

Pollution Tax Reform – a Necessary Step to Ensure Green Economic Growth

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Moldova's natural resources are in a precarious state. Water is a scarce resource and the country's afforestation rate is extremely low¹. This is compounded by inefficient waste management and increased pollution from car emissions. At the same time, the Republic of Moldova fails to explore the potential of fiscal-budgetary instruments in addressing environmental issues. For many years, budget spending on environmental protection has been extremely low. In addition, a number of shortcomings in the regulation of environmental taxes are eroding their ability to stimulate environmentally friendly behaviour of citizens and businesses. The existing system of pollution taxes in the Republic of Moldova is outdated, does not correspond to other countries' practices and is lagging behind other environmental reforms. In this context, this study assesses the national practice in the field of pollution taxes. The study concludes with a set of proposals for making pollution taxes more effective.

ENVIRONMENTAL TAX SYSTEM OF THE REPUBLIC OF MOLDOVA

The Republic of Moldova has a complex legal framework that also stipulate the use of fiscal-budgetary instruments in implementation of environmental policies. The state's vision on the application of economic instruments is stipulated in the *Environmental Strategy for 2014-2023*². Thus, the Strategy's specific objective 4 provides for reducing the negative impact of economic activity on the environment and improving measures to prevent environmental pollution. This objective should be achieved *'by improving and streamlining fiscal and economic instruments in the field of environmental protection and by modifying the environmental funds system'*. The two main documents that regulate the application of environmental taxes are the Tax Code and Law 1540/1998 on Payment for Environmental Pollution. At the same time, some aspects related to the application of fiscal-budgetary instruments are also regulated in other legal acts.

Fiscal and quasi-fiscal charges play an important role in the implementation of environmental policies. In the Republic of Moldova there are the following fiscal and para-fiscal charges:

1. *Taxes for the issuance of environmental permits*, which are set out in the Nomenclature of Permits annexed to the Law 160/2011 on the Regulation of Entrepreneurial Activity³;

¹ <https://mediu.gov.md/indicatori/index.html>

² https://www.legis.md/cautare/getResults?doc_id=48131&lang=ro

³ https://www.legis.md/cautare/getResults?doc_id=120955&lang=ro#

2. *Environmental taxes*, which are regulated in the Tax Code (taxes on energy, transport and natural resources) and in Law 1540/1998 on Payment for Environmental Pollution (pollution taxes);
3. *Fines for violations of environmental law*, which are imposed for committing prohibited actions (e.g. poaching, illegal logging, environmental offences). The amount of these fines is set out in the criminal and contravention law;
4. *Environmental damage as a result of pollution* is regulated by a series of guidelines, methodologies and laws.

Environmental taxes are divided into 4 categories: energy/fuel taxes, transport taxes, pollution taxes and resource taxes. This classification is also used by EUROSTAT⁴. The Republic of Moldova is also moving towards a similar approach (Annex 1). The study *'Taxes, Fines and Penalties to Prevent Activities Harmful to Biodiversity'*⁵ presents the same categories of environmental taxes.

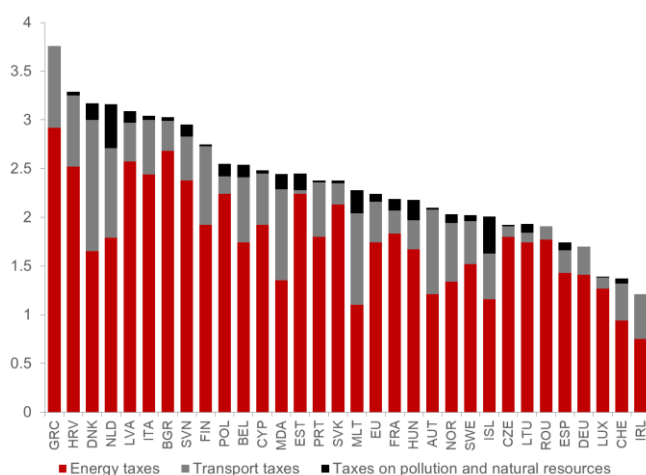
Despite international practice, the Moldovan authorities have a narrow vision of environmental taxes. Thus, in the 2014-2023 Environmental Strategy, only taxes on natural resources and charges for environmental pollution are considered as fiscal instruments, plus para-fiscal charges such as fines and damages. At the same time, energy and transport taxes are not considered as environmental taxes, which reduces the involvement of public institutions responsible for environmental protection in 'shaping' fiscal instruments.

In the Republic of Moldova, the ratio between environmental tax revenues and GDP are comparable to those in the European Union. Between 2015 and 2021, the revenues from environmental taxes almost doubled from almost MDL 2.8 billion to over MDL 5 billion. By ratio revenue from environmental taxes and GDP, the Republic of Moldova ranks average compared to other European countries. Thus, in 2020 in Moldova, these revenues amounted to 2.5% of GDP, while in the EU this indicator was 2.24% (Figure 1). In 2021 compared to 2015, the revenue from energy taxes (fuel excise duties) increased from MDL 1.6 billion to about MDL 2.8 billion. In comparative terms, the ratio between energy tax revenues and GDP are relatively low in the Republic of Moldova compared to other European countries. For example, in 2020, the energy tax revenue-to-GDP ratio in Moldova was 0.4 p.p. lower than the EU average. In recent years, the revenue from transport taxes has fluctuated. Between 2017 and 2021, the revenue from transport taxes varied between MDL 1.8 and 2 billion. At the same time, compared to European countries, Moldova has one of the highest levels of transport tax revenue in relation to GDP. In 2020, this indicator was 0.9% for our country and was twice higher than the EU average. For purposes of international comparisons, pollution and resource taxes have been merged. This approach has been taken over from EUROSTAT, which presents information on pollution and resource tax revenues in aggregated form. Revenues from these taxes increased between 2015 and 2021, from MDL 250 million to almost MDL 400 million. Compared to European countries, the revenues from resource and pollution taxes as a share of GDP are quite high in Moldova. In 2020, the proceeds from taxes on pollution and natural resources in our country accounted for 0.16% of GDP and were 2 times higher than the EU average.

Figure 1. The ratio between environmental tax revenues and GDP, %

⁴ <https://ec.europa.eu/eurostat/data/database>

⁵ http://madrm.gov.md/sites/default/files/Documente%20atasate%20Advance%20Pagines/Catalog_Taxe.pdf



Source: EUROSTAT, Ministry of Finance, NBS, author's calculations

Despite the fact that the current system of environmental taxes generates revenue for the budget, it contributes only marginally to solving environmental problems. Compared to other European countries, the Republic of Moldova use in most inefficient way fiscal-budgetary instruments to solve the environmental problems⁶. Greater efficiency can be achieved without increasing the level of environmental taxes, but a substantial increase in government spending on environmental protection is needed⁷. The focus should be on better targeting of environmental taxes⁸.

APPLYING POLLUTION TAXES IN THE REPUBLIC OF MOLDOVA

The Republic of Moldova has a complex system of pollution taxes. The Law on Pollution Charges was adopted in 1998. Although the law has been amended over time, the concept of taxation has not changed. The taxation system is quite confusing and involves the application of formulas with different coefficients and normatives. In general, calculating pollution taxes is complicated and requires a serious effort from firms. The most illustrative example of this is payments for emissions and discharges. Thus, the size of the payment for *emissions and discharges* is determined as the product of the conventional mass of the pollutant and the normative of payment, which is a fixed amount. In turn, the conventional mass is calculated by multiplying the actual mass of the pollutant by an aggressiveness coefficient, specific for each substance. The normative of payment is differentiated by geographical area. The normative applicable in Chişinău and Bălţi are higher than those used in the rest of the country. At the same time, for emissions into the atmosphere and waste water discharges, the law provides higher payments for exceeding the permissible limits. Several specific concepts are used in this respect: (i) maximum permissible concentration – a technical-scientific standard that establishes the maximum concentration that does not adversely affect human health and the environment; (ii) limited permissible emission – a technical-scientific standard that establishes the concentration of pollutants emitted into the ground air layer from a source or a group of sources that does not exceed the maximum permissible concentration standards;

⁶ Fala, A., Pîntea, D., Cantaragiu, I., Coşeru, I., Applying Fiscal-Budgetary Instruments to Solve Environmental Issues, Expert-Grup Independent Think-Tank/National Environmental Center, Chişinău, 2020, p. 38, https://www.expert-grup.org/media/k2/attachments/Compressed_Studiu_Instrumentele_fiscal-bugetare_aplicate_yn_domeniul_mediului.pdf

⁷ *Ibidem*, p. 38

⁸ *Ibidem*, p. 39

and (iii) limited permissible discharge – the maximum mass of pollutants in wastewater that is permissible for discharge. If the permissible limits are exceeded, a multiplication coefficient is used to calculate the amount of tax. The calculation of the other pollution payments also involves the use of different parameters, but is not as complex as for the payments for emissions and discharges. *Packaging taxes* are fixed amounts charged per piece of packaging. Packaging is divided into 3 categories: plastic packaging, aluminium packaging and primary composite packaging. In the case of *goods which in the process of use cause environmental damage*, ad-valorem taxes are applied on the value of the products placed on the market, either at import or for domestic production. This tax applies to 15 groups of goods, listed in Annex 8 to Law 1540/1998. *Waste* is divided into 5 groups according to the degree of toxicity. For each group separate normative of payment is applied, which are higher if the waste has higher toxicity degree. The landfill tax is calculated by multiplying the normative of payment, the minimum wage in the economy and the amount of landfilled waste.

In the Republic of Moldova, pollution taxes are aligned only to a certain extent to international practices. In international practice the environmental taxes are fixed amounts paid per physical unit (usually units of mass) of something that harms the environment. In this respect, not all pollution taxes in the Republic of Moldova are directly linked to the actual amount of pollutants. There is a proportional, but complex relationship between the amount of the tax on the one hand and emissions, discharges and the landfilled waste on the other hand. There is some relationship between the amount of the tax and the amount of packaging, and there is no relationship between the tax on goods that cause pollution and the mass of these products. Also, other countries periodically adjust the level of environmental taxes to inflation. In the Republic of Moldova, environmental taxes are not indexed. On the one hand, excise duties on fuel are adjusted annually for inflation, and taxes on goods that cause pollution implicitly incorporate price dynamics, since they are levied on the value of products. On the other hand, between 2008 and 2022, prices have increased 2.5 times, whereas the normative of payment for emissions and discharges have only been increased in 2020 by 20%.

Structurally, most of the revenue from pollution taxes comes from taxes on goods that in the process of use cause environmental pollution, while the revenues from taxes on emissions, discharges and waste landfilling are quite small. In 2021, 56% of the revenue from environmental pollution charges came from taxing goods that pollute the environment, and 40% of the revenue came from taxing packaging. Only 4% of the revenues from pollution charges were associated with taxes on emissions, discharges and waste landfilling. This structure of tax collection remains relatively unchanged over last years.

IMPACT OF POLLUTION TAXES ON THE STATE OF THE ENVIRONMENT IN THE REPUBLIC OF MOLDOVA

Although there is some evidence of a correlation between pollution tax revenues and pollution, it appears that the effect of taxation on pollution is marginal. Despite the increase in pollution tax revenues, pollution levels are not decreasing. This fact shows the reduced effectiveness of taxation. This conclusion is also in line with the findings presented in other documents: Environmental Performance Study. Republic of Moldova⁹,

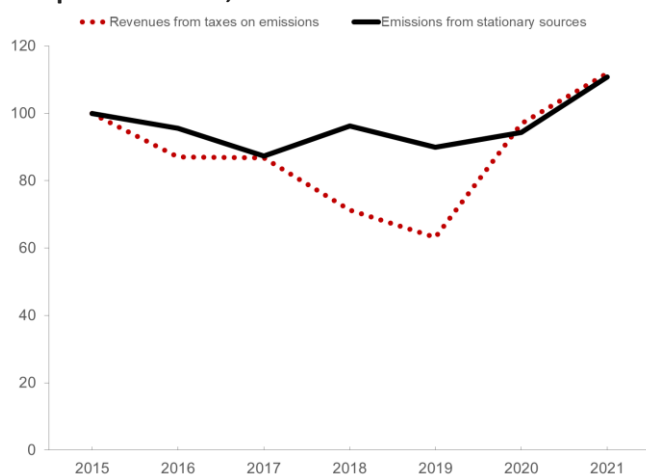
⁹ United Nations Economic Commission for Europe, Environmental Performance Review. Republic of Moldova, Third Review. Summary, 2014, https://unece.org/DAM/env/epr/epr_studies/Synopsis/Moldova_III_Synopsis_RO.pdf;

Environmental Audit Report on Air Quality in the Republic of Moldova¹⁰, Application of Fiscal-Budgetary Instruments in Addressing Environmental Problems¹¹.

Most emissions of air pollutants come from motor transport, but in recent years there has been a greater increase in emissions from stationary sources. Depending on the year, transport generates 10-20 times more emissions than stationary sources (technological installations that emit pollutants into the atmosphere). Energy and transport taxes are intended to reduce emissions from car transport, while the goal of pollution taxes is to reduce emissions from stationary sources. In 2021 compared to 2019, emissions from stationary sources increased from 14.2 to 17.5 thousand tonnes. In this context, it should be noted that between 2001 and 2021, the highest emissions were recorded in 2005 (20.3 thousand tonnes), 2006 (19.6 thousand tonnes) and 2021 (17.5 thousand tonnes). Overall, there is a strong positive correlation (0.7 points) between emissions from stationary sources and revenues from emissions tax, expressed in constant 2015 prices. The high correlation is also due to the increase in normative of payment in 2020. As a result, from 2020 onwards, the growth rates of revenues from pollution tax have caught up with the growth rates of emissions (

Figure 2).

Figure 2. Stationary source emissions and revenues from taxes for stationary source emissions, growth rate compared to 2015, %



Source: Ministry of Finance, NBS, author's calculations

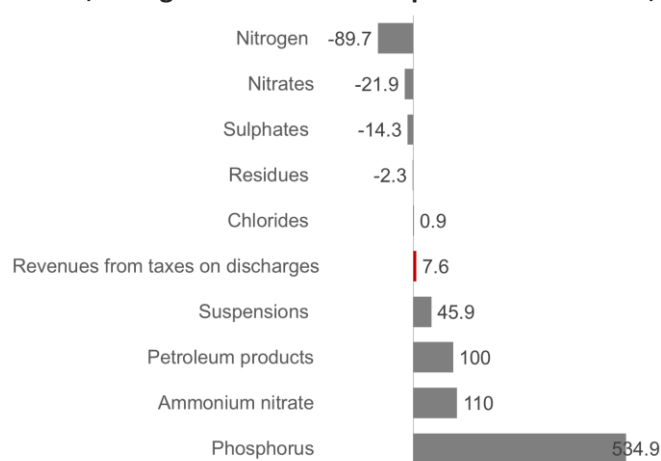
Although payments for discharges may have some effectiveness, there has been a rapid increase in discharges in recent years. Thus, the decrease in discharges of residues, sulphates, nitrogen and nitrates was outweighed by the increase in discharges of suspensions, chlorides, phosphorus, ammonium nitrate and petroleum products (**Error! Reference source not found.**). Moreover, the increase in receipts from discharge payments, expressed in constant prices, was also much smaller than the increase in discharges of different types of pollutants. The increase in discharges also affects water quality. Most of the samples taken from water supplies do not meet the

¹⁰ Court of Accounts, Environmental Audit Report on Air Quality in the Republic of Moldova, 2017, https://www.legis.md/cautare/getResults?doc_id=99718&lang=ro

¹¹ Fala, A., Pîntea, D., Cantaragiu, I., Coșeru, I., Applying Fiscal-Budgetary Instruments to Solve Environmental Issues, Expert-Grup Independent Think-Tank/National Environmental Center, Chișinău, 2020, p. 38, https://www.expert-grup.org/media/k2/attachments/Compressed_Studiu_Instrumentele_fiscal-bugetare_aplicate_yn_domeniul_mediului.pdf

required sanitary and chemical parameters. Between 2015 and 2021, the share of samples taken from centralised water supplies that did not comply with health standards ranged from 53% to 61%. During the same period, about three quarters of the samples taken from decentralised water supply sources did not meet the sanitary and chemical standards.

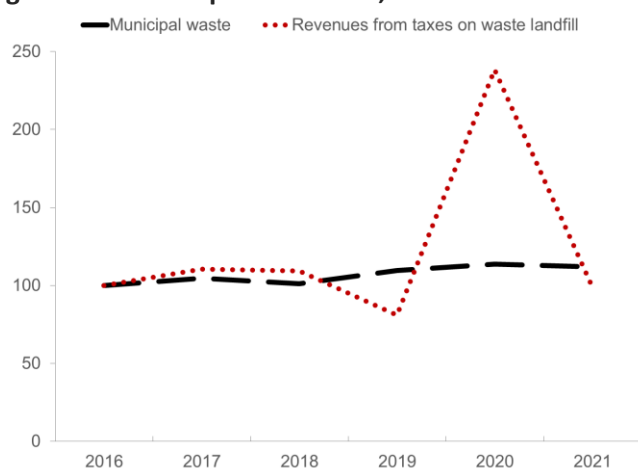
Figure 3. Discharge of wastewater pollutants to aquatic bodies, change in 2019-2021 compared to 2014-2016, %



Source: NBS, author's calculations

In general, the revenue associated with waste landfilling fluctuates and does not curb the growth trend of municipal waste. In 2021 compared to 2016, the volume of municipal waste increased by about 12%, while the revenue from landfill taxes, expressed in real terms, decreased by 0.9%. It should be noted that in 2020 there was a doubling of the revenues from pollution charges compared to 2016 (Figure 4). However, this development has not had major consequences and the growth trend of municipal waste did not change.

Figure 4. Municipal waste and revenue from waste landfill tax, growth rate compared to 2016, %



Source: NBS, author's calculations

DYSFUNCTIONS OF THE CURRENT SYSTEM OF POLLUTANT TAXATION

In general, we can highlight some common problems related to environmental taxes. Taking into account the international best practices, the following problems can be identified:

- *The taxation has no direct connection with the quantity of pollutants.* This is the biggest shortcoming of transport and pollution taxes in the Republic of Moldova. In the case of pollution taxes, the most illustrative example is ad-valorem taxes on goods which, in the process of use, cause environmental pollution. The packaging tax is only partly linked to the quantity of packaging. The amount of payments for emissions, discharges and landfill is directly proportional to the mass of pollutants, but this link is quite difficult to see because of the complex formulae used to calculate amount of taxes. This practice does not create any incentives for environmentally-friendly behaviour, as economic operators fail to see the link between taxation and pollution. Moreover, the current formula for taxing goods that cause environmental pollution may actually benefit pollution. In order to reduce the amount of tax, an economic operator may resort to importing larger quantities of polluting goods at lower prices;
- *There is no 'indexation' mechanism for environmental taxes.* With the exception of excise duties on fuels and, indirectly, taxes on goods that cause pollution, other environmental taxes are not regularly adjusted to price dynamics. This leads to a decrease of tax in real terms, which lowers the costs of using polluting installations and technologies for economic operators;
- *Differentiated taxation of emissions and discharges, both regionally and depending on machinery/equipment.* Different levels of taxation of stationary source emissions and wastewater pollutant discharges create the conditions for migration of harmful production processes to areas with lower taxes, or for the use of machinery/equipment with lower taxes, which does not encourage businesses to invest in environmentally friendly technologies;

In addition to general aspects, environmental pollution charges are also characterised by specific dysfunctions:

- The list of goods which in the process of use cause environmental damage is too long. For example, in Lithuania, only 7 types of goods considered harmful are listed in the Law on Pollution Tax, while in the Republic of Moldova, there are 15 categories of goods listed in Annex No 8 to Law 1540/1998.
- There is often a misinterpretation of the taxation of packaging and goods. Article 11(4)(2) of Law No 1540/1998 stipulates that the tax applies to plastic packaging classified under tariff headings 3923 21 000, 3923 29 and 3923 30. At the same time, Annex 8 provides that a tax applies to goods of plastics for transport or packaging; plugs, lids, caps and other closures, of plastics falling under tariff heading 3923. These provisions often make it difficult to choose the right tax to apply.
- There are inconsistencies between Law 1540/1998 and new environmental legislation, such as Law No 209/2016 on Waste and Law No 227/2022 on Industrial Emissions.
- The reporting on the payment of pollution taxes makes it quite difficult for policy makers to carry out more comprehensive analyses. Two reports are used to keep track of pollution taxes: POLMED (reported taxes on goods, which in the process of use, cause environmental pollution) that includes information on taxes on packaging and goods, and EMPOLDEP (reported payments for emissions, pollutant discharges and waste disposal). Incorrect taxation as well as this merging of information require considerable efforts to make separate analyses for each type of tax;
- Data on waste in the Republic of Moldova are not fully compatible with international statistics. Production waste data are expressed in mass units, while municipal waste information is presented in volume units. This does not allow the exact calculation of the total quantity of waste. The estimation of the total of generated waste is possible, but this would provide not real picture. At international level, waste statistics are also expressed in units of mass. This differentiation makes it difficult to make comparisons between Moldova and other countries.

POLICY RECOMMENDATIONS

The Ministry of Environment is currently working on a new concept of environmental pollution taxation. The new approach could be implemented by amending Law 1540/1998 or by drafting a new law. The aim is to rectify those dysfunctions that diminish the effectiveness of the application of pollution taxes.

The new concept of pollution taxes should take into account the following principles:

1. **A shift to fix taxes applied on the quantity of pollutants.** This will ensure that businesses are aware of the direct relationship between taxation and pollution, which could consequently discourage them from investing in environmentally harmful machinery and technologies;
2. **Annual adjustment of pollution taxes to evolution of inflation;**
3. **There is a need to increase taxes on emissions and discharges.** The last change to these taxes was made in 2019. *The increase should be at least 40% (between 2019 and 2022 the price level increased by 40.3%).* The increase could also be higher than 40%, because between 2008 and 2022, there was only a 20% tax increase in 2019, while during this period the price level grew by 250%. *Leaving out the 2019 increase, taxes could be increased by a factor of 2;*
4. **There is a need to move away from differentiated tax by territory or machinery/equipment** to discourage the retention of polluting technologies and installations, which can survive by relocating to lower tax areas or switching to lower taxed machinery/equipment;
5. **It would be appropriate to reduce the list of goods, which in the process of use cause environmental pollution, presented in Annex No 8 of Law 1540/1998.** Paper and cardboard, articles of pulp, paper or cardboard; glass and glass articles; aluminium and aluminium articles; land vehicles (used ones) could be removed from it;
6. **A clear separation should be made between packaging and goods in order to avoid misinterpretations when taxing pollutants;**
7. **The concept of recyclable and non-recyclable packaging needs to be introduced, with separate taxation of such packaging.** Non-recyclable packaging should be taxed at a higher level;
8. **Waste should be classified into 3 categories: hazardous, non-hazardous and inert. In turn, taxation should be linked to this waste classification.** The introduction of these concepts will allow the waste taxation regulation to be brought into alignment with national waste legislation.

Environmental taxes applied in the Republic of Moldova

Tax category	Name of tax	The legal act governing the application of taxes
Energy taxes	• Excise on petroleum products • Excise on liquefied gases	Tax Code, Title IV. Excise Tax
Transport taxes	• Excise on imported cars • Road taxes • Vignette	Tax Code, Title IV. Excise Tax; Tax Code, Title IX. Road Taxes
Pollution taxes	• Payments for environmental pollution caused by: - <i>emissions of air pollutants from stationary sources,</i> - <i>discharges of waste water pollutants into water bodies and sewage systems</i> - <i>landfill of production waste</i> • Taxes on goods which in the process of use cause environmental pollution	Law No 1540/1998 on Payment for Environmental Pollution
Natural resource taxes	• Water tax • Tax for the extraction of useful minerals • Tax on standing timber • Tax for carrying out geological surveys • Tax for carrying out geological explorations • Tax for the use of underground premises for the construction of underground sites other than for the extraction of useful minerals • Tax for the operation of underground structures for the purposes of entrepreneurial activity other than for the extraction of useful minerals	Tax Code, Title VIII. Natural resource taxes

Source: developed by the author