

## **CITIZEN ENGAGEMENT IN ECOLOGICAL TRANSITION AND CIRCULAR ECONOMY IN THE REPUBLIC OF MOLDOVA: EVALUATING ATTITUDES TOWARDS SUSTAINABILITY**

**RODICA PERCIUN**

*Academy of Economic Studies of Moldova,  
National Institute of Economic Research  
Chişinău, Republic of Moldova  
perciun.rodica@ase.md*

**VICTORIA IORDACHI**

*Academy of Economic Studies of Moldova, National Institute of Economic  
Research  
Chişinău, Republic of Moldova  
iordachi.victoria@ase.md*

**OLGA TIMOFEI**

*Academy of Economic Studies of Moldova, National Institute of Economic  
Research  
Chişinău, Republic of Moldova  
timofei.olga@ase.md*

### **Abstract**

*As a candidate country for the EU, the Republic of Moldova must align itself with a series of policies and standards that are essential for full integration into the European Union, including Environmental Policies, Climate Change Policies, and Circular Economy Policies. The aim of the research was to provide an overview of the population's attitude towards the ecological transition and the circular economy, identifying the level of awareness and understanding of these reforms. To achieve the proposed objectives, general scientific methods were applied: synthesis, critical analysis of materials, as well as analytical methods such as surveys, interviews, statistical data processing, graphical methods, comparison, grouping, etc. The study was based on data collection from a sample of 1419 participants to capture a clear image of public opinion. The survey was structured to address 30 key questions regarding: awareness of the circular economy, perception of sustainability policies, and the willingness to adopt sustainable behaviours. People generally feel positively about sustainability and environmental protection, but this doesn't consistently lead to sustainable actions or responsible buying habits. While most people understand that environmental protection matters, this understanding doesn't fully show up in their daily habits. They are a little interested in simple green steps that quickly save them money, like using less energy or doing some recycling. However,*

*measures that require significant investments or specific infrastructure, such as selective waste collection or the use of alternative energy sources, are less frequently adopted. This underscores the importance of active governmental support and incentive policies to encourage sustainable changes at the national level. In the context of the Republic of Moldova, insufficient information and limited access to energy-efficient equipment result in high energy consumption in households. Furthermore, recycling remains in its early stages, largely due to structural and governance challenges in waste management. In many regions of the country, the lack of resources and adequate infrastructure at the local authority level hinders the development of an efficient and sustainable waste management system. Despite the fact that most respondents claim to frequently use reusable products, a significant percentage of individuals still do not use them at all or use them very rarely. This behavior highlights the lack of environmental education and financial incentives for adopting new technologies, which leads to low awareness of the economic and environmental benefits of environmental policies and the circular economy. Based on the survey results, the study identified several important directions for sustainability policies that should be considered, such as: improving education and awareness, supporting sustainable behaviors, active community participation. The research was conducted under Project 20.80012.7007.10SE, "Social Impact Analysis for the Deposit Return System for Recyclable Packaging in the Republic of Moldova."*

**Keywords:** *circular economy; sustainable development; environmental policies; ecological transition.*

**JEL Classification:** M38; O10; Q01; Q50

## 1. INTRODUCTION

The Republic of Moldova became a candidate state for accession to the European Union on June 23, 2022 (European Council, 2022). As a candidate state for the European Union, the Republic of Moldova must align itself with a series of policies and standards that are essential for full integration into the European Union, including the Environmental, Climate Change, and Circular Economy Policies (European Council, 2023). These policies represent an essential foundation for sustainable development for the Republic of Moldova, as the quality and state of the environment represent an essential pillar for public health, economic development, and well-being of a country, because a healthy environment directly influences the quality of citizens' life. Environmental protection has become a global priority, placed at the top of international agendas, as humanity, especially after Covid 19, has realized that only sustainable practices and the rational use of natural resources will lead to sustainable economic growth that can meet current needs without compromising the future (Maqbool *et al.* 2024). For the Republic of Moldova, alignment with these policies involves not only a process of legislative, institutional, economic, but also social reforms. In this context, it is crucial to understand what is the commitment of society, what attitudes and level of awareness the citizens of the Republic of Moldova have towards the policies to be implemented, such as the Green Deal, the SDGs, the Industrial Emissions Directive, the Circular Economy Package, the Landfill

Directive, etc. (United Nations Population Fund Moldova, 2023). What really matters for these initiatives to succeed is the involvement and active support of the population, even more than government commitments or meeting European standards.

This research investigates the level of citizen engagement in the ecological transition and the adoption of a circular economy in the Republic of Moldova. To achieve this aim, the research will:

1. Analyze the national regulatory framework concerning strategies for implementing environmental and sustainability policies.
2. Identify gaps and barriers within the existing policy framework in the Republic of Moldova.
3. Assess the current behavioral patterns of Moldovan citizens regarding sustainability and determine the underlying causes.
4. Elucidate the main barriers preventing citizens from adopting more sustainable behaviors.
5. Determine the level of awareness regarding the importance of transitioning to a circular economy.
6. Identify the most effective actions to raise public awareness about European sustainability policies.
7. Estimate the population's financial openness and motivation to implement lifestyle and behavioral changes.

The methodology directly targets the main objectives of this study, namely the empirical investigation of the level of involvement of citizens in the ecological transition and towards a circular economy in the Republic of Moldova, including determining the degree of information and motivation of their behavior.

To achieve the proposed objectives, general scientific methods were applied: synthesis, critical analysis of materials, but also analysis methods, such as survey, interview, statistical processing of empirical data, the method of graphs, comparison, grouping, etc.

This study surveyed 1,419 participants to assess public opinion. Data were collected via telephone interviews conducted between July 1, 2024, and October 11, 2024. The interview instrument consisted of 30 questions. Responses were recorded and managed using Google Forms and subsequently analyzed in Excel. The study protocol, including the questionnaire, was reviewed and approved by the Ethics Committee of INCE, ASEM.

## **2. RESEARCH CONTEXT**

Circular economy, environmental policies and sustainability are essential areas of contemporary scientific research, having a significant impact on economic development, environmental protection and social well-being (Prieto-Sandoval *et al.*, 2018). Despite the concept's importance for academia, policymakers, and companies, the conceptual relationship between the Circular

Economy and sustainability is not clear. (Geissdoerfer *et al.*, 2017). Another significant aspect of the research is the multidisciplinary approach to circular economy models, which are developed through the interaction between ecology, economics, engineering and design. (Boons *et al.*, 2013) The role of citizens is central in building a circular and sustainable society, contributing not only through daily ecological actions, but also by involving themselves in political and economic decisions, which define the ecological urban transition (Girard, 2021). Circular economy governance systems including codified policies, laws, and regulations, shape individual behaviors and influence their adoption. (Ambituuni *et al.*, 2024). The implementation of circular economy systems in cities requires a combination of changes in technologies and resource management infrastructures as well as changes in people's production and consumption practices (Sambyal, 2023).

In this context, we wanted to explore the situation in the Republic of Moldova and analyze to what extent there is an openness of the population towards the transition to more ecological behavior, or if, on the contrary, there is reluctance and indifference on the part of citizens.

### **2.1. The national regulatory framework on strategies for implementing environmental and sustainability policies**

Environmental quality and its protection are fundamental pillars for public health, economic development, and the well-being of a nation, directly impacting the quality of life of its citizens. Environmental protection has become a global priority, central to international agendas, especially after the COVID-19 pandemic, which underscored the necessity of adopting sustainable practices. Humanity has recognized that respecting biodiversity and the responsible use of natural resources are essential to ensure sustainable economic growth that meets current needs without compromising the future. In this context, the integration of the Republic of Moldova into the European Union necessitates major legislative reforms to align the country's environmental policy with EU standards. The European Union places significant emphasis on environmental protection and sustainable development. To accede to the EU, Moldova must adopt stringent regulations in environmental protection, climate change, and the circular economy. These legislative reforms will contribute not only to improving environmental quality but also to economic growth, pollution reduction, and the protection of natural resources, thereby supporting the development of a sustainable agricultural sector, which is essential for our country. Thus, the implementation of these reforms will be a key factor in the Republic of Moldova's integration process into the European Union and in ensuring a sustainable economic future.

Ensuring a clean and healthy environment is essential and closely linked to the respect of fundamental human rights, as stipulated in Article 37 of the

Constitution of the Republic of Moldova (Parliament of the Republic of Moldova, 1994). A degraded environment not only affects the quality of life but also limits the right to health, access to clean drinking water, and the ability to live in a safe and healthy setting. Therefore, the state has the duty to protect and improve the environment by implementing an appropriate regulatory framework and clear policies that support the conservation of natural resources and reduce the negative impact of industrial and agricultural activities on ecosystems.

The Republic of Moldova has a series of legislative documents, strategies, and policies that directly or indirectly address the circular economy and regenerative organic agriculture. One of the main legislative pillars is Law on waste (Law 209/2016), which outlines the general legislative and institutional framework for waste management. It establishes the legal basis, state policy, and necessary measures for environmental protection and public health by preventing or reducing adverse effects caused by waste generation and management, as well as by minimizing the overall impact of resource use and increasing their efficiency. This law introduced the concept of extended producer responsibility in Moldova for the first time.

Another fundamental regulatory act in the transition to a circular economy is the Government Decision on the approval of the Regulation regarding packaging and packaging waste, which partially transposes Directive 94/62/EC of the European Parliament and Council from December 20, 1994, on packaging and packaging waste. This regulation governs the management of packaging and packaging waste with the goal of preventing or reducing environmental impact, ensuring a high level of environmental protection, the functioning of the market, and avoiding obstacles to trade, as well as preventing distortion or limitation of competition. (Government Decision 561/31-07-2020)

The National Development Strategy "European Moldova 2030", adopted by Law no. 315/2022, outlines several important environmental objectives. Among these, the general objective 10 is to ensure a healthy and safe environment, which includes specific objectives such as:

- Objective 10.1: Improving the quality of water, air, and soil.
- Objective 10.2: Sustainable increase of forested areas and protected zones.
- Objective 10.3: Ensuring responsible consumption of natural resources.
- Objective 10.4: Active transition to a green and circular economy.

According to the commitments for sustainable development, the following strategic targets are set to be achieved by 2030:

1. Ensuring resilience to climate change by reducing climate change-related risks (SDG 13.1).
2. Reducing water pollution, including through land activities (SDG 14.1).
3. Combating soil degradation (SDG 15.3).
4. Integrating biodiversity values into policies (SDG 15.9).

5. Implementing sustainable forest management and increasing afforestation and reforestation (SDG 15.2).

To achieve these Sustainable Development Goals (SDGs), the strategy emphasizes the active application of the "polluter pays" principle, which means that those responsible for negative environmental impacts will bear the costs of those effects. This objective will be supported by a fair system of taxes and fees, as well as financial support for eco-friendly initiatives. Moreover, the strategy encourages the integration of circular economy principles into the national economy. (Law no. 315/2022).

The Government Activity Program "Prosperous, Safe, European Moldova", approved by Parliamentary Decision no. 28 on February 16, 2023, outlines the state's plan to implement coherent policies and measures aimed at accelerating the transition to a circular economy and green economy, as well as adapting all sectors to the effects of climate change, with the goal of achieving carbon dioxide emissions neutrality by 2030. The program focuses on environmental priorities, such as accelerating the implementation of European standards, in line with the European Green Deal (European Commission, 2019). This initiative reflects Moldova's commitment to reducing its environmental impact and aligning its policies with the broader European Union objectives of sustainability and climate action. The program aims to integrate green and circular economy principles across various sectors, ensuring that the country is prepared to face the challenges posed by climate change while also promoting long-term ecological and economic prosperity.

The Environmental Strategy for the years 2024-2030 reflects the Republic of Moldova's commitment to complying with international standards and adopting concrete measures for environmental protection and climate change mitigation. The strategy includes objectives and action directions that will contribute to the implementation of environmental goals and priorities established in international treaties, such as the 8th European Action Programme for the Environment (PAM 8). PAM 8 aims to accelerate the green transition in a fair and inclusive manner, with the long-term goal for 2050: "A Good Life, Within the Planet's Limits." (European Commission, 2022).

This strategy outlines a comprehensive approach to addressing climate change, preserving biodiversity, and ensuring sustainable development in Moldova, in alignment with European environmental policies and international commitments.

In principle, the general objectives of the Environmental Strategy are formulated in line with the specific objectives of the National Development Strategy "European Moldova 2030", such as General Objective 10: Ensuring a healthy and safe environment, along with its specific targets. However, the Environmental Strategy also includes eight additional general objectives, accompanied by priority action directions aimed at promoting the green and

circular economy. Among these, Priority Direction 6.3: Implementation of Extended Producer Responsibility outlines the following targets for the period 2023-2027:

- a. Recycling 25% of packaging waste generated in rural areas and 35% of packaging waste generated in urban areas.
- b. Ensuring a minimum 35% separate collection of Waste Electrical and Electronic Equipment (WEEE).
- c. Ensuring a separate collection rate of 25% by 2023 and 45% by 2025 for batteries and accumulators waste (BAA).
- d. Ensuring a recycling and recovery rate of 65% for lead-acid batteries, 75% for nickel-cadmium batteries, and 50% for other types of batteries and accumulators (DBA).
- e. Improving the functioning of the Extended Producer Responsibility scheme by ensuring a separate collection and treatment rate of at least 25% for used oils.
- f. Improving the functioning of the Extended Producer Responsibility scheme by ensuring a separate collection and disassembly rate of at least 25% for end-of-life vehicles.

These objectives aim to enhance the management of waste, promote recycling and resource recovery, and encourage the adoption of circular economy principles in Moldova, contributing to a more sustainable and environmentally responsible future.

General Objective 7: "Reducing greenhouse gas emissions by 70% by 2030 compared to 1990 under the unconditional scenario (or 88% under the conditional one)." The emission reduction targets for each of the seven sectors are established in accordance with the EU aspirations for the years 2030, 2050, and the Nationally Determined Contribution (NDC). These targets are reflected in the Moldova's Low-Emission Development Program until 2030 and the Action Plan for its implementation. Achieving these targets will require the implementation of green economy principles, which contribute to efficient use of resources and energy, promotion of renewable energy, the application of cleaner technologies in the economic sector with reduced carbon emissions and pollution, and minimizing environmental risks.

General Objective 8: "Promoting the green economy, improving resource efficiency, and developing the circular economy." This includes the Priority Direction 8.1: Promoting the transition to a green economy. Although Moldova has made efforts to green its economy and transition to a green model, there remains a continuous need for state support, particularly through: promoting environmentally friendly technological innovations and supporting eco-industrial parks and eco-free trade zones.

The last priority direction of the strategy is 8.2 Improving resource efficiency and promoting the circular economy, where it is vaguely stated that "the circular

economy is part of sustainable development, emphasizing the need to optimize resource consumption to promote recycling and reuse." The strategy outlines actions such as: preventing waste generation and reducing the consumption of primary resources in the production process through the reuse and recycling of products.

However, the strategy lacks concrete actions related to the development of circular business models. There is a need for clearer policies and initiatives to promote circular business practices, enhance the circular economy infrastructure, and create a supportive environment for businesses to adopt circular economy principles effectively.

The Waste Management Program for 2023-2027 (Government Decision no. 972/2023) includes concrete actions for the transition to a circular economy, guided by the Circular Economy Action Plan of 2015 from the European Union (European Commission, 2015). This plan serves as a strategic framework for implementing circular economy principles, focusing on preventing waste generation, promoting reuse, recycling, and recovery of materials, and reducing the consumption of primary resources. (Government Decision no. 972/2023).

The Green and Circular Economy Promotion Program for 2024-2028 stipulates that, for Republic of Moldova, "the circular economy represents an innovative economic model aimed at eliminating waste and pollution from the design stage, focusing on promoting the continuous circulation of products and materials at the highest value level. This concept involves not only minimizing waste, but also regenerating natural resources in a sustainable and efficient cycle. In a circular system, products are designed to be durable, easy to repair, reusable, and recyclable, thus facilitating the maintenance of their value over time and minimizing environmental impact." (Government Decision, 2024).

Thus, the circular economy in Moldova will focus on creating a system where resources are used efficiently and products are designed to be reused and regenerated, significantly reducing waste generation and environmental impact. This model supports not only environmental protection but also innovation and long-term sustainability, providing a framework conducive to sustainable economic development.

In the National Climate Change Adaptation Program until 2030 (Government Decision no. 624/2023), it is mentioned that "Moldova's economy is already bearing significant costs caused by extreme climate events and is missing out on potential benefits that could arise from timely adaptation measures to climate change. Real and opportunity costs will increase in the future, especially due to damages caused by floods and droughts, the climate impacts on agriculture, as well as on health (such as mortality from heatwaves, food- and waterborne diseases, exotic diseases)" (Government Decision no. 624/2023).

This program emphasizes that climate change is already affecting the Republic of Moldova's economy, and the lack of adequate adaptation measures



could lead to additional costs in the future. Specifically, agriculture and public health are vulnerable sectors, and the impact of extreme climate events will have a significant effect on them. The program stresses the need for urgent adaptation measures to reduce these risks and minimize economic and social damages.” (Government Decision no. 624/2023).

The Republic of Moldova's Low Emission Development Program until 2030 (Government Decision no. 659/2023) is intended to fulfill the commitments made by Moldova under the Association Agreement between our country, on one side, and the European Union and the European Atomic Energy Community and its member states, on the other, in the chapter on Climate Actions. Specifically, Article 95 foresees the development and approval by Moldova of medium- and long-term measures to reduce greenhouse gas emissions.

Thus, based on this major objective, the Program has identified the following key actions for different sectors of the economy aimed at reducing GHG emissions compared to the level recorded in 1990, the baseline year. These sectors are: (i) energy, (ii) transport, (iii) buildings, (iv) industrial processes, (v) agriculture, forestry, land use, land-use change and forestry, and waste.

According to the Ministry of Environment, between 2010 and 2019, greenhouse gas emissions showed a constant trend. During this period, annual emissions amounted to about 13.4 million tons of CO<sub>2</sub> equivalent. Carbon dioxide represents 2/3 of the greenhouse gases. The structure of GHG emissions, by sector, has not seen significant changes during the reported period. The share of emissions from agriculture fluctuated slightly around 14.5%. Waste contributes approximately 11% to the GHG emissions. The share of emissions from industrial processes and the use of products increased from 4.2% to 7.2% (Government Decision no. 659/2023; Ministry of Environment, 2024).

The Sustainable Chemical Substance Management Program for 2023-2030 (Government Decision no. 816/2023) is a public policy document that establishes the national objectives and priorities for developing a sustainable chemical substances management system throughout their entire life cycle. It was developed in accordance with the provisions of Law no. 277/2018 on chemical substances.

According to the Program, Moldova produces few chemical substances, which are intended for the domestic market, such as: pharmaceutical preparations, fertilizers, dyes, paints and varnishes, fire retardants, perfume products, blended odorizing substances, and plastic products. (Government Decision, no. 816/2023). The Program aims to ensure that these substances are managed in a way that minimizes environmental and health risks, ensuring their sustainability throughout their lifecycle, from production to disposal. In the Republic of Moldova, there is a lack of enterprises that can provide the infrastructure for the collection and treatment of expired chemicals and mixtures, especially hazardous ones. Currently, expired chemicals and their waste are stored at the enterprises.

Additionally, certain streams of hazardous waste are exported for treatment and disposal in other countries, in accordance with the provisions of the Basel Convention on the control of transboundary movements of hazardous wastes and their disposal, approved by the Parliament Decision no. 1599/1998 (Government Decision no. 816/2023).

The approval of this Program was both timely and essential, as it includes a major objective aimed at improving the existing legal framework for the management of chemical substances throughout their entire life cycle. This objective seeks to establish proper systems for the safe handling of expired chemicals and hazardous waste, minimizing environmental and health risks associated with their disposal and management.

On July 31, 2023, Law no. 237 on organic production and labeling of organic products was adopted, representing an important step in the development of the organic sector in Republic of Moldova, ensuring a clear framework for the production and commercialization of organic products. Through certification, proper labeling, and support measures, the law aims to provide consumers with healthy and high-quality products, while also contributing to environmental protection and the sustainable development of agriculture.

This law strengthens the trust of consumers in organic products and supports the growth of eco-friendly agricultural practices that are aligned with international standards for organic production. It also creates a regulated market that facilitates the trade of organic goods, ensuring transparency and fairness. (Law no. 237).

In this study, only the main national policy documents relevant to the researched topic have been presented. As evidenced, all these legislative documents are in line with European legislative acts and international treaties. However, it is considered that the transition to a circular and ecological economy remains an unsolved challenge for the Republic of Moldova, both from an organizational and regulatory point of view. This transition not only requires the adoption of policies and regulations that comply with international standards but also the creation of an effective infrastructure and implementation mechanisms, as well as active involvement from the private sector, authorities, and society as a whole. Additionally, a more detailed and comprehensive legislative framework is needed to support the integration of circular economy principles across all economic sectors and in production and consumption processes.

## **2.2. Gaps and barriers in the existing policy framework in the Republic of Moldova**

From the analysis of the regulatory framework, it was found that the Republic of Moldova is making essential and significant efforts to align its legislative framework with European legislation. However, the Republic of Moldova is just starting to explore and understand the concept of a circular economy. Although there are some initiatives and regulations that align with the principles of the

circular economy, the current regulatory framework has several gaps and limitations, such as:

➤ **Lack of a specific national strategy for the circular economy**

Currently, there is no national strategy dedicated to the circular economy. Although, as mentioned, the National Development Strategy "Moldova 2030", the Program for Promoting the Green and Circular Economy for the period 2024-2028, and other policy documents make references to the circular economy, they do not provide a concrete plan for its implementation. Thus, there is a need for a clear framework that directly defines the objectives and specific measures for transitioning to a circular economy, as well as its indicators.

➤ **Limited regulations on waste management**

Even though there are rules for managing waste, the main focus in Moldova is on recycling and disposal, with less importance given to waste prevention and reuse.

Therefore, we can note that there are organizational and institutional weaknesses:

- **Insufficient measures to support the waste hierarchy:** not enough measures are being implemented to support the waste hierarchy, which includes prevention, reuse, recycling, recovery, and disposal.
- **Lack of secondary legislation for classifying waste as a by-product:** secondary legislation regarding the classification of waste as a by-product and the cessation of its status as waste has not been approved.
- **Lack of waste treatment infrastructure:** most authorized operators hold environmental permits but do not have waste treatment facilities, including for hazardous waste. Currently, they are only authorized for waste collection activities, and traceability from waste generation to final treatment/recovery destinations is not ensured.
- **Lack of standards and certification for circular products:** In the Republic of Moldova, there are no clear standards or certifications for circular products (only for organic food products), which makes it difficult to identify and promote such products on the market.
- **Lack of regulations for designing durable products:** There are no regulations to encourage the design of products for durability, repairability, or recyclability.
- **Deficient infrastructure for waste collection and recycling:** The infrastructure for selective waste collection and recycling is insufficiently developed, especially in rural areas.
- **Insufficient cooperation between sectors:** There is a lack of an effective cooperation framework between the public, private, and non-governmental sectors for the implementation of circular economy projects. Public-private partnerships are limited, and the regulatory framework does not sufficiently encourage such collaborations.

It should also be noted that, according to the Code of Contraventions of the Republic of Moldova, anyone who violates the waste legislation must be sanctioned. For example, environmental pollution that causes harm is penalized with a fine ranging from 24 to 36 USD for individuals, and from 210 to 300 USD for legal entities, with or without the deprivation of the right to carry out certain activities for a period of 6 months to one year (Law No. 218-XVI, 2008). Therefore, the sanctions stipulated in the Contravention Code of the Republic of Moldova are not severe enough to prevent illegal waste management practices.

Thus, we conclude that one of the barriers to the transition to a circular economy is ensuring control, supervision, and monitoring of activities. The state must ensure and control the implementation of both the legislation and policies in the field.

#### ➤ **Financial and investment-related issues**

Moldova's climate-resilient green transition will require substantial investment. The CCDR report estimates that the NECP scenario will require a total investment of \$31 billion over the next 30 years, considering a 6% discount rate to arrive at a net present value (NPV), or 13.2% of cumulative GDP (also discounted). The "net zero" scenario requires an additional \$8.0 billion, or 3.6% of GDP. This compares to \$15.4 billion, or 6.6% of GDP, required under the REF scenario. Although total investment expenses are significantly higher in the NECP and net zero scenarios, operational expenses decrease due to lower fuel import needs (World Bank, 2024a).

At the national level, there are no facilities for the treatment/storage of hazardous waste; there is a lack of incentives for businesses that adopt waste prevention or product reuse practices, and there is no subsidy for recyclers.

The transition to a green and circular economy relies not only on the existence of well-defined national and international policies but also on the attitude of the population and their openness to the necessary changes. While legislation and regulations are essential for setting a clear framework for action, the real success of this transition also depends on how citizens, businesses, and communities understand and adopt these new practices.

A positive attitude towards environmental protection and an awareness of the importance of the circular economy can play a crucial role in the effective implementation of sustainability measures. Environmental education, information dissemination, and active involvement of the population in recycling, reuse, and waste reduction initiatives are key elements that can encourage responsible and sustainable behaviors.

At the same time, the degree of openness of the population towards these changes influences how the green economy measures are implemented. When citizens are willing to adopt new consumption patterns, support sustainable businesses, and actively participate in ecological initiatives, the transition becomes much more efficient. On the other hand, resistance to change or a lack

of understanding of the benefits of the circular economy can lead to delays and challenges in implementing new policies.

Thus, the success of the transition to a green and circular economy depends not only on the legislative framework but also on changing the collective mindset and fostering active collaboration across society. It is important for governments, non-governmental organizations, and the business environment to work together to educate and encourage citizens to become an active part of this essential process for the future of the planet.

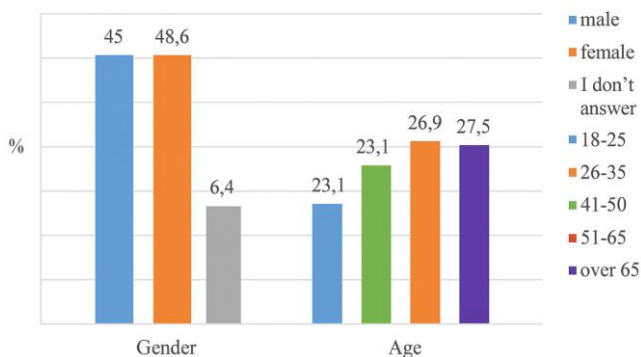
That is why the next objectives of our research focused on identifying the population's perception of the transition to a green and circular economy.

### 3. SURVEY RESULTS

#### 3.1. The interpretation of the respondent sample

Our survey received 1,419 responses, and the analysis of the sample's demographic characteristics provides a clear picture of its diversity. The relatively balanced gender distribution, with 48.6% women and 45% men, suggests a diverse and inclusive representation, essential for the validity of the survey results (Figure 1).

The respondents are also relatively balanced in terms of age group (25.3% are people in the 51-65 age range, 23.1% - respondents aged 41-50, 15.1% of respondents are aged 36-40, 14.2% - fall into the 26-35 age group, 12.6% - over 65 and people aged 18-25 are represented in a proportion of 9.7%) (Figure 1).



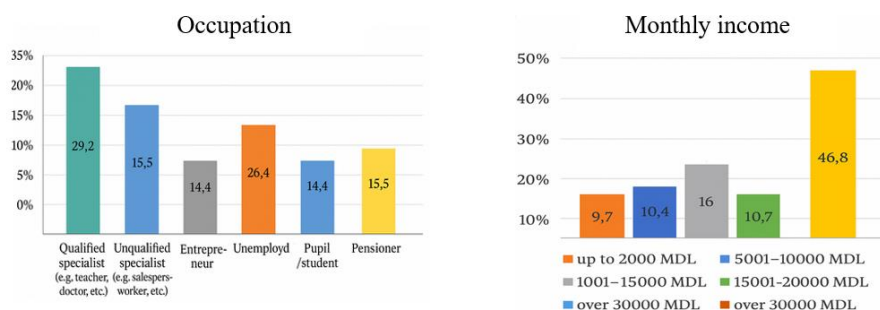
Source: compiled based on the questionnaire

**Figure 1. Distribution of respondents by gender and by age, %**

The region of residence of the respondents reflects the demographic structure of the Republic of Moldova, with a significant concentration in the Center (29.1%), South (29.8%), and Chisinau (the state capital) (23.4%). The North region is represented by only 17.8% of the total number of respondents. In terms of living environment, the majority of respondents come from urban areas (56.7%).

The occupation of the respondents shows a diversity in the workforce (29.2% are qualified specialists, such as teachers, doctors, etc., 26.4% - unqualified specialists, such as salespeople, workers, etc., 14.4% are entrepreneurs, 14.4% - students and pupils, 15.5% - pensioners (Figure 2).

Adopting eco-friendly behavior is often perceived as involving additional costs due to the higher prices of eco-friendly products, non-plastic packaging alternatives, and renewable energy sources, which are generally more expensive than conventional options. This perception can significantly influence the population's level of engagement in transitioning to a sustainable lifestyle.



Source: compiled based on the questionnaire

**Figure 2. Distribution of respondents by occupation and by monthly income, %**

To better understand this dynamic and assess respondents' economic capacity to adopt eco-friendly behaviors, we included a question about their monthly income in our study. This question allowed us to analyze the extent to which income levels affect attitudes and willingness to invest in products and services that support the green and circular economy. The results provide a clear perspective on the existing economic barriers and the need for public policies to encourage and support the transition to responsible consumption. However, considering that the survey was conducted in 2024, according to official data from the National Bank of Moldova, the average annual exchange rate of the Moldovan leu (MDL) against the euro (EUR) in 2024 was 19.2529 MDL for 1 EUR (National Bank of Moldova, 2024a). According to official data, in 2024, the average gross monthly salary in the Republic of Moldova was 14,096.7 MDL, equivalent to 732 EUR. At the same time, the average monthly income per person was 5,283.8 MDL (274 EUR) (National Bureau of Statistics of the Republic of Moldova, 2025).

Analyzing the respondents' answers, it is found that 46.8% of them have a monthly income in the approximate range of 519 – 779 EUR, close to the national average salary. Regarding higher incomes, 10.7% of respondents indicate a monthly income between 1,038 – 1,298 EUR, while 6.4% fall within the range of 1,298 – 1,558 EUR, significantly exceeding the national average. Another

significant category, representing 16% of respondents, reports monthly incomes between 260 – 519 EUR, below the national average. Furthermore, 10.4% of participants report monthly incomes below 104 EUR, indicating a marked economic vulnerability (the subsistence minimum in 2024 was 2,963.8 lei, equivalent to 154 EUR) (see Figure 2).

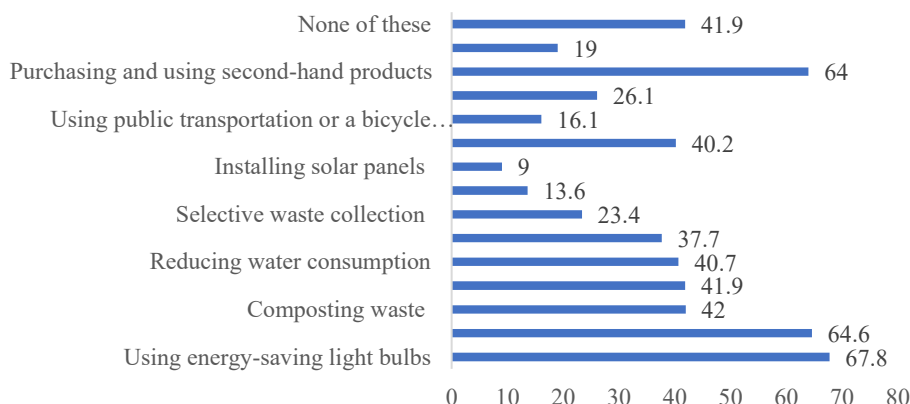
In conclusion, the analyzed sample exhibits diverse demographic and socio-economic characteristics, suggesting a good representativeness of the target population. Therefore, the sample can be considered suitable for the proposed analysis, contributing to the validity and reliability of the research.

### **3.2. Current behavior of citizens and identification of its causes**

To gain a deeper understanding of the population's engagement with environmentally responsible practices and to identify the underlying motivations or barriers influencing these behaviors, the following questions were asked:

1. To what extent do they participate in recycling activities?
2. Which ecological measures have they adopted in their households?
3. How often do they use reusable products (bottles, bags, containers, etc.) and how often do they participate in cleaning campaigns (parks, rivers)?
4. To what extent have they reduced electricity consumption in households?

When asked about the ecological measures used in their household, respondents gave preference to the following actions: using energy-saving light bulbs, with 67.8%, followed by reusing clothes (64.6%), composting waste (42%), purchasing ecological products (41.9%). Also, reducing water consumption is at a significant percentage of 40.7%, as well as using energy-efficient household appliances (37.7%). However, selective waste collection remains a less widespread practice (23.4%), which can be explained by the lack of adequate infrastructure in many regions of the country, where there are not enough separate waste collection points or appropriate infrastructure, but also the lack of motivation or information of respondents (Iordachi *et al.*, 2024). A small percentage of responses was also recorded for such actions as using alternative energy sources (13.6%) and installing solar panels (9%). Although it is a sustainable practice, the installation of solar panels is still less common, this is due to both the high initial costs (minimum 5 thousand Euros) and the complicated procedure for obtaining a connection permit from the government authority empowered with this. Figure 3 shows the distribution of respondents' answers regarding the ecological measures used in their household.



Source: compiled based on the questionnaire

**Figure 3. The distribution of respondents' answers regarding the ecological measures used in their household, %**

The vast majority of respondents (61.3%) use reusable products regularly, which signals a positive attitude towards sustainability, but there is also a part of the population (23.4%) that uses reusable products either rarely or occasionally, while 13.9% declare that they never use them.

The degree of civic responsibility and commitment to sustainable practices of the respondents is as follows: 31.8% engage in recycling activities regularly, over 64% - occasionally or rarely, and about 30% - never.

Research shows that individuals who are educated about environmental issues are more likely to actively participate in such campaigns (Gifford, 2013). Meanwhile, behavioral theories, such as the stage theory of behavioral change (Velicer *et al.*, 1995), suggest that individuals may be at an intermediate stage of change, where they are beginning to adopt environmentally friendly behaviors but are not yet fully committed. Individuals who rarely participate may be influenced by convenience factors, such as busy schedules, lack of intrinsic motivation, or the perception that cleanup activities will not produce a significant impact. This category of individuals may believe that they do not have the resources to make major changes or simply are not sufficiently aware of the effects of pollution on health and the environment. (Ryan and Deci, 2000). Time barriers and limited resources may also contribute to lower participation. The category of respondents who answered that they do not participate in such activities at all reflects a complete lack of involvement, which may be related to factors such as lack of awareness, indifference to environmental problems or lack of environmental education. Also, some individuals may consider that their individual efforts will not bring a significant change at the community level. In principle, this can be



argued by the fact that the perception of personal efficacy (the “lack of control” effect) can reduce the desire to get involved. The theory of planned behavior (Ajzen, 1991) suggests that people's intentions to participate in environmental behaviors are influenced by their attitudes towards the environment, social norms and the perception of control over the behavior. In this case, attitudes and social norms may not be strong enough to encourage constant participation. There is also an extrinsic motivation (external factors such as social pressure or external events) that can make participation less constant. The theory of perceived efficacy states that when people do not believe that their actions can bring about significant change, they will avoid participating (Bandura, 1982). Similarly, the “lack of control” theory (Kollmuss and Agyeman, 2002) suggests that people are less willing to participate when they feel that they have no real control over the problem and do not see how their individual actions can address global changes. Thus, the higher frequency of the options “rarely” and “never” suggests that although there is awareness of the importance of environmental protection, more educational initiatives and awareness campaigns are needed to increase the population’s involvement. Also, a change in public policies that encourages active participation, by facilitating access and creating more convenient volunteering opportunities, could contribute to increasing the participation rate.

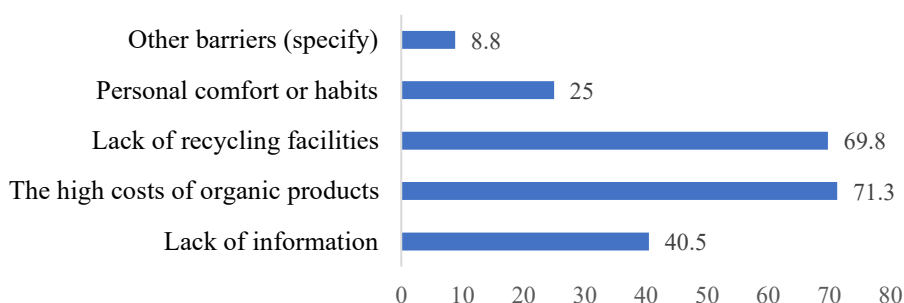
The Republic of Moldova has been recently facing a significant energy crisis (especially with the outbreak of the war in Ukraine), which is characterized by the increase in electricity tariffs. The increase in electricity prices directly affects household budgets, and this can lead to significant economic pressure on citizens, especially for those with lower incomes. Thus, starting from the idea that people are like “control systems”, similar to a thermostat or a mechanical system, which aim to maintain a certain “set point” (desired level of behavior or mental state) and which adjust their behaviors based on continuous feedback and cognitive processes of self-monitoring and reassessment (Carver and Scheier, 1981), the authors of the study asked to what extent the respondents have reduced their electricity consumption.

The distribution of respondents' answers regarding the reduction of electricity consumption indicates varying levels of engagement with energy-saving practices. Thus, about 46% of the respondents have not reduced their electricity consumption, 25% - moderately and about 23% - have reduced their consumption a little. This suggests that a large proportion of people do not consider it necessary to take significant steps to save electricity, either due to a lack of awareness of the impact that consumption can have on the environment or on bills, or due to economic or comfort factors. Changing electricity consumption behaviour requires a certain level of commitment and discipline. Many consumers may not consider saving energy to be worth the extra effort, especially if they are not directly affected by high energy bills or if there is no immediate visible impact on their lifestyle. Some people may perceive electricity as being relatively cheap or

accessible, which may make them feel less pressure to save. In economies where energy prices are not yet considered too high or subsidies are in place, consumers may not feel the pressure to reduce consumption as acutely.

### 3.3. The main barriers preventing citizens from adopting more sustainable behaviors

The respondents were asked about the main barriers preventing them from adopting more sustainable behaviors. The responses from the 1,270 participants led to the following findings (Figure 4).



Source: compiled based on the questionnaire

**Figure 4. Distribution of respondents' answers regarding the main barriers hindering the adoption of more sustainable behaviors, %**

Following the analysis of the respondents' answers, it was found that the main barrier to shifting towards more sustainable behavior is the high cost of ecological products, identified by 71.3% of the participants. This represents the most significant obstacle to adopting sustainable behaviors, suggesting that, despite growing interest in ecological and sustainable products, their costs are perceived as prohibitive for a large portion of consumers. The higher prices of ecological products, compared to conventional alternatives, remain a decisive factor in the purchasing decisions of most respondents. Nearly 73% of them report monthly incomes below 770 EUR, indicating significant economic vulnerability. In this context, the high costs of ecological products represent a considerable barrier for most people with lower incomes, who cannot afford to make these purchases.

Thus, it can be concluded that, despite the general interest in ecological products, lower incomes and their higher costs constitute a major obstacle to adopting more sustainable behavior, especially among those with lower incomes. Therefore, to facilitate the transition to sustainable behaviors, it is imperative that the prices of ecological products become more accessible to all income categories, particularly for people with lower incomes.

Indeed, attention should be given to factors such as comfort or personal habits (25%). A significant number of respondents (317 people) identified personal comfort and consumption habits as a barrier to adopting sustainable behaviors. This suggests that many people are reluctant to give up older, more comfortable habits, even if they may be aware of the need for change. Behavioral changes require a certain degree of effort and adaptation, which can discourage some people from making the transition to more eco-friendly habits.

This factor highlights that, beyond financial and economic constraints, cultural and psychological barriers also play a significant role in hindering the widespread adoption of sustainable practices. Comfort and ingrained habits are deeply rooted, making it difficult for individuals to prioritize sustainability over convenience. Therefore, addressing this barrier might involve not just providing alternatives but also supporting people in adjusting their lifestyles gradually, ensuring that sustainable behaviors align with their routines and personal comfort.

The results suggest that, although there is significant interest in sustainable behaviors, the main barriers are related to costs, infrastructure, and lack of information. These barriers are crucial to address in order to encourage widespread change in consumption behaviors. It is clear that the solutions lie not only at the consumer level but also at the level of authorities, who must develop adequate infrastructure and implement policies to support the adoption of a more sustainable lifestyle.

In other words, while consumers are increasingly aware of the importance of sustainability, practical challenges – such as higher costs, insufficient recycling facilities, or limited access to eco-friendly alternatives – must be overcome to enable broader adoption of green behaviors. At the same time, informing the public about the long-term benefits of sustainable choices and providing necessary incentives and support will play a pivotal role in creating a more sustainable society.

### **3.4. Awareness of the importance of the transition to the circular economy**

The level of awareness regarding the importance of the transition to a circular economy and the need for citizens' environmental involvement was analyzed through the answers to the following questions:

1. How important is the eco-label for you when shopping?
2. To what extent do you consider environmental protection to be important for the future of the Republic of Moldova?
3. To what extent do you agree with the following statement: "Implementing EU sustainability policies will improve the quality of life in Moldova."

Analyzing the data on the importance of the eco-label in the process of purchasing products, a significant disproportion can be observed between the responses of those who consider the eco-label important and those who consider it irrelevant. According to the results, only 3.5% of respondents considered the eco-label to be very important, while 54.6% indicated that it was not important at

all. Also, 23% assessed it as important, and 18.9% considered it to be a little important.

Following the analysis of the respondents' answers, it was found that the main barrier to shifting towards more sustainable behavior is the high cost of ecological products, identified by 71.3% of the participants. This represents the most significant obstacle to adopting sustainable behaviors, suggesting that, despite growing interest in ecological and sustainable products, their costs are perceived as prohibitive for a large portion of consumers. The higher prices of ecological products, compared to conventional alternatives, remain a decisive factor in the purchasing decisions of most respondents. Nearly 73% of them report monthly incomes below 770 EUR, indicating significant economic vulnerability. In this context, the high costs of ecological products represent a considerable barrier for most people with lower incomes, who cannot afford to make these purchases.

Thus, it can be concluded that, despite the general interest in ecological products, lower incomes and their higher costs constitute a major obstacle to adopting more sustainable behavior, especially among those with lower incomes. Therefore, to facilitate the transition to sustainable behaviors, it is imperative that the prices of ecological products become more accessible to all income categories, particularly for people with lower incomes.

Indeed, attention should be given to factors such as comfort or personal habits (25%). A significant number of respondents (317 people) identified personal comfort and consumption habits as a barrier to adopting sustainable behaviors. This suggests that many people are reluctant to give up older, more comfortable habits, even if they may be aware of the need for change. Behavioral changes require a certain degree of effort and adaptation, which can discourage some people from making the transition to more eco-friendly habits.

This factor highlights that, beyond financial and economic constraints, cultural and psychological barriers also play a significant role in hindering the widespread adoption of sustainable practices. Comfort and ingrained habits are deeply rooted, making it difficult for individuals to prioritize sustainability over convenience. Therefore, addressing this barrier might involve not just providing alternatives but also supporting people in adjusting their lifestyles gradually, ensuring that sustainable behaviors align with their routines and personal comfort.

The results suggest that, although there is significant interest in sustainable behaviors, the main barriers are related to costs, infrastructure, and lack of information. These barriers are crucial to address in order to encourage widespread change in consumption behaviors. It is clear that the solutions lie not only at the consumer level but also at the level of authorities, who must develop adequate infrastructure and implement policies to support the adoption of a more sustainable lifestyle.

In other words, while consumers are increasingly aware of the importance of sustainability, practical challenges – such as higher costs, insufficient recycling

facilities, or limited access to eco-friendly alternatives – must be overcome to enable broader adoption of green behaviors. At the same time, informing the public about the long-term benefits of sustainable choices and providing necessary incentives and support will play a pivotal role in creating a more sustainable society.

This distribution suggests that, although the concept of sustainability and environmental protection is increasingly discussed within Moldovan society, a large part of consumers do not attach significant importance to the eco-label when purchasing products. These results can be explained by a series of factors, supported by scientific research and behavioral theories (Megha, 2024).

A possible explanation could be the *lack of adequate environmental education among consumers*. Studies show that a low level of environmental education can reduce individuals' active involvement in sustainable behaviors, including the choice of eco-labeled products (Steg *et al.*, 2012). Studies have shown that awareness of the link between eco-labels and environmental protection can significantly influence consumer behaviors (Grankvist and Biel, 2007). Therefore, broader environmental education could contribute to changing this perception.

Another reason may be the *perception that eco-labels do not bring tangible benefits to consumers*. Many people are skeptical about the effectiveness and authenticity of eco-labels. Studies show that there is widespread skepticism among consumers about the true impact of products labeled as eco-labels (Magnusson *et al.*, 2003). This skepticism may lead to an underestimation of the importance of these labels. In a study conducted in Sweden, only 18% of consumers considered eco-labels to be significant in their purchasing decisions, despite a strong commitment to environmental protection (Magnusson *et al.*, 2003). The perception that these labels do not guarantee a real environmental impact or are not properly verified may explain the less favorable attitudes.

*The higher price of ecologic products* compared to their conventional alternatives represents a major barrier to purchasing decisions. Studies show that price is one of the most important factors influencing consumer behavior (Thøgersen *et al.*, 2012), and organic products are often perceived as more expensive than conventional alternatives. This may explain why most consumers do not consider the eco-label to be important enough to justify a higher price (Thøgersen *et al.*, 2012). Sustainable consumer behavior identifies the high price of organic products as the main deterrent to purchasing organic products. The authors argue that higher prices are associated with a significant barrier, especially among middle- and low-income consumers. (Mohan *et al.*, 2025). High price can limit the adoption of organic products, even when consumers are aware of their positive environmental impact (Sivapalan *et al.* 2021).

Also, *consumption behaviors* are deeply rooted in the individual's daily routine. Changing consumption behavior, even towards adopting ecological options, requires considerable cognitive and behavioral effort (Verplanken and Wood, 2006).

The low percentage of 17.3% of respondents who consider environmental protection “very important” highlights an important trend in the behaviors and perceptions of citizens in the Republic of Moldova. This result suggests that, despite media discussions and global campaigns on climate change and the need to adopt more sustainable behavior, environmental protection is not yet perceived as a major priority among the population. This finding reflects several social, economic and political realities and dynamics in the Republic of Moldova, which influence the level of awareness and involvement of citizens in environmental issues.

Taking into account the 4 human values, which are considered to underlie individuals' ecological beliefs and behaviors: biospheric values (i.e. concern for the environment), altruistic values (i.e. concern for others), egoistic values (i.e. concern for personal resources) and hedonic values (i.e. concern for pleasure and comfort) (Bouman *et al.*, 2018), we can see that in the case of our sample the main causes that led to such results are:

*Limited awareness of biospheric values:* A significant factor that may contribute to this low percentage of respondents who consider environmental protection “very important” is the limited awareness of biospheric values explained by the lack of adequate environmental education. Studies in the field of environmental education show that environmental awareness is closely related to the level of education and exposure to relevant information on the impact of human activities on the environment (Bouman *et al.*, 2018).

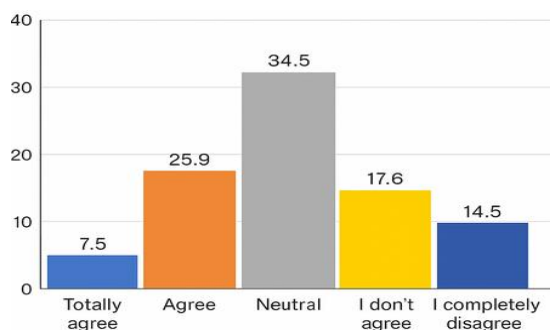
The perception of the importance of environmental protection is also influenced by the level of information about the negative effects of pollution, climate change or depletion of natural resources. In the case of the Republic of Moldova, the lack of consistent educational campaigns or a clear national environmental education policy may lead to a superficial understanding of the seriousness of environmental problems.

*Perception of low priority of environmental issues over other socio-economic issues:* In the Republic of Moldova, economic and social issues may be considered more pressing priorities than environmental protection. The majority of the population faces economic difficulties, declining living standards, and lack of job opportunities, which may lead citizens to be less concerned about environmental measures. In this context, environmental protection may seem like a secondary priority, especially when many families are focused on survival and improving their economic conditions. (Cattaneo *et al.*, 2022). The higher costs of environmentally friendly products, or difficulties in accessing recycling infrastructure or other environmental protection facilities, may also contribute to this attitude. Another factor may be the perception that individual actions will not have a significant

impact on the environment. Many people may also believe that the government and authorities should implement more effective environmental policies, leaving the responsibility for environmental protection to them, instead of perceiving it as an individual or community problem (Hampton and Whitmarsh, 2023).

*Limited involvement of authorities in the implementation of environmental policies:* In the context of the Republic of Moldova, public policies in the field of environmental protection have not always been a priority. Even if there is legislation in force regulating environmental aspects, its enforcement and the implementation of effective environmental protection measures are often incomplete or ineffective. For example, recycling facilities are not evenly distributed throughout the territory, and pollution prevention measures are often insufficient. This lack of active involvement of authorities in environmental protection can lead to a negative perception by the population, who consider environmental measures to be only declarative, without a real impact on their daily lives. (Kim and Kim, 2022)

*Social conformity and lack of a collective example of sustainability:* In many cases, the perception that “everyone” ignores environmental protection can lead to conformist behavior. If the majority of people in an individual’s community are not actively involved in environmentally friendly behaviors, it is more difficult for an individual to adopt sustainable behavior. In this sense, the work of raising awareness in society and promoting collective behavior becomes essential to make environmental protection a priority (Tu *et al.*, 2024). The survey results indicated a relatively balanced distribution of respondents’ opinions regarding the impact that the implementation of European Union (EU) sustainability policies will have on the quality of life in the Republic of Moldova. This suggests both a lack of clarity regarding the perceived benefits of EU standards and a general uncertainty among the population regarding their effects (Figure 5).



Source: compiled based on the questionnaire

**Figure 5. The impact of the implementation of European Union (EU) sustainability policies on the quality of life in the Republic of Moldova, %**

Thus, about 34.5% of respondents do not have a clear opinion regarding the statement that “Implementing EU sustainability policies will improve the quality of life in Moldova”; 26% of respondents agree with the statement that the implementation of EU sustainability policies will improve the quality of life in Moldova and 7.5% are firmly convinced that the implementation of EU standards will lead to an improvement in the quality of life in Moldova. A percentage of 17.8% of respondents disagree with the statement that the implementation of EU sustainability policies will improve the quality of life. This group expresses skepticism regarding the real impact of these policies on the country and can be explained by the fear of inequalities, conflicts, increased restrictions, taxes, etc.: EU integration and the implementation of standards are often perceived as a source of economic and social pressure, which could negatively affect certain sectors of the economy or certain social groups. For example, the implementation of strict environmental protection rules could entail additional costs in everyday life.

To verify the hypothesis that lack of information may be a cause of a low level of environmental awareness and education among the sample, which influences their behaviors (Van de Wetering *et al.*, 2022), a question was introduced in the questionnaire: *Where do you most often get information about environmental and sustainability issues?*

The most popular sources of information are social networks (87.6%) and traditional media (65%), indicating a considerable reliance on popular media and digital channels for obtaining environmental information. A significant aspect that emerges from the survey data is the low rate of use of official government or European Union websites for obtaining environmental information (only 8.8%). Another important result is the popularity of environmental information and education campaigns (54.3%). Respondents who mentioned this source of information believe that educational campaigns have a significant impact on environmental awareness, and they are seen as an effective method of reaching a wide audience.

This suggests two possible causes:

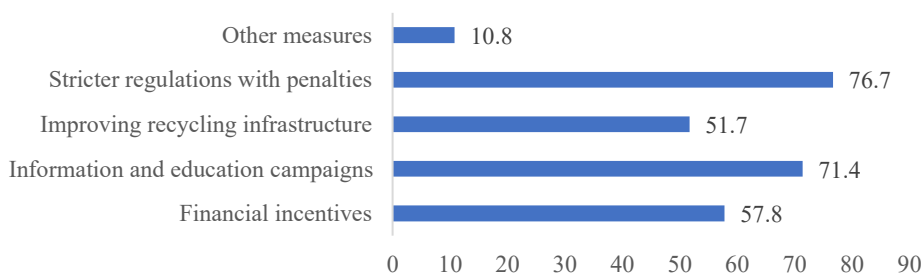
*Lack of accessibility:* Official government or EU websites may be perceived as more difficult to access or less visually appealing than more popular information sources (Serrano-Bedia, 2022). Also, the technical language or complex information presented on these websites may be an obstacle to their understanding and use by a significant part of the population. Thus, people may prefer to obtain information from more accessible and easy-to-understand sources (LoMonte and Delgado, 2023).

*Preference for quick and direct sources:* Many respondents may be more attracted to quick sources of information, such as social media posts or press articles, which provide a quick summary of news or environmental issues, than to the detailed and often technical information available on official websites. (Zhang and Gong, 2023).



### 3.5. The best actions to raise awareness among the country's population regarding sustainable behavior

Figure 6 shows the distribution of respondents' answers regarding the measures they would prefer to facilitate their behavioral change and stimulate their commitment to the transition to a circular economy. A significant percentage (76.7%) of respondents believe that stricter regulations accompanied by penalties for non-compliance are essential measures, which implies that there is an expectation on the part of the population that authorities will implement tougher policies that will force citizens and companies to adopt environmentally friendly behaviors. Another 71.4% of respondents believe that information and education campaigns are essential to encourage environmentally friendly behavior. More than half of respondents (57.8%) believe that financial incentives could encourage environmentally friendly behaviors. This can include tax breaks for environmentally friendly products, subsidies for the purchase of energy-efficient appliances, or bonuses for recycling. 51.7% of respondents argue that improving recycling infrastructure could support environmentally friendly behaviors.



Source: compiled based on the questionnaire

**Figure 6. The best actions to raise awareness among the country's population regarding sustainable behavior, %**

Although almost half of participants believe that this aspect is important, its implementation can be challenging, especially in rural areas or less developed communities. The creation of accessible recycling centers, wider availability of recycling containers, and education on waste separation are elements that need to be taken into account in public policies and can significantly improve recycling rates (Zhang *et al.*, 2016). A smaller percentage (10.8%) of respondents suggested other specific measures, for example, local awareness campaigns, green volunteer projects, or other solutions not explicitly mentioned in the questions.

The results suggest that, to encourage more environmentally friendly behavior, citizens are most influenced by information about environmentally friendly and sustainable products, tips for saving natural resources, and practical

guides. In this context, environmental authorities and organizations should adopt a more practical and accessible approach to environmental education, using in parallel information campaigns and online tutorials to reach a wider audience. Also, the use of mass media and social networks can be an effective method of disseminating environmental messages, but this must be supported by clear and relevant information. (Zhang and Gong, 2023)

### **3.6. The degree of financial openness of the population, as well as the motivation to make changes in lifestyle and behavior**

The transition to a circular economy represents a fundamental change in the way resources are used, produced and managed in the economy (Van Langen *et al.*, 2021). However, achieving an effective transition to this sustainable model requires significant investments and close collaboration between authorities, the private sector and the population (Moallemi *et al.*, 2020).

Regarding the capacity of the Republic of Moldova to ensure significant investments in the transition to a circular economy, there are several economic, political and institutional factors that need to be taken into account (National Bank of Moldova, 2024b). While the Republic of Moldova has significant potential to adopt circular economies, achieving this goal requires significant investments and a number of specific challenges. It is estimated that the Republic of Moldova will need to invest between 4 and 5 billion USD to finance the transition to a low-carbon economy and adapt to climate change by 2030 (World Bank Group, 2024a). Between 2010 and 2023, Moldova's investment landscape was mainly supported by reinvested profits and household savings, which accounted for about 50 percent of total gross fixed capital formation (compared to credit to the private sector by the banking sector, which contributed an average of 15 percent, with an average annual flow of 1.7 percent of GDP to the private sector). By 2023, the stock of credit to the private sector reached 23 percent of GDP (World Bank Group, 2024b).

However, despite the fact that the country is making important steps in harmonizing its legislation with EU norms (United Nations Development Programme Moldova, 2024), the country is limited by insufficient financial and technical resources. The private sector has a crucial role in supporting the transition to a circular economy. In this regard, local companies and international investors can contribute by adopting more energy-efficient technologies, implementing circular production processes and investing in green products (Nuryanto *et al.*, 2024). Public-private partnerships can also represent a solution for ensuring significant investments in green infrastructure. Collaborative projects between the state and the private sector could reduce the risks and initial costs of implementing circular solutions and attract more external funds (Călugăreanu and Chirtoca, 2024).

However, in the authors' view, an essential aspect to support the transition to a circular economy in the Republic of Moldova is the active participation of citizens and their degree of openness to environmental commitments.

The degree of openness to invest in the transition to a more circular and environmentally friendly way of life was analyzed through the following questions:

1. Would you be willing to invest in a more expensive, but more energy-efficient technology (e.g., household appliances, solar panels)?
2. Would you donate a sum of money to projects or organizations that support environmental protection?
3. Would you be willing to pay an additional tax to support environmental projects in your community?

The survey results on respondents' willingness to invest in more expensive but more energy-efficient technology, such as efficient home appliances or solar panels, are as follows:

- not willing to invest - 51%
- would probably invest - 23%
- unlikely to invest - 16%
- willing to invest - 10.4%

Regarding the introduction of an additional tax or the increase of the current environmental or territorial planning taxes, the results showed that there is a generally negative attitude (almost 54% do not agree), 17.0% of the respondents chose the option "probably" and 24.4% - chose the option unlikely and only 4.4% - would be willing to pay this tax, which reflects an awareness of the importance of environmental protection and an openness to financing them. However, there is a difference in perception among the population, which makes us believe that the population remains reluctant to such measures due to economic concerns or lack of trust in the management of funds.

The same picture is also attested to the willingness to make donations for environmental protection projects. The results reflect a similar trend to that observed in the case of the responses related to additional environmental taxes. The majority of respondents (almost 59%) answered negatively, which suggests a significant resistance to the idea of contributing financially to environmental projects. 26.5% of respondents would be willing to make donations, but only if they are convinced of their real impact. About 10% of respondents make such donations occasionally and 4.4% - agree and regularly participate in such actions.

#### 4. CONCLUSIONS AND RECOGNITION OF CONSTRAINTS

The results of the study highlight a positive attitude towards the concepts of sustainability and environmental protection, but this does not always translate into concrete actions or responsible consumption behaviors. Although there is a general awareness of the importance of environmental protection, this is not fully reflected in the daily behaviors of the population.

In the context of the Republic of Moldova, the results of the study suggest that insufficient information and limited access to energy-efficient equipment determine high energy consumption in households. Recycling is also still a practice in its infancy, largely due to structural and governance challenges in waste management. In many regions of the country, the lack of resources and adequate infrastructure at the level of local authorities hinders the development of an efficient and sustainable waste management system.

Despite the fact that the majority of respondents declare that they use reusable products frequently, a significant percentage of people still do not use them at all or use them very rarely. This behavior highlights the lack of environmental education and financial incentives for adopting new technologies, which leads to low awareness of the economic and environmental benefits of environmental policies and the circular economy.

The study results highlight the urgent need to improve environmental education and public information to stimulate active involvement and more sustainable behavior. Environmental policies must encourage environmentally friendly behaviors through clear measures and financial incentives, but also by developing the necessary infrastructure to implement environmental changes.

#### ACKNOWLEDGMENTS

*The research was conducted under Project 20.80012.7007.10SE, "Social Impact Analysis for the Deposit Return System for Recyclable Packaging in the Republic of Moldova."*

#### References

- 1) Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes*, 50(2), pp. 179-211. [http://doi.org/10.1016/0749-5978\(91\)90020-T](http://doi.org/10.1016/0749-5978(91)90020-T)
- 2) Ambituuni, A., Ajala, A., Schroeder, P. and Oyinlola, M. (2024). Catalysing Environmental Action: a Governance Framework for Enhancing Individual Participation in Sub-Saharan Africa's Plastic Circular Economy. *Environmental Management*. Springer US
- 3) Bandura, A. (1982). *Self-Efficacy Mechanism in Human Agency*. *American Psychologist*, 37(2), pp. 122-147. <http://doi.org/10.1037/0003-066X.37.2.122>

- 4) Boons, F., Montalvo, C., Quist, C. and Wagner, M. (2013). Sustainable innovation, business models and economic performance: an overview. *Journal of Cleaner Production*, 45, pp.1-8. <http://doi.org/10.1016/j.jclepro.2012.08.013>
- 5) Bouman, T., Steg, L. and Kiers, H. A. L. (2018). Measuring values in environmental research: A test of an environmental Portrait Value Questionnaire. *Frontiers in Psychology*, 9, Article 564. <https://doi.org/10.3389/fpsyg.2018.00564>
- 6) Carver, C. S. and Scheier, M. F. (1981). *Attention and Self-Regulation: A Control Theory Approach to Human Behavior*. New York: Springer. <http://doi.org/10.1007/978-1-4612-5887-2>
- 7) Cattaneo, A., Adukia, A., Brown, D. L., Christiaensen, L., Evans, D. K, Haakenstad, A., McMenomy, T., Partridge, M., Vaz, S. and Weiss, D. J. (2022). Economic and social development along the urban–rural continuum: New opportunities to inform policy. *World Development*, 157, 05941. <http://doi.org/10.1016/j.worlddev.2022.105941>
- 8) Călugăreanu, I and Chirtoca, A. (2024) International experience in financial and instrumental support for the sustainable development of clusters. <http://doi.org/10.36004/nier.cecg.III.2024.18.29>
- 9) European Council (2022). *European Council conclusions on Ukraine, the membership applications of Ukraine, the Republic of Moldova and Georgia, Western Balkans and external relations*. [online] Available at: <https://www.consilium.europa.eu/en/press/press-releases/2022/06/23/european-council-conclusions-on-ukraine-the-membership-applications-of-ukraine-the-republic-of-moldova-and-georgia-western-balkans-and-external-relations-23-june-2022/> [Accessed 28.04. 2025].
- 10) European Council (2023). *European Council conclusions on Ukraine, enlargement and reforms*. [online] Available at: <https://www.consilium.europa.eu/en/press/press-releases/2023/12/14/european-council-conclusions-on-ukraine-enlargement-and-reforms> [Accessed 28.04. 2025].
- 11) Geissdoerfer, M., Savaget, P., Bocken, N. M. P. and Hultink E. J. (2017). The Circular Economy – A new sustainability paradigm? *Journal of Cleaner Production*, 143, pp. 757-768. [doi.org/10.1016/j.jclepro.2016.12.048](https://doi.org/10.1016/j.jclepro.2016.12.048)
- 12) Gifford, R. (2013). Environmental Psychology Matters, *Annual Review of Psychology*, 65(1), pp. 541-579. <http://doi.org/10.1146/annurev-psych-010213-115048>
- 13) Girard, L. F. (2021). The evolutionary circular and human centered city: Towards an ecological and humanistic “re-generation” of the current city governance. *Human Systems Management*, 40, pp. 753–775. <http://doi.org/10.3233/HSM-211218>
- 14) Government Decision no. 561/2020. The Regulation regarding packaging and packaging waste. [online] Available at: [https://www.legis.md/cautare/getResults?doc\\_id=143207&lang=ro](https://www.legis.md/cautare/getResults?doc_id=143207&lang=ro) [Accessed 15.03.2025].
- 15) Government Decision no. 624/2023. The National Climate Change Adaptation Program until 2030. [online] Available at: <https://gov.md/sites/default/files/document/attachments/subiect-06-nu-242-mm-2023.pdf>. [Accessed 1.05.2025].
- 16) Government Decision no. 659/2023. The Republic of Moldova's Low Emission Development Program until 2030. [online] Available at:

- [https://cancelaria.gov.md/sites/default/files/document/attachments/nu-302-mm-2023\\_0.pdf](https://cancelaria.gov.md/sites/default/files/document/attachments/nu-302-mm-2023_0.pdf) [Accessed 25.04. 2025].
- 17) Government Decision no. 816/2023. The Sustainable Chemical Substance Management Program for 2023-2030. [online] Available at: [https://gov.md/sites/default/files/document/attachments/subiect-11-nu-510-mm-2023\\_2.pdf](https://gov.md/sites/default/files/document/attachments/subiect-11-nu-510-mm-2023_2.pdf). [Accessed 2.05.2025].
  - 18) Government Decision no. 972/2023. Waste Management Program for 2023-2027. [online] Available at: <https://www.fao.org/faolex/results/details/es/c/LEX-FAOC224800/>. [Accessed 5.04. 2025].
  - 19) Grankvist, G. and Biel, A. (2007). The impact of environmental information on professional purchasers' choice of products. *Business Strategy and the Environment*, 16(6), pp. 421 – 429. <http://doi.org/10.1002/bse.565>
  - 20) Hampton, S. and Whitmarsh, L. (2023). Choices for climate action: A review of the multiple roles individuals play. *One Earth*, 6(9), pp. 1157-1172. <http://doi.org/10.1016/j.oneear.2023.08.006>
  - 21) Iordachi V., Timofei, O. and Perciun, R. (2024). Consumer Decision Drivers in the Republic of Moldova: Choosing Recycled Clothing for a Sustainable Future. *Calitatea vietii*, 35:4. <http://doi.org/10.46841/RCV.2024.04.01>
  - 22) Kim, K. and Kim, S. (2022) Bringing power and time in: How do the role of government and generation matter for environmental policy support? *Energy Strategy Reviews*, 42, 100894. <http://doi.org/10.1016/j.esr.2022.100894>
  - 23) Kollmuss, A. and Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), pp. 239-260. <https://doi.org/10.1080/13504620220145401>
  - 24) Law no. 209/2016 on waste. [online] Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC179370/> [Accessed 10.02.2025].
  - 25) Law no. 218-XVI/2008. Code of Contraventions of the Republic of Moldova. [online] Available at: [https://www.covidlawlab.org/wp-content/uploads/2021/07/Republic-of-Moldova\\_2008.10.22\\_Law\\_Contravention-Code\\_EN.pdf](https://www.covidlawlab.org/wp-content/uploads/2021/07/Republic-of-Moldova_2008.10.22_Law_Contravention-Code_EN.pdf). [Accessed 27.02.2025].
  - 26) Law no. 237/2024 on organic production and labeling of organic products. [online] Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC220924/> [Accessed 10.02 2025].
  - 27) Law no. 315/ 2022. The National Development Strategy "European Moldova 2030". [online] Available at: [https://cancelaria.gov.md/sites/default/files/1\\_315\\_2022\\_snd\\_moldova\\_europeana\\_2030\\_adoptat\\_publicata.pdf](https://cancelaria.gov.md/sites/default/files/1_315_2022_snd_moldova_europeana_2030_adoptat_publicata.pdf) [Accessed 15.02.2025].
  - 28) LoMonte, F. D. and Delgado, D. (2023). *The Importance of Accessible Government Data in Advancing Environmental Justice*, 47 Wm. & Mary Env't L. & Pol'y Rev. 827. [online] Available at: <https://scholarship.law.wm.edu/wmelpr/vol47/iss3/7> [Accessed 15.02.2025].
  - 29) Magnusson, M/K., Arvola, A., Koivisto Hursti, U. K. and Åberg, L (2003). Choice of Organic Food Is Related to Perceived Consequences for Human Health and to Environmentally Friendly Behaviour. *Appetite*, 40(2), pp. 109-117. [http://doi.org/10.1016/S0195-6663\(03\)00002-3](http://doi.org/10.1016/S0195-6663(03)00002-3)

- 30) Maqbool, M. E., Farhan, A. and Qamar, M. A. (2024). Global impact of COVID-19 on food safety and environmental sustainability: Pathways to face the pandemic crisis. *Heliyon*, 10(15), e35154. <http://doi.org/10.1016/j.heliyon.2024.e35154>
- 31) Megha. (2024). Determinants of green consumption: A systematic literature review using the TCCM approach. *Frontiers in Sustainability*, 5, Article 1428764. <https://doi.org/10.3389/frsus.2024.1428764>
- 32) Ministry of Environment (2024). The environmental and resource productivity of the economy. [online] Available at: <https://mediu.gov.md/indicatori/capitol2.html> [Accessed 3.05. 2025].
- 33) Moallemi, E. A., Malekpour, S., Hadjikakou, M, Raven, R., Szetey, K., Ningrum, D., Dhiaulhaq, A. and Bryan, B. A. (2020). Achieving the Sustainable Development Goals Requires Transdisciplinary Innovation at the local Scale. *One Earth*, 3(3), pp. 300-313.
- 34) Mohan, R., Chauhan, N. and Kathikeyan, A. (2025). Deciphering Consumer Decision-Making for Mainstreaming Sustainable Products: Exploring Conscious Eco-Friendly Choices. In: Hamdan, A. and Braendle, U. (eds), *Harnessing AI, Machine Learning, and IoT for Intelligent Business. Studies in Systems, Decision and Control*, vol 555. Springer, Cham. [http://doi.org/10.1007/978-3-031-67890-5\\_92](http://doi.org/10.1007/978-3-031-67890-5_92)
- 35) National Bank of Moldova (2024a). *Exchange rates (currency exchange rate)*. [online] Available at: <https://www.bnm.md/ro/content/ratele-de-schimb> [Accessed 15.02.2025].
- 36) National Bank of Moldova (2024b). *Moldova Sustainable Finance Roadmap 2024 – 2028*. [online] Available at: [https://bnm.md/files/Foia%20de%20parcurs%20pentru%20finan%C8%9Bare%20durabil%C4%83\\_eng.pdf](https://bnm.md/files/Foia%20de%20parcurs%20pentru%20finan%C8%9Bare%20durabil%C4%83_eng.pdf) [Accessed 25.02. 2025].
- 37) National Bureau of Statistics of the Republic of Moldova (2025). *Website*. [online] Available at: [https://statistica.gov.md/ro/statistic\\_indicator\\_details/3](https://statistica.gov.md/ro/statistic_indicator_details/3) [Accessed 2.05.2025].
- 38) Nuryanto, U. W., Basrowi, Q., Quraysin, I. and Pratiwi, I. (2024). Harmonizing eco-control and eco-friendly technologies with green investment: Pioneering business innovation for corporate sustainability in the Indonesian context. *Environmental Challenges*, 15, Article 100952. <https://doi.org/10.1016/j.envc.2024.100952>
- 39) Parliamentary Decision no. 28/2023. *The Government Activity Program "Prosperous, Safe, European Moldova"*. [online] Available at: <https://www.fao.org/faolex/results/details/en/c/LEX-FAOC224003/> [Accessed 15.03.2025].
- 40) Prieto-Sandoval, V., Jaca, C., & Ormazabal, M. (2018). *Towards a consensus on the circular economy*. *Journal of Cleaner Production*, 179, pp. 605-615. <https://doi.org/10.1016/j.jclepro.2017.12.224>
- 41) Ryan, R. M. and Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), pp. 68–78. <http://doi.org/10.1037/0003-066X.55.1.68>
- 42) Sambyal, S. S. (2023). Social Innovation for the Circular Economy: An Example of Informal Waste Recycling. In: R. Arora, D. Mutz and P. Mohanraj (eds.), *Innovating for The Circular Economy*. Boca Raton, FL: CRC Press. 9781003201816

- 43) Serrano-Bedia, A.-M. and Perez-Perez, M. (2022). Transition towards a circular economy: A review of the role of higher education as a key supporting stakeholder in Web of Science. *Sustainable Production and Consumption*, 31, pp. 82-96. doi.org/10.1016/j.spc.2022.02.001
- 44) Sivapalan, A., von der Heide, T., Scherrer, P. and Sorwar, G. (2021). A consumer values-based approach to enhancing green consumption. *Sustainable Production and Consumption*, 28, pp. 699-715. http://doi.org/10.1016/j.spc.2021.06.013
- 45) Steg, L., Perlaviciute, G., Van der Werff, E. and Lurvink, J. (2012). The Significance of Hedonic Values for Environmentally Relevant Attitudes. *Environment and Behavior*, 6(2), pp. 163-192. http://doi.org/10.1177/0013916512454730
- 46) The Environmental Strategy for the years 2024-2030. [online] Available at: <https://gov.md/en/content/moldovan-cabinet-approves-environment-strategy-2024-2030>. [Accessed 5.03.2025].
- 47) The Green and Circular Economy Promotion Program for 2024-2028 (2024) [online] Available at: <https://consecn.gov.md/en/2024/07/10/guvernul-a-aprobat-programul-de-promovare-a-economiei-verzi-si-circulare-2024-2028/>. [Accessed 15.04.2025].
- 48) Thøgersen, J., Jørgensen, A.-K. and Sandager, S. (2012). Consumer decision making regarding a “green” everyday product. *Psychology & Marketing*, 29(4), pp. 187-197. https://doi.org/10.1002/mar.20514
- 49) Thøgersen, J. and Nohlen, H. (2022). Consumer understanding of origin labelling on food packaging and its impact on consumer product evaluation and choices: A systematic literature review. In: Ciriolo, E. (ed.), EUR 31208 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-56613-7. http://doi.org/10.2760/336778, JRC126893.
- 50) Tu, C., Chen, R., Pan, X., Fan, Y. and Guo, J. (2024). Impact of resource availability and conformity effect on sustainability of common-pool resources. *Fundamental Research*. http://doi.org/10.1016/j.fmre.2024.10.007
- 51) United Nations Development Programme Moldova (2024). [online] Available at: <https://www.undp.org/moldova/news/legislation-republic-moldova-energy-sector-aligned-european-union-standards> [Accessed 20.04.2025].
- 52) United Nations Population Fund Moldova (2023). *Progress Report on the implementation of the 2030 Agenda for Sustainable Development in the Republic of Moldova* 2023. [online] Available at: [https://moldova.unfpa.org/sites/default/files/pub-pdf/raport\\_de\\_progres\\_odd\\_2023\\_vf\\_07\\_08\\_2023\\_en\\_final.pdf](https://moldova.unfpa.org/sites/default/files/pub-pdf/raport_de_progres_odd_2023_vf_07_08_2023_en_final.pdf) [Accessed 15.04.2025].
- 53) Van de Wetering, J., Leijten, P., Spitzer, J. and Thomaes, S. (2022). Does environmental education benefit environmental outcomes in children and adolescents? A meta-analysis. *Journal of Environmental Psychology*, 81. http://doi.org/10.1016/j.jenvp.2022.101782
- 54) Van Langen, S. K., Vassillo, C., Ghisellini, P., Restaino, D., Passaro, R. and Ulgiati, S. (2021). Promoting circular economy transition: A study about perceptions and awareness by different stakeholders groups. *Journal of Cleaner Production*, 316, 128166. http://doi.org/10.1016/j.jclepro.2021.128166



- 55) Velicer, W. F., Hughes, S. L., Fava, J. L., Prochaska, J. O. and DiClemente, C. C. (1995). An empirical typology of subjects within stage of change, *Addictive Behaviors*, 20(3), pp. 299-320. doi.org/10.1016/0306-4603(94)00069-B
- 56) Verplanken, B. and Wood, W. (2006). Interventions to Break and Create Consumer Habits. *Journal of Public Policy & Marketing*, 25(1), pp. 90–103. <http://doi.org/10.1509/jppm.25.1.90>
- 57) World Bank Group (2024a). *Moldova Country Climate and Development Report*. [online] Available at: <https://openknowledge.worldbank.org/entities/publication/b5886ecd-d46b-4d48-a747-19e9326e0e9d> [Accessed 28.04. 2025].
- 58) World Bank Group (2024b). New World Bank report on Moldovan economy outlines key reforms necessary for accelerating growth, aligning with EU standards [Press release]. [online] Available at: <https://www.worldbank.org/en/news/press-release/2024/11/25/new-world-bank-report-on-moldovan-economy-outlines-key-reforms-necessary-for-accelerating-growth-aligning-with-eu-standa> [Accessed 28.04. 2025].
- 59) Zhang, J. and Gong, X. (2023). From clicks to change: The role of Internet use in fostering environmental sustainability awareness. *Journal of Environmental Management*, 348. <http://doi.org/10.1016/j.jenvman.2023.119275>
- 60) Zhang, S., Zhang, M., Yu, X. and Ren, H. (2016). What keeps Chinese from recycling: Accessibility of recycling facilities and the behavior. *Resources Conservation and Recycling*, 109, pp. 176-186. <http://doi.org/10.1016/j.resconrec.2016.02.008>