D1. ONLINE SURVEY REPORT

WE-DEMOCRACY

Co-funded by
the European Union

THIS DELIVERABLE HAS BEEN REALISED WITH THE CONTRIBUTION OF

ASSOUTENTI
ENTE DEL TERZO SETTORE APS

АКТИВНИ ПОТРЕБИТЕЛИ

CROMO FOUNDATION

cre thi dev
creative thinking development

CPIP
Dedicated to your development

ISeS

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or EACEA. Neither the European Union nor the granting authority can be held responsible for them.

TABLE OF CONTENTS

EXECUTIVE SUMMARY 2
BACKGROUND TO THE PROBLEM MAPPING ACTIVITY (WP1) 4
WE-democracy Project 4
Partner Organizations 5
National Reports 8
METHODOLOGY 10
LIMITATIONS 11
COMPARATIVE ANALYSIS 12
MAIN FINDINGS 13
Socio-Demographic Analysis 13
Environmental Knowledge and Concerns and Perception of citizens` effectiveness 15
CONCLUSIONS 20
RECOMMENDATIONS 21
NATIONAL REPORTS 23
BULGARIA 24
GREECE 49
HUNGARY 74
ITALY 97
ROMANIA 130
ANNEX 1 – Online survey questionnaire 157

EXECUTIVE SUMMARY

The COVID-19 crisis brought a halt to many everyday activities but not to political engagement; during the pandemic, **online democratic participation** has seen even an unprecedented level of engagement.
However, awareness of such participatory democracy instruments needs to be greatly increased, and stakeholders must work together to do so.

We need to rethink democratic models for the digital era. E-tools can act as a vital complement to traditional methods of citizens participation in the political life of democracies. There are many examples of democratic innovation, which rely predominantly on online collaboration. Methods such as **crowdsourcing** have been used to tap into the wisdom of the crowd on issues ranging from climate policies to how a city's budget should be spent.
These type of participatory initiatives boost the efficiency of our democratic societies, especially since collecting wide citizen input would be nearly impossible to do offline.

The Internet has opened up new opportunities for political engagement. But to what extent does the potential of e-participation contribute to creating a European public community and improving the quality of democratic decision-making at the EU level?
To answer this question, WE-democracy project aims to foster European citizenship and to improve conditions for civic and democratic participation at Union level by gradually transforming the relationship between EU citizens and EU decision-makers into more of a partnership, thus contributing to the creation of an engaged citizenship.
Specifically, the project is about empowering citizens to co-create policies with decision makers through crowdsourcing. We want to empower citizens by giving them the opportunity to learn from each other, collaborate and participate in the decision-making.

WE-democracy project aims to pilot a crowdsourcing activity in 5 European (Bulgaria, Greece, Hungary, Italy and Romania) countries on the subject of **"circular economy" (CE).** We have chosen this specific topic because we acknowledge the importance and the urgent need for a more Circular Economy in Europe.
In the last decades, the concept of environmental sustainability has gained increasing global significance.
The urgent need to address environmental challenges such as climate change, resource depletion, and pollution has led to the exploration of new economic

models that can ensure a harmonious coexistence between human activity and the environment.

However, due to a lack of education and transparency it is difficult for European citizens to grasp what CE really entails which makes it harder for citizens to advocate for a change of the existing linear model.
Another important part for a transition towards more circularity is the empowerment of consumers. The current system often focuses on recycling which should rather be treated as the last resort.
We, as a society, should focus on extending products' and materials' lifetimes through designing for repair, by empowering citizens through relevant legislation, spaces, and education, which highlights the need for EU legislation to set down these rights.
So, WE-democracy, wants to develop innovative democratic approaches and tools to help citizens make their voices heard and publicly exchange views on all areas of EU action, notably e-democracy, and to engage them in discussions and action related to our climate and environment.

This report is the first step towards the achievement of such ambitious objectives presenting the results of the "**Problem Mapping"** activity during which citizens from Bulgaria, Greece, Hungary, Italy and Romania have identified problems related to circular economy that they encounter in their daily life through an online survey and the approach they have towards circular economy.
This document is divided into "**Comparative analysis**" that recapitulates and compares prevalent data gathered from the "**National Reports**" (realized from the project partners) - which are a product of an online survey which endeavoured to uncover ways to engage citizens in the CE by assessing their current knowledge and behaviours with regards to the CE, the factors that could increase their engagement in the CE (incentives, drivers, etc) and the barriers preventing this engagement and to provide policy-relevant insights in the transition from a linear economy to a circular economy in the European Union.

BACKGROUND TO THE PROBLEM MAPPING ACTIVITY (WP1)

WE-democracy Project

A long-standing and continuing democratic deficit of the European Union is detected in public and scholarly debate.

This democratic deficit is explained by the complex and mutually reinforcing mix of institutional design features of the EU and it is held to contribute to a lacking sense of European citizenship and the negative and nation-oriented public discourse around the EU. It is still believed by many that the perceived democratic deficit of the European Union indicates the need for fostering a European public sphere as a space of debate across national public spheres.

Moreover, there is a consensus that the new modes of political communication and participation via the internet can play a role in that respect.

Redressing the democratic deficit is obviously a daunting task which cannot be accomplished through the introduction of e-participation tools alone. Far-reaching expectations of a fundamental reform of modern democracy through the application of online participatory tools are vanishing after two decades of e-democracy. However, if properly designed and implemented, e- participation has the potential to contribute to accountability and transparency, trans-nationalisation and politicisation of public debates, and the improvement of exchanges and interactions between EU decision-making and European citizens.

Among the different method of e-participation, crowdsourcing is a way of solving problems and producing new ideas by connecting online with people that you otherwise wouldn't reach, giving citizens the opportunity to learn from others, collaborate and participate in the decision-making.

WE-democracy has been conceived to piloting e-democracy tool- crowdsourcing to engage citizens on a certain topic which is at heart of the EU: circular economy.

So far, there are many initiatives and projects of crowdsourcing related to politics in the strict sense (election) and urban development and many crowdsourcing initiatives are top-down (even this sounds paradox) because it's the public sector applying the crowdsourcing and not "the crowd".

But WE-democracy wants to pilot a bottom-up crowdsourcing approach on a peculiar topic as circular economy, felt at EU level like an urgent topic.

Circular Economy is definitely a top priority of the EC agenda. Indeed, the European Commission adopted the new circular economy action plan (CEAP) in March 2020. It is one of the main building blocks of the European Green Deal, Europe's new agenda for sustainable growth. The new action plan promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU

economy for as long as possible. It introduces legislative and non-legislative measures targeting areas where action at the EU level brings real added value.
For this reason, we think WE-Democracy project will be able to create a real European added value contributing in defying policy and recommendations proposal from citizens for citizens in the field of circular economy.
The project target groups are EU citizens aged 18+ (without any discrimination of gender, race, nationality…), or in other words the "crowd".

Partner Organizations

The project involves an appropriate mix of participating organisations in terms of profile, past experience in the Programme and expertise to successfully complete all project objectives.
In particular, the project Consortium is comprised of 6 partners from 5 EU countries which are:

ASSOUTENTI (Italy) – Project Coordinator is one of the oldest Italian consumer organisations. It can count on consolidated structured and permanent relationships with Italian governmental administrations and authorities, competent to judge on matters of unfair commercial practices and cases in which a dual quality event can be considered misleading for consumers.
Assoutenti is one of the founders of the Consumers' forum, an independent association that includes the most important consumer associations, numerous industrial and service companies, trade associations, public institutions for the creation of discussion tables, research and training on the fairness of markets and for the development, promotion and dissemination of an aware and responsible consumer culture with the technical-scientific contribution of the university world and research.

Bulgarian National Association Active Consumers (Bulgaria) is an independent non-governmental organization for the protection of consumer interests. It was founded in 1998.

The main aims of the organization are to protect consumers' rights and interests by:

- Providing information that supports consumers' choices in the market;
- Giving assistance to consumers – consultation and legal assistance;
- Lobbying for the improvement of the legislation, and representing consumers' interests.

BNAAC's main topics includes general consumer rights, financial services, consumer contracts and access to justice, food safety and marketing, product safety, sustainable consumption, energy efficiency, and the internet (SPAM, security, children safety, personal data protection).

The activities which the organization performs include providing information to consumers (weekly newsletter, informative brochures and books, website) and through general media (press conferences, press releases, interviews, articles etc); Comparative testing and research of consumer products; consumer advice centers and workshops; campaigning; lobbying and advocacy, participation in various consultative committees, out-of-court settlement of consumer disputes; providing consumer education for consumers and SMEs.

cre thi dev
creative thinking development

Creative Thinking Development – CreThiDev (Greece) is a non-profit company, established in 2012, in Athens, Greece. The company focuses on research, as well as development of studies and action plans mainly in the fields of life-long learning, culture, health and wellbeing, sports, human rights, equality, social inclusion, environmental protection and sustainable development, technology and innovation as well as employment and local development.

Through the exchange of knowledge and expertise, research and training collaborative projects and cooperation with universities, companies, public authorities, and training centers, we seek to create a knowledge repository and facilitate the networking and cooperation efforts among authorities, organizations, business associations, on a local, regional, national, European, and international level.

CROMO
FOUNDATION

CROMO FOUNDATION (Hungary) was established in 2002 in order to contribute to the local and regional cooperation of non-governmental, business and

governmental actors and thus to strengthen a participatory, active and democratic society in Hungary and Europe. We wish to see local organizations well-managed and effective; local citizens active and committed to participation; local communities vibrant and sustainable; society inclusive and tolerant. The core values of our organization are credibility, accountability, professionalism and innovation. We believe in active citizenship and local democracy as well as empowering youth to mobilize their energy for the countries they live in.

ISES – Istituto Europeo per lo Sviluppo Socio Economico (Italy) was founded in 2008 as non-profit organization to spread European culture in Italy and to get closer public agencies, businesses and the third sector to the EU institutions through the development of funded projects following their whole bureaucratic, administrative and managerial path in accordance with the rules laid down by the European Commission. In particular, ISES cooperates since 2009 with different associations for sports promotion to implement projects at regional and national level.

ISES has long experience in managing EU projects and managing communication and dissemination activities. It has been the responsible for the communication in all its projects developing the project communication strategy, tools and materials.

The Center for Promoting Lifelong Learning – CPIP (Romania) is a non-governmental, non-profit institution dedicated to the development of lifelong learning ecosystems in local and professional communities.

Since 2005, the CPIP has been active in the educational and social field and promotes the culture of "lifelong learning" through the active involvement of community members in developing a coherent implementation strategy of the concept and practice of lifelong learning. The CPIP develops national and international projects on various social and educational topics, working in multicultural contexts with partners from all-over Europe.

The CPIP team has been actively involved in the latest policy recommendation on the digital divide and democratization of digital access.

More information on the partners on the project website:
https://www.wedemocracy-project.eu/the-partnership/

National Reports

The National Reports are a product of the Online Survey which took place in each partner country analysing (among the others):

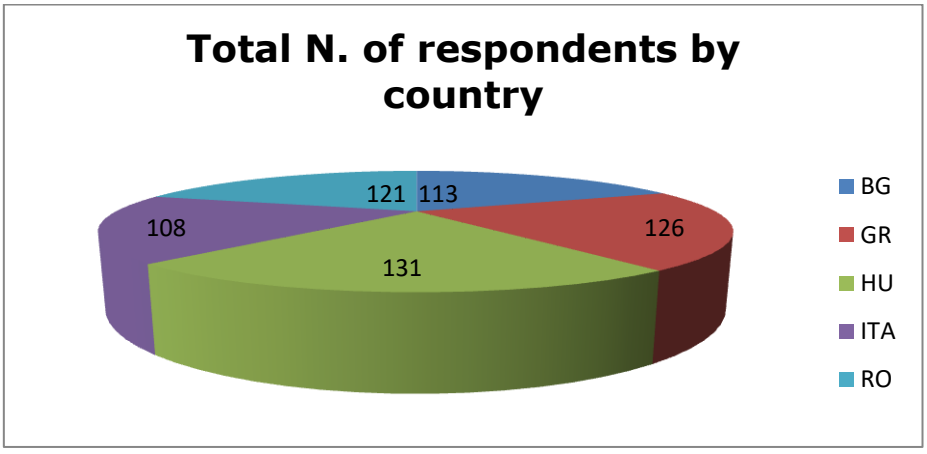
- Citizens' knowledge on the environment in general and in particular on reuse and recycling.
- Citizens' purchase intentions and environmental concerns regarding food and electronic products.
- Citizens' actual behaviour regarding food waste and electrical and electronic products (green behaviour and confidence in green products).
- Citizens' attitudes towards regarding the collection and disposal of bio-waste.

The survey took place from late May 2023 December 2022 until early August 2023.

The National Reports' objectives were:

- to uncover ways to engage citizens in the CE by assessing their current knowledge and behaviours with regards to the CE, the factors that could increase their engagement in the CE (incentives, drivers, etc) and the barriers preventing this engagement.
- to provide policy-relevant insights in the transition from a linear economy to a circular economy in the European Union.

The total number of respondents across the five (5) participating countries were 599. The breakdown between each country is as follows:



Considering its aim to develop innovative democratic approaches and tools to help citizens make their voices heard and publicly exchange views on all areas of EU action, notably e-democracy, and to engage them in discussions and action related to our climate and environment, the main target group was EU citizens (from the participating countries) aged 18+ in order to hear adult and young people's voices and opinions.

The national reports have been prepared by each project partner following the collection of responses on the WE-DEMOCRACY Online Survey. The results included the major outcomes of the survey.
Each report included:

1. **Country context** with country specific information about the environmental situation and circular economy (policies, legislations, major news related to the topic, national reports, national strategies...).
2. **Methodology** presenting how the survey has been promoted and how you addressed the possible respondents (via email, on social media, via your institutional newsletter…).
3. **Sociodemographic data, Environmental knowledge and concerns, and Perception of citizens' effectiveness** with graphics and short description of the results by question.
4. **Conclusions** including comments to the most interesting data resulting from the survey + some recommendations at national level.
5. **References.**

The main findings are explored with an emphasis on the overlapping themes faced by partner countries, and the needs that appear to be common across them. The Comparative analysis formulates the basis for the themes of mutual interest and concern to be further analysed and explored at the "Problem Solving" events – which ultimately are going to be organised for citizens to debate and propose solutions to the "circular economy" problems mapped.

METHODOLOGY

In order to draft the online survey, a compilation of existing surveys on the topic has been done by the project organisations. The purpose of this literature review was to integrate current knowledge in our methodology and focus on the existing gaps.
The survey was conducted online using the Survio tool in order to easily process and analyse the data.

Participation was entirely voluntary, and responses were analysed only in aggregate. For the online survey partners considered GDPR rules and protected the personal data of the participants.

To ensure more sincere and representative feedback, the survey was conducted anonymously.

The survey questionnaire was created in English and translated into the partner's languages in order to ensure wide accessibility.

Respondents were given ample time to think through their answers, and there were no time limits imposed.

The questions of the survey have been divided as such:

- Socio-demographic profile
- Ecological knowledge
- Perceived citizens' effectiveness on ecological matters
- Environmental concerns
- Actual Circular Economy engagement

The questionnaire consisted of a total of twenty-five (25) questions - whereas twenty (20) of them were related to ecological knowledge, perceived citizens' effectiveness on ecological matters, environmental concerns and actual Circular Economy engagement whilst the remaining five (5) questions were designed to distinguish the characteristics of the target group. The questions were: with multiple choice single answer or multiple choice. All questions were compulsory to be answered.

The primary objective of the survey was to gain an in-depth understanding of the awareness level regarding the United Nations' 2030 Agenda for Sustainable Development and to assess familiarity with the fundamental concepts of the circular economy. Through a series of targeted questions, the questionnaire wanted to gather data that can contribute to a better understanding of citizens' knowledge (questions 1-8), attitudes and practices towards environmental sustainability (questions 9-20).

Results were firstly assessed at country partner level following the formulation of the National Reports. Then, ASSOUTENTI compared the National Reports results preparing the Comparative Analysis presenting the most interesting and relevant results driving to recommendations for relevant key stakeholders in the field of environmental protection and circular economy and for the actions in the project to follow.

LIMITATIONS

This report has potential limitations.

The first limitation regards the gender distribution of the survey respondents. It commonly appears across the participating countries that the female population is overrepresented compared to the male population. Indeed, studies suggest that women respond to online surveys significantly more than men. The gender ratio of participants is important to note as the bias skewing gender may influence the results. Nonetheless, it remains unclear how people across the gender spectrum perceive and interact with the circular economy. It is also worth mentioning that when it comes to the non-binary population, in most of the countries people have not selected that option.

The second limitation involves the level of education of the respondents. Across the participating countries, the majority of the respondents hold a bachelor's level education - with a significant portion of them also possessing a bachelor and master's level education.

Due to the fact that the target group has a high level of information, it can be easily inferred that they have access to diverse and high-profile sources of information, which raises the average level of knowledge and awareness of the circular economy and the world revolving around it. This obliges us to consider a lack of homogeneity in the representation of the entire population of the countries under consideration.

COMPARATIVE ANALYSIS

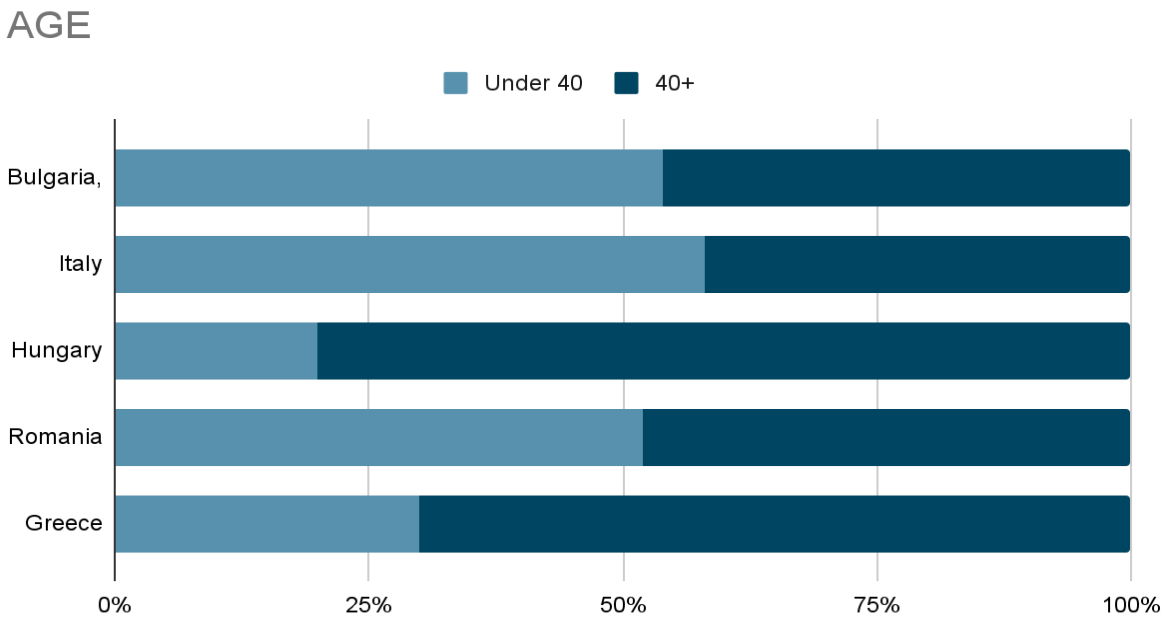
MAIN FINDINGS

Socio-Demographic Analysis

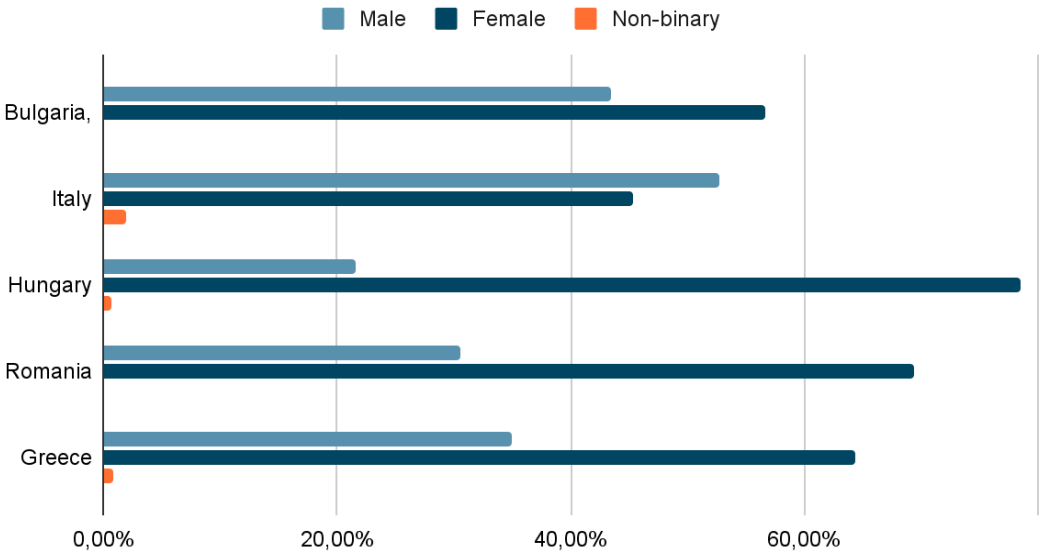
The online surveys conducted in Bulgaria, Italy, Hungary, Romania, and Greece provide a diverse picture of the perceptions and attitudes of the survey respondents of these countries towards the environment and the circular economy.

However, aside from a natural percentage of responses given at random, it is possible to identify some common elements , as well as some peculiar aspects that have emerged from the comparison of the data.

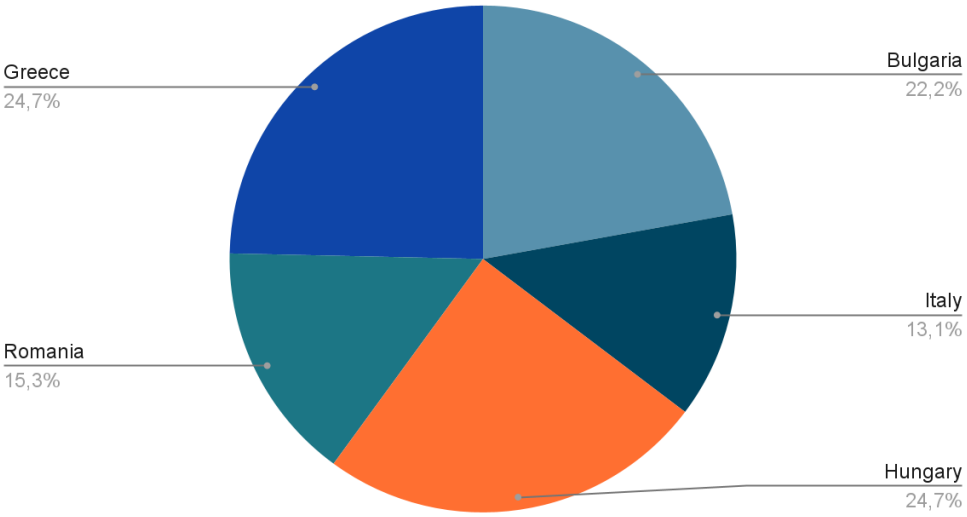
The statistical samples were equally composed of individuals aged 40+ and under 40 and above, mostly female, with a predominantly employed profession, and with a very high level of education (Bachelor's and Master's Degrees), except for Italy, which had a significant prevalence of low educational levels at 54.6% (Lower and Upper secondary education).

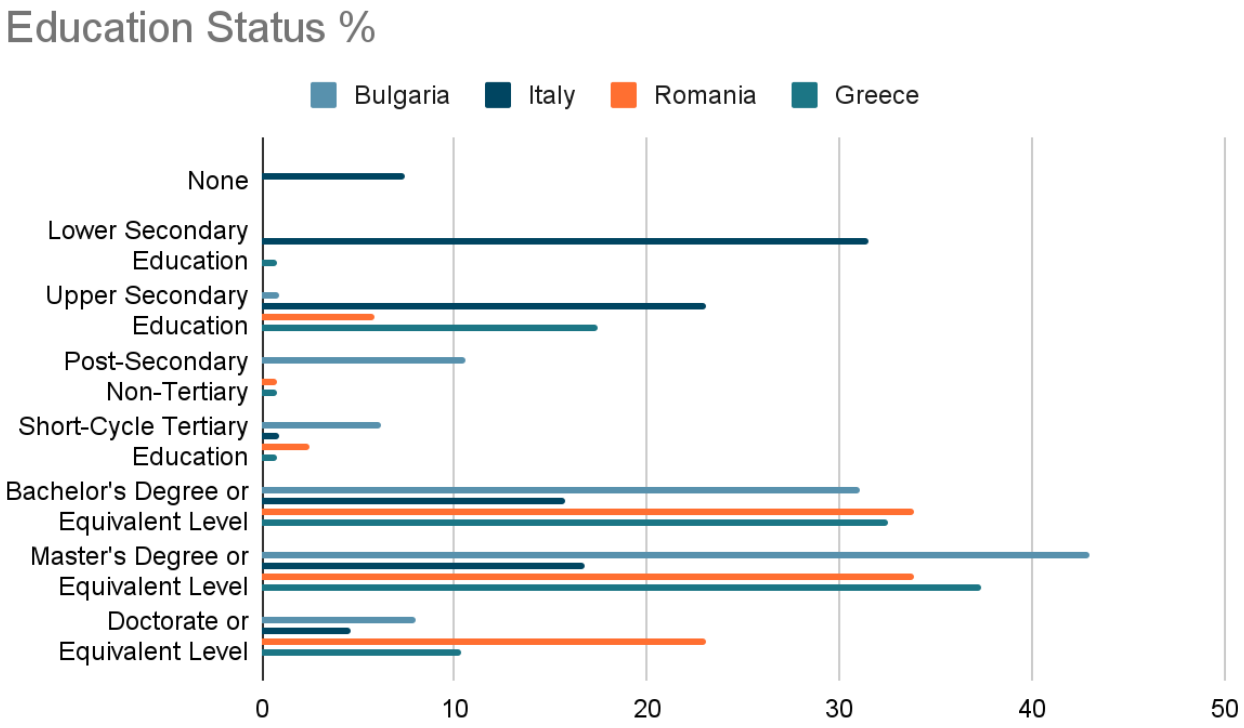


Gender



Employee

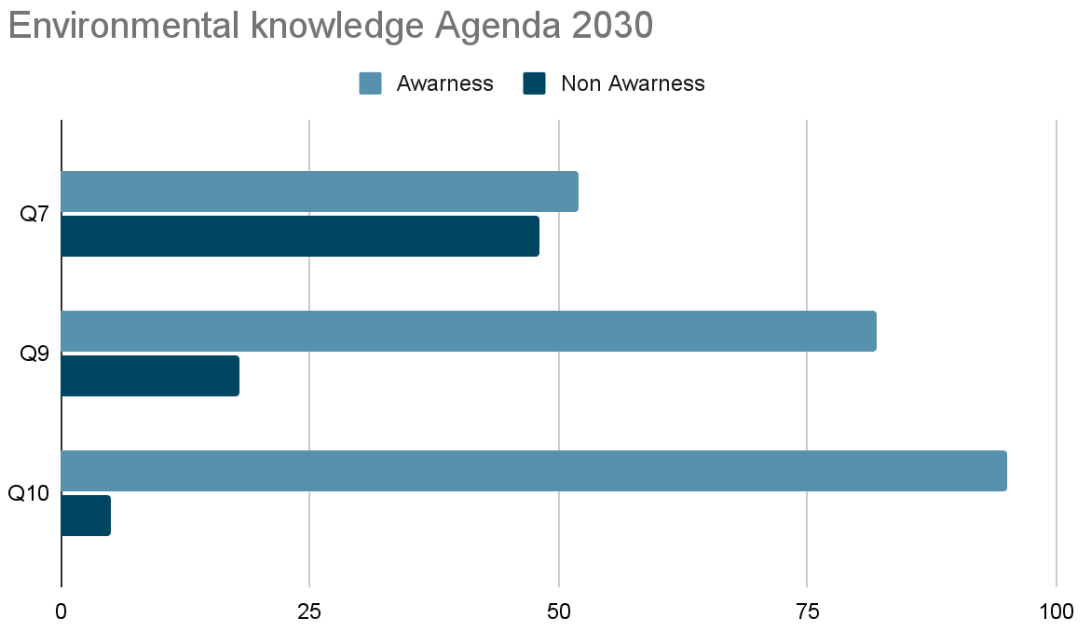




Environmental Knowledge and Concerns and Perception of citizens` effectiveness

Particular interest should be paid to the comparison between the data from Question 7, "Do you know what the UN2030 Agenda is?" and Question 9, "Do you know what the three 'R's stand for?" While the Q7 reveals a strong lack of knowledge about the Agenda's contents, with negative percentages (no; not sure) reaching 86% in Hungary and a transnational average of 52%, Q9 shows a totally opposite result, with nearly complete awareness of the three 'R's by the statistical samples, led by Bulgaria at 93%, and a transnational average of 82%.

Another confirmation of this dichotomy can be observed by considering Question 10, "In your opinion, what is a circular economy?" which has a transnational average of 95% of informed responses.



The data resulting from this comparison could be explained by the lack of promotion of the normative framework itself, with institutions being the sole promoters through their official channels but not conveying its contents and essence. So, considering such lack of promotion at institutional level, citizens do not reconnect Agenda 2030 with its contents which are usually benefitting from educational projects by associations or advertising campaigns carried out by companies for commercial purposes.

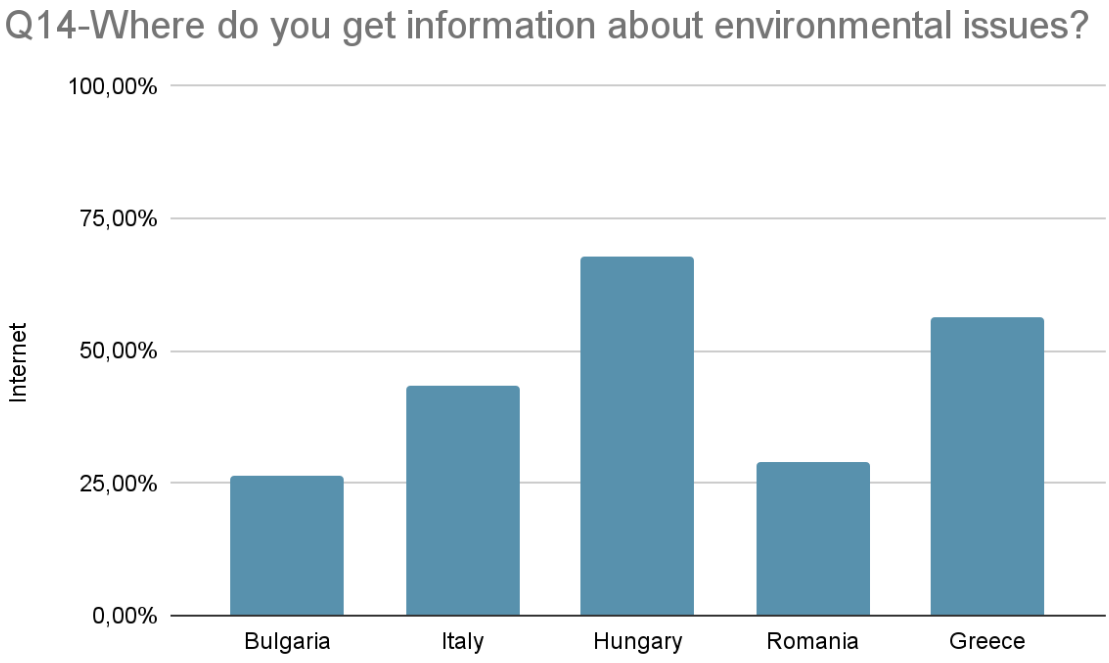
Analysis of Question 8, "Which of these are goals of the 2030 Agenda?", reveals seemingly contradictory results compared to Question 7. While Q7 shows substantial misinformation about the Agenda, Q8 reveals a different outcome with correct response percentages ranging from 60% to 80%.

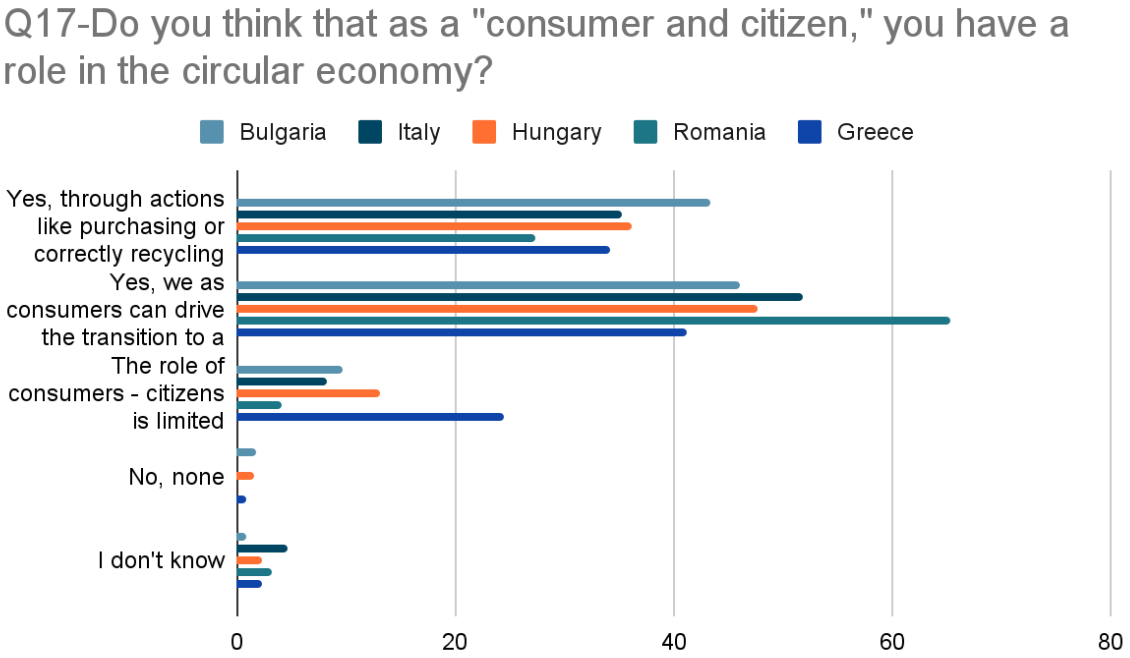
However, when considering the survey as a whole and taking into account the alternatives provided in addition to the correct answer, it is evident that environmental protection and ecosystem conservation issues are becoming part of the *Zeitgeist* of our time within the statistical sample, albeit with numerous barriers and delays.

About the "environmental concerns", in all the participating countries, respondents identified climate change as one of the most significant global environmental challenge. Environmental pollution and its effects on human health were also perceived as crucial issues, highlighting a raising awareness of global environmental problems and the need to address them, unfortunately, due to the increasingly evident daily signs.

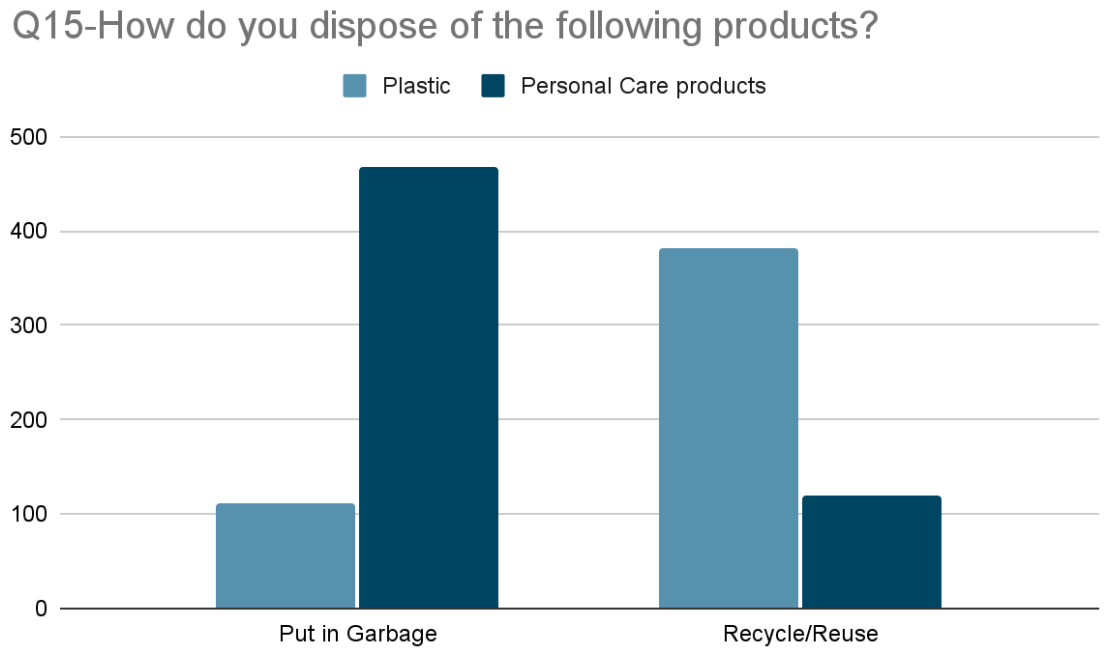
Among the priorities that prominently emerge from the statistical sample, there is a transition to renewable energy sources and the associated environmental protection. These outcome findings appear as cross-cutting priorities among participants from the involved countries. These data suggest the need and demand for an ever-increasing commitment to addressing the climate crisis and reducing its negative impact. Despite the relatively advanced age of the statistical sample, there is a clear predominance of internet usage as the primary source of information on survey topics (Q14). This data not only reflects the generational shift in digital literacy but also indicates a strong interest in the topics discussed. Therefore, the citizen-consumer is no longer a passive part of the information system but, recognizing the urgency of the moment, wants to be an active part of the change, both as a proponent of actions on a personal level and as a controller of national and supranational systems that define priorities and allocate resources.

This affirmation is further confirmed by Question 17, "Do you think that as a 'consumer and citizen,' you have a role in the circular economy?", to which the majority of the statistical sample (transnational average of 50.2% out of 5 possible responses, including 2 positive, 1 neutral, and 2 negative) responded positively, selecting the answer "Yes, we as consumers can drive the transition to a circular economy through conscious and informed purchasing choices and personal and public advocacy actions."





About the "perception of citizens' effectiveness", Question 15, "How do you dispose of the following products?", presented some of the most commonly used daily products to evaluate the effects of local policies on proper waste disposal by consumers. The data that emerges defines a very positive picture, with recycling rates of up to 90% for plastics. However, a notable issue in all the five countries is the improper disposal of cosmetics and personal care products, with a high number of responses choosing "Put in Garbage."



(Total responses number: Personal care products 208 Plastic 493)

In light of the renewed regulatory interest in packaging, it was decided to emphasize it through some targeted questions (Q 21-22-23), allowing the assessment of its impact on citizens' opinions and purchasing decisions. From the results regarding Q21, a consistent trend emerges. Among the three provided response options, there is a slight preference for 'no' in Q21, with 38% of respondents choosing this option. This preference is subsequently confirmed in the findings for Q23, with a peak preference for this specific sector at 26% in Italy. In Q22, citizens express a strong preference for the reuse of packaging, with the exception found in Romania, where 67% express a preference for bio-based plastic packaging.

For a complete understanding of the results from questions Q21 and Q23, it is beneficial to compare them with the results from questions 16 and 18, "How willing are you to engage in the following activities?" and "Would you pay more for a product made through circular economy practices?". Question 16 included the option of being willing to pay an additional 5% for an eco-sustainable product. Considering only the positive classifications (willing and very willing), it emerged that 68% of the transnational average would be willing to pay a surcharge (84% in Romania, 53% in Greece). In question 18, the transnational average stands at 53% in response to the explicit request.

By cross-referencing and comparing the data, one could hypothesize that, in response to an increase in the final product cost due to greater attention to packaging, the majority of citizens would be willing to support a price increase of about 5%. However, it is also evident that this 'majority' is quite fickle,

characterized by a substantial indifference to the sustainability of packaging as information for purchase preference, which could lead to a misunderstanding of the price increase. In conclusion, it is inferred that while tolerating a cost increase, those resulting from packaging should be absorbed by companies or compensated for through governments intervention.

Regarding citizens' perception of companies and their role in global protection, there is a clear assignment of direct responsibility for managing end-of-life products, the use of reusable packaging, and the promotion of durable and repairable products. Similarly, there is a widespread overall sentiment regarding the importance of adopting circular behaviours, primarily by citizens but also by businesses themselves. These behaviours could be incentivized through conscious consumer choices and institutional contributions, as well as through more robust policies that regulate the matter and promote a culture of sustainability through actions and initiatives aimed at raising awareness and encouraging the adoption of sustainable solutions. However, this awareness is not always put into practice by consumers in their daily lives, as evidenced by Question 20, which indicates a limited propensity to actually verify the circularity of the production process used by a company to create a specific purchased product, despite a strong desire to do so. (Questions 20, 24).

CONCLUSIONS

In light of the conclusions drawn from the five surveys, it is possible to outline a comprehensive picture of the participants, providing a detailed overview of the attitudes and knowledge of the sampling population regarding global environmental challenges and the transition to a circular economy. Despite some contradictions highlighted, primarily due to technical gaps, for example, regarding the understanding of the reference nomenclature 'Agenda UN2030,' which appears contradictory to its nature and main objectives, it has emerged that the respondents have a significant level of awareness of environmental challenges, particularly in relation to climate change, pollution, and their impacts on health.

Understanding the principles of '3R' (Reduce, Reuse, Recycle) is widespread among the participants, indicating a strong knowledge base regarding waste management practices; the majority demonstrates a well-structured understanding of the circular economy.

Among the most commonly used tools, the Internet emerges as the primary source of environmental information, although traditional media such as television and radio still maintain their relevance.

Overall, respondents have expressed a strong interest in a range of sustainable behaviours, including recycling, purchasing eco-friendly products, and reducing food waste. However, some resistance and uncertainties have emerged, suggesting the presence of obstacles to the adoption of sustainable practices that should be addressed through education and awareness-raising. Many participants believe that consumers play a significant role in the circular economy and in environmental protection, emphasizing the importance of individual action in promoting sustainability.

Furthermore, there is a similar focus on the commitment of businesses, which are called upon to play a significant role in promoting circular behaviours through end-of-life product management, the use of recyclable packaging, and product durability. This reflects an increasing awareness among citizens of the importance of involving the business sector in sustainability. In particular, packaging solutions have been a differentiating factor for consumers, who have stated that they pay attention to the type of packaging used an its characteristics. These factors can significantly influence purchasing decisions. According to the participants, the most effective approaches to addressing environmental challenges include education, stricter sanctions for violations, and financial incentives for environmentally responsible actions. This indicates the need for a combination of policies, education, and incentives to promote sustainability.

In conclusion, the results from the various surveys offer a complex yet informative picture of the attitudes and knowledge of the population regarding environmental sustainability.

While there is a growing awareness of the importance of sustainability, challenges related to knowledge dissemination, the adoption of sustainable practices, and the need for concrete actions by institutions and businesses have emerged. The proposed actions provide a plan to address these challenges and promote a more environmentally friendly and circular lifestyle.

RECOMMENDATIONS

Such list of recommendations can be defined "transversal" since addresses institutions, businesses and associations. All these actors should act following such recommendations.

- Develop comprehensive and accessible educational programs that explain the concept of the circular economy, waste reduction, and sustainable practices to the general public.
- Use internet platforms, social media, and traditional channels to disseminate information and raise awareness about global environmental challenges, such as climate change and pollution.

- Focus on explaining the link between individual behaviours and their impact on the environment, emphasizing the importance of responsible consumption and waste reduction.
- Promote the purchase of circular products by highlighting their advantages, such as a lower environmental footprint and long-term savings.
- Foster collaboration among stakeholders, including government agencies, businesses, NGOs, and citizens, to develop and implement effective environmental initiatives.
- Support the design and production of products with durability, reparability, and recyclability in mind, encouraging consumers to make informed choices.
- Promote information-sharing platforms that provide consumers with easy access to data on sustainable practices, including recycling options and energy-efficient products.
- Encourage businesses to adopt circular economy practices by providing incentives and recognition for sustainable initiatives.
- Provide financial incentives, such as tax deductions or grants, to both individuals and businesses for the adoption of sustainable practices, including circular economy initiatives.
- Strengthen environmental regulations and enforcement mechanisms to ensure compliance with sustainable practices and waste management.
- Consider introducing stricter sanctions for violations of environmental laws, especially those related to air pollution and waste management.
- Support legislation that promotes extended producer responsibility (EPR) and encourages businesses to take responsibility for the end-of-life management of their products.
- Encourage public-private partnerships that promote circular economy principles and sustainability in various industries.
- Share success stories and best practices from businesses and communities that have successfully adopted circular practices to inspire others.

NATIONAL REPORTS

BULGARIA

Country context

The Transition to the Circular Economy Strategy 2022–2027 was adopted in 2022. The circular economy has been incorporated into Bulgaria's plans as a long-term development initiative priority. The "circular and low-carbon economy" has received particular attention in the National Development Program: Bulgaria 2030. It is the national framework strategic document, outlining the vision and goals for all facets of state administration's development strategies. The document identifies 13 national priorities in addition to 3 strategic goals.

A number of additional fundamental research papers define how the circular economy will advance with regard to the national strategy. The national strategic document providing the framework for distributing support from European funds in Bulgaria for the program period 2022–2027 is the Partnership Agreement of the Republic of Bulgaria for 2022–2027. The Agreement outlines the Republic of Bulgaria's strategy and top priorities for putting the Cohesion Policy into practice. The document sets the key investment directions via European funding for the current program period, including: innovative and intelligent economic transition through innovation and applied science; clean and fair energy transition; green and blue investments; circular economy; improved mobility and regional connectivity; social development through the implementation of the European Pillar of Social Rights; and sustainable and integrated development of the country.

The primary goal of the National Resilience and Recovery Plan is to speed up the social and economic recovery from the COVID-19 pandemic-related disaster. The plan consists of a number of actions and reforms that will not only increase and develop the economy's growth potential but also restore it. The Plan also lays the groundwork for an economic transformation that is digital and green in light of the high ambitions of the Green Deal.

The "Environment" priority is one of the six included in the National Strategy for Small and Medium Enterprises (SMEs) 2022–2027. Support for SMEs' resource and energy efficiency improvements and expanded use of renewable energy sources are just two examples of the actions taken under this focus. The SME Strategy's goal in terms of the circular economy measure is to better

include SMEs in the economy and to improve recycling practices in the biggest SMEs.

The National Waste Management Plan, 2022-2028 outlines the following principles for waste management in the years leading up to 2028: waste as a vital resource and need for the state - a priority of state policy and local self-government policy; application of economic regulators to achieve sustainable waste management and use of recycled materials/products obtained as a result of waste treatment; preventing or reducing the formation of waste at the source of generation, in accordance with the National Waste Management Plan, 2022-2028.

Consumers must take on a new and more active role in the circular economy. The success of the shift to a circular economy depends critically on consumer understanding and interest in it. In order to make decisions, consumers must have access to the most unbiased information possible, including details about the social and environmental impact of products. Additionally, consumers are essential in waste reduction and recycling. There are still public organizations in Bulgaria that are sceptical of this economic model, do not think it works, or think it is too expensive compared to other services and goods.

The data in the strategy indicate[1] that just 40% of customers in Bulgaria are aware of the required energy efficiency labels, and only 10% are aware of the voluntary environmental labels. There are no known regulations for their use, certification protocols, or control alternatives. Due to this, more education and training are required on environmental labels and their meaning. Ecological items are in short supply since consumers aren't interested in them. The small market share of environmentally friendly items and the consumers' low level of awareness in Bulgaria provide a fertile ground for the emergence of uncontrolled eco-labels.

High public awareness of the need to protect the environment is a requirement for the growth of activities that contribute to a circular economy, such as purchasing used goods, fixing them, sharing them, or renting them out. It should be possible to raise consumer awareness of the markets for used goods, rental/leasing, and repair. In general, consumers are keen to repair broken goods, but they may quickly abandon their intentions if doing so requires more work than simply buying a replacement.

By encouraging businesses to engage in such activities, as well as by offering repair and maintenance services in strategic urban sites known as "reuse centres," we may increase the market for these services and make them more

[1] Ministry of environment and water. (2022). Strategy for the transition to a circular economy 2022-2027, pp.13

popular and accessible. In addition, it presents a chance to increase disadvantaged group members' access to training programs and jobs, as well as to professional certifications needed for repair work.
The plan notes that while citizen surveys indicate favourable opinions regarding the separate collection of waste, they do not reflect real behaviour. In the municipalities serviced by these systems, only approximately 25% of residents collect packaging garbage independently. Most of the time, residents are unaware that the municipality has different collection sites, therefore they don't take advantage of this chance to get rid of bulky waste. Despite having a reasonably developed recycling sector, the country's home trash recycling rate (34.6%) for 2020 is below the EU average (47.8%). And if we exclude waste from the building and extractive industries, the overall recycling rate in Bulgaria in 2020 is 23%, compared to the EU average of 55%.
According to NSI data, it is a troubling reality that less than 5% of household waste is individually collected and delivered for recycling in 202 municipalities across the country. In addition, the 2018 garbage Framework Directive establishes new, higher goals for reusing and recycling packaging and residential garbage, which are to be attained gradually by 2035.

Methodology of promoting the survey

The Bulgarian National Association Active Consumers (BNAAC) effectively disseminated the project survey among participants via multiple digital channels, including websites, email communications, and social media platforms. The survey achieved multiple respondents through several posts on the official Facebook page of the BNAAC. Furthermore, the survey found a place within the association's weekly newsletter, a regular publication distributed by email to the association's subscriber base. Notably, the survey also found placement within the online version of the newsletter hosted on the association's official website. This comprehensive approach to the survey distribution encompassing diverse digital channels underscores BNAAC's strategic efforts to enhance reach and engagement with its target audience. A total of 113 respondents successfully participated and completed the survey, thus contributing to the substantive dataset under examination.

- URL to the survey: https://www.survio.com/survey/d/W0P7X4A2W7T4N5R2F
- URL to the online newsletter where we published the link to the survey: https://aktivnipotrebiteli.bg/кампания/443/Седмичен-бюлетин-брой-23-(445)

Sociodemographic data

Age

A total of 113 respondents completed the survey in its entirety. The prominent age cohort in the online study was the 40 to 54 age group, accounting for 31.9% of the survey participants, corresponding to 36 respondents out of the total 113. Following this group, the 25-39-year-olds constituted the second-largest cohort with 31% representation, equivalent to 35 respondents. The 18-24 age group comprised the third-largest cohort, making up 23% of the total participants, accounting for 26 respondents out of 113. In contrast, the participation rate among individuals aged 55 and above was relatively lower, represented by only 16 respondents or 14.2% of the total surveyed population.

ANSWER	RESPONSES	RATIO
18-24	26	23.0%
25-39	35	31.0%
40-54	36	31.9%
55+	16	14.2%

Figure 1

Gender

Regarding gender distribution, the survey elicited responses from 56.6% of female participants, comprising 64 female respondents. In contrast, male participants constituted 43.4% of the sample, accounting for 49 respondents. Notably, despite providing the option to identify as non-binary, none of the respondents indicated this gender identity in their responses. One hundred thirteen respondents again answered this question.

ANSWER	RESPONSES	RATIO
Male	49	43.4%
Female	64	56.6%
Non-binary	0	0.0%

Figure 2

Geographical distribution

The geographical distribution of respondents who completed the survey reveals that all participants (100%) identified Bulgaria as their country of residence.

Employment status

The survey results reveal distinct occupational categories among the participants. The largest contingent consisted of employees, constituting 40.7% of the respondents, with 46 individuals. Following closely, the second largest group comprised workers affiliated with civil society organizations, representing 23% of the participants, amounting to 26 respondents. A notable proportion of the participants, 14.2% or 16 respondents, indicated being engaged in freelance or self-employed professions. Students constituted the fourth most significant group, accounting for 9.7% of the participants, with 11 respondents. Subsequently, pensioners comprised 7.1% of the current survey, represented by 8 respondents. In contrast, respondents in academic positions constituted the smallest cohort, comprising 6.2% of the participants, with 7 respondents. Remarkably, despite allowing the respondents to select the option of being unemployed, none of the participants expressed this status in their respective responses.

ANSWER	RESPONSES	RATIO
Student	11	9.7%
Academic	7	6.2%
Civil Society Organisation worker	26	23.0%
Employee	46	40.7%
Self-employed	16	14.2%
Retired	8	7.1%
Unemployed	0	0.0%

Figure 4

Education status

The analysis of educational attainment within the survey reveals that the most prominently represented group comprises individuals holding a Master's degree or an equivalent level of education, accounting for 43.4% of the participants, amounting to 49 respondents. In second place, respondents possessing a Bachelor's degree or an equivalent level of education constituted 31% of the surveyed population, with 35 respondents. The third group encompasses individuals with secondary education VIII–XII grades) or secondary special education IX–XII grades), representing 10.6% of the participants, with 12 respondents. Among the respondents, those with a doctoral degree account for 8% of the total, comprising 9 participants out of 113. Those with a short-cycle higher education represent 6.2% of the surveyed population, amounting to 7 respondents. Remarkably, only one respondent reported having attained primary
education (junior high school) (grades V – VII), making up a minimal 0.9% of the participants.

ANSWER	RESPONSES	RATIO
No qualification	0	0.0%
Lower secondary education	0	0.0%
Upper secondary education	1	0.9%
Post-secondary non-tertiary education	12	10.6%
Short-cycle tertiary education	7	6.2%
Bachelor or equivalent level	35	31.0%
Master or equivalent level	49	43.4%
Doctoral or equivalent level	9	8.0%

Figure 5

Environmental knowledge and concerns

Q7: Do you know what the UN2030 Agenda is?

The survey results indicate that most participants responded affirmatively, with 61.1% or 69 respondents stating "Yes." In contrast, the second most prevalent response category was "No," as chosen by 24.8% or 28 respondents. Notably, the option "I am not sure" was selected by 14.2% of the participants, corresponding to 16 respondents.

ANSWER	RESPONSES	RATIO
Yes	69	61.1%
No	28	24.8%
I am not sure	16	14.2%

Figure 6

Q8: Which of the following are goals that are part of the UN 2030 Agenda?

Among the respondents, a considerable majority, comprising 75.2% or 85 participants, exhibited awareness of objectives such as Overcoming poverty, clean and affordable energy, and responsible consumption and production. Conversely, the second most substantial group, constituting 11.5% or 13 respondents, expressed uncertainty by selecting the response "I don't know." A noteworthy proportion of respondents, accounting for 7.1% or 8 individuals, opted for the option advocating Stop the production of diesel cars and stop meat production as part of the UN's 2030 Agenda. Lastly, the response encompassing goals such as to defeat hunger in the world, to have accurate public transport, and quality education garnered the least representation, with 6.2% or 7 respondents selecting this alternative.

ANSWER	RESPONSES	RATIO
Defeating poverty, clean and affordable energy, responsible consumption and production	85	75.2%
Defeating world hunger, having punctual public transport, quality education	7	6.2%
Stopping the production of diesel cars, stopping meet production	8	7.1%
I don't know	13	11.5%

Figure 7

Q9: The third question: Do you know what the three 'R' stand for?

The respondents opting for the answer "Reduce, reuse, and recycle" amounted to 105 individuals, representing the most prevalent choice. Conversely, the second most preferred response, "I don't know," was selected by a minority, with 5 respondents choosing this option. The third alternative, "Resource, reuse, research," garnered limited preference, as indicated by 2 respondents. Remarkably, the option encompassing "radiation, resources, and recovery"

was selected by only one respondent, signifying the least representation among the choices.

ANSWER	RESPONSES	RATIO
Reduce, reuse and recycle	105	92.9%
Radiation, resource and restoration	1	0.9%
Resource, reuse, research	2	1.8%
I don't know	5	4.4%

Figure 8

Q10: "In your opinion, what is 'circular economy'?"

Elicited responses from a sizeable cohort of 105 respondents who identified it as "A green and sustainable model of production and consumption," constituting the most prevalent selection. On the other hand, a limited number of 4 respondents responded with "Don't know," signifying a relatively smaller proportion of participants who lacked clarity on the concept. In the third position, a scant 3 respondents offered the interpretation of "A type of exchange of objects between neighbours." Notably, the response characterizing it as "An isolationist kind of economy" was espoused by only one respondent, denoting the least representation among the provided answers.

ANSWER	RESPONSES	RATIO
A green and sustainable model of production and consumption	105	92.9%
A type of exchange of objects between neighbours	3	2.7%
An isolationist kind of economy	1	0.9%
I don't know	4	3.5%

Figure 9

Q11: What is your level of awareness of the concept of circular economy?

This particular question elicits responses that can be categorized into two substantial groups, each comprising 38 respondents. These groups are as follows: "I have good knowledge in the field and have heard of the term, but I am not familiar with the specifics." The third response category, denoting "I have extensive knowledge," was indicated by 21 respondents. Furthermore, 10

participants identified themselves as professionals in the field, while 6 respondents acknowledged a lack of knowledge on the subject matter.

ANSWER	RESPONSES	RATIO
I am a professional in the field	10	8.8%
I have extensive knowledge	21	18.6%
I have good knowledge in the field	38	33.6%
I have heard of the term, but I am not familiar with the specifics	38	33.6%
None	6	5.3%

Figure 10

Q12: In your opinion, what is "Green Washing"?

The predominant response, as ascertained from the survey data, is identified as "A communication or marketing strategy," which garnered a substantial count of 97 respondents. Following this, two distinct groups emerged, each comprising an equal number of respondents, specifically 8 individuals, with the responses "A washing technique" and "I don't know." None of the participants specified the response "An aquatic plant".

ANSWER	RESPONSES	RATIO
A communication or marketing strategy	97	85.8%
A washing technique	8	7.1%
An aquatic plant	0	0.0%
I don't know	8	7.1%

Figure 11

Q13: From the list below, which one (1), in your opinion, is the most significant global environmental challenge facing today's society?

The preeminent global environmental challenge, as discerned from the aggregated responses of the participants, is unequivocally identified as "Climate change mitigation and adaptation," which is emphasized by 29 respondents. Subsequently, three additional sizable groups have emerged, encompassing the following thematic concerns: "Pollution problems and their effect on health," as indicated by 28 respondents, and "Energy transition and renewables," noted by 24 individuals. And "Global Warming From Fossil Fuels," acknowledged by 17 respondents.

ANSWER	RESPONSES	RATIO
Climate change mitigation and adaptation	29	25.7%
Pollution problems and their effect on health	28	24.8%
Energy transition and renewables	24	21.2%
A sustainable food model	2	1.8%
Biodiversity Loss	7	6.2%
Sustainable urban development and mobility	1	0.9%
Hydric stress and water scarcity	5	4.4%
Global Warming from Fossil Fuels	17	15.0%
Food Waste	4	3.5%
Deforestation	3	2.7%
Fast Fashion and Textile Waste	4	3.5%

Figure 12

Q14: Where do you get information about the environment?

The question under consideration evoked varied responses, and the most recurrently cited source of information about the environment is the Internet (websites, blogs, forums), as evidenced by 30 respondents. Following the prominence of the Internet, Special Events (conferences, fairs, exhibitions, festivals, etc.) emerged as another significant source, having been chosen by 21 participants. Social networks (e.g., Facebook, Twitter, Instagram) garnered the third position, as indicated by 19 respondents.

Traditional media outlets, such as television and radio, continue to serve as prominent sources of information for 17 of the participating individuals. Moreover, books, magazines, and publications were selected by 15 respondents, signifying their continued relevance as an information source. 14 respondents identified local, national, and/or European campaigns as a valuable medium for obtaining environmental information.

In contrast, personal contacts rank among the less frequently cited sources of information, signifying a lesser reliance on interpersonal connections as an avenue for accessing environmental knowledge. These outcomes offer pertinent insights into the information-seeking behaviours and preferences of the surveyed individuals regarding environmental matters. It is important to note that this question provides multiple-choice options.

ANSWER	RESPONSES	RATIO
Newspapers	6	5.3%
Special Events (conferences, fairs, exhibitions, festivals, etc.)	21	18.6%
Television and Radio (films, documentaries and news)	17	15.0%
Books, Magazines and Publications	15	13.3%
The Internet (websites, blogs, forums)	30	26.5%
Social media (Facebook, Twitter, Instagram, etc.)	19	16.8%
Local, national and/or European campaigns	14	12.4%
Personal contacts (friends, family, school, work, etc.…)	4	3.5%
None of the above	2	1.8%

Figure 13

Perception of citizens` effectiveness

Q15: What is your primary mode of disposal of the following items?

The survey data elucidates the disposal and recycling practices for various waste materials, shedding light on the prevailing patterns among the respondents. Notably, plastic bottles and soft drink bottles are most frequently recycled or reused, as indicated by 52 respondents, while 51 respondents noted discarding them in regular garbage bins. A considerably smaller proportion, comprising 6 respondents, expressed returning these bottles to the dealer/distributor, while a mere 4 respondents mentioned disposing of them through dumping.

Conversely, for light bulbs, 63 respondents revealed their preference for returning them to the dealer/distributor, while 31 respondents chose the option of placing them in regular garbage bins. A minority of 10 respondents opted to recycle or reuse light bulbs, and 9 respondents acknowledged using dumping as a method of disposal.

Regarding household batteries, a substantial majority of 77 respondents preferred returning them to the dealer/distributor, whereas 16 respondents chose recycling and reusing or disposing of them in regular garbage bins. A smaller segment of 4 respondents indicated resorting to dumping.

For cell phones, computers, and other electronics, a comparable number of 77 respondents leaned towards returning them to the dealer/distributor, while 18

respondents advocated recycling and reuse. A relatively minor number of 13 respondents selected placing these items in regular garbage bins, and 5 respondents acknowledged opting for dumping.

When addressing medical waste, 54 respondents highlighted the practice of returning it to the distributor/distributor, with 47 respondents identifying regular garbage bins as their preferred disposal method. A limited number of 8 respondents indicated using dumping, and 5 respondents expressed their inclination towards recycling or reuse.

Concerning paper waste, an equal number of 50 respondents each emphasized putting it in regular garbage bins and recycling or reusing it, suggesting a balanced preference for these two disposal options.

These findings provide valuable insights into the prevailing waste management behaviours of the surveyed individuals and underscore the significance of environmentally responsible practices in waste disposal.

Specifically, household oil is predominantly discarded in regular garbage bins by 52 respondents. A considerable segment of 24 respondents opts to return household oil to the distributor/distributor, while 22 respondents emphasize the significance of recycling or reusing this waste.

Glass waste, on the other hand, exhibits a pronounced inclination towards recycling, as evidenced by 50 respondents. However, 44 respondents demonstrate a tendency to discard glass in regular garbage bins, and 14 respondents choose to return it to the distributor/distributor. A smaller number of 5 respondents indicate a preference for dumping glass waste.

The survey results indicate substantial consensus among the respondents regarding battery disposal, encompassing car batteries, moped batteries, and similar products. A significant majority of 81 respondents favour returning batteries to the distributor/distributor, while 16 respondents indicate disposal in regular garbage bins. Additionally, 13 respondents advocate recycling or reusing batteries, while a smaller group of 5 respondents mentions dumping as an alternative.

A considerable consensus emerges for metal cans, with 58 respondents endorsing recycling or reusing as the preferred disposal method. In contrast, 43 respondents place metal cans in regular garbage bins. A minority of 7 respondents prefer returning metal cans to the distributor/distributor, while 5 respondents indicate a propensity for dumping.

Regarding green waste, including grass and branches, the respondents demonstrate a balanced preference, with two groups comprising 45 respondents each, indicating recycling/reusing and disposal in regular garbage bins, respectively. The option of dumping receives a response from 18

participants, and 5 individuals mention returning green waste to the distributor/distributor.

As for personal care products, the predominant choice, as favoured by 71 respondents, is placing them in regular garbage bins. A notable number of 26 respondents opt to return these products to the distributor/distributor, while 12 respondents indicate a preference for dumping. However, only a minor proportion of 4 respondents advocates recycling or reusing personal care products.

	DUMP	PUT IN GARBAGE	RETURN TO DEALER/DISTRIBUTER	RECYCLE/ REUSE
Plastic bottle/Soft drink bottle	4	51	6	52
Light bulbs	9	31	63	10
Household batteries	4	16	77	16
Cell phones/computers and other electronics	5	13	77	18
Medical waste	8	47	54	5
Paper	5	50	9	50
Household oil	15	52	24	22
Glass	5	44	14	50
Battery(car battery, moped battery, etc…)	5	16	81	13
Metal can	5	43	7	58
Green waste (grass, branches, etc...)	18	45	5	45
Personal care products	12	71	26	4

Figure 14

Q16: How willing are you to engage in the following activities?

Notably, a substantial proportion of respondents display favourable dispositions towards sorting garbage into different recycling bins, with 56 individuals expressing willingness and 51 demonstrating a heightened eagerness. A minority, comprising 4 participants, remains ambivalent with their response, indicating a stance of "Neither willing nor unwilling." Interestingly, two respondents exhibit an unwillingness to comply with this practice. A similar trend emerges concerning the inclination to pay a 5%

premium for environmentally-friendly products. An overwhelming majority of 53 respondents exhibit willingness, while 33 individuals show a heightened enthusiasm. Conversely, 9 respondents are unwilling to engage in this sustainable consumer behaviour, with 13 individuals adopting a more neutral stance. The endeavour to reduce food waste through prudent purchasing, storage, and disposal methods enjoys substantial support, with 54 respondents expressing willingness and 48 signalling a higher degree of eagerness. Notably, 5 respondents are unwilling to pursue this action, while 2 participants manifest marked resistance. Engaging in composting activities garners robust interest, with 54 respondents displaying willingness and 35 exhibiting heightened enthusiasm. Conversely, 7 individuals convey unwillingness, and 2 respondents choose very unwilling to composting practices. Additionally, 16 participants espouse an ambivalent stance by selecting "Neither willing nor unwilling." Regarding energy conservation practices, positive sentiment is evident among 54 respondents, who demonstrate willingness, and 44 individuals, who express heightened eagerness. In contrast, 3 respondents exhibit unwillingness, while 4 participants vehemently oppose energy conservation efforts. The proclivity towards environmentally-friendly modes of travel, such as public transportation, electric vehicles, and walking, is robustly apparent. The majority of respondents, comprising 48 and 42 individuals, respectively, exhibit a heightened willingness and willingness towards such practices. Moreover, 11 participants displayed an ambivalent stance of "Neither willing nor unwilling," 8 individuals expressed reluctance, and 4 respondents evinced a marked very unwilling. Regarding dietary preferences conducive to sustainability, 51 respondents expressed willingness to effect changes, while 25 individuals showed a heightened eagerness. However, a subset of 15 respondents firmly expresses an unwillingness to alter their dietary choices. An equal number of respondents, 11 each, express ambivalence with the response "Neither willing nor unwilling" and display outright unwillingness. The purchase of second-hand products garners a favourable disposition, with 50 respondents exhibiting willingness and 30 participants expressing a higher degree of eagerness. Additionally, 15 respondents adopt a neutral stance with the response "Neither willing nor unwilling," while 10 individuals evince pronounced unwillingness, and 8 convey resistance. The findings illustrate respondents' generally positive and encouraging attitudes towards adopting sustainable practices. These attitudes provide valuable insights into the propensity of individuals to embrace eco-friendly behaviours, thus illuminating potential areas for advocacy and interventions aimed at fostering sustainable lifestyles.

	VERY UNWILLING	UNWILLING	NEITHER WILLING NOR UNWILLING	WILLING	VERY WILLING
Sort your garbage into different recycling bins	1	1	4	56	51
Pay 5% more to buy a product that is environmentally friendly	9	5	13	53	33
Reduce food waste through smarter purchasing, storage, and disposal	2	5	4	54	48
Engage in composting activities	2	7	16	54	35
Conserve energy e.g. by using less heating/air conditioning/less lightening	4	3	9	53	44
Choose a more environmentally-friendly way of travelling/transfer (public transport, electric car, walking…)	4	8	11	42	48
Change your diet to more sustainable food	15	11	11	51	25
Buy second-hand products (e.g. clothes and/or electronic devices)	10	8	15	50	30

Figure 15

Q17: Do you think you as "consumer and citizen" can play a role in circular economy?

The participants in our survey manifest affirmative dispositions regarding their roles as consumers and citizens within the circular economy paradigm. A noteworthy majority of 52 respondents acknowledge the capacity of consumers to propel the transition towards a circular economy through conscientious and well-informed purchase choices, coupled with active public and personal advocacy efforts. Similarly, 29 respondents agree that

affirmative action, encompassing product purchases and recycling practices, can effectively contribute to the circular economy. Conversely, a subset of 11 respondents harbour reservations, perceiving the role of consumers and citizens as comparatively limited in its impact within the circular economy. Notably, a mere 2 respondents assert a sceptical stance, contending that consumers and citizens may not wield a substantial role in advancing the circular economy. Only 1 respondent choose the answer I don't know.

ANSWER	RESPONSES	RATIO
Yes, with actions such as purchasing or recycling products	49	43.4%
Yes, we as consumers can drive the transition through conscious and informed purchase choices and public and personal advocacy	52	46.0%
The role of consumers - citizens is limited	11	9.7%
No	2	1.8%
I don't know	1	0.9%

Figure 16

Q18: Would you pay more for a product made through circular economy practices?

This survey question elicited distinct response patterns, delineating two resolute and one ambivalent cluster within the respondent pool. The foremost group, comprising 71 respondents, demonstrated a solid inclination to invest in products that adhere to circular economy principles. Concurrently, a subset of 15 participants don't want to pay more for this kind of product. Contrastingly, the wavering faction consisted of 27 respondents who expressed uncertainty concerning their willingness to pay an augmented price for circular economy-oriented products. They are unsure whether they want to pay more for these kinds of products. There may also be obstacles to their choices, such as wanting to pay more for an improved product but not having the financial means.

ANSWER	RESPONSES	RATIO
Yes	71	62.8%
No	15	13.3%
I am not sure	27	23.9%

Figure 17

Q19: What do you care more when buying circular products (select max 3 options)?

The respondents noted the information about the quality of the product as the thing they are most interested in when purchasing similar products. The answer was chosen by 58 of the surveyed persons. In second place is the Environmental Footprint for 53 respondents, and in third place is Working and Labour Conditions for 40 participants. The respondents are the least interested in the supply chain.

ANSWER	RESPONSES	RATIO
Ecological footprint	53	46.9%
Working and labour conditions	40	35.4%
Information about the quality of the product	58	51.3%
Certifications, verified label, validated sustainable claims	39	34.5%
Information about the supply chain	22	19.5%
Information about products caring, repairing and disposal	34	30.1%
I don't care (if you select this option, please do not mark others)	7	6.2%

Figure 18

Q20: When buying a product, do you consider whether a company applies circular economy processes?

The investigation into the extent of consumers' contemplation of circular economy processes during product purchases reveals a spectrum of responses and attitudes. Specifically, 28 respondents consistently incorporate the notion of companies applying circular economy principles into their purchasing decisions, while for 53 respondents, this consideration occurs intermittently. Conversely, among the participants, 23 acknowledge their need for current consideration but desire to initiate the practice in their future purchasing endeavours. A minority of 9 respondents do not think of circular economy processes during product buying. These diverse responses underscore the multifaceted nature of consumer engagement with circular economy concepts and highlight the potential for cultivating greater awareness and adoption of sustainable consumption practices.

ANSWER	RESPONSES	RATIO
Always	28	24.8%
Sometimes	53	46.9%
No, but I would like to	23	20.4%
No, I do not consider it	9	8.0%

Figure 19

Q21: Have you ever decided not to purchase a product because the packaging was not sustainable?

The present question explores the influence of sustainable packaging considerations on consumer purchase decisions. Of the respondents, a substantial majority of 67 individuals reported actively refraining from purchasing products due to inadequate sustainable packaging practices. Conversely, for 17 respondents, sustainable packaging did not emerge as a decisive factor in their product selection or refusal to buy. Notably, a significant proportion of participants (29 respondents) chose the response "I can't remember," implying a degree of uncertainty or lack of recall regarding the specific impact of sustainable packaging on their purchasing behaviour.

ANSWER	RESPONSES	RATIO
Yes	67	59.3%
No	17	15.0%
I can't remember	29	25.7%

Figure 20

Q22: In your opinion, which of the following option is more sustainable?

The findings demonstrate a clear preference for sustainable practices among the respondents. Notably, a significant proportion of 45 participants advocate for adopting the Refilling service, wherein individuals utilise their packaging for products. 28 respondents endorse the utilisation of bio-based plastic packaging derived from renewable resources. Subsequently, an equitable distribution of preferences is discerned, with 18 respondents aligning with each option encompassing packaging composed of recycled plastic and packaging fabricated from alternative materials such as paper and glass. In contrast, the option pertaining to packaging featuring a diminished proportion of virgin plastic garners the least endorsement, garnering support from merely 6 participants.

ANSWER	RESPONSES	RATIO
Packaging made of recycled plastic	18	15.9%
Packaging made of other materials (paper, glass)	18	15.9%
Refilling service (with packaging brought from home)	45	39.8%
Packaging with a reduced quantity of virgin plastic	6	5.3%
Packaging made of bio-based plastic (Plastics produced from renewable resources)	28	24.8%

Figure 21

Q23: Which actions do you expect from brands to increase your circular behaviour?

Within the surveyed cohort, a notable proportion comprising 42 individuals express the anticipation that brands should assume accountability for managing products at their end-of-life stage. This sentiment is encapsulated by the expectation of brands to implement readily accessible and economically viable take-back initiatives, thereby fostering circular consumer comportment. Subsequently, the second large group encompassing 21 respondents, accentuates the role of packaging in facilitating circular consumer behaviour. This is principally achieved through the deployment of packaging that is characterized by recycled or recyclable attributes. Another sizable assemblage of 20 respondents underscores the salience of product robustness and facilitation of repair mechanisms as pivotal determinants in nurturing circular practices.

ANSWER	RESPONSES	RATIO
Use recycled/recyclable/reduced packaging	21	18.6%
Take responsibility for the product End-Of-Life, for example, through ready-to-use/accessible take back programs	42	37.2%
Launch circular and sustainable products	15	13.3%
Guarantee product durability and access to repair	20	17.7%
Better information sharing and advertising and more transparency	10	8.8%

about product's features and supply chain		
Independently verify sustainability and circular claims	8	7.1%

Figure 22

Q24: In your opinion, what of the following actions can significantly make an improvement in the field of environmental protection?

A significant portion of 50 respondents believe that people in society should start adopting behaviours that fit the circular economy model better. Another big group of 30 individuals emphasised the importance of coming up with new materials to stop pollution caused by companies and brands. Following closely, 18 respondents mentioned that stronger rules and better enforcement from the European Union and national governments are needed. Lastly, 16 respondents suggested that consumers should stick to buying products with eco-friendly packaging and follow recycling guidelines.

ANSWER	RESPONSES	RATIO
Society (citizens) should take more steps to adopt circularity-based behaviour	50	44.2%
We need more material innovation to eliminate the pollution (from companies and brands)	30	26.5%
We need more regulation and enforcement (from the EU and national governments)	18	15.9%
Consumers should buy only sustainable packaging and follow recycling rules	16	14.2%

Figure 23

Q25: Do you think that the following institutions are doing too much, the right amount, or not enough to protect the environment?

Of the respondents, 68 people feel that their city, neighbourhood, or village isn't doing enough to protect the environment. Similarly, 63 people think their national government's efforts need to be improved, while 40 believe something needs to be done. On a positive note, 73 respondents acknowledge

that the European Union is taking steps to protect the environment, but 23 respondents feel that the EU is doing too much in this regard.

	DOING TOO MUCH	DOING SOMETHING	NOT DOING ENOUGH	DOING TOO MUCH
Your city, town or village	6	38	68	1
The (NATIONALITY) Government	7	40	63	3
The European Union	23	73	14	3

Figure 24

Q26: In your opinion, which of the following would be the most effective ways of tackling environmental problems *(select max three options)*?

Among the respondents, 50 individuals indicate that the most effective way to deal with environmental problems is by Providing more information and education, e.g., on waste separation and energy consumption. According to 49 respondents, an effective way to deal with this type of problem is to introduce heavier fines for breaches of environmental legislation. The third of 47 indicated answers as an effective way to deal with these problems is Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g., tax breaks, subsidies).

ANSWER	RESPONSES	RATIO
Providing more information and education, e.g., on waste separation and energy consumption	50	44.2%
Ensuring better enforcement of legislation	37	32.7%
Introducing heavier fines for breaches of environmental legislation	49	43.4%
Introducing stricter environmental legislation	31	27.4%
Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g., tax breaks, subsidies)	47	41.6%
Introducing or increasing taxation, or removing subsidies, on environmentally harmful activities	15	13.3%
Investing in research and development to find technological solutions	17	15.0%
Making the banking and insurance systems more environmentally-friendly	7	6.2%
Making the food system more sustainable from production to consumption	15	13.3%
Encouraging businesses to engage in sustainable activities	13	11.5%
Changing the way, we produce and trade	8	7.1%
None	3	2.7%
I don't know	2	1.8%

Figure 25

Conclusions

Based on the respondents' answers, climate change is identified as one of the most significant global environmental challenges, along with pollution and its effects on health. The use of renewable energy sources and environmental conservation are priorities for the respondents.

The survey results indicate a substantial awareness of the UN2030 Agenda, with 61.1% of the respondents affirming their knowledge. Moreover, a considerable majority (75.2%) of the participants demonstrate familiarity with key goals encompassing poverty reduction, clean energy, and responsible consumption, reflecting a commendable grasp of the UN's sustainability objectives.

The understanding of the three 'R' principles (Reduce, reuse, recycle) is prominent among respondents, with 83.3% correctly identifying them. This underscores a robust comprehension of fundamental environmental concepts.

Participants exhibit a comprehensive perception of the circular economy, with a majority (52.8%) defining it as a "green and sustainable model of production and consumption." This showcases a solid understanding of this ecological concept.

Respondents prefer to receive information about the environment from various sources, such as the Internet (websites, blogs, forums) and special events (conferences, exhibitions, etc.). Traditional media, like television and radio, remain essential channels for information, while personal contacts could be of greater significance in accessing information about the environment.

Consumer willingness to engage in sustainable behaviours is generally encouraging, with a strong interest in sorting garbage, paying a premium for environmentally-friendly products, and reducing food waste. However, some ambivalence and resistance exist, indicating potential barriers to adoption.

Respondents largely perceive their role as consumers and citizens to be significant within the circular economy framework, though a minority hold reservations about its effectiveness.

Sustainable packaging greatly influences purchase decisions, as a majority (67%) have refrained from buying products due to unsustainable packaging.

Brands are expected to take responsibility for end-of-life product management, employ recyclable packaging, and prioritise product durability and reparability to enhance circular behaviours.

There is a consensus that the societal adoption of circular behaviours and the introduction of new materials, along with stronger regulations and incentives, can significantly contribute to the environmental protection.

The most effective approaches to tackling environmental issues, as perceived by the respondents, involve education, heavier fines for violations, and financial incentives for environmentally responsible actions.

In summary, the survey reveals a commendable level of awareness, understanding, and willingness among respondents to adopt sustainable practices and engage in circular economy principles. There is a clear call for increased information, education, and proactive measures from individuals and institutions to address pressing environmental challenges effectively.

Positively, Bulgaria has improved its ability to manage specific flows of MRO (Maintenance, Repair and Operations), building waste, and domestic waste. Unfortunately, the country is still not making enough progress to rise above the EU average. The recently implemented "extended producer responsibility" systems are ineffective, thus, their productivity needs to be improved and gradually include other waste streams, including textile and leather waste, as previously motivated.

It is expected that it will improve if requirements for greater producer responsibility systems are introduced and included in national legislation. In order for municipalities to improve their separate collection systems and treatment of domestic garbage as indicated above, further regulatory measures must be introduced as well as simultaneous national and European funding for the duration of the existing plan of the municipal regional systems for residential waste management.

In order to reduce landfilled waste, landfill charges on municipal waste should continue to apply. Given the poor recycling results in many towns, it is necessary to gradually increase the amount of these deductions and impose stronger usage limitations, which should only be done for enhancing household recycling and recovery outcomes waste and to prevent waste. In light of the results of their use, they should continue to apply deductions for building waste as well.

The recommendations made to improve waste management should are implemented at the legislative level, simultaneously with the introduction of the legislation of the European legislation from the "circular economy' and be appropriately addressed in the programs funded from the EU for the program period 2021-2027.

Given the practice of the EC and the Court of the EU in criminal proceedings in waste sector and the resulting consequences for the member countries, is necessary timely planning, financing and implementation of appropriate mechanisms for the practical implementation of legislation. Except it will save national financial resource, timely implementation of legislation will provide environmental and human health benefits.

The risk of illegal traffic of waste within the EU is increasing, including in Bulgaria, as a result of the introduction of restrictions on the export of waste to third countries that until recently accepted large amounts of waste for treatment. The control authorities in the country, competent to carry out control at cross-border transport, are numerous and there must be provided an integrated and coordinated action bringing together different law enforcement agencies and the administrative bodies in order to build and further strengthen the system to combat illegal activities related to transboundary shipments of waste.

List of topics for discussion in public event:

- UN2030 Agenda
- Concept of circular economy
- Global environmental challenges
- Waste management and recycling

- The role of citizens in circular economy and protecting environment
- Circular economy for everyone

References

1. Ministry of environment and water. (2022). Strategy for the transition to a circular economy 2022-2027.
2. Ministry of environment and water. (2021). Analysis of the status of waste.
3. Ministry of environment and water. (2021). Conclusions and suggestions for improvement waste management in the country, with the aim achieving the set goals and requirements of the Directive 2008/98/EU on waste and other directives and regulations in the field of waste management and collection of correct solutions given the key issues in the circular economy package.

GREECE

Country context

Circular economy practices and policies adopted by Greek government bodies, businesses and consumers are perceived to make significant contributions to reversing adverse environmental changes, by also addressing corporate responsibility and ESG (Environmental, social, and corporate governance) criteria.

The circular economy was necessitated by a) changing environmental conditions brought about by human interventions, such as climate change, pollution, waste accumulation, limitation of natural resources, energy inefficiencies, biodiversity losses and b) the current technological trends and innovations that interlink businesses from various economic sectors and consumers, such as digitalization, automation and artificial intelligence.

The circular economy has also emerged as a vital resort for economic recovery after the COVID-19 pandemic, which highlighted the risks associated with a linear economy, such as the reliance on expanded international, instead of local supply chains and the heavy dependency of production on natural resources instead of exploring circular opportunities.

The main Policies & Strategic Targets in Greece include:

- Separate collection of recyclable materials και biowaste by the end of 2022.
- Preparation of municipal waste for reuse and recycling at 55% weight by 2025 and 60% by 2030.
- Separate collection of textile products and και hazardous domestic waste by 01.01.2024.
- Landfill disposal <10% by 2030.
- Establishment of systems 'Pay as you Throw' by 01.01.2023 in municipalities with over 100.000 inhabitants.
- Participation of involved entities & citizens in continuous dialogue for the promotion of the transition to a circular economy.
- Development of broad network for the collection of recyclable materials (no just packaging waste) for the increase recycling rate of all types of materials.

Although circular economy practices and applications are gaining momentum over the linear economic model and are supported by institutional policy frameworks, there are still barriers and challenges ahead. Greece lags European countries in recycling, with only 11% of total waste being recycled, far behind the EU-27 average (38%). However, in certain categories, as with packaging waste (64% in 2018), recycling rates in Greece have converged to the EU-27 average. Paper and cardboard packaging records a high recycling rate (92%), but plastics a relatively low (40%), (Alpha Bank Economic Research, 2021).

Major problems include:

- Low performance towards waste prevention (1st option according to waste management hierarchy).
- Lack of reuse networks.
- Producers not registered and not contributing to the cost for recycling of their products & packaging according to their legal responsibility.
- In some cases: Collection of separate recycling streams together with mixed recyclable packaging materials.
- Slow progress in establishing separate recycling streams in local level and insufficient information campaigns addressed to employees and broad public.
- Problems with implementation of the new DRS system.
- Large quantities of mixed waste to landfill disposal (containing biowaste & hazardous domestic waste) // still near 60%.
- Still existing sites of uncontrolled waste disposal.

However, circularity has financial and practical limitations that should be considered. For example, recycling has physical limitations, while the recycling of long lifespan products can be difficult, costly and more energy consuming. Large investments might be required in advanced technologies and in modernizing existing facilities and equipment. Financial barriers could hinder these investments, which require intensive funding and economic incentives.
Overall, circular economy applications are not feasible without a marked transformation of both production and consumption, which involves the entire supply chain and various sectors. Practical and cultural issues regarding the efficient interdependence of different stakeholders and their complex collaboration, communication and coordination require special attention. Cultural barriers, lack of consumer interest and awareness and hesitance or reluctance due to company culture are the main barriers for businesses and policymakers.

Methodology

Sampling and Data Collection

The research method used to collect data on Greek citizens' attitudes, habits, needs and ideas about circular economy, was the simple random sampling. A questionnaire link was sent by e-mail to members of the business and the university community, NGOs, trade and professional associations, while it was also published on social media such as Facebook, resulting in the collection of 126 responses. The sample was random and considered as representative of the population. The questionnaire was open for answering from May 16 to July 17, 2023. The aim was to collect as many responses as possible because the issues of circular economy concern all citizens regardless of their social profile.
People who volunteered to participate in the study have completed the online questionnaire. The participants gave their consent to participate in the study by completing the survey. Several questions were included in the questionnaire to determine demographic data (gender, age, employment, country of residence), educational level of respondents and the level of knowledge citizens have regarding environmental challenges and waste management, their attitudes towards circular economy issues and how they can be addressed as well as whether they were willing to take concrete actions for a more sustainable model of living.

Sociodemographic data

The demographic data of the participants are presented in the Table below which shows that of the 126 participants 64.29% of the participants were women (81 women), 34.92% were men (44 men), while 0.79% (1 person) mentioned that they are belonged to another sexual group. The gender of the participants did not influence their responses, as the topics of circular economy concerns everybody and applies to all individuals who make up a community.

Table 1: Demographic Data - gender.

Answer Choices	Responses	Ratio
Men	44	34.92%
Women	81	64.29%
(Non-binary)	1	0.79%

As far as the age range of the participants concerns, it is worth noting that in the questionnaire there were answers from all age groups. However, the majority of respondents were over 40 years old (76.99%), 15.87% were 25-39

years old and only 7.14% belonged to the 18-24 age group, (see Table and Figure below).

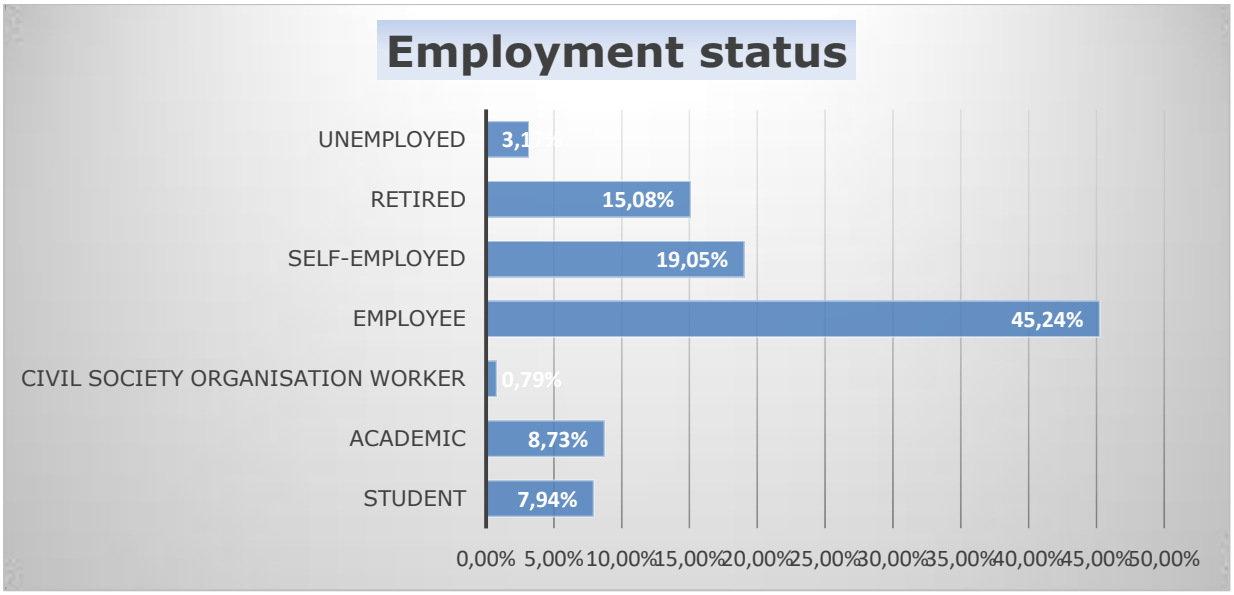
Table 2: Demographic Data - Age.

Answer Choices	Responses	Ratio
18-24	9	7.14%
25-39	20	15.87%
40-54	57	45.24%
55+	40	31.75%

The employment of the participants was requested to outline the social profile of each respondent. Most of the responses (45.24%) came from employees in private companies, followed by self – employed (19.05%) and retirees (15.08%), (see Table and Figure below).

Table 3: Demographic data - employment status

Answer Choices	Responses	Ratio
Student	10	7.94%
Academic	11	8.73%
Civil Society Organisation worker	1	0.79%
Employee	57	45.24%
Self-employed	24	19.05%
Retired	19	15.08%
Unemployed	4	3.17%



Regarding the educational level of the survey participants, we can see that 32.54% of the respondents have a university degree, 37.3% a post graduate degree and 10.32 are PhD holders. In addition, 17.46% are secondary education graduates, while there is only 1 respondent (0.79%) per category in: High-school education, Lyceum education, non-tertiary post-secondary education and short-term higher education. The data obtained from the participants' responses to education are presented in the Table below.

Table 4: Demographic data - Education

Answer Choices	**Responses**	**Ratio**
No qualification		0%
Lower secondary education	1	0.79%
Upper secondary education	22	17.46%
Post-secondary non-tertiary education	1	0.79%
Short-cycle tertiary education	1	0.79%
Bachelor or equivalent level	41	32.54%
Master or equivalent level	47	37.3%
Doctoral or equivalent level	13	10.32%

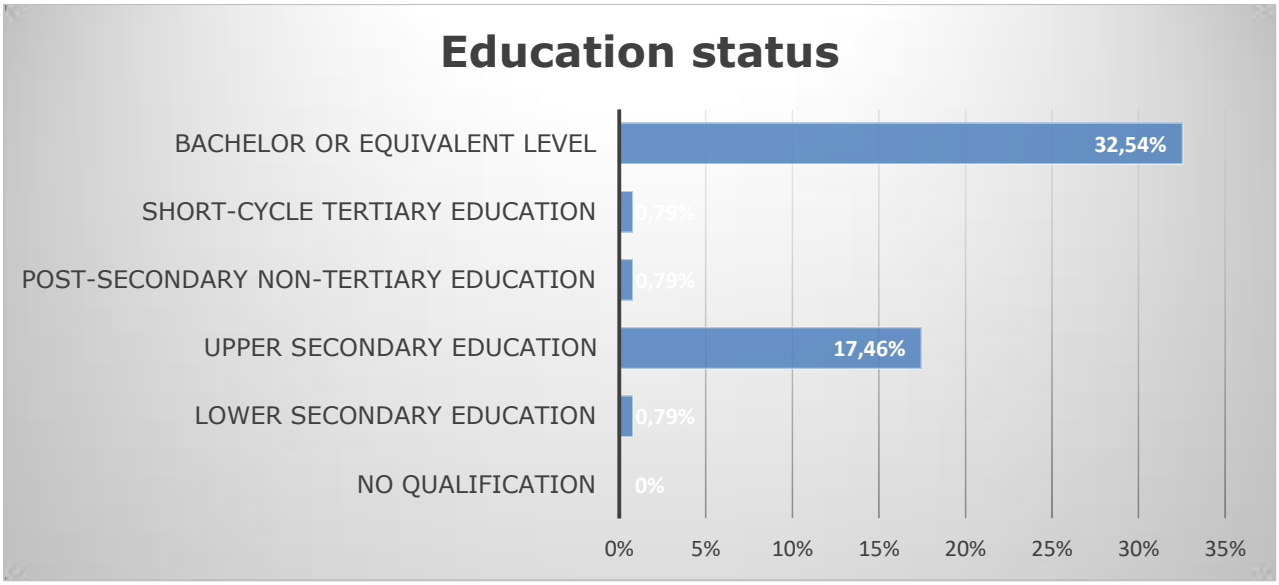


Figure 1: Education status of the participants

Environmental knowledge and concerns

After demographic questions, participants were asked to answer some educational questions to define their knowledge and conceptions about sustainability and circular economy issues.

The first question in this section refers to respondents' knowledge of the UN Sustainable Development Agenda 2030. Only 17.46% reported that they were aware of this agenda, while 46.03% reported that they were not aware and 36.51% that they were not certain, as shown in the Table and Figure below.

Table 5: Level of awareness regarding the UN Sustainable Development Agenda 2030

Answer Choices	**Responses**	**Ratio**
Yes	22	17.46%
No	58	46.03%
I am not sure	46	36.51%

Figure 2: Level of awareness regarding the UN Sustainable Development Agenda 2030

The above results show a lack of information or certainty regarding sustainability issues and the plan of action for people, planet and prosperity to realize the goals and the targets of the development agenda.
However, most participants (64.24%) recognized correctly Goal 2 of the Agenda: End hunger, but only 7.94% recognized Goal 1: End poverty and Goal 4: Ensure inclusive and equitable quality education, while 10.32% wrongly stated that the stopping of production of diesel cars and the stopping of production of meat constitute goals in the Agenda. Almost one fifth of the respondents (17.46%) reported that they do not know the UN2030 Agenda, (see Table below)

Table 6: Level of awareness regarding the UN Sustainable Development Goals

Answer Choices	**Responses**	**Ratio**
Fighting poverty, clean and cheap energy, responsible consumption and production	81	64.29%
Fighting world hunger, having regular public transport, quality education	10	7.94%
Stop production of diesel cars, stop production of meat	13	10.32%
I do not know	22	17.46%

As far as the question "What do the 3"Rs" mean", 74.6% correctly recognized or guessed the answer, 16.67% reported that they mean "Resource, reuse, research" and 8.73% sated that they do not know.

Table 7: Responses to the question "What do the 3"Rs" mean"

Answer Choices	**Responses**	**Ratio**
Reduce, reuse and recycle	94	74.6%
Radiation, resource and restoration		0%
Resource, reuse, research	21	16.67%
I do not know	11	8.73%

The results obtained in the question "What is Circular economy, according to your opinion" demonstrated an increased awareness of the respondents as 96.83% answered correctly, as shown in the Table below.

Table 8: Responses to the question "What is Circular Economy"

Answer Choices	**Responses**	**Ratio**
A green and sustainable model of production and consumption	122	96.83%
A type of exchange of objects between neighbours		0%
An isolationist kind of economy	1	0.79%
I do not know	3	2.38%

However, despite knowing the definition of CE, participants indicated a lack of basic knowledge on the concept and only 14.29% reported that they have a good knowledge, 3.17% that they have an extensive knowledge and 1.59% that they are experts. The majority (65.87%) stated that they have heard the term but they are not familiar with the specifics and 15.08% said that they do not possess any knowledge on the subject, (see Table below).

Table 9: Responses to the question "What is your level of knowledge regarding the concept of circular economy"

Answer Choices	Responses	Ratio
I am a professional in the field	2	1.59%
I have extensive knowledge	4	3.17%
I have good knowledge in the field	18	14.29%
I've heard the term but I'm not familiar with the specifics	83	65.87%
None	19	15.08%

The majority of participants (57.94%) correctly identified Green Washing as a communication and promotion strategy, 15.08% reported that it is a washing technique and 26.98% reported ignorance, (see Table below).

Table 10: Responses to the question "What is "Green Washing"

Answer Choices	Responses	Ratio
A communication or promotion strategy	73	57.94%
A washing technique	19	15.08%
An aquatic plant		0%
I do not know	34	26.98%

In regard to the most significant global environmental challenge facing today's society, the Greek participants in the survey reported "Climate change mitigation and adaptation" (38.1%) and "Energy transition and renewable forms of energy" (27.78%) as the most important issues, followed by "Global warming from fossil fuels" and "Pollution problems and their effects on health" (11.11% and 8.73% respectively). The rest of the issues were selected by less than 4% of the respondents, as shown in the Table below.

Table 11: Responses to the question regarding the most significant global environmental challenge facing today's society

Answer Choices	**Responses**	**Ratio**
Climate change mitigation and adaptation	48	38.1%
Energy transition and renewable forms of energy	35	27.78%
Global warming from fossil fuels	14	11.11%
Pollution problems and their effects on health	11	8.73%
Sustainable urban development and mobility	5	3.97%
Water stress and water scarcity	4	3.17%
Loss of biodiversity	3	2.38%
Deforestation	3	2.38%
A sustainable food system model	2	1.59%
Food waste	1	0.79%
Fast fashion and textile waste		0%

It seems that most respondents search and receive information on environmental issues from official and unofficial entities as is reflected n the Table below. The majority (56.35%) seems to be informed from the internet (websites, blogs, forums), while 18.25% prefer more official media such as the television and the radio. The rest of the participants stated that they prefer other channels of information such as the social media (7.14%), books, magazines etc (6.35%), newspapers (4.76%), conferences, exhibitions etc (3.17%), through their personal contacts (3.17%) or local, national and/or European campaigns (1.59%).

Table 12: Responses to the question "Where do you get information about the environment? "

Answer Choices	**Responses**	**Ratio**
The Internet (websites, blogs, forums)	71	56.35%
Television and Radio (films, documentaries and news)	23	18.25%
Social media (Facebook, Twitter, Instagram, etc.)	9	7.14%
Books, Magazines and Publications	8	6.35%
Newspapers	6	4.76%

Special Events (conferences, fairs, exhibitions, festivals, etc.)	4	3.17%
Personal contacts (friends, family, school, work, etc.…)	4	3.17%
Local, national and/or European campaigns	2	1.59%
None of the above	1	0.79%

Perception of citizens' effectiveness

The following questions investigate consumers' habits towards protecting the environment and their willingness to change their everyday behaviour in favour of more sustainable practices.

Survey respondents specified how they discard items of their household, and their answers are summarized in the Table below. Of the 126 participants in the survey, almost all stated that they recycle plastic bottles (123), paper and glass (119) and tin cans (117) and that they recycle or dispose properly electronic products such as cell phones, computers, etc (123), batteries (121) and light bulbs (118), while half of the participants reported that they recycle household oil (63). However, it seems that regarding other wastes participants do not use appropriate waste disposal practices, so most medical wastes, green wastes and personal care products end up in the dump or the garbage (91, 95 and 105 respectively).

Table 13: Responses to the question "What is your primary mode of disposal of the following items"

	DUMP	**PUT IN GARBAGE**	**RETURN TO DEALER/ DISTRIBUTER**	**RECYCLE/ REUSE**
Plastic bottle/Soft drink bottle	0	3	0	123
Light bulbs	0	8	60	58
Household batteries	0	1	59	66
Cell phones/computers and other electronics	1	2	70	53
Medical waste	10	81	21	14
Paper	0	6	1	119
Household oil	12	46	5	63
Glass	0	5	2	119

Battery (car battery, moped battery, etc…)	1	4	83	38
Metal can	0	7	2	117
Green waste (grass, branches, etc…)	43	52	2	29
Personal care products	8	97	6	15

The survey questionnaire then investigated the intentions of the participants to adopt more sustainable practices. It seems that of the 126 people that participated in the survey the vast majority (104) are willing or very willing to sort your garbage into different recycling bins, to reduce food waste through smarter purchasing, storage, and disposal activities (100). In addition, most of the participants reported that they are willing or very willing to conserve energy e.g. by using less heating/air conditioning, etc (87), to change their diet to more sustainable food, to choose a more environmentally-friendly way of travelling/transfer such as use public transportation, electric cars, walking, etc (82), and to pay 5% more to buy a product that is environmentally friendly (68). But, it seems that participants were undecided regarding engaging in composting activities with 59 stating that they were willing, 17 negative and 50 neither willing nor unwilling. Similar reactions were recorded regarding buying second-hand products such as clothes and/or electronic devices, with 45 stating that they were willing, 28 negative and 53 neither willing nor unwilling, see Table below.

Table 14: Responses to the question "How willing are you to engage in the following activities"

	VERY UNWILLING	**UNWILLING**	**NEITHER WILLING NOR UNWILLING**	**WILLING**	**VERY WILLING**
Sort your garbage into different recycling bins	5	6	11	54	50
Pay 5% more to buy a product that is environmentally friendly	10	20	28	58	10

Reduce food waste through smarter purchasing, storage, and disposal	3	4	19	71	29
Engage in composting activities	4	13	50	41	18
Conserve energy e.g. by using less heating/air conditioning/less lightening	4	12	23	59	28
Choose a more environmentally - friendly way of travelling/transfer (public transport, electric car, walking…)	5	10	29	61	21
Change your diet to more sustainable food	8	11	22	67	18
Buy second-hand products (e.g. clothes and/or electronic devices)	11	17	53	36	9

However, although most of the respondents in the above question reported that they are willing to pay 5% more to buy a product that is environmentally friendly (68 participants or 53.9%) when the question becomes "Would you pay more for a product made through circular economy practices" only 30.95% stated "Yes" and 37.3% said that they were not sure, see Table below. Maybe the difference in the responses could be attributed to the amount consumers believe they would be asked to pay which is not specified. So, it seems that the cost of the sustainable practices is important, and it could affects adoption.

Table 15: Responses to the question "Would you pay more for a product made through circular economy practices"

Answer Choices	Responses	Ratio
Yes	39	30.95%
No	40	31.75%
I am not sure	47	37.3%

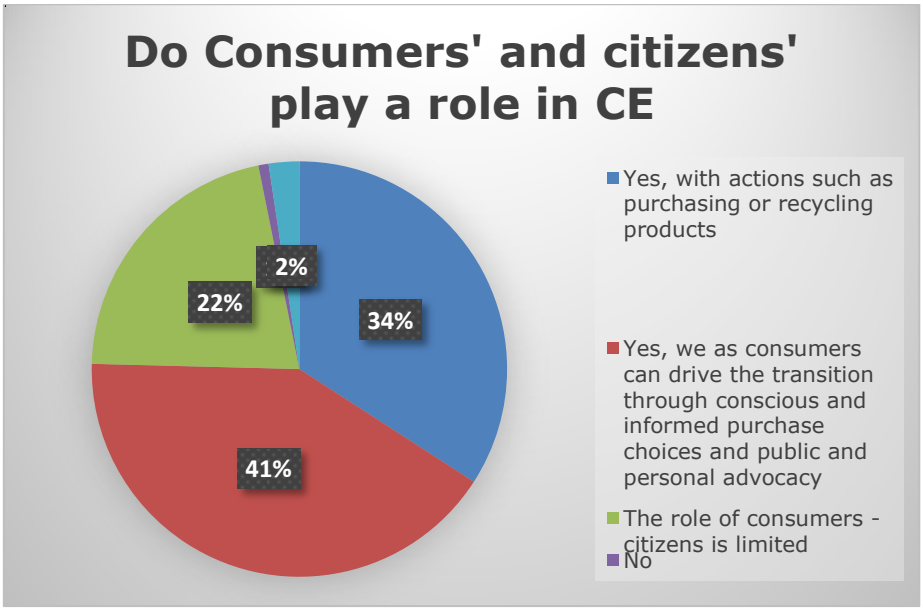
Figure 3: Would you pay more for a product made through circular economy practices

Participants believe that they have a powerful role in circular economy through consumer choices that support circular processes such as making informed purchase choices, public and personal advocacy (41.27%) and recycling products (34.13%). Only 21.43% believe that they role is limited, see Table and Figure below.

Table 16: Responses to the question "Do you think you as "consumer and citizen" can play a role in circular economy"

Answer Choices	**Responses**	**Ratio**
Yes, with actions such as purchasing or recycling products	43	34.13%
Yes, we as consumers can drive the transition	52	41.27%

through conscious and informed purchase choices and public and personal advocacy		
The role of consumers - citizens is limited	27	21.43%
No	1	0.79%
I do not know	3	2.38%



Respondents stated that when they buy circular products they care more about the ecological footprint (41.27%), certifications, verified label, validated sustainable claims (34.13%), information about the quality of the product (30.95%), working and labour conditions (21.43%) and less about information on caring, repairing and disposal of the product (15.87%) or the supply chain (7.14%),see Table below.

Table 17: Responses to the question "What do you care more when buying circular products (select max 3 options"

Answer Choices	**Responses**	**Ratio**
Ecological footprint	52	41.27%
Certifications, verified label, validated sustainable claims	43	34.13%
Information about the quality of the	39	30.95%

product		
Working and labour conditions	27	21.43%
Information about products caring, repairing and disposal	20	15.87%
I don't care (if you select this option, please do not mark others)	17	13.49%
Information about the supply chain	9	7.14%

Most survey participants (see Table and Figure below) reported that they would like to take into consideration the circular economy processes of the companies that develop the products (48.41%) although currently only 23.81% report to do so and 27.78% report that they do not.

Table 18: Responses to the question "When buying a product do you consider whether a company applies circular economy processes"

Answer Choices	**Responses**	**Ratio**
Always	2	1.59%
Sometimes	28	22.22%
No, but I would like to	61	48.41%
No, I do not consider it	35	27.78%

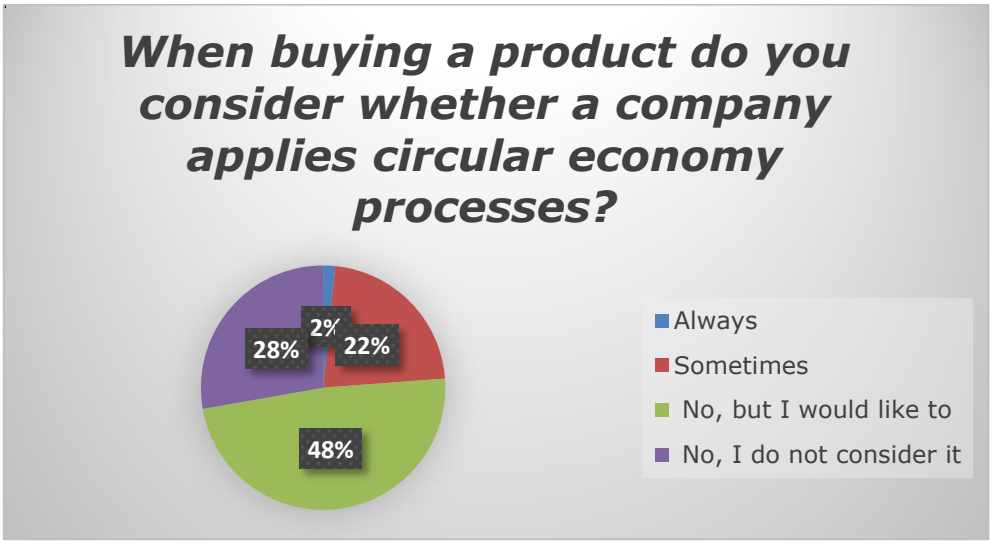


Figure 4: When buying a product do you consider whether a company applies circular economy processes?

In the same direction are the responses in the question "Have you ever decided not to purchase a product because the packaging was not sustainable" in which 71.43% reported that this did not affect their decision and only 11.9% said that this affected negatively their buying behaviour, as it is shown in the Table below.

Table 19: Responses to the question "Have you ever decided not to purchase a product because the packaging was not sustainable"

Answer Choices	Responses	Ratio
Yes	15	11.9%
No	90	71.43%
I can't remember	21	16.67%

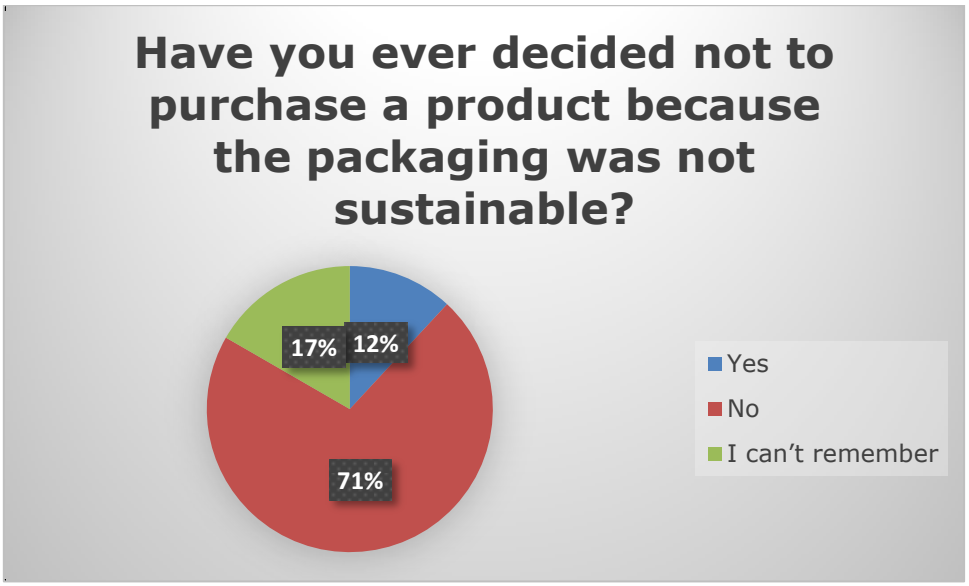


Figure 5: Have you ever decided not to purchase a product because the packaging was not sustainable?

Regarding which activities are considered more sustainable, participants specified refilling, packaging made of paper and glass as well as packaging made of bio-based plastic (34.92%, 28.57% and 24.6% respectively). Only 11.11% answered "packaging made of recycled plastic" and 0.79% "packaging with reduced quantity of virgin plastic, see Table below.

Table 20: Responses to the question "In your opinion, which of the following option is more sustainable"

Answer Choices	**Responses**	**Ratio**
Refilling service (with packaging brought from home)	44	34.92%
Packaging made of other material (paper, glass)	36	28.57%
Packaging made of bio-based plastic (Plastics produced from renewable resources)	31	24.6%
Packaging made of recycled plastic	14	11.11%
Packaging with reduced quantity of virgin plastic	1	0.79%

Respondents claimed that certain activities on behalf of the companies such as ready-to-use/accessible take back programs, the use of recycled/recyclable/reduced packaging, or the launching of circular and sustainable products (26.98%, 23.03% and 19.84% respectively) could affect positively and inspire environmentally sustainable behaviours. Participants also seem to believe that more information about product's features and supply chain could persuade them to adopt the circular economy model (17.46%). Guarantee product durability and access to repair as well as independently verified sustainability and circular claims seem to play a lesser role (8.73% and 4.76% respectively), as shown in the Table below.

Table 21: Responses to the question "Which actions do you expect from brands to increase your circular behaviour"

Answer Choices	**Responses**	**Ratio**
Take responsibility for the product End-Of-Life, for example, through ready-to-use/accessible take back programs	34	26.98%
Use recycled/recyclable/reduced packaging	29	23.02%
Launch circular and sustainable products	25	19.84%
Better information sharing and advertising and more transparency about product's features and supply chain	22	17.46%
Guarantee product durability and access to repair	11	8.73%
Independently verify sustainability and circular claims	6	4.76%

Regarding which actions can significantly make an improvement in the field of environmental protection, responses are distributed between the responsibility of the companies, the citizens and the political entities (EU and national governments): the need for more innovation in materials used by companies (28.57%), citizen's adoption of circularity-based behaviour and regulation and enforcement from the EU and national governments (26.19%). and (24.6%). But, if we take into consideration that an additional 20.63% believe that consumers should buy only products with sustainable packaging and follow recycling rules, as shown in the Table below, heavier responsibility seem to be placed on the part of the consumers which are considered to play an integral part in circular economy adoption.

Table 22: Responses to the question "In your opinion, what of the following actions can significantly make an improvement in the field of environmental protection"

Answer Choices	**Responses**	**Ratio**
We need more material innovation to eliminate the pollution (from companies and brands)	36	28.57%
Society (citizens) should take more steps to adopt circularity-based behaviour	33	26.19%
We need more regulation and enforcement (from the EU and national governments)	31	24.6%
Consumers should buy only sustainable packaging and follow recycling rules	26	20.63%

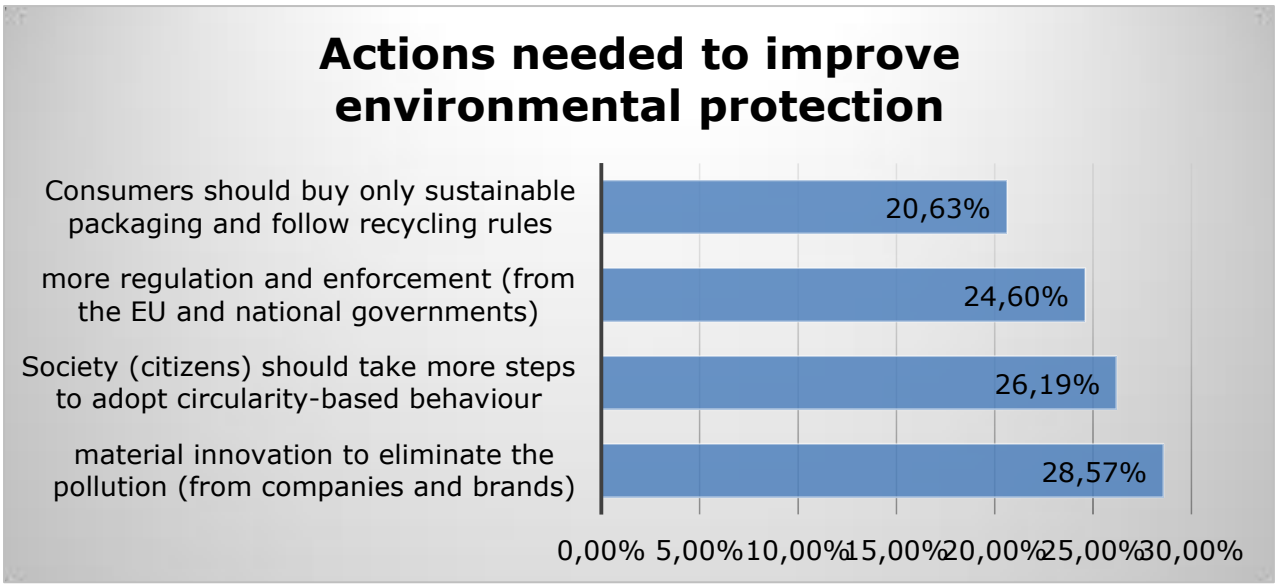


Figure 6: Actions needed to improve environmental protection

The Table and Figure below shows participants' perceptions regarding actions taken by local, national and EU administrations to protect the environment. It seems that respondents have very negative perceptions regarding their local and national decision makers (91% believe that they are not doing enough). Although their perceptions on the actions of the EU is better, 55% also believe that the EU is not doing enough.

Table 23: Responses to the question "Do you think that the following institutions are doing too much, the right amount, or not enough to protect the environment"

	DOING TOO MUCH	**DOING SOMETHING**	**NOT DOING ENOUGH**	**DO NOT KNOW**
Your city, town or village	0	20	91	15
The Greek government	0	30	91	5
The European Union	16	46	55	9

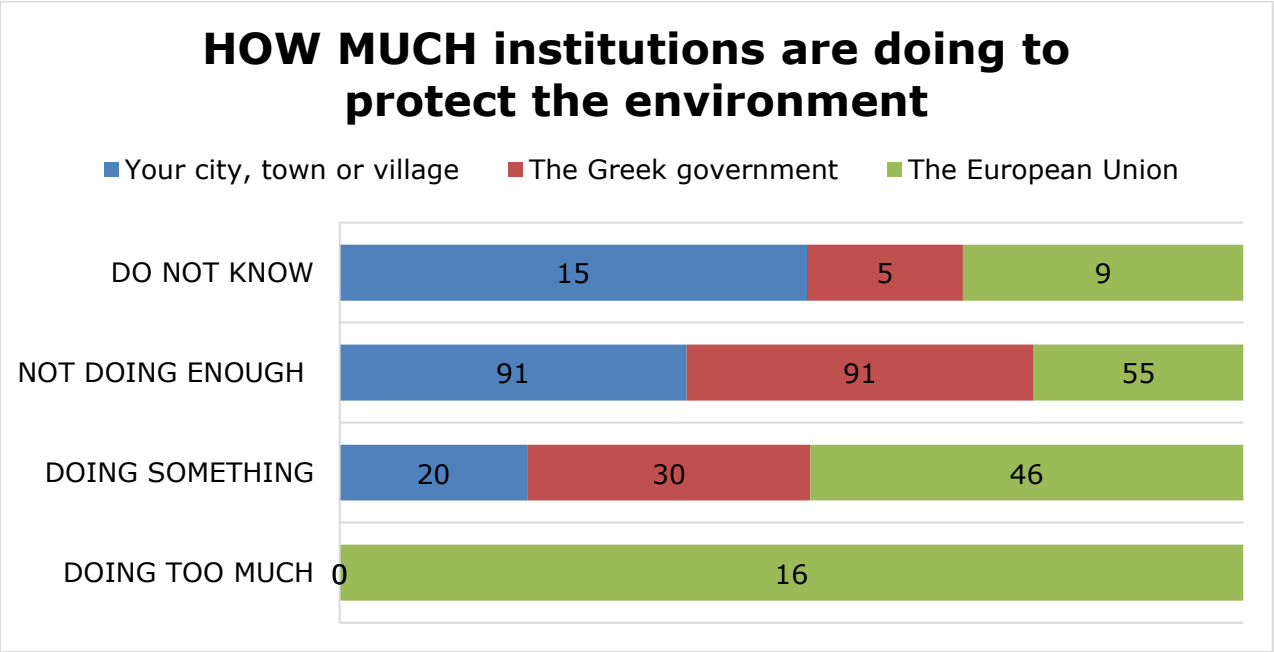


Figure 7: How much institutions are doing to protect the environment.

As far as what could be done to tackle environmental problems, participants identified the following: information and education (37.3%), financial incentives to businesses and citizens (34.92%), stricter environmental legislation (32.54%) and fines (23.81%), encouragement of businesses to engage in sustainable activities (19.05%), R&D (16.67%), enforcement of legislation and

introduction of financial consequences for environmentally harmful activities (15.87%), make the food system more sustainable from production to consumption (11.11%) and changing the way we produce and trade (7.94%).

Table 24: Reposes to the question "In your opinion, which of the following would be the most effective ways of tackling environmental problems (select max 3 options)"

Answer Choices	**Responses**	**Ratio**
Providing more information and education, e.g. on waste separation and energy consumption	47	37.3%
Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g. tax breaks, subsidies)	44	34.92%
Introducing stricter environmental legislation	41	32.54%
Introducing heavier fines for breaches of environmental legislation	30	23.81%
Encouraging businesses to engage in sustainable activities	24	19.05%
Investing in research and development to find technological solutions	21	16.67%
Ensuring better enforcement of legislation	20	15.87%
Introducing or increasing taxation, or removing subsidies, on environmentally harmful activities	20	15.87%
Making the food system more sustainable from production to consumption	14	11.11%
Changing the way we produce and trade	10	7.94%
Making the banking and insurance systems more environmentally friendly	1	0.79%
None		0%

Conclusions

The survey sample, although small, is deemed representative of the population in Greece because the participants were coming from various ages, professional and educational backgrounds.

Only 3.17% of the Greek participants said they "did not know" or gave wrong answers regarding what circular economy is. However, when asked to identify their level of knowledge regarding the concept of circular economy, the majority (65.87%) stated that they have heard the term, but they are not familiar with the specifics. Given that CE is a relatively new concept, with the European Union's first official action plan being released in 2015, citizens should be better informed about the new economy green model that will lead to sustainable development.

In addition, respondents' knowledge of the UN Sustainable Development Agenda 2030 seems to be limited. Only 17.46% reported that they were aware of this agenda, while 46.03% reported that they were not aware and 36.51% that they were not certain. Even though most respondents correctly recognized Goal 2: End hunger (64.24%), they failed to recognize other core targets such as fighting world hunger or reported lack of knowledge (17.46) so it seems that there is a need to increase awareness regarding sustainability issues and ways to address the climate emergency.

In terms of waste disposal, most participants (90%) reported that they recycle plastic bottles, paper and glass, tin cans and that they dispose properly electronic products such as cell phones and computers, batteries, and light bulbs. However, the largest environmental benefit comes from prevention, e.g. from preventing food from being wasted in the first place. Greek participants seem to be willing to reduce food waste through smarter purchasing, storage, and disposal activities (79.36%) but also to conserve energy by using less heating/air conditioning (69.04%), to change their diet to more sustainable food, to choose a more environmentally friendly way of travelling/transfer (65.07%). When it comes to cost, participants report that they are willing to pay 5% more to buy a product that is environmentally friendly (53.9%) but when asked whether they would you pay more for a product made through circular economy practices only 30.95% stated "Yes" and 37.3% said that they were not sure probably because they did not know the increase entailed. So, it seems that the cost of the sustainable practices is important, and it could affect adoption if it considered high, highlighting thus a complex interrelationship between pro-environmental behaviours and the context in which they are performed.

Participants believe that they have a powerful role in circular economy through informed purchase choices, public and personal advocacy (41.27%) and they

reported that they would like to take into consideration the processes of the companies that develop the products (48.41%) but it seems that they lack information or guidance.

In summary, Greek participants associate CE and environmentally friendly practices with recycling, waste sorting and energy conservation which is in line with the conventional roles of efficient recyclers and consumers. In addition, it is generally accepted by the sample that governments, municipalities, businesses, and citizens have a role to play in transitioning towards a circular economy through technological innovations and changes in the business models but also through more active citizen roles. Supporting the emerging roles of citizens seems to be a key for jointly advancing the transition to CE.

In order to create a circular economy society, we need to empower change through awareness and education. Professionals, experts and decision-makers, both now and in the future, as well as citizens will play a decisive role in building a new future. Raising awareness to citizens about the circular economy is a crucial step in promoting sustainable and responsible consumption and production patterns.

According to the analysis results from the online survey that has been held in Greece the following list of topics have been identified to open a discussion with all citizens, in order to increase their awareness on circular economy issues as well as to debate and propose solutions to the "circular economy" problems mapped:

- **The UN Sustainable Development Agenda 2030:** Inform citizens about the Goals and sustainability issues and the plan of action for people, planet and prosperity.
- **Understanding the Circular Economy:** Educate citizens about the concept of a circular economy and how it contrasts with the traditional linear economy. Explore the core principles of the circular economy, such as reduce, reuse, recycle, and repair. Show how these principles can be applied in everyday life. Highlight the importance of reducing waste, reusing products, and recycling materials. Emphasize the importance of reducing waste and maximizing resource efficiency.
    - **Waste Hierarchy:** Teach citizens about the waste hierarchy, which prioritizes waste management methods in the following order: reduce, reuse, recycle, recover, and dispose. Encourage them to focus on reducing waste in the first place.
    - **Waste Reduction**: Discuss strategies for reducing waste, including minimizing single-use items, adopting reusable products, and practicing responsible consumption.

- **Product Lifecycle**: Explain the concept of a product's lifecycle, from design and production to disposal. Highlight the importance of designing products with durability and recyclability in mind.
- **Food Waste**: Address the problem of food waste and encourage citizens to reduce food waste through proper meal planning, storage, and composting.
- **Green Packaging**: Raise awareness about sustainable packaging alternatives and the importance of avoiding excessive packaging.
- **Repair Culture:** Advocate for the revival of repair culture, where citizens are encouraged to fix rather than discard broken items.
- **Energy in the Circular Economy:** Discuss the energy-intensive nature of linear production and consumption. Highlight how circular economy practices can reduce energy consumption in various industries, etc. Provide tips for citizens to reduce waste and conserve energy in their daily lives.
- **E-waste Management**: Address the growing issue of electronic waste and educate citizens on the proper disposal and recycling of electronic devices.
- **Textile Recycling**: Inform citizens about the environmental impact of the fashion industry and the benefits of recycling textiles.
- **Green Washing:** Definition of greenwashing and its impact on consumers. How to spot greenwashing in product marketing. Examples of Greenwashing: Sharing real-life examples of companies engaging in greenwashing, How misleading claims can harm the environment and consumers. Environmental Impact of Greenwashing: Discussing the consequences of falling for greenwashing, How greenwashing contributes to waste and pollution.
- **Circular Economy and Climate Change**: Explain the link between the circular economy and climate change mitigation, emphasizing how reducing resource consumption can help combat global warming.

- **Global Environmental Challenges**: Discuss the pressing environmental challenges facing society today, such as climate change, biodiversity loss, and pollution. Emphasize the need for sustainable solutions.
- **Circular Business Models**: Showcase businesses and organizations that have successfully adopted circular business models and the benefits they have reaped.
- **Government Initiatives**: Discuss government policies and regulations aimed at promoting the circular economy, such as extended producer responsibility (EPR) and incentives for sustainable practices.

- **Local Initiatives**: Highlight local circular economy initiatives and projects in your community or region, encouraging citizens to get involved and support these efforts.
- **Case Studies**: Present case studies, success stories of cities or countries or businesses that have made significant progress in transitioning to a circular economy and the positive outcomes they have experienced.
- **Consumer Behavior**: Discuss the influence of consumer behavior on the circular economy. Explore the psychology behind consumer behavior and how it can be influenced to make more sustainable choices. Discuss the role of consumer choices in driving the shift towards a circular economy and how small changes can make a big difference.
- **Consumer Engagement**: Provide tips and ideas for citizens on how they can actively participate in the circular economy, from reducing waste at home to supporting sustainable brands.
- **Measuring Progress**: Explain how citizens can track and measure their own contributions to the circular economy, such as reducing their carbon footprint or waste generation.
- **Economic Benefits**: Explain how a circular economy can create jobs, stimulate economic growth, and reduce the environmental costs associated with traditional consumption patterns.
- **Challenges and Obstacles:** Acknowledge the challenges and barriers to transitioning to a circular economy and brainstorm solutions.

References

1. Alpha Bank Economic Research. (2021, December). Sectors in focus: Circular economy and applications in various sectors. https://www.alpha.gr/-/media/alphagr/files/group/agores/sectors-in-focus/circular_economy_sectors_in_focus_december2021.pdf
2. EY Study on the Circular Economy in Greece. (2016, May). https://en.sev.org.gr/wp-content/uploads/2018/06/EY_Study_on_the_Circular_Economy_BRIEF-EDITION_0.pdf
3. Greece's commitment to green growth through Circular Economy. (2019, November) https://sdgs.un.org/partnerships/greeces-commitment-green-growth-through-circular-economy
4. Papamonioudis, K.; Zabaniotou, A. (2022) Exploring Greek Citizens' Circular Thinking on Food Waste Recycling in a Circular Economy—A Survey-Based Investigation. Energies 2022, 15, 2584. https://doi.org/10.3390/en15072584

HUNGARY

Country context

In Hungary, the circular economy has become important as part of the EU's environmental and sustainability directives. In 2018, three organisations, the Ministry of Innovation and Technology, the Business Council for Sustainable Development in Hungary (BCSDH), and the Embassy of the Netherlands, founded the Circular Economy Platform, with the aim of working together with companies and NGOs to accelerate the circular economy transformation. The Platform currently has nearly 100 members and its main activities are knowledge sharing, dissemination of corporate best practices, circular product design training and the development of a service to measure circularity.

At the beginning of March 2021, the Hungarian parliament dealt with the issues of circular economy in the framework of an amendment to the law (Law on the Amendment of Certain Laws on Energy and Waste Management). From 2021 onwards, there is a shift and transition towards the circular economy, with varying degrees of success.[2] The Act II of 2021, also known as the Waste Management Code, aims to provide a legal basis for the transition to a circular economy, including making producers responsible for the products they produce and waste. At that time, there was no comprehensive strategy or roadmap setting out the goals, tools and actions needed for the national economy to make the transition to a circular economy.

In March 2022, another circular economy initiative, the Circular Economy Technology Platform, was established by the Ministry of Innovation and Technology, with corporate and industry experts, which also helps to implement the model. But despite all the initiatives, until circularity is properly established in law and the country has a concrete strategy for transition, it is difficult to operate circularly in a linear economy.

Within the use of natural resources, Hungary recorded the highest increase in land use, i.e. the increase in the area covered by artificial surfaces (buildings, roads, parking lots, etc.) among EU countries between 2012 and 2015. Another important measure is resource productivity (a measure of the total amount of

[2] https://www.portfolio.hu/gazdasag/20210305/itt-a-korforgasos-gazdasag-ami-magyarorszagon-is-hamarosan-az-eletunk-reszeve-valhat-472578

materials directly used by an economy [EUR/kg]), where the performance of the Hungarian economy has deteriorated spectacularly compared to the EU average. While in 2010, the EU average resource productivity was 1.7 times better than Hungary's, in 2018 this number increased to 2.4, which is uniquely high in the EU. The relative deterioration of these two indicators means that the Hungarian economy can only achieve economic growth with declining resource efficiency, i.e. the goal of decoupling economic growth from environmental pollution has not yet been achieved. [3]

In Hungary, uptake has been slow due to the exposure of the economy to battery development, production and recycling. Nuclear energy is seen as a green energy (thus triggering the construction of more nuclear power plants). Wind power is currently not available for residential or commercial installation, and solar capacity is insufficient. The Greening of transport is an important factor and progress has already been made (green bus programme).

Waste management has been centralised and the focus is shifting from conscious production to waste management. 70% of PET bottles are not recycled.[4]

Under the funding possibilities of the 2021-27 EU cycle, a budget of HUF 1,200 billion is available for the planned developments under the Environment and Energy Efficiency Operational Programme in five main priorities (KEHOP Plus, GINOP Plus, TOP Plus, DIMOP Plus, CAP Strategic Plan). In addition, several funds of the Recovery and Resilience Facility (RRF) are available to support the transition to a circular economy. There is currently no direct application for support to the circular economy in Hungary.

In March 2023, the National Circular Economy Strategy was presented, which was prepared with the assistance of the OECD:
https://www.oecd.org/environment/waste/circular-economy-country-studies.htm

In April 2023, the Circular Economy Academy webinar series was launched to present the Strategy. It presents best practices, key priority areas (biomass, food, construction and plastics) and measures with a significant impact.

Goals to be achieved by 2040:

- The Government invests in research and introduces incentives to promote resource efficiency through innovation, eco-design, product sharing and reuse. Hungary aims to double its resource productivity (GDP/DMC) and reach the target of €2/kg.
- In order to close the material loop and use materials more sustainably,

[3] Bartus, Fenntartható pályán? A társadalmi-ökológiai fenntarthatóság állapota és trendjei
[4] https://hvg.hu/zhvg/20220615_Sosem_lesz_korforgasos_a_gazdasag_jogi_szabalyozas_nelkul

measures will be taken to double (to 15%) Hungary's recycling rate.

- The Government will support innovation and the development of new business models. Hungary aims to increase the number of circular jobs by 30% (to 2.5% of the total workforce) in industry, agriculture and services.[5]

Meanwhile, the country's resource productivity has been steadily and significantly deteriorating since 2012, as the only one in the European Union.

Among the large Hungarian multi-companies, MOL (Hungarian Oil and Gas Public Limited Company) has come up with plans and strategies for the transition to a circular economy. Currently, the 2030 target for Hungary to switch to a circular economy does not seem achievable, as action plans have not been prepared in time, the public perception does not reflect it (85% of Hungarian people do not even know the meaning of the model or only understand it as recycling[6]) and companies are not necessarily interested. Most businesses have no idea about circularity or how to integrate the concept in practice. The model is only popular among start-ups, e.g. Munch, which connects restaurants, commodity retailers and cafés with consumers as a food rescue service. The leftover food can be uploaded to an app by businesses and customers can buy it cheaper. Car-sharing services also fall into the circular category, but community platforms for sharing equipment are also popular in Hungary. Another example is Pilze-Nagy ltd., where they make raw material from hay, which they use to grow mushrooms and produce biogas from waste.

Overall, in order to reach its goals for the transition to a circular economy by 2040, Hungary needs to focus on critical measures and efforts.

To fully realise the potential of the circular economy, Hungary needs to adopt a comprehensive circular economy policy framework. Further policies are needed to achieve absolute decoupling so that resource use or some environmental pressure declines while economic activity continues to grow. Promoting and investing in recycling and eco-design can increase the availability of green jobs, products and services. Improving product reuse and repair can generate local product loops that create local jobs and make the economy less dependent on imports.[7]

Methodology

The link to the questionnaire was distributed as widely as possible by the CROMO Foundation. It was made available on its own website and social networking sites, where it could activate its associated community.

[5] Towards a National Circular Economy Strategy for Hungary | OECD iLibrary (oecd-ilibrary.org)
[6] https://g7.hu/adat/20210528/a-magyarok-85-szazaleka-nem-ismeri-azt-a-gazdasagi-modellt-amely-fele-a-kormany-elindult/
[7] https://www.oecd-ilibrary.org/sites/1178c379-en/index.html?itemId=/content/publication/1178c379-en

The Foundation staff also promoted the project and the questionnaire through their own network.
It was also shared with several professional and other groups in order to reach the widest and most diverse social strata: university alumni networks, intellectuals who could also be lecturers on the topic, the mailing list of the large families association - large families are one of the biggest consumers among the population and their awareness of the issue is crucial, agricultural sector, promotion in a group of active gardeners.
With hundreds of people reached, the required number was quickly gathered. 263 people viewed or started to fill in the questionnaire, of which 131 valid responses were received within the deadline. The response rate was 49.4% among those who viewed the questionnaire. All respondents accessed the online questionnaire via the link provided.

Sociodemographic data

The age distribution of respondents varies widely: from 18 to older age groups. The highest response rate was among the middle-aged, 42.3% (55 respondents) aged 40-54, with 38.5% (50 respondents) aged over 55. The younger age group had a lower response rate, with almost 20% between 18 and 39 years.

Table 1: Demographic Data - age

Answer Choices	**Responses**	**Ratio**
18-24	8	6.15%
25-39	18	13.85%
40-54	55	42.31%
55+	50	38.46%

The gender gap is significant. Of the respondents, 28 are men and 103 are women. There was one error among the respondents, those who marked more than one respondent indicated to us that they were in the female category. Thus there was no "non-binary" response.

Table 2: Demographic Data - gender

Answer Choices	**Responses**	**Ratio**
Man	28	21.54%
Woman	102	78.46%
Non binary	1	0.77%

It is assumed, but not proven, that women are the most interested in this topic. The majority of male respondents were aged 40 and over, but middle-aged women are also in the majority, as the overall proportion of young people is low. The majority of respondents live in Hungary (126), 1 respondent lives in Romania and 3 did not specify their country of residence. It is safe to say that the responses have Hungarian characteristics.
There is also a wide range in terms of the occupation of the respondents, with the majority being in employee status. Almost equal proportions are represented by entrepreneurs, university staff, NGO staff and pensioners. A smaller group is made up of students (9 persons) and the proportion of unemployed is negligible (2.3%, 3 persons).

Table 3: Demographic data - Education

Answer Choices	**Responses**	**Ratio**
Student	10	7.69%
Academic	16	12.31%
Civil Society Organisation worker	13	10%
Employee	59	45.38%
Self-employed	17	13.08%
Retired	15	11.54%
Unemployed	3	2.31%

From the definition of occupations, it could also be inferred that respondents have some kind of completed education. Without inference, the responses confirm this. There are no respondents without qualifications. There are only 3 respondents who have completed up to grade 10 of secondary school with a primary education.

Table 4: Demographic data - employment status

Answer Choices	**Responses**	**Ratio**
No qualification		0%
Lower secondary education	3	2.31%
Upper secondary education	12	9.23%
Post-secondary non-tertiary education	4	3.08%

Short-cycle tertiary education	3	2.31%
Bachelor or equivalent level	33	25.38%
Master or equivalent level	50	38.46%
Doctoral or equivalent level	26	20%

The chart also shows that the majority (38.5%, 50 people) have a master's degree or equivalent, and 26 (20%) have a doctorate.
Overall, 40% of the respondents have a bachelor's or intermediate degree, while 60% have a master's or doctorate. Respondents indicated the highest level of education completed.
Overall, the sociodemographic data show that educated middle-aged Hungarian women workers have the highest propensity to respond in the study population. Young men and men were not very sensitive to the topic. The participation of entrepreneurs in the survey is desirable because of their potentially crucial role in the circular economy, and their responses are therefore particularly important for us.

Environmental knowledge and concerns

In this block we look at how much respondents know about the environment and the impact of humans on the environment.
In Hungary, the responses indicate that there is no awareness of the UN 2030 Agenda. No, or not sure. A high level of uncertainty indicates that they have heard the term but are not sure of its meaning, or that they do not know its meaning but only the term.
Knowledge is more widespread among graduates.

Table 25: Level of awareness regarding the UN Sustainable Development Agenda 2030

Answer Choices	**Responses**	**Ratio**
Yes	23	17.69%
No	61	46.92%
I am not sure	46	35.38%

Further questions were asked about the content of Agenda 2030, which was also answered by those unsure and those who did not know it at all.

As only a small proportion of respondents were familiar with the content of the Agenda 2030, and therefore the goals it contains, the rest only guessed.
Apart from the almost 30% who selected the „I did not know" answer, 84 respondents were able to select the main goals of combating poverty accurately. Since the response options were not separate goals, but contained a set of goals to choose from, the choice was easier. The goals not included in the Agenda (stopping the production of diesel cars, stopping meat production) also received 5 votes. Those who admitted to not being familiar with Agenda 2030 did not know the goals, but among the undecided there were some who could identify the exact goal.

Table 26: Level of awareness regarding the UN Sustainable Development Goals

Answer Choices	**Responses**	**Ratio**
Fighting poverty, clean and cheap energy, responsible consumption and production	84	64.62%
Fighting world hunger, having regular public transport, quality education	6	4.62%
Stop production of diesel cars, stop production of meat	5	3.85%
I do not know	36	27.69%

The chart shows that the other real-world choices: fighting world hunger, providing accurate public transport and quality education, are only marginally selected. In total, 6 people chose these. All but one of the 6 were women, there was no correlation in terms of occupation and highest level of education, but only one was sure of the content of the Agenda 2030, the other 5 were not sure or uncertain. Thus, only one of the 23 people who knew the document also ticked this response option. However, this may be due to the fact that the questionnaire question did not specify that more than one answer was possible to select, so they ticked the answer that was more relevant to them. No firm conclusions can be drawn from this. Respondents all ticked one answer for this question.

The next set of questions concerned the three "Rs".
For the meaning of the term 3R 71.5% of respondents got the answer right, while 22.3% did not know. 6.2% chose another option. Of these, they were already unsure about Agenda 2030.

Table 27: Responses to the question "What do the 3"Rs" mean"

Answer Choices	**Responses**	**Ratio**
Reduce, reuse and recycle	93	71.54%
Radiation, resource and restoration	0	0%
Resource, reuse, research	8	6.15%
I do not know	29	22.31%

The most important question for the project is the knowledge of the circular economy. 96.2% of the respondents could correctly select the meaning of circular economy. Only a meagre 3.8%, 5 people, answered that they did not know. No one ticked the incorrect, irrelevant answers.
Those who did not know the concept did not know the other, earlier concepts or the UN Agenda 2030. They are all middle-aged workers, employees.

Table 28: Responses to the question "What is Circular Economy"

Answer Choices	**Responses**	**Ratio**
A green and sustainable model of production and consumption	125	96.15%
A type of exchange of objects between neighbours	0	0%
An isolationist kind of economy	0	0%
I do not know	5	3.85%

Although respondents were able to define the meaning of the circular economy well, they were uncertain about its specific meaning, with 59.2% of them saying they had heard of the term but were not clear about the specifics. 1 person is a professional in the field, and 26.2% do not know the content at all. Only nearly 15% said they had good knowledge in the field.

Table 29: Responses to the question "What is your level of knowledge regarding the concept of circular economy"

Answer Choices	**Responses**	**Ratio**
I am a professional in the field	1	0.77%
I have extensive knowledge	0	0%
I have good knowledge in the field	19	14.62%
I've heard the term but I'm not familiar with the specifics	77	59.23%
None	34	26.15%

Looking further into the context of knowledge, those who did not know what a circular economy is, do not know its content. The middle-aged entrepreneur who responded as a specialist is a woman who is familiar with the other concepts interviewed. Those who have a good knowledge of the content of the circular economy are also familiar with the 3Rs concept. There are no other clearly common aspects in the answers.

The majority of respondents are not familiar with the concept of "greenwashing". They either indicated that they did not know the meaning or gave a completely different meaning. More than 60% do not know the exact meaning of "greenwashing".

Only 36.9% of respondents indicated a communication or marketing strategy. As this activity is aimed at misleading consumers, it can be very effective in Hungary, as the majority of people are not aware that the marketing or communication message about a product or business does not reflect reality.

Table 30: Responses to the question "What is "Green Washing"

Answer Choices	Responses	Ratio
A communication or promotion strategy	48	36.92%
A washing technique	56	43.08%
An aquatic plant	1	0.77%
I do not know	26	20%

The previous questions all presumed a prior knowledge to be answered accurately, requiring the respondent to have prior learning or knowledge. In what follows, we want to know their views on how they perceive the global environmental challenges facing society today. They were asked to choose the most significant global environmental challenge from a list.

Nearly half of respondents (46.2%) selected Climate change mitigation and adaptation. Pollution problems and their effect on health was the next most important issue, with 19.2% of respondents saying it was a priority.

Almost half of the respondents (46.2%) identified Climate change as a challenge to mitigate and adapt to. Pollution and its impact on health is the next most important issue, with 19.2% of respondents saying it is a priority.

Hydric stress and water scarcity, Energy transition and renewables, Global warming from fossil fuels are in the midfield. Few people chose Sustainable food model, Food waste, Biodiversity loss, Deforestation, Sustainable urban development and mobility as their top priorities. Fast fashion and textile waste were not seen as a major challenge that society should address.

Table 31: Responses to the question regarding the most significant global environmental challenge facing today's society

Answer Choices	Responses	Ratio
Climate change mitigation and adaptation	60	46.15%
Pollution problems and their effects on health	25	19.23%
Energy transition and renewable forms of energy	10	7.69%
A sustainable food system model	6	4.62%
Loss of biodiversity	3	2.31%
Sustainable urban development and mobility	1	0.77%

Water stress and water scarcity	13	10%
Global warming from fossil fuels	10	7.69%
Food waste	4	3.08%
Deforestation	2	1.54%
Fast fashion and textile waste	0	0%

As we did not have information on prior knowledge and information platforms, we also asked where information on environmental issues is obtained. This is also an interesting question as the majority of respondents had no knowledge of the UN Agenda 2030 or the 3Rs or greenwashing. It was clear from the responses that the Internet has the greatest influence on the subject, in terms of the content of websites and blogs and forums available on the Internet. 67.7% of respondents use these sites for information. It is therefore worthwhile to present topics related to the circular economy on these platforms, as this is where most of the knowledge and information is obtained. Social media, which are also Internet-based, are also important. 13.8% of respondents indicated this. TikTok, which is not specifically mentioned in the survey, can also be used to raise awareness of a current issue in a short video. While more readable platforms can be used to disseminate the content of the issues in more depth. A small percentage of respondents get information from television, radio, print media, books, events, family and friends.

Table 32: Responses to the question "Where do you get information about the environment?"

Answer Choices	**Responses**	**Ratio**
Newspapers	2	1.54%
Special Events (conferences, fairs, exhibitions, festivals, etc.)	4	3.08%
Television and Radio (films, documentaries and news)	11	8.46%
Books, Magazines and Publications	5	3.85%
The Internet (websites, blogs, forums)	88	67.69%
Social media (Facebook, Twitter, Instagram, etc.)	18	13.85%
Local, national and/or European campaigns		0%
Personal contacts (friends, family,	4	3.08%

school, work, etc.…)		
None of the above	1	0.77%

Overall, the majority of Hungarian respondents do not have a good, comprehensive understanding of environmental impacts and current concerns. It is a major responsibility of the organisations and public bodies dealing with the issue to raise public awareness and sensitisation on the subject. The majority gather information through internet platforms, but even there they are mostly informed about climate change and its risks. Although the concept of a circular economy has been identified as one of the options, they are no longer aware of the actual content of the concept, nor of the fact that they could be the target of a marketing and communication strategy that gives a false impression of reality. If citizens are to be able to take responsible action to protect the environment, it is necessary to ensure that they have access to appropriate information.

Perception of citizens' effectiveness

Knowledge is a true reflection of how people act in everyday life. For example, how they deal with household waste, how much they use activities to protect the environment, which also affects their way of life. Citizens' attitudes can be considered effective if they are able to sacrifice amenities in order to help protect the environment. This means not only renunciation, but also awareness, sensitisation of fellow citizens, experience and knowledge sharing.

We have asked some questions in this block to assess the effectiveness of citizens.

For 12 products, we assessed how they are treated as waste.

The answers were positive, as recycling and selective collection are already the norm for many products. All municipalities have already introduced the separate collection and disposal of PET bottles, soft drink bottles and paper waste, and the possibility of landfilling. In addition, the treatment of batteries as hazardous waste has become part of public awareness. Collection containers for used batteries are now available at many places (educational institutions, grocery stores, offices). The same is true for used oil. Separate collection of care products and medical waste should be improved, as the majority of respondents throw used products in the rubbish. This is also a cause for concern because medicines are classified as hazardous waste among healthcare products. It is possible to drop off expired medicines at pharmacies, but not in all cases and not all pharmacies accept them. For light bulbs, there is already a higher rate of selective collection, but even so, more people than expected are throwing them in the bin.

It is also interesting to note that used electronic equipment (mobile phones, computers, etc.) is also a popular item to store at home.

Table 13: Responses to the question "What is your primary mode of disposal of the following items"

	DUMP	**PUT IN GARBAGE**	**RETURN TO DEALER/ DISTRIBUTER**	**RECYCLE/ REUSE**
Plastic bottle/Soft drink bottle	0	5	2	123
Light bulbs	6	27	17	80
Household batteries	5	5	16	104
Cell phones/computers and other electronics	31	3	18	80
Medical waste	1	54	29	46
Paper	4	8	0	118
Household oil	7	15	5	104
Glass	4	22	5	100
Battery (car battery, moped battery, etc…)	6	3	29	92
Metal can	5	9	3	113
Green waste (grass, branches, etc…)	22	12	1	95
Personal care products	4	77	5	44

The practice of separate waste collection also reflects the willingness, with most people taking the trouble to collect plastic, metal boxes and paper separately. The greatest willingness to do so and to reduce food waste is shown by smarter shopping, storage and littering. Energy saving is also an important consideration for respondents, with several residential programmes in settlements to use energy efficient light bulbs. Respondents are willing to use less lighting, heating and air conditioning. The least willingness is shown in the purchase of goods, reluctant to spend 5% more on a product that is environmentally friendly. Price is a higher priority than the environmental impact of food production. Respondents are the least willing to change their own diet to more sustainable food. The highest number of refusals is also found in these aspects.

Table 33: Responses to the question "How willing are you to engage in the following activities"

	VERY UNWILLING	UNWILLING	NEITHER WILLING NOR UNWILLING	WILLING	VERY WILLING
Sort your garbage into different recycling bins	0	2	5	20	104
Pay 5% more to buy a product that is environmentally friendly	5	6	25	69	26
Reduce food waste through smarter purchasing, storage, and disposal	1	0	5	42	83
Engage in composting activities	4	7	15	32	72
Conserve energy e.g. by using less heating/air conditioning/less lightening	1	2	9	51	68
Choose a more environmentally - friendly way of travelling/transfer (public transport, electric car, walking…)	1	3	23	49	54
Change your diet to more sustainable food	4	7	26	57	38
Buy second-hand	4	9	14	46	58

products (e.g. clothes and/or electronic devices)					

This willingness to participate also contributes to the 47.7% (62 persons) of respondents who believe they can play a role in the circular economy as a citizen consumer. They can contribute to this by making informed and conscious purchasing decisions and by public and personal advocacy. Only 2 (1.5%) think they cannot play a role.

Table 15: Responses to the question "Do you think you as "consumer and citizen" can play a role in circular economy"

Answer Choices	**Responses**	**Ratio**
Yes, with actions such as purchasing or recycling products	47	36.15%
Yes, we as consumers can drive the transition through conscious and informed purchase choices and public and personal advocacy	62	47.69%
The role of consumers - citizens is limited	17	13.08%
No	2	1.54%
I do not know	3	2.31%

The willingness to pay more has already been demonstrated by the fact that most people do not want to pay more for a product that is environmentally friendly. However, when not expressed as a percentage of the extra cost, more than half of respondents (50.8%) would pay more for a product that is made according to circular economy practices. Interestingly, however, the number of undecided respondents is also high, with 43.1% not sure they would pay more for it. A total of 10 (7.7%) refused to pay more for such a product.

Table 16: Responses to the question "Would you pay more for a product made through circular economy practices"

Answer Choices	Responses	Ratio
Yes	66	50.77%
No	10	7.69%
I am not sure	56	43.08%

We also looked at what, other than price, would make someone buy a circular economy product. Respondents could select three criteria.The main aspects they would consider were the Ecological footprint (51.5%), Information about the quality of the product (48.5%) and Certifications, verified label, validated sustainable claims (40%). Respondents were less interested in information about the supply chain.

Table 1734: Responses to the question "What do you care more when buying circular products (select max 3 options"

Answer Choices	Responses	Ratio
Ecological footprint	67	51.54%
Working and labour conditions	36	27.69%
Information about the quality of the product	63	48.46%
Certifications, verified label, validated sustainable claims	52	40%
Information about the supply chain	21	16.15%
Information about products caring, repairing and disposal	40	30.77%
I don't care (if you select this option, please do not mark others)	3	2.31%

The selection criteria for choosing products are varied, but in general people are interested in whether the company that produces them uses circular economy processes: 42.3% of the respondents already sometimes consider it when making a purchase, 48.5% have not yet considered it but would like to. 8 respondents, 6.2% always take into account. Very few, a total of 5 people (3.8%) indicated that they do not consider whether a company applies circular economy processes when buying a product.

Table 18: Responses to the question "When buying a product do you consider whether a company applies circular economy processes"

Answer Choices	Responses	Ratio
Always	8	6.15%
Sometimes	55	42.31%
No, but I would like to	63	48.46%
No, I do not consider it	5	3.85%

Consumer awareness is reflected in the fact that the packaging of the product also influences the propensity to buy. Unsustainable packaging has already caused 40% (52 respondents) to refuse to buy. For the rest, it was not a consideration or they no longer remember.

Table 19: Responses to the question "Have you ever decided not to purchase a product because the packaging was not sustainable"

Answer Choices	Responses	Ratio
Yes	52	40%
No	49	37.69%
I can't remember	30	23.08%

Respondents felt that the refill option with packaging brought from home was the most sustainable. 62.3% of respondents agree. Packaging made from other materials, paper, glass, the use of biobased plastic, recycled plastic, or packaging with reduced quantity of virgin are already less sustainable according to the responses.

Table 20: Responses to the question "In your opinion, which of the following option is more sustainable"

Answer Choices	Responses	Ratio
Packaging made of recycled plastic	9	6.92%
Packaging made of other material (paper, glass)	20	15.38%
Refilling service (with packaging brought from home)	81	62.31%
Packaging with reduced quantity of virgin plastic	5	3.85%
Packaging made of bio-based plastic (Plastics produced from renewable resources)	18	13.85%

Conscious purchasing, sustainable and environmentally friendly aspects depend not only on citizens, but also on the approach of manufacturing companies. These brand manufacturers can also reinforce the circular behaviour of consumers. For consumers, it is important to guarantee product durability and access to repair. 26.9% of respondents believe so. 25.4% of them believe that taking responsibility for the product End-Of-Life is a key priority. 19.2% believe that both the use of recycled/recyclable/reduced packaging and the launch circular and sustainable products reinforce their own circular behaviour.

Table 21: Responses to the question "Which actions do you expect from brands to increase your circular behaviour"

Answer Choices	**Responses**	**Ratio**
Use recycled/recyclable/reduced packaging	25	19.23%
Take responsibility for the product End-Of-Life, for example, through ready-to-use/accessible take back programs	33	25.38%
Launch circular and sustainable products	25	19.23%
Guarantee product durability and access to repair	35	26.92%
Better information sharing and advertising and more transparency about product's features and supply chain	8	6.15%
Independently verify sustainability and circular claims	7	5.38%

In addition to public awareness and a change of attitude on the part of manufacturers, further regulation is needed in the field of environmental protection. 30% of respondents expect such regulation by the EU and national governments, which could significantly improve environmental protection. Similarly, 29.2% believe that society (citizens) should take more steps to adopt circularity-based behaviour. 22.3% believe that consumers should only buy sustainable packaging and follow recycling rules. Finally, 20.8% think we need more material innovation to eliminate pollution coming from companies and brands.

The diversity of responses also shows that there is no clear distinction between the aspects. The individual measures are equally important, the greatest impact can be reached by a complex action plan, so to improve green production/consumption. No single measure can be singled out as the only one that will improve the environmental situation.

Table 22: Responses to the question "In your opinion, what of the following actions can significantly make an improvement in the field of environmental protection"

Answer Choices	**Responses**	**Ratio**
Society (citizens) should take more steps to adopt circularity-based behaviour	38	29.23%
We need more material innovation to eliminate the pollution (from companies and brands)	27	20.77%
We need more regulation and enforcement (from the EU and national governments)	39	30%
Consumers should buy only sustainable packaging and follow recycling rules	29	22.31%

As already mentioned, the responsibility of decision-makers is also crucial for the dissemination of knowledge about the circular economy and has an impact on its implementation. The majority of respondents are dissatisfied with both local and national decision-makers' actions to protect the environment. 89 respondents believe that the Hungarian government is not doing enough to protect the environment, and 60 respondents believe that their own municipality is not doing enough. Opinions on the European Union are divided, with 47 respondents saying it is doing something, 48 not enough, but 19 saying it is doing much.

Table 23: Responses to the question "Do you think that the following institutions are doing too much, the right amount, or not enough to protect the environment"

	DOING TOO MUCH	**DOING SOMETHING**	**NOT DOING ENOUGH**	**DO NOT KNOW**
Your city, town or village	18	44	60	8
The Hungarian government	7	26	89	8

The European Union	19	47	48	17

There are other ways to tackle environmental problems beyond relying on these actors. Of the listed practices, respondents were able to select three that they considered to be the most effective, with a wide spread of options. More than half of the respondents (53.8%) think that the most effective way is Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g. tax breaks, subsidies). 41.5% see education and awareness-raising as the solution. The most neglected solution is to make the banking and insurance system more environmentally friendly, with only 1 respondent indicating this as an option.
Interestingly, only 9.2% think that ensuring better enforcement of legislation can be an effective method.

Table 24: Responses to the question of the most effective ways of tackling environmental problems

Answer Choices	**Responses**	**Ratio**
Providing more information and education, e.g. on waste separation and energy consumption	54	41.54%
Ensuring better enforcement of legislation	12	9.23%
Introducing heavier fines for breaches of environmental legislation	27	20.77%
Introducing stricter environmental legislation	25	19.23%
Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g. tax breaks, subsidies)	70	53.85%
Introducing or increasing taxation, or removing subsidies, on environmentally harmful activities	22	16.92%
Investing in research and development to find technological solutions	32	24.62%
Making the banking and insurance systems more environmentally friendly	1	0.77%
Making the food system more sustainable from production to consumption	32	24.62%
Encouraging businesses to engage in sustainable activities	27	20.77%
Changing the way we produce and trade	20	15.38%
None	1	0.77%

Overall, the efficiency of the population in environmentally friendly activities is already present, but needs to be improved. Respondents confirmed that this is not only the responsibility of individuals, but also of producers and policymakers. The majority of the population has the willingness and the will, but this is influenced by financial circumstances. When buying, price and quality are a higher priority than environmentally friendly packaging or circular economy production. However, they consider their own role to be important through conscious purchasing decisions, e.g. by bringing packaging from home. They also expect greater involvement of decision-makers and the introduction of financial incentives for businesses and individuals.

Conclusions

The survey was designed to assess the current knowledge and attitudes of a population sample towards the circular economy. It also looked at how to increase the engagement of residents and how they could participate in the widespread use of environmentally friendly technologies and practices. A brief overview was given of current efforts in Hungary, which unfortunately are not progressing at a sufficient pace, lacking strategic planning and implementation. Entrepreneurs are not motivated and there are no incentives for them. Green energy sources are difficult to access, over-regulated or the national capacity is not built to absorb additional energy sources. The Hungarian economy is currently focused on battery development, production and recycling.

The circular economy and the associated environmentally friendly technologies and methods are not widely known among the general public. The population is stuck with the selective collection of PET bottles and paper waste.

The majority of Hungarian respondents do not have a good, comprehensive understanding of environmental impacts and current concerns. It is a major responsibility of the organisations and public bodies dealing with this issue to raise public awareness and sensitisation on the issue. The majority gather information through internet platforms, but even there they are mostly informed about climate change and its risks. In order to enable citizens to take responsible action to protect the environment, it is necessary to ensure access to appropriate information.

Our proposals at national level to kick-start the circular economy:

- Commitment of policy makers,
- Developing and promoting a precise national economic action plan, involving NGOs, professionals, manufacturers
- Raising awareness through public education + internet platforms + social media - using easy to understand language

- Mobilising businesses not by punishment but by involvement and incentives,
- Introducing financial incentives for businesses and individuals,
- Removing barriers (legislation e.g. to install wind farms, lack of demand e.g. economic stability/growth to enable the population to spend more).

The survey shows that in many respects the public is not well-informed and aware of the different aspects of the circular economy. Equally lacking is the political and business will to enable the green transition. Accordingly, the following topics are proposed for open discussion:

- **Awareness raising and education among citizens** on the UN Sustainable Development Agenda 2030 and the Circular Economy
- **Motivation of the business sector** to enter the circular economy
- **Public incentives, the involvement of policymakers**: how to encourage local decision-makers to adopt appropriate regulations and options to encourage the green transition
- **Climate change mitigation and adaptation**: there is a lot of information available online, but still not sufficient on how to prepare for the expected changes, and what action to take to mitigate climate change
- **Waste-management**: information on how to deal with e-waste and other waste (e.g. light bulbs) is still lacking
- **Purchasing circular products**: people have little information about the products they buy, it is worth strengthening conscious consumption at an individual level
- **3 R**: putting the 3 Rs concept into practice
- **Change of circular behaviours of brands**: what can a citizen do to push brands increase their circular behavior

References

1. Bartus, G. (2020). Fenntartható pályán? A társadalmi-ökológiai fenntarthatóság állapota és trendjei. In T. Kolosi, I. Szelényi, I. Gy. Tóth (Eds), Társadalmi Riport 2020. Budapest.
2. Bíró, Á. (2021, November 29) Greenwashing, azaz a zöldre mosás jelentése és típusai. https://agotabiro.com/greenwashing-azaz-a-zoldre-mosas-jelentese-es-tipusai/
3. Greenwashing. https://hu.frwiki.wiki/wiki/Greenwashing
4. Kákos, A. (2022, June 15). Sosem lesz körforgásos a gazdaság, amíg a jogszabályok nem kényszerítik ki.
5. https://hvg.hu/zhvg/20220615_Sosem_lesz_korforgasos_a_gazdasag_jogi_szabalyozas_nelkul

6. Körforgásos gazdaság. (2023, June 23) Wikipedia. https://hu.wikipedia.org/wiki/Körforgásos_gazdaság
7. Kriza, M. (2021, March 5). Itt a körforgásos gazdaság, ami Magyarországon is hamarosan az életünk részévé válhat. https://www.portfolio.hu/gazdasag/20210305/itt-a-korforgasos-gazdasag-ami-magyarorszagon-is-hamarosan-az-eletunk-reszeve-valhat-472578
8. Torontáli, Z. (2021, May 28). A magyarok 85 százaléka nem ismeri azt a gazdasági modellt, amely felé a kormány elindult. https://g7.hu/adat/20210528/a-magyarok-85-szazaleka-nem-ismeri-azt-a-gazdasagi-modellt-amely-fele-a-kormany-elindult/
9. Towards a National Circular Economy Strategy for Hungary. (2023. April 28). OECD. Towards a National Circular Economy Strategy for Hungary | OECD iLibrary (oecd-ilibrary.org)

ITALY

Introduction

This report presents the results of the analysis of data collected through the online questionnaire to Italian respondents. It is divided into key sections reflecting different aspects examined in the survey. Following this introduction, the report presents an overview of the respondents' profiles in terms of age, gender, work background, and education levels.

The next section examines participants' knowledge and awareness of the United Nations' 2030 Agenda, highlighting the importance of this global framework for understanding environmental challenges. Responses related to the goals of the 2030 Agenda have been analysed to assess participants' familiarity with the main intervention areas identified by the United Nations.

The report then presents the analysis of the participants' understanding of the circular economy. Definitions and perceptions of the circular economy have been examined, as well as the level of knowledge about key concepts such as the 3Rs (Reduce, Reuse, Recycle) rule and the concept of "green washing."

Particular attention has been paid to responses regarding global environmental challenges. Participants' opinions on the priority of challenges such as climate change, pollution, biodiversity loss, and other relevant issues have been scrutinised.

Then we have examined the sources of information used by the respondents to deepen their understanding of environmental issues and evaluating product disposal practices. Data regarding participants' preferences for recycling, reuse, and proper waste management are presented.

Subsequent sections present participants' perspectives on their willingness to engage in eco-sustainable practices, such as waste separation, purchasing sustainable products, and adopting low-impact environmental behaviours.

Participants' viewpoints on the role of consumers and citizens in the circular economy have been examined, as well as their willingness to pay more for sustainable products and considerations during the purchase of circular products.

Finally, the last chapter draws significant conclusions from the collected data and outlines the implications of participants' responses for promoting the adoption of the circular economy and environmental awareness.
In summary, this report provides a comprehensive overview of a sample of Italian citizens' responses regarding the circular economy and environmental awareness. The collected information will serve as an important starting point for future research, policies, and initiatives aimed at promoting greater sustainability in society.

Country context

The war in Ukraine has entailed, among its repercussions, also increases in prices of raw materials, in particular of fossil fuels. Despite the consequent economic slowdown starting from the third quarter of 2022, Italy still managed to achieve an average +3.8% GDP increase. This growth was accompanied, again in 2022, by an increase in imports of raw materials.
From a circular economy perspective, it is important to evaluate in what terms the economic recovery recorded in 2022 was also followed by a growth in net imports of materials.
According to 5TH REPORT ON CIRCULAR ECONOMY IN ITALY – 2023, Italy confirms its leadership among the top five EU economies The overall ranking of circularity in the top five economies of the European Union (France, Germany, Italy, Poland, Spain) is based on seven indicators: waste recycling rate; utilization rate of materials from recycling; resource productivity; waste production and material consumption ratio; share of energy from renewable sources in total gross energy consumption; repair; soil consumption.
However, despite these positive outcomes, Italy – according to the "Environmental Implementation Review 2022: Turning the tide through environmental compliance" issued by the European Commission has still to face different challenges:

- to improve municipal waste management, in particular by reducing landfilling and increasing separate collection of waste in southern regions;
- to improve urban wastewater treatment by making investments in these facilities;
- to reduce particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO2) emissions by reducing traffic congestion and biomass burning;
- to designate the remaining Natura 2000 marine sites as special areas of conservation (SACs), set and meet site-specific conservation objectives and ensure the network is effectively managed;
- to improve the efficiency with which environmental financing is implemented.

During 2022, circular economy policies underwent a further important evolution, both at European and national level. The difficult international context, marked by the war in Ukraine, has pointed out the need for Europe and Italy to accelerate the transition towards the circular economy, not only for environmental and economic reasons, but also for geopolitical ones.

On March 30, 2022, with a view to implementing the European Union Action Plan, the Commission adopted four important measures on eco-design and sustainable products, a strategy for sustainable and circular textile products, construction products, consumer rights and empowerment. These measures were followed by the new draft regulation on packaging and packaging waste, the new draft regulation on repair and measures on critical raw materials, in a broader context of ecological transition policies, including the provision on the carbon border tax and the Industrial Plan for the Green Deal. New measures are expected in the coming months, including the circularity delegated act required by the taxonomy regulation.

For its part, Italy has adopted two key strategic and programmatic documents, essential to help step up the transition towards the circular economy. The national strategy for circular economy is especially important. It should now be fully and effectively implemented, by adopting the envisaged measures in compliance with the time schedule. The National Waste Management Programme was also launched in 2022, which serves as a key reference framework for regional planning and for the achievement of the objectives set by the framework directive on waste.

Between the end of 2022 and the beginning of this year, rankings were also published and funds were allocated under the PNRR to projects to be completed by 2026 (EUR 1.5 billion for waste recycling plants and increase of separate collection, EUR 600 million for circular economy 'flagship projects').

On the other hand, less satisfactory steps have been undertaken to meet the need to ensure and develop effective industrial and tax policies to support circular economy.

From this point of view, a few priority measures are the updating of the Transition 4.0 Plan and other investment support actions within the framework of the business incentives reform law, and the need to provide for ecological taxation measures to promote circular production and consumption in the enabling act on tax reform.

Methodology

The distribution of the questionnaire represented a fundamental part of the data collection process.

Various strategies and tools have been employed to reach a broad and diverse audience, ensuring the representativeness of participants:

Email: The questionnaire was sent to a sample of individuals via email. Emails were dispatched to a list of contacts gathered from various sources, including organizational databases, academic institutions, and associations. Using email facilitated reaching individuals with diverse demographic characteristics and interests.

Social Media: The questionnaire was promoted through social media platforms such as Facebook, Twitter, and Instagram. Sponsored ads and public posts were used to disseminate the questionnaire to a wider and more diverse audience, including young people and those with specific environmental interests.

Institutional Newsletters: The questionnaire was featured in newsletters of organizations, associations, or institutions with a focus on environmental issues and sustainability. This approach allowed reaching an audience already attuned to such matters.

A total of 108 respondents successfully participated and completed the survey, thus contributing to the substantive dataset under examination.

Socio-Demographic Analysis

The socio-demographic analysis of questionnaire participants provides valuable insights into the profile of the population involved in the survey. These data help us understand how different characteristics influence participants' responses and opinions. Below are the results of the socio-demographic analyses for each of the questionnaire questions.

Q2: How old are you?

The analysis of responses regarding participants' ages reveals an interesting distribution. The most represented age group is between 18 and 24 years, accounting for 48.1% of participants. This could reflect a heightened interest and sensitivity of younger generations towards environmental issues. The subsequent age groups, 25-39 years, 40-54 years, and 55 years or older, represent 13.0%, 25.0%, and 17.6% of participants, respectively.

	ANSWERS	RATIO
18-24	52	48,1%

25-39	14	13,0%
40-54	27	25,0%
55+	19	17,6%

Q3: What is your gender?

The distribution of genders among participants indicates a balanced participation. 52.8% of participants identify as male, while 45.4% identify as female. There is also a small percentage (1.9%) of participants who identify as non-binary.

	ANSWERS	**RATIO**
Male	57	52,8%
Female	49	45,4%
Non-binary	2	1,9%

Q4: Where do you live?

The analysis of responses regarding geographic origin reveals a predominant participation of individuals from Italy, with 99.1% of participants. This is mainly due to the fact that the questionnaire was distributed to a sample of the population located within Italy.

Q5: What is your occupation?

The data reflects participants' occupations, providing information about the type of work they engage in.

The broadest category is "Student", representing 47.2% of the responses. This suggests that a significant portion of participants is still involved in educational pursuits.

Other participants (24.1%) declare themselves as "Employee", indicating that they work for an organization or company.

The category of "Freelancer" is notable, comprising 13.9% of responses. This indicates a considerable number of participants work independently or autonomously.

A smaller percentage of participants fall into the categories of "Retired" (4.6%) and "Unemployed" (4.6%).

The relatively lower responses for "Academic" and "Civil Society Worker" reflect that a minority of participants are involved in these specific fields.

The data analysis reveals a variety of occupations among participants, with a distribution spanning various sectors and employment situations. The significant presence of "Students" suggests that many participants are young learners, which might influence their perspectives and attitudes toward eco-sustainability and the Agenda 2030. The diversity of occupations can also contribute to a broader understanding of the challenges and opportunities related to sustainable development in different work contexts. This heterogeneity can be valuable for promoting informed discussions and initiatives related to eco-sustainability on a global level.

	ANSWERS	**RATIO**
Student*	51	47,2%
Academic*	3	2,8%
Civil Society Operator*	3	2,8%
Employee*	26	24,1%
Self-Employed Professional*	15	13,9%
Retired	5	4,6%
Unemployed**	5	4,6%

Q6: What is your highest level of education?

The data reflects participants' educational attainment, providing information about the degrees they hold.

The broadest category is participants with "Lower Secondary Education", representing 31.5% of responses. This suggests diversity in participants' educational backgrounds, with a significant percentage having completed only lower secondary education.

The next largest category is "Upper Secondary Education", comprising 23.1% of responses. This indicates a substantial portion of participants have achieved an advanced level of secondary education.

The categories of "Bachelor's degree or equivalent level" and "Master's degree or equivalent level" are relatively balanced, at 15.7% and 16.7% respectively. This suggests many participants have attained tertiary education.

The relatively lower responses for "Doctorate or equivalent level" indicate that a limited number of participants have reached the highest level of education.

The data analysis reflects a variety of education levels among participants, with a distribution spanning a wide range of degrees. While some responses reflect

higher levels of education, there's also a significant percentage of participants who have completed only lower secondary education. This diversity can influence participants' opinions and knowledge on various topics, including eco-sustainability. Being aware of this variety can be valuable in the context of discussions and initiatives related to sustainable development, adapting information and communications effectively to reach all education levels.

	ANSWERS	RATIO
None	8	7,4%
Lower Secondary Education	34	31,5%
Upper Secondary Education	25	23,1%
Post-Secondary Non-Tertiary Education	0	0,0%
Short-Cycle Tertiary Education	1	0,9%
Bachelor's Degree or Equivalent Level	17	15,7%
Master's Degree or Equivalent Level	18	16,7%
Doctorate or Equivalent Level	5	4,6%

Environmental Knowledge and Concerns

Q7: Do you know what the United Nations' 2030 Agenda for Sustainable Development is?

The data reflects participants' level of knowledge about the United Nations' 2030 Agenda for Sustainable Development, a global action plan adopted in 2015 to address challenges such as poverty, inequality, climate change, and biodiversity loss.

The majority of participants (77.8%) state that they know what the Agenda 2030 is, indicating a good awareness of the existence of this global action plan.

Some participants (11.1%) admit to not knowing what the Agenda 2030 is, while an equal percentage states they are unsure (11.1%). This could indicate a lack of familiarity or confusion regarding the Agenda 2030.

Data analysis suggests that the majority of participants have some level of knowledge about the United Nations' 2030 Agenda for Sustainable Development. However, the presence of uncertain or negative responses indicates that there might be a need for further information and awareness about the Agenda 2030 and its objectives. This could contribute to increased engagement and participation in promoting global sustainable development and the implementation of the Sustainable Development Goals (SDGs) by 2030.

	ANSWERS	RATIO
Yes	84	77,8%
No	12	11,1%
Not sure	12	11,1%

Q8: Which of these are goals of the 2030 Agenda?

The data reflects participants' knowledge about the goals of the 2030 Agenda, a global action plan by the United Nations to achieve a more sustainable future by 2030.

The most common response is that the goals of the 2030 Agenda include "Ending poverty, clean and affordable energy, responsible consumption and production," chosen by 85.2% of participants. These goals correspond to the United Nations' Sustainable Development Goals (SDGs), which involve eliminating poverty, promoting clean and sustainable energy, and adopting responsible consumption and production patterns to address environmental challenges.

A minority of participants (8.3%) selected "Ending world hunger, having reliable public transportation, quality education" as goals of the 2030 Agenda. While the goal of ending hunger is part of the SDGs, the other two elements do not align with the specific objectives of the 2030 Agenda.

Data analysis demonstrates that the majority of participants have a good understanding of the goals of the 2030 Agenda, with a clear association between the objectives and themes such as poverty alleviation, clean energy, and sustainability in production and consumption. The presence of incorrect or uncertain responses suggests that it might be useful to provide additional information and awareness about the specific goals of the 2030 Agenda to foster a greater understanding of the contributions needed to achieve a sustainable future by 2030.

	ANSWERS	RATIO
Eradicating poverty, clean and accessible energy, responsible consumption and production	92	85,2%
Ending world hunger, reliable public transportation, quality education	9	8,3%
Halting diesel car production, discontinuing meat production	4	3,7%
I don't know	4	3,7%

Q9: What is the 3R rule?

The data reflects participants' perceptions of the 3R rule, which represents a fundamental concept in sustainability and the circular economy. The 3R rule stands for Reduce, Reuse, and Recycle, three key actions to minimize waste and maximize resource efficiency.

The most common response is that the 3R rule is "Reduce, Reuse, Recycle," chosen by 83.3% of participants. This indicates a good understanding of the concept and reflects the importance of adopting these three actions to promote a more sustainable lifestyle. Other responses, such as "Radiation, Resources, and Restoration" and "Resources, Reuse, Research," are chosen by only a small percentage of participants, suggesting that these interpretations are less common and could be due to confusion or limited familiarity with the 3R rule.

The "I don't know" response indicates that some participants were not aware of the 3R rule or were unsure of the correct answer.

Data analysis shows that the majority of participants correctly understand the 3R rule as "Reduce, Reuse, Recycle." This demonstrates a general awareness of the importance of reducing waste and maximizing resource utilization through concrete actions. However, the presence of incorrect or confused responses indicates that further education and awareness may still be needed to educate people about the 3R rule and its practical application for a more sustainable lifestyle.

	ANSWERS	RATIO
Reduce, reuse, recycle	90	83,3%
Radiation, resources, restoration	1	0,9%
Resources, reuse, research	10	9,3%
I don't know	7	6,5%

Q10: In your opinion, what is "circular economy"?

The data reflects participants' perceptions of the definition of the "circular economy," an economic model aimed at reducing waste and maximizing resource utilization through recycling, reuse, and regeneration.

The most common response is that the "circular economy" is a model of green and sustainable production and consumption, chosen by 96.3% of participants. This indicates a broad recognition of the concept of the circular economy as an approach that goes beyond the traditional linear model of production and consumption, promoting reuse and waste reduction.

The response "An exchange of objects between neighbours" was not chosen by anyone, suggesting that the majority of participants have an accurate understanding of the term and do not confuse it with a simple exchange of goods between individuals.

A minor response states that the "circular economy" is an isolationist economic system, chosen by only 0.9% of participants. This could be due to confusion or a misunderstanding of the concept.

Data analysis shows a broad understanding of the concept of the circular economy as a model of green and sustainable production and consumption. This reflects the increasing awareness among participants of the importance of adopting a more responsible and sustainable approach to resource use. The absence of responses that confuse the circular economy with other notions suggests that the term is becoming more recognizable and understandable. However, the presence of some incorrect or confused responses indicates that there may still be a need to increase awareness and clarity regarding the concept of the circular economy.

	ANSWERS	**RATIO**
A green and sustainable model of production and consumption	104	96,3%
A type of exchange of objects between neighbours	0	0,0%
An isolationist kind of economy	1	0,9%
I don’t know	3	2,8%

Q11: How much do you know about the circular economy?

The majority of participants have limited knowledge of the topic, with 40.7% stating that they have "A fair amount, a good understanding of the field," and 47.2% admitting to knowing "A little, I have heard about it, but I have never delved into it." These responses indicate widespread awareness of the circular economy but insufficient familiarity with the details and practical applications.

There is a small percentage of participants (2.8%) who consider themselves experts in the subject, while an even smaller number (0.9%) claim to have extensive knowledge. Data analysis reflects a level of general awareness of the circular economy, but also a lack of in-depth knowledge among most participants. This may suggest that the topic of the circular economy is gaining attention, but there is still room to further educate and inform people about the principles and practices of this model. The high percentage of participants who have heard about the topic but have not delved into it is a sign that there is a knowledge base to build upon in order to spread a more comprehensive understanding of the circular economy and its environmental and economic benefits.

	ANSWERS	**RATIO**
A lot, I'm practically a professional in the field	3	2,8%
A great deal, I have extensive knowledge in the matter	1	0,9%
Quite a bit, I have a good understanding of the field	44	40,7%
A little, I've heard about it but never delved into it	51	47,2%
Not at all	9	8,3%

Q12: What do you think "Greenwashing" is?

The data reflects participants' opinions on the definition of "Greenwashing," a term that refers to the practice of deceptively presenting products or actions as more environmentally sustainable than they actually are. The most common response is that "Greenwashing" is a communication/marketing strategy, chosen by 67.6% of participants. This reflects a widespread understanding of the concept, which is widely associated with attempts at self-promotion by companies or organizations seeking to appear more environmentally friendly than they actually are. The idea that "Greenwashing" is a washing program is cited by 13.9% of participants. This response might reflect confusion or limited familiarity with the term. The response "An aquatic plant" was not chosen by

anyone, suggesting that the majority of participants have a fairly clear idea of what "Greenwashing" is and do not confuse it with an aquatic plant.
Data analysis shows that the majority of participants understand that "Greenwashing" refers to a deceptive communication/marketing strategy aimed at presenting products or actions as more sustainable than they actually are. This indicates a growing awareness among consumers regarding misleading marketing practices and the need to be critical of sustainability claims. However, the presence of incorrect or confused responses suggests that there may still be a need for further education and awareness regarding the concept of "Greenwashing" and its implications.

	ANSWERS	**RATIO**
A communication/marketing strategy	73	67,6%
A washing program	15	13,9%
An aquatic plant	0	0,0%
I don't know	20	18,5%

Q13: From the following list, what do you think is the most significant global environmental challenge that society must address at the moment?

The data represents participants' opinions on the most significant global environmental challenge that society must address at the moment.
"Pollution issues and their effects on health" is the most common response, chosen by 24.1% of participants. This highlights the recognition of the importance of addressing the direct consequences of pollution on the environment and human health.
"Mitigation and adaptation to climate change" is cited by 21.3% of participants. This reflects the global attention to the climate emergency and the need to directly address the causes and consequences of climate change.
"Energy transition and renewable energies" is mentioned by 17.6% of participants, indicating the relevance of transitioning away from traditional energy sources and adopting renewable sources to tackle energy and climate-related issues.
"Global warming from fossil fuels" is chosen by 14.8% of participants, emphasizing the urgency to reduce the use of fossil fuels to counter global warming.

Data analysis highlights a range of environmental challenges considered significant by participants. These challenges are interconnected and require complex and coordinated solutions. Pollution and climate change emerge as primary concerns, as they directly impact human health and ecosystem balance. The transition to renewable energy sources and changing dietary patterns are equally relevant in combating global warming and biodiversity loss. The analysis shows that awareness of environmental challenges is high and recognizing the interconnectedness of these challenges is crucial for adopting effective coping strategies.

	ANSWERS	**RATIO**
Mitigation and adaptation to climate change	23	21,3%
Pollution issues and their health effects	26	24,1%
Energy transition and renewable energies	19	17,6%
Sustainable food model	2	1,9%
Biodiversity loss	7	6,5%
Urban development and sustainable mobility	1	0,9%
Water stress and water scarcity	8	7,4%
Global warming from fossil fuels	16	14,8%
Food waste	3	2,8%
Deforestation	3	2,8%
Fast fashion and textile waste	0	0,0%

Q14: Where do you get information about environmental issues?

The data shows preferences and sources of information among a group of individuals regarding various media categories and channels. It appears that the internet plays a dominant role as an information source, with 43.5% of individuals indicating websites, blogs, and forums as their main source of knowledge. This result emphasizes the ever-growing importance of the internet in disseminating information and seeking diverse content.

Television and radio, along with films, documentaries, and news programs, represent a significant source of information for 19.4% of participants, demonstrating that traditional media still maintain some relevance in people's lives.

Also interesting is the use of social media, including popular platforms like Facebook, Twitter, and Instagram. While not the primary source for most individuals, 10.2% indicate that social media is a source of information, suggesting that these platforms have a considerable impact on shaping opinions and sharing content.

Newspapers and printed publications seem to have a relatively modest presence as sources of information, with only 9.3% of participants considering them relevant. This might reflect a shift towards digital formats and a decrease in interest in traditional printed media.

Local, national, and/or European informational campaigns, as well as personal contacts (friends, family, school, work, etc.), garnered lower percentages as sources of information. However, it is important to note that even these sources can be relevant in specific contexts and can directly influence people's opinions.

Overall, the data reflects the wide variety of options available for accessing information in modern times, with the internet playing a central role in research and content sharing, while traditional media and personal interactions continue to hold their significance.

	ANSWERS	**RATIO**
Newspapers	10	9,3%
Special Events (conferences, fairs, exhibitions, festivals, etc.)	4	3,7%
Television and radio (movies, documentaries, and news)	21	19,4%
Books, Magazines, and Publications	8	7,4%
Internet (websites, blogs, forums)	47	43,5%
Social media (Facebook, Twitter, Instagram, etc.)	11	10,2%
Local, national, and/or European information campaigns	1	0,9%
Personal contacts (friends, family, school, work, etc.)	5	4,6%
None of the above	1	0,9%

Perception of citizens` effectiveness

Q15: How do you dispose of the following products?

The analysis of data regarding the disposal methods of different products provides an interesting overview of participants' habits and choices concerning waste management. Let's explore some key observations:

Plastic bottles/beverage bottles: The majority of participants (51.9%) choose recycling/reuse for this type of waste, while 42.6% opt for the waste bin. Only a small percentage disposes of it in the landfill (3.7%).

Light bulbs: Light bulbs appear to be an area of uncertainty for many participants, as 38.9% dispose of them in the landfill and 33.3% in the waste bin. Only 14.8% recycle or reuse them, and 13.0% return them to the retailer/distributor.

Batteries: Similarly, for batteries, the majority of participants (33.3%) dispose of them in the waste bin, followed by recycling/reuse (25.9%) and returning them to the retailer/distributor (19.4%). About 21.3% throw them in the landfill.

Mobile phones/computers and other electronic devices: Here, 41.7% choose recycling/reuse, while 26.9% dispose of them in the waste bin. However, a surprising 41.7% discard these devices in the landfill, which might reflect a lack of awareness about the hazards of improper electronic waste disposal.

Medical waste (bandages, plasters, etc.): The majority (64.8%) disposes of these waste items in the waste bin, while 17.6% recycle/reuse them. A relatively low percentage (14.8%) throws them in the landfill, which is a positive signal of awareness about proper medical waste management.

Paper: The majority (51.9%) recycles/reuses paper, while 44.4% disposes of it in the waste bin. Only 2.8% throws it in the landfill.

Used cooking oil: 42.6% dispose of used cooking oil in the waste bin, while 26.9% recycle/reuse it. 24.1% choose to return it to the retailer/distributor.

Glass: The majority (48.1%) recycles/reuses glass, while 37.0% disposes of it in the waste bin. 11.1% throw it in the landfill.

Batteries: A significant percentage (49.1%) disposes of batteries in the waste bin, while 29.6% recycle/reuse them. Only 6.5% throw them in the landfill, which is positive considering the importance of battery recycling.

Cans: The majority (50.9%) recycles/reuses cans, while 41.7% disposes of them in the waste bin. 3.7% throw them in the landfill.

Green waste (grass, branches, etc.): The majority (34.3%) disposes of this waste in the waste bin, while 32.4% recycle/reuse it. 30.6% throw it in the landfill.

Personal care products: The most common option is to dispose of these products in the waste bin (75.9%), while 11.1% recycle/reuse them.

In general, the analysis suggests that recycling/reuse is often the primary preference for many types of waste, but there are still areas for improvement, such as proper disposal of electronic devices. The presence of responses indicating landfill disposal highlights the importance of further educational efforts on sustainable waste management.

	LANDFILL	WASTE BIN	RETURN TO RETAILER/ DISTRIBUTOR	RECYCLING /REUSE
Plastic bottle/beverage bottle	4	46	2	56
Light bulbs	42	36	14	16
Batteries	36	28	21	23
Cell phones/computers and other electronic devices	45	15	29	19
Medical waste (band-aids, bandages, etc.)	16	70	19	3
Paper	3	56	1	48
Household cooking oil	29	46	7	26
Glass	12	52	4	40
Batteries (car battery, scooter battery, etc.)	53	16	32	7
Cans	4	55	4	45
Green waste (grass, branches, etc.)	33	37	3	35
Personal care products	10	82	4	12

Q16: How willing are you to engage in the following activities?

The data reveals participants' willingness to engage in various environmentally friendly activities. Here's a breakdown and commentary on the responses:

Separating waste into different containers for recycling: The majority (49.1%) are very willing to engage in this activity, with an additional 36.1% being fairly willing. This strong willingness indicates a positive attitude towards waste separation and recycling efforts.

Paying 5% more to purchase an environmentally friendly product: A significant portion (44.4%) are willing to pay a slightly higher price for eco-friendly products, while 25.0% are neutral in their willingness. This suggests a growing willingness to invest in sustainable purchasing choices.

Reducing food waste through smarter purchasing, storage, and disposal: A considerable number (46.3%) are willing to make efforts to reduce food waste. However, 16.7% are only slightly willing, indicating a potential area for awareness and behaviour change.

Engaging in composting activities: About 42.6% are fairly willing to engage in composting, with 20.4% neutral in their willingness. This response reflects an encouraging openness to composting, which can significantly contribute to waste reduction.

Saving energy (e.g., using less heating/air conditioning/lighting): A significant portion (43.5%) are fairly willing to save energy, which is a positive sign for reducing energy consumption and environmental impact. However, 18.5% are only slightly willing.

Opting for environmentally friendly modes of travel (public transport, electric car, walking, etc.): A notable percentage (30.6%) are fairly willing to choose eco-friendly travel options, and 28.7% are neutral in their willingness. This indicates potential for more sustainable transportation choices.

Changing diet to include more sustainable foods: Many (38.0%) are fairly willing to change their diet for sustainability, while 19.4% are neutral. This highlights a significant willingness to embrace sustainable food choices.

Purchasing second-hand products (e.g., clothes and/or electronic devices): A significant number (28.7%) are neutral in their willingness to buy second-hand products. However, 25.0% are fairly willing, indicating a positive inclination towards reducing consumption and promoting reuse.

In general, the data illustrates a promising willingness among participants to engage in environmentally friendly activities. However, there are also neutral responses, which could signal areas for further education and awareness-building. The high percentages of willingness for actions like waste separation, using eco-friendly transportation, and adopting sustainable diets suggest a positive shift in attitudes towards more environmentally conscious behaviors.

	NOT AT ALL	A LITTLE	NEITHER A LOT NOR A LITTLE	ENOUGH	A LOT
Dividing waste into different collection containers	2 (1,9%)	6(5,6%)	9 (8,3%)	39 (36,1%)	53(49,1%)
Paying 5% more to buy an environmentally friendly product	7 (6,5%)	13(12,0%)	27 (25,0%)	48 (44,4%)	13(12,0%)
Reducing food waste through smarter shopping, storage, and disposal	1 (0,9%)	6(5,6%)	18 (16,7%)	50 (46,3%)	34(31,5%)
Engaging in composting activities	8 (7,4%)	16(14,8%)	22 (20,4%)	46 (42,6%)	16(14,8%)
Saving energy, e.g., using heating/air conditioning/lighting less	0	11(10,2%)	20 (18,5%)	47 (43,5%)	30(27,8%)
Opting for an environmentally friendly mode of travel/commuting (public transport, electric car, walking...)	4 (3,7%)	20(18,5%)	31 (28,7%)	33 (30,6%)	20(18,5%)
Changing your diet to include more sustainable foods	7 (6,5%)	18(16,7%)	21 (19,4%)	41 (38,0%)	21(19,4%)
Buying second-hand products (e.g., clothes and/or electronic devices)	9 (8,3%)	27(25,0%)	26 (24,1%)	31 (28,7%)	15(13,9%)

Q17: Do you think that as a "consumer and citizen," you have a role in the circular economy?

The data reflects an overall positive attitude regarding the role of consumers in adopting the circular economy. The majority of responses (51.9%) firmly believe that consumers have the ability to drive the transition towards a circular economy through conscious purchasing choices and public and personal advocacy actions. This underscores the growing awareness of consumers' power in shaping the economic landscape. On the other hand, 35.2% of responses believe that consumers can contribute to the circular economy through specific actions such as purchasing or proper product recycling. This group might consider their actions more as part of a practical solution rather than as an engine for systemic change. A relatively low number of participants (8.3%) believe that the role of consumers is limited. This perspective could stem from scepticism about the actual impact consumers can have in the context of a major economic transition. It is interesting to note that no participant selected the option "No, none," indicating that no one believes that consumers have no role in adopting the circular economy approach. A small group (4.6%) responded with "I don't know," suggesting that some participants might not have a clear understanding of the concept of the circular economy or the role of consumers in this context. In summary, the data indicates a broad consensus on consumers' ability to influence the circular economy, with the majority believing that conscious purchasing choices and advocacy actions can guide the transition towards a more sustainable model.

	ANSWERS	**RATIO**
Yes, through actions like purchasing or correctly recycling products	38	35,2%
Yes, we as consumers can drive the transition to a circular economy through conscious and informed purchasing choices and personal and public advocacy actions	56	51,9%
The role of consumers - citizens is limited	9	8,3%
No, none	0	0,0%

I don't know	5	4,6%

Q18: Would you pay more for a product made through circular economy practices?

The most common response that emerges is "Yes," with 51.9% of participants stating that they would be willing to pay more for a product made through circular economy practices. This suggests that over half of the participants recognize the value of sustainable practices and the circular approach when purchasing products.

13.9% respond with "No," indicating that they would not be willing to pay more for a product made through circular economy practices. This group represents a minority, and the reasons behind this choice could vary, such as budget constraints or a lack of interest in sustainable practices.

The response "Not sure" accounts for 34.3% of the responses, indicating considerable uncertainty among this group of participants. There might be a lack of awareness or knowledge about the circular economy, or it could be challenging for them to make a decision without further information.

The data shows that there is a relatively high level of interest and awareness towards circular economy practices, as the majority of participants would be willing to pay more for products made in this way. However, the uncertainty represented by the "Not sure" response highlights the importance of better informing the public about the implications and benefits of the circular approach.

The "No" response could be influenced by various factors, including price, personal preferences, or a lack of understanding of circular economy practices.

In summary, the data reflects public interest in the circular economy but also the need for education and clear communication to promote a better understanding and acceptance of such practices.

	ANSWERS	**RATIO**
Yes	56	51,9%
No	15	13,9%
Not sure	37	34,3%

Q19: What interests you the most when purchasing circular products?

These data represent participants' preferences regarding the aspects they consider most important when purchasing circular products. The multiple-choice format suggests that individuals can attribute importance to more than one aspect.

The aspect that garners the most interest is "Ecological footprint," with 38.9% of participants considering it a crucial factor. This indicates an awareness of the importance of reducing the consumption of natural resources and the impact of products on the environment.

"Work and labour conditions" are equally relevant to 23.1% of participants, demonstrating sensitivity toward fairness and the well-being of workers involved in the production of circular products.

"Product quality information" is deemed essential by 31.5% of participants, emphasizing the importance of having products that are durable and meet user expectations.

"Certifications, verified labels, and validated sustainability statements" are considered important by 34.3% of participants, suggesting that formal guarantees of sustainability influence purchasing decisions.

"Supply chain information" is mentioned by 12.0% of participants, highlighting the importance of knowing ethical and sustainable practices throughout the entire production chain.

"Information about product maintenance, repair, and disposal" is relevant to 9.3% of participants, reflecting attention toward product durability and end-of-life management.

Only 3.7% of participants state that they are "Not interested" in any of these aspects.

The data analysis highlights that the purchase of circular products is influenced by a variety of factors. Eco-sustainability, labour conditions, product quality, sustainability certifications, transparency in the supply chain, and end-of-life product management are all elements considered relevant. This demonstrates a growing awareness of the various dimensions of circular consumption and sustainable choices among participants.

	ANSWERS	RATIO
Ecological footprint (human consumption of natural resources - Earth's capacity to regenerate them)	42	38,9%
Work and working conditions	25	23,1%
Information about product quality	34	31,5%
Certifications, verified labels, validated sustainability statements	37	34,3%
Supply chain information	13	12,0%
Information about product maintenance, repair, and disposal	10	9,3%
I'm not interested (if you select this option, do not select others)	4	3,7%

Q20: Do you consider whether a company applies circular economy processes when you purchase a product?

These data represent participants' habits regarding the consideration of circular economy processes when they make a purchase.

Only a small group of 6.5% of participants states that they always consider whether a company applies circular economy processes when purchasing a product. This group seems to attach significant importance to the circular approach and views it as a key factor in their purchase decisions.

40.7% of participants declare that they sometimes consider whether a company applies circular economy processes. This group appears to be open to the idea and takes the circular approach into account, but it might not be the sole determining factor in their choices.

A similar number, 34.3% of participants, state that they do not actively consider whether a company applies circular economy processes, but they express an interest in this perspective. This group might not be fully familiar with the circular approach or might wish to learn more about how companies implement it.

18.5% of participants claim that they do not consider at all whether a company applies circular economy processes when purchasing a product. This group seems to not place much importance on the circular approach or might be more oriented toward other factors in their purchase decision.

The data analysis highlights a range of attitudes toward considering the circular economy approach when buying products. While a minority is always attentive to the circular approach, the majority of participants state that they consider it at least sometimes. This suggests that interest in the circular approach is growing, but there might be a need for more effort in education and awareness-raising to increase the awareness and significance of the circular economy in product purchases.

	ANSWERS	RATIO
Always	7	6,5%
Sometimes	44	40,7%
No, but I would like to	37	34,3%
No, I don't consider it	20	18,5%

Q21: Have you ever chosen not to purchase a product due to unsustainable packaging?

These data represent participants' experiences and choices regarding product purchases based on the sustainability of the packaging.

A portion of 29.6% of participants state that they have chosen not to purchase a product because the packaging was unsustainable. This group exhibits a significant level of environmental awareness and makes choices based on packaging sustainability.

The majority, 47.2% of participants, claim that they have never foregone purchasing a product due to unsustainable packaging. This group might not prioritize packaging sustainability highly or might not have been influenced by such considerations in their purchase decisions.

Another 23.1% respond with "Don't remember," indicating a lack of clarity or awareness regarding their past experiences with unsustainable products and packaging.

The data analysis reveals a variety of attitudes toward the environmental impact of packaging in purchase decision-making processes. A significant number of participants report having refrained from purchasing products due to unsustainable packaging, suggesting that packaging sustainability holds considerable relevance for a portion of the audience. On the other hand, an even larger number of participants do not seem to make this aspect a fundamental criterion for product choice. This could be attributed to various factors such as personal preferences, lack of sustainable alternatives, or limited awareness of the issue. The "Don't remember" option also highlights the need for greater education and awareness regarding the environmental impacts of packaging in purchasing processes.

	ANSWERS	RATIO
Yes	32	29,6%
No	51	47,2%
I don't remember	25	23,1%

Q22: According to you, which of the following options is more sustainable?

These data represent participants' opinions on the sustainability of different packaging options.

A portion of 13.0% of participants believe that "Packaging made from recycled plastic" is the most sustainable choice. This could be due to the reduction in the use of virgin resources and the utilization of materials already in circulation.

"Packaging made from other materials (paper, glass)" is considered the most sustainable choice by 24.1% of participants. This suggests concerns about plastic usage, and some participants deem alternatives like paper and glass to be more eco-friendly.

An even larger number of participants, 27.8%, prefer "Refill service (with packaging brought from home)," indicating that this approach is widely seen as sustainable. This could be attributed to the complete elimination of single-use packaging and the promotion of responsible resource use.

Only 4.6% of participants believe that "Packaging with reduced amounts of virgin plastic" is the most sustainable choice, suggesting that this might be viewed as a compromise between plastic use and reduction.

The choice "Packaging made from bio-based plastic (plastic produced from renewable resources)" is considered the most sustainable by 30.6% of participants. This likely reflects a growing interest in biodegradable and plant-based materials as more eco-friendly alternatives to traditional plastic.

Data analysis shows a balanced distribution of opinions regarding the sustainability of different packaging options. While there is a growing interest in innovative solutions like bio-based packaging and refill services, some individuals still consider packaging made from recycled plastic or with reduced amounts of virgin plastic to be equally valid. The result suggests that environmental awareness is influencing consumer preferences, but what is deemed more sustainable varies based on individual perceptions and knowledge of material circularity.

	ANSWERS	RATIO
Recycled plastic packaging	14	13,0%
Packaging made from other materials (paper, glass)	26	24,1%
Refill service (using brought-from-home packaging)	30	27,8%
Packaging with reduced amounts of virgin plastic	5	4,6%
Packaging made from bio-based plastics (plastics produced from renewable resources)	33	30,6%

Q23: What actions do you think brands should take to facilitate your eco-sustainable behavior?

These data reflect participants' expectations regarding actions that brands should undertake to encourage eco-sustainable behaviours among consumers.

The most common response is "Take responsibility for the end-of-life of the product," with 33.3% of participants believing that brands should offer ready-to-use/accessible take-back programs. This suggests that consumers want to see a commitment from brands to ensure proper disposal and recycling of products at the end of their useful life.

"Use recycled/recyclable/reduced packaging" is chosen by 26.9% of participants, indicating that sustainable packaging management is seen as a priority. This reflects the importance of reducing the environmental impact resulting from the use and disposal of packaging.

"Ensure product durability and access to repair" is mentioned by 16.7% of participants, highlighting the importance of longevity and the ability to repair products instead of frequently replacing them.

"Launch circular and sustainable products" is mentioned by 13.9% of participants, indicating that consumers want to see a broader range of products that adhere to circular economy principles.

"Improved sharing of information and advertising, along with greater transparency about product features and the supply chain," is considered important by 7.4% of participants, underscoring the importance of having clear and accessible information to make informed decisions.

Only 2.8% of participants believe it's important for brands to "Independently verify sustainability and circular claims," indicating that there is less emphasis on this action compared to others.
Data analysis reveals that consumers desire a range of actions from brands to facilitate eco-sustainable behaviours. These include increased involvement in managing the product life cycle, the use of sustainable packaging, promotion of durability and repair access, as well as greater transparency and clear information about product sustainability. These results reflect a growing consumer awareness of the importance of eco-sustainability and the desire to see tangible commitments from brands in this direction.

	ANSWERS	**RATIO**
Using recycled/recyclable/reduced packaging	29	26,9%
Taking responsibility for the end-of-life of the product, e.g., through ready-to-use/accessible take-back programs	36	33,3%
Introducing circular and sustainable products	15	13,9%
Ensuring product durability and access to repair	18	16,7%
Improved sharing of information and advertising, and increased transparency about product features and supply chain	8	7,4%
Independently verifying sustainability and circular claims	3	2,8%

Q24: In your opinion, which of the following actions can bring a significant improvement in the field of environmental protection?
These data reflect participants' opinions regarding actions that can bring a significant improvement in environmental protection.
The most popular response is "Society (citizens) should take more steps to adopt circular behaviour and follow the 3Rs rule," chosen by 53.7% of participants. This indicates that the majority believe that widespread behavioural change towards circular economy practices and the 3Rs (Reduce, Reuse, Recycle) is essential for a significant environmental improvement.
"The need for more innovation in materials to eliminate pollution (by companies and brands)" is mentioned by 22.2% of participants. This underscores the importance of technological innovation and sustainable materials as a lever to address environmental issues.

"The need for more innovation in materials to eliminate pollution (commitment from companies)" is chosen by 16.7% of participants, indicating that there is recognition of the importance of proactive corporate involvement in environmental improvement through the adoption of more sustainable materials. Only "Purchasing only sustainable packaging and following recycling rules by consumers" is mentioned by 7.4% of participants. This suggests that while consumers are considered important, collective responsibility through behaviour changes and the commitment of companies and institutions are seen as more significant factors.

Data analysis reflects a general consensus on the need for widespread commitment from society and citizens towards circular and 3Rs-respecting behaviours. This suggests that awareness and education are essential to promote behavioural change. At the same time, material innovation is deemed important to address pollution, both through corporate engagement and through the creation of more sustainable material solutions. While the purchase of sustainable packaging and adherence to recycling rules by consumers is acknowledged, it seems that the majority believe the solution to be broader and requiring collective actions on multiple societal levels.

	ANSWERS	**RATIO**
Society (citizens) should take more steps to adopt a behaviour based on circularity and the 3R rule (reduce, reuse, recycle)	58	53,7%
We need more material innovation to eliminate pollution (from companies and brands)	24	22,2%
We need more material innovation to eliminate pollution (commitment from companies)	18	16,7%
Consumers should only purchase sustainable packaging and follow recycling rules	8	7,4%

Q25: Do you think the following institutions are doing too much, the right amount, or not enough to protect the environment?

The data presents participants' opinions regarding the efforts of various institutions in environmental protection. Let's analyse the responses for each institution:

Local Authorities:

It is evident that a significant majority (63.9%) of participants believe that local authorities are not doing enough to protect the environment. This suggests a general perception that more needs to be done at the local level to address environmental concerns. The relatively low percentages of those who think that local authorities are doing the right amount or too much indicate a predominant sentiment that efforts fall short of expectations.

Italian Government:

Similarly to local authorities, a significant majority (72.2%) of participants believe that the Italian government is not doing enough to protect the environment. This perception could stem from various factors, such as policy implementation, enforcement of regulations, or public communication. The relatively low percentages for "too much" and "right amount" suggest that many participants are dissatisfied with the current efforts of the government in environmental protection.

European Union:

The distribution of opinions regarding the efforts of the European Union is slightly more balanced compared to the other institutions. While 49.1% of participants believe that the EU is not doing enough, a considerable portion (36.1%) believes that the EU's efforts are in the right amount. This suggests a relatively higher level of recognition for the EU's actions compared to local authorities and the Italian government.

In summary, the data indicates a general sentiment of dissatisfaction with the efforts of the mentioned institutions in environmental protection. The majority of participants believe that local authorities, the Italian government, and the European Union are not doing enough. This could reflect public expectations for stronger and more effective measures to address environmental challenges. The relatively low percentages of "too much" and "right amount" for all institutions suggest a predominant desire to increase environmental protection efforts.

	TOO MUCH	ENOUGH	NOT ENOUGH	I DON'T KNOW
Local Authorities	4 (3,7%)	26 (24,1%)	69 (63,9%)	9 (8,3%)
Italian Government	3 (2,8%)	18 (16,7%)	78 (72,2%) 9 (	9 (8,3%)
European Union	7 (6,5%)	39 (36,1%)	53 (49,1%) 9 (	9 (8,3%)

Q26: In your opinion, which of the following would be the most effective way to address environmental issues?

The data represents participants' opinions on which action could be the most effective way to address environmental issues.

The most popular response is "Providing more information and education, e.g. about recycling and energy consumption," chosen by 39.8% of participants. This suggests that education and awareness are considered crucial to promote behavioural change and eco-friendly actions.

"Introducing financial incentives for businesses and individuals adopting environmentally protective measures" is mentioned by 38.9% of participants, indicating that economic measures can serve as a significant driver for encouraging more sustainable behaviours and decisions.

"Implementing stricter sanctions for violations of environmental legislation" is selected by 29.6% of participants, reflecting the importance of respecting environmental laws and the consequences for those who do not comply.

"Investing in research and development to find technological solutions" is mentioned by 14.8% of participants, highlighting the relevance of technological innovation in addressing environmental challenges.

The data analysis reveals a variety of opinions regarding the most effective actions to tackle environmental issues. This reflects the complexity of the topic and the importance of adopting a holistic approach. Education and awareness are deemed essential, but economic measures, legal enforcement, technological innovation, and involvement of sectors like finance and the food industry are also considered crucial for sustainable change. These findings underscore the significance of an interdisciplinary and collaborative approach to address environmental challenges.

	ANSWERS	RATIO
Provide more information and education, e.g., on recycling and energy consumption	43	39,8%
Ensure better enforcement of legislation	22	20,4%
Introduce stricter penalties for violations of environmental laws	32	29,6%
Introduce stricter environmental legislation	8	7,4%
Introduce or increase financial incentives for businesses and individuals adopting environmental protection measures (e.g., tax benefits, subsidies)	42	38,9%
Introduce or increase taxation, or eliminate subsidies, on environmentally harmful activities	7	6,5%
Invest in research and development to find technological solutions	16	14,8%
Make banking and insurance systems more environmentally conscious	3	2,8%
Make the food system more sustainable from production to consumption	15	13,9%
Encourage businesses to engage in sustainable activities	13	12,0%
Change the way we produce and trade	13	12,0%
None	1	0,9%
I don't know	4	3,7%

Conclusions

In an ever-evolving world, environmental awareness is emerging as a critically important theme. The analysis of data collected through the questionnaire reveals a range of interesting insights that outline citizens' perception and commitment regarding environmental issues and proposed solutions.

One of the most positive outcomes is the widespread awareness of the United Nations' 2030 Agenda for Sustainable Development. The substantial percentage of correct responses indicates that many individuals are informed about global goals and their efforts to tackle environmental challenges. However, the existence of a small percentage who were unaware of it demonstrates that there are still opportunities for further dissemination of information.

The analysis reveals that many people grasp the concept of the 3Rs (Reduce, Reuse, Recycle) and the circular economy. However, a significant portion of participants acknowledges having limited knowledge on the topic. This underscores the need for additional educational efforts to deepen the understanding of waste management practices and sustainable production models.

It is heartening to see that many citizens are willing to engage in eco-sustainable actions, such as recycling and purchasing circular products. This reflects a growing willingness to adopt behaviours that promote environmental sustainability. However, this must be accompanied by adequate infrastructure and awareness initiatives to ensure that such actions are accessible and practicable.

Understanding the importance of sustainable business practices and consumer responsibility in promoting the circular economy is a sign of progress. It is evident that many participants view themselves as agents of change and wish to support brands that adopt more responsible practices. This can positively influence corporate behaviour and foster the widespread adoption of sustainable practices.

While local, national, and European institutions are perceived as key players in environmental promotion, there is a call for more impactful actions. This demonstrates a growing desire for stricter policies and financial incentives to promote sustainable solutions. However, involving all stakeholders is essential to achieve real change.

In conclusion, the analysis of questionnaire data reveals a complex and multifaceted landscape of perceptions and attitudes regarding environmental issues and proposed solutions. While there is increasing awareness and interest in sustainability, challenges still exist, such as knowledge dissemination, adoption of sustainable practices, and institutional involvement. Education, awareness, and active engagement of citizens and businesses remain crucial to address environmental challenges and build a more sustainable future for all.

Therefore, there is an urgent need to expand and deliberate on the following points:

- ***Consumer*: Education and awareness of key concepts**
    a. Research and Information: Consumers should dedicate time to seek accurate and up-to-date information on critical issues, using reliable and verified sources.
    b. Responsible Consumption: Choose products and services that align with key concepts such as sustainability, fairness, and corporate ethics. For example, favour products with a low environmental

impact or support companies that promote socially responsible practices.

c. Knowledge Sharing: Share knowledge with friends, family, and colleagues, encouraging them to educate themselves and act responsibly on key issues.
d. Informed Consumption: Be critical of the information received and make informed decisions, such as reading product labels to understand their environmental impact or evaluating news sources to recognize fake news.
e. Waste Reduction: Reduce waste of resources, such as energy, water, or food, through more sustainable daily practices.
f. Continuous Learning: Maintain a constant commitment to learning and updating knowledge on key issues, as the context and challenges may evolve over time.

- ***Business*: Greater transparency in product traceability, including the production process (labelling)**
    a. Sustainability Education for Businesses: Companies can educate their employees about sustainability concepts, such as carbon footprint reduction, resource efficiency, and eco-friendly practices.
    b. Corporate Social Responsibility (CSR) Training: Organizations can provide CSR training to their staff, emphasizing concepts like ethical business practices, community engagement, and environmental stewardship.
    c. Supply Chain Sustainability: Businesses can train their supply chain partners on sustainable practices and concepts like ethical sourcing, fair labour practices, and supply chain transparency.
- ***Institutions*: Adoption of more impactful policies**
    a. Biodiversity Education: Schools and organizations can teach citizens about the importance of biodiversity, explaining key concepts such as ecosystems, endangered species, and ecological interconnections.
    b. Ecosystem Conservation: Educational programs can raise awareness about the concept of ecosystem conservation, illustrating the need to protect forests, oceans, and other natural areas to preserve the environmental balance.
    c. Energy Efficiency Education: Awareness campaigns can promote awareness of energy efficiency and explain key concepts such as energy consumption, renewable energy, and responsible resource use.

d. Circular Economy Education: Initiatives can educate about the concept of a circular economy, emphasizing the importance of recycling, reuse, and waste reduction.
e. Climate Change Awareness: Public campaigns can focus on key concepts of climate change, such as the greenhouse effect, sea-level rise, and greenhouse gas emissions.
f. Environmental Impact Education: Businesses and institutions can educate consumers about the concept of environmental footprint, showing how daily choices affect the environment.
g. Waste Management Awareness: Awareness programs can explain the importance of proper waste management, including concepts like recycling, composting, and waste reduction.
h. Sustainable Food Education: People can be instructed on key concepts of sustainable food, such as local production, seasonal consumption, and food waste reduction.
i. Water Conservation Awareness: Educational programs can raise awareness about water conservation and explain concepts like the importance of water resources, the water cycle, and sustainable water management.

References

1. United Nations' 2030 Agenda for Sustainable Development
2. Ministero dell'ambiente e della sicurezza energetica - Ministry of the Environment and Energy Security

https://www.mase.gov.it/pagina/pnrr/la-struttura-del-pnrr-e-i-progetti-del-mase
https://www.mase.gov.it/pagina/green-economy
https://www.mase.gov.it/pagina/strategia-nazionale-lo-sviluppo-sostenibile
https://www.mase.gov.it/pagina/economia-circolare
https://www.mase.gov.it/pagina/piano-la-transizione-ecologica

3. ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale - Institute for Environmental Protection and Research

https://www.isprambiente.gov.it/it/pubblicazioni/stato-dellambiente
https://www.isprambiente.gov.it/it/pubblicazioni/pubblicazioni-di-pregio/atlante-dei-dati-ambientali
https://www.isprambiente.gov.it/it/pubblicazioni/pubblicazioni-di-pregio/transizione-ecologica-aperta

4. Environmental Implementation Review 2022: Turning the tide through environmental compliance (European Commission Staff Working paper)
5. Circular Economy Network, 5th report on circular economy in Italy - 2023

ROMANIA

Country context

The transition from a linear to a circular economic model is a complex and long-term process, and Romania is in the early stages of this transformation. Although, in the recent years, Romania has taken steps towards embracing a more circular economy approach: initiatives to minimize waste, encourage sustainable methods of production and consumption, and optimize the use of resources.

One notable initiative is the "National Strategy for the Transition to a Circular Economy in Romania 2020-2030," which outlines the country's roadmap for promoting sustainable and circular practices. It encompasses a range of vital domains, such as waste management, promoting sustainable consumption patterns and enhancing the efficient use of resources. Furthermore, the strategy places a strong emphasis on fostering innovation and providing support to businesses that embrace circular economy principles. The strategy gives an overview of the fourteen economic sectors, and identifies the following as having the greatest circular potential: agriculture and forestry, the automotive industry, construction, consumer goods (food and beverages), packaging (glass, paper, plastic materials etc.), textiles, electrical and electronic equipment. The „National Strategy for the Transition to a Circular Economy" (NSCE) aligns its overarching objectives with the United Nations' 2030 Agenda Sustainable Development Goals. This means that the goals and initiatives outlined in the NSCE are in harmony with global efforts to promote sustainability, environmental stewardship, and responsible resource management, reinforcing Romania's commitment to these vital global objectives. In line with the National Circular Economy Strategy adopted in 2022, Romania has taken several significant actions to improve its environmental performance and address various environmental challenges. Some of the most notable actions include:

- *Renewable Energy Development:* Romania has made efforts to increase its share of renewable energy in its energy mix. The country has implemented policies and incentives to promote the development of renewable energy sources, such as wind, solar, and biomass. These

measures aim to reduce reliance on fossil fuels and decrease greenhouse gas emissions.

- *Waste Management Improvements:* Romania has been working on enhancing its waste management practices. Efforts have been made to increase recycling rates, improve waste collection systems, and reduce the amount of waste sent to landfills. The National Waste Management Plan outlines the country's goals and strategies for waste management and aims to align with EU waste management targets.
- Biodiversity Conservation: Romania is home to significant biodiversity, including protected areas and unique ecosystems. The country has taken steps to conserve its biodiversity through the establishment and management of national parks, nature reserves, and Natura 2000 sites. These efforts focus on preserving wildlife habitats and protecting endangered species.

Moreover, Romania is also participating in European Union initiatives and programs related to the circular economy. The EU Circular Economy Action Plan and other EU policies provide a framework for countries like Romania to align their efforts with broader European objectives for sustainability and waste reduction. This plan aims to accelerate the transition to a circular economy across the EU, and Romania is expected to align its efforts with the EU's objectives and targets in this area.

In the area of responsible consumption and production, Romania is progressing. Implementing the 10-Year Framework of Programmes on Sustainable Consumption and Production Patterns is under way. The country does not have a specific action plan on sustainable consumption and production (SCP), but important is to note that its Sustainable Development Strategy for 2030 (SDS 2030) encompasses a collection of ambitious objectives.

As outlined in the „Environmental performance Third reviews of Romania" from 2021, published by United Nations Economic Commission for Europe, the country advanced well in setting the conditions necessary for implementing the 2030 Agenda for Sustainable Development. Romania adopted a new Strategy for Sustainable Development 2030 and established cross-sectoral governance and institutional structures, notably the Intergovernmental Committee for Sustainable Development and the State Department for Sustainable Development.

According to the National Strategy for Sustainable Development 2030, the most important environmental priorities for Romania in the next 5-8 years are:

- Simplifying and stabilizing the legal and policy structures related to the environment. Also, closely monitoring and reporting on how these plans are put into action.

- Making it easier for people to access information about the environment, making sure the public can participate in decisions about the environment, and promoting practical education for sustainable development.
- Enhancing the quality of the air and increasing public awareness about the harmful effects of air pollution.
- Improving the way water resources are managed strategically.
- Expanding systems that manage solid waste in a coordinated way.
- Taking strong actions to deal with climate change and the loss of biodiversity.
- Making the economy more environmentally friendly. This includes collaborating with businesses and increasing environmentally conscious public purchases.
- Supporting the shift toward a society and economy that produces fewer carbon emissions.

According to statistics released by the Circular Economy Monitoring Framework, Romania is among the lowest EU country performers in terms of waste treatment and use of recycled materials in the economy. Eurobarometer surveys on European citizens' attitudes towards the environment and waste management and resource efficiency show a low level of involvement of Romanian citizens in circular economy activities, and the recycling rate of municipal waste is one of the lowest in the EU. While the country has made progress in adopting sustainable policies and frameworks, there is a clear imperative to take further steps to align more closely with EU standards and aspirations in the area of circular economy and waste reduction.

Methodology

The survey promotion for the project was carefully designed to reach a diverse and relevant audience, being an important opportunity to address the survey. Promotion involved various channels including email, attendance at a conference, use of the organisation's website and social media platforms.

Centrul pentru Promovarea Invatarii Permanente sent emails to stakeholders, experts, and representatives in the project field at Romania level: academic experts with relevant backgrounds, representatives from organizations specializing in studying e-democracy and circular economy, civil society organizations working in areas of e-democracy and circular economy, and decision-makers. This targeted approach ensured that the survey reached individuals with the knowledge and expertise to contribute meaningfully to the research, in order to capture comprehensive insights and perspectives from different angles, ensuring its relevance and applicability.

During the European Association for the Education of Adults (EAEA) Annual Conference on Adult Learning and the Green Transition hosted in Zagreb, Croatia, an overview of the survey was introduced among the Romanian participants. This allowed for direct interaction with potential respondents and provided an opportunity to invite them to participate in the survey. This direct interaction fostered a sense of importance and relevance, encouraging attendees to contribute to the research. The conference's context likely facilitated a more engaged response from attendees interested in the topics of adult learning, education, and the green transition. The conference's theme aligning with the survey's focus likely attracted individuals with a genuine interest in the topics, further increasing response rates.

The organization's website served as a central platform for survey promotion. The survey was posted on the News tab of the website, inviting potential respondents to fill in the questions. The organisation's website was used as the main dissemination tool to reach a wide audience, in addition to the main contacts included in the mailing list.

To further expand the reach and visibility of the survey, the project was promoted on the organization's Social Media Platforms, such as Facebook and LinkedIn pages. This allowed for regular updates about the survey and encouraged followers and visitors to participate and share the survey with their networks. Social media engagement encouraged followers to participate in the survey and share it with their networks, potentially reaching an even broader audience beyond the organization's direct contacts. In addition to the organization Social Media profiles, it was an important opportunity to promote the survey on the Facebook page created by the Romanian National Agency for Community Programmes in Vocational Education and Training dedicated to news, articles and inspiring initiatives and good practices in the field of adult learning and education at national level. The Facebook page served as an additional platform to promote the survey and target a specific audience interested in the topic of circular economy. The broad and diverse user base on social media platforms offered an excellent opportunity to attract respondents from various backgrounds, expanding the survey's reach significantly.

By applying a multi-faceted approach to survey promotion, Centrul pentru Promovarea Invatarii Permanente-CPIP was able to reaching 121 respondents at national level, in Romania. The combination of email outreach, conference participation, website posting, and social media engagement ensured that the survey reached a diverse and relevant audience, including academic experts, professionals, and citizens interested in e-democracy and circular economy topics.

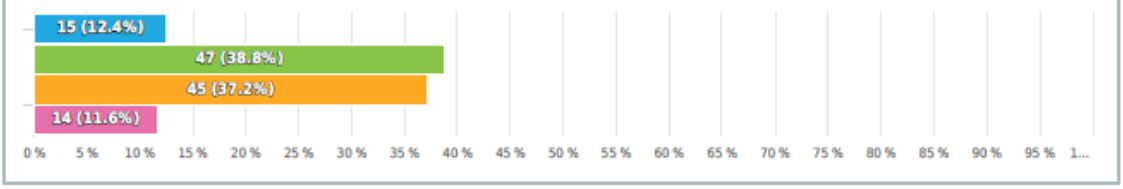
Sociodemographic data

In this initial part of the survey, we aimed to gather key details about the respondents' background, including factors like age, gender, education, occupation, and location. This sociodemographic data provides essential context for understanding the diverse perspectives and experiences that participants from Romania level bring to the survey. In the initial survey question, participants shared their individual email addresses. This information will be securely stored in an electronic format under the consortium's safeguarding. The purpose of collecting these email addresses is to keep respondents updated on the outcomes gathered within the partnership, as well as to inform them about upcoming events scheduled throughout the duration of the project. The protective measures taken to store the data emphasize the consortium's commitment to data privacy and security, aligning with best practices for responsible information management. In the second question of the survey, our objective was to determine the age of the participants. This element was undertaken in order to obtain a more comprehensive overview of the age spectrum represented among those who chose to respond to the questionnaire. By asking about the age of the respondents, we aimed to create a demographic profile that encompassed a wider range of generations. This approach allows us to capture the diversity within the respondent group, providing valuable insights into the interests and perspectives of individuals from various age groups.

As can be observed from the data presented in Figure 1 (age of the responders), there is a particularly notable concentration of responses within the 25-29 and 40-54 age brackets. Specifically, these two age groups constitute a significant portion of the overall participant base, with 47 responses (38.8%) falling within the 25-29 range and 45 responses (37.2%) in the 40-54 range. This distribution underscores the success of our efforts to capture a diverse age range among the survey participants.

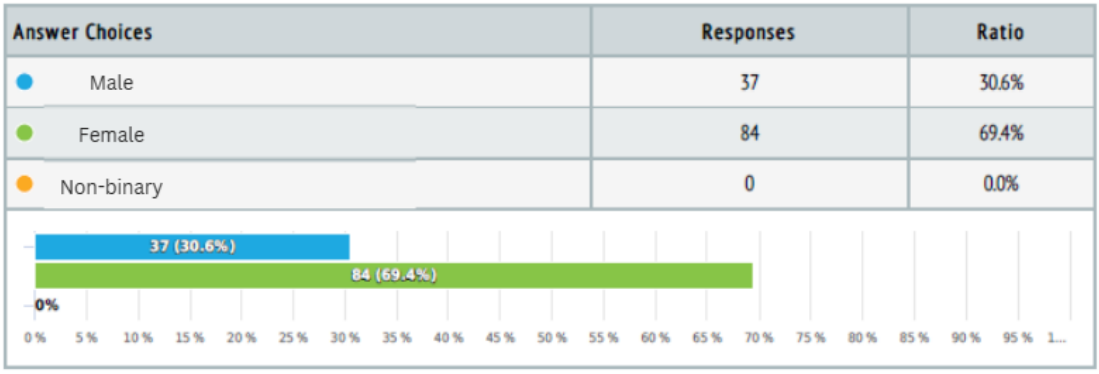
Figure 1

Answer Choices	Responses	Ratio
18-24	15	12.4%
25-39	47	38.8%
40-54	45	37.2%
55+	14	11.6%



Focusing on the gender composition of participants, the third question of the survey addresses this significant aspect of our study. It offers insights into gender representation and facilitates a nuanced understanding of potential gender-related dynamics within the survey responses. The data displayed in Figure 1.1 distinctly shows the proportional distribution of individuals who were actively involved in the research: 69.4% women (84 responses) and 30.6% men (37 responses). By recognizing and amplifying the voices of all genders, we affirm our commitment to a balanced and representative approach to data collection and analysis.

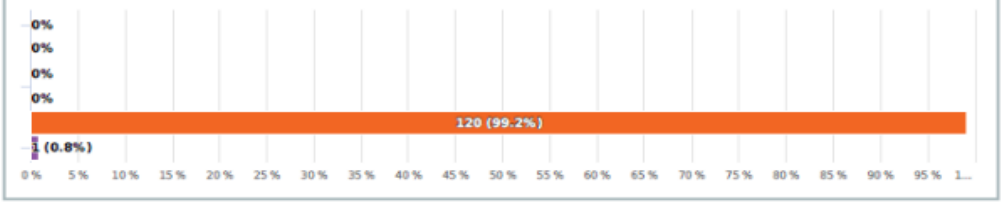
Figure 1.1



The fourth question of the survey aimed to collect information about respondents' country of residence. By including a question dedicated to respondents' country of residence, we aimed to obtain information about the geographical distribution of our participant base. This information is important because it allows us to understand the coverage of our survey and the diversity of regions from which responses were received. The image provides a clear and concise representation of the proportion of respondents living in Romania.

Figure 1.2

Answer Choices	Responses	Ratio
Italy	0	0.0%
Bulgaria	0	0.0%
Greece	0	0.0%
Hungary	0	0.0%
Romania	120	99.2%
Other	1	0.8%



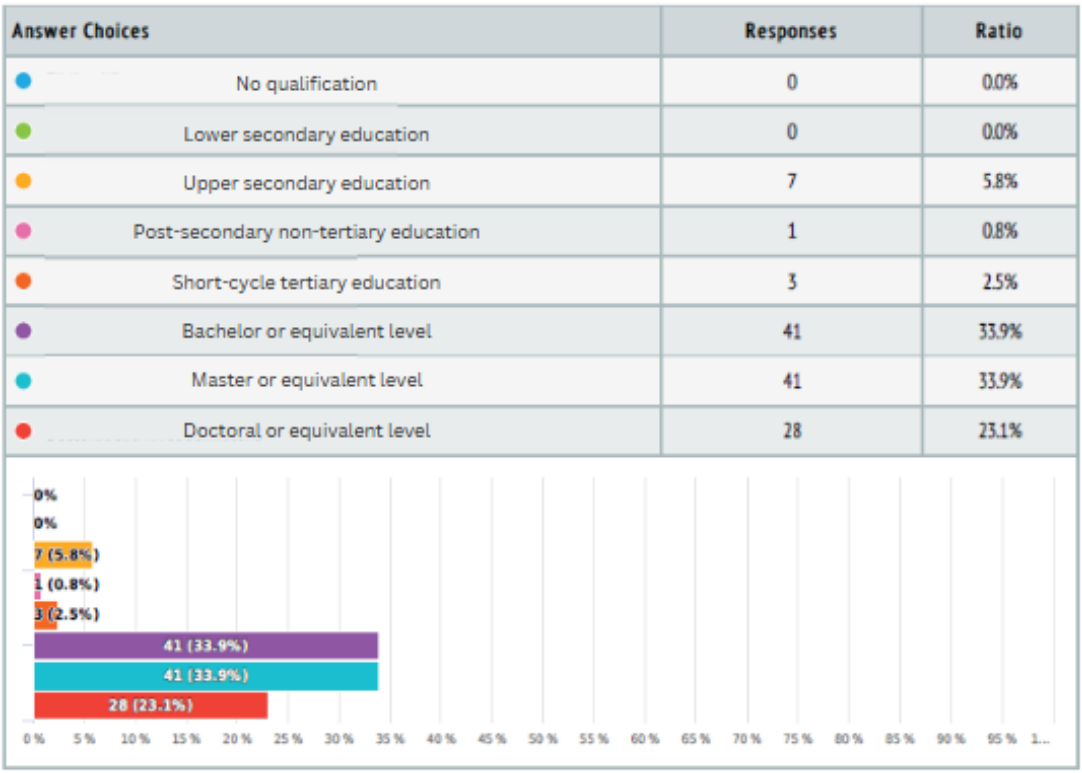
In the survey's fifth question, participants were inquired about their current occupation. The aim was to gain insights into the diverse professional backgrounds of the respondents. Interestingly, the data analysis revealed that the majority of participants, comprising 28.1% (34 responses), identified themselves as employees. Another notable segment included Academics, accounting for a similar percentage of 25.6% (31 respondents). Additionally, a substantial portion, amounting to 24.0% (29 respondents), consisted of individuals engaged in roles within civil society organizations. This perspective allows us to respond to the specific interests and concerns of various professional groups, ensuring that our initiatives and updates are effectively echoed in their respective spheres.

Figure 1.3

Answer Choices	Responses	Ratio
Student	9	7.4%
Academic	31	25.6%
Civil Society Organisation worker	29	24.0%
Employee	34	28.1%
Self-employed	16	13.2%
Retired	2	1.7%
Unemployed	0	0.0%

The last level of respondents' education is highlighted by question six. This question offers valuable insights into the diverse educational backgrounds of the respondents. Both the Bachelor or equivalent level and the Master or equivalent level categories share an equal percentage of 33.9% (41 responses). In addition, it is significant to mention that the level of Doctorate or equivalent level appears as the next most significant category, with 23.1% (28 responses) of participants falling into this group. Remarkably, no participant indicates being in the category of No qualification or Lower secondary education. Understanding the educational landscape of our respondents enriches the interpretation of their perspectives and responses. Educational backgrounds shape viewpoints, and this insight allows us to contextualize the diversity of ideas within the survey results. In summary, question six, which delves into the last level of respondents' education, contributes a nuanced understanding of the educational diversity within our respondent pool. This question serves as a reflection of the project's goal to engage a broad spectrum of participants, encompassing both the wider public and experts within the field (professionals who possess specialized knowledge and experience).

Figure 1.4



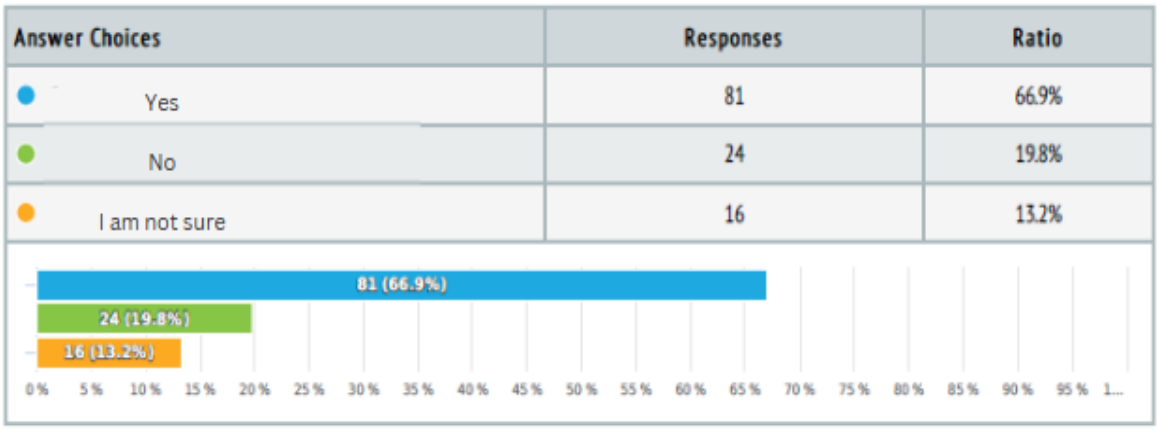
Answer Choices	Responses	Ratio
No qualification	0	0.0%
Lower secondary education	0	0.0%
Upper secondary education	7	5.8%
Post-secondary non-tertiary education	1	0.8%
Short-cycle tertiary education	3	2.5%
Bachelor or equivalent level	41	33.9%
Master or equivalent level	41	33.9%
Doctoral or equivalent level	28	23.1%

Environmental knowledge and concerns

The next section of the questionnaire is dedicated to exploring questions related to awareness of environmental issues and respondents' perceptions. By delving into this aspect, we aim to paint a comprehensive picture of the respondents' perceptions and attitudes towards the environment.

Question seven refers to respondents' familiarity with the UN2030 Agenda. The survey asked participants whether they are acquainted with the UN2030 Agenda, which encompasses a set of global goals aimed at addressing various social, economic, and environmental challenges by the year 2030. The findings reveal that a considerable portion of respondents, totaling 66.9% (81 responses), are indeed aware of the UN2030 Agenda. This indicates a substantial level of recognition within our respondent pool about this significant international initiative. On the other hand, a segment of 19.8% respondents (24 responses), indicated that they were not familiar with the UN Agenda 2030. In addition, 13.2% (16 responses) of respondents expressed uncertainty about their familiarity with this global framework. This insight contributes to our understanding of the broader context in which environmental and sustainability discussions are taking place and guides us in tailoring educational efforts to bridge knowledge gaps.

Figure 2

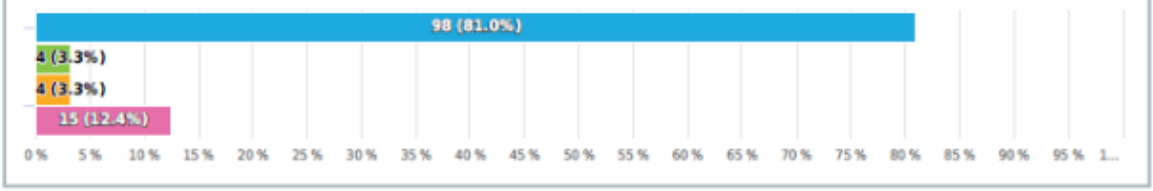


Through question eight we aimed to find out whether respondents in Romania are familiar with the specific goals covered by the UN 2030 Agenda. This global initiative presents a set of goals aimed at addressing a wide range of global challenges by 2030. Data analysis reveals that a significant percentage of participants, representing 81.0% (98 responses), have a clear understanding of the specific objective " Defeating poverty, clean and affordable energy, responsible consumption and production". This high level of recognition demonstrates that a considerable proportion of respondents are well informed

about these vital sustainability goals. However, a proportion of respondents, representing 12.4% (15 responses), expressed uncertainty as to which of the goals mentioned are part of the UN 2030 Agenda. These findings provide a clearer picture of awareness among Romanian respondents of the specific goals included in the UN 2030 Agenda.

Figure 2.1

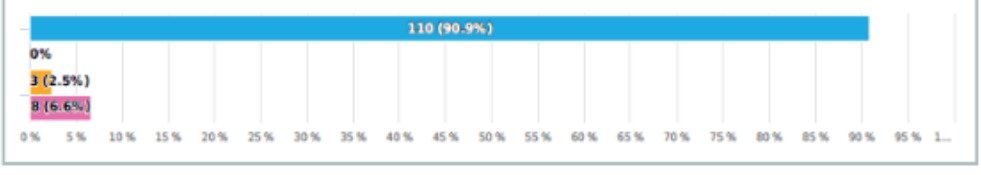
Answer Choices	Responses	Ratio
Defeating poverty, clean and affordable energy, responsible consumption and production	98	81.0%
Defeating world hunger, having punctual public transport, quality education	4	3.3%
Stopping the production of diesel cars, stopping meat production	4	3.3%
I don't know	15	12.4%



Regarding the next question, we explored whether respondents were familiar with the concept behind the three Rs. These "R's" stand for a meaningful approach to sustainable living, encompassing principles such as reduce, reuse and recycle. An impressive majority of participants, 90.9% (110 responses), demonstrated a clear understanding of the meaning of the three Rs. This high level of awareness indicates an understanding of sustainable practices among our group of respondents. On the other hand, a smaller proportion of respondents, accounting for 6.6% (8 responses), indicated uncertainty by selecting the option "I Don't know". In essence, this question highlighted respondents' knowledge of a key aspect of sustainable living.

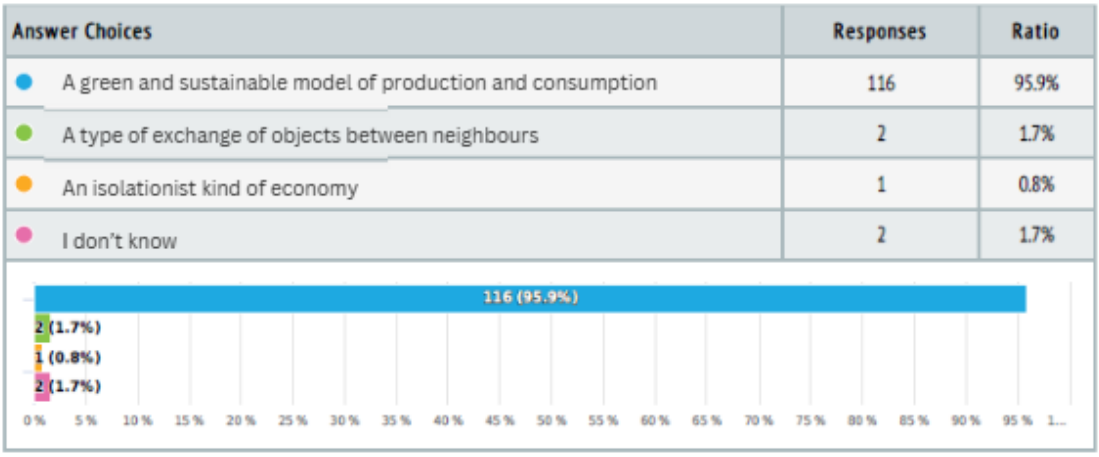
Figure 2.2

Answer Choices	Responses	Ratio
Reduce, reuse and recycle	110	90.9%
Radiation, resource and restoration	0	0.0%
Resource, reuse, research	3	2.5%
I don't know	8	6.6%



Respondents' views on what the "circular economy" are captured under question ten. A substantial majority of participants, 95.9% (116 responses), expressed a clear understanding of the circular economy as a model characterized by a green and sustainable model of production and consumption. This strong recognition reflects a good awareness of the principles underlying this transformative economic concept. It's equally significant to acknowledge the presence of a smaller percentage of respondents, comprising 1.7% (2 responses), who indicated uncertainty by selecting the option "I Don't know". The question helps to measure participants' awareness and familiarity with the circular economy. Understanding whether respondents are informed about this concept was an essential step integrated within the project survey.

Figure 2.3

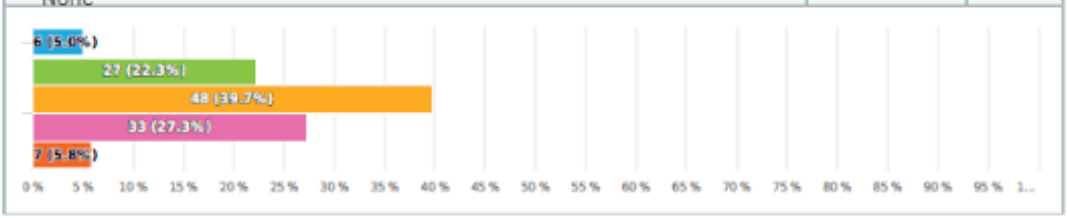


Answer Choices	Responses	Ratio
A green and sustainable model of production and consumption	116	95.9%
A type of exchange of objects between neighbours	2	1.7%
An isolationist kind of economy	1	0.8%
I don't know	2	1.7%

The level of participants' knowledge of the circular economy concept was identified by question eleven. Thus, according to the figure below, the respondents framed all the suggested answers. The data analysis reveals a fascinating distribution of knowledge levels among participants. The highest percentage of respondents, 39.7% (48 responses) scored in the category `I have good knowledge in the field`. Furthermore, 27.3% (33 responses) of participants indicated that they had encountered the term 'circular economy' before but lacked familiarity with its specific principles and workings and 22.3% (27 responses) of respondents expressed extensive knowledge of the circular economy. These findings offer a comprehensive view of the varied levels of knowledge that participants hold regarding the circular economy, showcasing a diverse spectrum of knowledge levels. This indicates that one group of respondents feel well informed about the circular economy and its complexity, while the other group could benefit from a deeper reflection on the subject.

Figure 2.4

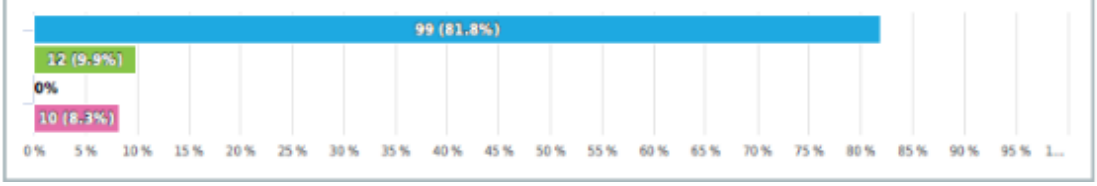
Answer Choices	Responses	Ratio
I am a professional in the field	6	5.0%
I have extensive knowledge	27	22.3%
I have good knowledge in the field	48	39.7%
I have heard of the term, but I am not familiar with the specifics	33	27.3%
None	7	5.8%



The following question highlights the respondents' views on what exactly Greenwashing is. The data analysis, illustrated in figure 2.5, define a significant majority of respondents, 81.8% (99 responses), which identified Greenwashing as 'A communication or marketing strategy'. This highlights participants' understanding of the misleading nature of presenting environmental claims for promotional purposes. It's equally important to note that a segment of respondents expressed uncertainty about the concept. 8.3% of (10 responses) participants indicated that they were unfamiliar with what Greenwashing represents.

Figure 2.5

Answer Choices	Responses	Ratio
A communication or marketing strategy	99	81.8%
A washing technique	12	9.9%
An aquatic plant	0	0.0%
I don't know	10	8.3%



For question thirteen, respondents were suggested a list of global environmental challenges currently facing society, so that they could select which one they thought is most important. Each suggested option received attention, contributing to a comprehensive spectrum of concerns. As it is highlighted in the Figure 2.6, 47.1% (57 responses) of respondents identified „Global Warming From Fossil Fuels" as the main challenge listed. The prominence of fossil fuel-induced global warming as the most emphasized concern reflects the urgency of addressing this issue at global scale. This data accentuates the importance of collaborative endeavors to mitigate the impact of fossil fuels and advance sustainable alternatives. Respondents' recognition of the impact of „Global Warming from Fossil Fuels" as the most important global environmental challenge is reflected due to its widespread and tangible effects, and recognition of the need for immediate and collective action to reduce its effects.

Figure 2.6

Answer Choices	Responses	Ratio
Climate change mitigation and adaptation	16	13.2%
Pollution problems and their effect on health	23	19.0%
Energy transition and renewables	6	5.0%
A sustainable food model	4	3.3%
Biodiversity Loss	5	4.1%
Sustainable urban development and mobility	0	0.0%
Hydric stress and water scarcity	1	0.8%
Global Warming From Fossil Fuels	57	47.1%
Food Waste	4	3.3%
Deforestation	4	3.3%
Fast Fashion and Textile Waste	1	0.8%

For the next question it was also essential to find out where do respondents get information about the environment. To facilitate the analysis of responses, a set of potential sources of information was provided. As illustrated in the figure below, the data reveal a varied landscape of information sources among Romanian respondents. The internet, which includes websites, blogs and forums, comes out as the predominant source, with 28.9% (35 responses) of participants turning to online platforms for environmental information. Following closely, social media platforms such as Facebook, Twitter, and Instagram constitute the preferred information source for 25.6% (31 responses) of

respondents. This emphasizes the growing influence of digital networks in disseminating environmental knowledge. Additionally, 17.4% (21 responses) of respondents rely on events, including conferences, fairs, exhibitions, festivals, as a source of environmental information. This underscores the significance of in-person engagements in fostering awareness. 16.5% (20 responses) of participants find books, magazines, and publications to be their preferred means of staying informed about environmental topics. In summary, the data from this question provides a comprehensive view of the sources from which respondents in Romania draw their environmental knowledge. It outlines the dynamic interplay between digital platforms, in-person events, and traditional media in shaping awareness and understanding of environmental issues.

Figure 2.7

Answer Choices	Responses	Ratio
Newspapers	0	0.0%
Special Events (conferences, fairs, exhibitions, festivals, etc.)	21	17.4%
Television and Radio (films, documentaries and news)	13	10.7%
Books, Magazines and Publications	20	16.5%
The Internet (websites, blogs, forums)	35	28.9%
Social media (Facebook, Twitter, Instagram, etc.)	31	25.6%
Local, national and/or European campaigns	0	0.0%
Personal contacts (friends, family, school, work, etc....)	0	0.0%
None of the above	1	0.8%

Perception of citizens' effectiveness

The following part of the survey focuses on citizens' perceptions of effectiveness, including their level of involvement in protecting the environment and their environmental behaviour. In this section, we aim to explore how individuals perceive the impact of their actions and choices on environmental well-being. We're interested in understanding to what extent people actively participate in environmental preservation activities and how their behaviors align with sustainable practices. This section of the study provides a picture of the public's role in environmental management and highlights opportunities to encourage more sustainable behaviour. The next question under this survey part addresses respondents' primary mode of disposal of the specific items. A list was suggested to respondents so that each item could be assigned according to their behaviours. The majority of participants, representing 94.2%

(114 responses), actively engage in recycling or reusing plastic bottles, reflecting a valuable commitment to reducing plastic waste. However, regarding light bulbs, 44.6% (54 responses) of respondents appear to be slightly unsure of the appropriate disposal method, selecting both 'return to distributor' and 'recycle/reuse'. This slight confusion highlights the need for clearer guidance on how to dispose of these items sustainably. Concerning household batteries, a significant proportion, 59.5% (72 responses), demonstrate an active attitude by recycling them, indicating a recognition of the environmental concerns associated with improper disposal. Similarly, 77.7% (94 responses) of participants responsibly return mobile phones, computers, and electronic devices to distributors, showcasing a responsible approach to electronic waste management. On the subject of medical waste, 36.4% (44 responses) of respondents admit to put in garbage, which means there is potential scope for better awareness and guidance on appropriate disposal methods. In contrast, there is a strong inclination towards recycling in other areas, with 91.7% (111 responses) recycling paper, 78.5% (95 responses) recycling household oil and 89.3% (108 responses) recycling glass, highlighting a commitment to sustainable waste management practices. 86.0% (104 responses) of participants actively return car and scooter batteries to distributors, while 88.4% (107 responses) recycle metal cans, in line with efforts to reduce the environmental footprint of these items. However, there are areas where improvement is needed, as 43.8% (53 responses) of respondents admit to disposing of green waste (such as grass and branches) and personal care products in the garbage, indicating opportunities for education and encouragement of more eco-friendly disposal practices.

Figure 3

Answer	DUMP	PUT IN GARBAGE	RETURN TO DEALER/ DISTRIBUTER	RECYCLE/ REUSE
Plastic bottle/Soft drink bottle	0	6 (5.0%)	1 (0.8%)	114 (94.2%)
Light bulbs	0	13 (10.7%)	54 (44.6%)	54 (44.6%)
Household batteries	0	6 (5.0%)	72 (59.5%)	43 (35.5%)
Cell phones/computers and other electronics	1 (0.8%)	3 (2.5%)	94 (77.7%)	23 (19.0%)
Medical waste	0	44 (36.4%)	36 (29.8%)	41 (33.9%)
Paper	0	9 (7.4%)	1 (0.8%)	111 (91.7%)
Household oil	0	19 (15.7%)	7 (5.8%)	95 (78.5%)
Glass	0	6 (5.0%)	7 (5.8%)	108 (89.3%)
Battery(car battery, moped battery)	0	3 (2.5%)	104 (86.0%)	14 (11.6%)
Metal can	0	11 (9.1%)	3 (2.5%)	107 (88.4%)
Green waste (grass, branches, etc...)	7 (5.8%)	53 (43.8%)	15 (12.4%)	46 (38.0%)
Personal care products	0	59 (48.8%)	18 (14.9%)	44 (36.4%)

The next question reflects the willingness of respondents to get involved in certain environmental activities, providing a clear perspective on their willingness to participate in sustainable practices. Respondents were presented with a range of levels of involvement, from 'very unwilling' to 'very willing', and their options revealed interesting observations. The data points to a positive inclination of respondents towards active participation in environmentally responsible actions. The figure below indicates that the level of very willing is the most common in the respondents' answers, compared to very unwilling. 83.5% (101 responses) of respondents are very willing to sort their waste into different recycling bins, and 80.2% (97 responses) of respondents would be very willing to reduce food waste through smarter purchasing, storage, and disposal.

This willingness highlights a recognition of the environmental implications of food waste and a desire to make more sustainable choices. In terms of paying 5% more to buy a product that is environmentally friendly, respondents' answers are predominantly in the very willing category, 53.7% (65 responses). The answers emphasising the willingness of respondents to prioritise eco-friendly alternatives, despite the potential cost implications. A total of 83 respondents (68.6%) were also very willing to be involved in composting activities, showcasing a commitment to converting organic waste into valuable resources for soil health. Furthermore, a substantial majority, comprising 75.2% (91 responses), is 'very willing' to adopt energy-saving measures, outlining a dedication to conserving energy resources. In terms of sustainable transportation choices, 62.8% (76 responses) choose the 'very willing'

category, signaling a readiness to opt for more environmentally friendly modes of travel, including public transport, electric cars, and walking. Also impressive is the percentage of respondents of 57.9% (70 responses) who would be very willing to change their diet to more sustainable food, highlighting a growing awareness of the environmental impact of dietary choices. Furthermore, 67.8% (83 responses) indicate a high level of willingness to purchase second-hand products, such as clothing and electronic devices, aligning with principles of reuse and reduced consumption.

Figure 3.1

Answer	VERY UNWILLING	UNWILLING	NEITHER WILLING NOR UNWILLING	WILLING	VERY WILLING
Sort your garbage into different recycling bins	1 (0.8%)	3 (2.5%)	3 (2.5%)	13 (10.7%)	101 (83.5%)
Pay 5% more to buy a product that is environmentally friendly	5 (4.1%)	5 (4.1%)	9 (7.4%)	37 (30.6%)	65 (53.7%)
Reduce food waste through smarter purchasing, storage, and disposal	0	2 (1.7%)	5 (4.1%)	17 (14.0%)	97 (80.2%)
Engage in composting activities	1 (0.8%)	5 (4.1%)	9 (7.4%)	23 (19.0%)	83 (68.6%)
Conserve energy e.g. by using less heating/air conditioning/less lightening	1 (0.8%)	1 (0.8%)	8 (6.6%)	20 (16.5%)	91 (75.2%)
Choose a more environmentally-friendly way of travelling/transfer (public transport, electric car, walking...)	4 (3.3%)	6 (5.0%)	12 (9.9%)	23 (19.0%)	76 (62.8%)
Change your diet to more sustainable food	3 (2.5%)	3 (2.5%)	12 (9.9%)	33 (27.3%)	70 (57.9%)
BBuy second-hand products (e.g. clothes and/or electronic devices)	4 (3.3%)	7 (5.8%)	8 (6.6%)	20 (16.5%)	82 (67.8%)

For question seventeen it was also interesting to find out participants' perceptions of the role of citizens in the circular economy process, specifically, if we as "consumers and citizens" can play a role in circular economy. 65.3% (79 responses) of respondents opted for the option that we as consumers can drive the transition through conscious and informed purchase choices and public and personal advocacy. This perspective emphasises the essential role of individuals in achieving change through their choices and voices. 27.3% of the respondents opted for the first option, i.e. that as "consumers and citizens" we can play a role in the circular economy process through actions such as purchasing or recycling products. As illustrated in Figure 3.2, remarkably, none of the respondents indicated a negative position, recognising the potential of citizens to play a role in promoting circular economy principles.

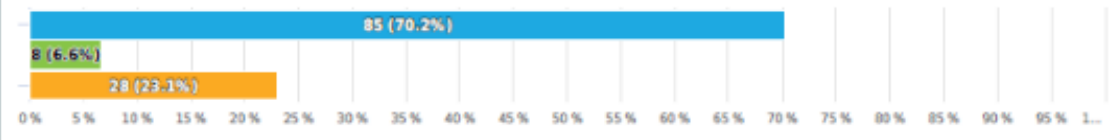
Figure 3.2

Answer Choices	Responses	Ratio
Yes, with actions such as purchasing or recycling products	33	27.3%
Yes, we as consumers can drive the transition through conscious and informed purchase choices and public and personal advocacy	79	65.3%
The role of consumers - citizens is limited	5	4.1%
No	0	0.0%
I don't know	4	3.3%

As interesting was to find out if participants who took part in the questionnaire would pay more for a product made using circular economy practices. In summary, the results of this question highlight that participants are generally willing to invest in products aligned with circular economy principles. As illustrated in the figure below, 70.2% of respondents (85 responses) would pay more for a product made using circular economy practices. In parallel, the percentage of 6.6% (8 respondents) who would not pay more for a product produced through circular economy practices is highlighted. This willingness indicates a growing consumer interest in sustainable and environmentally friendly products, supporting the promotion and adoption of circular practices in the marketplace.

Figure 3.3

Answer Choices	Responses	Ratio
Yes	85	70.2%
No	8	6.6%
I am not sure	28	23.1%



Question eighteen explored the factors that capture participants' attention when considering the purchase of circular products. Information about the quality of the product was among the main interest of the respondents, 78.5% (95 responses). This means that, even when it comes to circular products, people

want them to be good quality. Furthermore, a percentage of 45.5% (55 responses) of respondents are interested in ecological footprint, and 22.3% (27 responses) in certifications, verified label and validated sustainable claims. It is highly important to mention that the participants expressed their interest to know how much impact the product has on the environment and an official proof that the product is as green as it claims to be.

Figure 3.4

Answer Choices	Responses	Ratio
Ecological footprint	55	45.5%
Working and labour conditions	19	15.7%
Information about the quality of the product	95	78.5%
Certifications, verified label, validated sustainable claims	27	22.3%
Information about the supply chain	22	18.2%
Information about products caring, repairing and disposal	11	9.1%
I don't care (if you select this option, please do not mark others)	2	1.7%

With question twenty we aimed to identify whether respondents, when buying a product, consider if a company applies circular economy processes. It is very important to mention that, as illustrated in the figure below, 59.5% (72 responses) do not consider this aspect, but would like to. This finding represents a significant opportunity to raise awareness and promote circular economy principles among consumers. It suggests that a substantial proportion of respondents are willing to integrate sustainability considerations into their purchasing choices, if they are informed and encouraged to do so. In essence, this question indicates consumers' willingness to align their purchasing decisions with the values of the circular economy.

Figure 3.5

Answer Choices	Responses	Ratio
Always	8	6.6%
Sometimes	35	28.9%
No, but I would like to	72	59.5%
No, I do not consider it	6	5.0%

The next question highlights whether respondents have ever decided not to purchase a product because the packaging was not sustainable. Respondents' answers correspond to all three options, namely, „Yes" „No" and „I can't remember". The figure below captures the percentage of respondents of 48.8% (59 responses) who selected the option "I don't remember". The question highlights the need for better awareness and visibility of sustainable packaging options in the consumer market. It also highlights the importance of making sustainable choices more accessible and visible to consumers, thereby reducing the need for consumers to rely on memory to remember such decisions. Furthermore, this underlines the potential to improve the visibility and availability of sustainable packaging options to make it easier for consumers to make environmentally conscious decisions.

Figure 3.6

Answer Choices	Responses	Ratio
Yes	34	28.1%
No	28	23.1%
I can't remember	59	48.8%

A significant majority of respondents 67.8% (82 of the respondents) consider packaging made of bio-based plastic (Plastics produced from renewable resources) as the most sustainable choice among the alternatives. The finding highlights a strong preference for bio-based plastics as a sustainable packaging material. Therefore, the respondents recognise the environmental benefits of using renewable resources in packaging production. The selection of bio-based plastics as the preferred sustainable packaging option signifies awareness among respondents regarding the ecological implications of packaging materials. It also signals an alignment with circular economy principles, where the use of renewable resources are vital considerations in achieving sustainability goals. In summary, this response highlights a clear inclination among respondents towards bio-based plastics as a sustainable packaging solution. This preference reflects a broader trend in consumer awareness and preferences for eco-friendly materials, which can have significant implications for the packaging industry and environmental sustainability efforts.

Figure 3.7

Answer Choices	Responses	Ratio
Packaging made of recycled plastic	66	54.5%
Packaging made of other material (paper, glass)	30	24.8%
Refilling service (with packaging brought from home)	47	38.8%
Packaging with reduced quantity of virgin plastic	25	20.7%
Packaging made of bio-based plastic (Plastics produced from renewable resources)	82	67.8%

Question twenty-three captures what actions respondents expect brands to take to increase their circular behaviour. 74.4% (90 responses) of respondents highlighted the use of recycled/recyclable packaging as the main action that companies should adopt. This indicates a strong desire among respondents for brands to prioritize sustainable packaging solutions. It reflects an expectation that companies should actively contribute to reducing packaging waste and fostering a circular approach by using materials that can be reused or recycled. In addition, 62.8% (76 responses) of respondents considered the introduction of circular and sustainable products as a crucial action. This underlines a demand for innovative and environmentally responsible product design and manufacturing. Additionally, 51.2% (62 responses) of participants expressed the need for companies to improve information sharing, advertising practices, and transparency regarding product features and supply chains. This suggests that consumers value access to clear and comprehensive information to make informed choices aligned with circular economy values. In conclusion, the answers to question 23 highlight a set of expectations that consumers have of brands to promote circular behaviour. Brands that consider these expectations can align with consumer values and contribute to the transition towards a more circular and sustainable economy.

Figure 3.8

Answer Choices	Responses	Ratio
Use recycled/recyclable/reduced packaging	90	74.4%
Take responsibility for the product End-Of-Life, for example, through ready-to-use/accessible take back programs	27	22.3%
Launch circular and sustainable products	76	62.8%
Guarantee product durability and access to repair	16	13.2%
Better information sharing and advertising and more transparency about product's features and supply chain	62	51.2%
Independently verify sustainability and circular claims	4	3.3%

Exploring the respondents' viewpoints on actions that could substantially enhance environmental protection was a key objective. The figure below reveals that a substantial 76.0% (92 responses) of participants believe that citizens should take more proactive measures to embrace circular behavior. Equally impressive is the perspective of 64.5% (78 responses) of respondents who regard consumers as having a pivotal role in effecting change. These respondents stress the importance of conscious consumer choices, such as buying only sustainable packaging and follow recycling rules. This view underlines the role of consumers in shaping sustainable outcomes and highlights their power to influence the market and drive demand for environmentally responsible products. A similar percentage of respondents, namely 52.9% (64 responses) and 52.1% (63 responses) consider that we need more regulation and enforcement (from the EU and national governments) but also more material innovation to eliminate the pollution (from companies and brands). The finding underline the need for a collective effort and individual responsibility to promote a circular and sustainable approach in various aspects of life, from consumption choices to recycling practices. This collective effort, according to respondents, is essential to bring about significant changes in the field of environmental protection.

Figure 3.9

Answer Choices	Responses	Ratio
Society (citizens) should take more steps to adopt circularity-based behaviour	92	76.0%
We need more material innovation to eliminate the pollution (from companies and brands)	63	52.1%
We need more regulation and enforcement (from the EU and national governments)	64	52.9%
Consumers should buy only sustainable packaging and follow recycling rules	78	64.5%

Another defining question for our study focused on respondents' views on which institutions are doing too much, the right amount, or not enough to protect the environment. 90.9% (110 responses) of participants consider that the Romanian government is not sufficiently involved in environmental protection efforts. This indicates a predominant feeling among respondents that government actions or initiatives in this regard are inadequate or insufficient. 85.1% (103 responses) of respondents feel that their local authorities, whether in their city, commune, or village, are not doing enough to safeguard the environment. Thus, there is a strong desire for more active involvement at local level to address environmental issues. On the other hand, a significant proportion of respondents, 51.2% (62 responses), consider that the European Union (EU) does not take adequate measures to protect the environment. However, interestingly, 38.0% (46 responses) of respondents believe that the EU is taking steps in this regard, suggesting a more balanced view of the EU's environmental efforts. The data suggest that there is room for improvement in the actions of both the Romanian government and local authorities, while views on EU efforts are more mixed, with a substantial proportion recognising the level of environmental commitment from the EU. These perspectives underline citizens' expectations for stronger environmental protection measures at different levels of government.

Figure 3.10

Answer	DOING TOO MUCH	DOING SOMETHING	NOT DOING ENOUGH	DO NOT KNOW
Your city, town or village	0	12 (9.9%)	103 (85.1%)	6 (5.0%)
The (NATIONALITY) government	0	4 (3.3%)	110 (90.9%)	7 (5.8%)
The European Union	1 (0.8%)	46 (38.0%)	62 (51.2%)	12 (9.9%)

The last question in the questionnaire captures respondents' opinions on the most effective ways to tackling environmental problems. Their insights are valuable in understanding their perspectives on how to tackle environmental problems. A significant 79.3% (96 responses) of participants believe that providing more information about waste separation and energy consumption is the primary way to address these issues effectively. This underscores the importance of education and awareness in promoting responsible environmental behaviors.

Furthermore, introducing heavier fines for breaches of environmental legislation and ensuring better enforcement of legislation are other essential methods for 36.4% (44 responses) and 32.2% (39 responses) respectively. This perspective highlights the importance of not only having solid environmental laws but also ensuring their consistent implementation and application. These insights offer valuable guidance for policymakers and organizations seeking to develop effective environmental initiatives and policies that align with public sentiment and preferences.

Figure 3.11

Answer Choices	Responses	Ratio
Providing more information and education, e.g. on waste separation and energy consumption	96	79.3%
Ensuring better enforcement of legislation	39	32.2%
Introducing heavier fines for breaches of environmental legislation	44	36.4%
Introducing stricter environmental legislation	18	14.9%
Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g. tax breaks, subsidies)	16	13.2%
Introducing or increasing taxation, or removing subsidies, on environmentally harmful activities	2	1.7%
Investing in research and development to find technological solutions	22	18.2%
Making the banking and insurance systems more environmentally-friendly	0	0.0%
Making the food system more sustainable from production to consumption	38	31.4%
Encouraging businesses to engage in sustainable activities	26	21.5%
Changing the way we produce and trade	37	30.6%
None	0	0.0%
I don't know	0	0.0%

Conclusions

The results indicate that the participants in the survey have a positive attitude towards the importance of the environmental protection, in general and it also measures the frequency of adopting eco-friendly behaviours by the consumers. Moreover, it is also relevant to mention the willingness of respondents to get involved in certain environmental activities, providing a clear perspective on their willingness to participate in sustainable practices. The survey responses highlight citizens' expectations for stronger environmental protection measures at different levels. It is essential that the EU in general, and the Romanian Government in particular, focus on increasing environmental education and

awareness among the public through awareness raising and educational campaigns for explaining to consumers the liaison and the impact of their behaviour to the environment and to the economy. In the view of respondents, global warming caused by fossil fuels is the most important global environmental challenge facing society today. As a key recommendation, the government should also increase public awareness of the negative impact of air pollution on human health and the environment by ensuring that air quality data provided to the public contains all necessary information, such as sources of air pollution, short and long-term impacts, recommendations for the protection of vulnerable populations and advice on how to contribute to emission reductions.

A significant proportion of participants believe that providing more information about waste separation and energy consumption, introducing heavier fines for breaches of environmental legislation and ensuring better enforcement of legislation are essential methods to tackling environmental problems. These insights offer valuable guidance for policymakers and organizations seeking to develop effective environmental initiatives and policies that align with public sentiment and preferences.

Through the survey it was interesting to identify whether respondents, when buying a product, consider if a company applies circular economy processes. This finding represents a significant opportunity to raise awareness and promote circular economy principles among consumers. It suggests that a substantial proportion of respondents are willing to integrate sustainability considerations into their purchasing choices, if they are informed and encouraged to do so. It also underlines the importance of making sustainable choices, more accessible and visible to consumers. Moreover, from respondent`s views it is highlighted the importance for a collective effort and individual responsibility to promote a circular and sustainable approach.

It's important to note that environmental challenges are complex and often require continuous efforts and multi-faceted approaches. While Romania has taken significant actions to improve its environmental performance, there is still room for progress and further implementation of policies and measures to achieve sustainable development and a greener future. The success of circular economy initiatives and the overall environmental situation in Romania will depend on effective implementation, enforcement of regulations, public awareness, and collaboration among stakeholders, including the government, businesses, and civil society.

As highlighted above, there are various key issues that need to be addressed and debated being an important opportunity to propose solutions to the "circular economy" problems identified:

- Promoting Recycling, Reuse, and Waste Reduction: We must underscore the significance of recycling, reusing items, and implementing waste separation and reduction practices in our daily lives. This extends beyond just materials; it includes conserving energy, water, and food through more sustainable everyday habits.
- Enhancing Environmental Education and Awareness: It's crucial to educate and raise awareness among the public about the connections between their behavior and environmental impact. Through informed knowledge, consumers can better appreciate the implications of their choices on the environment.
- Global environmental challenges: results from participants answers (pollution problems and their effect on health) public awareness of the negative impact of air pollution on human health and the environment
- Embracing Circular Economy Principles: Encouraging the purchase of circular products through informed consumption is vital. Consumers need to critically evaluate the information they receive and make choices that align with circular economy principles. This involves selecting products designed with longevity and sustainability.
- Empowering Citizens in the Circular Economy: We can all play a role in protecting the environment through responsible consumption: products and services that align a low environmental impact or support companies that promote socially responsible practices.

References

1. Environment Agency. 2022. European Topic Centre on Circular economy. https://www.eionet.europa.eu/etcs/etc-ce/products/etc-ce-products/etc-ce-report-5-2022-country-profiles-on-circular-economy/romania-ce-country-profile-2022_for-publication.pdf
2. Monitorul Oficial al României. 2022. Strategia Națională privind Economia Circulară. https://dezvoltaredurabila.gov.ro/strategia-nationala-privind-economia-circulara-13409762
3. Lakatos, A. S., Dan, V., Cioca, L. I., Bacali, L., Ciobanu, A. M., 2016, How Supportive Are Romanian Consumers of the Circular Economy Concept: A Survey, Articol Sebes. https://www.mdpi.com/2071-1050/8/8/789
4. Vermeșan, H., Mangău, A., Tiuc, A. E. 2020. Perspectives of Circular Economy in Romanian Space. Sustainability. https://tradeit.utcluj.ro/pdf/sustainability-12-06819.pdf

5. Cristea, M. A. 2021. Circular economy just starting out in Romania. Business Review-Where Romania talks Business. https://business-review.eu/greenrestart/circular-economy-just-starting-out-in-romania-226287
6. UNECE. 2021. Romania Environmental Performance Third Reviews. Geneva. https://unece.org/sites/default/files/2021-12/ECE_CEP_189_0.pdf
7. Departamentului pentru dezvoltare durabilă. 2020. Strategia națională pentru dezvoltarea durabilă a României 2030. Miercurea Ciuc. https://dezvoltaredurabila.gov.ro/files/public/10000001/Strategia-nationala-pentru-dezvoltarea-durabila-a-Romaniei-2030_002.pdf

ANNEX 1 – Online survey questionnaire

Dear participant,
With the following survey, we are interested to learn about your environmental knowledge, what are your environmental concerns, your perception of effectiveness on ecological matters and your engagement in circular economy*. Answering this survey will take approximately 10 minutes. All responses will be safeguarded by anonymity and be treated as strictly confidential. The responses will only be used for research purposes.
The research is carried out in the framework of the project We-DEMOCRACY.
We-DEMOCRACY brings together researchers from Bulgaria, Greece, Hungary, Italy and Romania in an aim to foster active European citizenship and to improve conditions for civic and democratic participation. The project will organise a series of activities to empower citizens by giving them the opportunity to learn from each other, collaborate and participate in the decision-making in the field of the circular economy.
We-DEMOCRACY is co-funded by the Citizens, Equality, Rights and Values Programme (CERV) of the European Union.
Your response is significant to us. We thank you in advance for your time.
Sincerely,
The We-DEMOCRACY. Project Team

GDPR Statement: Your participation in this survey is voluntary. You may choose not to participate. If you decide to participate in this survey, you may withdraw at any time. The mandatory personal data we request from you for this survey is just your email address. The We-DEMOCRACY consortium takes your privacy seriously and will only use your personal information in full confidentiality for the sole purposes of this project. All data will be stored in a protected electronic format by the Consortium. The results of this survey have only a study purpose. You are in control of the personal data you provide to us. You can contact us at any time to have your information changed or deleted at wedemocracyeu@gmail.com.

* The circular economy is a model of production and consumption, which involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products as long as possible. In this way, the life cycle of products is extended.

- **E-mail of the respondent**

SOCIO DEMOGRAFIC DATA

We want to know something more about you!

- **How old are you?**
  - 18-24
  - 25-39
  - 40-54
  - 55+

- **What is your gender?**
  - Male
  - Female
  - Non-binary
  - _____

- **What is your country of residence?**
  - Italy
  - Bulgaria
  - Greece
  - Hungary
  - Romania
  - Other _____

- **What is your occupation?**
  - Student
  - Academic
  - Civil Society Organisation worker
  - Employee
  - Self-employed
  - Retired
  - Unemployed

- **What is the highest level of education you attained?**
  - No qualification
  - Lower secondary education
  - Upper secondary education
  - Post-secondary non-tertiary education
  - Short-cycle tertiary education
  - Bachelor or equivalent level
  - Master or equivalent level
  - Doctoral or equivalent level

ENVIRONMENTAL KNOWLEDGE and CONCERNS

How much do you know about environment and the effects of human being on it?

1. **Do you know what the UN2030 Agenda is?**
   - Yes
   - No
   - I am not sure

2. **Which of the following are goals that are part of the UN 2030 Agenda?**
   - Defeating poverty, clean and affordable energy, responsible consumption and production
   - Defeating world hunger, having punctual public transport, quality education
   - Stopping the production of diesel cars, stopping meat production
   - I don't know

3. **Do you know what the three 'R' stand for?**
   - Reduce, reuse and recycle
   - Radiation, resource and restoration
   - Resource, reuse, research
   - I don’t know

4. **In your opinion, what is “circular economy”?**
   - A green and sustainable model of production and consumption
   - A type of exchange of objects between neighbours
   - An isolationist kind of economy
   - I don’t know

5. **What is your level of awareness of the concept of circular economy?**
   - I am a professional in the field
   - I have extensive knowledge
   - I have good knowledge in the field
   - I have heard of the term, but I am not familiar with the specifics
   - None

6. **In your opinion, what is “Green Washing”?**
   - A communication or marketing strategy
   - A washing technique
   - An aquatic plant
   - I don’t know

7. **From the list below, which one(1), in your opinion, is the most significant global environmental challenge facing today's society?**
   - Climate change mitigation and adaptation

- Pollution problems and their effect on health
- Energy transition and renewables
- A sustainable food model
- Biodiversity Loss
- Sustainable urban development and mobility
- Hydric stress and water scarcity
- Global Warming From Fossil Fuels
- Food Waste
- Deforestation
- Fast Fashion and Textile Waste

8. **Where do you get information about the environment?**
   - Newspapers
   - Special Events (conferences, fairs, exhibitions, festivals, etc.)
   - Television and Radio (films, documentaries and news)
   - Books, Magazines and Publications
   - The Internet (websites, blogs, forums)
   - Social media (Facebook, Twitter, Instagram, etc.)
   - Local, national and/or European campaigns
   - Personal contacts (friends, family, school, work, etc.…)
   - None of the above

PERCEPTION OF CITIZENS' EFFECTIVENESS

What is your level of engagement in protecting the environment?
Have you virtuous behaviours towards the environment?

9. **What is your primary mode of disposal of the following items?**
   (Mark the column that represents you)

	DUMP	PUT IN GARBAGE	RETURN TO DEALER/DISTRIBUTER	RECYCLE/REUSE
Plastic bottle/Soft drink bottle				
Light bulbs				
Household batteries				
Cell phones/computers and other electronics				
Medical waste				
Paper				
Household oil				
Glass				

Battery(car battery, moped battery, etc…)				
Metal can				
Green waste (grass, branches, etc...)				
Personal care products				

10. **How willing are you to engage in the following activities?**

(Please indicate the extent to which you are willing to participate in the following activities in the table)

	VERY UNWILLING	UNWILLING	NEITHER WILLING NOR UNWILLING	WILLING	VERY WILLING
Sort your garbage into different recycling bins					
Pay 5% more to buy a product that is environmentally friendly					
Reduce food waste through smarter purchasing, storage, and disposal					
Engage in composting activities					
Conserve energy e.g. by using less heating/air conditioning/less lightening					
Choose a more environmentally-friendly way of travelling/transfer (public					

transport, electric car, walking…)					
Change your diet to more sustainable food					
Buy second-hand products (e.g. clothes and/or electronic devices)					

11. **Do you think you as "consumer and citizen" can play a role in circular economy?**
- Yes, with actions such as purchasing or recycling products
- Yes, we as consumers can drive the transition through conscious and informed purchase choices and public and personal advocacy
- The role of consumers - citizens is limited
- No
- I don't know

12. **Would you pay more for a product made through circular economy practices?**
- Yes
- No
- I am not sure

13. **What do you care more when buying circular products (select max 3 options)?**
- Ecological footprint
- Working and labour conditions
- Information about the quality of the product
- Certifications, verified label, validated sustainable claims
- Information about the supply chain
- Information about products caring, repairing and disposal
- I don't care (if you select this option, please do not mark others)

14. **When buying a product do you consider whether a company applies circular economy processes?**
- Always
- Sometimes

- No, but I would like to
- No, I do not consider it

15. **Have you ever decided not to purchase a product because the packaging was not sustainable?**
    - Yes
    - No
    - I can't remember

16. **In your opinion, which of the following option is more sustainable?**
    - Packaging made of recycled plastic
    - Packaging made of other material (paper, glass)
    - Refilling service (with packaging brought from home)
    - Packaging with reduced quantity of virgin plastic
    - Packaging made of bio-based plastic (Plastics produced from renewable resources)

17. **Which actions do you expect from brands to increase your circular behaviour?**
    - Use recycled/recyclable/reduced packaging
    - Take responsibility for the product End-Of-Life, for example, through ready-to-use/accessible take back programs
    - Launch circular and sustainable products
    - Guarantee product durability and access to repair
    - Better information sharing and advertising and more transparency about product's features and supply chain
    - Independently verify sustainability and circular claims

18. **In your opinion, what of the following actions can significantly make an improvement in the field of environmental protection?**
    - Society (citizens) should take more steps to adopt circularity-based behaviour
    - We need more material innovation to eliminate the pollution (from companies and brands)
    - We need more regulation and enforcement (from the EU and national governments)
    - Consumers should buy only sustainable packaging and follow recycling rules

19. **Do you think that the following institutions are doing too much, the right amount, or not enough to protect the environment?**

Please select the option most suitable to you

	DOING TOO MUCH	DOING SOMETHING	NOT DOING ENOUGH	DO NOT KNOW

Your city, town or village				
The (NATIONALITY) government				
The European Union				

20. **In your opinion, which of the following would be the most effective ways of tackling environmental problems (select max 3 options)?**

- Providing more information and education, e.g. on waste separation and energy consumption
- Ensuring better enforcement of legislation
- Introducing heavier fines for breaches of environmental legislation
- Introducing stricter environmental legislation
- Introducing or increasing financial incentives to businesses and people taking measures to protect the environment (e.g. tax breaks, subsidies)
- Introducing or increasing taxation, or removing subsidies, on environmentally harmful activities
- Investing in research and development to find technological solutions
- Making the banking and insurance systems more environmentally-friendly
- Making the food system more sustainable from production to consumption
- Encouraging businesses to engage in sustainable activities
- Changing the way we produce and trade
- None
- I don't know

THANK YOU FOR HAVING COMPLETED THIS SURVEY! OUR PARTICIPATION IS VERY MUCH APPRECIATED!