GERMAN 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 Germany 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[1]. 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 German situation.

2. Methodology

For the collection of suitable content for the outputs of the GreenerAge project, information was collected in advance through various methods: On the one hand in theory in form of desk research, on the other hand by involving the target group (adults 55+) in form of workshops and interviews. These are presented below.

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

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2.1. Desk Research

Our research focused on relevant databases in Germany that provide scientific literature. They comprised general scientific literature, and, specifically on questions about environmental awareness and environmental protection databases like GoogleScholar, UFORDAT, ULIDAT, SOLIS, FORIS.

"Information that has always been there must finally be noticed. Information about environmental damage and climate change has been around for 30 years. The effects of climate change have been known for so long and it frustrates me that there is hardly any corresponding intervention. Maybe the information needs to be merged with personal experience, maybe you need to experience the consequences of your actions to understand them" (Interviewee). When it comes to researching environmentally friendly behaviour in Germany, many sources revolve around "awareness research". These mainly include the differentiation between climate types, such as climate-friendly or climate-damaging types, as well as the differentiation between environmental knowledge, attitudes and behaviour. These are closely connected but can also differ from each other. Thus, comprehensive knowledge does not automatically mean environmental-friendly behaviour. The reason for this phenomenon of discrepancies between behaviour and knowledge has much to do with vertical (income, education) and horizontal (ethnicity, age) inequalities. For example, income seems to be the main driver of polluting behaviour because people can afford more mobility, housing and consumption[2].

Within this framework, the scientific discussion focuses on contradictions between attitudes and behaviours. It is assumed that individuals use three strategies to compensate for the discrepancy between their concerns and their behaviour: (1) behaviour is varied depending on certain situations, which leads individuals to portray their behaviour positively; (2) behaviour is often justified by explanations that are associated with low costs; and (3) rationality contains conflicts, which is why ideal attitudes are not transferred to behaviour[3].

That leads us to an argumentation on why or why not older people should or should not be treated separately. The differentiation of age groups is based on the assumption that not all lifestyle groups can be reached with the same measures[4]. Older people are often no longer given the opportunity to actively shape the future[5]. Environmental education for older people therefore also has a participatory task. On the other hand, attention should be paid to circumstances, such as the fact that they may have limited physical mobility and should still be

[2] Blättel-Mink, B. (2010). Konsum und Nachhaltigkeit - ein Widerspruch? Wie soziokulturelle Milieus Lebensstil und Konsumverhalten bestimmen. *Konsumforschung, (3).* Online.

[3] Diekmann, A., & Preisendörfer, P. (1992). Persönliches umweltverhalten: Diskrepanzen zwischen Anspruch und Wirklichkeit [Ecology in everyday life: Inconsistencies between environmental attitudes and behavior]. *Kölner Zeitschrift für Soziologie und Sozialpsychologie, 44*(2), 226–251. Online.

[4] Stanossek, I. (2005). Senioren als Bezugsgruppe in der Umweltbildung: Analyse, Besonderheiten und Zielvorschläge (Doctoral dissertation). Online.

[5] Umweltbildung.Bayern (2007). 60+ Aktiv bleiben durch Umweltbildung. *LBV*. Online

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able to participate[6]. Other pro-arguments revolve around the fact that they have more time and money on average. In addition, they belong to a different generation (post-war generation) whose behaviour is in many cases environmentally conscious, or they are acting environmental-friendly anyway. Nevertheless, the fact that income is the main driver, and this cannot be generalised across different age groups, speaks against the differentiation of 55+. Regarding this topic one interviewee said: “There are always only individual people, not *one group* of older people. It's just that habits are more likely to have become more entrenched in old age. There are older people who are fit and younger people who don't know how to help themselves either”.

Another part of the desktop research was about already existing practices and the implementation of projects. Training courses in the natural environments, adventure tours and workshops as well as intergenerational environmental education by means of exchange of experiences and awareness are particularly popular. Especially older people as teachers and learners in intergenerational projects should be promoted; different age groups can learn from each other and benefit from ideas. More detailed information on this is provided in a later section.

2.2. Workshop and narrative interviews

We conducted the workshop in the town hall of the City of Maintal, that functions as an associated project partner, with eight participants (five male and three female) in an age range of 55-80 years. With four of them we performed additional in-depth interviews, that lasted one hour on average.

All participants were very well-read in environmental matters. The workshop group comprised, among others, an ethnologist, natural scientist, climate protection manager, agricultural worker and engineer. Hence most of the participants were already professionally and/or personally strongly engaged in environmental issues and willing to invest a lot of extra energy in more environmental-friendly behaviour. Otherwise, they would not have been interested in participating in the workshop. This is something to keep in mind when evaluating the results.

All participants agreed that the current way of dealing with the environment cannot continue. Nature is the basis of all life and must be urgently preserved in order to enable future generations to live a life worth living. Since all of them already have this awareness, they are already implementing many measures to achieve this goal. For example, through restricted consumption and travel behavior. But they also see that more can be done, and they all aim to make a difference at the local level. Whether it's curbing traffic in certain places and making certain streets car-free or greening inner cities more.

[6] ANU - Bundesverband (NN). Arbeitsgemeinschaft Natur- und Umweltbildung Bundesverband e.V. Online1, Online2.

In the following results section, insights gained in the workshops and interviews will be presented and discussed in more concrete terms.

3. Results

The results of the workshops and interviews are presented below. Where sources are referenced, they are the results of the desk research.

3.1. Knowledge and behaviour

3.1.1. Environmental literacy

When teaching environmental literacy, it is important to adjust contents and methods to the age group and to the knowledge level of the learners. When teaching environmental behaviour with children a simpler language than with adults is to be used. With people who are not yet educated in environmental behavior, facilitators have to start with the basic topics. If the learners are already educated in the area, a lesson on the mearning of green or environmental behaviours is not appropriate. Each learning offer has to define its target group and be designed accordingly. In general, it is important to learn in practice rather than exclusively in theory, no matter what age or level of education. One interviewee said for example: “Environmentally friendly behaviour should not be taught so much through theory, but through *doing*. People need to be motivated to do it, because your own experience is worth much more than what you read about it”.

3.1.2. Environmental habits

“Until the mid-1990s, the principle more or less applied: the younger, the more environmentally conscious, whereas today it is the middle generations who are most concerned about the environment. One could say casually: the environmentally conscious of the past have simply become older.[7]“

Many of our workshop participants already were well experienced with green behavior. They all agreed that environmental-friendly behaviour has a lot to do with saving resources. Saving in this context means for example, reduced consumption, not always having to buy the latest technical devices or clothes, or saving energy on heating or lighting, or saving water when showering and washing. One interviewe added: “I choose environmentally friendly behaviours because they are important and there is no alternative. Moreover, they fit my active lifestyle – I only feel good in nature and have great pleasure in implementing and building my own (environmentally friendly) projects, such as nesting boxes for birds”.

[7] Kuckartz, U. & Rheingans-Heintze, A. (2006). Quer geblickt: Einflüsse auf Umweltbewusstsein und Umweltverhalten. In: Kuckartz, U., Rheingans-Heintze, A. (eds) Trends im Umweltbewusstsein. *VS Verlag für Sozialwissenschaften*. DOI: https://doi.org/10.1007/978-3-531-90196-1_4. Online.

In a survey by Neugebauer (2004) on environmental habits, the variable age is also discussed[8]. Younger people have a higher environmental awareness, but on the behavioural level the trend is in the opposite direction. Younger people are more environmentally aware when it comes to shopping and sorting waste, whereas older people are more environmentally aware when it comes to transport behaviour. Participation in recycling increases with age. In addition, three reasons are given for more environmentally conscious behaviour among older people: (1) Environmentally friendly everyday behaviour such as waste avoidance, energy/water saving, reuse of things, general saving (low consumption behaviour) and limited car use are behaviours that are often found in the post-war generation. (2) The financial constraints of older people compared to younger people. (3) Driving license and car availability are underrepresented among older people compared to younger people[9].

Haller & Troy (2003) also examined environmental behaviour on the variable age. For this they use data from the International Social Survey Programme (ISSP) from 2000-2001 on "Environmental attitudes in international comparison"[10]. A clear determinant of environmental awareness is the variable age: younger people know more, but are less willing to make sacrifices than older people; middle-aged people (35 to 60 years) have the highest risk assessment. It is also interesting to note that in almost all countries, environmentally friendly behaviour increases with the age of the respondents. In those countries where age has no effect, the general level of personal environmental action is also particularly low. The reasons for this are that older people have more money and time and can therefore afford to act in an environmentally friendly way. There are doubts whether these results apply for people 70+, because this is a contradiction to statements in other studies, where the narrative is that older people have less money. Here again it would be interesting to see what age group these assumptions are specifically about. For 40-60 year olds we would agree. The study also states that the dimensions of attitudes and actions towards environmentally friendly behaviour correspond more closely with each other in old age than in younger people.

3.1.3. Environmental footprints

When it comes to environmental footprints, whether in studies or in the workshops and interviews, its calculation through various online tools is mentioned. These proved to be very interesting for the participants. Concerns arose when different calculators gave different results. It is therefore important to ensure that there is transparency in the calculation of the footprint, including the one that is selected for the GreenerAge learning platform. In this context, the credibility of data, sources and information in general was also discussed. In order

[8] Neugebauer, B. (2004). *Die Erfassung von Umweltbewusstsein und Umweltverhalten.* (ZUMA-Methodenbericht, 2004/07). Mannheim: Zentrum für Umfragen, Methoden und Analysen -ZUMA-. Online.

[9] Note: These results need to be treated with caution as "older" and "younger" are only comparative categories and are not concretely described by an age range.

[10] Haller, M., & Troy, C. (2003). Umwelteinstellungen und Umweltverhalten im internationalen Vergleich. *SWS-Rundschau*, *43*(1), 81-105. DOI: https://nbn-resolving.org/urn:nbn:de:0168-ssoar-165477. Online.

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to avoid uncertainties on such an important topic, on which there is a lot of scientific and valid literature and research, we should also be transparent with our sources.

Staying with the theme of environmental awareness research and the discrepancy between environmental knowledge and actual behaviour described above, it also remains to be noted in the context of measuring the ecological footprint that a distinction can be made between reported and actual behaviour[11]. According to this paper there is a large discrepancy between self-reported and actual behaviour which raises severe doubts on the validity of the measuring results.

A German-language study with data based on the Microcensus in Austria from 2007 further shows how which age groups perform in certain categories relevant to the environment[12]. Persons under 20 and over 70 years score lowest in the category ”purchasing durable, environmentally friendly products”. With increasing age, the weight factor, for example, plays a greater role: plastic bottles are therefore more likely to be bought because they weigh less. Another finding is that mobility decreases with age, which in turn has an impact on more environmentally friendly behaviour.

3.1.4. Environmental and climate impacts

All workshop participants agree and accept that human actions impact the physical environment in many ways, such as drought, pollution, burning fossil fuels, deforestation, wildfires, use of cars, etc. One interviewee said for example: “What worries me a lot is that in many places you can see the climate changes and effects directly, you just have to look closely. For our allotment garden, there is no water for irrigation every summer because the groundwater runs dry earlier due to the hot and dry summers, and the trees in the forests are also getting fewer and fewer”.

It is true that they also see a responsibility in each individual and people should be motivated to make their behaviour more environmental-friendly. However, in order to achieve large and highly scaled goals, changes in politics and practices in large companies would be needed. Or political measures should be implemented that more or less force individuals to act in an environmentally friendly way (e.g., speed limit). “Of course, awareness must also be created with regard to individual behaviour and, for example, personal responsibility must be strengthened. However, it is above all important to see the big picture” (Interviewee).

3.1.5. Habits and behaviour change

The participants agreed that anything can be implemented if there is a will to do so. But money is a big factor when it comes to organic or fair-trade products, for example. On the

[11] Kuckartz, U. (2016). Umweltbewusstsein und Umweltverhalten heute: Ein Überblick. Berlin: Springer Verlag. DOI: 9783642588129. Online.

[12] Austria, S. (2007). UMWELTBEDINGUNGEN, UMWELTVERHALTEN. *Mikrozensus Dez 98*. Online.

other hand, to abstain from some luxuries, such as long-distance vacations, would be hard for many people and would need specific insights and motivations to adhere to.

The 55+ age group has accomplished many habits throughout their lives, and it will be difficult to break them. The longer one follows certain behaviours, the more difficult it becomes to change them. An example is meat consumption. A change in behaviour could be achieved mainly in the form of positive practical experiences like cooking together, joint experiences of the natural environment or experiences with environmental projects. As soon as there is a certain basis of knowledge and will to implement environmental-friendly behaviour, it is also realistic that people can achieve this on their own.

In the theoretical distinction between weak and strong concepts of sustainability, it is often mentioned that these "weak" ones, such as sustainable consumption in the form of fair/bio/regional, compensation payments, e-mobility, etc., would appeal mainly to older people, as their lifestyles would remain unaffected by them[13]. One interviewee added: "When buying seasonal vegetables, the taste factor is the most important thing for me. It's a positive incentive and the environment benefits too".

3.2. Existing practices/initiatives/projects

In Germany, there are many initiatives and projects that deal with the environmental behaviour and awareness of older people. In addition to the preservation and protection of the environment, the focus is on winning over post-professionally committed people for environmental education and educational work and recognizing and appreciating them as competent and experienced partners[14]. The need to use the potential of old age socially is often already recognised, especially in the environmental field. Older people must also recognize their responsibility for the future prospects of all ages — many want to or are already doing so[15].

The projects and initiatives mainly take place at the local level. A good example is the City of Maintal, which has been involved in environmental projects for many years and includes all age groups. For us as the GreenerAge team, it is of great importance to support these local initiatives and projects. We don't have to reinvent anything that is already there. However, awareness of these problems, approaches to solving them and finally concrete initiatives and projects cannot be strengthened enough! Then changes can be made not only on a local level, but nationally, internationally and finally globally. One interviewee said: "What individuals do in small ways has a huge effect when added up - this should be brought across as an important message".

[13] Wendt, B., Höppner, G., Görgen, B., & Grundmann, M. (2019). Nachhaltigkeit und Alter: Konturen und Spannungsfelder eines vernachlässigten Forschungsfeldes. *Soziologie und Nachhaltigkeit*, *5*(1), 66-90. Online.

[14] Umweltbildung.Bayern (2007). 60+ Aktiv bleiben durch Umweltbildung. *LBV*. Online.

[15] Olejniczak, C. (2005). Generationen Netzwerk Umwelt: Wissen und Erfahrungen älterer Menschen für die Umweltbildung der nächsten Generation. Online.

Initiatives that go beyond the local level in Germany are, for example, “Grandparents for Future - generation 50+ for climate protection” (German: “Omas for Future”). It is a spin-off of the world-renowned “Fridays for Future” movement.

Other initiatives are for example:

- “Generationennetzwerk Umwelt: Wissen und Erfahrungen älterer Menschen für die Umweltbildung der nächsten Generation“[16]: Intergenerational exchange of experiences related to environmental education and potentials of older persons.
- “NUA. Natur- und Umweltschutz-Akademie. Umweltbildung für Senioren“[17]: Practical seminars such as building raised beds, beekeeping, garden design are presented.
- “Umweltbildung.Bayern „60+ Aktiv bleiben durch Umweltbildung“[18]: Special features of working with older people in environmental education.
- “LIZ Landschaftsinformationszentrum Wasser und Wald Mönnsee e.V.“[19]: Environmental education locally on site with different projects for different target groups.
- “GrünNatürlich — Umweltbildung Erwachsene“[20]: Compilation of nature experience tours, further training and lectures/workshops on environmental education with adults
- “BUND Friends of the Earth Germany“[21]: Projects for adults and as dialogue between the generations.
- “Bundesamt für Naturschutz“[22]: Organisation of projects with senior citizens and across generations (herbalism, hikes).
- “ANU, Arbeitsgemeinschaft Natur- und Umweltbildung Bundesverband e.V.“[23]: Environmental education divided into different target groups, as not all can be reached with the same measures. Nature encounters such as mountain forest projects, forest school, open-air museums.
- “DBU, Deutsche Bundesstiftung Umwelt: Alter für die Umwelt“[24]: Programme to promote post-professional, voluntary and intergenerational work of older people in the environmental sector in education and counseling, research and development

The impact of such initiatives and projects is that people in general, but older people in particular, should be sensitised to environmental issues. It becomes clear that a large part of the

[16] Source: www.izt.de
[17] Source: www.nua.nrw.de
[18] Source: www.google.com
[19] Source: www.liz.de
[20] Source: www.gruennatuerlich.de
[21] Source: www.bund.net
[22] Source: www.natgesis.bfn.de
[23] Source: www.umweltbildung1.de, www.umweltbildung2.de
[24] Source: www.dbu.de

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projects is based on the fact that older people already have a lot of knowledge that they should learn to apply. Or they learn to implement projects themselves and become trainers. In projects that involve several generations, the focus is on the exchange of experience and knowledge.

3.3. Existing skills

3.3.1. Older adults

Environmental education seems to be a common topic in Germany and the importance of environmental protection seems to be a narrative that runs through all age groups. However, this awareness is not yet accompanied by green skills and also not by skills in the IT field, which will be relevant for the use of the platform as an outcome of this project. In the workshops, the interviews and the desk research it became clear that the skills of older adults are very far-reaching. Many are already implementing their own creative projects, renovating their homes or just using sustainable mobility.

In the study of exiting skills among older adults, a distinction is made in theory between weak and strong sustainability concepts. “Weak” concepts, such as sustainable consumption in the form of fair/bio/regional, compensation payments, e-mobility, etc., would appeal to many older people, as their lifestyle would remain unaffected. Rather “strong” sustainability concepts refer to lifestyle changes, such as living a frugal life or the involvement in initiatives and movements[25]. Like for younger generations, these concepts would be much harder to implement.

3.3.2. Trainers

Trainers must learn that the way they impart knowledge must be appropriate — be it according to the age group or the level of knowledge of the learners[26]. Nobody wants to be treated ”from above”. This is also important for our project, so that no one feels belittled and consequently loses interest in such important topics as environmental education and protection.

3.4. Existing training

There are already many offers and training that deal with the topics of ageing and sustainability as well as environmental education for adults. Often, adults are not trained alone, but together with children in schools or other educational institutions. These intergenerational projects are particularly popular because they offer an exchange of experiences and awareness-raising. However, offers by older people for older people are also popular. Practical ex-

[25] Wendt, B., Höppner, G., Görgen, B., & Grundmann, M. (2019). Nachhaltigkeit und Alter: Konturen und Spannungsfelder eines vernachlässigten Forschungsfeldes. *Soziologie und Nachhaltigkeit*, *5*(1), 66-90. Online.

[26] Source: www.repository.difu.de

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amples of environmental education projects for seniors take place mainly in the form of nature encounters. Special groups for older people usually take into account disabilities or limitations in independence and physical mobility[27].

There are also programmes to promote post-professional, voluntary and intergenerational work of older people in the environmental sector in education and consultancy, research and development[28]. Many projects are divided into different phases. The main phase consists of offering workshops for older people interested in post-occupational engagement in the environmental sector. They are supported in finding a suitable activity in the environmental sector through a placement office. In addition, intensive public relations work was carried out (network letters, annual conference) and good examples of post-occupational commitment were recorded and analysed (including interviews with committed older people). The results show that older people are interested in practical tasks in environmental work (e.g., planting and maintaining gardens) in addition to the types of activities such as counselling and imparting knowledge[29].

Other trainings do not focus on age groups, but on the distinction between the implementation of environmental education in rural and urban areas[30]. There are also projects that focus on teaching participants to plan, implement and evaluate their own environmental education projects[31].

3.5. Existing policy

There are initiatives that offer practical materials to integrate sustainability processes into municipal policies, developed in cooperation between the German Federal Environment Agency and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety[32]. Policy integration in this context means two dimensions: a vertical one (different policy levels — local, regional, national and European) and a horizontal one (economic, social and environmental policy objectives).

They have published two brochures aimed at politicians or actors in the field of administration or civil society, which offer assistance and solutions for stronger and more effective joint coordination of sustainability processes in the municipality. Concrete examples are used to illustrate how everyday municipal life can be made more sustainable with selected levers and instruments. For example, questions are answered on how controversial issues can be brought before colleagues, how to deal with politicians not being interested in the issues raised, or how to stimulate a constructive and helpful citizen dialogue. Local sustainability

[27] Source: www.umweltbildung.de

[28] Umweltbildung.Bayern (2007). 60+ Aktiv bleiben durch Umweltbildung. *LBV*. Online.

[29] Source: www.dbu.de

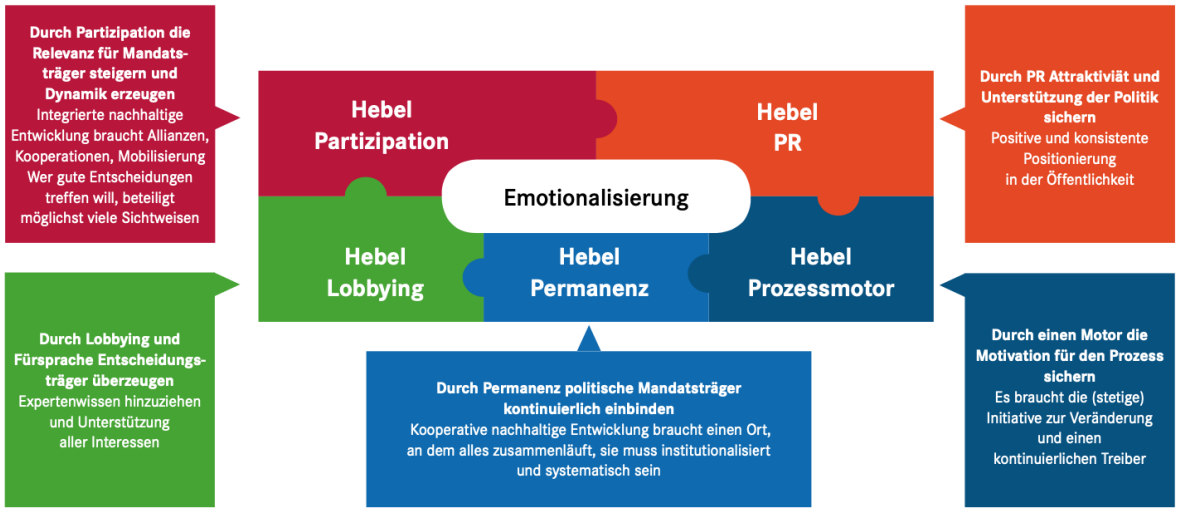
[30] Source: www.repository.difu.de

[31] Source: www.naturschutz.ch

[32] Source: www.umweltbildung1.de, www.umweltbildung2.de

initiatives thus firstly receive basic tools and detailed suggestions, and secondly a rich pool of ideas and experience is presented for imitation and adaptation. Likewise, supra-regional organisations will be encouraged to take measures to promote the transfer of sustainability projects in an even more targeted and effective way.

The following graphic illustrates, for example, the central levels for the integration of policy and sustainability processes at the municipal political level. These are participation, public relations, lobbying, permanence and process engine (see picture). The 6th level is emotionalisation, it holds all the others together. Since the graph is in German, the different levers will shortly be explained.



IFOK-Modell des gesellschaftlichen Wandels

"Partizipation" (Participation) refers to the fact that for good decisions as many points of view as possible are needed. Through cooperation and mobilisation, as many aspects of the issue as possible should be illuminated. For us, this means the active inclusion of older people and their needs and problems in the design of educational outputs for them. "Lobbying" here means the addition of expert knowledge. "Permanenz" (Permanence) describes the continuous inclusion of environmental issues in political processes — to be successful, it must be systematic and institutionalised. "Prozessmotor" (Process engine) means that there needs to be a steady and continuous initial and something like a driver that stimulates change. The level of "PR" aims at being permanently positioned in the public sphere to put the issue of the environment on the agenda. Finally, "Emotionalisierung" (emotionalising) describes the realisation that people do not only act on facts, but also to a large extent on emotions — this increases identification and more target groups can be involved.

The central message of the lever model is that only the interaction of all levers can generate the desired dynamics. Further developed, these levers can be used to initiate and specifically control social change processes, but also to analyse and readjust ongoing processes with regard to deficits.

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4. Needs and gaps

4.1. Knowledge and behaviour

4.1.1. Environmental literacy

Our respondents are very aware of green behaviours. But we have to keep in mind that there are different levels of literacy and education. Key aim should be to include both literate people as well as those who are not aware of any measures that could be taken to act more environmental-friendly. It is important to learn in practice rather than exclusively in theory, no matter what age or level of education.

4.1.2. Environmental habits

Above all, practical actions and community initiatives should be supported by the learning platform. Most of the participants still follow a non-vegetarian diet, which could be addressed as well. Further aspects that can be improved are linked to the access to and implementation of renewable energy sources as well as mobility decisions: actions that can be taken at individual level, both regarding internalised habits (such as the personal diet), as well as consumption and climate-friendly choices (e.g., regarding housing) in general.

4.1.3. Environmental footprints

The calculation of the environmental footprint gave the interviewees important insights. However, there are some transfer problems, for example the quality and trustworthiness of information. Different calculators measure the footprint differently which leads to different outcomes. We have to be transparent with our sources to avoid lack of trust.

4.1.4. Environmental and climate impacts

The majority of our participants read “occasionally” or “often” about environmental issues and “very often” boycotts companies with an environmentally destructive background. But we could shed light on which companies to avoid (e.g., Nestle) and explain why. And always give trustworthy information or information on how to distinguish false information from good sources. Sometimes people lack motivation because the impacts cannot be noticed directly.

4.1.5. Habits and behaviour change

Most of our respondents point out environmentally destructive behaviours to other people. This also applies to at least occasional support of environmental organisations. It is difficult for some people to change habits which they have accomplished over a long period of time.

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Specific awareness should be given to this topic to make behaviour changes as easy as possible, e.g., acquiring points or badges in the particular learning units, or calculating the amount of money saved by green behaviours.

4.2. Practices/initiatives/projects

Problems in changing habits might be overcome by positive practical experiences that demonstrate individual benefits in saving resources. Local initiatives/projects are not widely enough promoted. It is also difficult (but necessary) to scale up local practices, initiatives and projects, which had a positive impact to help transfer good local practices to a broader scope. The GreenerAge learning platform can gather such projects with testimonials by their members. This would also acknowledge the individual and group efforts taken so far.

4.3. Skills

4.3.1. Older adults

Our respondents had rather advanced ICT skills, but this does not hold true for all people 55+. “As far as my digital competences are concerned, I mainly try to educate myself in training courses. There I can learn thematic focuses with my own computer” (Interviewee). A learning platform should be intuitive, easy to navigate and not demand too many ICT skills. Like in the built environment low thresholds in ICT are good for all.

With regard to green skills, it has already been shown in previous chapters that older people in Germany certainly have a lot of knowledge. They often lack opportunities to apply this in a targeted way or to share it with others. Our platform can overcome this gap by specifically referring to projects (local, community or individual) and initiatives. And also by offering them an opportunity to share their own knowledge and present self-initiated projects.

When it comes to environmental knowledge and behaviour, older people often have habits that are good for nature due to their generational background (“saving” in terms of consumption, water and energy use, mobility). On the other hand, due to their older age, they may find it more difficult to give up certain behaviours that they have been practising for years (eating meat). This is a particular challenge when designing the project contents ans outputs. But we have to keep in mind, that because people automatically behave in a more environmentally friendly way due to their limited mobility, for example, one must not miss the goal of including older people within their possibilities and not excluding them only because of their physical limitations. They must be actively and participatory involved in the implementation of an environmentally friendly everyday life and motivated to take the initiative. We can support them in this.

4.3.2. Trainers

Desk research reveals the importance that the trainers do not speak from a top-down position to the participants, but in a respectful way, making the particular strength of the participants

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to the starting point of further-development and positive learning experiences. Nobody wants to feel that they are being lectured.

4.4. Training

Regarding the ICT skills, one can say that most of the respondents have taught themselves in using computers and the internet, some also referring to the family and friends who provided information. Only a few respondents mentioned a formal teacher or trainer. The same applies to environmental behaviour. However, it will support the learners to be given role models or examples of good practices that inspire people to take action for themselves. For example, by featuring testimonials on the platform who share their motivation to be environmentally friendly with users and spread their ideas to contribute to a greener earth.

4.5. Policy

“The barriers are mainly on a political level. You can't even agree within Germany, the next step would be Europe-wide, only then global” (Interviewee). In general, the workshop participants were disappointed by actions taken at a political level and feel that a change in policies should be the focus of any environmental project. They accepted the argument that E+ projects aim at individual levels but were not satisfied with this reasoning.

Political measures and framework conditions for individual behaviour are key when it comes to environmental issues. One cannot detach environmentalism from politics, everything is interrelated. It would for example be more climate-friendly if a country (e.g., Germany) didn’t produce most of its products abroad (e.g., in China). Dependency from other countries must be reduced. Political measures should also embrace the reduction of parking space in cities, free public transport, speed limit or the prohibition of certain things like sealed gardens in front of houses.

However, green behaviour in general must also be promoted by policies, for example through neighborhood management. This can be done by setting up neighborhood centres run by staff of the municipality where citizen groups can find each other, exchange ideas, learn from each other and network. Examples of good practice that are published on the learning platform should always highlight the role of municipalities or institutions at other levels to make it clear that individual behaviour is closely linked to political framework conditions in this area. “The local sense of environmental initiatives is important to me. Above all, source mobility within cities and towns must be curbed. This would also have a social component, because life would take place more on the streets as soon as many main streets become pedestrian zones. As a retailer, you then also have a better chance of asserting yourself against online wholesalers” (Interviewee). Another Interviewee also suggested: “Transport concepts should be developed together with an environmental concept” and also pointed out: “Bureaucracy is often a problem when implementing larger projects, such as installing a photovoltaic system on one's own

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roof or balcony. As soon as a certain wattage is exceeded, a trade must be registered for it – this prevents many from doing so".

Greener behaviour will also have to be supported by actions to encourage taking responsibility and promoting self-responsibility, through experiences with others, social recognition and role models, training of employees in crucial positions in the area of environmental protection.

5. Challenges and barriers

Like for all other age groups, people 55+ are not homogeneous and have different strengths and weaknesses. Older people may sometimes appear to be more passive, and habits seem to have become more established with age. On the other side they have more time, and many of them are actively committed to environmental practices and initiatives. This applies to all four of the following outcomes:

5.1. Compendium

The goal of sensitising learners to environmental and climate-friendly practices and impacts may be complicated by the fact that some people do not want to be taught. Therefore, the way of addressing them is of particular importance. Hence it is important that the Compendium will engage adult learners in bottom-up approach instead of a top-down approach.

In addition to the knowledge gained through desk research, the personal perspective of people 55+ (gained through the Workshops and Interviews) should also be included. For us as a team, it will be important to keep this permanently in mind.

In addition to providing information, a particular difficulty lies in motivating users to change their behaviour in everyday life — so that they also motivate others to behave in a more environmentally friendly way.

5.2. Platform

The biggest challenge will be to combine the tools with training content and gamification strategies. Care must always be taken to create a simple and attractive interface that appeals not only to people who are particularly literate in IT skills.

Regarding the platform one Interviewee pointed out that "less is more – the shorter the better" and also that "the platform should mainly promote local initiatives – there is no need to reinvent the wheel and you can build on what already exists".

It will also be difficult to motivate people to adapt the presented ideas to daily life. The content has to be put together in such a way that they reflect on their own behaviour without

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being too lecturing and, in the next step, take action themselves and change their behaviour towards more environmentally friendly ones.

5.3. Trainer Manual

The trainer manual must be user-friendly and work well with the GreenerAge platform. A particular challenge is that the communities are actually motivated to contribute towards more sustainable lifestyles and to address decision-making.

Not only trainers who are familiar with the platform should be addressed, but also those who are not familiar with applying digital tools in their training by providing detailed instructions on how to use the platform.

The discrepancy between environmental awareness and environmental behaviour, which has already been discussed in detail, must also be addressed in the workshops — it must be pointed out that one's own involvement is a particular challenge.

5.4. Policy booklet

Here it will be particularly difficult to find a good way to unite the different policy measures at micro, meso and macro levels so that the policies are implemented. We focus a lot on changing the behaviour of each individual. However, in the workshops and interviews it came to light that the participants would like to see much more action and enforcement of climate-friendly activities from policy makers. It must therefore be communicated that policies not only contribute a great deal to actual climate protection, but also act as role models to a certain extent.

Furthermore, education for sustainable consumption must be integrated into every policy area. Especially through creative new solutions and engage in debates. It should be as lively and inspiring as possible.

Appendix A – Guiding Questions for Workshop

1. Was the workshop held online or 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)

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a. Age.
b. Gender.
c. Education level (according to EQF): This question was not applied to avoid a status hierarchy from the very beginning of the discussion.
d. Occupation.
e. Type of house they are living in.

5. First set of questions:
    a. What do the participants think of the environment? Write down everything they mention.
    b. How do you understand…?
        i. Green behaviors
        ii. Environmental footprint
        iii. Environmental skills

6. Second set of questions:
    a. Do you think the environment is important?
    b. Why do you think the environment is important?
    c. 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?

7. Third set of questions:
    a. What is your experience thus far in environmental green behaviour?
    b. What did you do yourself to improve the environment?
    c. What do you see that others do?
    d. What do you think works well and what doesn't?

8. Last set of questions:
    a. What do you need to improve your environment? And the environment of others
    b. What do you need to improve your green behaviour?
    c. What works well and what doesn't?

Appendix B – Questions for Narrative Interviews

1. Was the interview held online or in person?

2. Participants description
    a. Age.
    b. Gender.
    c. Educational Level.
    d. Occupation.
    e. Type of housing they are living in.

3. What does "being green" mean to you?

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

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

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

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

8. What factors make you choose environmentally friendly options?
9. What factors do not allow you to choose environmentally friendly options?
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.
11. Do you usually use the internet and digital apps?
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?
13. What kind of policies do you think are needed for greener behaviour?
14. What are the challenges and barriers to engage people over 55 years of age? How could we overcome these challenges?
15. In your opinion, how can we promote environmental and climate literacy?

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