

INTERNATIONAL EXPERIENCE OF ENVIRONMENTAL TAXES AND ITS IMPLICATIONS FOR THE REPUBLIC OF MOLDOVA

Angela TIMUȘ²²

Corina CHIRONACHI²³

Abstract:

There is a growing trend towards a green economy due to increasing environmental and climate risks. As a result, countries are forced to develop fiscal policies that take into account the climate agenda. This paper analyzes how different countries implement environmental taxes to guide the development and improvement of the environmental tax system in the Republic of Moldova. The paper examines the main categories of environmental taxes in different countries, analyzes the economic impact of environmental protection based on foreign experience, and explores potential approaches to environmental tax reform in the Republic of Moldova.

Keywords: *environmental taxation, green economy, tax instruments*

JEL classification: H23, Q50, Q58

Introduction

The global economy has faced many challenges in recent decades, including climate change, biodiversity loss, inappropriate use of natural resources, waste management issues, rising inequality, social fragmentation, and financial and political instability. To address these challenges, governments and international leaders are developing policies and strategies to promote the concept of a “green economy”. Adopting this development model requires the harmonious integration of economic, environmental, and social aspects. Tax policy is considered one of the most effective tools for regulating environmental processes. Legislation regulates the use of these tax policy instruments. This makes environmental taxes an indispensable attribute of national policy. Environmental tax restructuring, defined as a reform of the national tax system that shifts the tax burden from labor to activities that use resources unsustainably or pollute the environment, is a current issue and a new development paradigm in tax theory.

Denmark, Sweden, the Netherlands, the UK, Germany, and Austria are all countries that have successfully implemented green tax reforms. By using green taxes, these countries can stimulate green development, achieve environmental goals, generate revenue, and promote sustainable growth. The effectiveness of green taxation as a policy tool has been repeatedly demonstrated. Moldova can greatly benefit from the valuable foreign experience in enhancing its economic mechanisms to promote the rational use of natural resources, reduce waste, adopt environmentally friendly technologies, and increase the utilization of renewable energy sources.

In this paper, the environmental tax system in the Republic of Moldova is analyzed through the prism of EU environmental taxes to identify best practices and gaps and to ensure compliance with EU standards.

²² PhD, Associate Professor Academy of Economic Studies of Moldova, National Institute for Economic Research, Ion Creanga str., 45, Chișinău, Republic of Moldova, ince.timush@gmail.com, <https://orcid.org/0000-0002-2556-3198>

²³ PhD Student Academy of Economic Studies of Moldova, Banulescu-Bodoni str., 59, Chișinău, Republic of Moldova, corinachironachi@gmail.com, <https://orcid.org/0000-0002-8201-3125>

Literature Review

The impact of human activities damages the environment through the overexploitation of natural resources. To achieve broader policy goals, such as changing producer or consumer behavior and overcoming market failures or pollution-related costs that polluters do not cover, governments must implement environmental policies and intervene in the market. **(Stern, 2003)**. Market failures include unaccounted externalities, undersupply of public goods, noncompetitive markets, and asymmetric information **(Braaten, 2015)**.

Scientific approaches to environmental taxation began to take shape within the scientific community based on utility theory. The concept of an "environmental tax" is interpreted as a "Pigouvian tax," which is a tax imposed on an activity that produces negative externalities. Gossen's second law allowed A.S. Pigou to conclude that the market mechanism is insufficient to regulate the activity of firms and consumers because of the influence of externalities **(Pigou, 1920)**. This conclusion highlights the link between the social and private costs of producing goods, emphasizes the government's regulatory role in these relationships, and helps shape the theory of taxes and subsidies. According to this theory, corrective taxation is used to eliminate externalities, and subsidies are used to eliminate positive externalities. Both the tax and the subsidy must be commensurate with the marginal harm and benefit that third parties experience.

The theoretical approach of A. Pigou remains a widely used tool in environmental policy, and the assertion of the need to redistribute financial resources through the budgetary mechanism is a strength of this theory. In some countries, this mechanism is implemented through preferential taxation, grants, subsidies, credits, quota systems, or other means. Later, Pigou's ideas were developed in tax theory by implementing the principle of double tax advantage, called the "double tax dividend" **(Jaeger, 2013)**. The essence of this theory is to reduce environmental impacts by increasing the tax burden on polluting taxpayers, i.e., by transferring external costs to them and forcing them to reduce emissions to reduce the tax burden.

The OECD established the "polluter pays" principle in 1972, and it is a widely recognized idea in environmental taxation. The essence of this principle is that economic agents take responsibility for the environmental damage they cause **(OECD, 2008)**.

The OECD, the International Energy Agency, and the European Commission all accept the same definition of environmental taxes and charges **(OECD, 2010)**. This definition refers to mandatory taxes and charges levied on a tax base of particular environmental relevance. An environmental tax is a tax that has as its base a physical unit of reference, a proxy, and a proven negative impact on the environment. The tax base is considered the main criterion for the recognition of such environmental taxes to allow international comparisons.

The need for environmental taxes was confirmed in 1973 in the first Environmental Action Programme of the EU on environmental protection. The process of greening the tax systems of European countries began in the 1990s, based on the idea of double tax benefits. Thus, environmental taxes are used to implement the polluter pays principle and to protect the environment, and the revenue from these taxes can be used to reduce other taxes and encourage economic growth through the double tax dividend.

Finland implemented the first environmental taxes in 1990, which included carbon emissions taxes. Later, the Netherlands and Norway adopted this measure, and Italy introduced its environmental taxes in 1998. Sweden followed suit in 1991, using environmental taxes to regulate the consumption of oil, coal, natural gas, and other fuels and to tax industries using these energy sources. In 1997, Eurostat, together with the European Commission, the Directorate General for Taxation, the Customs Union, the Organization for Economic Cooperation and Development, and the International Energy Agency, drew up a list of items subject to environmental taxes, which has been updated over the years thanks to the practical experience of Eurostat experts. Thus, environmental taxes and charges were introduced in 1997 to use fiscal instruments to increase the effectiveness of

environmental policy. Today, environmental taxes play an important role in the tax systems of most EU countries.

Description of the Problem

In both developed and developing countries, fiscal policy plays a crucial role in promoting the sustainable use of natural resources and protecting the environment. Taxes can be an effective tool to ensure that the social costs associated with the production of goods and services are reflected. Countries' national and regional policies primarily determine the scope of environmental taxation.

Environmental taxes and charges are set at the level of each Member State based on taxes that focus on polluting emissions (such as water pollution taxes and noise emissions in the aviation industry) and taxes that apply to products (such as pesticides, oil, etc.). The purpose of introducing these taxes is to add revenue to the state budget, and they can also be used to finance environmental protection activities and reduce other taxes, especially labor taxes.

Moldova, like EU countries, has introduced environmental taxes as part of its efforts to address environmental problems. However, Moldova's environmental tax policy is still at an early stage of development. The Republic of Moldova faces several problems in the area of environmental taxation, including a low level of environmental tax revenues, a narrow interpretation of environmental taxes, and a low level of investment in environmental protection.

Analyzing the experience of EU countries in the area of green taxation can be helpful for the Republic of Moldova in addressing these problems. The EU has extensive experience in using environmental taxes to protect the environment and promote a more sustainable economy. An analysis of this experience can help Moldova identify best practices and implement them in its tax system to improve the effectiveness of environmental taxes and better protect the environment.

Methodology and Data

The research used the method of comparative analysis, which is necessary to conduct research between the environmental tax system in the EU countries and the Republic of Moldova, to observe similarities and differences, trends, and formulate conclusions; and the method of synthesis, which is used to generalize the elements under analysis and to propose recommendations.

The international organizations' databases or reports, like those of the UNDP and OECD, provided the data used in this study. The data were collected from the EUROSTAT platform. The Ministry of Finance's reports on state budget execution and the State Tax Service's classification of national public budget revenues provided statistical information for the Republic of Moldova. Later, the author compiled these data according to the Eurostat methodology used in EU countries to obtain comparable data and then presented them in the form of figures.

Results

The OECD assesses the impact of environmental policies on the economy using the Environmental Policy Stringency (EPS) Index. It measures the extent to which environmental policies impose an explicit or implicit price on polluting or environmentally harmful behavior. The index ranges from 0 (no environmental policy stringency) to 6 (the highest level of policy stringency). The index takes into account 14 instruments, including environmental charges for SO_x, NO_x, diesel, and CO₂; CO₂ trading schemes; renewable energy and energy efficiency certificates; feed-in tariffs for solar and wind energy; storage and refund schemes; emission limits for NO_x, SO_x, PM_x, and sulfur content limits in diesel; and government spending on renewable energy research and development (**Kozluk, 2016**). Figure 1 shows that over the past five years, OECD member countries have had a medium level of environmental policy rigidity. Thus, for the year 2020, the average indicator among the analyzed countries is 2.9. The country with the most rigid environmental policy was found to be France, and at the opposite pole was Brazil.

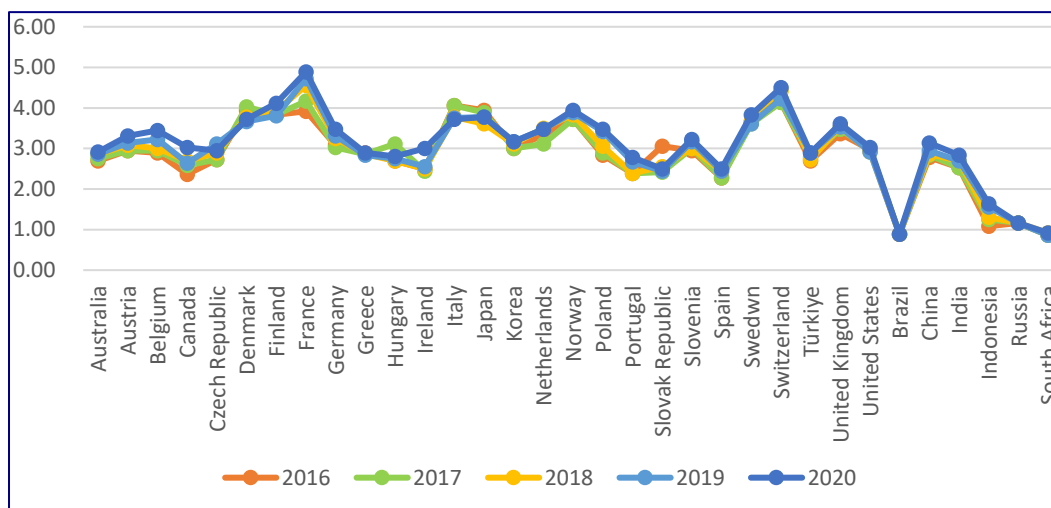


Figure 1 - Environmental Policy Stringency Index (EPS)

Source: Authors' construction, based on basic data from the OECD Database.

The Environmental Performance Index (EPI) ranks 180 countries worldwide according to their efforts to protect the environment, improve ecosystem vitality, and mitigate climate change. The EPI is calculated using 40 performance indicators. A comparative analysis of the Environmental Performance Index (EPI) by the Center for Environmental Policy and Law at Yale University shows that about one-third of the countries included in the study are pursuing a rational use of natural resources (Wolf. et al., 2022), which contributes in various ways to reducing environmental and human health impacts (Figure 2). For example, in 2022, Denmark had the highest EPI of 77.9, followed by the UK with 77.7, and India at the other pole with 18.9.

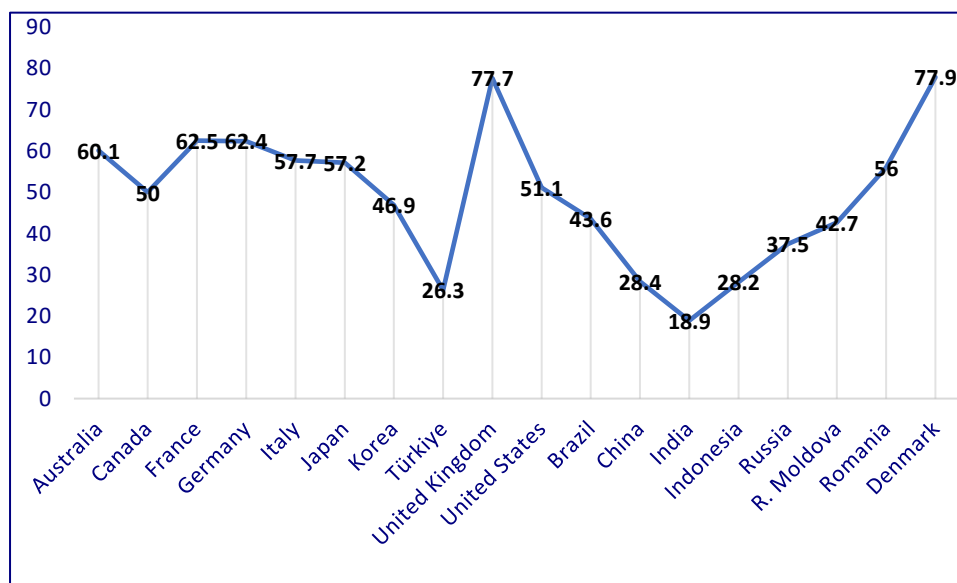


Figure 2 - Environmental Performance Index (EPI) for 2022

Source: Authors' construction, based on Wolf, M. J., et al. (2022).

A process of harmonization of environmental taxes and redistribution of the tax burden in favor of environmental taxes, including the use of the concept of double taxation relief, is underway to encourage environmental reforms.

Many countries have introduced taxes on environmentally harmful products and activities, while others have supplemented the structure of existing tax instruments to make environmental protection more effective. The introduction of natural resource payments, which allow the cost of natural resource use to be included in the cost of products, has been noted. Producers support the tax on emissions (discharges) of polluting substances from the company's profits. Ongoing costs related to

the maintenance and operation of environmental protection facilities (sewage treatment plants, ash collectors, filters, etc.) are also included in the production costs of enterprises (**Barde, 2004**).

Environmental taxes and charges are often used as part of strategies and policies aimed at developing energy consumption from renewable sources, low-carbon production, and the use of alternative fuels to reduce emissions.

According to OECD statistics, total revenues from environmental taxes for 2021 are in the range of 0.15% to about 4% of GDP (Belize, Mexico, Ecuador, USA, Brazil, Denmark, Italy, Latvia, Netherlands, Slovakia, Croatia, etc.) and have been stable in recent years. Analysis of environmental tax revenues as a share of total tax revenues has shown that this share varies between 2% and 10% in countries such as Jamaica, Brazil, Bulgaria, and Slovenia. Environmental tax revenues per capita range from \$33 to \$1555.

The European Green Deal recognizes the fundamental role of green taxation in the transition to greener and more sustainable growth and the need to better align tax systems with the EU's climate change objectives. Well-designed tax reforms can stimulate economic growth, help reduce greenhouse gas emissions by ensuring efficient carbon pricing, and contribute to a just transition.

The Roadmap for a Resource Efficient Europe included a target to shift from labor to environmental taxes by 2020, which would help to significantly increase the share of environmental taxes in public revenues (**European Commission, 2011**).

According to Eurostat data, environmental taxes in the EU are divided into the following categories: energy taxes, transport taxes, and taxes on pollution and resource use. In the Republic of Moldova, although there is no explicit definition of environmental taxes at the legislative level, they can be classified according to the EUROSTAT methodology, as shown in Table 1.

Table 1

A Review of Environmental Taxes in the European Union and the Republic of Moldova

	Environmental taxes in the EU	Environmental taxes in the RM
Energy taxes	<ul style="list-style-type: none"> -Taxes on energy production; -Taxes on energy products used for both transportation (petrol and diesel) and stationary purposes (heating oil, natural gas, coal, and electricity); -Taxes on biofuels and any other forms of energy from renewable sources; -Taxes on stocks of energy products; -Taxes on carbon dioxide (CO₂); -(EU ETS) related to greenhouse gas emissions. 	<ul style="list-style-type: none"> -Excise duties on liquefied gases; -Excise duties on petroleum products.
Transport taxes	<ul style="list-style-type: none"> - Taxes related to the ownership and use of motor vehicles; - Taxes on transportation equipment (e.g. airplanes, ships, or railway stocks), and related transportation services (e.g. duties on chartered or scheduled flights); - 'one-off' taxes related to the import or sale of equipment; - Recurrent taxes (annual road tax); - Taxes on railway rolling stock, public transport, and electric cars; - Vehicle registration taxes to encourage the purchase of low-carbon vehicles; -Taxes and charges on airline passengers. 	<ul style="list-style-type: none"> - Excise duty on imported cars; - Road use taxes; - Vignette.

Pollution taxes	<ul style="list-style-type: none"> -Taxes on measured or estimated emissions to air and water; -Taxes on solid waste and noise management; -Charges for specific products (waste electronic and electrical equipment, end-of-life vehicles) -Taxes on lubricating oils. 	<ul style="list-style-type: none"> -Payments for emissions of air pollutants from stationary sources; -Payments for discharge of pollutants into aquatic facilities and sewerage sources through wastewater; -Payments for the storage of production waste; -Taxes on products that pollute the environment during their use (such as pesticides, batteries, tires, etc.); -Taxes on packaging.
Resource taxes	<ul style="list-style-type: none"> -Taxes linked to the extraction or use of natural resources, such as water, forests, and wild flora and fauna; -Biodiversity regulation charges. 	<ul style="list-style-type: none"> -Payments applied to the exploitation of natural resources other than those used as energy sources; -Payments applied to water abstracted from any source (springs); -Payments for useful minerals (deposits); -Timber released on the foot.

Source: Authors' construction, based on Eurostat (2013) and (PNUD, 2018, p. 10-11)

Analyzing the information presented in Table 1, the following aspects can be highlighted:

Energy taxes in EU countries include CO₂ taxes because they are levied on the carbon content of fossil fuels. CO₂ taxes differ from other energy taxes because they do not increase the price of energy products but stimulate the use of low-carbon fuels. Fourteen EU Member States and four EFTA Member States levy such taxes. In many countries, this CO₂ tax varies. For example, in Poland, it is around €1/metric ton of carbon, and in Sweden, Switzerland, and Liechtenstein, it exceeds €110.

The EU ETS, or European Emissions Trading Scheme, was introduced in 2005 to control total CO₂ emissions. Until 2012, national governments allocated emission allowances free of charge. From 2013 to 2020, emission allowances were distributed through auctioning. From 2021 to 2030, the number of allowances is expected to decrease. Simultaneously, 100% free allocation of allowances will be made in those sectors at risk of relocating production outside the EU. For less-risky sectors, free allocation is expected to be phased out by 2026.

The payments collected by EU Member States for emission permits or certificates are examples of CO₂ taxes. Total CO₂ tax revenues from EU ETS permits reported by EU countries amounted to €16.5 billion in 2021, compared to €3.0 billion in 2014. In 2021, Germany's tax revenues from EU emission permits totaled €3.3 billion, with Poland coming in second with €2.9 billion, Italy with €2.5 billion, and Spain with €1.7 billion.

As of October 1, 2023, the European Union has introduced a border carbon adjustment mechanism, the so-called Carbon Tax, or CBAM, applicable to imports of products from highly polluting industries to avoid the relocation of production to other countries. Thus, until 2025, importers are not obliged to pay the CBAM tax but only to report the carbon content of imported products. From 2026, importers will have to purchase "CBAM certificates."

The Republic of Moldova does not apply carbon taxes, but the authorities intend to set up their carbon pricing systems by the end of 2025 to avoid paying the CBAM tax.

Transport taxes include taxes on vehicle ownership and use. Revenues from transport taxes reflect the dynamics of vehicle sales and vehicle stocks, and this explains the reduction in transport tax revenues observed after the two main economic crises of the last two decades: the one in 2007 and the one in 2020 due to the COVID-19 pandemic.

In many countries, vehicle registration taxes have been developed to promote the purchase of low-carbon vehicles, such as Ireland, the Netherlands, Portugal, and Spain. Some countries apply taxes and charges for air passengers, such as Germany, Austria, the United Kingdom, and France.

Pollution charges cover different types of taxes: measured or estimated emissions to the air (e.g., NO_x, SO₂), water, noise, and solid waste management charges. In all EU countries, there are payments and taxes on waste management. In addition to landfill taxes, certain materials (such as combustible waste and specific products) are prohibited from being disposed of in landfills; these are particularly enforced in Austria, Belgium (Flanders and Wallonia), Denmark, Finland, France, Hungary, Italy, the Netherlands, Norway, Sweden, and Switzerland.

Air pollution payments exist in two-thirds of countries and cover a wide range of air pollutants. Such measures have been introduced in some Central and Eastern European countries (Bulgaria, Estonia, Latvia, Lithuania, and Romania), where they are often linked to fines for not complying with environmental legislation.

Most EU countries levy different charges for water: for drinking water supply and consumption, for wastewater disposal, and drainage systems. Product charges are usually applied only to groups of products that account for a small proportion of the respective market outputs. In many EU countries, there are differences in the specific products covered by these measures: waste electronic and electrical equipment, old, end-of-life vehicles, batteries and accumulators, packaging, used tires, light bulbs, and plastic bags. Denmark is a leader in this area of regulation and applies several instruments, including taxes on chlorinated solvents, phthalates, and PVC, excise duties on antibiotics and growth incentives, and taxes on light bulbs and fuses.

In the Republic of Moldova, environmental pollution charges and charges for goods that, in the process of use, pollute the environment cover five categories of pollutants.

Natural resource taxes are applied in almost half of the EU countries. In Bulgaria, Croatia, Estonia, Latvia, and Lithuania, they mainly regulate the extraction and exploitation of natural resources such as sand and gravel; in Belgium, the Czech Republic, Denmark, France, Latvia, Lithuania, Sweden, and Estonia, they regulate the exploitation of peat, coal, and lignite.

In the field of biodiversity regulation, some countries apply charges for logging and felling, environmental protection charges, and non-fiscal hunting taxes. In some cases, revenues from these instruments are used for biodiversity protection, conservation, and wise use. A limited number of countries also apply land-use change taxes (Croatia, Czech Republic, Poland, some US states) and land taxes, which in principle can help protect natural areas and reduce urban sprawl (Denmark, Estonia, Australia, New Zealand, some US states).

Some countries have introduced taxes and levies that are directly related to fisheries and marine biodiversity. Revenues from these taxes are used to protect the marine environment and conserve and maintain fisheries. Taxes and charges in other areas, such as the harbor waste fee, NO_x and engine oil fee on ships, polyethylene bag fee, sea dumping fee, and marine aggregates fee, are also of significant importance in regulating the consumption and use of items in the marine environment.

In the agriculture sector, several countries have introduced levies on pesticides and fertilizers. Some of these measures, particularly fertilizer levies, have been repealed in various EU Member States after the introduction of the Directive on the protection of waters against nitrate pollution from agricultural sources.

In the Republic of Moldova, in addition to the resource charges mentioned in Table 1, several payments are applied to activities with an environmental impact, such as fees for the issuance of environmental permits, fines for violation of environmental legislation imposed for poaching, illegal felling of forests, ecological offenses, and damage to the environment because of pollution. These are part of the damage recovery mechanism. At the same time, these payments are considered parafiscal charges and represent sums of money transferred to the accounts of public institutions and/or public interest bodies (**EaP Green, 2016, p. 17**). Thus, fiscal and parafiscal payments play a central role among the economic instruments used to implement environmental policies.

A feature of environmental taxes in EU countries is the category of taxpayers: households and businesses. For instance, in 2020, the contribution of households as taxpayers exceeds the share of businesses in total environmental taxes: 48.6% of households and 47.6% of businesses. In the case of pollution and resource taxes, households pay more than half of the tax revenues, as household waste, sewage, wastewater, water abstraction, plastic bags, hunting and fishing taxes,

and so on, are taxes that, in 2020, combined 56% of the total revenues from pollution and resource taxes.

Analyzing receipts from environmental taxes on GDP in the Republic of Moldova, they are comparable to those in the European Union. The position of the Republic of Moldova by the ratio of environmental taxes to GDP shows that these receipts represented 2.43% of GDP in 2021, while in the EU, this indicator was 2.24% (Figure 3).

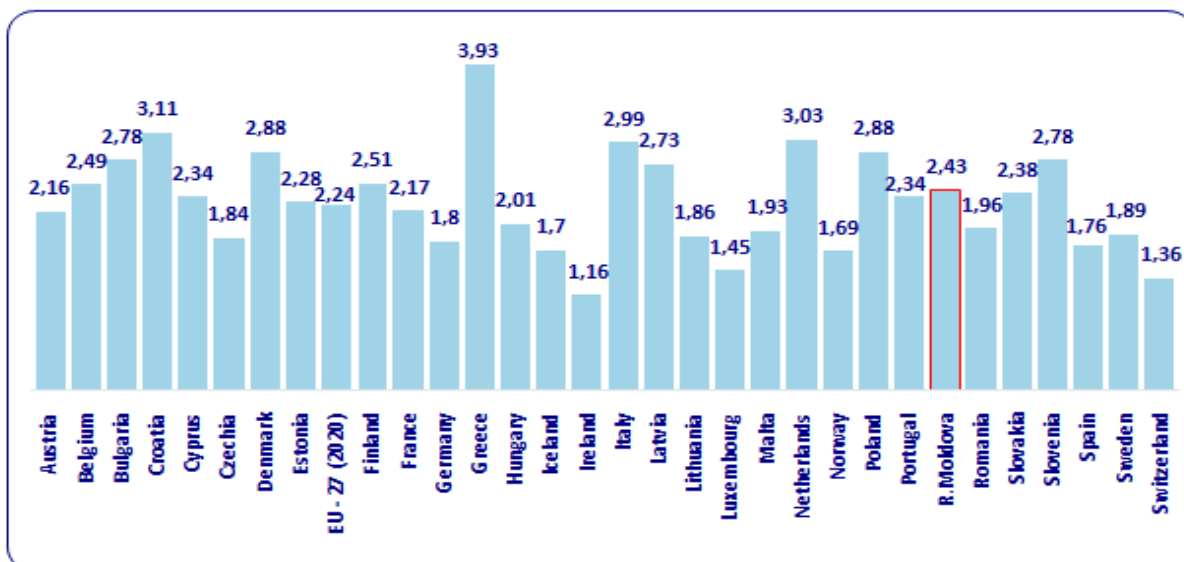


Figure 3 - Share of environmental taxes in GDP (%) in 2021, %

Source: Authors' construction based on basic data from the EUROSTAT Database and the Ministry of Finance of the Republic of Moldova.

Figure 4 shows the evolution of environmental taxes in the EU from 2017 to 2021. Thus, the total revenue from environmental taxes in the EU-27 in 2021 was €325.837 billion, representing 2.24% of GDP and up to 5.38% of total tax and social contribution revenue. Revenues from energy taxes have the largest share of total environmental taxes in almost all countries and account for approximately 78.4% of revenues; transport taxes account for approximately 18.1%; and pollution and resource taxes account for 3.5% of total environmental taxes in 2021.

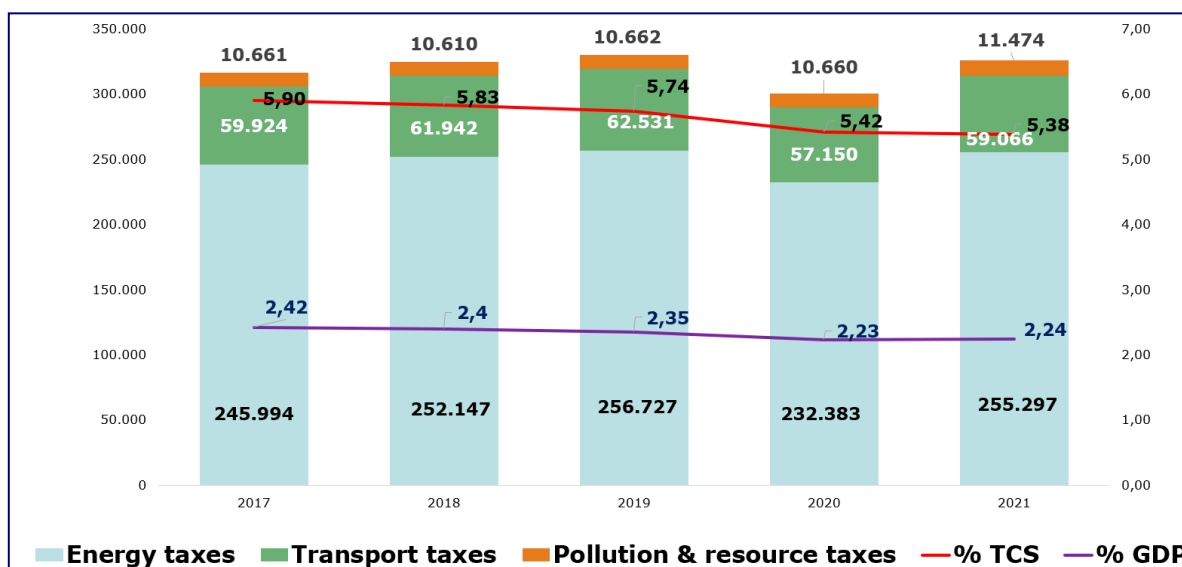


Figure 4 - Environmental tax revenue by type (billion EUR) and total environmental taxes as a share of TSC and GDP, EU 2017-2021

Source: Authors' construction, based on basic data from the EUROSTAT Database (2022).

An analysis of environmental taxes in the Republic of Moldova showed a steady increase in the period 2018–2022, bringing revenues to the state budget from 4.28 billion lei at the beginning of the analyzed period to over 6.09 billion lei at the end of this period (Figure 5).

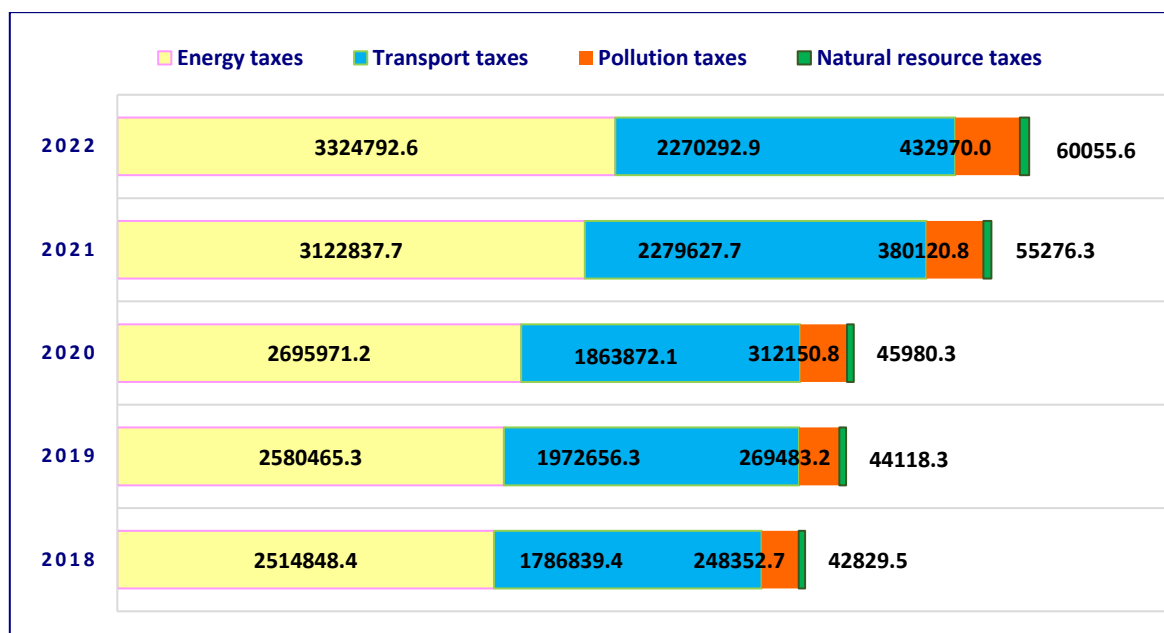


Figure 5 - Environmental tax revenue by type (thousand, MDL), 2018-2022

Source: Authors' construction, 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 (2018-2022).

During the review period, 2020 saw the lowest growth in environmental tax revenues due to the COVID-19 pandemic crisis. An analysis of energy tax receipts shows a steady increase, whereas transport taxes show a fluctuating trend. Pollution and natural resource taxes have a smaller share of total environmental taxes. While pollution charges have shown an upward trend over the period analyzed, natural resource charges have shown an uneven trend.

The environmental taxes applied in the Republic of Moldova exceed the average of other countries. They contribute more than 10% of total tax revenues (Figure 6), and their share of total taxes collected in the budget has a downward trend from 12.2% in 2018 to 10.6% in 2022. This was due to the much higher increase in tax and duty collections (on goods and services because of increased imports) compared with the increase in environmental taxes.

The percentage of environmental taxes in GDP was 2.42% in 2018; however, this percentage decreased due to the pandemic-related decline in economic activity (2.32% in 2019 and 2.38% in 2020). After rising to 2.41% in 2022, the share of environmental taxes in GDP fell to 2.23% in 2022 as a result of the substantial GDP growth (Figure 6).

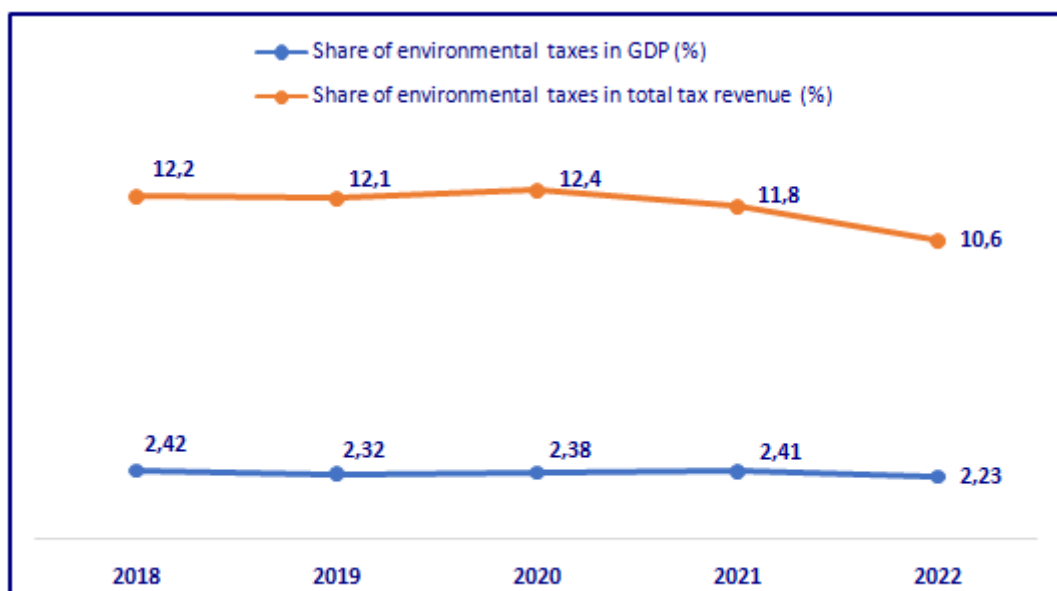


Figure 6 - Share of environmental taxes in GDP and total taxes, 2018-2022

Source: Authors' construction, based on reports on the execution of the state budget (2018-2022).

The legislation of the Republic of Moldova does not stipulate the notion of an environmental tax.

However, a system for environmental taxes and payments has been developed following Eurostat's methodology. The OECD considers that environmental taxes on harmful products were introduced in the Republic of Moldova in 2002. However, in European countries, the ecological tax system is much better designed and more efficient because environmental taxes operate according to the "double dividend" principle, which has two positive effects: improving the environmental situation and increasing economic competitiveness by improving the tax system (Timuș, Chironachi, 2022). The Moldovan ecological tax system does not target or affect producer or consumer behavior, does not achieve the goal of ensuring environmental protection, but serves to generate revenue for the state budget, and most of the time ecological taxes are not adjusted for inflation (Fala, 2023).

Energy taxes are geared toward environmental protection because excise duties on fuel can be recognized as ecological payments to the state budget. They are based on differentiated fuel tax rates and are adjusted annually for inflation.

Transport taxes hardly serve their environmental purpose because excise duties on imported cars account for a significant share of the total, which is calculated according to the vehicle's age and engine power rather than the amount of pollutant emitted into the air.

There are several inconsistencies in the case of pollution taxes that do not correspond to international practice. These relate to the unavailability of data allowing comparative analysis with other countries and the fact that the charging system is quite confusing. Taxes on polluting goods are adjusted annually for inflation because they are applied to the value of products and take into account price dynamics.

Taxes on natural resources consist of fixed rates. The polluter calculates them and pays them into the administrative-territorial unit's budget, where the natural resources are extracted. The number of these charges has not been adjusted to price trends for a long time.

To ensure better implementation of environmental policies in the Republic of Moldova, it is necessary to update the legal framework with international practices, bring the new environmental protection regulations into line with existing legislation, and remove all inconsistencies.

Conclusions

The role of tax policy and its instruments in facilitating the transition to a green economy is indisputable. This includes green taxes and charges, subsidizing green sectors, fund allocations, public investments in sustainable infrastructure, sustainable public procurement, and other mechanisms. Tax policies also increase government revenues, which can be used for green investments, wider tax reforms, or other priorities such as health and education. A system of environmental taxation plays an essential role not only in the rational use of resources and protecting the environment but also in repairing environmental damage.

The main problem in determining the parameters of environmental taxes is the assessment and measurement (spatial, temporal, physical, in monetary terms, etc.) of environmental damage, such as emissions to air and water bodies, etc., and the distribution of the tax from the producers of products subject to environmental taxation to consumers. Thus, the purpose of ecological taxes is to motivate economic agents to implement environmentally friendly practices. There is also a need for regular evaluation of the effectiveness of environmental taxes, their continuous updating, and their correct application.

The state has the leading role in eliminating imbalances in the market, so through appropriate regulation, the state must create all the conditions and opportunities for business and society to move toward 'greening' the economy.

A comprehensive review of environmental tax legislation can identify areas where taxes and charges can be introduced or abolished. An aspect for consideration is the impact of these taxes and charges on the poor, administrative costs, and sectoral competitiveness. Environmental taxes can be used in several sectors of the economy. These taxes correct price signals and help shift consumer and business behavior toward more sustainable models.

The green tax system in the Republic of Moldova is in the formative stage of its development, and the main task of tax policy is to shape a set of tax instruments, considering national particularities and priorities. The Republic of Moldova has a well-structured legal framework in the field under review, but it needs to be regularly revised and adapted to the European regulatory framework.

Future Directions

Future research directions in the field of ecological taxes in the Republic of Moldova will include an assessment of the effectiveness of the fiscal-budgetary system; a comparative analysis of fiscal and environmental systems with those of other countries; performance studies and case studies; and an analysis of legislation to identify opportunities to improve the domestic tax system.

Bibliography

Barde, J.P. (2004). Green tax reforms in OECD countries: An overview, OECD, Retrieved from http://www.eclac.org/dmaah/noticias/discursos/3/1428_3/03_en.pdf

Braathen, N.A. (2015) Cost benefit analyses and the environment. The use of environmentally related taxes in OECD and other countries. Presentations made in Tallinn 18-19 May 2015 on seminar "Evaluation of externalities in Estonia".

Comisia Europeană (2011) Foaie de parcurs către o Europă eficientă din punct de vedere energetic. Bruxelles. Retrieved from <https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0571:FIN:RO:PDF>

EaP Green (2016). Assessing the Green Transformation of the Economy: A Guide for EU Eastern Partnership Countries. Paris. Retrieved from http://www.green-economies-eap.org/ru/resources/EaP%20GREEN_GGI%20Guide_clean_RUS_Final.pdf.

Eurostat (2013). Environmental taxes — A statistical guide. Luxembourg: Publications Office of the European Union. doi:10.2785/47492, ISBN 978-92-79-33230-2. Retrieved from <https://ec.europa.eu/eurostat/documents/3859598/5936129/KS-GQ-13-005-EN.PDF.pdf/706eda9f-93a8-44ab-900c-ba8c2557ddb0?t=1414782946000>

Fala, A. (2023). Reforma taxelor pe poluare – un pas necesar pentru asigurarea unei creșterii economice verzi. Retrieved from [https://www.expert-grup.org/media/k2/attachments/ Reforma _taxelor _pe _poluare _analiza.pdf](https://www.expert-grup.org/media/k2/attachments/Reforma_taxelor_pe_poluare_analiza.pdf)

Jaeger, W.K. (2013). The Double Dividend Debate. Handbook of Research on Environmental Taxation. Chapter: 12. The Double Dividend Debate. Edward Elgar Publishing. Retrieved from https://www.researchgate.net/publication/259486745_The_Double_Dividend_Debate

Kozluk, T. (2016). How stringent are environmental policies? Policy perspectives. OECD. Retrieved from <https://www.oecd.org/economy/greeneco/How-stringent-are-environmental-policies.pdf>

OECD (2008). The Polluter Pays Principle: Definition, Analysis, Implementation. Paris: Organization for Economic Cooperation and Development. doi: 10.1787/9789264044845-en. ISBN 9789264113374. Retrieved from https://read.oecd-ilibrary.org/environment/the-polluter-pays-principle_9789264044845-en#page7

OCDE (2010). Taxation Innovation and the Environment Paris, p. 56. Retrieved from: <https://www.oecd.org/env/tools-evaluation/46177075.pdf>

OECD. (2014). Do environmental policies matter for productivity growth? Insights from new cross-country measures of environmental policies. Economics department working papers no. 1176. By Silvia Albrizio, Enrico Botta, Tomasz Koźluk and Vera Zipperer. OECD.

Pigou, A. C. (1920). The Economics of Welfare. London: Macmillan. Retrieved from <https://archive.org/details/dli.bengal.10689.4260/page/n15/mode/2up>

PNUD (2018). Catalog privind Taxe, amenzi și sancțiuni pentru prevenirea activităților dăunătoare pentru biodiversitate, Chișinău. Retrieved from: https://madrm.gov.md/sites/default/files/Documente%20atasate%20Advance%20Pagines/Catalog_Taxe.pdf.

Sterner, T. (2003). Instruments for environmental policy, SIDA. Retrieved from <https://cdn.sida.se/publications/files/sida2384en-instruments-for-environmental-policy.pdf>

Timuș, A. Chironachi, C. (2022). Rolul taxelor ecologice în procesul dezvoltării durabile și modernizării economiei. În: *Viabilitatea fermelor și dezvoltarea rurală durabilă în contextul actualelor priorități ale UE privind agricultura și mediul*: sesiune științifică internațională: Cercetări de economie agrară și dezvoltare rurală, Institutul de Economie Agrară, INCE, 8 decembrie 2021. București: Editura Academiei Române, pp. 117-126. ISBN 978-973-27-3645-6

Wolf, M.J. et al. (2022) Environmental Performance Index. New Haven, CT: Yale Center for Environmental Law & Policy. Retrieved from <https://epi.yale.edu/downloads/epi2022report06062022.pdf>