% (Figure 1).

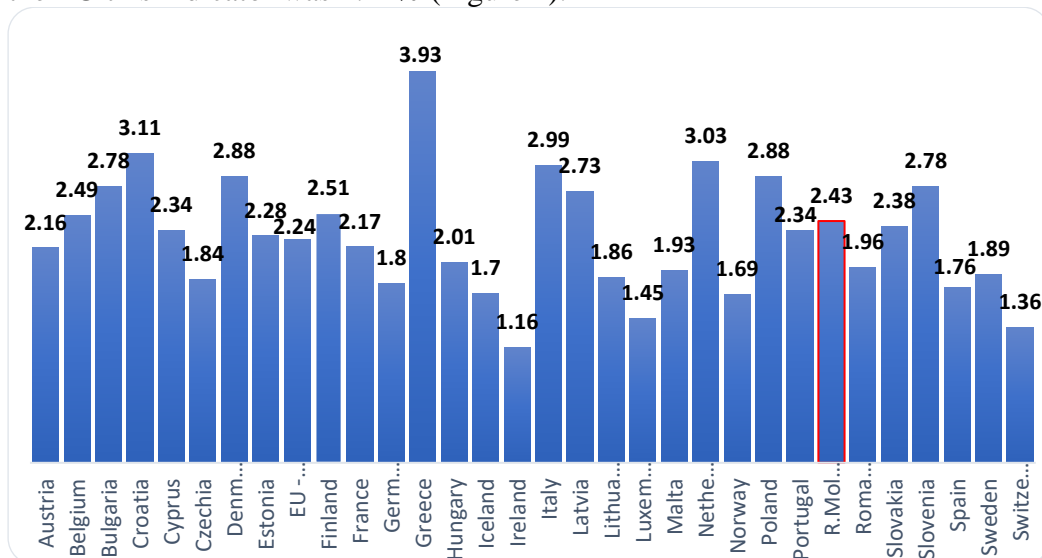


Figure 1. The share of environmental taxes in GDP (%), in 2021

Source: Elaborated by the author based on EUROSTAT and the Ministry of Finance of the Republic of Moldova data.

During the years 2018-2022, environmental taxes have shown a steady increase, generating revenues to the state budget from 4.28 million lei at the beginning of the analyzed period to over 6.9 million lei at the end of this period.

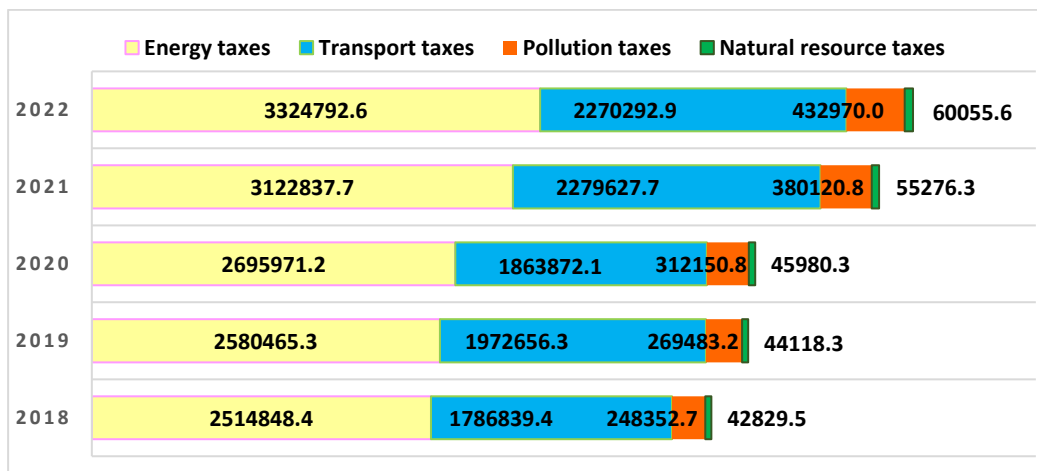


Figure 2. Dynamic evolution of environmental taxes applied in the Republic of Moldova, thousand lei

Source: Elaborated by the author based on Reports on the execution of the state budget and Information on revenues to the national public budget corresponding to the classification of budgetary revenues from the years 2018-2022.

During the analyzed period, the revenues from ecological taxes in 2020 were the lowest due to the COVID-19 crisis. The revenues from energy taxes consistently increased, while transportation taxes had fluctuating trends. Pollution taxes and natural resources taxes have a smaller share in total environmental taxes. Pollution taxes showed an upward trend over time, whereas taxes on natural resources had inconsistent patterns.

Compared to other countries, the Republic of Moldova had higher environmental taxes based on international benchmarks (OECD and EU), applied in the Republic of Moldova exceed the average of other states. These taxes contributed more than 10% to total fiscal revenues (Figure 3), and their share in overall tax collection and budget decreased from 12.2% in 2018 to 10.6% in 2022. This was due to a greater increase in tax and duty collections for goods and services, driven by import growth, compared to the growth of environmental taxes.

Similarly, the share of environmental taxes in GDP exhibited a declining trend from 2.42% in 2018 to 2.32% in 2019 and 2.38% in 2020, reflecting the reduced economic activity during the pandemic. Subsequently, there was a slight

increase to 2.41% in 2022 and a decrease to 2.23% in the same year, mainly driven by a significant increase in GDP. (Figure 3)

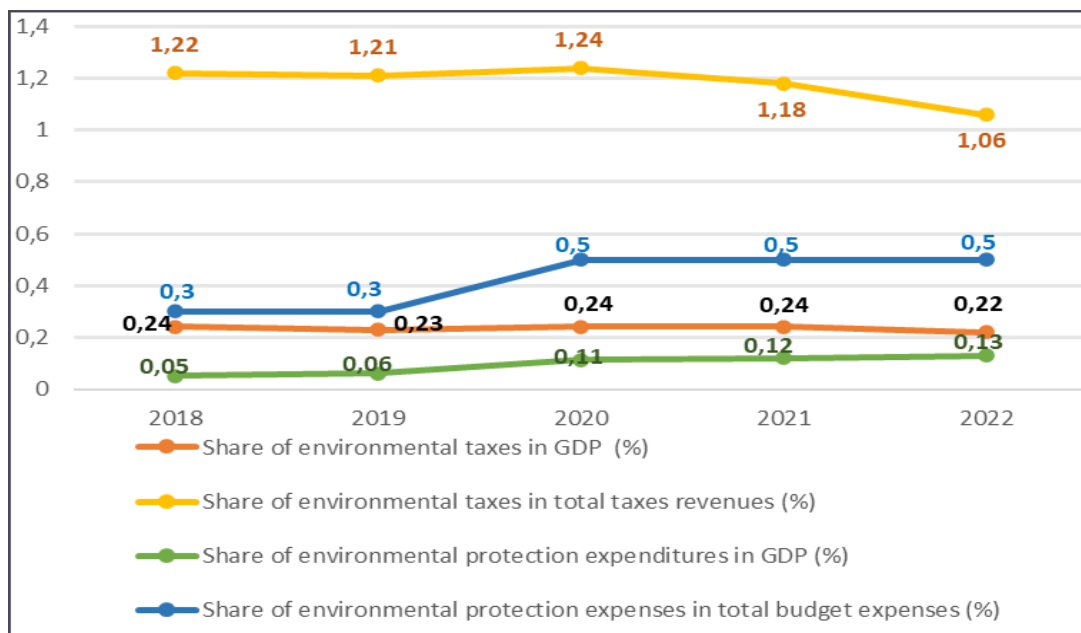


Figure 3. The share of environmental taxes in GDP and in total taxes, the share of environmental protection expenses in GDP and in total budget expenses

Source: Compiled by the author, according to the Reports on the execution of the state budget from 2018-2022

The expenses related to environmental protection suggest that environmental protection priorities in the Republic of Moldova are underfunded. The data only includes government expenditures, as expenses made by economic agents or households in this area are not tracked. Figure 3 reveals that the share of expenses for environmental protection in the total budget expenses is minimal, but there is a slight upward trend from 0.3% in 2018 to 0.5% in 2022. In terms of the economy, government spending on environmental protection accounted for 0.05% of GDP in 2018, which increased to 0.13% of GDP in 2022. This reflects a lack of emphasis on preventing, reducing, or eliminating environmental pollution or degradation in the Republic of Moldova.

5. Discussions

While there is no clear definition of environmental taxes in the legislation, the country has developed a system of taxes and payments related to the environment. These include taxes on mineral extraction, water taxes, fees for

subsoil usage, road usage taxes, excise taxes on petroleum products, payments for environmental pollution, taxes on environmentally harmful goods, etc. However, the way these taxes and payments function in Moldova differs from other European countries where environmental tax reforms are much better thought out and much more effective.

In European Union countries, environmental taxation is based on the "double dividend" principle, which aims to achieve both environmental improvements and economic competitiveness through tax system enhancements. In Moldova, many environmental taxes primarily serve the purpose of generating revenue for the state budget rather than effectively protecting the environment.

For instance, transport taxes do not effectively fulfill their ecological function. A significant share in the total of these taxes is the excise duty on imported vehicles, which is calculated based on engine power and age rather than the amount of pollutants emitted. Furthermore, statistics reveal that over 82% of cars in Moldova are over 10 years old. An increase in transport taxes will incentivize citizens to purchase more environmentally friendly cars, but this would not be feasible for low-income individuals who will continue to drive environmentally dangerous cars but pay a charge for it.

On the other hand, energy taxes in Moldova do aim to protect the environment, as fuel excise duties can be seen as environmental payments. They are set at different rates according to tax legislation.

However, the concept of pollution taxation in Moldova has remained largely unchanged since 1998, despite the adoption of several laws in recent years like Law No. 209/2016 related to waste and Law No. 227/2022 on industrial emissions. There are still inconsistencies that do not align with international practices. An issue is the lack of availability of comparable data that would allow comparative analysis with other countries. For example, waste is expressed in units of mass internationally, while Moldova uses both tonnage and volume, making it difficult to determine waste quantities per capita.

The system for taxing discharges and emissions is complex, involving multiple formulas with different coefficients and standards depending on the area and specific limits. To ensure a stronger connection between taxation and pollution, there should be a closer link between the quantity of pollutants emitted and the tax amount. This could be achieved through a fixed tax based on the quantity of pollutants, discharges, emissions, and waste.

There are also discrepancies in waste classification. Law No.1540/1998 specifies waste taxation based on five toxicity groups, while Law No. 209/2016 related to waste categorizes waste into hazardous, non-hazardous, and inert. It would be simpler to tax polluters according to these three risk groups of the waste, as the tax increases as the degree of toxicity increases.

Unlike other countries that periodically adjust environmental taxes for inflation, Moldova does not index its environmental taxes. The exception is fuel excise duties, which are adjusted annually to account for inflation, and taxes on polluting goods, which are based on the products' value and price dynamics.

Regarding packaging, a differentiation should be made between recyclable and non-recyclable packaging, and taxation should reflect this distinction.

Taxes on natural resources consist of fixed rates determined by the polluter and paid into the local budget where the resource extraction occurs. However, these tax values have not been adjusted for price changes for a long time.

To improve the implementation of environmental policies in Moldova, the "Environmental Strategy for the years 2014-2023" has been developed, outlining tools for policy implementation. Objective No. 4 specifically focuses on reducing the negative impact of economic activities on the environment and enhancing measures to prevent pollution through the optimization of fiscal and economic instruments. The "Environmental Strategy until 2033" is being developed to update legislation and align it with recent environmental protection laws.

6. Conclusions

An environmental tax system plays a crucial role in promoting the sustainable use of resources and protecting the environment, as well as in addressing environmental damage. However, evaluating the extent of environmental damage is challenging. Determining the parameters of environmental taxes is problematic due to the need to assess and measure the damage caused to the environment in various aspects such as emissions into the air and water bodies. Additionally, the allocation of taxes from producers to consumers poses difficulties. Therefore, the purpose of environmental taxes is to encourage economic agents to adopt environmentally friendly practices.

Regular evaluation, updating, and proper application of environmental taxes are essential. However, there are some shortcomings in the functioning of environmental fiscal instruments. If taxes are undervalued or overvalued, it becomes challenging or even impossible to achieve the goal of internalizing externalities.

If environmental taxes are set at a low level, polluting companies may not face financial difficulties and may not prioritize adopting environmentally friendly technologies, especially in cases where the volume of production is high, the demand is stable and it responds poorly to a small increase in prices,

The government has a crucial role in addressing market imbalances and creating favorable conditions for businesses and society to transition towards a greener economy. The legal framework in the Republic of Moldova in this area is

well-structured but requires periodic revision and alignment with the European normative framework.

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