

PORTUGUESE REPORT ON
**55+ ENVIRONMENT AND
CLIMATE LITERACY**



Greener Age



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DOCUMENT INFORMATION

This report summarises the results of the research activities carried out in Portugal within the Erasmus+ project GreenerAge – Climate Change and Environmental Literacy for Urban Citizens 55+ (cooperation partnership in adult education, project number: 2021-1-FI01-KA220-ADU-000033502). More information is available at <https://greenerage.eu/>.

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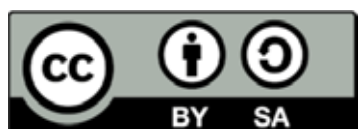
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1. Introduction

We are facing an environmental and climate crisis, affecting health and well-being and the quality of life of EU citizens. Our lifestyles and consuming behaviours impact communities thousands of kilometres away. Hence climate and environmental action are key priorities in Europe and other regions, with a green transition towards carbon-neutral societies by 2050 or earlier. We cannot achieve these ambitious green targets unless citizens are also brought on board. While people 55+ are concerned about climate change, they often do not feel they will be directly affected, nor that they can personally take action to stop it. Hence GreenerAge specifically focuses on mature and older adults and aims to positively inform, engage and empower them to take positive action towards climate change and reduced environmental impact in their everyday lives, as part of the green transition.

Since 1968, the definition of environmental literacy has been broadly reviewed, and the most widely used meaning is that it comprises an awareness of and concern about the environment and its associated problems, as well as the knowledge, skills, and motivations to work towards solutions of current problems and the prevention of new ones¹. Increased climate and environmental literacy, combined with improved digital skills, will empower older citizens to adopt healthier behaviours for themselves and the planet, and promote more active citizenship with other citizens in other EU countries and their intergenerational cooperation, influencing their family members, neighbours and friends.

Sensitising learners to environmental and climate-friendly practices and impacts requires knowledge, tools and drivers for change that may lead to a better understanding of the problems and support people to change their behaviour, improve their daily habits and influence others.

Towards this aim, the GreenerAge partners in each country made an investigation on personal habits and knowledge of the 55+ adult target group, as well as on strategies to increase environmental and climate literacy and change behaviours. This report documents the results of the research in regard to the Portuguese situation.

2. Methodology

This section explains the two main methods used for the data collection: desktop research and workshop and narrative interviews.

2.1. Desktop Research

The GreenerAge learning platform is based on existing knowledge, platforms, tool, etc. Thus, desktop research, i.e., a review of existing data (secondary data), was conducted. To

¹ McBride, B B, Brewer, C A, Berkowitz, A R and Borrie, W T (2013) Environmental literacy, ecological literacy, eco-literacy: What do we mean and how did we get here? *Ecosphere*, (4) 5. DOI: <https://doi.org/10.1890/ES13-00075.1>



guarantee consistency during the research project, a workshop on systematic desktop research was organised with partners in which the research objective, criteria and scope were defined.

The desktop research conducted at the Portuguese level used diverse sources of data, such as Google Scholar, Web of Science, and Portuguese magazines. The language was limited to Portuguese and English, and no year limitation was set to obtain a comprehensive understanding of the phenomena. Regarding the data synthesis, descriptive statistics were used to analyse the main source characteristics. Qualitative data were analysed using qualitative content analysis as this method is suitable for inductive qualitative analysis and where interpretation of latent content is required.

2.2. Workshop and narrative interviews

To collect feedback from our target groups and implement a co-creation approach, workshops and narrative interviews were organised in Coimbra, Portugal.

Eleven Portuguese adults (seven female and four male) aged between 55 and 82 years old, with medium to high levels of formal education (high – 6, medium – 4, low - 1), participated in the workshops. Of this group of participants, five of them (4 female and 1 male; level of formal education: high – 2, medium – 2, low - 1) also participated in the narrative interviews.

Twelve participants (six female and six male; level of education: high - 6; medium - 4; low - 2) responded to two questionnaires/scales, the *General Ecological Behaviour Scale* (GEB-50; Kaiser, 2020) and the *Digital Literacy Assessment Questionnaire* (DLQ; Son, Park, & Park, 2017) as part of the assessment protocol. Data collected from these questionnaires is also presented in the current summary of the results obtained.

During the workshops and narrative interviews, **participants stressed the importance of environmental issues for their quality of life and future generations** (e.g., "It is the inheritance we leave to our children."). This is also supported by previous studies that identify the importance of generativity for older adults, a process by which they engage in activities that can improve the world and leave a legacy for future generations (Villar, 2012, Pillemer et al., 2017, Chen et al., 2022).

In the workshops, the main aims were to:

1. Explore, refine and get feedback on PR1's content and understand older adults' needs related to environmental and climate literacy (PR1/A2);
2. Define their personal habits regarding environmental behaviours, their needs in terms of knowledge and level of digital skills, as well as possible intervention strategies, and the kinds of digital platforms that they are drawn towards (based on the earlier mapping) (PR2/A2).

To collect feedback from the workshop participants, a feedback form was developed (see Appendix B), in which the main questions/topics addressed during the workshop can be found.

Narrative interviews were held the following week among those willing to participate (three people, as defined in the project). Narrative interviews are a means of collecting people's stories about their experiences, thus they can help the researcher/interviewer to better understand people's experiences, needs, and behaviours. Note that narrative interviews provide an opportunity to prioritise the interviewee's perspective rather than imposing a more specific agenda. Narrative interviews lasted over 1 hour each, and these were recorded to avoid losing the richness of the narrative and insights.

The interviews were divided into:

1. An initial introduction and explanation of GreenerAge, including practical information about data protection information.
2. The main part where the interviewee began telling their story.
3. Finally, the interviewer concluded by explaining the next steps, and providing contact details to the participants in case they would like to add further input or ask any questions.

To collect feedback from the narrative interviews, a feedback form was developed (see Appendix C), which can also be found on the main questions/topics addressed during the interviews.

3. Results

In this section, the **results of the GreenerAge** are presented. These are divided into subsections to allow an integrated view of both the desktop research, the workshops and the narrative interviews' results. Specifically, current knowledge and behaviour, practices/initiatives/projects, skills, training and policy will be addressed. The identified needs and gaps will also be pointed out.

3.1. Knowledge and behaviour

The results presented are firstly discussed according to the needs and gaps identified in the existing knowledge and behaviour.

3.1.1. Environmental literacy

Although information on the environmental literacy of Portuguese citizens appears to be limited, there are policies and strategies in place that aim to address climate change through

training and adult learning initiatives. These efforts can be viewed as valuable tools to enhance the environmental literacy of the Portuguese population.

The National Energy and Climate Plan 2021-2030 (2019) seeks to implement capacity building for sustainable production and consumption patterns, including compulsory education and private sectors. Additionally, the National Environmental Education Strategy (2020) aims to foster training in environmental and sustainability topics, including climate change, for professionals and support professional internships in the environmental area.

Non-governmental organizations like the Portuguese Association of Environmental Education and the League for the Protection of Nature offer climate training opportunities to various stakeholders, including teachers, technicians, and the interested public, through online and offline training initiatives Education Profiles. (n.d.).

The participants who took part in the workshops and narrative interviews were **significantly concerned about the environment and its associated problems**. They highlight the **increasing use of renewable energy sources (e.g., solar panels), water-saving practices, and a reduced energy need for cooling/heating houses by improving their thermal isolation**. Their responses to the GEB-50 highlighted these more frequent behaviours and a **growing concern with recycling**.

3.1.2. Environmental habits

The **development of habits/behaviours that are beneficial to our environment is key in modern societies**. It is particularly important to understand how green consumer behaviour can be promoted. Paço, Alves, Shiel e Filho (2013) proposed a **green consumer behaviour model** based on a sample of 1175 university students from four EU countries, including Portugal. This model highlights the **link between attitudes and behaviour**. For example, a conservation attitude (e.g., reusing materials) seems to influence buying behaviour. **The adoption of environmental habits has been shown to vary with several factors**. For example, Reis, Lopes, and Antunes (2021) collect data from university students that suggest that energy-consuming behaviours vary between people who own their homes and people who live with family members or temporary rent spaces. Also, they found that older age was associated with more willingness to adopt an environmentally friendly tariff policy.

Concerning older adults, the literature is scarce. Nunes (2018) considers different older adults' possible assets (e.g., illiteracy, income, lacking cooling and heating devices, and social support) that influence their adaptation to extreme temperatures.

Data collected during GreenerAge PR1 with the GEB-50 suggest that Portuguese older adults follow more frequently the following environmental habits: **i) recycling** (e.g., I bring empty bottles to a recycling bin), n=11, 92%) and **ii) care with energy and water consumption** (e.g., I wait until I have a full load before doing my laundry, n=9, 75%).



3.1.3. Environmental footprints

According to our desktop research, there is **no information regarding environmental footprints in Portugal that is specifically related to older adults and action on climate change**. On a general view, and according to the 2019 EU Environmental Implementation Review Country Report (European Commission, 2019), Portugal has made substantial progress on the transition to a circular economy, but it is considered at risk of failing to meet the EU target of recycling 50% of its municipal waste. There has been some progress with water management and some progress has also been made with marine conservation.

3.1.4. Environmental and climate impacts

In the narrative interviews and workshops, the participants mentioned **the importance of receiving more information on the impacts of their daily habits on the environment and climate change**, to fine-tune their behaviours accordingly. They highlight that the quantification of this impact on the planet can be key to motivating older adults to change their behaviours/habits.

3.1.5. Habits and behaviour change

There is a high necessity to change habits and behaviour towards greener options. Concerning Portuguese older adults and following data collected with the GEB-50, several habits need to **be improved in the future**. Most participants showed a lack of behaviours relate to the **use of renewable energies** (e.g., only 17% own solar panels), **choices regarding mobility** (e.g., only 25% refrain from using their car), food choices and packages (e.g., 33% buy convenience foods), and **participation in environmental issues** (e.g., only 17% have financially contributed to environmental organizations and none belonged to one of these organizations).

From the workshops, participants stated that many people are starting to be aware of the importance of having sustainable behaviours. All of them mentioned that they don't have access to much practical information on how to help beyond what they already do. Two participants said that this practical knowledge should appear during commercial breaks on television, radio and other communication channels. One participant referred that using renewable energies and electric cars, not only takes money but also some clear knowledge to make the best choice.

3.2. Existing practices/initiatives/projects

Concerning current or past initiatives (research or lay-based), the current sources of information held the conclusion that **there is no systematic approach and very few results are documented. Overall, it is not possible to know if the existing initiatives have a strong impact on changing habits or not and how these are reflected in environmental impacts**. Participants interviewed concluded the current lack of information regarding the

development of environmental projects in their area of residence (Bento, 2020), leading to a scare interpretation of the findings these projects could have led.

The lack of systematization of the available initiatives impoverishes individuals' updated awareness, and thus participants reflected on the **need to have the possibility to share outcomes of the available initiatives for the Portuguese population**, namely whether each project/initiative had or has a significant impact on changing life habits and how this is reflected in climate/environment true impact. Participants also highlight the **importance of associations for older adults to establish cooperation with climate change NGOs**, by means to increase environmental civic engagement, and for capacity building of both members.

Some environmental awareness projects have been developed in Portugal, mainly in the areas of greener habits and behaviour promotion, like recycling.

As it can be seen in Appendix A, these initiatives have been usually implemented by municipalities, parish councils and various social institutions, at a local level. Also, several intergenerational activities exist.

3.3. Existing skills

In this section, existing skills identified from the literature and workshops and interviews for older adults and trainers are explained.

The GreenerAge project highlights the **key role of digital literacy** to improve the capacity of older adults to be aware of environmental problems and to be an active force in overcoming them. Data collected with the DLQ reinforces this by describing the importance of digital tools for awareness and behaviour change. In this questionnaire, all participants stated that they own mobile phones (for an average time of 17 years) and most of them (75%) own personal computers (for an average time of 25 years). As for their purpose, the mobile phone was used mainly for calls (100%), followed, respectively, by info search (92%), social media (83%) and email (67%). Among the participants who own a computer, they mainly used it for email and internet research (100%), followed by social media (78%). This data agrees with a Portuguese study among older adults (N=91) which suggested that **the use of a computer and the internet has increased among the older Portuguese population (above 55 years old)** (Dias, 2012). A third of the participants inquired (n=4) owns a Tablet and used it mainly for info search and social media (75%). In their responses to the question about who taught them how to use the mobile phone or the computer in the first place, half of the participants mentioned a Teacher/Trainer (n=6), while almost half of them (n=5) reported self-learning or the help of family members. Their family members were also how half of the participants (n=6) usually find out about new digital technologies.

Most of the participants considered the level of their typing skills as "Acceptable" (50%); their web search skills as "Acceptable" (33%) or "Good" (33%); their computer literacy as "Very poor" (33%) or "Acceptable" (33%); their Internet literacy as "Acceptable" (42%); and their digital literacy also as "Acceptable" (50%). Overall, they seemed to think that they had an

acceptable ability to use digital technologies, with lower computer literacy and higher typing skills.

The participants' skills in using the computer are limited. Most of them do not understand the basic functions of computer hardware components (58%), do not use keyboard shortcuts (75%), do not know how to take and edit photos (58%) or to record and edit sound and videos (75%), and they do not have mobile apps for language learning purposes (92%). **Nevertheless, they did not seem to have many problems in using the computer for learning purposes, both by reading (67%) or watching (58%) learning material. Most of them stated that they feel competent in using digital learning resources (83%).**

Most of the participants perceived themselves as capable to perform basic computer operations, like changing computer screen brightness and contrast (58%), minimising, maximising or moving windows in the computer screen (75%) or writing files into a USB drive (58%).

The results from DLQ also show that many participants tended to use word processing programs, email, and the World Wide Web, very often or frequently, whereas they rarely use or do not know how to use graphics software (90%), databases (90%), Blogs (83%), Wiki (75%) or Spreadsheets (83%).

Concerning their digital skills, respondents have no skills in using Virtual worlds, and a reduced competence (58% to 92% of them do not know) to use Learning management systems, File sharing sites, Database applications and Blogs. On the other hand, most of them perceived their competence to use Web search engines (92%), Communication applications (83%), Social networking services (66%), Video sharing sites (67%) and Word processing applications (76%) as “Acceptable” to “Very good”.

Finally, the participants' attitudes toward the use of digital technologies were highly positive, with 92% of the participants strongly agreeing or agreeing that they enjoy using digital devices and 91% of them strongly agreeing or agreeing that they are willing to learn more about digital technologies.

Their replies also seem to indicate that they feel comfortable using digital devices (83%) and strongly agree or agree with the importance of the improvement of their digital fluency (92%) and the use of digital tools and resources for the enhancement of their learning (83%).

However, given that this is a rather small sample, it is important to analyse the existing statistical data on digital literacy in Portugal. To this end, data were collected from Eurostat taking into consideration some socio-demographic factors such as age, level of education and gender.

According to Eurostat, only 26,76% of the population have basic digital skills and as age increases the percentage of skilled individuals drops (see table below).

	Individuals with basic overall digital skills					
	All Individuals	16-24 years old	25-54 years old	55-64 years old	65-74 years old	> 75 years old
European Union	27,46	32,26	30,03	25,26	17,18	:
Portugal	26,76	38,07	29,75	23,03	12,73	:

	Individuals with above basic overall digital skills					
	All Individuals	16-24 years old	25-54 years old	55-64 years old	65-74 years old	>75 years old
European Union	26,46	38,91	32,11	16,79	8,27	:
Portugal	28,54	48,13	36,68	13,23	3,83	:

According to the GreenerAge project target group, we observed that only 23% of the population ages between 55-64 have basic overall digital skills and with ages between 65-74 drops to 12,73%.

With digital skills above basic, although the total Portuguese population presents 28,54% (above the European average), only 13,23% of the population with ages between 55-64 have above basic skills and with ages between 65-74 drops to 3,83%, both age-groups below the European average.

Another factor that greatly influences the digital literacy levels of +55 adults is the level of education (see table below).

	Above basic overall digital skills		Basic overall digital skills	
	EU	Portugal	EU	Portugal
Individuals aged 55 to 74 with low formal education	3,42	1,30	11,29	7,76
Individuals aged 55 to 74 with medium formal education	10,61	16,92	21,78	38,25
Individuals aged 55 to 74 with high formal education	30,98	30,82	35,37	41,86

The percentage of the population with basic or above basic digital skills decreases significantly as the level of education decreases.

Of the population with basic digital skills, 41,86% have the highest level of education, decreasing to 38,25% with a medium level and 7,76% with a low level of education. Of the population with above basic digital skills, 30,82% have the highest level of education, decreasing to 16,92% with a medium level and 1,3% with a low level of education.

Compared with the European average, only the population with a low level of education have lower digital skills, both basic and above basic.

In conclusion, older age and low education background negatively influence digital skills in Portugal.

Concerning gender, men aged +55 have a greater representation than women, but the difference is not significant, both basic and above basic digital skills (see table below).

	Above basic overall digital skills		Basic overall digital skills	
	EU	Portugal	EU	Portugal
Males 55 to 74 years old	16,38	9,33	22,17	18,87
Females 55 to 74 years old	9,87	7,78	21,17	16,96

Comparing with the results of the interviews conducted, namely the digital literacy assessment scale, considering the socio-demographic characteristics of the sample (n=12), 83.3% of respondents with a high and medium level of education and only 33.3% with a low level of education, we conclude that this factor is representative in the results obtained, demonstrating a higher level of digital skills when compared with the statistical data.

3.3.1. Older adults

Population living longer is one of humanity's greatest triumphs and, at the same time, a challenge for society (World Health Organization, 2005). The average life expectancy has been increasing worldwide and Portugal has seen its ageing index increase from 27.5% in 1961 to 182.7% in 2021 (Pordata, 2021). In Portugal, the average life expectancy at birth increased from 64 years in 1960 to 81.2 years in 2021 (Pordata, 2021). **According to the provisional results of the 2021 Census in Portugal, in the past 10 years, the population of older adults (65 years old or above) increased by 20.6% and represents now 23.4% of the total Portuguese population.** Finally, it is expected that older adults maintained their functional capacity and physical health for 8 to 9 years after their retirement (Pordata, 2021). **Therefore, the active involvement of older adults in all aspects of our society and particularly in the increasing environmental challenges is essential.** Positive effects of the involvement of older adults have been suggested both for themselves (e.g., better health and psychological well-being) and for their communities (more likely to be willing to be volunteers) (Pillemer et al., 2017).

3.3.2. Trainers

A key component to promote the engagement of older adults in environmental actions and to improve the impact of their collective behaviour in our society is training them so they can maximize their capacity.

Pillemer and colleagues (2021) defined a set of recommendations to promote older adults' environmental action in which adequate training is highlighted. Providing adequate training is highlighted. **To provide a basic knowledge of the key aspects of environmental challenges and climate change is necessary and citizen science initiatives adapted to the older population can be effective.** Also, training must take into account local characteristics (e.g., physical and social environment) and older population characteristics (e.g., in Portugal's rural areas older adults usually live with lower resources and have lower levels of formal education) to maximize the effectiveness of older adults' actions.

3.4. Existing training

No specific training programs were found in the desktop research. Data from narrative interviews and workshops suggest that **older adults look for training to engage in behaviours that allow better conservation of our planet.** Specifically, they want accessible, one-stop-

shop, simple-to-access and use knowledge platforms, where they can learn intuitively and have direct feedback to realize the advantages of their use.

3.5. Existing policy

Portugal's government recently approved a new **National Energy and Climate (ENCP) Plan (2021-2030)**. Along with the numerous targets contained in this plan, Portugal has the objective to achieve 2050 a carbon-neutral economy by reducing GHG emissions and increasing the use of renewable energies. It has also assumed the compromise to reinforce public transport and electric mobility. These targets were also referred to by participants in the narrative interviews and workshops as main policies to be implemented as soon as possible.

Concerning citizens' involvement, in Portugal there is still a weak environmental conscience of the population to environmental issues.

National and local initiatives to engage civil society about environmental policies have been scarce. Initiatives like the creation of the Climate Change Forum (2008) or the development of conferences and congresses about these environmental issues (e.g., The International Conference on Water, Energy, Food and Sustainability - ICoWEFS 2022, Portalegre, May 10th - 12th, 2022) did not allow for active participation or feedback from civil society and new interactive forums are needed.

Carvalho and colleagues (2014) conducted a review of climate change research conducted in Portugal while reviewing current policy and measures to improve public engagement in environmental issues and they found some contradictory results. **For example, while the Portuguese population expressed quite high levels of concern with climate change (above many other EU countries), levels of knowledge and understanding of it are quite low (below the EU average).**

4. Discussion of results: challenges and barriers

In this section, based on the results explained in section 3, the main barriers and challenges to addressing the main needs and gaps identified are discussed, as well as implications for the four main project results: Compendium, Platform, Trainer Manual and Policy Booklet.

4.1. Compendium

Participants' responses to the GEB-50 highlighted the **need for improving older adults' participation in environmental projects**, increasing the use of renewable sources of energy, and the use of less environment-demanding mobility and food choices.

Regarding gaps identified in this questionnaire, participants mark the **lack of specific information for individuals +55** and inquired whether older people have demonstrated

significantly low levels of environmental literacy, meaning a **lack of awareness of environmental issues**. These concerns were also mentioned by participants in the workshops and interviews, as well as a lack of motivation to change consumption models.

In Portugal, many challenges remain concerning water management (e.g., improving water governance). **There is a need for improvement in water-saving and management behaviours and policies** especially in more vulnerable regions like Algarve, Alentejo and Madeira (Costa, 2018). Also, some gaps in the implementation of measures to reduce the environmental footprints are described by the participants in the narrative interviews as being related to a **lack of infrastructure**, namely the lack of mobility alternatives, low quality of sidewalks and insufficiently accessible walking lanes, which compromises efforts to lower the footprints. As a strategy to improve these behaviours that diminish the environmental footprints, **participants reinforce the importance of increasing information regarding healthier lifestyles, mobility options and alternatives and other green data**.

Participants highlighted some needs that give clues on how the compendium could be addressed:

- The importance of **creating simple and intuitive information** as means to promote wider understanding and advantages comprehension regardless of individuals' academic level.
- The recognition of the need to increase general populations' environmental literacy, specifically improving the **quality of information delivered simply and intuitively and adapted to different literacy levels, age groups and geographical contexts**. Additionally, they stand for the relevance to engage older adults in environmental volunteerism, supporting others for the adoption of different positive environmental behaviours (i.e., investing in solar panels, saving water, and cooling the house, among others).
- The need for more information and training to effectively **understand the association between daily habits and their impact on the environment and climate change**. As such they point out the **need to be objective in the information delivered**, namely by **quantifying the impact of a single life habit change on the planet's health**.

4.2. Platform

Among the most important gaps in an older population, participants in the workshops highlighted the importance of digital up-skill programs **specially directed to the improvement of internet users** to find accessible information on environmental behaviours and their impacts. These programs must be adapted to older adults' population characteristics (e.g., lower processing speed).

Training in digital skills was particularly highlighted by the interviewees, recognizing the need to develop basic skills to access the internet, understand the basic functioning of platforms and apps and understand privacy rules.

Therefore, there is a need for **tailored programs and tools to increase digital skills**, with platforms that are accessible, one-stop-shop, simple to access and use - where they can learn intuitively and have direct feedback - to realize the advantages of their use.

4.3. Trainer Manual

There is a need for trainers to **understand older adults' characteristics and adapt contents and training methods to practical usage**.

Training activities are not usually properly adapted to the different ability levels of older people (Pillemer et al., 2021). There is a need for targeted training focused on necessities, creating a **cause-and-effect relationship** and **adaptable to local contexts** (e.g., urban, rural, education levels, digital literacy, etc.)

4.4. Policy booklet

Contextual and economic factors are the most essential gaps found in policies currently implemented in Portugal. For example, the average amount of a pension in Portugal is very low, which does not allow people to choose eco-friendly products because they are more expensive.

From these gaps, several needs have been pointed out like **the necessity for incentives to recycle** (e.g., provision of household containers for recycling; payment for depositing recyclable materials, etc.), an **improvement of the public transport network**, and an **increased need for fines and inspection** (there is already legislation, but there is no enforcement). These needs were also described by the participants in the workshops and narrative interviews. Finally, they also consider that greater media involvement is crucial, especially public television that is accessible to low-income populations.

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Appendix A – Platform, resources and best practices

Resources

<https://www.deco.proteste.pt/sustentabilidade/exijo-fora-da-caixa>

“Exijo fora da Caixa” is a website with some information about the excessive use of plastics, with some interactive information that also promotes an active attitude towards local government awareness. You can send them a photograph of the product with excess packaging, so they can evaluate if it is overpacked. These examples will facilitate the work of building new solutions with brands and can be included as new categories in this campaign.

<https://apps.apple.com/br/app/rota-da-reciclagem-tetra-pak/id483224874>

It informs selective collection points in several cities in Portugal, helping the consumer not to fill the sanitary landfill with products that could be reused.

https://play.google.com/store/apps/details?id=alphadelete.aguaconsciente&hl=pt_PT&gl=US

“Água Consciente” is an app that proposes to make users avoid excessive water expenditure by making them aware of the waste of the resource during routine day-to-day tasks. When you open the app, you can check four tables with actions that involve water consumption: brushing your teeth, washing dishes, washing clothes and taking a shower.

The idea is that, when performing each of these actions, the user activates the app's timer, which calculates how many litres of water on average is spent while performing the tasks.

In addition, it is also possible to check the history with the volume of water spent during the previous months and, thus, compare consumption to check if there were water savings, for example. The app is only available for Android phones.

<https://www.youtube.com/watch?v=es989Pd0RRw>

“Contas Poupança” is a video with advice on how to save water and gas consumption, using low-cost tools with easy installation for the consumer.

Best practices

Guimarães 65 - <https://www.labpaisagem.pt/projeto-guimaraes-65/>

The Landscape Laboratory, in collaboration with the Municipality of Guimarães and other partners (Resinorte and Cor de Tangerina), provides a program of activities within the scope of environmental sustainability for the “**Guimarães 65**” program, which brings together more

than four dozen institutions in the municipality. that make up the Guimarães Social Network. The objective is to provide older adults with diverse activities related to environmental sustainability and science.

Lousada: "innovative" environmental project for hundreds of older adults - <https://www.noticiasominuto.com/pais/1415887/lousada-em-marcha-projeto-ambiental-inovador-para-centenas-de-idosos>

Lousada will involve hundreds of older people in a new program, which the municipality says is innovative in Portugal, for environmental awareness, which adapts to older adults this model that already involves thousands of children.

Caring for Ca(u)sa Olival -

<https://jornal.bairrossaudaveis.gov.pt/projetos/00000866/index.htm>

The main objective is to provide the community with structures, mechanisms, as well as the capacity and responsibilities to be able to enjoy its ageing more actively and participatory. Taking care of ca(u)sa Olival intends to create moments of learning and leisure through specialized interventions, showing that community participation is possible when they are saying what they want to do and what path they want to follow.

Environmental education for 80 older adults -

<https://ump.pt/Home/envelhecimento/noticias/vieira-do-minho-educacao-ambiental-para-80-idosos/>

Misericórdia de Vieira do Minho organized an environmental awareness tour for about 80 older people in the region, as part of the project "Bem Envelhecer III", of the European Anti-Poverty Network. Joining the host Santa Casa were the brotherhoods of Barcelos and Póvoa de Lanhoso, in a total of ten institutions.

Friendly city of the old people - <http://www.cm-tvedras.pt/seniores/cidade-amiga-das-pessoas-idosas/>

The World Network of Age-Friendly Cities aims to create environments that allow older people to remain active and healthy by continuously participating in society.

Regenerative circular economy and nature-based solutions - <https://www.greenfest.pt/>

Hybrid events (face-to-face in Cascais and Braga + digital) with exclusive, different and active schedules and experiences, to share economic, social and environmental perspectives on climate change and greener behaviours and policies.

Environment –related exhibitions - <https://www.ambientemagazine.com/erp-portugal-e-novo-verde-apostam-na-cultura-para-aprofundar-conhecimento-sobre-o-ambiente-e-a-emergencia-climatica/>

ERP Portugal and new green bet on culture for better knowledge about the environment and climate emergency.

Appendix B – Workshop documentation form

1. Was the workshop held online or in person?

- Online
 In-person

2. What kind of materials were used during the workshop?

3. How many participants were in the workshop?

4. Participants' description (number of participants per group)

4.1. Age

4.2. Gender

4.3. Education level (according to EQF)

a) Basic knowledge (Level 1)

b) Basic education (Level 2)

c) Preparatory studies for general upper secondary school (Level 3)

d) General upper secondary school syllabus (Level 4)

e) Specialist vocational qualifications (Level 5)

f) Bachelor's degrees at university (Level 6)

g) Master's degrees at university (Level 7)

h) Licentiate and doctor degrees (Level 8)

4.4. Occupation

4.5. Type of house they are living

4.5.1. Apartment (High-rise)

4.5.2. Terraced house or house

4.5.3. Semi-detached house

4.5.4. Detached house

4.5.5. Other _____

5. First set of questions:

5.1. What do the participants think of the environment? Write down everything they mention.

5.2. How do you understand...?

Concept	Answer
Environmental literacy	
Green behaviours	
Environmental footprint	

Please use the list below:

- A. Behaviour that minimises harm to the environment as much as possible, or even benefits it.

- B. Environmental education consists of four interrelated components: knowledge, dispositions, competencies, and environmentally responsible behaviour.
- C. Appropriate behavioural strategies to make sound and effective decisions in specific environmental contexts.
- D. An individual's ability to perform actions on behalf of the environment.
- E. Human actions like burning fossil fuels, use of cars, and deforestation impact the physical environment, e.g., in the form of drought, pollution, or wildfire.
- F. Efficient use of air conditioning in summer
- G. Efficient use of heating in winter
- H. Choice of sustainable energies in general
- I. Water-saving behaviour
- J. Recycling behaviour
- K. Sustainable food consumption/use
- L. Sustainable mobility choices
- M. Participation in environmental protection initiatives

Please reflect on the participant's answers:

6. Second set of questions:

- 6.1. Do you think the environment is important?
- 6.2. Why do you think the environment is important?
- 6.3. Is there a difference in importance for older people or younger people? And for poor or rich people? And for educated or not so educated people?

Please reflect on the participant's answers:

7. Third set of questions:

- 7.1. What is your experience thus far in environmental green behaviour?
- 7.2. What did you do yourself to improve the environment?
- 7.3. What do you see that others do?
- 7.4. What do you think works well and what doesn't?

Please reflect on the participant's answers:

8. Last set of questions:

- 8.1. What do you need to improve your environment? And the environment of others?
- 8.2. What do you need to improve your green behaviour?
- 8.3. Could you exactly tell us what works well and what doesn't?

Please reflect on the participant's answers:

9. Comment on any other relevant issues.

Appendix C – Narrative interviews documentation form

1. Was the interview held online or in person?

- Online
- In-person

2. Participant's description

2.1. Age

2.2. Gender

2.3. Education level (according to EQF)

- a) Basic knowledge (Level 1)
- b) Basic education (Level 2)
- c) Preparatory studies for general upper secondary school (Level 3)
- d) General upper secondary school syllabus (Level 4)
- e) Specialist vocational qualifications (Level 5)
- f) Bachelor's degrees at university (Level 6)
- g) Master's degrees at university (Level 7)
- h) Licentiate and doctor degrees (Level 8)

2.4. Occupation

2.5. Type of house they are living

- a) Apartment (High-rise)
- b) Terraced house or house
- c) Semi-detached house
- d) Detached house
- e) Other _____

3. What does "having green behaviour" mean to you?

Please reflect on the participant's answers:

4. What "green" behaviours do you think you have in your daily life?

Please reflect on the participant's answers:

5. Do you know what to do to be more friendly to the environment? Why (or why not)?

Please reflect on the participant's answers:

6. What would make a difference in adopting greener behaviours?

Please reflect on the participant's answers:

7. Do you think that the information to understand what is better for the environment is easily available? Where?

Please reflect on the participant's answers:

8. What factors make you choose environmentally friendly options?

Please reflect on the participant's answers:

9. What factors do not allow you to choose environmentally friendly options?

- a) Lack of information
- b) Lack of skills
- c) Lack of tools
- d) Difficulties to access the information online
- e) If others, please add them here _____

10. Would you like to change your habits and behaviours, but you cannot do it? If yes, please tell us why and what resources/knowledge/training do you need.

Please reflect on the participant's answers:

11. Do you usually use the internet and digital apps?

Please reflect on the participant's answers:

12. If so, what kind of digital platforms do you prefer to use to improve your environmental skills and habits? If not, would you be open to using one if you received training for it?

Please reflect on the participant's answers:

13. What kind of policies do you think that are needed for greener behaviour?

Please reflect on the participant's answers:

14. What are the challenges and barriers to engaging people over 55 years of age? How could we overcome these challenges?

Please reflect on the participant's answers:

15. In your opinion, how can we promote environmental and climate literacy?

Please reflect on the participant's answers:

16. Please provide a summary of the relevant additional (or most relevant) issues. Also, interesting issues to compare between participants and countries.

