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**EU4Environment**

Green Economy in Eastern Partner Countries



# Market Assessment and Policy Instrument Analysis of the Eco-Innovation Landscape in the Priority Sectors of the Republic of Moldova



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Please cite this publication as: *EU4Environment (2022), “Market Assessment and policy instrument analysis of the eco-innovation landscape in priority sectors in Republic of Moldova”.*

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# List of acronyms and abbreviations

<b>ASM</b>	Academy of Sciences of Moldova
<b>CAIT</b>	Climate Analysis Indicators Tool
<b>CCAS</b>	Climate Change Adaptation Strategy
<b>CCIR</b>	Romanian Chamber of Commerce and Industry
<b>CDM</b>	Clean Development Mechanism
<b>CP</b>	Cleaner Production
<b>CPA</b>	Community Protected Area
<b>CSO</b>	Civil Society Organization
<b>DCFTA</b>	Deep and Comprehensive Free Trade Agreement (DCFTA)
<b>DO</b>	Designations of origin
<b>EAP</b>	Eastern Partner
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EC</b>	European Commission
<b>EEA</b>	Energy Efficiency Agency
<b>EU</b>	European Union
<b>EUR</b>	Euro
<b>GD</b>	Government Decision
<b>GDP</b>	Gross Domestic Product
<b>GEF</b>	Global Environment Facility
<b>GHG</b>	Greenhouse Gases
<b>GII</b>	Global Innovation Index
<b>GVA</b>	Gross Value Added
<b>IMF</b>	International Monetary Fund
<b>IPP</b>	Integrated Product Policy
<b>LPA</b>	Local Public Authorities
<b>MAFI</b>	Ministry of Agriculture and Food Industry
<b>MDL</b>	Moldovan Lei
<b>MOVCA</b>	Moldova Organic Value Chain Alliance
<b>NARD</b>	National Agency for Research and Development
<b>NDCS</b>	National Determined Contributions
<b>NGO</b>	Non-Governmental Organizations
<b>NSMR</b>	National System for Monitoring And Reporting
<b>ODIMM</b>	Organization for the Development of Small and Medium Enterprises Sector
<b>ODA</b>	Organization for Entrepreneurship Development
<b>OECD</b>	Organisation for Economic Co-Operation and Development
<b>R&amp;D</b>	Research and Development
<b>RM</b>	Republic of Moldova
<b>SCP</b>	Sustainable Consumption and Production
<b>SDG</b>	Sustainable Development Goals
<b>SDS</b>	Sustainable Development Scenario
<b>STI</b>	Science, Technology and Industry
<b>SME</b>	Small and medium Sized Enterprise
<b>SPP</b>	Sustainable Public Procurement
<b>STI</b>	Science, Technology and Innovation
<b>TAFL</b>	Textile, Apparel, Footwear and Leather goods
<b>TUM</b>	Technical University of Moldova
<b>UNDP</b>	United Nations Development Programme
<b>UNIDO</b>	United Nations Industrial Development Organization
<b>UNEP</b>	United Nations Environment Programme
<b>USD</b>	American Dollar
<b>USAID</b>	United States Agency for International Development
<b>VAT</b>	Value Added Tax
<b>WRI</b>	World Resources Institute
<b>WTO</b>	World Trade Organization
<b>SWOT</b>	Strengths, Weaknesses, Opportunities, and threats analysis



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# Executive summary

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This study provides a market assessment and policy instrument analysis of the eco-innovation landscape in the Republic of Moldova, in order to prioritize sectors with the highest potential in terms of introduction of UNEP's eco-innovation approach in Small and Medium Enterprises. Eco-innovation is the development and application of a sustainable business model, shaped by a new business strategy that incorporates all partners across the value chain.

The first part of the study analyses the national context of eco-innovation in the Republic of Moldova. The first chapter describes the concept of eco-innovation and the context in which it has evolved in the Republic of Moldova, UNEP's vision in this field, the measures and programs that have been developed so far to support and promote the eco-innovation at national and international levels.

The study then goes on to analyse the legal framework for eco-innovation in the Republic of Moldova, which includes a review of the main initiatives for SME greening, environment and innovation policies based on what they offer and what are the key parts which need to be analyzed and improved. For a more comprehensive understanding, the analysis covers the legal basis for waste management, water supply and sanitation, research, development, and innovation and potential measures that could help and support the introduction of eco-innovation at national level. The analysis of the policy landscape also includes a review of the institutional Framework for eco-Innovation and the main public authorities and institutions of Moldova that can be involved in the eco-innovation process.

The study also provides an overview of national and international programs, which finance eco-innovation in the Republic of Moldova. This section offers a clear description of both governmental projects and programs which support and fund eco-innovation such as National Greening Program, and the international programs which finance Research and Innovation at European and international levels.

The second part of the study is the identification of sectors and markets with the highest eco-innovation potential in the Republic of Moldova, based on UNEP's eco-innovation manual. Based on the results of the conducted analysis the Agriculture and Industry sectors, particularly wine and apparel production markets, have been identified as the ones with the highest eco-innovation potential for SMEs in Moldova.

# Introduction

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This assessment was prepared in the framework of the European Environment Action (EU4Environment). In particular, the component of promoting ecological value chains and product innovation, implemented by UNEP, is addressed.

The aim behind EU4Environment is to help the six partner countries - Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine - keep their capital and increase the ecological well-being of the environment and people. In this context, the program provides support for environmental actions, presents and creates opportunities for greener growth, and establishes mechanisms for better management of risks and environmental impact. The action is funded by the European Union and implemented by five partner organizations: the Organisation for Economic Co-operation and Development (OECD), the United Nations Economic Commission for Europe, the United Nations Environment Program, the United Nations Industrial Development Organization and the World Bank on a budget of about EUR 20 mln. The implementation period of the Action is 2019-2024.

As economies become more open and liberal, and populations become ever more aware of the declining state of our environment, companies can no longer solely depend on strategies such as low-cost production to remain competitive. Consumers are becoming more and more conscious of where their goods come from, how they are produced, and are increasingly demanding sustainable products. Furthermore, the COVID-19 pandemic has shown us how vulnerable SMEs are to economic shocks.

UNEP's eco-innovation approach helps SMEs face these challenges by guiding them on business-model innovation - how to incorporate sustainability and circularity into every aspect of business models, operations, strategy, products, and processes to reduce the environmental and social impact of their business. Eco-innovation is the development and application of a sustainable business model, shaped by a new business strategy that incorporates all partners across the value chain. It entails a coordinated set of modifications or novel solutions to products (goods/services), processes, market approach and organizational structure, which leads to a company's enhanced performance and competitiveness. It results in resilient, agile, and competitive companies.

Transitioning to a circular business model brings environmental, social, and economic benefits to businesses. However, SMEs can only transition to circular business models as part of a wider economic shift that values circularity, with governments actively promoting this transition. To support this shift, Moldova

needs to address global environmental challenges and to shape the environment to favor sustainable and circular business models.

The analysis of international statistics shows that small and medium-sized enterprises (SMEs) generate about 64 percent of industrial pollution, while only 16 percent of them are engaged in environmental actions. In Republic of Moldova SMEs are also an important economic driver and source of innovation. 98.6 percent of enterprises in the Republic of Moldova are SMEs. From the total turnover resulted from economical activities, only 39.3 percent are generated by SMEs. Nevertheless, even though big enterprises have more profit according to statistics, the number of employees is lower in big enterprises (39,85 percent).<sup>1</sup>

Implementing eco-innovation within SMEs by mainstreaming sustainability in their business strategies and diversifying their business models will provide a few opportunities for the Republic of Moldova to fully benefit from the Deep and Comprehensive Free Trade Agreement (DCFTA), and to achieve the environmental objectives of the 2030 Agenda adopted by United Nations in 2015, including:

- ▶ Increasing productivity by streamlining production processes and efficient use of energy resources, raw materials, while at the same time creating a space for innovation and added value, as well as, allocation of resources according to production needs;
- ▶ Increasing the degree of investor confidence thanks to the ability of the Government to implement public policies to reduce the negative impact on the environment;
- ▶ Expanding access to new markets due to increased demand for more environment-friendly products;
- ▶ Ensuring economic growth thanks to the efficient use of available resources, and reducing the negative effects on the environment and health.

These opportunities have not yet been fully exploited, as the vision of economic greening has been outlined at the Government level relatively recently. This was done through integration of the principles of the green economy into the Environmental Strategy adopted in 2014 and by introducing these in 2016 in the chapter of SME Sector Development Strategy 2012 - 2020 on "Development of the green economy for Small and Medium Sized Enterprises".

In 2019, the Government of the Republic of Moldova reiterated its commitments and the importance of decoupling economic growth from environmental degradation, by integrating green economy measures into production processes of various branches of the national economy through the EU's EU4Environment Programme.

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<sup>1</sup> [https://statbank.statistica.md/PxWeb/pxweb/en/40 percent20Statistica percent20economica/40 percent20Statistica percent20economica\\_\\_24 percent20ANT\\_\\_ANT030/ANT030060.px/?rxid=9a62a0d7-86c4-45da-b7e4-fecc26003802&fbclid=IwAR2EunhN3VOC8HqUlllX4IPf9vQGecR-ZiINb-9aUBygfc62FkfkP\\_ESgOI](https://statbank.statistica.md/PxWeb/pxweb/en/40%20percent20Statistica%20economica/40%20percent20Statistica%20economica__24%20percent20ANT__ANT030/ANT030060.px/?rxid=9a62a0d7-86c4-45da-b7e4-fecc26003802&fbclid=IwAR2EunhN3VOC8HqUlllX4IPf9vQGecR-ZiINb-9aUBygfc62FkfkP_ESgOI)



Under the new EU-funded EU4Environment Programme, United Nations Environment Programme (UNEP) aims to strengthen resource and energy efficiency, mainstream sustainable public procurement, promote eco-innovation in small-to-medium enterprises and design citizen educational programmes for sustainability in partner countries, including the Republic of Moldova.



# Methodology

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When integrated into the core of a business, eco-innovation has the potential to bring significant benefits to any enterprise, and the environment in which it exists. By transforming a business-model into one centred on sustainability, businesses can experience increased market access, value creation and business growth (with an average annual growth of 15 percent from eco-innovative companies) along with increased operational resilience. The increased importance of sustainable business models is being driven by businesses' needs to access new markets, increase profitability, stay ahead of standards and regulation, and attract investment and increase productivity and technical capacity.<sup>2</sup>

**The primary objective** of this report is the identification of sectors that will be best suited for introduction of eco-innovation at the SME level in Moldova, and an analysis of enabling policies for eco-innovation in Moldova.

**The specific objectives include:**

- ▶ Market assessment to identify sectors and markets that are most promising for eco-innovation in Moldova (and should thus be targeted in the EU4Environment project interventions)
- ▶ Critical review of the Sustainable Consumption and Production (SCP) policy and the Science, Technology and Innovation (STI) policy framework to identify weaknesses, gaps and opportunities for eco-innovation,
- ▶ Identification of challenges for eco-innovation in the Republic of Moldova and providing recommendations for policies that help enhance eco-innovative practices.<sup>3</sup>

The Market analysis section of this study includes sector-level and market-level analyses with the goal of identifying sectors of the Moldovan economy which have the highest eco-innovation potential.

A review of the existing SCP policy and the STI policy framework, laws, regulations, and the strategies which are driving eco-innovation in Republic of Moldova was conducted to help identify opportunities, weaknesses and gaps, and to provide recommendations on policy provisions that can boost eco-innovative practices in key sectors of the economy.

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<sup>2</sup> <http://unep.ecoinnovation.org/wp-content/uploads/2021/02/UNEP-Business-Case-for-Eco-innovation.pdf>

<sup>3</sup> Challenges and recommendations will be further updated after the implementation of eco-innovation with SMEs in Moldova, integrating lessons learned and the SMEs' needs into the recommendations.

The methodological tools used in this study were the tools for statistical analysis based on primary data from the National Bureau of Statistics, official Information from OECD, Ourworldindata, and official information from the Government and the Ministries that are directly responsible for the implementation of green economies.



# Environmental context of the Republic of Moldova

The state of Moldova's environment has declined over the last decades. Natural capital depletion and ecosystem degradation were caused by overexploitation of natural resources, combined with poor resource efficiency and lack of adequate regulatory policies and incentive mechanisms for sustainable consumption and production. In response, the Government made sustainable development a central priority in national policies and programmes. One of the key government priorities is the preservation of soil quality, as stated in the Environmental Strategy of Moldova for 2014–2023.<sup>4</sup>

**In addition, the Environmental Strategy and the Government Activity Programme<sup>5</sup> include and encourage actions, such as:**

- ▶ Expansion of the protected areas;
- ▶ Use of biomass renewable energy;
- ▶ Use of solar and wind energy;
- ▶ Closed-cycle water devices;
- ▶ Applied research on clean technologies;
- ▶ Conduction of national awareness-raising campaigns on ecology and sustainable development.

The Republic of Moldova is one of the most vulnerable countries to climate change, even though it has a minor contribution to global greenhouse gas emissions. The annual losses caused by climate change amount to 2.13 of the GDP, and in the next decade up to 40 thousand deaths per year could be caused by extreme temperatures. All these interventions would contribute to the preservation and sustainable exploitation of the stock of natural capital, thereby creating enabling conditions for a transition to a green economy in Moldova.<sup>6</sup>

The National Environmental Strategy for 2014–2023 stresses that water availability is lower than 1,000 m<sup>3</sup> per capita per year and this hinders the economic development and affects the health and overall well-being of the Moldovan population. Key challenges that should be urgently addressed are point source water pollution (untreated water being discharged into rivers), low water efficiency across sectors and poor infrastructure development. Effort is also needed to improve the country's resilience to recurrent floods.<sup>7</sup>

4 [https://wedocs.unep.org/bitstream/handle/20.500.11822/9507/-Environmental\\_Strategy\\_for\\_the\\_years\\_2014-2023-2014Moldova\\_EnvironmentalStrategy\\_2014-202.pdf?sequence=3&percent3BisAllowed=](https://wedocs.unep.org/bitstream/handle/20.500.11822/9507/-Environmental_Strategy_for_the_years_2014-2023-2014Moldova_EnvironmentalStrategy_2014-202.pdf?sequence=3&percent3BisAllowed=)

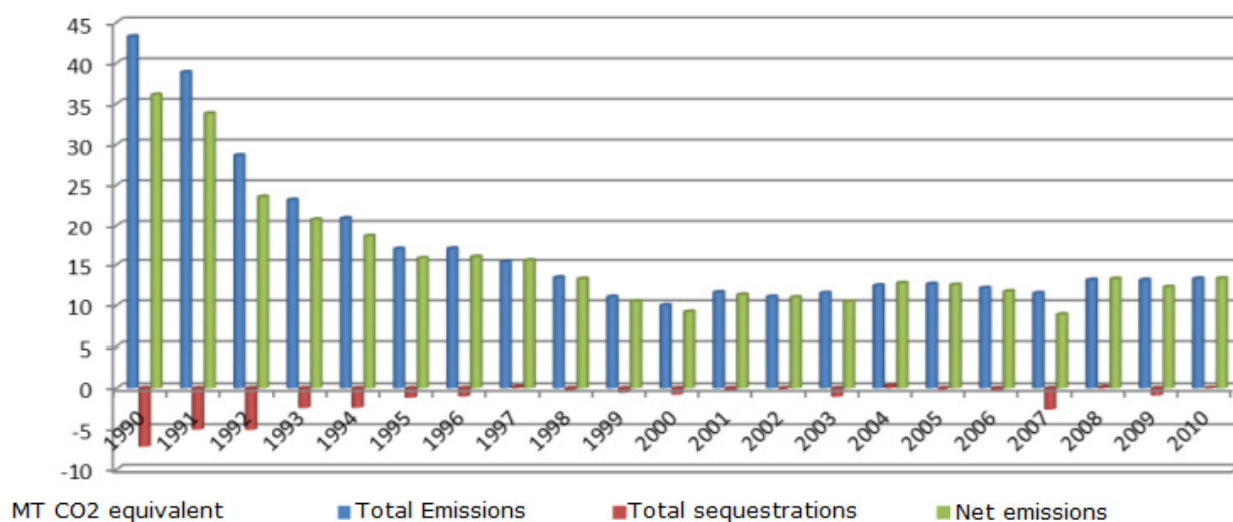
5 [https://gov.md/sites/default/files/document/attachments/programul\\_de\\_activitate\\_al\\_guvernului\\_moldova\\_vremurilor\\_bune.pdf](https://gov.md/sites/default/files/document/attachments/programul_de_activitate_al_guvernului_moldova_vremurilor_bune.pdf)

6 <http://www.mediu.gov.md/>

7 Ibid

At the same time, in recent years, the volume of greenhouse gas (GHG) and carbon dioxide emissions has increased slower than the economic growth, thus marking a relative decoupling. Republic of Moldova has reduced its greenhouse gas emissions by approximately 69 percent compared to 1990, exceeding its commitments under the Paris Agreement, included as intermediate targets for 2020, by 4 percent. Between 1990 and 2010, respective emissions were reduced by about 69.3 percent, from 43,26 megatons CO<sub>2</sub> equivalent in 1990 to 13,28 megatons CO<sub>2</sub> equivalent in 2010.<sup>8</sup>

**Figure 1. Emissions of GHG and carbon dioxide in Moldova between 1990 – 2010 (in percent)<sup>9</sup>**



Significant reduction of national greenhouse gas emissions is, first, a consequence of the economic crisis that followed the collapse of the Soviet Union, leading to changes also in the supply and consumption structure of energetic resources. Consumption of fossil fuels (mainly coal and oil) decreased substantially, while natural gas, which is less polluting, has become the main fuel used in heat and power plants, reaching a share of 40-50 percent of the primary energy supply.

According to MARDE estimates, the major reductions in GHG emissions were recorded in agriculture, exceeding the intermediate targets for 2020 by 26 percent, and the electricity and heat production sector, by 19 percent. However, there are significant increases in GHGs compared to pre-established targets for 2020, in the residential sector – by 49 percent, transport – by 37 percent, and industrial processes – by 39 percent.<sup>10</sup>

<sup>8</sup> <https://moldova.un.org/en/33141-moldova-intends-increase-its-commitment-greenhouse-gas-emissions-reduction-year-2030-70>

<sup>9</sup> <http://extwprlegs1.fao.org/docs/pdf/mol159048.pdf>

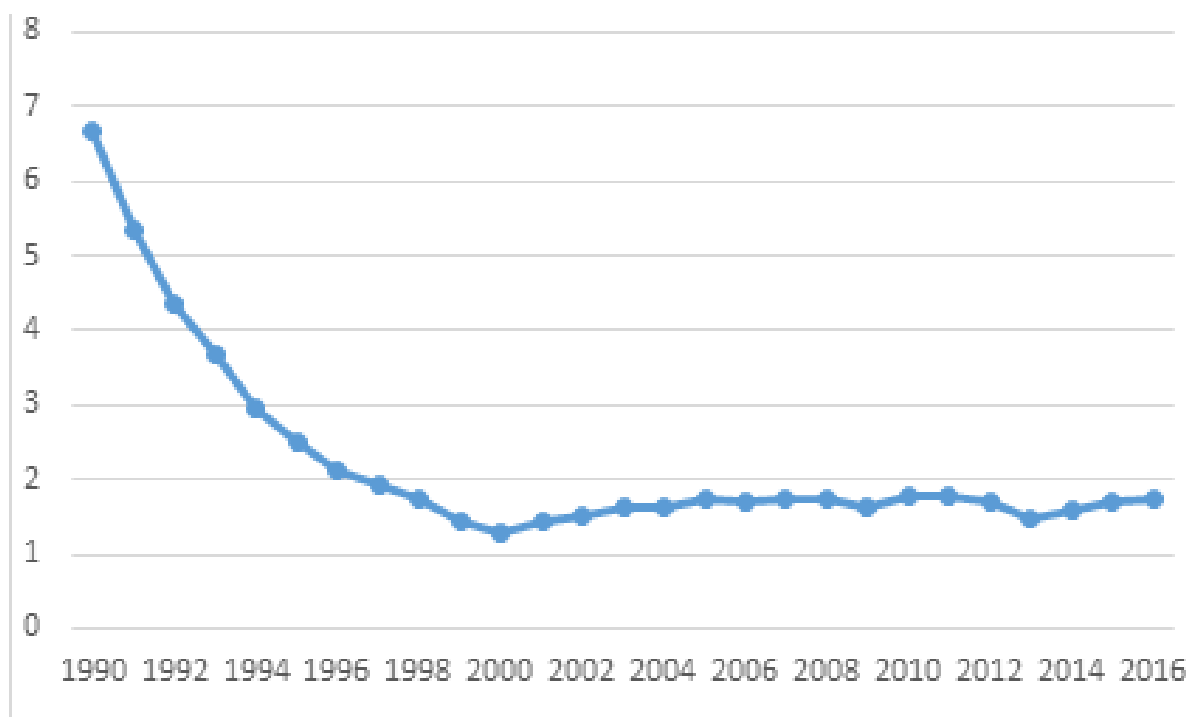
<sup>10</sup> <https://eu4climate.eu/2021/05/20/chisinau-to-glasgow-moldovas-roadmap-to-cop26/>



The low-emission development approach will enable the Republic of Moldova to achieve the Sustainable Development Goals and international climate commitments. The Paris Agreement stipulates that each country shall develop and submit National Determined Contributions (NDCs). The NDCs plan to mitigate GHG (greenhouse gas) emissions and adapt to climate change. In its updated NDC, Moldova has committed to unconditionally reduce GHG emissions by 70 percent by 2030 compared to 1990, to contribute to the implementation of the Paris Agreement, which provides for global warming to be kept well below 2 degrees Celsius compared to the pre-industrial period.<sup>11</sup>

Below is the breakdown of emissions – total greenhouse gases, plus carbon dioxide, methane and nitrous oxide individually per capita and by sector data available for the Republic of Moldova.

**Figure 2. Per capita greenhouse gas emissions in Moldova<sup>12</sup>**

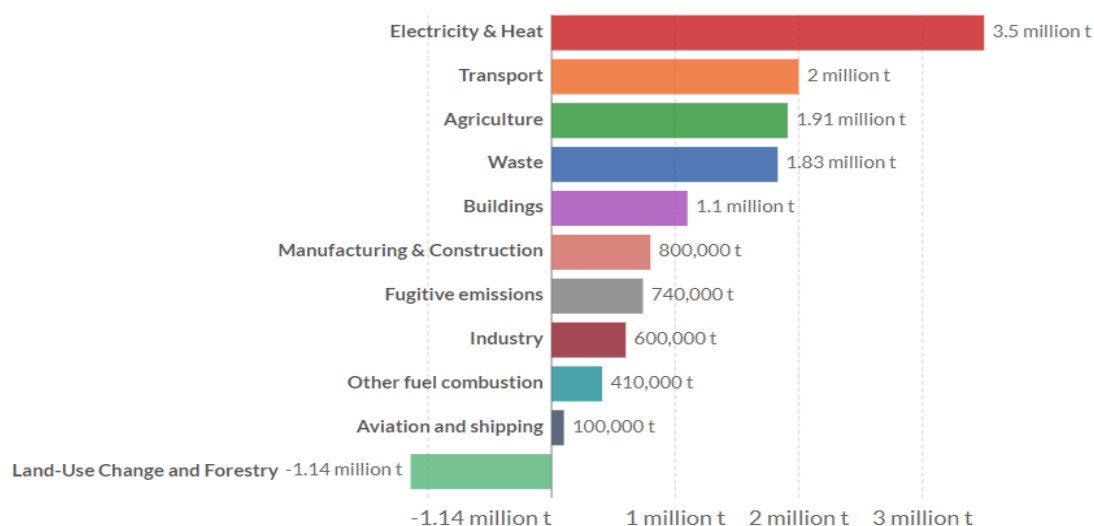


<sup>11</sup> Ibid

<sup>12</sup> [https://ourworldindata.org/co2/country/moldova?fbclid=IwAR3-GKqIbRW12oOPdua3fvH1altThLgYXdwguk\\_nkMghmzRae2wkyZ-xUpHk](https://ourworldindata.org/co2/country/moldova?fbclid=IwAR3-GKqIbRW12oOPdua3fvH1altThLgYXdwguk_nkMghmzRae2wkyZ-xUpHk)

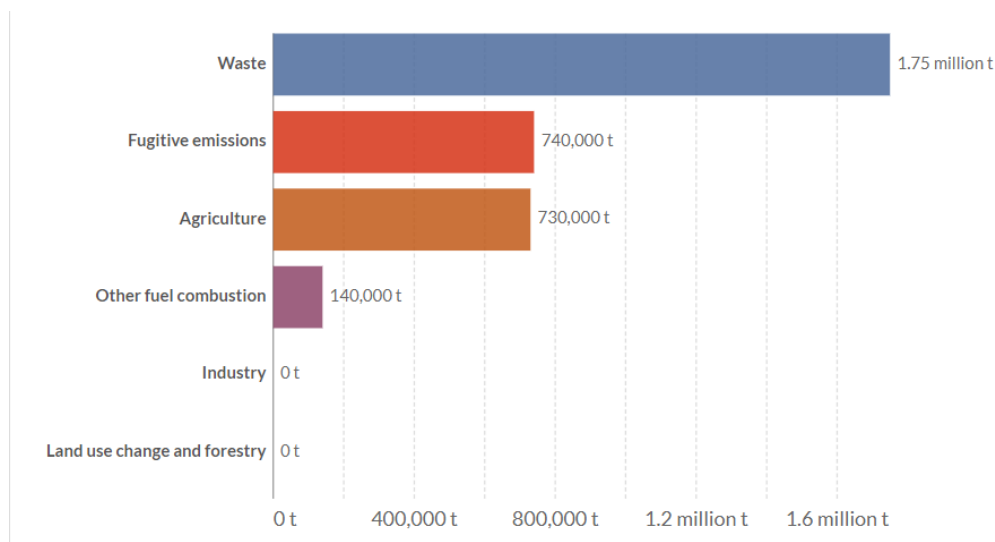
Greenhouse gas emissions – from carbon dioxide, methane, nitrous oxide, and F-gases – are summed up and measured in tons of carbon-dioxide equivalents (CO<sub>2</sub>e), where “equivalent” means “having the same warming effect as CO<sub>2</sub> over a period of 100 years”.

**Figure 3. Greenhouse gas emissions by sector, Moldova**<sup>13</sup>



Greenhouse gas emissions are measured in tons of carbon dioxide-equivalents (CO<sub>2</sub>e).

**Figure 4. Methane emissions by sector, Moldova**<sup>14</sup>

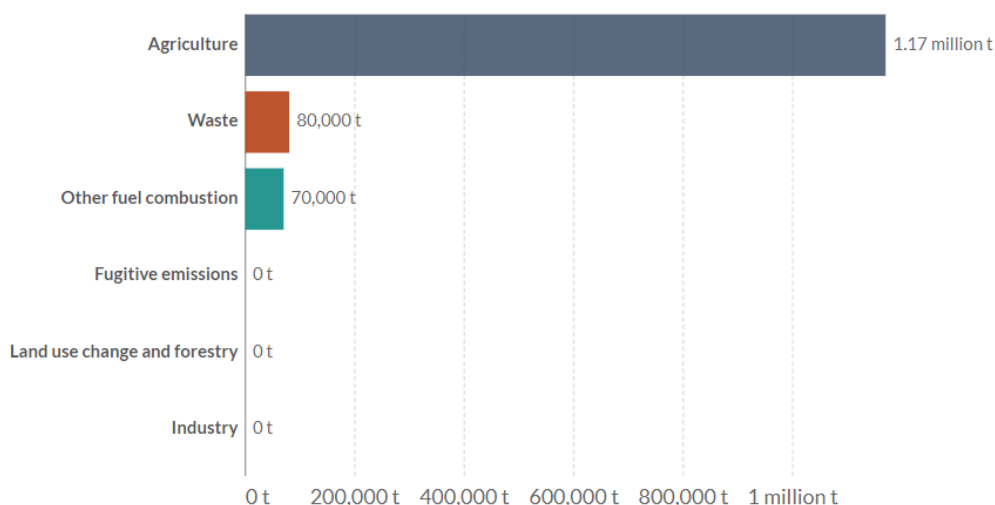


<sup>13</sup> Ibid

<sup>14</sup> Ibid

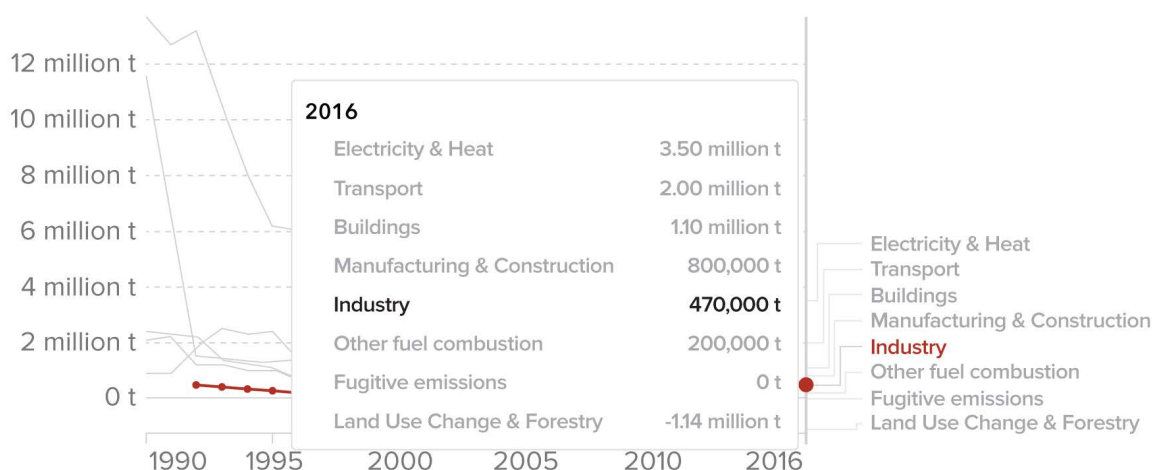
Methane (CH<sub>4</sub>) emissions are measured in tons of carbon dioxide equivalent (CO<sub>2</sub>eq) based on a 100-year global warming potential value. The chart shows where these emissions come from: the contribution of each sector.

**Figure 5. Nitrous oxide emissions by sector, Moldova<sup>15</sup>**



The chart shows where these emissions come from: the contribution of each sector. Nitrous oxide (N<sub>2</sub>O) is a strong greenhouse gas, that is mainly produced from agricultural activities (e.g., from the use of synthetic and organic fertilizers to grow crops).

**Figure 6. CO<sub>2</sub> emissions by sector, Moldova<sup>16</sup>**



Carbon dioxide (CO<sub>2</sub>) from the combustion of fossil fuels and deforestation is a major contributor to greenhouse gases. CO<sub>2</sub> makes up the largest share of greenhouse gases and thus is a key factor in countries' ability to mitigate climate change. National emissions are also affected by changes in global demand and supply patterns with increasing trade flows and the displacement of car-

<sup>15</sup> Ibid

<sup>16</sup> Ibid

bon-intensive production abroad. Reductions in domestic emissions can thus be partially or wholly offset elsewhere in the world.

Thus, for enabling the access to finance action on identified adaptation priorities **NDC document recommends taking the following actions which affect SMEs:**

- ▶ Promote country-wide dissemination of information on available funding opportunities at the national and international levels on climate resilience and adaptation in various climate-related areas.
- ▶ CPAs, international donors to direct the financial flows for their availability to local level actors (LPAs, NGOs, SMEs, women associations) to identify, prioritize, implement, and monitor climate adaptation measures.
- ▶ Incorporate CCA priorities into funding schemes provided by the National Ecological Fund, the National Fund for Regional Development, the Energy Efficiency Fund, the National Fund for the Development of Agriculture and Rural Environment.

**For private sector engagement in building climate change resilience and for Supporting and promoting the private sector capacity building for climate action,** the following activities are recommended:

- ▶ Leading agencies in climate change to support climate-related information sharing, research and development, and skill-building through demonstrations and training about adaptation options for the private sector, particularly SMEs.
- ▶ Capacity building on the use of climate-related information and tools to incorporate risks in planning, budgeting, and implementation of measures to be delivered for engaging SMEs in adaptation.
- ▶ Support the development and delivery of business-relevant climate information and risk analysis. Improve the delivery of information about the relevant risks and uncertainties (by geography and sector) to the planning and decision-making processes of SMEs, taking gender aspects into consideration.
- ▶ Promote regulatory and fiscal incentives that can stimulate risk reduction among private sector actors. The Government should consider incentives and compliance measures to motivate SMEs to invest in climate resilience and business development.
- ▶ Increase availability and knowledge of cost-effective adaptation options. Communicate this information and knowledge to local businesses.

- ▶ Provide support to the private sector to develop technical skills and expertise for adopting new business processes, developing new products and services, implementing new technologies for increased climate resilience.
- ▶ Support the private sector to be more active in safeguarding the agriculture supply chain against climate impacts, transport, energy and city infrastructure, rural communities.
- ▶ Implement pilot and demo projects that demonstrate business value and stimulate market demand, development of market linkages across the value chain, and scaleup through larger investments.<sup>17</sup>



<sup>17</sup> [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Republic percent20of percent20Moldova percent20First/MD\\_Updated\\_NDC\\_final\\_version\\_EN.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Republic%20of%20Moldova%20First/MD_Updated_NDC_final_version_EN.pdf)



# Economic performance and market analysis

Moldova's economic freedom score in 2019 was 59.1, making its economy the 97<sup>th</sup> in the Index, a 0.7 point increase in comparison with 2018, with improvements in judicial effectiveness, government spending, and fiscal health outpacing a decline in labor freedom, though it is still below the regional and world averages.

In 2020, Moldova's GDP decreased by 7.0 percent<sup>18</sup> compared to 2019. According to statistic data, in 2020, the gross domestic product (GDP) totaled 206,352<sup>19</sup> billion MDL current market prices.

Moldova's economic performance has been relatively strong over the past few years, but repeatedly hindered by the unfavorable global situation or poor climatic conditions. According to the IMF's April 2021 forecast, growth is expected to recover in 2021, estimated at 4.5 percent of GDP, and stabilized in 2022 at 4 percent. Uncertainties around the evolution of the pandemic are expected to keep the economy below potential<sup>20</sup>.

Moldova's unemployment rate increased exponentially to 8 percent in 2020, from 5.1 percent in 2019, due to the negative economic impact of the COVID-19 pandemic. The IMF estimates that the rate will decrease in both 2021 (by 5.5 percent) and 2022 (by 3 percent). The jobless rate is higher in urban areas than rural areas.

**Table 1. Moldova's economic performance<sup>21</sup>**

Main Indicators	2018	2019	2020	2021 (e)	2022 (e)
GDP (billions USD)	11.46	11.97	11.70	12.00	12.58
GDP (Constant Prices, Annual percent Change)	4.0	3.6	-7.5	4.5	4.0
GDP per Capita (USD)	4	4	4	4	4
General Government Gross Debt (in percent of GDP)	31.6	28.3	35.3	39.5	40.1
Inflation Rate (percent)	3.1	4.8	3.8	3.0	5.0
Unemployment Rate (percent of the Labour Force)	3.0	5.1	8.0	5.5	3.0
Current Account (billions USD)	-1.21	-1.12	-0.75	-0.84	-1.02
Current Account (in percent of GDP)	-10.7	-9.4	-6.5	-7.0	-8.1

<sup>18</sup> Ibid

<sup>19</sup> Ibid

<sup>20</sup> <https://www.imf.org/en/Countries/MDA>

<sup>21</sup> Source: IMF – World Economic Outlook Database, April 2021

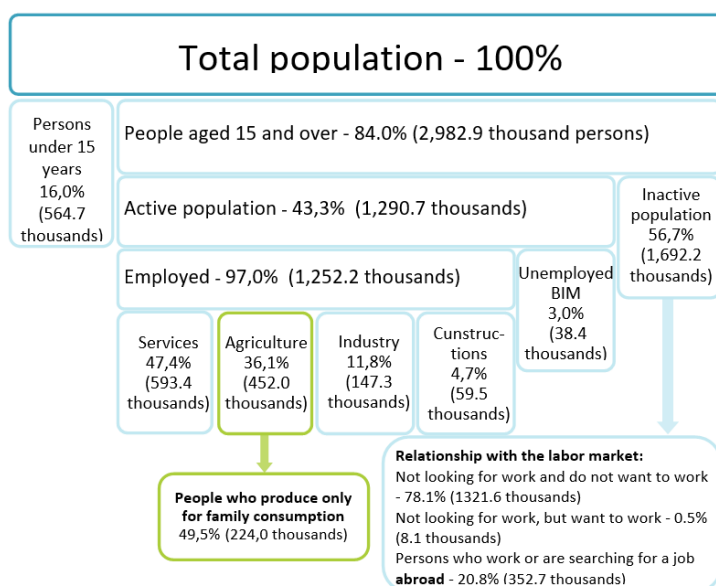
## GDP growth over the last 3 years was driven by the following economic activities:

- ▶ Wholesale and retail trade; maintenance and repair of motor vehicles and motor-cycles; transportation and storage; (+ 1.2 percent), with a share of 21.0 percent in GDP formation and a 5.9 percent increase in Gross Value Added (GVA);
- ▶ Construction (+ 1.1 percent), with a smaller share of GDP formation (7.9 percent), but which recorded a significant increase in GVA (by 16.0 percent);
- ▶ Mining; manufacturing industry; production and supply of electricity and heat, gas, hot water and air conditioning; water distribution; sanitation, waste management, remediation activities (+ 0.7 percent), with a 15.1 percent share of GDP formation and a 4.3 percent increase in VAB;
- ▶ Agriculture, forestry and fishing (+ 0.2 percent), with a 10.2 percent share in GDP formation and a 1.9 percent increase in VAB;
- ▶ Information and communications (+ 0.2 percent), with a 4.8 percent share of GDP formation and an increase in VAB by 4.3 percent.

## Labor market situation

Moldova is still the state with one of the lowest employment rates in Europe. In 2020, the employment rate in Moldova was about 38,8 percent<sup>22</sup>, compared with the EU average of around 70 percent. Agriculture is still an important economic activity, especially in rural areas and almost the only activity carried out by people aged above 65. The structure of employment is relatively static<sup>23</sup>.

**Figure 7. Labor market situation in Moldova, 2020**



22 [https://statbank.statistica.md/PxWeb/pxweb/en/30 percent20Statistica percent20sociala/30 percent20Statistica percent20sociala\\_\\_03 percent20FM\\_\\_03 percent20MUN2019\\_\\_MUN010/MUN110200.px/chart/chartViewColumn/?rxid=2345d98a-890b-4459-bb1f-9b565f99b3b9](https://statbank.statistica.md/PxWeb/pxweb/en/30 percent20Statistica percent20sociala/30 percent20Statistica percent20sociala__03 percent20FM__03 percent20MUN2019__MUN010/MUN110200.px/chart/chartViewColumn/?rxid=2345d98a-890b-4459-bb1f-9b565f99b3b9)

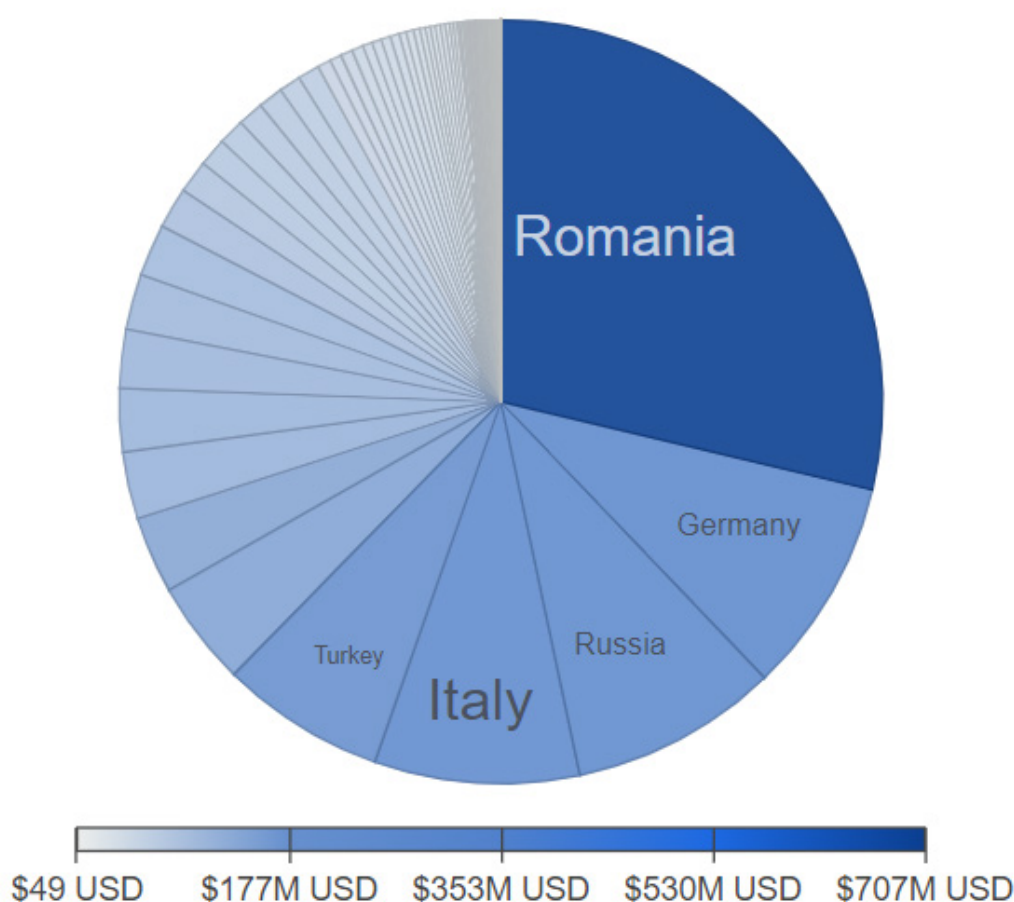
23 NATIONAL BUREAU OF STATISTICS OF THE REPUBLIC OF MOLDOVA

## Position of the Republic of Moldova within the European and global economies

The increase in trade liberalization in the Republic of Moldova has reduced barriers to international trade. Moldova became a member of the WTO (World Trade Organization) in 2001 and, as a member, it does not apply quantitative trade prohibitions or restrictions that do not comply with WTO provisions.

The combined value of exports and imports is equal to 113.2 percent of GDP. The average applied tariff rate is 3.5 percent. As of 2020, according to the WTO, Moldova had eight non-tariff measures in force. In general, foreign and domestic investors are treated equally under the law. Weaker growth among key trade partners and potential changes in international trade and migration could undermine exports and remittance flows.

**Figure 8.** Moldova Exports by Country in U.S. dollars, according to the United Nations COMTRADE database on international trade, 2020<sup>24</sup>.



<sup>24</sup> <https://comtrade.tradingeconomics.com/comtrade/share?r=mda&c=0000&v=piechartmarkets&t=2&title=>

A SWOT analysis shows the strengths, weaknesses, opportunities and threats of the Republic of Moldova from an economic perspective.

**Figure 9. SWOT analysis of the competitive economic advantages of the Republic of Moldova compared to other countries**

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> <li>▶ Agricultural potential (wine, fruit, vegetables, sunflowers, wheat);</li> <li>▶ Association and free trade agreements with the EU</li> <li>▶ Small open economy attracts foreign investment;</li> <li>▶ Relatively inexpensive labor force;</li> <li>▶ Managed floating currency regime.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Agricultural potential (wine, fruit, vegetables, sunflowers, wheat);</li> <li>▶ Association and free trade agreements with the EU</li> <li>▶ Small open economy attracts foreign investment;</li> <li>▶ Relatively inexpensive labor force;</li> <li>▶ Managed floating currency regime.</li> </ul>
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> <li>▶ Agricultural potential (wine, fruit, vegetables, sunflowers, wheat);</li> <li>▶ Association and free trade agreements with the EU</li> <li>▶ Small open economy attracts foreign investment;</li> <li>▶ Relatively inexpensive labor force;</li> <li>▶ Managed floating currency regime.</li> </ul>	<ul style="list-style-type: none"> <li>▶ Agricultural potential (wine, fruit, vegetables, sunflowers, wheat);</li> <li>▶ Association and free trade agreements with the EU</li> <li>▶ Small open economy attracts foreign investment;</li> <li>▶ Relatively inexpensive labor force;</li> <li>▶ Managed floating currency regime.</li> </ul>

## Main Sectors in the Republic of Moldova

The Republic of Moldova is fully committed to the Paris Agreement's objectives on:

- A.** Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the increase to 1.5 °C;
- B.** Increasing the ability to adapt to the adverse impacts of climate change.

### The adaptation priorities by sectors and measures according to Updated Nationally Determined Contribution of the Republic of Moldova are defined as follows:

**Agriculture:** sustainable soil management (conservation, precision, organic agriculture, etc.); promoting efficient irrigation systems; promoting diversity and resilience of agricultural crops; increased food security; promoting integrated food, water, and energy systems in a smart and climate change resilient agriculture.

**Water Resources:** increasing supply and efficient management of water demand, taking into account social and gender issues; management of natural disasters (floods, droughts); effective water treatment and reuse.

**Forestry:** afforestation/reforestation, promoting the ecosystem approach in adaptation of forests to climate change; promoting agroforestry and silvo-pastoral practices; sustainable management of forests and ecosystem services; organic matter restoration in degraded pastures.

**Human Health:** improving health services for vulnerable groups of the population by developing the infrastructure of hospitals to become “greener” to overcome the impact of extreme weather events (heat and cold waves, floods).

**Transport:** resilient urban infrastructure to reduce exposure to climate risks; increasing climate resilience of transport infrastructure (roads, bridges, viaducts, railways, tracks); adoption of climate resilience codes and standards; access of the rural population to a climate-resilient road system that takes into account social, age and gender issues.

**Energy:** promoting water-energy-land interaction with renewable energy sources; climate protection of the energy system infrastructure; ensure operation of energy infrastructure in any climatic conditions.

**Inter-Sectoral Priorities:** Improving resilience of the Republic Moldova's communities to adverse climate change effects, taking into account social and gender issues.<sup>25</sup>

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<sup>25</sup> [https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Republic percent20of percent20Moldova percent20First/MD\\_Updated\\_NDC\\_final\\_version\\_EN.pdf](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Republic%20of%20Moldova%20First/MD_Updated_NDC_final_version_EN.pdf)



The Republic of Moldova is one of the most vulnerable countries to climate change, even though it has a minor contribution to global greenhouse gas emissions. The annual losses caused by climate change amount to 2.13 percent of the GDP, and in the next decade up to 40 thousand deaths per year could be caused by extreme temperatures<sup>26</sup>.

The agriculture sector has an important role in Moldova's economy, covering a moderate climate and productive farmland. It represents 9.51 percent<sup>27</sup> (in 2020) of the GDP and employs nearly 77.8 percent<sup>28</sup> of the workforce. Of the agriculture workforce, around 25 percent are directly employed by agri-enterprises, while the other three-quarters are classified as self-employed. Moldova's main products are vegetables, fruits, grapes, grain, sugar beets, sunflower seeds, tobacco, beef, milk and wine<sup>29</sup>.

Industry represents 23.28 percent<sup>30</sup> (in 2020) of the GDP, employing 17.6 percent<sup>31</sup> of the active population. Traditionally, the country's main industries have been manufacturing, agriculture and food processing, textile, apparel and footwear. This sector faces a double challenge: the loss of heavy industry since the self-proclaimed independence of Transnistria, and the country's economic dependence on imported energy (due to a lack of energy resources on its territory).

The workflow in the utilities sector (mainly, electricity and natural gas supply) decreased during the last years, whereas the core manufacturing sector performed significantly above the average (the manufacturing industry is estimated to contribute 10.8 percent of the country's GDP – World Bank). As a result of COVID-19 pandemic, the World Bank estimates that almost one fifth of businesses may have succumbed to the economic shock caused by the required shutdown.<sup>32</sup>

The GDP structure is progressively turning towards services, to the detriment of industry and agriculture. The services sector now represents nearly 54.24 percent<sup>33</sup> (in 2020) of the GDP, employing just 4.2 percent<sup>34</sup> of the workforce. It is driven by the insurance, legal consultancy and telecommunications sectors. The ICT sector is also growing<sup>35</sup>.

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26 <https://eu4climate.eu/2021/05/20/chisinau-to-glasgow-moldovas-roadmap-to-cop26/>

27 <https://www.statista.com/statistics/513314/moldova-gdp-distribution-across-economic-sectors/>

28 <https://genderpulse.md/en/economic-empowerment/labor-force-employment/structure-of-employed-population-by-economic-sectors>

29 <http://www.fao.org/countryprofiles/index/en/?iso3=MDA>

30 <https://www.statista.com/statistics/513314/moldova-gdp-distribution-across-economic-sectors/>

31 <https://genderpulse.md/en/economic-empowerment/labor-force-employment/structure-of-employed-population-by-economic-sectors>

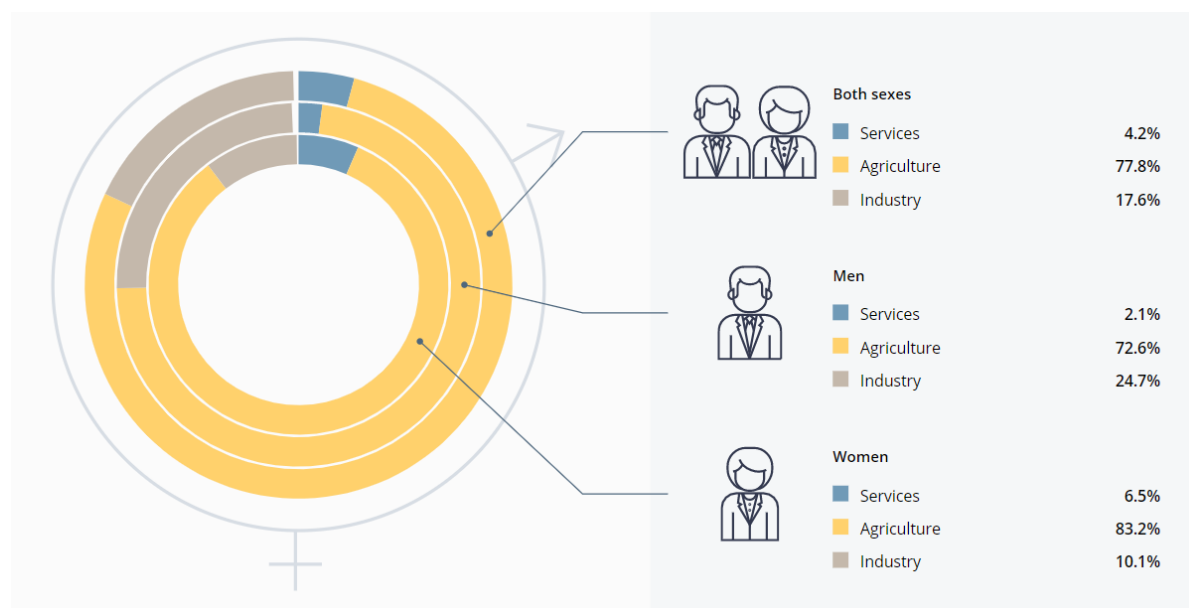
32 <https://www.worldbank.org/ro/country/moldova>

33 <https://www.statista.com/statistics/513314/moldova-gdp-distribution-across-economic-sectors/>

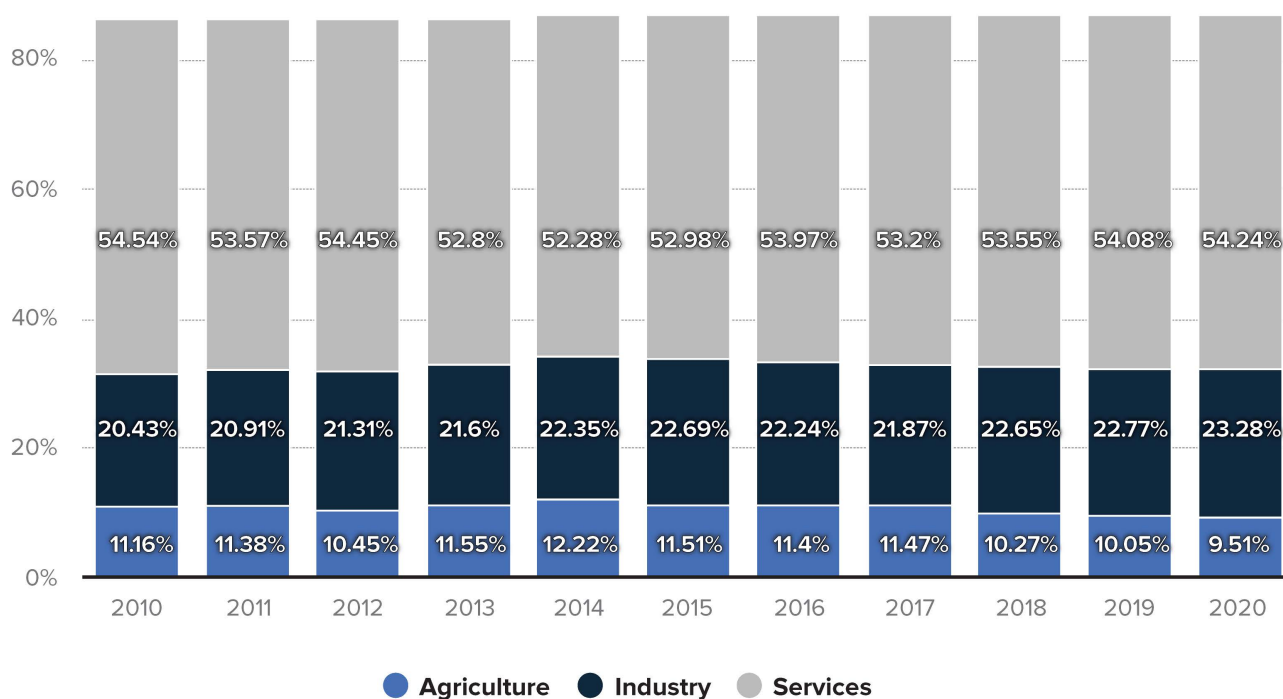
34 <https://genderpulse.md/en/economic-empowerment/labor-force-employment/structure-of-employed-population-by-economic-sectors>

35 [https://mei.gov.md/sites/default/files/document/attachments/nota\\_proгноza\\_macroeconomica.pdf](https://mei.gov.md/sites/default/files/document/attachments/nota_proгноza_macroeconomica.pdf)

**Figure 10. Moldova: Distribution of gross domestic product (GDP) across economic sectors from 2010 to 2020<sup>36</sup>.**



**Figure 11. Structure of employed population by economic sectors<sup>37</sup>.**



<sup>36</sup> <https://www.statista.com/statistics/513314/moldova-gdp-distribution-across-economic-sectors/>

<sup>37</sup> Structure of employed population by economic sectors (genderpulse.md)

It is an unquestionable fact that, research and innovation are the engine of economic growth and the generator of solutions to overcome the challenges that society is coping with. The level of development of these areas directly affects the economic competitiveness of a country and the level of the population's resistance to the impacts of changes experienced by humanity. Nevertheless, in the Republic of Moldova, constant vulnerability of the scientific activities' relevance is related to the weak connection between the scientific community and the business environment.

The impact of the lack of dialogue between representatives of the two spheres at the national level is that business environment implements deficient results of practical research, and incorporates new technologies (including from outside). According to the "2015-2016 Innovation Activity of Enterprises in the Republic of Moldova" data taken from the National Bureau of Statistics, only 13 percent of the innovative enterprises indicated the universities and research institutions as cooperation partners.

The analysis the National Program in the fields of research and innovation for the years 2020-2023<sup>38</sup> and the "State Program" competition shows that only projects for the following strategic priorities will be funded:

- ▶ **Health,**
- ▶ **Sustainable agriculture,**
- ▶ **Food security and food safety,**
- ▶ **Environment and climate change;**
- ▶ **Social challenges and Economic competitiveness and innovative technologies.**

Of course, Innovations with impact on biological and non-biological factors, on the environment and society, safe and clean technologies with development of new sources of green effective energy, are part of strategic priorities.

**Table 2. Main priorities within the National Program in the fields of research and innovation for 2020-2023<sup>39</sup>**

Strategic priorities	Strategic directions
<b>I. Healthcare</b>	Non-communicable diseases – epidemiological monitoring, prevention, diagnosis and treatment
	Epidemiological monitoring – control and response measures, diagnosing and treating communicable diseases
	Pharmaceuticals and nutraceuticals

38 Programul național în domeniile cercetării și inovării pentru anii 2020-2023, Hotărârea Guvernului nr.381/2019, [accessed 22.10.2019]. available at: <https://ancd.gov.md/ro/content/legisla percentC8 percent9Bie>

39 [https://ancd.gov.md/sites/default/files/document/attachments/programulpercent20national percent20cercetare percent20inova-re\\_engleza.pdf](https://ancd.gov.md/sites/default/files/document/attachments/programulpercent20national percent20cercetare percent20inova-re_engleza.pdf)

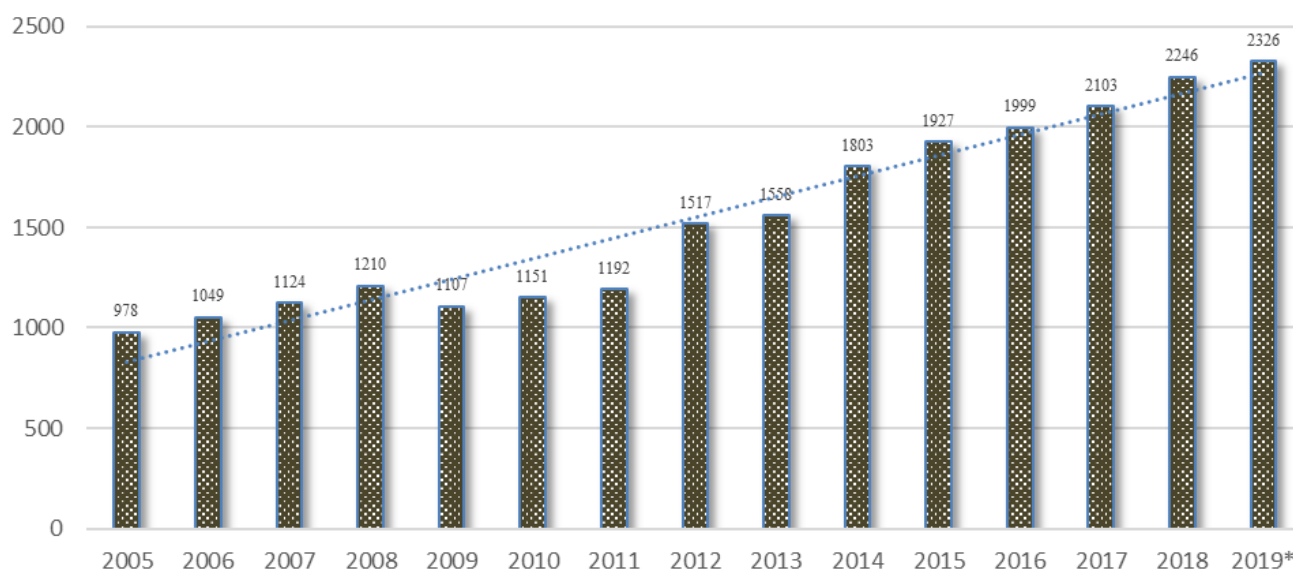
Strategic priorities	Strategic directions
<b>II. Sustainable Agriculture, Food Security and Safety</b>	Food security and safety
	Varieties and hybrids of high-performance agricultural, technical and forage crops
	Sustainable management of agricultural ecosystems
	New technologies for processing agricultural raw materials. Agri-food biotechnologies
<b>III. Environment and climate change</b>	The impact of biological and non-biological factors on the environment and society
	Safe, clean and effective energy
	Waste, plastics and pollutants
	Ecological security
	Conservation of biodiversity
<b>IV. Social challenges</b>	Social, educational and cultural innovations for integration and adaptation
	Migration, diaspora and socio-demographic changes
	Tangible and intangible heritage
	Tapping into human and social capital
<b>V. Economic Competitiveness and innovative technologies</b>	Nanotechnologies
	Information technology and digital development
	Innovative materials, technologies and products

In 2019, the expenditures on R&D amounted 498,0 million lei (approx. 25.5 million EUR), representing 0,24 percent of the GDP of Moldova. 97.3 percent of this amount represents operational costs, and capital investments are only 2.7 percent. 88.5 percent of total expenditure occurs in state-owned organizations. In comparison with 2018, R&D expenditures have grown both in state-owned organizations (+7.6 million MDL or +1.8 percent) and private companies (+5.9 million MDL or +11.5 percent).<sup>40</sup>



40 [https://www.unido.org/sites/default/files/files/2021-02/Report\\_on\\_Innovation\\_Ecosystem\\_of\\_Moldova.pdf](https://www.unido.org/sites/default/files/files/2021-02/Report_on_Innovation_Ecosystem_of_Moldova.pdf)

**Figure 12.** Expenditures on R&D, in 2005-2019 of global expenditures for total research and development and in regional division (billion USD)<sup>41</sup>



**Table 3.** Dynamics of global research and development expenditures for the period 2015-2019 divided by leading countries, billion USD

Country	2015	2016	2017	2018	2019*
SUA	496,8	521,8	537,6	565,8	581
China	372,8	424,8	444,8	485,5	519,2
Japan	164,6	185,9	185,5	191,5	193,2
Germany	112,2	114,6	114,8	120,8	123,2
India	66,5	73,6	76,9	86,2	94,1

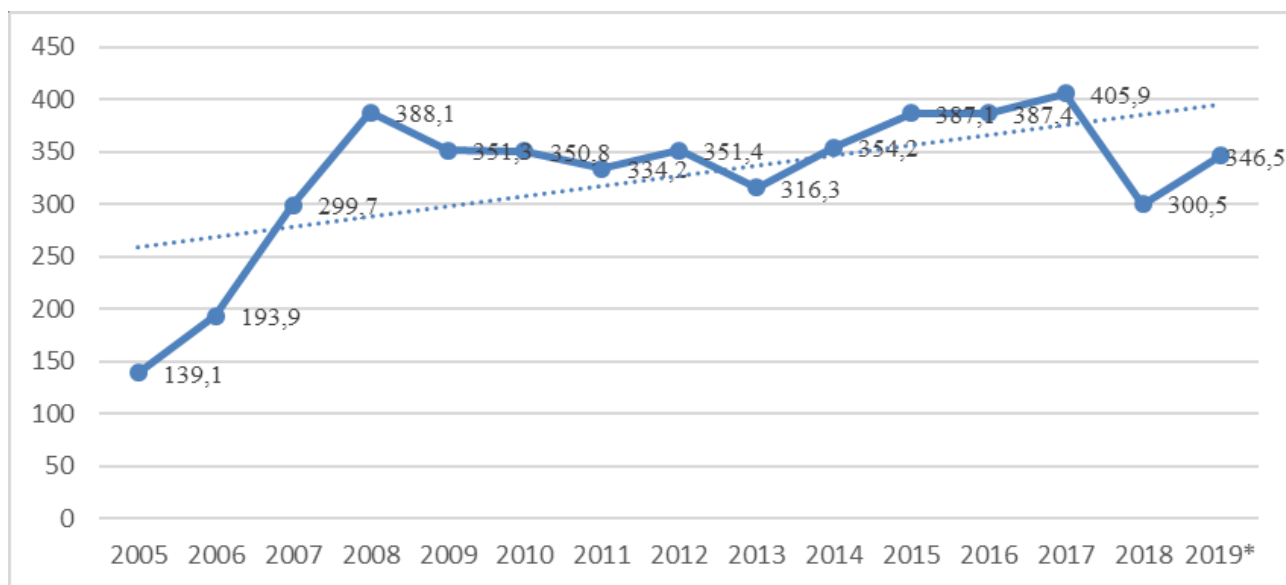
Budgetary expenditures for research and development in GDP in the leading countries for investment in research and development, in 2019, constituted on average 2.3 percent and registered an increasing trend compared to 2009 (on average  $\approx 1.9$  percent), with 0.4 percent or  $\approx 1.2$  times. Romania is at the same level of 0.5 percent during the analyzed period. However, the Republic of Moldova has the lowest quota compared to other states of the European Union and neighboring, which is only 0.3 percent of GDP, down from 2009, by 0.2 percent ( $\approx 7$  times).<sup>42</sup>

<sup>41</sup> [https://csei.ase.md/wp/files/issue16/WP\\_Issue16\\_86-93\\_RAI.pdf](https://csei.ase.md/wp/files/issue16/WP_Issue16_86-93_RAI.pdf)

<sup>42</sup> IBID



**Figure 13. Moldovan Budgetary expenditures for research and development 2005-2019**



For the period 2021-2023, the trend of the volume of budget allocations for financing scientific activities and maintaining the infrastructure of research institutions will be constant, and the budgetary costs for the research sector are estimated at  $\approx 368$  million MDL annually.<sup>43</sup>

The energy sector is one the leaders in terms of introduction of innovations. Various strategic documents show that by 2021 the final energy consumption in all sectors of the national economy will be reduced by 20 percent, the losses in the electricity networks will be reduced by 11 percent, the share of electricity from renewable sources will constitute 10 percent, and greenhouse gas emissions will be reduced by at least 25 percent, and by 64 percent by 2030.<sup>44</sup>

<sup>43</sup> bid

<sup>44</sup> Programul național pentru eficiență energetică 2011-2020, Hotărârea Guvernului nr. 833 din 10.11.2011, available at: <http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=340940>

# The analysis of innovative SMEs in the Republic of Moldova based on statistical data

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Today, when businesses, particularly SMEs, are marked by fierce market competition, competitiveness depends more than ever on their ability to develop, implement and commercialize innovative solutions constantly, including the eco-innovations.

In order to remain competitive on a long-term basis, SMEs need to introduce new products/services in the market, permanently improving the quality of existing ones by applying new production technologies, etc. Knowing innovative business activities is very important for the economic measurement of innovation, for assessing its potential, efficiency and impact.

Overall, the small and medium-sized enterprises are more innovative than large enterprises, and the share of innovative SMEs in total innovative enterprises in the Republic of Moldova in 2016 constituted 90 percent.<sup>45</sup> And though the share of SMEs in the total innovative enterprises is significant, the share of innovative SMEs in the total SMEs in the Republic of Moldova is small (1.2 percent).

Small businesses are more innovative than medium-sized businesses. Small-scale innovative SMEs (employing 10-49 employees) had a share of 68.6 percent in the total of innovative SMEs, which is 2.2 times higher than the share of innovative medium-sized enterprises (31.4 percent). The same is true for both Industry and Services sectors.<sup>46</sup>

There are more innovative SMEs in Industry than in Services sector. Innovative SMEs in the Industry sector accounted for 52.4 percent of all innovative SMEs, 1.1 times higher than the share of innovative SMEs in Services (47.6 percent).

The decreased results of the innovative SMEs reflect the need to further develop a stimulating economic and legislative framework, thus also potentially contributing to development of favorable conditions for the introduction of eco-innovations.<sup>47</sup>

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<sup>45</sup> <https://statistica.gov.md/newsview.php?l=ro&id=5882&idc=168>

<sup>46</sup> Ibid

<sup>47</sup> Ibid

The institutional framework for sustainable development and greening of the economy includes the Ministry of Environment, State Chancellery, Ministry of Economy, Ministry of Agriculture and Food Industry, Ministry of Transport and Road Infrastructure, Ministry of Finance, National Agency for Energy Regulation, National Environment Fund, Agency for Energy Efficiency, Agency for Interventions and Payments in Agriculture, Academy of Sciences, non-governmental organizations.<sup>48</sup>

A substantial contribution is provided by the development partners of the Republic of Moldova, including the United Nations Development Program, European Union, European Bank for Reconstruction and Development (EBRD), Global Environment Facility (GEF), USAID, Millennium Challenge Fund, Organization for Economic Co-operation and Development.<sup>49</sup>



48 <http://green.gov.md/pageview.php?l=ro&idc=35&t=/Cadrul-institutional/Informatii-generale&>

49 Ibid

# Legal framework for Eco-innovation in the Republic of Moldova

Greening SMEs and eco-innovation will provide the Republic of Moldova with a range of opportunities to take advantage of its Deep and Comprehensive Free Trade Area Agreement (DCFTA) with the EU, as well as to achieve goals under **the 2030 Agenda for Sustainable Development**<sup>50</sup>. Elements of SMEs greening can be found in Moldova's Environmental Strategy for 2014-2023<sup>51</sup>; the Strategy for Low Emission Development of the Republic of Moldova until 2030<sup>52</sup>; the National Energy Efficiency Programme for 2011-2020<sup>53</sup>; the Energy Strategy of the Republic of Moldova until 2030<sup>54</sup>; the Strategy for waste management in the Republic of Moldova for 2013-2027<sup>55</sup> and the country's Strategy for water supply and sanitation (2014-2028)<sup>56</sup>. Acest fapt pune în evidență, de asemenea, un peisaj politic favorabil pentru stimularea eco-inovării în rândul întreprinderilor din Moldova.

## Legal framework for SME greening

Recently, the vision of economic greening has been outlined relatively at the government level, by integrating the principles of the "green" economy in the **Environmental Strategy for 2014-2023 (Government Decision no. 301/2014)**<sup>57</sup>, and in 2016 in the **Sector Development Strategy for small and medium enterprises for the years 2012-2020 (Government Decision no. 685/2012)**<sup>58</sup> there was included the chapter "Development of the green economy for Small and Medium Enterprises", focusing on environmental protection, sustainable development, the development of the "green" economy and the integration of the principles of adaptation to climate change in all sectors of the national economy.

**In 2018, the Program for promoting the "green" economy in the Republic of Moldova for the years 2018-2020 and the Action Plan for its implementation**

50 [https://statistica.gov.md/public/files/SDG/docs/Targets\\_ONU\\_EN.pdf](https://statistica.gov.md/public/files/SDG/docs/Targets_ONU_EN.pdf)

51 <http://green.gov.md/pageview.php?l=en&idc=41&t=/Regulatory-framework>

52 [https://www.madrm.gov.md/sites/default/files/Documente percent20atasate percent20Advance percent20Pagines/Conceptul percent20Programului percent20de percent20dezvoltare percent20cu percent20emisii percent20reduce.pdf](https://www.madrm.gov.md/sites/default/files/Documente%20atasate%20Advance%20Pagines/Conceptul%20Programului%20de%20dezvoltare%20cu%20emisii%20reduce.pdf)

53 <https://www.iea.org/policies/2364-national-energy-efficiency-program-2011-2020>

54 [https://www.serviciilocale.md/public/files/Energy\\_Strategy\\_2030\\_Final.pdf](https://www.serviciilocale.md/public/files/Energy_Strategy_2030_Final.pdf)

55 [https://serviciilocale.md/public/files/deseuri/2013\\_01\\_24\\_NATIONAL\\_WASTE\\_MANAGEMENT\\_STRATEGY\\_2013-27\\_ENG.pdf](https://serviciilocale.md/public/files/deseuri/2013_01_24_NATIONAL_WASTE_MANAGEMENT_STRATEGY_2013-27_ENG.pdf)

56 <https://cis-legislation.com/document.fwx?rgn=67028#A4220YG2TX>

57 [https://www.legis.md/cautare/getResults?doc\\_id=114539&lang=ro](https://www.legis.md/cautare/getResults?doc_id=114539&lang=ro)

58 [https://www.legis.md/cautare/getResults?doc\\_id=110186&lang=ro](https://www.legis.md/cautare/getResults?doc_id=110186&lang=ro)

were approved (Government Decision no. 160/2018<sup>59</sup>), integrating the priorities for promoting the "green" economy according to the final declaration of the United Nations Conference on Sustainable Development "The future we want" (Rio de Janeiro, June 20-22, 2012) and the provisions of the National Development Strategy "Moldova 2020", approved by Law no. 166/2012.

The promotion of the "green" economy in the sectors of the national economy was also included as a priority action in the **National Development Strategy "Moldova 2030" (GD no. 377 of 10.06.2020<sup>60</sup>** on the approval of law for the approval of the Strategy.

In 2019, the Government of the Republic of Moldova reiterated the commitments and importance of increasing the process of decoupling economic growth from environmental degradation by integrating the measures of the "green" economy in the production processes of various branches of the national economy, by associating with the **EU regional project – European Union for the Environment / "EU4Environment"** and by reflecting environmental measures in key Government policy documents.

## **The greening elements of SMEs have been included in the following national strategic documents:**

- ▶ The low-emission development strategy of the Republic of Moldova until 2030 and the Action Plan for its implementation (Government Decision no. 1470/2016)<sup>61</sup>;
- ▶ The National Energy Efficiency Program 2011-2020 (Government Decision no. 833/2011)<sup>62</sup>;
- ▶ Energy Strategy of the Republic of Moldova until 2030 (Government Decision no. 102/2013)<sup>63</sup>;
- ▶ Waste management strategy in the Republic of Moldova for the years 2013-2027 (Government Decision no. 248/2013)<sup>64</sup>;
- ▶ Water supply and sanitation strategy (2014-2028) (Government Decision no. 199/2014)<sup>65</sup>.

At the same time, in 2014 the European Commission approved the "Green Action Plan for SMEs", enabling them to turn environmental challenges into business opportunities. The plan aims to improve the efficiency of resource use by SMEs, encourage "green" entrepreneurship, exploit the opportunities of greener value chains, and to facilitate the market access of "green" SMEs.

59 [https://www.legis.md/cautare/getResults?doc\\_id=102127&lang=ro](https://www.legis.md/cautare/getResults?doc_id=102127&lang=ro)

60 [https://www.legis.md/cautare/getResults?doc\\_id=121920&lang=ro](https://www.legis.md/cautare/getResults?doc_id=121920&lang=ro)

61 [https://www.legis.md/cautare/getResults?doc\\_id=114408&lang=ro](https://www.legis.md/cautare/getResults?doc_id=114408&lang=ro)

62 [https://www.legis.md/cautare/getResults?doc\\_id=110334&lang=ro](https://www.legis.md/cautare/getResults?doc_id=110334&lang=ro)

63 [https://www.legis.md/cautare/getResults?doc\\_id=68103&lang=ro](https://www.legis.md/cautare/getResults?doc_id=68103&lang=ro)

64 [https://www.legis.md/cautare/getResults?doc\\_id=114412&lang=ro](https://www.legis.md/cautare/getResults?doc_id=114412&lang=ro)

65 [https://www.legis.md/cautare/getResults?doc\\_id=109692&lang=ro](https://www.legis.md/cautare/getResults?doc_id=109692&lang=ro)

In order to accelerate SME information and promote greening practices of production processes in 2019, it was approved the Greening Program of small and medium enterprises (GD 592/2019).<sup>66</sup>

The SMEs National Greening Program targets three key areas, including:

- ▶ Resource efficiency: responsible use of resources throughout value chain;
- ▶ Waste management, recycling and reuse: reducing waste valuable resources and important business opportunities for SMEs, who can create and sell "green" products, services and solutions; and
- ▶ Eco-innovation and the circular economy: creating business opportunities through integration of circular business models and implementation of technologies in the production process of existing and future SMEs from all sectors of the national economy.<sup>67</sup>

Eco-innovation enacted by a company leads to changes in the value chain and potentially the global market and responds directly to SDG8 and SDG12. However, the market is not always conducive to eco-innovation adoption and diffusion due to a number of barriers, including:

- ▶ Insufficient economic incentives,
- ▶ Challenging incentives,
- ▶ Insufficient consumer demand,
- ▶ Limited investment and access to finance,
- ▶ Limited absorptive capacity, and
- ▶ Weak systems for innovation.

Global, national and local level policy can create enabling conditions for eco-innovation through diverse measures, with national and local measures focusing on creating enabling conditions at production and consumption side, while global measures can ensure level playing through addressing asymmetries between countries. In general, the role of policy is to remove barriers, create incentives, draft adequate regulations and mobilize different types of stakeholders.

**The Sustainable Consumption and Production (SCP) policy framework and the Science, Technology and Innovation (STI) policy framework** offer an extensive list of policy instruments for promoting SCP and supporting STI. These two policy frameworks are interconnected and support the effort of sustainability and eco-innovation system.

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<sup>66</sup> [https://www.legis.md/search/getResults?doc\\_id=119235&lang=en](https://www.legis.md/search/getResults?doc_id=119235&lang=en)

<sup>67</sup> [https://cancelaria.gov.md/sites/default/files/document/attachments/proiectul\\_633\\_1\\_0.pdf](https://cancelaria.gov.md/sites/default/files/document/attachments/proiectul_633_1_0.pdf)



As well, **eco-innovation** can provide a **concrete means** for SCP and STI, thus, the private sector can contribute to the achievement of the overarching SCP and STI objectives and the 2030 Agenda in a practical and beneficial manner.

Furthermore, it provides a strategic business approach that can help to define the technological needs and opportunities of a company.

There will be analysed below the policies, based on what they offer and which could be the key sections needed to be analyzed and intervened upon.

## **National Environmental Strategy of 2014-2023**

The strategy aims to align the national environmental legislation with the acquis communautaire and institutional reform, in order to develop an institutional mechanism capable of implementing the new environmental regulations. This system will ensure environmental sustainability and improve the quality of environmental factors. Among the objectives of this strategy are:

- ▶ Integration of the environment protection, sustainable development and green economic development principles in all sectors of the economy;
- ▶ Market analysis of financial instruments for facilitation of eco-technologies regarding environment protection by at least 50 percent until 2023;
- ▶ Facilitation of the access to environment information;
- ▶ Reduction of the negative impact of economic activity on environment and improvement of the measures of preventing environmental pollution;
- ▶ Development of an integrated monitoring system and environment quality control - to ensure the rational utilization, protection and conservation of natural resources;
- ▶ Development of an integrated air quality management system to reduce the emission of air pollutants by 30 percent by 2023 and of GHG by at least 20 percent by 2020, compared to the current situation; and
- ▶ Development of integrated waste management and chemical substances management system, to reduce the deposited waste by 30 percent and to increase the recycling rate by 20 percent by 2023.<sup>68</sup>

**Moldova 2020, National development strategy, seven solutions for economic growth and poverty reduction** recognizes environmental issues as one of the causes for the drawbacks of economic sustainable development and a cause of poverty, emphasizing the necessity for the alignment with European environmental standards. Although the strategy does not refer directly to eco-inn-

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<sup>68</sup> Republic of Moldova on the approval of the Environmental Strategy for the years 2014-2023 and of the Action Plan for its implementation

ovation, it mentions the need for increasing energy efficiency and for using renewable energy sources. The document focuses on the fact that, the Republic of Moldova engages in undertaking all necessary efforts to ensure the transition to a green economic development, to promote sustainable development principles and to contribute to poverty reduction, by ensuring better governance in the field of sustainable development.

**The Energy Strategy of the Republic of Moldova until 2030** provides concrete guidelines for development of energy sector of the Republic of Moldova. The main goal is to provide the required basis for economic growth and improved social welfare, which will lead to an efficient control of energy consumption through the introduction of new technologies that will lead to a competitive level of implementation costs.

**The Strategy for national Security of the Republic of Moldova (Decision no. 153 from 15.07.2011)** identifies the energy security as a component part of the economic security and proposes solutions like the diversification of the energy sources, development of energy transport and distribution infrastructure, the increase of energy efficiency and promotes the use of national renewable resources according to the EU regulations. Overall, the prevention, management and the elimination of the effects of natural calamities, pollution and technological accidents are to be addressed in correlation with other national strategic plans and measures<sup>69</sup>.

**The Environmental Policy Concept of the Republic of Moldova** connects the major objectives of environmental policy with the social and economic changes in the country and the regional programmes and the global trends in the field, to prevent environmental degradation. The main objective of environmental policy is the following: to prevent and reduce the negative impact of economic activity on the environment, natural resources and public health in the context of sustainable development of the country and the ecological security of the country.

The priorities of the environmental policy, which create the framework for eco-innovation of the Republic of Moldova are:

- ▶ Environmental management in enterprises and organic certification,
- ▶ The regulation of the impact and pollution prevention (the implementation of environmental audit in enterprises,
- ▶ The certification of environmental auditors,
- ▶ Introduction of ensuring ecological and integrated environmental permits,
- ▶ Ensuring biological security, and efficiency of energy resources through the implementation<sup>70</sup>.

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69 [https://www.legis.md/cautare/getResults?doc\\_id=17629&lang=ro](https://www.legis.md/cautare/getResults?doc_id=17629&lang=ro)

70 [https://www.legis.md/cautare/getResults?doc\\_id=58192&lang=ro](https://www.legis.md/cautare/getResults?doc_id=58192&lang=ro)

## Legal Basis for Waste Management

**The National Waste Management Strategy of the Republic of Moldova 2013-2027** (hereinafter referred to as the National Strategy) states that waste management is still an issue at country level, that should be better managed and for which legislation should be improved. Although environmental protection is governed by 35 legal acts and more than 50 Government Decrees, the regulatory framework for the management of waste is far from being satisfactory.

**The Law of 09.10.1997, No. 1347, 'On the Waste of Production and Consumption'** has been replaced by the Law of 29.07.2016 on Waste, which entered into force in 23 December 2017. The law reportedly aligns the national legislation to EU provisions as stipulated in the Moldova-EU Association Agreement. The law contains, in particular, a provision on the adoption of the European List of Waste, but most likely an implementing regulation will be needed to effectively introduce the List of Waste. Until effective implementation of the European List of Waste, the National Bureau of Statistics (NBS) is using the existing national waste classifications.<sup>71</sup>

## Legal Basis for water supply and sanitation in the Republic of Moldova

Currently water supply and sanitation are regulated by legislative acts developed, adopted, and changed according to new conditions and provisions which, however, need to be enhanced, particularly:<sup>72</sup>

- ▶ The law No. 272-XIV on drinking water of February 10, 1999 establishes requirements for ensuring safe operation of water supply and shall be reviewed according to the Directive 98/83/EU on quality of the water intended for consumption of the population.
- ▶ The law No. 272 on water of December 23, 2011 is harmonized with several provisions of the European directives. The law is directed to protection of waters against pollution and establishes standard rates of quality of the environment.
- ▶ The law No. 303 of December 13, 2013, on public service of water supply and the sewerage regulates the single legal base in the field of creation, the organizations, managements, financings, operation, monitoring and control of work of public services in supply with drinking, technological water, and the sewerage of household sewage.

<sup>71</sup> [https://serviciilocale.md/public/files/deseuri/2013\\_01\\_24\\_NATIONAL\\_WASTE\\_MANAGEMENT\\_STRATEGY\\_2013-27\\_ENG.pdf](https://serviciilocale.md/public/files/deseuri/2013_01_24_NATIONAL_WASTE_MANAGEMENT_STRATEGY_2013-27_ENG.pdf)

<sup>72</sup> <https://cis-legislation.com/document.fwx?rgn=67028#A4220YG2TX>

## Legal framework measures that support the implementation of “eco-innovation”

**Law no. 1515 from 16.06.1993** concerning the protection of the environment establishes the general framework for environment protection, with specific long term mentions for each domain (Article 2) and enounces the principles of environmental protection (Article 3). The Article 3 refers directly to the use of eco-technology, focusing on the stimulation of the implementation of the “energy-saving technologies” (merely eco-technologies) that would be stimulated through preferential credits and through other methods. Article 23 refers to eco-innovation by including in the area of expertise the verification of programmes and projects.

**Law no. 1525 from 19.02.1998 on energy** - Among the regulations of this law, article 4 mentions the powers of the central authority on energy management, fact which is relevant for the legal framework regarding eco-innovation, because it offers freedom to the public authorities’ opportunities for implementing eco-technologies. Article 6 ensures the fact that the principles of activity and the development of energy targets are performed only on the basis of studies, programmes, schemes and projects<sup>73</sup>.

**Law no. 160 from 12.07.2007 on renewable energy.** The subject of this Law, as resulted from the Article1. is the legal operational framework of the renewable energy sector, the economic and social relations, that include the use of renewable energy sources and the ways of organizing the production and commercialization of fuel and energy sources. Regarding eco-innovation measures, Article 22. mentions the means and devices of technical renewable energy which should ensure compliance with the standards and other regulations; the compliance requirements for production and rules for storage, transportation and use of energy and renewable fuels; supervising the operation and functioning state means and technical devices; ensuring compliance of technical and economic indices of the means and technical devices with the requirements of national and international legal acts. Eco-innovation subject is convergent with the article 27 on ecological protection and security requirements<sup>74</sup>.

**Law no. 142 from 02.07.2010 on energy efficiency** provides general background for the implementation of innovation and new technologies in energy sector, creating the legal obligation for cooperation with other countries for promoting advanced technologies and financial instruments for facilitation of eco-technologies, implementing scientific achievements and for raising citizens’ awareness on energy efficiency activities<sup>75</sup>.

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73 <https://mei.gov.md/ro/content/legea-nr-1525-din-19021998-cu-privire-la-energetica>

74 [https://www.legis.md/cautare/getResults?doc\\_id=23997&lang=ro](https://www.legis.md/cautare/getResults?doc_id=23997&lang=ro)

75 [https://www.legis.md/cautare/getResults?doc\\_id=23981&lang=ro](https://www.legis.md/cautare/getResults?doc_id=23981&lang=ro)

**Law from 02.2012 on promotion of energy generated from renewable resources** aims to create a legal framework for the promotion and use of energy from renewable sources. The law aims (article 6) to diversify primary energy sources; achieving a share of energy from renewable sources in final consumption 2020 Gross energy of at least 17 percent; achieving at least a 10 percent share of energy from renewable sources in the final energy consumption in transport in 2020. The law encompasses regulations for certain domains that are correlated to renewable energy in Article 20, Article 21, Article 22, Article 23, Article 24, Article 27, Article 29, Article 31, and Article 32.<sup>76</sup>

## **Legal Ground for Research, Development and Innovation**

**Innovation Strategy 2013–2020 “Innovation for Competitiveness”:** Empowering people with innovative skills; steering the companies towards innovation; stimulating demand for innovative products and services.

**Research and Development Strategy of Moldova until 2020:** Capacity-building of human, institutional and infrastructure resources; ongoing dialogue between science and society, knowledge dissemination and practical implementation of research results.

## **2020-2023 National Program for Research and Innovation**

The National Program aims to increase the effectiveness of the national research and innovation system, ensure the optimal conditions to generate new knowledge based on fundamental and applied research, and apply this knowledge to increase the competitiveness of the national economy and general welfare level. This National Program will favour excellence in research and innovation, contributing to the implementation of national policy, stimulation of productivity and competitiveness, and developing the national economy by promoting national values.

Thus, the National Program is the main policy document establishing both the strategic priorities and directions, and objectives of development in the field of research and innovation for a period of 4 years.

The National Program provides a long-term systemic approach to the sustainable development of a healthy, harmonious, education-oriented, knowledge-based, competitive society, a society able to meet the challenges of time. A society where fundamental and applied research aims to achieve and provide scientific support needed to solve social issues, considering contemporary requirements for sustainable development. Fundamental and applied research, innovation and technology transfer will help to increase synergy between re-

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<sup>76</sup> [https://www.legis.md/cautare/getResults?doc\\_id=105420&lang=ro](https://www.legis.md/cautare/getResults?doc_id=105420&lang=ro)



search areas and state needs, to develop integrated research meant to become structural support for carrying out projects, to acquire new knowledge and hypotheses, develop products, technologies and new competitive services, widely used in industry and economy.<sup>77</sup>

## **Designing and mainstreaming policies to promote eco-innovation**

A growing number of businesses have demonstrated profit opportunities identified along the value chain through implementing eco-innovation. It has helped businesses grow and achieve a significant advantage over their competitors. The potential of SMEs is to bring about system-wide change, as they are the most prevalent type of business and contribute approximately 45 percent of formal employment and job creation in developing and emerging economies. Their impact on both the environment and society is significant, while their small size enables more agile decision-making and flexibility for eco-innovative changes compared to larger companies.<sup>78</sup>

La nivel guvernamental, o mare parte a realizat oportunitățile de câștig în orice circumstanțe pentru eco-inovare, în scop de a spori semnificativ competitivitatea și dezvoltarea economică.

At the government level, many have realized the win-win opportunities for eco-innovation to significantly enhance competitiveness and economic development. More widespread implementation of eco-innovation in companies, and especially SMEs, stimulated by effective combinations of policies can contribute to the alleviation of resource constraints and environmental degradation, improvement of social welfare and local community engagement, job creation and attracting financial resources.<sup>79</sup>

Eco-innovation applied by businesses with solutions scaled through their value chains has the potential to reduce resource consumption and stabilize resource supply and prices for long-term prospects of productive growth, which is important for human development. Thus, the promotion of eco-innovation is a vital policy objective within the overall development framework of a country. For improving policies and strategies in the field there is a need to take the following steps:

- ▶ **Defining concrete actions related to Eco-innovation, considering current national public policies and regulations**
- ▶ **Strengthening of the system of incentives and funds for Eco-innovation**
- ▶ **Inclusion of Eco-innovation in the formal and non-formal education**

<sup>77</sup> [https://ancd.gov.md/sites/default/files/document/attachments/programul\\_percent20national\\_percent20cercetare\\_percent20inova-re\\_engleza.pdf](https://ancd.gov.md/sites/default/files/document/attachments/programul_percent20national_percent20cercetare_percent20inova-re_engleza.pdf)

<sup>78</sup> [https://cancelaria.gov.md/sites/default/files/document/attachments/proiectul\\_633\\_1\\_0.pdf](https://cancelaria.gov.md/sites/default/files/document/attachments/proiectul_633_1_0.pdf)

<sup>79</sup> [http://unep.ecoinnovation.org/wp-content/uploads/2018/03/UNEP\\_157-Mainstreaming-ecoInnovation\\_web.pdf](http://unep.ecoinnovation.org/wp-content/uploads/2018/03/UNEP_157-Mainstreaming-ecoInnovation_web.pdf)



- ▶ **Incorporation of Eco-innovation into national policies, regulations and plans that are ongoing development**
- ▶ **Expansion of Eco-innovation with different sectoral programs and projects**
- ▶ **Strengthening of consultants and service providers**
- ▶ **Inclusion of Eco-innovation in the disclosure of the guideline of innovation at a national level**
- ▶ **Institutional cooperation between stakeholders: State-enterprises-universities and centres for research, science and technology<sup>80</sup>**

Moldova will continue to implement a clear plan to support the greening of SMEs, in line with “Moldova 2030” National Development Strategy, linking ecological growth and SMEs to the 2030 Agenda Sustainable Development Goals. Thus, the government's program to promote the green economy (implemented by ODIMM), includes the objective of providing adequate support to SMEs for the implementation of green economy principles, including resource efficiency and cleaner production techniques. Thus, in particular, companies could initiate an overall analysis on the level of efficiency of the resources used and the production channels, which would later allow a more efficient development and optimization of production.




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80 Ibid

# National and international programs which could finance eco-innovation

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Funding is vital to commercialize eco-innovative products and services. Accessing funding is a challenge for SMEs in general, and those that develop new concepts face even harder challenges often due to rough competitive conditions; this is why they need to create synergies between public and private financial support. Although public authorities can deliver support and provide incentives through activities like in other countries through sustainable public procurement and skills training, venture capital funds have also a significant input in inspiring the inventiveness and flexibility of eco-innovative Small and Medium Sized Enterprises (SMEs). The Information below analyses different National and International Programs financing opportunities for SMEs in order to implement Eco Innovation with clear environmental impact.

**Greening Program of Small and Medium Enterprises** (by Government Decision 592/2019 from 27.11.2019 ) is implemented by ODIMM with the purpose to promote, support and develop the entrepreneurial capacities of SMEs, in order to be applied in production processes and services providing the greening practices.

The Program provides an integrated approach of support for SMEs oriented to introduce green economy principles.<sup>81</sup>

## **Climate Investment & Innovation Fund Program in Moldova<sup>82</sup>**

57.4 percent of Moldova's population lives in rural areas, 70 percent of which depend solely on income from agriculture. Having access to the capital is difficult for these people, moreover, climate change is strongly afflicting Moldova's rural areas, directly impacting agriculture. The Climate Investment and Innovation Fund is an innovative blended finance tool to serve Moldova. Combined with technical assistance it will enhance the capacities of small businesses, especially in rural areas. It will deploy for the purpose a guarantee scheme, matching grants, and a diaspora crowdfunding platform. These instruments will offer tailored financial products for climate smart investment and green businesses.

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<sup>81</sup> <https://www.odimm.md/en/ecodimm>

<sup>82</sup> <https://sdginvest.jointsdgfund.org/proposals/climate-investment-innovation-fund-program-moldova>

## **Horizon Europe**

The European Union is putting forth a great effort to improve and sustain the continent's robust growth and development, while creating a better quality of life. Within the long-term budget 2021-2027 the Programme will receive EUR 95.5 billion.

The strategic plan is one of the novelties in the new funding programme, which is developed to set the strategic orientations in the first four years of Horizon Europe and, thus, to ensure that EU research and innovation contribute to EU priorities: a European Green Deal, a Europe fit for the digital age, an economy that works for people, a stronger Europe in the world, promoting the European way of life, and a new push for European democracy.<sup>83</sup>

## **EU4Climate project**

The aim of the project is to support the development and implementation of climate policies by Eastern Partnership countries, which contribute to the development of low emissions and climate resilience, in accordance with the Paris Agreement on Climate Change. It identifies key actions and results in line with the Paris Agreement, the "20 Deliverables for 2020" and the key global policy objectives set by the UN Sustainable Development Agenda 2030.<sup>84</sup>

## **EU4Environment Programme**

EU4Environment aims to assist the 6 partner countries in ensuring the sustainable use of natural capital, improving the quality of the environment and the well-being of the population by supporting eco-oriented actions, demonstrating and opening up opportunities for green growth, and establishing mechanisms for better management of risks and environmental impact.

Actions are divided into around five priority outcomes:

- ▶ A "greener" decision-making process
- ▶ The circular economy and new growth opportunities
- ▶ Ensuring compliance with environmental requirements
- ▶ Ecosystem services and livelihoods
- ▶ Knowledge exchange and regional coordination<sup>85</sup>

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83 <https://cdn3.euraxess.org/worldwide/south-korea/horizon-europe-launched>

84 <https://eu4climate.eu/>

85 <https://www.eu4environment.org/>

# Identification of eco innovation sectors and markets in the Republic of Moldova following the prepare phase of the UNEP Eco innovation Manual<sup>86</sup>

In accordance with the above analysis, the most important economic sectors in the Republic of Moldova are Agriculture and Industry.

In this section, these two sectors will be analysed further following the sector-level analysis template of UNEP's Eco-innovation Manual (Section A below). According with the answers provided, each sector will get a score out of 10 points. This exercise aims to assess if the agriculture and industry sectors in Moldova are well suited for eco-innovation.

In a following 'stage, a market in each of the two sectors will be further analysed following the market-level analysis template of UNEP's Eco-innovation Manual (Section B below). Based on the answers provided, each market will get a score out of 20 points. This exercise aims to assess which markets in the agriculture and industry sectors in Moldova will be targeted for eco-innovation services.

Two of the highest scoring sectors, which have the highest eco-innovation potential, are taken forward to the next stage for the analysis of the main characteristics and the representative markets.



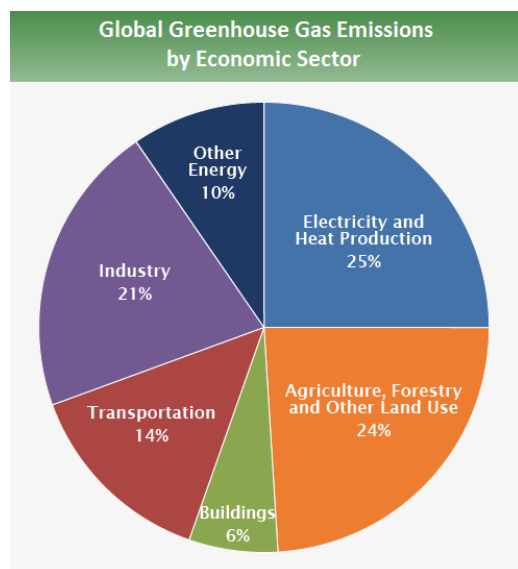
86 <http://unep.ecoinnovation.org/activities/pr1/>

## A - Sector-level analysis

### Sector name: **Agriculture**

A1

**To what extent does the sector contribute to global greenhouse gas emissions and climate change (taking into account the full lifecycle of the product or service delivered by the sector)?**



According to Global Greenhouse Gas Emissions Data 24 percent of 2010 global greenhouse gas emissions come mostly from agriculture (cultivation of crops and livestock) and deforestation.<sup>87</sup>

In 2018, world total agriculture and related land use emissions reached 9.3 billion tonnes of carbon dioxide equivalent. Europe (including the Russian Federation) accounted for approximately one-tenth of global emissions due to agriculture. Emissions declined during 2000–2010 and increased in the following decade.

WRI CAIT data shows that agriculture emissions in Moldova decreased by 61 percent from 1992 to 2013, due primarily to a sharp drop in domestic livestock and poultry populations, synthetic and organic fertilizers applied to soils, agricultural crop residues returned to soils, and changes of tillage practices.<sup>88</sup> Decreased emissions from enteric fermentation accounted for most of the decline,<sup>89</sup> driven by an 81 percent decrease in the cattle population and a 44 percent decrease in sheep.<sup>90</sup>

In 2016, the agricultural sector from Moldova produced 1.91 million tons of Greenhouse gas emissions, measured in tons of carbon dioxide-equivalents, making it the third largest source of greenhouse gases, behind Electricity and Heat, as well as Transport, which emit 3.5 and 2 million tons respectively.<sup>91</sup> Agriculture is an important source of greenhouse gas emissions globally and it contributes to a range of 0-98 percent of countries' greenhouse gas emissions, with an average contribution of 30 percent. Emissions from agriculture make up more than 50 percent of national emissions in 42 countries and more than 20 percent in 91 countries. 39 percent of emissions from agriculture come from only 4 countries: China, India, Brazil, and the USA.

87 <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

88 [https://www.climatelinks.org/sites/default/files/asset/document/2017\\_USAID\\_GHG percent20Emissions percent20Factsheet\\_Moldova.pdf](https://www.climatelinks.org/sites/default/files/asset/document/2017_USAID_GHG%20Emissions%20Factsheet_Moldova.pdf)

89 FAOSTAT, 2017

90 FAOSTAT. Moldova – Live Animals, viewed on April 18, 2017

91 <https://ourworldindata.org/co2/country/moldova>

In the Republic of Moldova Agriculture was the second highest source of GHG emissions (16 percent), with enteric fermentation from livestock and synthetic fertilizers contributing almost 50 percent of agriculture emissions.

**A2** **To what extent does the sector contribute to global consumption of non-renewable resources and potable water (taking into account the full lifecycle of the product or service delivered by the sector)?**

Agriculture, which accounts for 70 percent of water abstractions worldwide, plays a major role in water pollution. Farms discharge large quantities of agrochemicals, organic matter, drug residues, sediments and saline drainage into water bodies. The caused water pollution poses demonstrated risks to aquatic ecosystems, human health and productive activities.

Water pollution from agriculture has direct negative impacts on human health; for example, the well-known blue-baby syndrome in which high levels of nitrates in water can cause methaemoglobinemia – a potentially fatal illness in infants. Pesticide accumulation in water and the food chain, with demonstrated ill effects on humans, led to the widespread banning of certain broad-spectrum and persistent pesticides (such as DDT and many organophosphates), but some such pesticides are still used in poorer countries, causing acute and likely chronic health effects. Aquatic ecosystems are also affected by agricultural pollution; for example, eutrophication caused by the accumulation of nutrients in lakes and coastal waters has impacts on biodiversity and fisheries.<sup>92</sup>

In most high-income countries and many emerging economies, agricultural pollution has already overtaken contamination from settlements and industries as the major factor in the degradation of inland and coastal waters (e.g., eutrophication). Nitrate from agriculture is the most common chemical contaminant in the world's groundwater aquifers.

In the European Union, 38 percent of water bodies are significantly under pressure from agricultural pollution.

In the United States of America, agriculture is the main source of pollution in rivers and streams, the second main source in wetlands and the third main source in lakes.

In China, agriculture is responsible for a large share of surface-water pollution and is responsible almost exclusively for groundwater pollution by nitrogen.

In low-income countries and emerging economies, the large loads of untreated municipal and industrial wastewater are major concerns. Nevertheless, agricultural pollution, aggravated by increased sediment runoff and groundwater salinization, is also becoming an issue.<sup>93</sup>

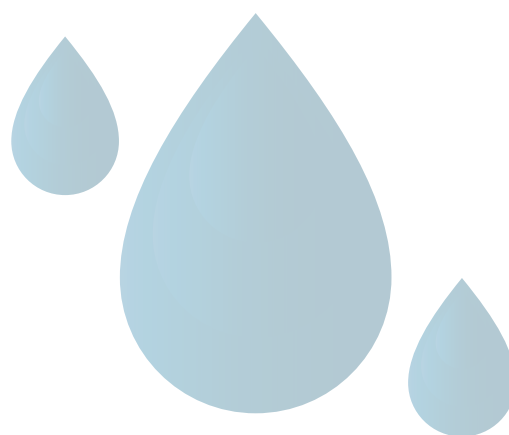
92 <https://www.fao.org/3/i7754e/i7754e.pdf>

93 Ibid



Due to the fact that, Moldova is agriculturally oriented and has received support from the international community in this domain, biomass is one of the most developed renewables sectors. In the form of agricultural residues and direct and indirect wood fuel, biomass is used almost fully for heating purposes. According to Moldova's NBS, 752 ktoe of biomass were used in 2017 (mostly by residential sector), which represents app. 10 percent of biomass potential. This allowed the Government to report 28 percent of renewable energy in gross final energy consumption target. In this context, the overall renewable target (17 percent -legally binding RE-related targets for Moldova that were set by the EnC-MC decision in 2012 and 20 percent - voluntary target set in the National Energy Strategy 2030) has already been achieved, taking into consideration the finding of the 1st Survey on Energy Consumption in Households, conducted in 2016. According to the EEA, more than 100 MW of biomass heating capacity was built in the public and residential sector in 2011-17 with EU support, and more than 300 boiler units were installed countrywide. At the same time, more than 3000 small boilers (20 kW to 25 kW each) were installed in the residential sector, demonstrating rising public interest in this technology, stimulated in part by higher tariffs for fossil fuel-based energy. This increased market demand for solid biofuels amounts to EUR 7 million to EUR 10 million, met by 100 local producers.<sup>94</sup>

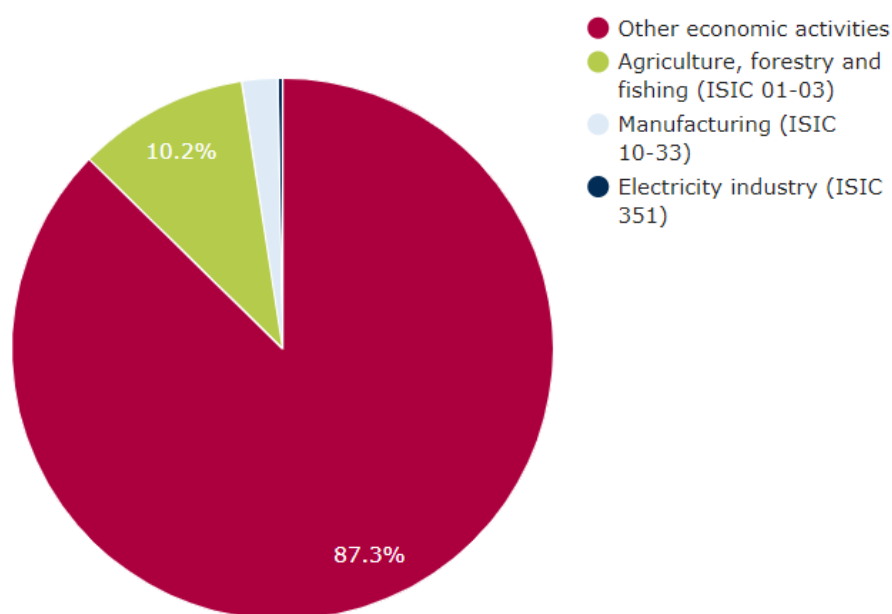
On average, 800 million m<sup>3</sup> of fresh water are used annually in the Republic of Moldova (including the territory on the left bank of the Dniester River) to meet the demand for water in various economic sectors. Freshwater consumption decreased by about 9 percent in 2017 compared to 2000.<sup>95</sup>



94 <https://www.iea.org/reports/moldova-energy-profile/sustainable-development>

95 [https://date.gov.md/ro/system/files/resources/2019-12/MDC3-percent20Utilizarea-percent20total-percentC4-percent83-percent20a-percent20apei-percent20-percent20INDICATOR-percent20FINAL\\_RO1.pdf](https://date.gov.md/ro/system/files/resources/2019-12/MDC3-percent20Utilizarea-percent20total-percentC4-percent83-percent20a-percent20apei-percent20-percent20INDICATOR-percent20FINAL_RO1.pdf)

**Figure 14. Water use by economic activity in the Republic of Moldova (2017)<sup>96</sup>**



**A3**

**To what extent does the sector contribute to global pollution problems (taking into account the full lifecycle of the product or service delivered by the sector)?<sup>97</sup>**

Agriculture is the main sector of Moldovan economy, subjected to a change in practices from the communities and businesses and directly affected by climate change. While bringing great benefits for people's livelihoods, Moldovan conventional agriculture also brings a significant impact on the environment associated with soil degradation and water and air pollution.

### **The main pollution problems:**

- ✓ Lack of sustainable agricultural practices including land and soil fertility management (such as crop rotations, use of organic fertilizers etc.) leading to loss of organic matter, erosion and decline of the yields of crops.
- ✓ Inadequate animal manure management, mainly storage and handling of manure resulting in soil, water and air pollution, nutrient losses and contributing to increased CHG emissions.
- ✓ Excessive use of chemicals due to poor fertilizer management causing pollution of water catchments and groundwater resources and having a significant impact on health.
- ✓ Poor organic waste management leading both to wasting of useful resources and air and soil pollution, generated by: burning crop residues from agricultural production and other vegetal material; illegal waste dumps for household waste affecting soil, water and air.

<sup>96</sup> <https://eni-seis.eionet.europa.eu/east/indicators/c3-2013-total-water-use-in-the-republic-of-moldova>

<sup>97</sup> <http://unep.ecoinnovation.org/activities/pr1/>

#### **A4** How important is the sector for the national economy?

With a moderate climate and productive farmland, the agriculture sector has an important role in Moldova's economy: it represents 9.51 percent<sup>98</sup> (in 2020) of the GDP and employs nearly 77.8 percent<sup>99</sup> of the workforce.

#### **A5** To what extent has this sector been targeted by Non-Governmental Organizations (NGOs) to encourage improvements in sustainability performance?

Non-Governmental Organizations (NGOs) encourage actively the improvements in sustainability performance of the agricultural sector. There are various NGOs like Moldova Organic Value Chain Alliance (MOVCA) Eco Contact, Expert Grup, Eco Visio, and many others which interconnect agriculture with ecology in a sustainable manner. These organisations implement innovative projects for developing eco innovative projects. One of the projects which can be undelined is the project "Acting eco through innovation" which is funded by the Small Grants Program (SGP) of the Global Environment Facility (GEF) through UNDP Moldova. The activities of the project are carried out by People in Need Moldova in partnership with the Moldova Organic Value Chain Alliance (MOVCA) and the cooperative of organic producers "Ecoferm". The project "Acting eco through innovation" will be completed in February 2022.<sup>100</sup>

#### **The main NGOs activities in this regard include:**

- ✓ informing, organization of trainings for farmers, creation of videos and info-graphics about organic farming;
- ✓ organization and facilitation of educational, networking and teambuilding events;
- ✓ exploring, sharing and supporting a diversity of agroecological practices, so that they can be adopted by Moldovan farmers on a large-scale
- ✓ regular live-streams showing positive example from the local agro-community;
- ✓ organizing trainings and create educational materials
- ✓ provision of consultancy and set up of experimental demo-plots;
- ✓ promotion and assistance with composting practices;
- ✓ organizing actions for combating food waste;
- ✓ provision of greening up services to businesses and CSOs.

98 <https://www.statista.com/statistics/513314/moldova-gdp-distribution-across-economic-sectors/>

99 <https://genderpulse.md/en/economic-empowerment/labor-force-employment/structure-of-employed-population-by-economic-sectors>

100 <https://agromedia.md/agricultura-moderna/agricultura-bio/-actionam-eco-prin-inovatie-patru-raioane-de-la-nord-participa-la-programul-pilot-destinat-agriculturii-ecologice>

## Sector findings summary:

Agriculture is the main sector of economy in Republic of Moldova and it represents 9.51 percent (in 2020) of the GDP and employs nearly 77.8 percent of the workforce. Due to the fact that, it is an important sector of the country's economy, the GHG emissions are highly compared with other national sectors, despite decreasing by 20 percent in 2020 compared with 1990.

Water resources for agriculture are scarce, and irrigation infrastructure is almost inexistent among small-scale farmers. Projections on climate change, manifested through increased rainfall variability and overall drop in rainfall, show an increased demand for irrigation water and a decline in available surface water resources.

## The main challenges to the agricultural sector include:

- ✓ Quantity of water resources;
- ✓ Water quality;
- ✓ Soil erosion;
- ✓ The low degree of afforestation and illegal logging;
- ✓ Overgrazing;
- ✓ Social and economic vulnerability;
- ✓ Lack of investments in new technologies.

## A – Sector-level analysis

**Table 4.** Summary of scores, sector name: **Agriculture**

<b>A1. To what extent does the sector contribute to global greenhouse gas emissions and climate change (taking into account the full lifecycle of the product or service delivered by the sector)?</b>		
Major contributor e.g. agriculture, chemicals, automotive, energy etc. [2 points]	Moderate contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]
<b>A2. To what extent does the sector contribute to global consumption of non-renewable resources and potable water (taking into account the full lifecycle of the product or service delivered by the sector)?</b>		
Major contributor e.g. agriculture, chemicals, automotive, energy etc. [2 points]	Minor contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]
<b>A3. To what extent does the sector contribute to global pollution problems (taking into account the full lifecycle of the product or service delivered by the sector)<sup>101</sup>?</b>		
Major contributor e.g. see list above. [2 points]	Moderate contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]

<sup>101</sup> <http://unep.ecoinnovation.org/activities/pr1/>

A4. How important is the sector for the national economy?		
High importance, contributes over 15 percent of GDP or employs over 15 percent of workforce [2 points]	Medium importance, contributes over 5 percent of GDP or employs over 5 percent of workforce [1 point]	Low importance, contributes less than 5 percent of GDP and employs less than 5 percent of workforce [0 points]
A5. To what extent has this sector been targeted by Non-Governmental Organizations (NGOs) to encourage improvements in sustainability performance?		
Major focus of sustained, global campaigns by NGOs. [2 points]	Focus of occasional, local campaigns by NGOs. [1 point]	No focus/attention from NGOs. [0 points]
Total Points: 10/10		

## B – Markets-level analysis

The wine production market in the Republic of Moldova is one of the main branches of the country's economy. 90-95 percent of the total volume of produced wine is exported<sup>102</sup>, thus constituting an important source of income for the state budget. The vineyards occupy an area of 148,500 hectares (around 8 percent) from the total arable land, of which 107,800 hectares (72.6 percent) are used for commercial production. The other 40,700 hectares (27.4 percent) are located on personal plots, and grapes are used for production of homemade wine.

The following analysis confirms that wine production, also one of the most important branches of the country's economy, is a sector of high interest for eco-innovation in Moldova:

### Description of the market: Wine production

#### B1 How strong is the growth of this market?

The market growth is currently at a low level, because of the drought of the last two years, which severely affected the wine complex of the Republic of Moldova, causing a considerable decrease in the production of wine. The COVID-19 pandemic has closed practically all social entities, which sell tangible quantities of domestic wines and spirits on the domestic market. Nevertheless, while there was a decrease due to drought and COVID, previously there has been stable growth.

The reserves-stocks of 18 million dal of quality wines from the 2019 harvest, currently existing in the country, will satisfy the export demand in the amount of 100 percent.<sup>103</sup>

<sup>102</sup> [https://statistica.gov.md/public/files/publicatii\\_electronice/Recensamint\\_agricol/Studiu1\\_viniviticol\\_ro.pdf](https://statistica.gov.md/public/files/publicatii_electronice/Recensamint_agricol/Studiu1_viniviticol_ro.pdf)

<sup>103</sup> [https://mpira.ub.uni-muenchen.de/106349/1/MPRA\\_paper\\_106349.pdf](https://mpira.ub.uni-muenchen.de/106349/1/MPRA_paper_106349.pdf)

Hence the wine production market has national and international customers, reputation and credibility:

- ✓ The Republic of Moldova is one of top 10 wine producing and exporting countries in the world;
- ✓ The Republic of Moldova exports to 68 countries of the world - Moldovan wine accounts for 2 percent of world wine volume.

## **B2** How strong is the competition in this market?

Wine consumption has increased in the rest of the world, driven by the households of the two leading global economies—the United States and China.

Moreover, the latter will become the leading global consumer of wine before 2030 (ahead of the United States and France) and will drive global growth over the next 15 years.

The pandemic has played a role in bringing environmental and social responsibility into increased focus for consumers across the wine landscape. A heightened emphasis on ingredients, authenticity, self-care and the environment are increasingly shaping consumer purchasing behaviours with organic, biodynamic and low-intervention wine at the core of this trend. As demand for these wines continues to grow, specialised restaurants, bars and wine shops have flourished in cities all around the world.<sup>104</sup>

However, production has increased for the first time in five years in certain regions. It is the case for some parts of Europe, notably in Spain and to a lesser extent, in Italy. There is the same trend in South Africa, Australia, in the US and even in Chile, countries where the producers of the famous “wines of the new world” are emerging.

The wine-production is an essential branch of the economy of Moldova. The share of viticulture and winemaking in total agricultural output is about 15 percent and 23 percent from the total agri-food export. The total area of wine-producing plantations is 130 thousand hectares, with over 30 technical varieties.

There are more than 980 companies in the wine sector and more than 199 Wineries<sup>105</sup>. The competition in the wine production market is very strong. Because of the strong competition, the wine quality is high and the prices are affordable.

## **B3** To what extent is government policy encouraging and supporting moves towards improved sustainability performance?

During the last 10 years, the wine industry of the Republic of Moldova has undergone a significant transformation, passing through several major crises. To

104 <https://www.wineintelligence.com/which-key-macro-factors-are-driving-the-global-wine-industry-in-2021/>

105 <https://www.invest.gov.md/en/sectors/agrifood>



meet these challenges the government has undertaken and implemented a series of structural and institutional reforms, including:

- ✓ **creation of the National Office of Vine and Wine, a public institution based on public-private partnership, responsible for the implementation of state policies in the wine field and management.**
- ✓ **implementation of quality policies by creating the system of quality signs - designations of origin (DO), geographical indications (GI), national quality mark "Moldovan wine" (WoM).**
- ✓ **ensuring the quality and traceability of wine products through the Wine Register.**
- ✓ **promoting quality wine and diversifying sales markets.**
- ✓ **development of extension services and provision of support to the wine sector at implementation of new technologies and good wine practices.**
- ✓ **development of human resources for the wine industry.**

Moldova has a developed organic sector, both commercially and in terms of policy and government involvement. The organic sector does not have a long history, but combined efforts by NGOs, private investors and the Government of Moldova has led Moldova exporting organic wine. The area of certified organic land represents almost 2 percent of the total arable area. Moldova has had an organic marketing law and the implementing regulations since 2006.

The Government knows that the end customers are interested in this market, and therefore adopted a strong support policy for encouraging and supporting moves towards improved sustainability performance.

The Government has employed most of the tools that are available to it to support its organic sector: regulations, institutional development, subsidies, investments and capacity building: In addition, regional agricultural departments have specific staff responsible for dealing with the promotion of organic agriculture. The Agricultural University opened a branch of organic agriculture within the structure of its agronomy faculty. Agricultural research institutions manage demonstration plots to display organic technologies, and organize field days and courses for know-how transfer. Out of 34 grapes processing units, two units produce organic wine. Likewise, USD 120 million has been invested in supporting the planting of new vineyards and 12 thousand hectares – half of the plantations – are certified as organic.

Finally, it can be concluded that Moldova's organic sector has considerable potential for further growth and the government policy encourages and supports the improved sustainability performance.

#### **B4 Is this market affected by new or forthcoming legislation?**

The Moldovan wine market is not negatively affected by any new or forthcoming laws or regulations. Nevertheless, there are some positive effects. Taking into consideration weather conditions and high risks as a positive effect of the legislation represent the adoption of the “Law on Subsidized Agricultural Risk Insurance”, this law proposed to strengthen unnatural defense, protection against adverse climatic factors which will require a viable cooperation between farmers, insurance companies and the state.

#### **B5 How interested are the end customers of this market in improved sustainability performance?**

The end customers (national and international) of the wine production market are very interested in an improved sustainability performance. The main advantages of improved sustainability performance are:

- ✓ Stable market;
- ✓ Proper process for the final product;
- ✓ High quality of the products;
- ✓ Development of new type of products from this category.

Environmentally responsible and sustainable business practices are becoming increasingly crucial to consumers. International studies show us that:

- ✓ 60 percent of US adults who purchase online say it is very or extremely important to them that a company is environmentally conscious;
- ✓ Nearly half of those who shop online said they seek eco-friendly products specifically, at least sometimes;
- ✓ More importantly, 45 percent of respondents who shop online said they would pay at least 5 percent more for a product with higher ecological features;
- ✓ A further 22 percent were willing to pay at least 10 percent more So the wine industry should pay attention to this expectation and increasing sensibility that consumers.<sup>106</sup>

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106 [https://ec.europa.eu/jrc/sites/default/files/20160930-macroregional-innovation-penco\\_en.pdf](https://ec.europa.eu/jrc/sites/default/files/20160930-macroregional-innovation-penco_en.pdf)

**B6**

**Are there trends that would encourage eco-innovation in this market? Relevant trends might include: new energy efficient technologies being developed; companies marketing products based on sustainability characteristics; a workforce that is motivated to support progress on sustainability issues, etc.**

Wine (as any artisanal/traditional food) is generally considered by the consumer as a natural, handcrafted product and its historical reputation as a “green” beverage (in terms of the environmental impact) provided an advantage over most other food products.

In the near future, consumers will consider the ecological factor as one of the main parameters to select a wine, attributing an importance similar to price, variety, and origin.

This parameter may affect at least the segment of average consumers, not particularly passionate experts, who buy wine at the supermarket, but consume bulk of the volumes in the industry.

However, if there’s one category of wine that appeals around the world, with the exception of Asia, it’s organic wine. According to the extensive Wine Trade Monitor study, conducted by Sopexa among 1,044 wine import and distribution professionals from eight countries worldwide, this is the category that’s tipped to be the most successful in 2022, according to 45% of the wine industry stakeholders surveyed.<sup>107</sup>

The demand for organic wine by consumers is getting stronger, all over the world → A research by Wine Intelligence on 1000 “regular drinkers” of the 4 main export markets (US, Germany, UK and the emerging China) sees a growing incidence in the choice of so-called “ethical wines” (organic, biodynamic, fair trade etc.)

In the UK and in the US about a third of the sample declared important to purchase a wine coming from organic, sustainable or fair-trade viticulture.

A figure that rises to 67 percent of respondents in Germany and 86 percent in China.<sup>108</sup>

The Government of the Republic of Moldova supports policies to encourage eco-innovation in all areas of economic activity. An important initiative is the National Greening Program for SMEs which provides information support, consulting and mentoring, ecological training and education (focusing on three main sectors: agri-food, industry, service providers). At the same time, the program is focused on research and development, promotion, exchange of good practices at national and European level in the field of application of the principles of the green and circular economy.

107 <https://www.prestigeonline.com/th/wine-dine/drinks/most-interesting-wine-trends-for-2022/>

108 [https://ec.europa.eu/jrc/sites/default/files/20160930-macroregional-innovation-penco\\_en.pdf](https://ec.europa.eu/jrc/sites/default/files/20160930-macroregional-innovation-penco_en.pdf)

**B7 Do you have existing customers, reputation and credibility in this market?**

**Yes, significant number of existing customers and well known in this market**

One of the oldest Programmes implemented by ODIMM is PARE 1+1 Programme. It should be noted that out of the total contract of non-reimbursable financing approved for financing on the issues of 2019, in agriculture are started 120 businesses and oriented to different types of activity, such as: cultivation of cereals and vegetables (onions and potatoes, asparagus), the establishment of plantations (vines, sea buckthorn, gogi, nuts, apples, cherries, sour cherries and plums), planting berries and bacifers, growing animals (sheep, cattle, chinchilla, goats), and ostriches beekeeping.

**B8 Are the potential companies in this market similar to the types of organization that we normally choose to work with? Would they make good companies for our organization?**

**Possibly, some similarities but also some differences.**

ODIMM achieved experience in 14 years, during all this period, the organization formed partnerships with similar organizations who are in close relationships with the companies involved in wine production market also. Thus, similar organisations which ODIMM partners is USAID's High Value Agriculture Activity in Moldova (HVAA) works to cultivate a modern agriculture sector that increases rural prosperity.

**B9 Do we have the necessary sector and market knowledge within our organisation today to deliver eco-innovation services to this market?**

**Possibly, there is one member of staff with some relevant sector and market knowledge.**

Organization for the Development of Small and Medium Enterprises Sector has various types of programs which provide support to the SME from different economics sectors and markets not less than wine production.

**B10 How easy would it be to collaborate with other organisations within this market based on geographic location?**

At the national level, ODIMM's collaboration with other organizations through this market takes place easily through the ODIMM consulting center and business incubators. At the same time, ODIMM is working on creating a cluster for winemakers and another one for grape growers. Within this market ODIMM keeps in touch with the wine producing enterprises through Moldovan Small Wine Producers Association. ODIMM gained extensive experience in 14 years, in all of this period organization used to partner with similar organizations who are in close relationships with the companies which are involved in wine production market also.

**Somewhat difficult – significant proportion of market or final customer is in a different country**

Hence the cooperation between the wine-producing companies is conducted in the Republic of Moldova, and the geographical location is not an impediment. Collaboration between respective companies is also conducted at the international level. In September 2021, the Romanian Chamber of Commerce and Industry (CCIR) announced the initiation of a Memorandum of Cooperation with the National Office of Vine and Wine of the Republic of Moldova in order to organize joint promotional activities on markets of interest from the Far East, on the American continent or in other non-EU markets where the wine regions of the two states can be promoted.

### Market findings summary:

Republic of Moldova has the highest density of vineyards in the world, ranking 13<sup>th</sup> in the world by the area of vineyards. Vineyards cover 3.8 percent of the country's territory and 7 percent of arable land<sup>109</sup>. Moldova has the largest collection of wines in the world, with over 1.5 million bottles, which was included in the Guinness Book of Records in 2005. The collection is located in the cellars of the village of Milestii Mici, which stretch over a length of 250 kilometers.

## B – Markets-level analysis

**Table 5. Summary of scores, market name: Wine production**

B1. How strong is the growth of this market?		
Strong (>5 percent per year) [2 points]	Moderate (2-5 percent per year) [1 point]	Weak (<2 percent per year) [0 points]
B2. How strong is the competition in this market?		
Strong (6+ companies competing) [2 points]	Moderate (2-5 companies competing) [1 point]	Monopoly (1 company) [0 points]
B3. To what extent is government policy encouraging and supporting moves towards improved sustainability performance?		
Suport major prin intermediul politicilor, inclusiv măsuri financiare. [2 puncte]	Suport moderat prin intermediul politicilor, dar fără măsuri financiare. [1 punct]	Nici un suport prin intermediul politicilor. [0 puncte]
B4. Is this market affected by new or forthcoming legislation?		
Major changes required to meet new or forthcoming legislative requirements [2 points]	Moderate changes required to meet new or forthcoming legislative requirements [1 point]	No new or forthcoming legislation. [0 points]

109 <https://cdn1.img.sputnik.md/images/2772/68/27726888.png>

B5. How interested are the end customers of this market in improved sustainability performance?		
Major interest – willing to switch products/suppliers or pay a price premium for better sustainability performance. [2 points]	Moderate interest – information about sustainability performance is considered as part of the purchase decision, but not a deciding factor. [1 point]	No interest. [0 points]
B6. Are there trends that would encourage eco-innovation in this market? Relevant trends might include: new energy efficient technologies being developed; companies marketing products based on sustainability characteristics; a workforce that is motivated to support progress on sustainability issues etc.		
Yes, several strong trends that would encourage eco-innovation. [2 points]	Possibly, one or two weak trends that would encourage eco-innovation. [1 point]	No relevant trends. [0 points]
B7. Do you have existing customers, reputation and credibility in this market?		
Yes, a significant number of existing customers and well known in this market. [2 points]	Yes, some existing customers but not well known in this market. [1 point]	No customers or reputation in this market. [0 points]
B8. Are the potential companies in this market similar to the types of organization that we normally choose to work with? Would they make good companies for our organization?		
Yes, exactly the type of company that we aim to work with. [2 points]	Possibly, some similarities but some differences. [1 point]	No, not the type of company that we aim to work with. [0 points]
B9. Do we have the necessary sector and market knowledge within our organisation today to deliver eco-innovation services to this market?		
Yes, we have several staff with relevant sector and market knowledge [2 points]	Possibly, we have one member of staff with some relevant sector and market knowledge. [1 point]	No relevant sector or market knowledge. [0 points]
B10. How easy would it be to collaborate with other organisations within this market based on geographic location?		
Relatively easy – majority of market, including final customer, is within the same country [2 points]	Somewhat difficult – significant proportion of market or final customer is in a different country [1 point]	Very difficult – majority of market, including final customer, is in a different country [0 points]
<b>Total Points: 17/20</b>		

## A – Sector-level analysis

Industrial enterprises in the Republic of Moldova, according to statistical rules, are divided into three groups: the extractive industry, the manufacturing industry and the thermal and electrical energy production industry.

For industrial enterprises, as well as for the economy in general, it is very important to ensure sustainable growth and not a temporary one.



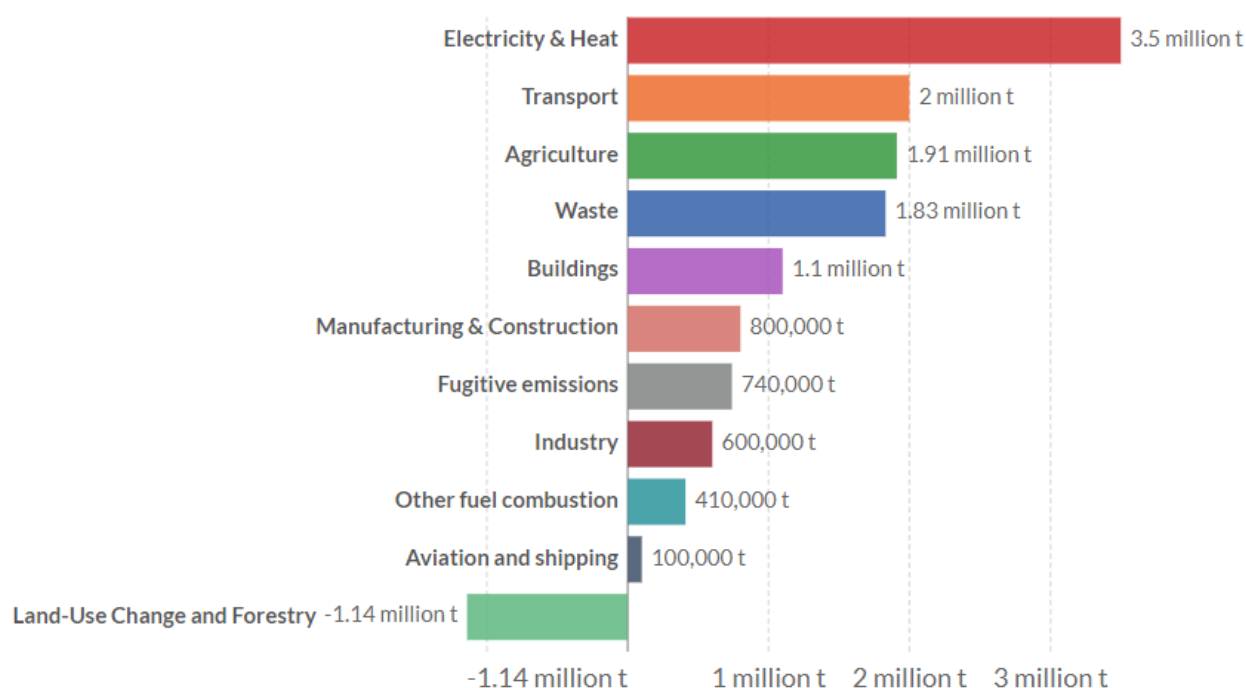
## Sector name: **Industry**

### **A1** To what extent does the sector contribute to global greenhouse gas emissions and climate change (taking into account the full lifecycle of the product or service delivered by the sector)?

After allocating electricity and heat emissions to final sectors, industry continued to be the largest emitting sector globally, with over 40 percent of global emissions in 2019. Emissions in the transport sector increased to account for 27 percent of the global emissions in 2019, while buildings related emissions slightly decreased to represent 25 percent of global emissions in 2019.<sup>110</sup>

At national level, in 2016, the industry sector of Moldova produced 600.000 tons of greenhouse gases, measured in tons of carbon dioxide-equivalents<sup>111</sup>. In 2019 from Industry came 23 percent of greenhouse gas emissions – Greenhouse gas emissions from industry primarily come from burning fossil fuels for energy, as well as greenhouse gas emissions from certain chemical reactions necessary to produce goods from raw materials.

**Figure 15. GHG emissions by sector, Moldova**



### **A2** To what extent does the sector contribute to global consumption of non-renewable resources and potable water (taking into account the full lifecycle of the product or service delivered by the sector)?

Pollution is defined as the introduction of harmful contaminants into the environment that negatively alters our surroundings. The widespread prevalence of

<sup>110</sup> <https://www.iea.org/reports/greenhouse-gas-emissions-from-energy-overview/emissions-by-sector>

<sup>111</sup> <https://ourworldindata.org/grapher/co-emissions-by-sector?country=~MDA>

environmental pollution began with the birth of the industrial revolution and has not slowed down since then. As economies and populations have continued to grow over the years, so too has environmental pollution. This has created a serious global problem that continues to affect biodiversity, ecosystems, and human health worldwide. While pollution can take several forms, such as light and noise, the three major types are air, land, and water pollution. Humans contribute to each of these every day.<sup>112</sup>

Demand for industrial products has risen considerably in the past two decades, along with energy consumption and CO<sub>2</sub> emissions. Some modest improvements have been made in industrial productivity (value added per unit of energy consumed) and in renewable energy uptake, and some positive policy and innovation steps have also been taken. Nonetheless, progress is far too slow. Accelerated efforts on all fronts will be needed to get industry on track with the Sustainable Development Scenario (SDS).<sup>113</sup>

In 2017, half of all energy resources in the country were consumed by the population. In 2017, over 50 percent of all energy resources in the country were consumed by the population. Energy consumption in the transport sector accounted for 28 percent of final energy consumption and only 10 percent was consumed in the trade and public services sectors and 8 percent in the industrial sector<sup>114</sup>.

**A3**

**To what extent does the sector contribute to global pollution problems (taking into account the full lifecycle of the product or service delivered by the sector)<sup>115</sup>?**

Although industry makes a significant contribution to the economic welfare and development of a country, pollution from industrial activities can also negatively affect people and the environment.

Pollution from industry is subject to national, European and international regulations, and standards that limit releases, waste and resource use.

Industry here refers to the production of goods within an economy. Activities included are energy supply, extractive industry, manufacturing industry (iron and steel, non-ferrous metal, non-metallic minerals, chemicals, Pulp, paper and wood, food and drink, other manufacturing) the waste industry (including waste and wastewater management).<sup>116</sup>

Industry contributes to different types of pollutants which affect the environment. Different countries in the world are facing different types of industrial

112 <https://www.statista.com/topics/4739/environmental-pollution/>

113 <https://www.iea.org/reports/tracking-industry-2020>

114 <https://mei.gov.md/ro/content/industrie>

115 <https://ourworldindata.org/grapher/co-emissions-by-sector?country=~MDA>

116 <https://www.eea.europa.eu/themes/industry/industrial-pollution>

pollution problems. Industry produces both traditional pollutants such as organic substances, sulfur dioxide, particulates and nutrients, etc., and newly-recognized pollutants such as dioxin and other specific toxic substances. The pollutants are mainly in gas, water, and solid forms that can cause serious damage to the biosystems. Industrial pollution has attracted a lot of attention. Great efforts have been made to solve the problems. In recent years, the sustainable development concept has been widely recognized, which has promoted the implementation of integrated management of industrial production.

Overall, the level of air pollution in Moldova, seen from space, is relatively low compared to other European countries, being largely within the limits of the World Health Organization's air quality guide.

Nitrogen dioxide concentrations in Moldova are generally low. This air pollutant comes mainly from cars and other vehicles, also refining oil and metals, electricity production, light and the food industry.

Sulphur dioxide levels are generally low across the country, with modest growth only around the capital. This pollutant is closely related to coal-fired power plants, industrial processes or other fossil fuel combustion activities. According to research, the amount of sulphur dioxide in the air reaches maximum levels during the winter, usually increasing from five to ten times compared to summer due to the heating season<sup>117</sup>.

#### **A4** How important is the sector for the national economy?

According to the National Bureau of Statistics, in July 2021 industrial production (gross series) increased by 16.2 percent compared to the corresponding month of the previous year, against the background of the decrease of production in July 2020 compared to the corresponding month of 2019 by 3.2 percent. The increase in production in July 2021 compared to July 2020 is due to the increases in the manufacturing industry (+18.2 percent) and in the production and supply of electricity and heat, gas, hot water, and air conditioning (+3,8 percent), generating the increase of production on total industry by 16,1 percent and 0,3 percent respectively. At the same time the extractive industry registered a decrease (-3,9 percent), generating the decrease of production on total industry by 0,2 percent<sup>118</sup>.

117 <https://www.md.undp.org/content/moldova/ro/home/presscenter/articles/2021/view-from-space-on-the-air-we-breathe-in-moldova.html>

118 <https://statistica.gov.md/newsview.php?l=ro&id=7126&idc=168>

## To what extent has this sector been targeted by Non-Governmental Organizations (NGOs) to encourage improvements in sustainability performance?

Non-Governmental Organizations (NGOs) actively encourage the improvements in sustainability performance of the industrial sector.

### The main NGOs activities in this regard:

- ✓ Organizing and hosting specialized trainings;
- ✓ Facilitating the participation of the companies to international trades;
- ✓ Organizing study visits for companies;
- ✓ Facilitating contact with state institutions;
- ✓ Facilitating assistance on productivity increase, working standards and safety;
- ✓ Assisting on international funding attraction and proposal writing;
- ✓ Assisting on finding raw materials.

### Sector findings summary

The Republic of Moldova has an industry focused more on the manufacturing industry (food and beverage industry, manufacture of clothing, textiles, etc.), production of machinery and electrical appliances, production of non-metallic mineral products, extractive industry, etc.

As a result of the collapse of the Soviet Union, the industry of the Republic of Moldova stagnated continuously for a period of 10 years (1991-2001), after which there were positive trends (except 2009).

The industrial policy of the Republic of Moldova is focused on consolidating and encouraging the factors that determine the creation of an industrial sector of the technologically advanced, scientifically intensive, efficient and competitive economy, connected to the European standards.

The growth of the industrial sector is supported by the automotive industry, as a result of the expansion of the activity of foreign investors within the Free Economic Zones.

Overall, the industrial sector in the Republic of Moldova is growing and state policies encourage this.

## A – Sector-level analysis

**Table 6. Summary of scores, sector name: Industry**

<b>A1. To what extent does the sector contribute to global greenhouse gas emissions and climate change (taking into account the full lifecycle of the product or service delivered by the sector)?</b>		
Major contributor e.g. agriculture, chemicals, automotive, energy etc. [2 points]	Moderate contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]
<b>A2. To what extent does the sector contribute to global consumption of non-renewable resources and potable water (taking into account the full lifecycle of the product or service delivered by the sector)?</b>		
Major contributor e.g. agriculture, chemicals, automotive, energy etc. [2 points]	Minor contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]
<b>A3. To what extent does the sector contribute to global pollution problems (taking into account the full lifecycle of the product or service delivered by the sector)<sup>119</sup>?</b>		
Major contributor e.g. see list above. [2 points]	Moderate contributor e.g. Insurance, banking, software etc. [1 point]	Contribution is negligible. [0 points]
<b>A4. How important is the sector for the national economy?</b>		
High importance, contributes over 15 percent of GDP or employs over 15 percent of workforce [2 points]	Medium importance, contributes over 5 percent of GDP or employs over 5 percent of workforce [1 point]	Low importance, contributes less than 5 percent of GDP and employs less than 5 percent of workforce [0 points]
<b>A5. To what extent has this sector been targeted by Non-Governmental Organizations (NGOs) to encourage improvements in sustainability performance?</b>		
Major focus of sustained, global campaigns by NGOs. [2 points]	Focus of occasional, local campaigns by NGOs. [1 point]	No focus/attention from NGOs. [0 points]
<b>Total Points: 9/10</b>		

## B – Markets-level analysis

The apparel market has benefited from the production of fashionable knitted and woven clothing for the EU market. In the past five years, the apparel market represented more than half of the turnover in the TAFL industry. Moldova's modern manufacturing sector foundations build on its strong industrial past. The share of industry in Moldova's GDP represented 60 percent until the 1990s. At that time, Moldova was one of the important manufacturers of industrial products among the CIS states – and currently it revives.

To understand the importance of the Apparel market, it is important to realize that this market is very significant for the Fashion Industry and the Fashion Industry is a major component of the Moldovan economy, generating nearly 22 percent of the country's total export volume in 2018. Over 26,000 (mostly female) workers are employed by around 450 enterprises, of which the majority

119 <http://unep.ecoinnovation.org/activities/pr1/>

is small and medium-sized. Many well-known fashion brands, produce their garments in Moldova. Some 82 percent of the merchandise is exported to EU markets, while the rest is consumed domestically.

The analysis that follows confirms that apparel, also one of the most important branches of the country's economy, is a market of high interest for eco-innovation in Moldova:

## Description of the market: Apparel

### B1 How strong is the growth of this market?

The fashion industry is one of the major polluting industries in the world, largely due to overproduction, the use of synthetic fibres and colours, and the agricultural crop pollution. The apparel sector alone produces, in total, 10 percent of all CO<sub>2</sub> emissions, creates 20 percent of all wastewaters, and uses 10-20 percent of all pesticides for the production of cotton.<sup>120</sup>

In April 2021, the European Commission launched a campaign aimed at raising awareness of the environmental impact of the fast fashion industry. The apparel market is stagnated starting since 2019.<sup>121</sup> The apparel market has been among the worst hit by the COVID-19 pandemic. Global retail value sales declined by 19 percent in 2020, with a return to the pre-COVID-19 level of sales not expected until post-2025. The continued restrictions and growing fears of contagion in retail spaces and shopping malls among consumers are creating further challenges for retailers around the globe. Innovation is at the heart of recovery as key players look at new business models for survival.

Presently, the TAFL industry plays an important role in the Moldovan economy, representing nearly 20 percent of the country's total export volume, 86 percent of which is exported to the EU countries and the rest is being consumed in the domestic market. The export of TAFL increased by 27 percent in 2016, mainly due to the threefold increase of 3 times of knitted garments. Main export markets are the following: Italy, Germany, Romania, Austria, France, USA, UK, Belgium, Bulgaria, Netherlands, Poland, Greece, as well as the CIS. Famous brands like Versace, Armani, Max & Co., NafNaf, Trussardi, Primark, Max Mara, Prada, Nike, Dolce & Gabbana, Moncler, Calvin Klein produce their clothes in Moldova<sup>122</sup>.

New ways of thinking and doing will be key to building resilience, and one thing that should not be paused despite the economic crisis is innovation. New business models and corporate strategies remain focused on mitigating ongoing risks in light of successive waves of COVID-19 infections and slower than anticipated vaccination roll-out programmes.

120 <https://www.cbi.eu/market-information/apparel/trends>

121 [https://statbank.statistica.md/PxWeb/pxweb/en/40 percent20Statistica percent20economica/40 percent20Statistica percent20economica\\_\\_14 percent20IND\\_\\_IND010\\_\\_serii percent20anuale/IND010100.px/table/tableViewLayout1/](https://statbank.statistica.md/PxWeb/pxweb/en/40%20percent20Statistica%20economica/40%20percent20Statistica%20economica__14%20percent20IND__IND010__serii%20percent20anuale/IND010100.px/table/tableViewLayout1/)

122 [http://connectingcompanies.eu/wp-content/PDF-Flip/Textile\\_Sector percent20strategy.pdf](http://connectingcompanies.eu/wp-content/PDF-Flip/Textile_Sector%20strategy.pdf)



Nevertheless, the Moldovan apparel market is competitive in prices and maintains social and labor security standards at the same time. The proximity to the EU market also gives customers the possibility to out-source large parts of the value chain: Fashion, Taste, Design in Moldova is European, especially among the young generation of designers. Price, quality and lead-time are thus the main strengths of the Moldo-van apparel sector.

**Table 7. Volume indices of industrial production, previous year =100  
by Economic activities and Years**

	2015	2016	2017	2018	2019	2020
<b>Manufacture of wearing apparel</b>	119.9	115.1	102.3	102.1	93.5	92.6

## **B2 How strong is the competition in this market?**

The competition is strong in the apparel market, in 2019, 302 companies with this economic activity were registered in Moldova<sup>123</sup>. As there are more players in the apparel market, customers now have more options to choose from. Such different business models have made the apparel market more competitive. The domestic apparel consumer market is highly competitive due to low-cost clothing imported from China and the lively trade in second hand clothing. Additionally, the size of the population is small, salaries are low and the average annual expenditure on all consumer goods is less than half of the expenditure in other countries in the region. In order to be able to produce at full capacity, the majority of Moldovan apparel producers are presently dependent upon export to the EU, CIS and Turkish markets. Around 70 percent of the Moldovan apparel producing companies work in LOHN basis for EU export markets, led by Italy, UK and Germany.

**Table 8. Main indicators of enterprises activity, by economic activities, 2014-2019**

	Number of reporting units
<b>2019</b>	
<b>Manufacture of wearing apparel</b>	302

## **B3 To what extent is government policy encouraging and supporting moves towards improved sustainability performance?**

There are no Government Policies at this stage that would support improved sustainability performance. Nevertheless, the Government's Industry Development Strategy lists the TAFL Sector (Manufacturing textiles, apparel, leather, leather articles, and footwear) as one of the key economic branches, given its signi-

<sup>123</sup> [https://statbank.statistica.md/PxWeb/pxweb/en/40percent20Statisticapercent20economica/40percent20Statisticapercent20economica\\_\\_24percent20ANT\\_\\_ANT020/ANT020100.px/table/tableViewLayout1/](https://statbank.statistica.md/PxWeb/pxweb/en/40percent20Statisticapercent20economica/40percent20Statisticapercent20economica__24percent20ANT__ANT020/ANT020100.px/table/tableViewLayout1/)

ficant advantages, such as the possibility to engage a large number of employees into various branch activities, a relatively fast rotation cycle of current assets, moderate investment needs and a professional training system for employees in place.

All Companies operating in Apparel market benefit from:

- ▶ Incentives to import of Raw Materials used to produce Export Goods. Export manufacturers registered in Moldova are entitled to request the deferral of the payment due date for VAT and customs taxes, for the period of the production cycle, but no longer than 180 days, for raw material, materials, accessories, primary packaging and imported finishing items that are used exclusively for manufacturing of export goods.
- ▶ Exemption from VAT payments and customs obligations on raw materials and components supplied, based on Free Trade Agreement with CIS and GUAM.
- ▶ VAT and customs duties exemption for imported goods introduced in equity capital.
- ▶ Deep and Comprehensive Free Trade Agreement (DCFTA) with the European Union, which provides improved access to the EU market of 500 million consumers for Moldovan goods and services, as well as improved investment opportunities.
- ▶ Moldova joined the Convention on PanEuro-Mediterranean preferential rules of origin. Enterprises producing in Moldova can import raw materials from third countries directly, process it in Moldova and export it as Moldovan goods to the EU or other member states of the Convention.

Thus, Moldova's access to the Convention opens new opportunities for business, processing industry and cooperation with the countries of EU, CEFTA and Turkey as well as with the countries DCFTA agreements will be signed.

#### **B4** Is this market affected by new or forthcoming legislation?

The Government is aiming to develop better condition for the attraction of investments in this field and to promote the image of the Republic of Moldova internationally. The EU strategy for sustainable textiles is noteworthy in this context - this strategy will help the EU shift to a climate-neutral, circular economy where products are designed to be more durable, reusable, repairable, recyclable and energy-efficient.

**It aims to ensure that the textile industry recovers from the COVID-19 crisis in a sustainable way by:**

- ▶ making it more competitive
- ▶ applying circular economy principles to production, products, consumption, waste management and secondary raw materials
- ▶ directing investment, research and innovation.<sup>124</sup>

124 EU strategy for sustainable textiles (europa.eu)

The European Green Deal, the Circular Economy Action Plan 2 (CEAP) and the Industrial Strategy identified textiles as a priority sector in which the EU can pave the way towards a carbon neutral, circular economy, and announced an EU Strategy on textiles. In the Commission Staff Working Document 'Identifying Europe's recovery needs', which accompanied the Communication 'Europe's moment: Repair and Prepare for the Next Generation', the Commission outlined the impact of the COVID-19 pandemic on the industrial ecosystem for textiles in the EU, identifying its recovery needs in the light of current and expected weaknesses on both the demand and supply sides.<sup>125</sup>

The Ministry of Economy has a well-defined plan for this market. One of the key points of this plan is to facilitate the establishment of direct relations between local producers and foreign partners by excluding intermediate companies from the value chain. This will enable increasing the profits of the domestic producers, which will lead to increased labour productivity, investments in R&D and new technologies.

**B5**

### **How interested are the end customers of this market in improved sustainability performance?**

According to the desk research and speaking with representatives of apparel companies the end customers (national and international) of the apparel market are very interested in an improved sustainability performance. The conclusion is based on the discussion the Textile Cluster Sorintex and with TechnoTextile Hub from Soroca where are registered more than 20 sector companies.

**The main advantages of improved sustainability performance listed by the interviewees are:**

- ✓ Stable market;
- ✓ Good process for the final product;
- ✓ High quality of the products;
- ✓ Development of new type of products from this category;

**Are there trends that would encourage eco-innovation in this market?**

**B6**

**Relevant trends might include: new energy efficient technologies being developed; companies marketing products based on sustainability characteristics; a workforce that is motivated to support progress on sustainability issues etc.**

As European consumers and governments are becoming more environmentally aware, sustainability becomes central to apparel market trends and strategies. Producers are approaching the issue from multiple angles including climate neutrality, use of sustainable and alternative materials, material recycling and

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125 Ibid

upcycling, more sustainable production techniques, chemical management, and animal friendliness. The developing country suppliers who are the fastest in adjusting their sourcing and production to these trends, will have the biggest opportunities in the European market.<sup>126</sup>

The main trend currently is sustainability, connected with corporate social responsibility and transparency. The second major current trend is the influence of technology on production processes, sales and the relationships between buyers, suppliers and consumers.

The global apparel market is anticipated to record a Compound Annual Growth Rate (CAGR) of 5.5 percent during the forecast period (2020-2025).

Rising per capita income, favorable demographics, and a shift in preference to branded products are projected to drive the demand for the market.

The adoption of luxury lifestyle among consumers has influenced the purchasing power to opt for luxury wears among millennials. The increasing fashion trends, coupled with the evolving retail landscape across brands, have been the key factor for the booming apparel market, despite being a matured market.

As competition is steep, apparel companies often create alliances to present a stronger front. Successful advertising strategies and concentration in specialized markets help in allowing apparel companies to generate increased revenue.<sup>127</sup>

Online apparel sales have seen a boom over the recent years as consumers have gradually become more comfortable making wardrobe purchases from their computers and handheld devices. The growth in online apparel sales is mainly attributed to web-only startups. A boosted exposure to the internet and e-commerce has improved the fashion consciousness and availability of high-end brands and limited edition products. Using influencers has made an impact on how beauty companies market their products and look to increase sales. With 71 percent of social media marketers reporting that they have an influencer marketing budget, it is clear to see that marketers are finding value in influencers.<sup>128</sup>

### **B7 Do you have existing customers, reputation and credibility in this market?**

Currently ODIMM is involved in implementing more than 6 national Programmes, such as: PARE 1+1; FEMEI IN AFACERI; START PENTRU TINERI; ECO IMM; INTERNATIONALIZARE IMM; DIGITALIZAREA IMM; etc. The companies participating in these programs are from different sectors as well as SMEs from the apparel sector were involved in training courses provided by ODIMM and in accessing non-reimbursable financial support also.

126 <https://www.cbi.eu/market-information/apparel/trends>

127 <https://www.globenewswire.com/news-release/2020/05/14/2033333/0/en/Global-ApparelMarket-2020-to-2025-Growth-Trends-and-Forecasts.html>

128 <https://www.mordorintelligence.com/industry-reports/apparel-market>

**B8** Are the potential companies in this market similar to the types of organization that we normally choose to work with? Would they make good companies for our organization?

Yes, exactly the type of company that we aim to work with

**B9** Do we have the necessary sector and market knowledge within our organisation today to deliver eco-innovation services to this market?

Possibly, there is one member of staff with some relevant sector and market knowledge

**B10** How easy would it be to collaborate with other organisations within this market based on geographic location?

Somewhat difficult – significant proportion of market or final customer is in a different country

The advantages of cooperation with foreign partners for the local apparel enterprises are:

- ✓ There is no need for large investments from domestic producers
- ✓ Free transfer of new technologies
- ✓ Getting performance experience
- ✓ Creating jobs
- ✓ Safe exit opportunities in foreign markets.

Under pressure from the demanding external partners' quality requirements, local enterprises have been forced to innovate more rapidly and create more competitive products.

### Market findings summary

The apparel market of Moldova is one of the oldest branches of the economy and continues to remain vibrant and competitive. This is because it is based on one of the most important available resources in Moldova: a strong and competent labour force. It is a market with longstanding traditions in manufacturing a wide range of products.

The Moldovan apparel market is price competitive while maintaining social and labour security standards. The proximity to the EU market gives customers the possibility to outsource large parts of the value chain.

The apparel market is representative of the industrial sector because there is high competition on national level and Moldova is recognised on the international level for high quality and cheap labor force.

## B – Markets-level analysis

**Table 9. Summary of scores, market name: Apparel**

B1. How strong is the growth of this market?		
Strong (>5 percent per year) [2 points]	Moderate (2-5 percent per year) [1 point]	Weak (<2 percent per year) [0 points]
B2. How strong is the competition in this market?		
Strong (6+ companies competing) [2 points]	Moderate (2-5 companies competing) [1 point]	Monopoly (1 company) [0 points]
B3. To what extent is government policy encouraging and supporting moves towards improved sustainability performance?		
Major support from policy, including financial measures. [2 points]	Moderate support from policy, but no financial measures. [1 point]	No support from policy. [0 points]
B4. Is this market affected by new or forthcoming legislation?		
Major changes required to meet new or forthcoming legislative requirements [2 points]	Moderate changes required to meet new or forthcoming legislative requirements [1 point]	No new or forthcoming legislation. [0 points]
B5. How interested are the end customers of this market in improved sustainability performance?		
Major interest – willing to switch products/suppliers or pay a price premium for better sustainability performance. [2 points]	Moderate interest – information about sustainability performance is considered as part of the purchase decision, but not a deciding factor. [1 point]	No interest. [0 points]
B6. Are there trends that would encourage eco-innovation in this market? Relevant trends might include: new energy efficient technologies being developed; companies marketing products based on sustainability characteristics; a workforce that is motivated to support progress on sustainability issues etc.		
Yes, several strong trends that would encourage eco-innovation. [2 points]	Possibly, one or two weak trends that would encourage eco-innovation. [1 point]	No relevant trends. [0 points]
B7. Do you have existing customers, reputation and credibility in this market?		
Yes, a significant number of existing customers and well known in this market. [2 points]	Yes, some existing customers but not well known in this market. [1 point]	No customers or reputation in this market. [0 points]
B8. Are the potential companies in this market similar to the types of organization that we normally choose to work with? Would they make good companies for our organization?		
Yes, exactly the type of company that we aim to work with. [2 points]	Possibly, some similarities but some differences. [1 point]	No, not the type of company that we aim to work with. [0 points]



B9. Do we have the necessary sector and market knowledge within our organisation today to deliver eco-innovation services to this market?		
Yes, we have several staff with relevant sector and market knowledge [2 points]	Possibly, we have one member of staff with some relevant sector and market knowledge. [1 point]	No relevant sector or market knowledge. [0 points]
B10. How easy would it be to collaborate with other organisations within this market based on geographic location?		
Relatively easy – majority of market, including final customer, is within the same country [2 points]	Somewhat difficult – significant proportion of market or final customer is in a different country [1 point]	Very difficult – majority of market, including final customer, is in a different country [0 points]
Total Points: 18/20		

# Challenges & recommendations for eco-innovation implementation in Moldova

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The process of implementation of eco-innovations is a challenging process. Understanding the barriers and opportunities at the level of each business can guide policy makers and other key players (for instance universities, technical organizations, NGOs) to put in place enabling conditions and support for eco-innovation in Republic of Moldova. The following challenges and recommendations have been developed through a desk research, however this list will be updated and expanded based on the inputs of the SMEs and lessons learned during the implementation of the EI pilot in Moldova.

The analysis also identified the existing conditions opportunities in Moldova which enable eco-innovation implementation. The desk research identified the existing premises and the potential for eco-innovation, which through a suitable approach, they can be transformed into factors of change.

Finally, the analysis helped to develop a few key recommendations that are derived from the desk analysis performed for this report. These steps will add value putting sustainable procurement into practice and will reinforce the economic capacity of the state by reducing the negative environmental effect and developing the social safety of the population. These also are not final recommendations, as they will be further shaped and adapted according to the experience of applying eco-innovation with SMEs in the wine production and apparel markets in Moldova. Concrete recommendations building on this experience will be provided at the end of the project.

## **National conditions for a faster assimilation of Eco-Innovation.**

- ▶ Provide good access to external information and knowledge, including services of technology support
- ▶ Expected future regulations imposing new standards
- ▶ Improving existing regulations, including standards - The Republic of Moldova has a great variety of rules through policies, norms, and strategies that can promote the development of sustainable business models, i.e. eco-innovation.

- ▶ Improving collaboration of the business sector with research institutes, agencies, and universities.

### Recommendations to further enable eco-innovation in Moldova:

- ▶ **Increase long-term institutional collaboration between value chain actors, including government, businesses (producers/suppliers, brands, retailers, associations), universities, investors, consumers, as well as NGOs and research, science, and technology centres.** This action requires securing the links between all the actors, for instance through the creation of innovation centres/ platforms at the regional level (as opposed to the centralized way this is currently being done). Collaboration should also be done within the actor groups, for instance cross-ministerial collaboration in the government.
- ▶ **Integrate eco-innovation further into the different business development programs and industry projects,** for example, through entrepreneurship programs, Organizations such as business associations can help ensure the programs and knowledge have a wide reach.
- ▶ **Offer eco-innovation training and incorporate eco-innovation approaches into already existing study programs to prepare the next generation of professionals for its application.**
- ▶ **Strengthen the system of funds and incentives to eco-innovation.**



# Conclusions

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This report has analysed national policies and assessed the market to determine priority SME sectors for eco-innovation implementation in the Republic of Moldova. The analysis involved screening a range of environmental metrics/statistics and records of existing policy instruments that encourage innovation and socio-environmental sustainability in Moldovan SME sectors, as well as the macro-economic scale.

In line with the results of the research it is recommended to work with Agriculture and Industry sectors, in particular the Wine Production and Apparel markets, in Moldova and to apply eco-innovation in these specific sectors and markets under EU4Environment Programme. These sectors and markets show high potential for eco-innovation, and also are in need of support to overcome challenges caused by the COVID-19 pandemic.

As was mentioned previously in the study, the Republic of Moldova is ready to develop a more competitive economy with low CO2 emissions, for environmental protection, for the development of new technologies and methods of organic production, for the introduction of new smart and efficient grids, for enhancing the business environment with the EU support.



