



POLISH 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 Poland 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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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 ones (McBride *et al.*, 2013). Increased climate and environmental literacy, combined with improved digital skills, will empower older citizens to adopt healthier behaviours for themselves and the planet, 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 Finnish 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., review of existing data (secondary data), was conducted. To guarantee consistency during the research project, a workshop on systematic desktop research was organised with partners in which research objective, criteria and scope were defined.

The desktop research was conducted at the Finnish and EU level. Different source of data was used: Google Scholar, Web of Science, Tampere University databases, open repository of the Ministry of Social Affairs and Health's and branch organisations (Julkari) and institutional repository for the Government (VALTO). Language was limited to English and Finnish (each partner covers its local language), and no year limitation was set to obtain a comprehensive understanding of the phenomena. Regarding the data synthesis, descriptive statistics were used to analyse 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. Briefly, it can be said that the studies and documents collected in the desktop research provide evidence on the topic of households and consumers in general, meaning that the topic remains narrow regarding older age groups.

2.2. Workshop and narrative interviews

To collect feedback from our target groups and implement a co-creation approach, workshop and narrative interviews were organised in Tampere, Finland. More in detail, the workshop was held in the premises of a local service housing in September 2022. Recruitment of the participants proceeded as follows; First, an effort was made to recruit those willing to be involved in the workshop and narrative interviews by distributing an open bulletin through various channels and networks. These channels were, for example, researchers' own networks, as well as organizations working with the older adults. At this stage, only one person showed interested to partake in the activity. Thus, the team decided to organize an info session at the premises of a local service house. Service house was selected as a target because the local social hub operates there and thus it was possible to bring the workshop closer to the people.

An information session about the workshop was held two weeks before the workshop in the lobby of the service building, just after a social event in which many residents of the surrounding area were participating. Leaflets with information about workshop and narrative interviews were also left on the bulletin board of the service house. The workshop was organized in the cabinet of the service house, just after a social event where many people were gathering, in order to facilitate the transition from one event to another. Following the minimum number of participants defined in the proposal, six people joined the workshop, two of whom left during the workshop due to personal reasons. For this reason, in the case of surveys, the answers do not cover all 6 people.

Participants aged between 63 and 82 (mean 73,3 years old), with five females and one male. Regarding education level, one of the participants had bachelor's degree (ISCED 6) and the rest were on lower levels. All participants were retired. One participant lived in a residential building type where only outdoor corridors connect and give access to individual apartments (Finnish *luhtitalo*), four of them lived in apartment, and one in detached house.

In the workshops, main aims were to:

1. Explore, refine and get feedback of 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).

Main questions/topics addressed during the workshop were:

First,

1. How do you understand environmental and climate impacts, environmental literacy, green behaviours, environmental footprint, environmental skills?

Secondly,

1. Do you think environment is important?
2. Why do you think environment is important?
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?

Thirdly,

1. What is your experience thus far in environmental green behaviour?
2. What did you do yourself to improve the environment?
3. What do you see that others do?
4. What do you think works well and what doesn't?

Fourthly,

1. What do you need to improve your environment? And the environment of others?
2. What do you need to improve your green behaviour?
3. Could you exactly tell us what works well and what doesn't?

To collect feedback from the workshop participants, a feedback form was developed (see Appendix B).

Narrative interviews were held among those willing to participate (three people; as defined in the proposal) the following week. Narrative interviews are a means of collecting people's stories about their experiences, thus they can help 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 can be divided into:

First, introduction and explanation of GreenerAge, including the practical information about data protection information.

Second, the interviewee began telling their story. Main questions/topics addressed during the interview were:

1. What does “having green behaviour” mean to you?
2. What “green” behaviours do you think you have in your daily life?
3. Do you know what to do to be more friendly to the environment? Why (or why not)?
4. What would make a difference in adopting greener behaviours?
5. Do you think that the information to understand what is better for the environment is easily available? Where?
6. What factors make you choose environmentally friendly options?
7. 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 as online
 - e. If others, please add here _____
8. 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 you need.
9. Do you usually use the internet and digital apps?
10. If so, what kind of digital platforms would you prefer to use to improve your environmental skills and habits? If not, would you be open to use one if you received training for it?
11. What kind of policies do you think that are needed for a greener behaviour?
12. What are the challenges and barriers to engage people over 55 years of age? How could we overcome these challenges?
13. In your opinion, how can we promote environmental and climate literacy?

Finally, the interview concluded the interview 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).

3. Results

In this section, main results from the desktop research and workshops and narrative interviews are briefly explained. Then, they are discussed according to the needs and gaps identified on the existing knowledge and behaviour, practices/initiatives/projects, skills, trainings, and policies.

Results from the desktop research indicated that green behaviour in older adult is a multidimensional topic to which there is no common definition, i.e., it may be different depending on the country and/or research field. The reviewed literature showed that the research around green behaviour and environmental awareness seems to focus more on households (Miafodzyeva and Brandt, 2013; Miliute-Plepiene *et al.*, 2016) and/or consumers in general (Niva *et al.*, 2014) instead of older adults. It is important to acknowledge that older adults are part of both groups and, as Salo *et al.* (2016) highlight, the ways (strategies implemented) in which households reduce their carbon footprint and energy consumption are relatively universal, i.e., reducing electricity consumption at home, using public transportation instead of private car, and minimizing food waste. However, tools and solutions to reduce carbon footprint and energy consumption may vary between households (Salo *et al.*, 2016). Furthermore, in the reviewed literature, older adults were often depicted as vulnerable passive victims who are suffering from the consequences of climate change without being able to take action (i.e., young people are seemed as the best positioned to create a more sustainable society through environmentally friendly and healthier behaviours), while older age groups need to be protected from climate-change related impacts (Hajat *et al.*, 2014; Urban *et al.*, 2017). These results show that, despite the fact that older adults (and women in particular) have been shown to play a more active role in sustainability practices than young people (and men specifically) when it comes for sustainable and healthy habit, such as eating (Niva *et al.*, 2014) they seem to be excluded from the clean energy transition.

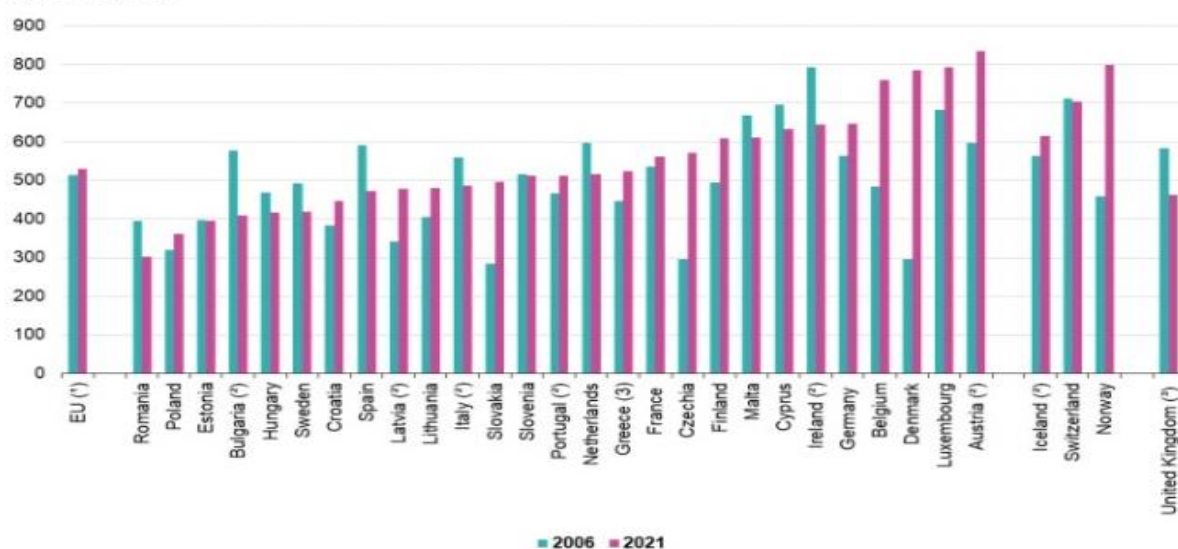
It is important to highlight that, from the reviewed literature, sustainable food consumption is not related to the potential impact to the environment but to have a healthy lifestyle; people change the way the consume food because the potential impact for their health instead of for the environment (Grasso *et al.*, 2019, 2021). Similarly, Niva *et al.* (2014) suggest that sustainable food consumption is not a strongly socially stratified phenomenon, but it is related to other practices of eating regarded as “proper,” such as interest in cooking and healthy eating, concluding that broader and more inclusive policies are needed to better engage people in sustainable activities.

At this stage, the question to be answered is ‘why should older adults be considered as an individual group?’ Results showed that, among others, aging affects household recycling behaviour. As individuals get older, their attitude towards recycling is positive but their aptitude decreases slightly; although further research is needed (Guiot, Malas and Urien,



2019). However, it seems that this aptitude change towards a less active recycling behaviour is usually compensated by the amount of time older people have to do ‘extra’ activities, such as recycling and/or learning new skills, and the knowledge and skills they have learned from their experiences. It is indeed their knowledge, skills and time what make older people a key player in our attempt to achieve a more sustainable society (Guiot, Malas and Urien, 2019). In Finland, recycling is an important topic to be considered in this project; Finnish households accumulate more than 10 kilograms of waste per week and 90 kilograms per year, which is over the EU average; see Figure 1 (Pirtonen, 2022; EUROSTAT, 2023).

Municipal waste generated, 2006 and 2021
(kg per capita)



Note: Countries are ranked in increasing order by municipal waste generation in 2020.

(*) Estimated.

(2) Bulgaria, Latvia, Italy, Portugal, Ireland, Austria, Iceland 2020 data.

(3) Greece 2019 data.

(4) United Kingdom 2018 data

Source: Eurostat (online data code: env_wasmun)

Figure 1. Municipal waste generated, 2006 and 2021 (kg per capita) (Eurostat, 2023).

In Finland, after continuous curricula reforms, climate and environmental literacy has been added and included in school curricula to an increasing extent over the years (Rokka, 2011). However, most of the people in our target group (people over 55 years old) did not have the chance (they already graduated from school) to study the new content on climate and environmental awareness. This means that our target group may have a weaker knowledge on climate and environmental literacy; reason why we defined 55+ as our target group. Nonetheless, it is not possible to generalise as many of them may have covered this knowledge gap through informal and non-formal learning. For instance, Kuoppamäki, Wilska and Taipale (2017), through a Finnish nationally representative survey, showed that ecological and economical attitude tends to increase with age, while younger age groups have a more self-indulgent attitude.

Regarding the workshops, participants represented different household types (e.g., single person living in an apartment building, married person living in a detached house, etc.), gender; Male 17%, female 50% (2 no answer) and educational level; ISCED 3 33%, ISCED 4 17%, ISCED 5 17%, ISCED 7 17% (2 no answer). It is worth highlighting that participants agreed on that the way they perceive the tools and how they influence their behaviour is very different among people, which is in line with findings from Salo *et al.* (2016)

Overall, the participants of the workshop seemed very aware of current environmental issues. However, we interpreted this to be due to the fact that the people who participated in the workshop were already primarily interested in environmental issues. Peer support and sharing of experiences also seemed to be important to the participants, which we will discuss later in the section of 'good practices' (or best practices). An important aspect to highlight from the results of the workshop is that quite a few listeners associated the name of the project (GreenerAge) with the political party 'the Greens'. Our own interpretation was that greenness can also be considered a negative value if an individual wants to remain politically uncommitted; greenness may be associated with politics for the general society. This is an important aspect to consider for the development of the learning platform (at least the Finnish version) in order to avoid rejection from participants. It is interesting to see the role political culture plays in people's behaviour, attitude and willingness to engage towards a more sustainable lifestyle.

3.1. Knowledge and behaviour

In this section, main results are discussed according to the needs and gaps identified on the existing knowledge and behaviour.

3.1.1. Environmental literacy

In the workshop, participants were asked to open up and share their thoughts about the concept 'environmental literacy'. Note that opening the discussion was challenging, and hence answers were collected by post-it notes. Analysing the post-it notes, it can be said that environmental literacy was defined by participants as something that a person 'has to feel', meaning that if a person sees that the environment (surroundings a person appreciates) is 'feeling bad' (destroyed by people's behaviour), it is very likely that this person will (try to) do something to avoid it. Once participants were engaged in the discussion, feeling in a comfortable/safe environment, they showed a more extensive knowledge when describing their own behaviour (*the need to create a safe and inclusive learning environment, community, where users can freely share their experiences*). When discussing green behaviour, it was defined as something an individual does for saving the nature, and carbon footprint was defined as a something caused by humans' actions. We want to emphasize that there are many different concepts buzzing around green behaviour that are used to aim to influence people's behaviour (carbon footprint, carbon emission), but they are not effective

because most people do not know the concept (e.g., what carbon footprint means) (*increase climate and environmental literacy*). It is interesting to see that ‘environmental literacy’ and ‘green behaviour’ is defined as individual actions, while ‘carbon footprint’ as a collective action; participants acknowledge their potential to take actions, but ‘blame’ others for current (and future) environmental impacts (*need to promote individual responsibility*). It is also important to highlight that participants demonstrated their ability (aptitude) to think critically, and teach each other about environmental issues by sharing past experiences (*promote sharing of knowledge and past experiences -GreenerAge community*).

During the discussion about the importance of protecting the environment, participants fully agreed on being very important for human being, highlighting that we would not be able to live without the nature. The relationship between people and nature was well understood, since when discussing about the meaning of the nature concerning age or income, they pointed out that we all need nature (*nature as trigger of environmentally friendly (green) behaviour*). At the time workshops and interviews were arranged, the situation in Ukraine had affected the pricing of gasoline, and this led participants to critically discuss and evaluate the consequences of producing electric cars, highlighting the negative impact for the environment associated to battery production (*electric cars may not be an environmentally friendly solution for many people in Finland at least*). Consumerism came up in the discussion, and participants generally discussed that consumerism may vary depending on the income level and/or age, pinpointed that younger and wealthier people travel and fly more often than old age groups; this statement is in line with the study conducted by Kuoppamäki, Wilska and Taipale (2017) where they show that consumerism vary in each age group. Furthermore, it was acknowledged that wealthy people tend to spend their money (behave) without considering the associated environmental impact (*promote environmental awareness*), when those who have more budget/income/savings could afford to buy organic food and invest on, e.g., environmental protection projects. On the other hand, participants discussed how expensive is to have a green behaviour, meaning that it is very difficult for people with a limited income level (low-income households) to buy organic products choose green options (*define low-cost solutions and easy to implement, and promote environmental awareness among policymakers -policy booklet*).

When talking about potential solutions, participants addressed the need of clear printed instructions (*accessible and low-threshold information about how to have a green behaviour*), for example, how to recycle garbage at home (*nice visualisation with the different recycling containers in the kitchen and simple steps about how to do it*). They were aware that there are regional differences in waste recycling but were unsure about the practices in their own region (*promote environmental information at local level*): “it is difficult to know how to do the right thing even if you want to do it well”, commented one of the participants. Finnish Packaging Recycling RINKI Ltd provide instructions for households (available online on the Rinki website; *which is not very accessible for most of older people*) by addressing, for

example, that plastic packaging used in companies should not be recycled under plastic waste but mixed waste, and plastic waste that is very dirty does neither belong to plastic bin (RINKI, 2023). However, the choice of what is dirty and what packaging is 'used in companies' is left for consumers to figure it out; kind of plastic the package is made of or suitable dirtiness of the package where some of the main uncertainty raised during the interviews. Furthermore, the Waste Management Act has changed recently (Ministry of the Environment, 2023a) and knowing (having access to) the up-to-date instructions also requires digital skills (*promote digital skills, but also make more accessible the information for those who are not online - inclusiveness*).

3.1.2. Environmental habits

When discussing about behavior and habits, participants recognized well the habits that are harmful to the environment. Thus, the matter was discussed from the opposite perspectives; they focused on those things that should not be done instead of discussing positive actions and environmentally friendly behavior. This can be interpreted as environmentally harmful behaviour (negative news, consequences, impacts, etc.) is easier to identify/perceive by society than environmentally friendly behaviour (*raise awareness by showing the associated negative impact of people's behaviour -people become aware of their 'bad' environmental behaviour when they see it through their own actions*). One important topic for discussion was highlighted in the workshop, public toilets as an important solution to protect the environment; human urine is also harmful for the nature. General cleanliness has also impact in the nature, especially in urban environments (*it's not all about the trash*).

Participants completed the GEB-50 Scale (General Ecological Behaviour Scale) for behaviour assessment. Overall, although some of the answers could indicate that participants do not have an ecological behaviour, e.g., 50% of participants did not identify themselves with the statement "*In winter, I turn down the heat when I leave my apartment for more than 4 hours*", it can be said that participants have somehow a positive ecological behaviour. However, we would like to point out that in Finland, self-adjustment of the temperature is not necessarily possible in locations with district heating (which is common in most apartment buildings). None of the participants owned solar panels, although one of them lives in a house typology that it would enable the installation of the solar-panel system.

3.1.3. Environmental footprints

Based on the results of the workshops and interviews, it can be said that 'environmental footprint' was the topic that participants were least familiar with. They acknowledged not being aware (uncertainties) about the impact their actions have in the local, national or even international nature (*people need to understand the impact of their action in the nature, environment and society in general*), and argued that many organizations are only focused on gaining profit rather than contributing to a better environment (greenwash).

Participants shared that some of their choices, in terms of food, energy and water consumption, are guided by familiar ecolabels such as FairTrade and Nordic Joutsenmerkki (Nordic Swan). Researchers at the Finnish Environment Institute Judl and Lehtoranta have written about the positive impact of ecolabels in people's behaviour. However, they raise up the point that there are already too many environmental labels in the 'market' (the wide diversity of labels has increased so much in the last years that it has become a real challenge to navigate through all of them) that make it difficult for citizens to make 'right' decisions (i.e., which one is the good one, why different ecolabels for the same purpose, etc.) (Judl and Lehtoranta, 2022). Eco-labeling has a role in consumer behaviour, affecting on their willingness of purchasing goods (Testa *et al.*, 2015). In this respect, participants argued that there is a trend of adding ecolabels to everything based on marketing strategies, and expressed some worries about the issue that sometimes labels may guide exaggerated information about eco-friendliness (*need for simple, clear and credible information*).

In conclusion, 'environmental footprint' as a term was difficult to grasp by participants, who highlighted the huge variety of different concepts/terms that are not easy to understand and that often are defined by using political language. One participant added: "It is difficult to understand the correct content (i.e., what we need to do and how, what is 'good' and 'bad') if you do not understand the terms/concepts" (*Low-threshold language and use of images to clearly explain good practices and recommendations*).

3.1.4. Environmental and climate impacts

When discussing about environmental and climate impacts, participants referred to 'well known' images/episodes of melted glaciers, burnt and/or dry rainforests, pandas and polar bears suffering from climate-change related impacts, meaning that people are more aware of global impacts (maybe because of the media), but they could not associated those impacts to the local context (nature) (*promote implications of individual behaviour for the local environment/nature*). Also, the environmental impacts were mainly related to the different products consumed everyday, and nothing regarding actions (*make 'tangible' / 'measurable' the 'intangible' -people need to see and feel it*).

During the interviews, the interviewer asked separately if, for example, they consider how the electricity is produced when they made their electricity contract; none of the participants admitted that it is a relevant aspect (*show the impacts of the energy supplier they select*). They also commented that they cannot change their current car by a more ecological alternative because of the high costs of buying a new car.

In conclusion, it can be said that environmental impacts are more familiar for people at the global level, and that they think about them when making larger purchases. However, at the individual level, people are more worried about their own finance, and this is the key factor when making decisions (*the role of income/budget in environmental habits, green behaviours*).



3.1.5. Habits and behaviour change

When asking participants about what green habits and behaviours they have, they started to describe *choices* that they make in *everyday life*, for instance, choices on nutrition (being vegetarian or choosing local products; produced on the area). A European study on the readiness of aging consumers to accept sustainable protein sources in their diet highlights the fact that often people who consume sustainable protein sources have a green way of thinking (Grasso *et al.*, 2019). This is aligned with the interpretation made above, in which Finnish participants in the workshop and interviews were already interested about the green way of life. In order to increase the general acceptance of a sustainable diet, it is important to increase public awareness (Grasso *et al.*, 2019, 2021). One issue that regulates the sustainable food choices (e.g., avoiding meat or favouring plant-based diet) is health related (Salonen, Siirilä and Valtonen, 2018) as people more often choose diets that are good for their health (*show the impact of 'bad' habits and behaviours for people's health and wellbeing as well as the benefits of having a greener/healthier behaviour -behaviour change*).

Regarding specific green behaviours, participants mentioned not using their own car but walking, using bicycles or public transport (i.e., travelling with a bus) as their main green habits and behaviour. It is important to note that one of the participants pointed out that being 'green' also mean "protecting other people who are more "lost" with their behaviour, i.e., they do not know how to adopt a greener behaviour" (*promote community activities where people can learn from each other*). Adopting good habits when cleaning was also mentioned, e.g., not using hard chemicals, no dishwasher. It is important for GreenerAge to highlight that (maybe due to their cultural background) using dishwasher was not considered as part of 'having green behaviour' but that using the dishwasher has a high energy consumption and then it is not efficient (*need to show the benefits of using the dishwasher, in particular when the machine is high energy efficient; ecolabels*). Growing own food and picking up the food from the nature (berries and mushrooms) and living without TV were also included as part of having green behaviours, and in particular, avoiding metallic pins in tea bags.

The role of financial issues and socioeconomical status in habits and behaviour change was also brought up in the discussion. Generally, it can be assumed that when retiring the monthly income decreases, and participants commonly commented that from their perspective organic food is more expensive than 'standard' food, reflecting that not everyone has therefore the opportunity to choose organic food/goods even if they would want to do it. This argument is underpinned by a report developed by the OECD in 2011 that show the significant role pricing has when households are making decisions (*people with low income cannot afford to have a greener behaviour, cannot change their habits even though they would want to do it -policy booklet*).

Similarly, participants referred to the lack of infrastructures to have green behaviours by saying that adopting environmentally friendly behaviour requires strong will; "Being an older



person without a car and living in a country where weather conditions may not always be favourable for walking long distances make it difficult for older people (in particular) to recycle and go shopping for organic food. One of the participants, who had spent three hours to take ink cartridges to the recycling point by bus, said: “if the recyclable goods or purchases have to be carried by hand and they are heavy, the individual must be willing to spend time and effort on it, as well as have the proper transport mean if the store or recycling point is far away”. Furthermore, having decent or applicable IT-skills were also acknowledged as one important factor to adopt green behaviours when the information is only available online, for instance, locations or opening hours of recycling points. Access to local services is known to be a major problem in Finland, not only for those who live in rural areas without a car (Verma and Taegen, 2019) but clearly also for those who live in an urban context where it is difficult to access to these services due to there are only a few places to go (e.g., garbage stations) (*having accessible infrastructures, e.g., related to recycling, is also important to promote behaviour change -policy booklet*).

3.2. Existing practices/initiatives/projects

From the reviewed literature, a relevant aspect to acknowledge is that none of the projects that received funding to promote environmental education and awareness from Centre for Economic Development, Transport and the Environment in 2019-2022 targeted older adults. Most of the projects targeted schools and young people, and the rest of projects had a general scope without targeting specific population groups; for instance, “opening the discussion about climate in rural areas” is one example of those projects aiming at a broader scope. It is clear that older people are not explicitly excluded from the discussion, but due to the recruitment process is different than for other groups, they do not receive the message and hence they are not part of the discussion (ELY, 2023).

Environmental college Sykli is a national specialist vocational college aiming to reinforcement of environmental skills. However, it should be noted that most of the training offered by Sykli is aimed at a profession, and thus the focus is largely on adults of working age.

In conclusion, it can be said that there is a lack of information on the impact of existing practices/initiatives/projects in older adults’ behaviour change in Finland, mainly due to older adults is not defined as target group but part of the general population.

3.3. Existing skills

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

3.3.1. Older adults

In terms of access to internet, Finland is considered highly digitized (only 0-4% of people never accessed the Internet in 2021), followed by the Netherlands, Germany (4-8% of people) and Poland (12-16% of people), and Portugal with the highest rates (16-21% of people) (Jacobs, 2023) (*potential of the trainer manual to make the content more accessible, meaning that people who are not online can also benefit from GreenerAge*).

All of our Finnish respondents had had a computer and a phone for more than 20 years and they said they used them mainly for calls, e-mails and searching for information from internet. Among our respondents, friends and family were stated to have important role when learning about new things. This finding is consistent with what Hänninen, Taipale and Luostari (2021) discuss in their research which deals with warm experts. Warm experts are people who help and assist with technologies, they are available and usually in a close relationship with the person being helped (Hänninen, Taipale and Luostari, 2021).

Our participants rated their web searching skills to be very good, acceptable and very good skills. All of them agreed even at some level that they were willing to learn more about digital technologies. Typing skills, computer literacy, and internet literacy were considered acceptable in the questionnaire, but participants addressed that it is important to improve their digital fluency. An important note is that, during the interviews, some participants addressed that sometimes it is difficult to identify the reliability of internet sources (*create a trustworthy digital learning environment*). Regarding different ways to learn, all of the participants considered that watching the computer screen is one of the easiest way to learn.

3.3.2. Trainers

In Finland, one significant operator in the field of adult education are liberal adult education institutions which provide non-formal education to different groups. Learning programmes address, for example, literacy, writing, digital skills, working life and social orientation (Finnish National Agency for Education, 2023.) The aim of the liberal adult education institutions to promote people's versatile development as well as a more cohesive society. The content of the programmes is developed by those who provide education; municipal authorities, associations, foundations and limited liability companies (Ministry of Education and Culture, 2023), and the curriculum is not uniform between the different courses. This can be interpreted as the education, knowledge and skills of trainers and teacher may vary considerably between institutions (*trainer manual to be simple and easy-to-use for trainers without requiring much knowledge and digital skills*).

Liberal adult education consortium have expressed its desire to be part of the promotion of environmental awareness, and similarly the Finnish Adult Education Association (further FAEA) have published a roadmap aiming towards more eco-socially sustainable popular adult education. FAEA acknowledges its role as part of Nordic, European and global green transition and highlight their role of being part of supporting more eco-socially sustainable society. Also,

they address their desire to support the competences and well-being of senior citizens (Finnish Adult Education Association, 2023).

3.4. Existing training

In Finland, digital skills are considered civic skills and there are quite a lot of different courses and projects related to teaching digital skills to older citizens. There are several entities offering digital skills guidance and they operate in different locations across the country. These entities include, for example, vocational colleges, libraries, universities, and various projects (JYU, 2023; SeniorSurf, 2023).

On the other hand, when looking at available education for adults on environmental issues, this is quite limited. For example, Sykli has a guide on how to produce and exploit interactive videos for the greener future to use as a learning tool, especially in adult education (Laitala *et al.*, 2022). However, this is not environmental literacy related not behaviour change promotion. Furthermore, it can be said that this is not a good example of a low-threshold learning platform for older adults.

3.5. Existing policy

Environmental and climate legislation and instructions exist, but sometimes it is difficult to act accordingly; difficult language and not accessible. In Finland, government is committed to tackle the climate crisis, and strong legislation has been already put in place:

- Finnish National climate and Energy Strategy aims to carbon neutral Finland by 2035 (Huttunen *et al.*, 2022).
- In 2022, the new Climate Act entered into force, defining targets to reduce emissions by 2023 and 2040 (Ministry of the Environment, 2023b).
- Existing policy acknowledges that more than a third of greenhouse gas emissions are generated as a consequence of housing and buildings. However, aging population is not part of the new action plan on housing for older people, meaning that they are mentioned in the action plan as ‘passive actors’ instead of being ‘active actors’ who take part in the development process (Finnish Government, 2023).

A new waste law is also in the political agenda, but the transition period is still in progress. New legislation brings obligations to households, e.g., how to separate waste collection. With bio-waste, it is possible to replace separate collection with composting on-site, but it requires reporting it to municipal waste management authorities; this is not possible to be done by many older people (Ministry of the Environment, 2023b). The new waste law, which comes quite close to the consumer’s behaviour as it defines the activities of households need to follow, raised many questions among the participants because even they were not sure how to act/proceed to implement what is mandated by the law and whether this will require special actions, knowledge, skills from citizens.



4. Discussion of results: challenges and barriers

In this section, based on the results explained in section 3, main barriers and challenges to address 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

In Finland, people live in different types of houses (detached, semi-detached, high-rise, rowhouses), and they might be rented or owned. Also, some live in right-of-occupancy homes which combines security of owning but the flexibility of renting. Variability in living means that universal instructions for choosing heating, purchasing solar panels or using air conditioning may be difficult to implement. For instance, energy saving tips, such as reducing the base temperature might lead to risk of moisture condensation in Finnish weather conditions.

When making changes to the apartment, you need to know whether it is permitted and also that it is done correctly, meaning that access to the municipality website where this information is available should be included.

In particular, the compendium should:

- Be easy to read and accessible.
- Not too scientific but with helpful tips.
- Clearly structured.
- Use of images can help explain the content and make it more accessible, e.g., illustration with main steps to recycle.
- Promote green behaviour through sharing good practices.
- Show the impacts of non-green behaviours, for their surrounding and health and wellbeing.
- Local context should be addressed as general recommendations may not fit in everywhere.
- Include different online resources (e.g., platforms, videos) on how to adopt green behaviours.

4.2. Platform

Many kinds of people with different backgrounds will participate in the platform. Challenges can arise when trying to create content that meets different needs.

In particular, the learning platform should:

- Simple to access and use (older people can learn intuitively and have direct feedback).
- Promote (the advantages of) using the platform.
- Well defined and structured content.

- Multigenerational dialogue.
- Future scenarios and how current habits may impact in their surroundings, as well as health and wellbeing.

It can be said that the Compendium and the Platform will have as main barriers and challenges to overcome:

- Low pensions will make it difficult for our target group to implement specific solutions and/or adopt a green behaviour (i.e., main barrier for behaviour change).
- Energy poverty may lead low-income groups to use more polluted (less efficient) energy systems.
- Bad housing conditions lead to a higher energy consumption and, consequently, make it difficult to reduce CO2 emissions.
- Competitive price of organic food in supermarkets make it not accessible for most of the population; our target group in particular due to their low income.
- Inequalities in access to internet (digital divide) and digital tools/devices.
- People may not want to give up the habits they have acquired over their lifetime.
- Lack of accessible infrastructure to adopt green behaviours, e.g., recycling.

4.3. Trainer Manual

One of the main characteristics of the trainer manual is that it should (1) help trainers to understand the needs of older adults and (2) provide clear instructions on how to adapt the content and training methods to easy and practical use. In this respect, the trainer manual must be suitable for a wide range of needs, but also takes into account different learners.

The trainer manual should create a cause-and-effect relationship (i.e., our habits have an impact in the nature, environment and society in general, at present and in the future) and be adaptable to local contexts (e.g., urban, rural, education levels, digital literacy, etc.). Thus, practical experiences should be combined with theory. Furthermore, try-out programmes, where participants can put in practice their knowledge and gain self-confidence, must be included.

Finally, intergenerational activities where different age groups share ideas and experiences, with time for reflection on what has been learnt, should also be included

4.4. Policy booklet

When regulating political measures or preparing national guidelines, the guidelines should be in plain language and understandable. As the guidelines and regulations change (waste law), care should be taken to ensure that the information spreads through different channels, i.e., it is accessible for all citizens. As our results indicated, people are aware of 'greenwashing' and acknowledge that environmental issues may also be used as getting profit. Advertising

and marketing are dimensions that are possible to regulate by means of legislation as well. The responsibility should not be given to consumers alone.

In particular, the policy booklet should:

- Promote the need to increase Government investment to improve information, training and tools.
- Encourage Government, Chambers and Parish Councils take a more proactive stance.
- Provide incentives to recycle (e.g., provision of household containers for recycling; payment for depositing recyclable materials, etc.).
- Show the need to improve public transport network to promote green behaviour.
- Similarly, the need to increase bike lanes, accessible pedestrian lanes and sidewalks.
- Argue the need to develop more sustainable and affordable housing.
- State the need to define appropriate mechanisms, such as fines and inspection that support the implementation of current and future legislation (i.e., there is already legislation, but there is no enforcement).
- Reduce the use of cars in cities, promoting more walking and cycling.
- Highlight the role of media involvement in adopting green behaviour.
- Remind to use understandable language and terminology, avoid jargon

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Appendix A – Platform, resources and best practices

Choice of sustainable energies in general

Sitra's 100 Smart Ways and Lifestyle Test

After this short test, you will find out whether your lifestyle is good or bad for the environment. Then, you will get tips tailored for you. They will help you save time and money and improve your quality of life, while reducing your environmental impact

Carbon footprint calculator

Carbon footprint calculator provided by Finnish electricity company. Possible to calculate how much emissions household accumulate per year and how to minimize them.

11 calculators from Finnish Environmental Institute

Different calculators e.g., monitoring greenhouse gas emissions, water footprint counter, calculator for comparing different mobility choices, counting if solar electricity is good choice etc.

(General) Behaviour change

The Climate Game – Can you reach net zero by 2050?

Raise awareness of the impact of our activities on the environment (contributing to climate change) and how we can contribute to climate change mitigation through behaviour change.

Environmental literacy

Silinskas, G., Ranta, M., & Wilska, T.-A. (2021). Financial Behaviour Under Economic Strain in Different Age Groups: Predictors and Change Across 20 Years. Journal of Consumer Policy, 44(2), 235–257.

Summary: In later years, ecological attitudes were more closely determined by life course stage, that is household type and other socio-demographic determinants.

Ottelin, J. (2022). Ageing society risks emission cuts. Nature Climate Change, 12(3), 221–222.

Summary: Seems interesting but Tampere has no access, maybe someone else has, or do I order the access to it from library? Quote -> “The group aged 60 years and over composes around one-fifth of the population in developed countries, and is expected to double between 2019 and 2050^{2,3}. Thus, the lifestyles and consumption habits of senior citizens have an increasing impact on total greenhouse gas emissions”

Behaviour change

Salo, M., Nissinen, A., Lilja, R., Olkanen, E., O'Neill, M., & Uotinen, M. (2016). Tailored advice and services to enhance sustainable household consumption in Finland. Journal of Cleaner Production, 121, 200–207.



Summary: Research is about households (not +55 group), but it provides good discussion about Finnish society and promoting behaviour change in Finnish context. They introduce typical household types in Finland, responsibilities, etc.

Experiences on projects promoting sustainable lifestyles in Nordic countries

Summary: In this study, 22 different project descriptions were used to show the various ways in which a sustainable lifestyle can be promoted... The conclusions identified a need for a sustainable infrastructure and new sustainable products and services.

White, K. Habib, R., & Hardisty, D. J. (2019). How to SHIFT Consumer Behaviors to be More Sustainable: A Literature Review and Guiding Framework. Journal of Marketing, 83(3), 22–49

Summary: The framework is represented by the acronym SHIFT, and it proposes that consumers are more inclined to engage in pro-environmental behaviors when the message or context leverages the following psychological factors: Social influence, Habit formation, Individual self, Feelings and cognition, and Tangibility. Not any comparison between age groups of targetted specifically to older adults.

Policy

European Commission, Directorate-General for Environment, Attitudes of Europeans towards the environment: report, European Commission, 2021.

Summary: In this file respondents are divided as older 55+ -> “older respondents are less likely than younger people to support changing the way we consume

Older People and Climate Change: the Case for Better Engagement

Summary: The report calls for old stereotypes of this age group, as being incapable of engagement, passive or disinterested, to be abandoned. It recommends new approaches to engage older people on climate change issues which promote direct interaction and the use of trusted agents that are sensitive to the personal circumstances faced at their particular stage of life.

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:
 - 5.4. What do the participants think of the environment? Write down everything they mention.

5.5. 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 that 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 that impact the physical environment, e.g., in 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 environment is important?
- 6.2. Why do you think 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 to 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 to the information as online
- e. If others, please add 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 use 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 a greener behaviour?

Please reflect on the participant's answers:

14. What are the challenges and barriers to engage 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.

