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ASSESSMENT OF THE REGULATORY FRAMEWORK OF THE REPUBLIC OF MOLDOVA FOR IMPACTING SUSTAINABLE CONSUMPTION AND PRODUCTION UNDER EUROPEAN INTEGRATION

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Abstract: According to the National Development Strategy (NDS) “European Moldova 2030,” the implementation of sustainable development is a priority for the Republic of Moldova. The establishment of the country’s strategic development direction reflects the government’s priorities and commitments, as well as the level of awareness regarding citizens’ needs, sustainable development, and European integration. This research examines the Republic of Moldova’s progress and the level of awareness and integration of sustainability into national policies, starting from the analysis of international agreements to which our country is a signatory to the analysis of legislation that regulates the process of implementing sustainability and contributes to increasing responsible consumption and production in the business environment. The study reveals that significant steps have been taken in this area and that the foundations regulating responsible consumption and production have been established. However, for accurate impact measurement, more monitoring data are needed. Not all SDG 12 targets have measurable indicators, such as the food loss and waste index. The available indicators show progress in the elimination of hazardous waste, a decrease in the volume of production and consumption waste generated, an increase in the capacity of renewable energy generation facilities, and a reduction in the consumption of natural resources per capita, decreases the intensity of CO2 emissions per unit of GDP. For a better understanding of the level of improvement in responsible consumption, it is recommended to encourage companies, especially large and transnational ones, to adopt sustainable practices and to integrate sustainability information into their reporting cycles.

Keywords: *international agreements, waste recycling, CO2 emission intensity, sustainable reporting*

JEL code: *F 530, O 440, Q 580*

Introduction

According to the 2025 Planetary Boundaries Report, 7 out of 9 planetary boundaries have been exceeded. In 2025, for the first time, the "Ocean Acidification" limit was identified as being exceeded [13]. This is further evidence that we have no time to waste. The transition to sustainable models of society development must happen faster, more consciously and systemically. From this point of view, regulation, governance and monitoring of the transition are essential to avoid irreversible ecological cataclysms.

The purpose of the research is to identify the typology of transformational processes for sustainable consumption and production in Republic of Moldova, regulated by the national legislative framework, aligned with European good practices.

This research was rejected from the main characteristics of sustainable development [1].

- it is a shared concept - there are no geographical, economic or ideological borders;
- no one should be left behind;
- it is implemented through global partnerships - on the one hand: partnerships between governments, private business and citizens; on the other hand: developed countries will fully implement their official development assistance commitments to help less developed countries;
- it is implemented by empowering people to participate in, to contribute to, and benefit from economic, cultural, social, and political development;

- will be achieved through a „just transition” - so that those involved in these areas are not negatively affected by the change, while still bringing multiple benefits.

The process of raising awareness of the importance of sustainable behavior — both among producers and consumers — is still in full swing and requires time to produce lasting changes in mentality. Raising awareness of sustainable behavior in society must occur in tandem with the preparation of the regulatory framework and models for implementing sustainable practices based on international and European best practices.

According to the National Development Strategy (NDS) "European Moldova 2030", the implementation of sustainable development is a priority for the Republic of Moldova. The major strategic objective - increasing the quality of people's lives is materialized through 10 general objectives that cover multiple dimensions comparable to those used in the European Union to measure the quality of life: sustainable income and the mitigation of inequalities; living conditions; education; culture; physical and mental health; social protection; efficient and transparent governance; fair and independent justice; safe society; healthy environment [5, 7, 8, 9].

Setting the country's strategic development direction reflects the priorities and commitments of the government, the degree of awareness of the concerns regarding the needs of citizens, sustainable development and European integration. The road to this awareness has been long. Since declaring independence, the Republic of Moldova has been a signatory to various international agreements and treaties through which it is committed to implementing sustainability principles. Table 1 lists the main international agreements and treaties to which the Republic of Moldova is a signatory and through which it commits to implementing sustainability principles [16].

Table 1. International Agreements and Treaties to which the Republic of Moldova is a party and through which it commits to implementing sustainability principles

No	Year / Ratification	Domain	Main Obligations for the Republic of Moldova	Implications for Business and Policies
1	EU candidate country Agreement			
	2023	Institutional and economic alignment	Gradual alignment with the EU acquis; reform of economic, fiscal, trade, environmental, social, and digital legislation.	Increased compliance with EU standards export benefits but also additional requirements (technical norms, food safety, consumer protection).
2	Green Partnership for the East (EU4Environment / Green Agenda for EaP)			
	2019 – present	Green transition, circular economy	Integration of green economy principles into economic and educational policies.	Access to green financing and ESG assessment tools for SMEs.
3	Paris Agreement on Climate Change			
	2017	Climate change, GHG emissions, green transition	Reduction of GHG emissions by 70% by 2030 (compared to 1990) and achieving climate neutrality by 2050.	Development of renewable energy markets, clean technologies, and energy efficiency services.
4	UN 2030 Agenda for Sustainable Development			
	2015	All SDGs, including SDG 7, 9, 12, 13	Implementation of a national framework for achieving SDGs; periodic reporting (Voluntary National Review).	Promotes sustainable production and consumption policies; companies encouraged to adopt CSR and ESG practices.
5	Association Agreement RM – EU (AA + DCFTA)			
	2014 / in force since 2016	Economic integration and environmental/energy legislation harmonization	Transposition of EU directives on waste, air, water, renewable energy, and climate change.	Corporate compliance with EU standards; new environmental certification and reporting requirements for exporters.
6	Protocolul de aderare la Tratatul de constituire a Comunității Energetice, Viena			
	2010	Energy sector integration with EU market	Implementation of essential EU legislation on energy efficiency and renewable energy.	Legal harmonization, institutional reform, diversification of energy sources, increased investment opportunities.
7	Joint Declaration of the Eastern Partnership Launch Summit, Prague			
	2009	Political and economic cooperation with EU Eastern neighbors	Respect for common values: democracy, rule of law, market economy, human rights, good governance, and sustainable development.	Progress toward EaP Agenda and 2025 'Recovery, Resilience and Reform' targets for green infrastructure, energy efficiency, and connectivity.

8	Stockholm Convention on Persistent Organic Pollutants (POPs)			
	2004	Hazardous chemicals (POPs)	Gradual elimination and control of Persistent Organic Pollutants (POPs).	Chemical/agricultural firms must replace toxic substances with safer alternatives.
9	Convenția de la Rotterdam privind comerțul cu substanțe chimice periculoase			
	2004	Chemical trade safety	Prior informed consent for import/export of hazardous chemicals.	Importers must ensure chemical traceability and transparent reporting.
10	Kyoto Protocol			
	2003	GHG emissions, clean energy	Initial emission reduction commitments and Clean Development Mechanism (CDM) participation.	Foundation for current climate policies and green funds.
11	Convenția privind combaterea deșertificării (UNCCD)			
	1999	Soil, sustainable agriculture	Combat land degradation and desertification.	Promotes sustainable agriculture and protection of productive land.
12	Aarhus Convention on Access to Information and Public Participation in Environmental Matters			
	1999	Environmental governance, transparency	Ensure public access to environmental information and participation in decision-making.	Requires firms and authorities to disclose environmental impacts; enhances corporate transparency.
13	Basel Convention on the Control of Transboundary Movements of Hazardous Wastes			
	1998	Waste management	Control of transboundary movement and disposal of hazardous waste.	Firms importing or treating waste must comply with strict regulations and obtain special authorizations.
14	Convention on Biological Diversity (CBD)			
	1996	Biodiversity and ecosystems	Conservation and sustainable use of natural resources.	Requires agricultural and forestry companies to adopt sustainable practices.
15	UN Framework Convention on Climate Change (UNFCCC)			
	1995	Climate change	Development of national policies for GHG reduction and climate adaptation.	Sectoral climate policies; reporting requirements for energy-intensive companies.

Sourse: Developed by the author based on [16].

The partnership of the Republic of Moldova with the European Union plays a fundamental role in the process of adjusting the national legislative framework to European standards, including in the field of sustainability. Through the Association Agreement and participation in initiatives such as the Eastern Partnership, the Republic of Moldova benefits from access to expertise, good regulatory practices and technical support instruments that facilitate the harmonization of environmental, energy and economic legislation. This process not only aligns domestic norms with the requirements of the European market, but also contributes to the strengthening of governance, transparency and corporate responsibility, creating premises for a sustainable and competitive transition of the national economy [2].

Integrating sustainability into the national regulatory framework

However, the transition to sustainable economic practices cannot be left to evolve spontaneously. It must be supported, regulated and monitored through public policies and legislative instruments that guide and accelerate the adoption of responsible behaviors across the economy. The need for regulatory acts for sustainable business processes derives from the essential role that the state plays in guiding the economy towards a balanced model between economic growth, environmental protection and social equity. In the absence of a coherent regulatory framework, the principles of sustainability risk remaining only at a declarative level, without practical applicability.

Regulations provide clear directions for the responsible behavior of enterprises, establish minimum environmental and social performance standards, stimulate green innovation and ensure equal conditions of competition for all economic actors. Based on international commitments and the National Sustainable Development Goals, multiple policy documents have been approved that provide for the integration of the green economy in various fields of activity by 2030 (Figure 1.):

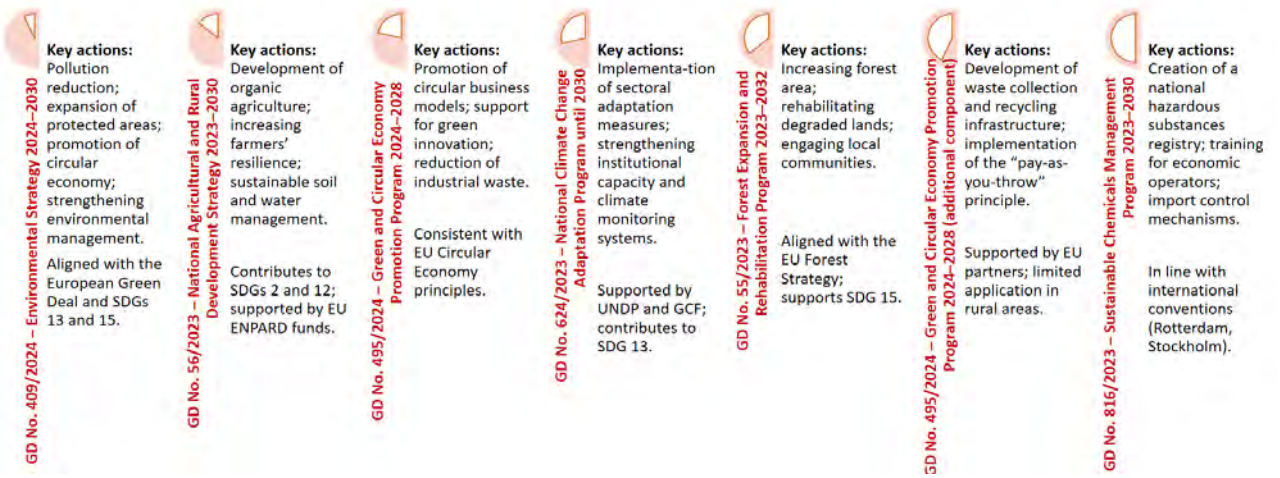


Figure 1. Strategies and policies that provide for the integration of sustainable practices in different fields of activity

Sourse: Developed by the author based on [15]

Entrepreneurial activity is the backbone of the economy. Only in a developed economy, with prosperous and growing businesses, can a high level of quality of life be achieved. At the same time, compliance with sustainability criteria reveals that businesses cannot be developed at any price. Ecological and social requirements, in conditions of high efficiency, are the parameters that define sustainable businesses. The application of sustainable practices in business requires a colossal effort from entrepreneurs, focused on various dimensions, such as:

• **Education:** Raising awareness of the need to apply sustainable practices and increasing knowledge of the wide range of sustainability solutions.

• **Sustainable models:** Identifying circular and green business models suited to the specific characteristics of enterprises.

• **Waste management:** Treating waste as secondary resources for other operational cycles, contributing to synergies among different industries and improving resource-use efficiency.

• **Energy efficiency and renewable energy:** Identifying alternative energy efficiency solutions for businesses and gradually transitioning to renewable energy sources to achieve zero greenhouse gas emissions.

• **Eco-innovation and digitalization:** Identifying cutting-edge innovations tailored to the specific needs of various sectors, with a major impact on productivity, resource efficiency, and climate neutrality.

• **Decent work and corporate social responsibility (CSR):** Ensuring decent employment opportunities and applying voluntary measures to improve quality of life in society.

• **Financial support:** Identifying free or low-cost financial sources to fund the implementation of sustainable practices.

Most of the time, implementing sustainability principles involves high initial costs, which is why many entrepreneurs are reluctant to adopt them. However, an essential role in making producers responsible is also played by the consumer, who, through his choices, can favor products and services based on sustainable criteria. In this context, sustainability is starting to become a source of competitive advantage, especially for those companies that respond to the demands of conscious consumers who are less sensitive to the price factor.

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In order to meet the requirements for sustainable business but also to contribute to the achievement of strategic objectives and development programs, a series of amendments have been made to several laws regulating environmental protection, SMEs, the use of renewable energy and energy efficiency, waste and chemical management, ecological design for products with environmental impact. But new laws have also been developed, such as the Law on industrial emissions into air, water and soil and the Law on labeling of energy-effective products.

The legislation in force, requires the business environment to adopt new practices that bring entrepreneurial activity into the realm of sustainability, such as:

- Extended Producer Responsibility;
- Collective Systems;
- Waste Management;
- Strategic Environmental Assessment;
- Environmental Impact Assessment and Ecological Expertise;
- Energy Audit and Energy Efficiency;
- Renewable Energy Transition;
- Energy Communities;
- Sustainable Public Procurement;
- Resource Efficient and Cleaner Production (RECP);
- Energy Labeling of Products; Eco-labeling.

Aspects of responsible consumption and production in the Republic of Moldova

Measuring the degree of awareness and application of responsible consumption and production is carried out by monitoring a series of indicators of SDG12 of the 2030 SDG Agenda. In the Republic of Moldova, the analysis of this area is gaining increasing importance in the context of aligning national policies with European Union standards and practices. SDG12 has 8 targets, all of which were considered locally relevant at the time of adopting the agenda to the specifics of the country and were recommended for their integration into national policies and their implementation. In 2017, monitoring data in the national indicator system were available for only 4 of the 8 targets. Meanwhile, the number of monitoring indicators for SDG12 has increased. Currently 17 indicators are allocated, of which only 11 are considered available and data is still missing for the rest. [10, 17] From this point of view, we can consider that responsible consumption and production is considered a pressing issue for the country, unlike, for example, Georgia, which allocated only a single monitoring indicator for SDG12 [3].

Analyzing the indicators available for monitoring progress towards SDG12, several positive trends were revealed at the country level.

In the Republic of Moldova, the volume of waste generated has decreased in recent years, due to prevention, recycling and reuse measures, as well as the alignment of legislation with European standards (Figure 2). The redefinition of the concept of “waste” – by excluding materials that are reused or composted – largely explains this reduction. Although total waste generation has decreased, recycling has not followed a consistently upward trend, indicating problems with infrastructure, selective collection and the market for recycled.

As Figure 3 shows, the Republic of Moldova has a recycling rate of around 30%, placing it below the EU average (54.8%), but above several EU Member States such as Estonia, Bulgaria, Greece, Malta, and Romania. Countries with the highest recycling rates — Belgium (80.3%), Slovenia (73.8%), Luxembourg (71.8%), and the Netherlands (71%) — demonstrate the existence of efficient waste collection systems, advanced infrastructure, and well-implemented circular economy policies.

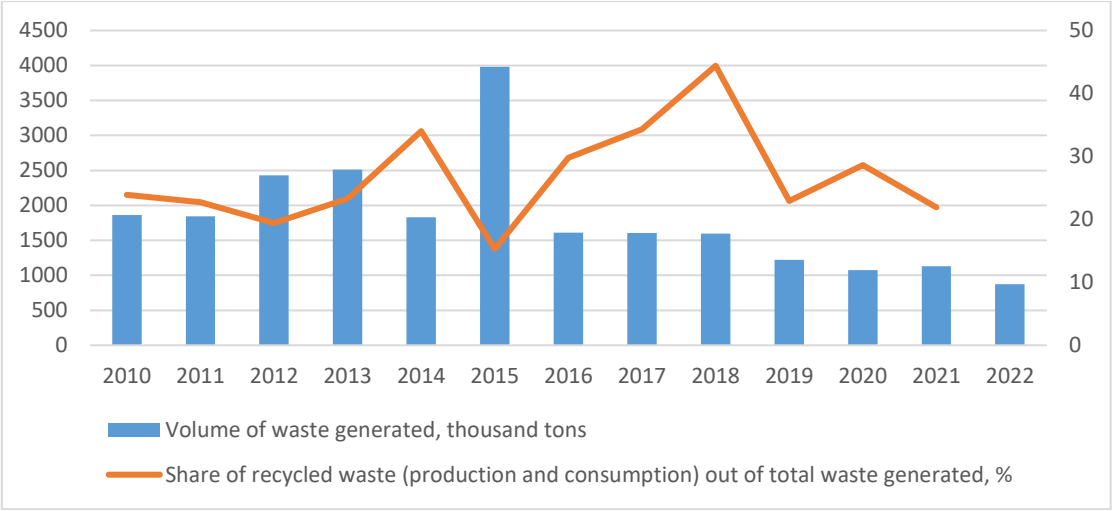


Figure 2. Dynamics of waste generated and recycling rate in Republic of Moldova, for the period 2010-2022

Sourse: https://ec.europa.eu/eurostat/databrowser/view/cei_wm010/default/table?lang=en

In contrast, Moldova and several Eastern European countries (Romania, Bulgaria, Greece) face structural challenges, such as insufficient infrastructure, uneven waste collection, and a low level of public awareness. However, Moldova's position above some EU states indicates positive progress potential, especially if investment programs in recycling and waste management continue as part of the alignment with EU standards.

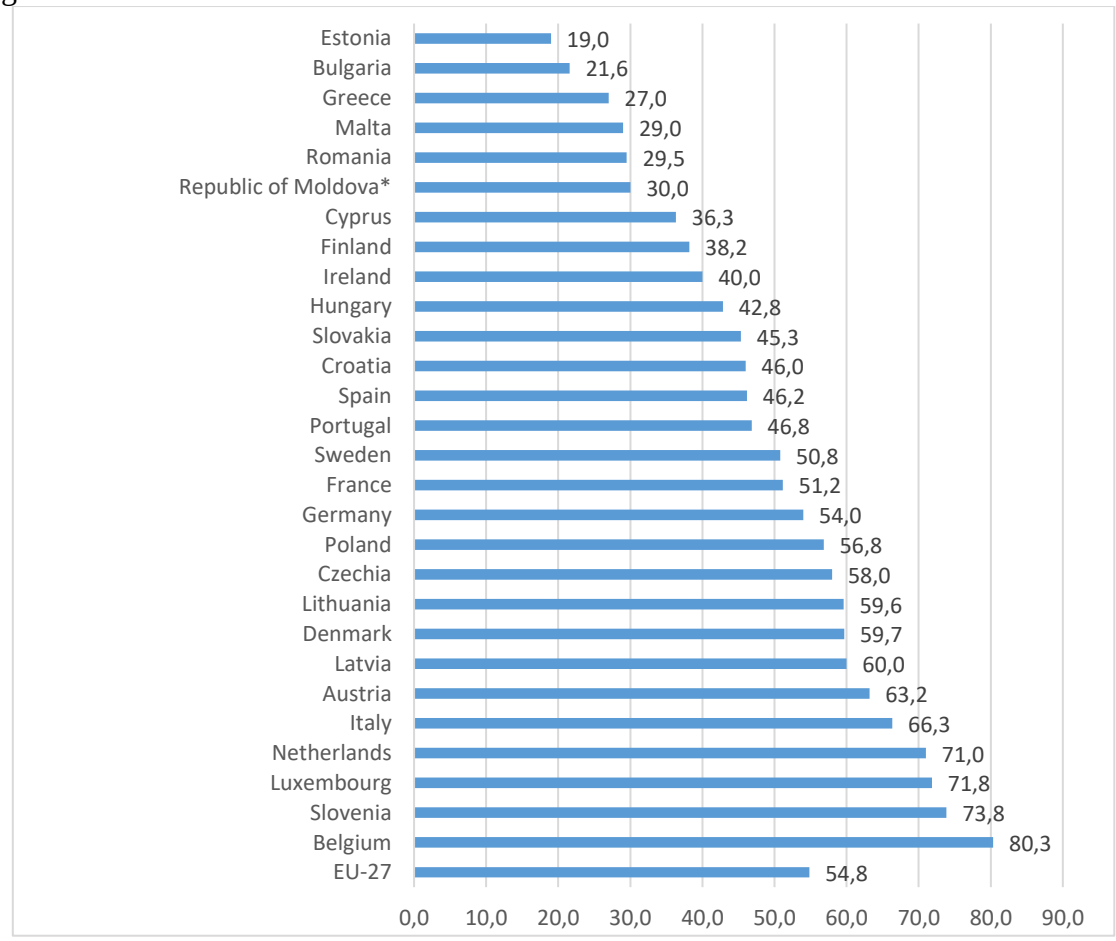


Figure 3. Average recycling rate of all waste, excluding major mineral waste, for the years 2010-2020

**- share of recycled waste (production and consumption) out of the total generated*

Sourse: https://ec.europa.eu/eurostat/databrowser/view/cei_wm010/default/table?lang=en

Between 2010 and 2022, the indicator of carbon dioxide emissions per unit of GDP (kg of CO_2 per constant 2017 USD) demonstrates a general downward trend across most analyzed countries**,** reflecting improved energy efficiency and gradual structural transformation toward low-carbon and resource-efficient economies**.** Countries such as Switzerland, Sweden, and Ireland maintain the lowest emission intensity levels, showcasing consistent efforts in energy transition, technological innovation, and effective implementation of environmental policies. In contrast, Central and Eastern European countries, including the Republic of Moldova**,** still record higher CO_2 intensities compared to the EU average, highlighting the ongoing challenges of modernizing energy systems and industrial processes. For the Republic of Moldova**,** emission intensity decreased from 0.29 kg to 0.20 kg CO_2 per USD, indicating moderate but steady progress in improving energy efficiency and reducing dependence on carbon-intensive sectors. This evolution suggests an emerging alignment with EU climate and energy objectives, particularly under the commitments of the Paris Agreement and the Association Agreement with the EU.

Table 2. Carbon dioxide emissions per unit of GDP, kg of CO2 per constant 2017 USD

Ranking position	Contries	2010	2012	2014	2016	2018	2020	2022
1	Switzerland	0.07	0.07	0.06	0.06	0.05	0.05	0.04
2	Sweden	0.09	0.08	0.07	0.06	0.06	0.05	0.05
3	Ireland	0.15	0.13	0.11	0.10	0.08	0.06	0.05
4	Malta	0.16	0.16	0.12	0.06	0.06	0.06	0.06
5	Iceland	0.11	0.10	0.10	0.08	0.07	0.07	0.06
10	Lithuania	0.14	0.12	0.10	0.10	0.10	0.09	0.08
11	Latvia	0.16	0.12	0.12	0.11	0.11	0.10	0.08
14	Portugal	0.12	0.13	0.12	0.12	0.12	0.10	0.08
15	Romania	0.15	0.15	0.12	0.11	0.10	0.09	0.09
26	Armenia	0.13	0.15	0.14	0.13	0.12	0.14	0.13
30	Georgia	0.12	0.13	0.15	0.16	0.14	0.15	0.14
34	Azerbaijan	0.13	0.16	0.16	0.16	0.16	0.17	0.17
36	Estonia	0.44	0.36	0.35	0.31	0.28	0.13	0.17
39	Poland	0.30	0.27	0.24	0.23	0.22	0.19	0.18
40	United States	0.29	0.26	0.25	0.23	0.22	0.19	0.19
41	Ukraine	0.35	0.35	0.32	0.29	0.25	0.22	0.19
42	Republic of Moldova	0.29	0.27	0.22	0.22	0.21	0.23	0.20
43	Bulgaria	0.27	0.26	0.25	0.23	0.21	0.18	0.20
44	Belarus	0.27	0.24	0.23	0.23	0.23	0.21	0.21
50	Kazakhstan	0.48	0.45	0.36	0.34	0.34	0.33	0.34
51	Uzbekistan	0.74	0.57	0.46	0.41	0.36	0.38	0.34
52	Turkmenistan	0.49	0.44	0.40	0.42	0.45	0.49	0.64

Sourse: United Nations Global SDG Database https://w3.unece.org/sdg/en/Indicator?id=28&utm_source=chatgpt.com [accessed: 16.08.2025]

Conclusions:

- The principles of sustainable consumption and production are integrated into the legislative framework according to national priorities;
- The transition from linear to circular economic models is still at an early stage;
- The principle of extended producer responsibility is regulated, promoted and implemented;
- The current level of collection and recycling is modest, but promising compared to other countries in the region;
- Support for enterprises through financing programs for greening, re-engineering and digitalization for green businesses is regulated;
- The level of productivity of environmental resources in the Republic of Moldova is much lower than the value of the similar indicator recorded in European countries
- The consumption of energy from renewable sources has increased;
- The share of renewable energy in the primary energy supply and in final energy consumption has increased.

- The legal framework mentions sectors such as tourism (HoReCa), the food industry, the textile industry and construction as essential for the application of sustainable practices;
- There are no specialized sustainability strategies for sectors such as tourism (HoReCa), the food industry, the textile industry and construction that generate significant amounts of waste;
- Food waste is not monitored;
- The overwhelming majority of companies do not practice sustainability reporting.
- The Republic of Moldova is making positive steps, but needs to strengthen public policies, green investments and industrial innovation to accelerate convergence with European standards. Strengthening environmental policies, infrastructure investments and private sector involvement can accelerate convergence towards the European average.

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