World Education

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WP2: Descriptive Mapping of AE in Environmental Awareness and Sustainable Development

A3_Mapping Report

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Executive Summary

According to recent reports, it seems that the Education for Sustainable Development in the field of Adult Education is structurally underfunded and often becomes overshadowed by the VET field that is more focused on professional development. There is also a lack of opportunities that foster environmental awareness in adult education, especially among low-skilled adults (NEETs). The aim of the current descriptive mapping report is to fill this gap in green adult education by investigating available learning opportunities and good practices and also mapping the needs of adult educators and NEETs, which will help to create inclusive content in the next step. To achieve this goal, desk and field research has been conducted in six European countries including both adult learners and educators. The desk research results revealed that there are existing learning opportunities, either provided by governments or private bodies. Also, there are available good practices that can act as a sample and direct the structure of the educational programme. It is important though to produce more learning opportunities in the AE sector, equip the Adult Educators with green teaching capacities, as the non-formal education approach of AE is equally as important as the VET field, especially when talking about environmental awareness, active citizenship and the development of green skills for sustainable life choices.

Beside these, the survey results revealed that the content of the proposed training for the environmental education of low-skilled adults (i.e., NEETs) should evolve around topics of SDG goals (mainly goals of 7, 12, 13, and 15). Furthermore, green hard skills (e.g., climate change and mitigation, environment, health and safety, etc.) and green soft skills should be part of the inclusive training curriculum. The detailed findings are discussed, and further recommendations are provided towards the creation of an inclusive training curriculum on Environmental Awareness and Sustainable Decelopment in AE and the increase of NEETs' motivation during the learning phase.

Introduction

The current descriptive mapping report is a result of Work Package 2 (WP2), which aimed to map the needs of adult educators and low-skilled adults (i.e., NEETs and/or socially economically vulnerable people) in the area of environmental education and sustainable development. The descriptive mapping report serves a crucial role since it will guide the development of Work Package 3 (WP3) by providing the necessary content for an inclusive training curriculum on environmental awareness and sustainable development in adult education.

The development of this report was achieved through the implementation of desk research and survey research that were conducted in six different European countries, involving Cyprus, Denmark, Greece (2 partners), Italy, Latvia, and Spain. In the first phase of WP2, Progressus created a mapping methodology that guided each partner throughout their implementation of desk and survey research. As a part of this methodology, the consortium agreed to follow an explanatory sequential mixed research methodology that involves both quantitative and qualitative data. In this method, quantitative data (desk and field research for the WE project) also serves the purpose of directing phases for the qualitative method (the focus group phase of the WE project).

In line with this proposed methodology, the partnership has planned to follow two phases. The first phase of data collection was quantitative research, which mainly involved the implementation of desktop and survey-driven field research. Specifically, the desktop research required a partnership to engage in an intensive literature review at the national level to highlight an environmental awareness framework for adult education, at least five good practices in adult education on environmental awareness, learning opportunities at the national level, and demands for green skills. At the end of desktop research, seven national-level desktop research reports had been completed. In the first part of this descriptive mapping report (i.e., Section 1, Section 2, Section 3, Section 4), you will be introduced to the results of desktop research.

As stated, the first phase of the methodology also had a survey component. During the implementation of the survey part, all partners needed to access at least 20 adult educators who would take on the trainer role and 20 low-skilled adults (NEETs) who would take on the trainee role. The survey questions were designed to discover target groups' knowledge about training opportunities, their learning needs, and their needs for green hard and soft skills. OMNIA was a responsible partner leading the survey implementation

activity. At the end, the partnership managed to collect responses from 151 trainees and 143 adult educators. You will be introduced to the analysis of results in the second part of the descriptive mapping report (i.e., section 5).

Within the survey phase, the most challenging part was reaching low-skilled adults (NEETs) in partner countries. The majority of partners used social media channels in order to reach low-skilled adults (NEETs). Another useful approach was an indirect one, such that partnerships used their contacts, stakeholders, and public bodies that focus on the social inclusion and employment of NEETs. Given the organizational structure of some partners, their access to NEETs was easier than others (e.g., VUC as an adult education center having NEET students and Progressus as a counseling center). In terms of the barriers encountered by partners through the implementation of surveys for NEETs, the weakness in understanding the topic of the survey and technical terms were among the main challenges. Despite all those challenges, the explanation of the goals and potential future benefits of the project enabled NEETs to be fully engaged during the survey duration.

On the other hand, partners did not experience many difficulties while reaching out to adult educators. The use of contacts, stakeholders, and approaching universities were common approaches adopted by the partnership. Indeed, the explanation of the project goals, its benefits, and the possibilities to use the project results was a successful method of keeping adult educators fully engaged during the survey.

In the second phase of explanatory sequential mixed research methodology, the partnership agreed to have focus groups with adult educators and low-skilled adults/NEETs (one focus group per partnership,involving 42 participants in total). The aim of those focus groups was to receive feedback from adult educators and low-skilled adults/NEETs and ensure the quality of the mapping report through the use of predetermined evaluation questions developed by Progressus. Those questions were created based on the results of quantitative data (i.e., desk research and field research described above). As stated, the partnership agreed to use quantitative data to create the direction for the qualitative approach during the methodology part. The evaluation questions were separated into two sections. The first section involved open-ended questions and aimed to identify focus group suggestions for an effective adult education program, potential motivators for learners, and potential barriers that can be encountered by the learners. The second section involved close-ended questions and acted as one of the three quality check points for the content of the mapping report. To achieve those

purposes, adult educators and low skilled adults/NEETs were presented with the main results and conclusions of this descriptive mapping report and asked to write their comments and rate the validity and quality of the report. In Section 6, you will be introduced to detailed information about focus group results.

The low-skilled adults/NEETs were selected for focus groups by using similar methods as the partnership used while reaching out the survey participants. Some partners continued with the same low-skilled adults/NEETs who had participated in the survey phase and were interested in being a part of focus group as well. For other partners, the use of contacts, stakeholders, and social media invitations were among the common approaches. Indeed, the process of implementation was smooth for the majority of partners, as barriers were minimized by using simplified language and interactive methods. The explanation of the project's goals, potential current and future benefits were useful strategies that were used by the partnership to keep focus group participants as engaged as possible.

In terms of the methods used to select adult educators for focus group implementations, invitations via social media, the use of contacts, and contacting universities were among the common approaches. The adult educators were already engaged during the majority of focus group implementations and willing to integrate environmental aspects into their education.

Section 1: Environmental awareness framework on Adult Education

The **European Union** has developed a number of initiatives in the context of environmental awareness and education in adult education. The following lines are indicative of some of them.

The Council of the European Union published the European Agenda for Adult Learning, setting the priorities and strategic objectives for adult learning in Europe, including the promotion of environmental education and sustainable development (Council of the European Union, 2011).

In 2021, the Council of the European Union adopted the Resolution on a new European agenda for adult learning 2021- 2030. It underlines that green skills will be required throughout society and in all sectors and all levels of the workforce. Also, the green transition will be a driver for innovation and will create new learning pathways and new educational and training approaches (Council of the European Union, 2021).

In June 2022, the Council of the European Union issued a recommendation titled "Recommendation on learning for the green transition and sustainable development." This recommendation is based on a proposal submitted by the European Commission in January 2022, which emerged after extensive consultation with representatives from across the social spectrum (policy makers, educators, youth organizations, etc.).

Additionally, significant emphasis is placed on the important role that education and training play in achieving the goals of the European Green Deal. Education and training should be fundamental pillars for Europe's transition towards a more just, sustainable, and inclusive way of life and work, in order to meet the contemporary needs of learners.

Education should equip learners with the knowledge, skills, and attitudes to take action for sustainable development. Furthermore, it should create active citizens who can responsibly participate in decision-making processes.According to the desk survey results, the situation in the project partners' countries referring to the environmental awareness in adult education is as follows.

In the case of **Cyprus** there are not state-created centers specifically dedicated to adult education. However, there are private and non-profit organizations that have established adult education centers focused on environmental awareness.

On the other hand, in **Denmark**, the curricula for all governmental AE-programs are regulated and frequently revised. Sustainability is incorporated into almost any subject curriculum or made the very focus of new courses. The Danish government provides a broad variety of formal AE-programs for adults of all needs and at all ages, ranging from short-term skills courses (AMU, Adult Vocational Training) to a full-scale continuing education system for adults (including FGU, Preparatory Basic Education and Training, EUD, Vocational Education and Training, and VUC, General Adult Education) offering formal degrees and course credentials at EQF-levels 1 - 5 parallel to the ordinary educational system.

Most low skilled adults and adult NEETs in Denmark with educational needs are enrolled in one of these programs and often by the intervention of local PES authorities or adult counselling entities. In 2020, the Danish Parliament passed a climate bill stating that Denmark aims to reduce carbon dioxide emissions by 70% compared to 1990 levels by 2030 and achieve carbon neutrality by 2050. This national climate agenda assigns educational institutions the task of preparing students for active participation in the green transition.

When it comes to **Greece**, there is a network of 58 public Environmental Education Centers. The Centers for Environmental Education is a network of decentralized sustainable public educational structures of the Ministry of Education and Culture, with the aim of promoting environmental education and its support at local, national and international level. The aim of environmental education is the cultivation of environmental awareness and the sensitization of students, teachers of Primary and Secondary Education and other adult citizens. The aim also is to perceive the environment holistically and to approach it in an interdisciplinary way.

Through the action of the Environmental Education Centers, standard methods of education are developed, promoted, and implemented with a view to preserving the environment and sustainable development. (“KPE”, n.d.). There have also been several educational programs in Sustainable development in the province of Greece, such as in Larissa (Bechlivani & Pavlis-Korres, 2021).

Regarding adult education, the participation rates in Greece are low in comparison with other European countries. Though, as has been depicted in research that evaluated the program of training instructors of adults through distance learning education hosted by the GSAE (General Secretary for Adult Education) and the ICAE (Institute for the

Continuing Adult Education) in Greece, most of the participants had a positive attitude towards the program in general as well as the electronic educational material distributed. Furthermore, the hybrid educational process selected for use by the program was thought to be particularly flexible. As for the program's negative aspects, the main problems noted were the relatively large distance certain trainees had to cover in order to participate physically during the scheduled meetings, as well as the technical matters that arose within the e-learning environment. (Alafodimos et al., 2009).

It is worth mentioning that an innovative method in adult education that has been growing rapidly in Europe, especially since the Lisbon European Council in 2000, is mentoring. In Greece, this interest has found expression either through the development of educational material in the context of adult educator training programs, or the investigation of the mentoring needs of adult learners. In spite of the obvious fact that the mentor plays a key role in ensuring that the mentoring process is constructive and successful, there has been little research to date on the attributes of an effective mentor in adult education. (Koutsoukos, 2022).

Regarding **Italy**, there is a decentralized governance system, and a lot of responsibility lies with regional governments and municipalities. On a national level, the Ministry of Ecological Transition is the main ministry responsible for coordinating climate change action. The Ministry oversees Italy's commitments to the Kyoto Protocol and Paris Agreement. Italy's Ministry for the Environment, Land and Sea is the Action for Climate Empowerment (ACE) focal point. Italy's National System for Environmental Protection was established in 2016 by the Law of 28 June 2016, n. 132. It is part of the Ministry of Ecological Transition. It acts as a monitoring and research institute for environmental protection and carries out 'inspection activities.' The Italian Institute for Environmental Protection and Research is a public research body that supports the Ministry of Ecological Transition and is the main research institute for environmental topics in Italy.

The definition of a strategic framework is crucial to lay the foundations for a sustainable future and adjust the undertaken national reform route in a long term perspective.

To this aim, Italy is engaged in integrating the 2030 Sustainable Development Goals into the economic, social and environmental programming, by drafting the "National Sustainable Development Strategy 2017/2030" (NSDS). Following the 2030 Agenda, the Strategy shapes a new vision towards a circular, low-emission economy, resilient to climate

impacts and other global changes endangering local communities, prioritizing the fight against biodiversity loss, alteration of the fundamental biogeochemical cycles (carbon, nitrogen, phosphorus) and land-use change. The Ministry for Education and the Ministry for University and Research are responsible for formal education in Italy. The Ministry for Education oversees pre-primary, primary, secondary, as well as Technical and Vocational Education and Training (TVET) and adult education while the Ministry for University and Research is responsible for higher education.

In 2009, the Ministry of Education, University and Research and the Ministry of Ecological Transition entered into a formal agreement to strengthen the role of environmental themes in education, as described in the 7th National Communication. The National Program for Environmental Education, Information and Training was established by the Ministry of Ecological Transition in 2015. It aims to distribute information, training, and environmental education programs throughout the country.

In the case of **Latvia**, the environmental science expert Māris Kļaviņš writes that the concept of Education for Environmental Citizenship in Latvia is a timely one considering the transformation process of education. This process can also include the need to develop competencies that are necessary for society. The concept covers several major aspects essential for the development of the educational system to improve citizens' involvement in society and promotes the significance of sustainable development. Education for Environmental Citizenship can be considered as a continuation of efforts to implement environmental education in Latvia. A comprehensive environmental education system has not been established in Latvia, so the proposition of a new approach can 'dilute' existing 8 v: efforts, as well as observed a shortage of study aids on the basic issues of environmental education for the assurance of different levels of environmental education. There is a wide offer of continuous education in the country at large, which is developing along with the demand. It would be necessary to set up a system to assess the quality of the continuing education programmes.

There is no regulatory framework governing the financing of continuous education and sharing the responsibility regarding the financing for lifelong learning (Hadjichambis et al, 2019). The Ministry of Environmental Protection and Regional Development in cooperation with other state administration institutions, international organisations, as well as academic sector and non-governmental organisations promotes the improvement of environmental science and education, education for sustainable development by

implementing Latvian Sustainable Development Strategy 2030 (section - Promoting Sustainable Lifestyle). Latvia's Sustainable Development Strategy 2030 has become the country's main planning instrument with the force of law. All strategic planning and development documents for the near and distant future will be drawn up in accordance with the orientations and priorities set out in this Strategy (The Ministry of Environmental Protection and Regional Development, 2020). The Environmental Policy Guidelines 2021-2027 are a medium-term policy planning document for the environment sector. It has been developed in line with the priorities set out in the Latvian Sustainable Development Strategy 2030 and the National Development Plan 2021-2027 and the strategic objectives of the European Green Deal. (Cabinet of Ministers, 2022). They incorporate the priorities of environmental education and science into draft legislation and policy planning documents and support these priorities in the work of other institutions and organisations.

Finally, in the **Spanish** literature, there is consensus that the climate crisis is a complex problem in which education is crucial for reaching a solution (Rodrigo-Cano et al., 2019; Gobierno de España, 2021 and Barbara, 2019). It is especially highlighted that the climate crisis can only be tackled through a collective effort and thus education on environmental awareness needs to include adults as well (Gobierno de España, 2021). In order to increase environmental awareness, the Spanish government developed an action plan for 2021-2025 on Environmental Education for Sustainability (Gobierno de España, 2021). This framework outlines key actions related to environmental education to improve society's knowledge about the climate emergency, a just ecological transition and concrete possibilities for actions (Gobierno de España, 2021).

In this process, the Spanish government stresses the need to include a variety of social actors and different educational levels, thus also including adult education (Gobierno de España, 2021). For instance, one aim of the Spanish government's plan is to increase training for adults working on socio-environmental issues, with contents adapted to the different sectors and specialties the adults are working in (Gobierno de España, 2021). The Spanish government acknowledges that many current workers need to be requalified and that teaching about environmental awareness needs to be provided with the necessary resources (Gobierno de España, 2021).

In order to improve teaching opportunities, the Spanish government wants to train adults working in the educational field to improve their competencies to teach about environmental issues (Gobierno de España, 2021). As also Barbara (2019) highlights,

teaching about environmental issues requires specialized knowledge, however increasing numbers of teachers in the area of environmental awareness did not undergo specific training. Moreover, the Spanish government proposes to educate a diversity of people, including adults, about environmental topics by reaching out to them through various channels (Gobierno de España, 2021). For instance, it is suggested that on top of informing residents through formal school education, they are also informed about environmental problems through cultural institutions, neighborhood associations and socio-cultural centers (Gobierno de España, 2021).

Another strategy to educate adults on environmental problems is the inclusion of adults into projects of educational institutions. For example, Spanish universities and schools carried out an awareness-raising campaign to reach out to the local community about environmental problems (Oritz de Santos et al., 2021). Through this nonformal education, awareness about environmental problems rises and academic practices are connected with the community (Oritz de Santos et al., 2021).

Nevertheless, in the literature, it has been criticized that adult education in Spain is often modeled after the school system and few educational policies and frameworks exist that are directly aimed at adult education (Fernández, 2020). Hence, only few formal frameworks on environmental awareness targeted directly at adult education are available.

Section 2: Good practices in adult education on environmental awareness

After extensive research, a number of good practices on environmental awareness and adult education were identified in each of the project partners' countries. The most important are presented below

Cyprus

- **Sincerely Food (2018 – 2019):** It was a bi-communal project with the participation of both Greek and Turkish Cypriots. Its' aim was to raise awareness concerning food waste. It involved activities that aimed to raise awareness among domestic workers coming from third countries (i.e., low-skilled individuals). http://www.akti.org.cy/portfolio/sincerely-food-cyprus/
- **Zero Waste Beach in Cyprus. Zero Waste Future in Malta. Net Zero in Cyprus and Malta (2019 – 2020):** This project aimed to engage citizens to take responsibility for the problem of land and marine litter by raising public awareness of plastic marine pollution. http://www.akti.org.cy/portfolio/zero-waste-future-program-in-cy-and-ma-zero-waste-beach-in-cyprus-and-zero-waste-cities-and-zero-waste-campus-programs-in-malta/
- **Let's Do It! (2012 – 2022):** This campaign is a part of Let's Do It! World Foundation which aims to clean natural areas from waste disposal and encourage sustainable waste management. It is a practice that aims to raise awareness about waste disposal in Cyprus. https://www.togethercyprus.org/en/lets-do-it-cyprus/
- **ReFill (2022 – still):** This behavior change campaign aims to reduce plastic pollution by raising awareness in Cypriot society. This campaign is endorsed by the implementation of water refill stations that make it convenient for society to reuse and refill their water with free filtered water. https://www.letsmakecyprusgreen.com/refill-cyprus/
- **Social Peas (2022 – 2023):** This project aims to support adult educators to increase their knowledge regarding the creation of regenerative permaculture so that they can benefit marginalized individuals (e.g., individuals with mental disorders). https://dev.foecyprus.org/social-peas/

Denmark

- **2030 Schools (2019):** The CHORA 2030 foundation has in cooperation with end users developed a 3-year program for a complete SDG certification of educational institutions. The program includes a plan of action for sustainable development of both learning, values, and daily operations. https://2030skoler.dk/indhold/
- **Integration of SDG Target 12.8 with existing curriculum elements in the subject of Danish at higher preparatory level (2023):** The aim was to develop and qualify students' opinions and to make each individual able to raise her voice in climate debates.
- **Annual Sustainability Project Week (2023):** In agreement with the local student council, VUC Storstrøm will dedicate five days for each year to interdisciplinary learning activities and projects about sustainability. The aim is to raise environmental awareness and to improve knowledge and skills to create a sustainable future for all.
- **Hybrid Education at VUC Storstrøm (2019):** Hybrid education allows students to choose a school facility closer to home or even participate from home, as it is a mix between the traditional in-person classroom setting and virtual participation. Less traveling means reduced carbon emission from personal transportation. https://vucstor.screenstepslive.com/s/6494/m/106157/l/1447476-opstart-af-hybrid-lokale
- **The Climate Embassy (Originally in 2009 but mainly since 2020):** Denmark's green think tank Concito runs this program aimed at children, youth, and young adults to promote ESD and Concito's agenda for sustainable development. The Climate Embassy trains students to act as local ambassadors for sustainability. https://concito.dk/undervisningsmaterialer, http://sustainable.dk/

Greece

- **Adult environmental education, local communities and waste management: an experiential workshop (2014):** This pedagogical workshop was addressed to adults and combined the principles of Education for Sustainable Development and Adult Education in Ikaria. https://www.peekpemagazine.gr/article/%CF%80%CE%B5%CF%81%CE%B9%CE%B2%CE%B1%CE%BB%CE%BB%CE%BF%CE%BD%CF%84%CE%B9%CE%BA%CE%AE-%CE%B5%CE%BA%CF%80%CE%B1%CE%AF%CE%B4%CE%B5%CF%85%CF%83%CE%B7-%CE%B5%CE%BD%CE%B7%CE%BB%CE%AF%CE%BA%CF%89%CE%BD-%CF%84%CE%BF%CF%80%CE%B9%CE%BA%CE%AD%CF%82-

%CE%BA%CE%BF%CE%B9%CE%BD%CF%8C%CF%84%CE%B7%CF%84%CE%B5%CF%82-%CE%BA%CE%B1%CE%B9-%CE%B4%CE%B9%CE%B1%CF%87%CE%B5%CE%AF%CF%81%CE%B9%CF%83%CE%B7-%CE%B1%CF%80%CE%BF%CE%B2%CE%BB%CE%AE%CF%84%CF%89%CE%BD-%CE%AD%CE%BD%CE%B1-%CE%B2%CE%B9%CF%89%CE%BC%CE%B1%CF%84%CE%B9%CE%BA%CF%8C

- **Clean up the Mediterranean": volunteering and awareness-raising activities in the Municipality of Hersonissos (Crete) (2023):** This campaign has been mobilizing for years municipalities, environmental and other social institutions, businesses and volunteers of all ages to take part in solving the problem and to declare in their own practical way their will for cleaner seas and coasts. https://www.otavoice.gr/aytodioikitika-nea/2023/05/kathariste-ti-mesogeio-draseis-ethelontismou-kai-evaisthitopoiisis-ston-dimo-chersonisou/
- **Champions in Recycling (Komotini) (2023):** The aim is to raise awareness and educate athletes about the benefits of recycling, as well as the gradual development of environmental awareness, with club athletes invited to collect recyclable paper, aluminum and plastic packaging in bins with special markings. https://www.paratiritis-news.gr/athlitika/sto-paichnidi-tis-anakyklosis-bainoun-oi-athlitikoi-syllogoi-tis-komotinis/
- **Environmental information and awareness in ARCHELON (1984 – still):** ARCHELON – Sea Turtle Protection Society of Greece center has been organizing five-month field programs on an annual basis, in which systematic work is carried out informing and raising public awareness about sea turtles, their life cycle, the threats they face in the marine environment and on their nesting beaches, and the climate crisis. https://www.archelon.gr/eng/actions.php?mid=4
- **Health, Safety and Environment Month (One month per year):** ELVAL-HALCOR has developed an intensive, educational program with information aimed at changing the culture, and raising awareness of staff on environmental management and health, safety issues and health and safety at work. https://gr.youth4sdgs-project.eu/wp-content/uploads/2021/11/Greek_SDGs-Best-Practices-in-our-5-countries.pdf
- **Mamagea (2001 – today):** Mamagea is an environmental organization with the mission to improve everyday life in cities, the social and urban environment. Through current and innovative approaches, mamagea designs and implements actions

capable of changing the daily life of cities and neighborhoods. It aims to develop social cohesion, tackle climate change, strengthen communities and human networks. **https://mamagea.gr/**

- **Circular Economy Festival of the Municipality of Thessaloniki - THESS CLEAN-THESS GREEN:** This initiative aspires to acquaint the citizens of Thessaloniki with new practices by inserting into their daily lives the philosophy of the triptych of the Circular Economy: waste reduction, reuse and recycling of materials. (Forward Green Expo., 2023). https://pop-machina.eu/news/events-items/thess-clean
- **Environmental Education Centers:** They consist of a network of decentralized sustainable public educational structures of Y.PAI.TH., with the object of environmental education and its support at the local, national and international level. The ultimate goal of environmental education is the cultivation of environmental consciousness and the awareness of students so that they perceive the environment holistically but also approach it interdisciplinary (INEDIVIM, 2023).
- **School-Urban gardens:** Why and how. KPE Drapetsonas & Troizenas: The spread of school gardens coincided with the parallel development of urban cultivation in the form of municipal and collective vegetable gardens. https://www.peekpemagazine.gr/article/%CF%83%CF%87%CE%BF%CE%BB%CE%B9%CE%BA%CE%BF%CE%AF-%E2%80%93-%CE%B1%CF%83%CF%84%CE%B9%CE%BA%CE%BF%CE%AF-%CE%BA%CE%AE%CF%80%CE%BF%CE%B9-%CE%B3%CE%B9%CE%B1%CF%84%CE%AF-%CE%BA%CE%B1%CE%B9-%CF%80%CF%8E%CF%82-%CE%BA%CF%80%CE%B5-%CE%B4%CF%81%CE%B1%CF%80%CE%B5%CF%84%CF%83%CF%8E%CE%BD%CE%B1%CF%82-%CF%84%CF%81%CE%BF%CE%B9%CE%B6%CE%AE%CE%BD%CE%B1%CF%82-%CE%BC%CE%B5%CE%B8%CE%AC%CE%BD%CF%89%CE%BD
- **Aegean Greeners (2017 - still):** The Aegean Greeners are active students of the University of the Aegean, with a special sensitivity towards environmental protection issues. They organize clean-ups of beaches and areas within the Chios University Campus to remove waste. They participate in the pan-European database MarineLitterWatch, which aims to monitor the presence of waste on European shores. Additionally, they utilize waste materials to create artworks, organize bazaars to raise funds for their activities, and produce audiovisual material to raise awareness among the public and the University Community about environmental issues.

(https://www.facebook.com/permalink.php?story_fbid=2746756605591881&id=2171999923067555)

Italy

- **National Programme for Environmental Education, Information and Training (IN.F.E.A) (2016 – ongoing):** This Act on education and training is broken down into 12 points, from biodiversity and mobility, from digital communication to climate change. The Rome Charter is mainly addressing students, as well as teachers and trainers, and is also aimed at supporting the implementation of the renewed Italian National Strategy on Sustainable Development as well as the 2030 Agenda Objectives. https://www.mase.gov.it/pagina/il-sistema-nazionale-infea
- **Italian strategy for Education for Sustainable Development (2020-Ongoing):** The implementation of Civic Education discipline, has endorsed the same approach of UN SDGs, aiming at social, economic and environmental sustainability and, more specifically, the implementation of a national education measure that implies a review of curricula and is based on an innovative teaching approach and innovative teachers' training.
- **National Week of Education for Sustainable Development (2016-Ongoing):** The National Week of Education for Sustainable Development develops many initiatives to raise awareness and education throughout the country (e.g., Climate change and Cities, Climate change and migrations). https://esdw.eu/country/italy/
- **Globe Project Italy (2023 – Ongoing):** The Ministry of Education, University and Research participates in the "Globe Project", an international program on environmental science and education linking students (5 to 18 years old), teachers, and the scientific community. https://www.globeitalia.it/
- **Fund for the Italian Environment – FAI (1975-Ongoing):** FAI - is an Italian non-profit foundation that works with the support of private citizens, companies and public institutions to safeguard Italy's historical, artistic and landscape heritage, in the spirit of Article 118 of the Italian Constitution. https://fondoambiente.it/il-fai/

Latvia

- **Awareness raising on packaging deposit and strategic approach for harmonisation of packaging deposit systems in Estonia and Latvia**

(PACKGDEPO) (2021 – 2022): The aim of the project is to raise awareness on packaging deposit and to evaluate a strategic approach to harmonise the packaging deposit system in Estonia and Latvia. https://www.varam.gov.lv/lv/projekts/informetibas-paaugstinasana-par-iepakojuma-depozitu-un-strategiska-pieeja-iepakojuma-depozita-sistemas-saskanosanai-igaunija-un-latvija (The Ministry of Environmental Protection and Regional Development, 2021).

- **Latvia's Sustainable Development Strategy 2030 (Latvia2030) (2010-2030):** One of Latvia 2030 priorities is "A paradigm shift in education" and includes the action line "Lifelong learning", requires a paradigm shift in education in order to increase the human capital at our disposal and make full use of other capitals, such as cultural, natural or economic ones. chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.varam.gov.lv/sites/varam/files/content/files/lias_2030_lv.pdf (Saeima of the Republic of Latvia, 2010).
- **LIFE Waste To Resources IP (2021 – 2028):** The LIFE Waste To Resources IP aims to reduce waste by introducing new material management measures and reducing the environmental impact and carbon footprint of the economy by fully implementing the measures set out in the National Waste Management Plan 2021-2028 (NWMP). https://www.varam.gov.lv/lv/projekts/atkritumi-ka-resursi-latvija-regionalas-ilgtspejas-un-aprites-veicinasana-ieviesot-atkritumu-ka-resursu-izmantosanas-koncepciju-life-waste-resources-ip (The Ministry of Environmental Protection and Regional Development, 2021).
- **The Big Cleanup (2008 – still):** The Big Clean-up is the largest Latvian non-governmental movement based on voluntary participation in cleaning up, restoring and improving the environment, creating unity, positivity and a sense of a well-done job. https://talkas.lv/liela-talka/ (Latvian non-governmental movement The Big Clean-up, 2023)
- **Implementing measures to reduce air pollution by improving household heating systems (2023 – 2025):** This project aims to reduce the negative impact of air pollution on the environment and human health. https://www.varam.gov.lv/lv/gaisa-piesarnojumu-mazinosu-pasakumu-istenosana-uzlabojot-majsaimniecibu-siltumapgades-sistemas-0 (The Ministry of Environmental Protection and Regional Development, 2023)

Spain

- **CEDREAC:** The center offers a useful meeting and exchange space for environmental educators in the region as well as for public and private entities linked to environmental education and everybody who is interested in learning more about the environment. CEDREAC: Biblioteca y recursos - CIMA (cantabria.es)
- **SEO/BirdLife (over 20 years):** The organization informs adults and children about the beauty of nature through excursions outside in nature. Thereby they aim to create an incentive to protect the environment. SEO Birdlife - Sociedad Española de Ornitología
- **EL LEGADO OCULTO DE ALJUFIA:** Spanish university publicly provides a documentary informing about the need to protect and recover the cultural and natural heritage of the region Huerta. Carpeta junio 2023 (mineco.gob.es)
- **CEIDA World Environment Day with the Humboldt Dialogues:** Based on historical information about Humboldt as one of the most important naturalists of the 18th-19th, participants are encouraged to reflect on the current state of the environment. Diálogos Humboldt: los retos ambientales a la luz de sus contribuciones (miteco.gob.es)
- **Short story contest "Río de Letras":** The activity takes the form of a contest. It is a creative way to engage locals in a reflection on environmental problems. The winning short story will be published and thereby further stimulates environmental awareness. IV short story contest "Río de Letras" | Madrid's community (comunidad.madrid)

Section 3: Learning opportunities

The shift towards a carbon-neutral economy will initiate a profound overhaul in various industries. This process will encompass the emergence of fresh employment opportunities, alongside the replacement and redefinition of certain jobs. In order to effectively navigate this transition, it is essential to foster and endorse environmentally-friendly employment, tackle the training and retraining needs of workers, and proactively anticipate the forthcoming changes in future work environments.

In this section, we present some significant institutions and organizations in Cyprus, Denmark, Greece, Italy, Latvia, and Spain which provide learning opportunities related to green professions and environmental awareness for citizens.

Cyprus

1. The Knowledge Academy – Environmental Awareness Training in Limassol: This training is offered to anyone who wishes to increase their environmental awareness. At the end of this course, attendees are expected to gain an understanding of how the environment can impact daily life. This course involves 6 modules in total including modules about environmental impacts, environmental risk analysis, water pollution, various pollutions, environmental aspects, and personal social responsibility. The training is implemented by an experienced instructor. Depending on their preference, interested individuals can take the training both in on-site or online formats. There are scheduled courses once or twice every month. It is important to note that this course includes fees of 995 euros.

2. The Cyprus Environmental Studies Center (CESC): This center teaches about the importance of the environment and how to become responsible citizens. It was established in 1995 and expanded its scope with the help of the Cypriot government in 2004-2006. It welcomes 3500 students per year including students from universities. It provides opportunities for both outdoor and indoor learning. The length of the environmental education varies from a day to 2 weeks depending on the preference of the learner.

3. Cyprus Marine Environment Protection Association: This association strives to design programs that aim to provide environmental education and raise environmental awareness. As a result of education and fulfillment of certain criteria, it certifies

adults/children/offices/sectors, and provides green/blue labels. For example, Cyprus Police Academy is among the ones who managed to receive "green office sign" as a result of their compliance with the strict environmental criteria.

Denmark

1. **AMU, Adult Vocational Training,** is the national system for short-term technical skills courses. The course catalog is constantly modified according to employer demands in industry and service sectors. Today, several new courses on sustainability are being developed to suit the needs of different branches. A few examples are:

- Waste handling and sorting on the building site
- Sustainable production
- Energy efficient driving for professional drivers
- Biodiversity in landscape gardening
- Introduction to ESG and ESG-reporting
- Circular value chains

2. The FGU (Preparatory Basic Education and Training) education was established in 2019 to help NEETs build self-esteem and a personal professional identity, assess the skills and options of the individual student, and offer individual training in basic and professional skills. One of the programs offered is called 'Environment and recycling', and it prepares students for the recycling and waste management industry.

3. Several **resource platforms with e-learning materials free of charge** are available on the internet. Many platforms also provide networks, conferences, webinars, and similar activities to raise the level of environmental knowledge, awareness, and action skills. The platforms can be used by both learners and educators looking for appropriate and accessible learning materials.

Greece

Greece places particular emphasis on achieving sustainable development and is strongly committed to the implementation of the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), as they provide an ambitious, visionary and transformative framework for a new, equitable and sustainable development path. Ensuring that "no one is left behind", including Education, is a high political priority for Greece. In this context, the Hellenic Ministry of Education is promoting policies and

measures at all education levels, for the integration of the basic principles of sustainable development, in line with the overall national education policy, and is implementing concrete interventions at all levels of education, supported by several laws and Ministerial Acts, to this end.

Therefore, in Greece we can find several learning opportunities in SDE, in a range of universities' courses to short seminars conducted by private educational centers:

1. University of the Aegean/Department of environment: The main objectives of the Department of Environment main mission is to educate and carry out research into a wide range of environment-related topics such as Ecology, Economics, Education, Politics, Engineering and Pollution. The research in the various fields of environmental problems articulated in the Department of Environment within the statutory research laboratories with main themes the following:

Water and Air Quality, Biodiversity Management, Waste Management, Energy Management and Climate Change, Sensing / Geographic Information Systems, Island Financial Planning, Environmental Education & Communication, Environmental Policy, and Management (University of the Aegean, 2023).

2. Environmental Education Centers: The Environmental Education Centers organize seminars on environmental issues for teachers and students and receive visits from school groups implementing Environmental Education programmes, to exchange experiences and knowledge on specific issues that concern them, in the context of their in-school environmental activities. In addition to the formal educational framework of Environmental Education, civil society actors are also involved in this issue through the production of educational material. The Environmental Education Centres is an institution which is considered globally as one of the most important carriers that promote education outside school. Their actions prove that, through the dialogue and other kinds of education, many targets of education in general, can be achieved, by establishing, in this way, their contribution to education. By giving great importance in educator's cultivation, the centres extend their action in various levels. To sum up, it is assumed that Environmental Education is a multifunctional procedure that consists of a total of side targets which, by interacting, compose the achievement of their central target which is the formation of environmentally responsible social teams of citizens who will be sensitive and will care about the form and function of the environment and its problems. The knowledge, the capabilities and the dexterities obtained by it will awaken the citizens and render their participation in finding the solution to these problems effective (Pasvagka D., 2011).

3. Centers of Continuing Education and Lifelong Learning (KEDIVIM) of Universities and Center of Vocational training. Those centers organize several training sessions for adults in sustainable development, such as circular economy, green entrepreneurship, business skills for exploiting green opportunities, and methods of environmental restoration (KEDIVIM).

4. DYPA (Public Employment Service) will cooperate with the K.E.D.I.B.I.M. of the Greek Public Universities, as well as with the licensed Lifelong Learning Centers that meet specific quality assurance criteria, to provide training programmes to 150,000 private sector workers. The aim of the action is to upgrade the knowledge, skills and competences of private sector workers in line with the skills required by modern trends in the workplace and to improve both the productivity of the beneficiary workers and the retention of their jobs. The programmes are aimed at private sector employees over 18 years of age who have completed at least compulsory education. 191 Lifelong Learning Centres, 9 selected Training and Lifelong Learning Centres (K.E.D.I.B.I.M.) of Higher Education Institutions (HEI) and 10 Personal Certification Providers. The action concerns the provision of 80 hours of theoretical training to 150000 private sector employees aged over 18 years, leading to the acquisition of digital and green knowledge and skills and the corresponding certification through independent certification bodies. The aim of the action is to help employees adapt to the requirements of modern labor market trends, upgrade their prospects and thus contribute to the modernization of the Greek economy (DYPA).

Italy

1. The **Electronic Platform for Adult Learning in Europe** (EPALE 2009) is an online environment open to all, but especially dedicated to those working in the adult education sector. On the platform, it is possible to exchange news, opinions, ideas and resources with other professionals across Europe. There are currently over 64 thousand members in Europe, including over 6 thousand in Italy. Every month more than 100 Italian experts in the field register on the portal, and Italy is the second in the world in terms of number of members. EPALE chose to dedicate the first 2020 thematic focus to environmental awareness, to emphasize the importance of the issue globally and to highlight how adult education can contribute significantly to changing things for a more sustainable future.

2. The **Italian Ministry of Environment and Energy Security** also coordinates since 2016 the **Sustainable Development Forum**, whose function is to ensure the active involvement of civil society in the implementation of the National Strategy for Sustainable Development and related triennial updating processes. Within the framework of the Forum, a "pathway" dedicated to young people and adults addressed to listening to and collecting requests from society in view of the Strategy review process is launched. The Ministry is also engaged in promoting public information and awareness activities through participation in trade fairs and industry events, which are highly effective moments to reach specific targets and contribute to the dissemination of sustainability principles.

3. **Higher education institutions and universities** are strongly involved in climate action in Italy. Since 2001, the Conference of Italian University Rectors is the organization responsible for steering and coordinating Italian universities. The Conference of Rectors launched the Network of Universities for Sustainability in 2015. The Network aims to spread a culture of sustainability and to contribute to the achievement of the Sustainable Development Goals (SDGs). The Network has a working group that deals specifically with climate change. It organizes events such as the Climate Expo and publishes reports such as the Impact of Covid-19 on Emissions from Italian Universities towards Zero Emissions. The Conference of Rectors and Network of Universities are also involved in promoting Istruzione, No Estinzione (Education, Not Extinction).

4. The **Ministry of Education** has furthermore promoted agreements in 2022 with the **National Organisation of Natural Science Teachers** (www.sigmt.it/anisn); the **Italian Geographic Society** (www.societageografica.it); the **Council of Architects and Planners** aiming at developing interactive multimedia tools for training on sustainability aspects. Training material to be adopted in formal national training of school teachers is also in course of being developed by a joint effort of the 3 mentioned associations.

Latvia

Professional development programme for adult educators "Integrating green skills in adult education". Learners (adult educators) can learn about current environmental issues, get ideas for actions to reduce their impact on the environment, as well as examples of good practice. Learners (adult educators): 1. have improved their understanding of the most pressing environmental issues; 2. know approaches to

integrate green skills into adult education programmes; 3. have demonstrated their understanding and developed ideas to integrate green skills into the programmes they teach. (Zemgale Region Human Resource and Competences Development Centre, 2020)

1. **Latvia University of Life Sciences and Technologies** in Latvia, as part of the international project ILCES – Intergenerational Learning Communities towards Environmental Sustainability, is implementing activities to educate people about nature-friendly skills and competences.
2. **Adult education centers** (not only educational institutions, but also NGOs, libraries, museums, etc.) are involved and can become "green" advocates, promoting sustainability and environmental awareness among young people and seniors. (Latvia University of Life Sciences and Technologies, 2022, June 1)
3. **The Estonian Erasmus+ National Agency** organised an international workshop on environment and sustainability in adult education to find partners and develop new ideas for international cooperation projects on environment and sustainability in adult education. The event gave adult educators and learners the opportunity to learn how their personal and professional activities can help to improve their environment and the environment around them in a sustainable way. (The Estonian Erasmus+ National Agency/Latvian State Education Development Agency, 2023).
4. **The Ministry of Environmental Protection and Regional Development** organises seminars on environmental protection, the materials of which are available on the website. (The Ministry of Environmental Protection and Regional Development, 2022).

Spain

In the history of Spanish environmental education, as early as 1999 the Ministry of the Environment promoted a review on the future objectives to be achieved. In fact, the so-called White Paper on Environmental Education in Spain (LBEAE) was produced. The LBEAE was a document used as a means of construction for social and labor activity in the area of socio-ecological challenges and the construction of a society based on environmental education. Following the creation of the LBEAE and after the economic crisis, the Action Plan for Environmental Education for Sustainability in 2019 (PAEAS) was implemented in Spain. The plan emphasized the urgency of acting on socio-ecological problems and the urgency of undertaking education policies and programmes against climate change.

In this context, an education law (LOMLOE) was passed in March 2020, incorporating references to Education for Sustainable Development and Global Citizenship Education for the first time, to follow the objective of creating a sustainable Spain. The LOMLOE includes among the principles of the education system education for ecological transition with social justice criteria as a contribution to environmental, social and economic sustainability.

The law has proposed several actions that allow the incorporation of subjects such as Civic and Ethical Education, Education for Sustainable Development and Combating Climate Change into the formal education system.

To enable the educational system to be improved, the Spanish Government has developed a guide with objectives and actions to be undertaken:

1. Improve and innovate the education system to meet the needs of the ecological transition: promote information seminars on environmental policies; promote mixed working groups of educators, researchers and managers to incorporate environmental, social and economic policies into teaching; create recognition mechanisms for innovative projects in the field of environmental sustainability.
2. Promoting the development of innovation research to improve environmental education interventions: linking formal education to museums, cultural and art centers to build new environmental and social narratives;
3. Changing curricula towards an ecological transition: incorporating sustainability skills into the educational curriculum that support the 2030 Agenda and its goals; creating interdisciplinary approaches with relevant institutions and training centers;
4. New education programmes: develop new academic curricula focusing on change management towards sustainability; integrate environmental education for sustainability in universities and training centers.

The **national center for environmental education** (CENEAM), an autonomous body of the Ministry of the Environment and Rural and Marine Affairs, provides information to develop environmental education programmes such as the implementation of virtual classrooms: development of online training projects for environmental education; training courses for teachers aimed at training in environmental media and combating climate change.

Spain is one of the first countries to have developed teaching courses whose focus is on nature and its protection. The **Spanish Foundation for Science and Technology**,

FSP (FECYT) is a public foundation of the Ministry of Science and Innovation and has presented learning opportunities to incorporate environmental education and sustainable development. For instance, learning opportunities that can be incorporated into environmental education also for adults, are social gardens (Esteban-Ibáñez & Amador-Muñoz, 2019). In concrete, urban gardens can help to inform about animals and plant species (Esteban-Ibáñez & Amador-Muñoz, 2019). Furthermore, teaching about environmental awareness is also an opportunity to learn interdisciplinary about interrelated topics. For instance, Caride & Meira Careta (2020) mention the benefit of teaching about sustainability in connection with equity and social justice.

Section 4. Demands in green skills

The importance of implementing and developing green transition, sustainable development and climate change skills is an objective of all EU member states. According to the European Training Foundation, green skills are not only those related to renewable energy, recycling and biodiversity, but should be seen as those skills, attitudes and values needed by an individual to contribute positively to sustainability in all its domains (ETF, 2023). The definition brought to light by the ETF shows that acquiring green transition skills also has an impact on social issues such as inequality and social inclusion.

Given the importance of the green transition and the fight against climate change in the world in recent decades, European states have been working to create laws and recommendations to find quick solutions to climate change. According to a thorough desk research, the importance of green skills is also highlighted in all project partners' countries, as it follows:

In 2018, the Human Resource Development Authority of **Cyprus** published a study that aimed to identify green skills that are needed in the labour market for the periods of 2017-2027 (HRDA, 2018). The results of this study revealed the following green skills: smart sensors and automations, construction of nearly zero energy buildings, remediation of landfills, use of anti-pollution devices, corporate waste management systems, smart grids, climate change risks on the supply chain and green finance.

In **Denmark**, a survey among 80 SMEs and other business stakeholders was conducted by the professional interest organization Concito to map key skills for the green transition. The survey identified both general green skills and specific skills related to specific branches and business strata.

General green skills

- A green mindset: A holistic understanding is needed to understand the link between local action and global impact and to connect knowledge and emotions and make the individual able to think and act responsibly.
- Cross-disciplinary skills: Sustainable transition affects all parts of the business and the entire value chain. Therefore, interdisciplinary skills are demanded rather than demarcated expert skills for most emerging job functions.

- Digital skills: Digitalisation and automation are key drivers of the green transition. New technical equipment often comes with an app or on-line support service which requires digital communication skills.
- Reporting and documentation skills: There is a growing demand for transparency among investors, society, government, and other business stakeholders. A business must be able to document its carbon footprint and other environmental performance indicators to meet these expectations or to acquire green certifications.
- Innovation: At every level and across all sectors and branches there is a need for new solutions to adjust and improve production processes and practices. Green innovation is not restricted to experts in the research department. It is a matter for everyone in the business - and sometimes beyond.

In **Greece**, the National Recovery and Resilience Plan “Greece 2.0”, is fully aligned with the EU's objectives for a faster transition of the Greek economy towards a green growth model. As regards the employment, skills and social cohesion pillar, the Plan's investments and reforms include, inter alia, the creation of additional large-scale training programs aimed at increasing employment with a particular focus on the development of "green" skills. It also focuses on updating, upgrading, and aligning VET curricula with the needs of the labor market, to develop green skills that will allow companies that want to accelerate their transition to a green economy meeting the need to get the right workforce with the most relevant green skills. Regarding Active Labor Market Policies, a strong focus will be given to providing green-skills training to beneficiaries as well as financial incentives to companies that promote green and circular economy.

The national magazine Rinnovabili.it reported that in the next few years (article written in 2019), in **Italy** between 518,000 and 576,000 workers with environmental skills will be sought by green companies to best seize the opportunities offered by “circular economies”.

The demand for green skills will concern, in a transversal manner, both highly specialized and the technical professions, employees such as those in charge of commercial and tourist services, people in charge of services to workers and artisans. Experts in energy management, environmental chemists, green purchasing experts, environmental marketing

experts, installers of low environmental impact systems are some examples of green jobs that will be most in demand.

Moreover, according to the 4.Manager Observatory, which surveyed a panel of more than 4.000 Italian companies, the Italian industrial system has increased its demand for managers with targeted experience and qualifications in sustainability by 5% each year. From Sustainability Manager to Sustainability Specialist, from Environmental Manager to Governance Manager, and it is an exponentially growing trend. By 2026, the national demand for workers with high and medium green skills will reach about 4 million.

In order for **Latvia** to maintain a competitive advantage in the green transition and sustainable development, new green jobs are expected to be created, which requires a change in the skills mix. To promote the green transition and sustainable development, basic skills, including pervasive skills (critical and systems thinking, problem solving) need to be acquired in a lifelong learning perspective. Latvia agrees that sustainability competences and professional green skills, which complement cross-cutting skills, are essential for people to live, work and create new green jobs in a sustainable way. At the same time, closer cooperation between the education sector and different stakeholders is needed to identify and develop the skills of the future in the context of the green transition. (Cabinet of Ministers Republic of Latvia, 2023).

Market demand for skills related to the green economy, automation, energy efficiency and green construction is growing. (Ministry of Economics, 2022).

In 2021, the government of **Spain** adopted a new Law on Climate Change and Energy Transition (number 121, 7/2021), following the international community's focus on combating climate change and the 2015 Paris Agreement's goal of a pathway to reduce greenhouse gas emissions.

The purpose of the law is to facilitate the decarbonisation of the Spanish economy and the transition to a circular model. Article 35 is dedicated to the topic of education, training and implementation of new skills for the green transition against climate change. The law aims to create and promote a Spanish education system that reinforces knowledge of climate change and its implications, and to promote technical and professional training for the acquisition of environmental skills. In addition, the basic curriculum for teachers will be revised to include elements necessary to achieve education for sustainable development.

The Spanish government promotes formal and non-formal training to form competent professionals in the fight against climate change and energy transition. Teachers will have the opportunity to learn and subsequently teach new educational methods based on environmental protection.

To develop an educational system based on combating climate change and promoting energy transition, it is important to implement and acquire environmental skills. Generally, the most important skills to acquire are:

- Knowledge of the benefits and advantages for outdoor education, basing learning on nature and the environment;
- Improving students' motivation and involvement by applying outdoor education to different formal contexts;
- Knowledge of renewable energy and energy conservation in order to learn and specialize in projects based on energy conservation education;
- In-depth knowledge of subjects such as physics and biology in order to implement courses aimed at promoting nature and its preservation.
- In-depth knowledge of the connection between outdoor education and environmental education;
- Knowledge of practical educational approaches to develop teamwork and collaboration.

Summary – Desk Research

The partners' desktop research in the area of environmental frameworks at national levels revealed that Denmark, Greece, and Italy possess environmental awareness actions targeting adult education at governmental levels. In Denmark, it is obvious that there are efforts on a large scale, and these efforts are being updated frequently and regularly. In Greece, standardized environmental awareness education programs were developed, allowing for blended participation (i.e., on-site vs online). In Italy, there have been ongoing efforts since the national program for environmental education was established in 2015.

On the other hand, the comprehensive environmental education system driven by the efforts of the government is not fully established in countries involving Cyprus, Latvia, and Spain. In those countries, most of the environmental awareness efforts are the result of the contributions of the private sectors, non-governmental organizations, and the academic sector.

All partners provided good practices that were either done in the past or are currently in place in their countries. Indeed, the origins of those practices were diverse, including EU-funded projects and campaigns, national-level initiatives and campaigns, local-level initiatives, initiatives done by adult education centers, festivals aiming to raise environmental awareness, school-driven initiatives, etc. The content of those environmental practices was varied, including focus on food waste, land and marine litter, waste management, plastic pollution, sustainable development of learning, values, and daily operations, clean seas and coasts, recycling, protection of sea turtles, environmental management and health, circular economy, urban cultivation, biodiversity and mobility, climate change, packaging deposits, air pollution, protection of cultural and natural heritage, etc.

In terms of learning opportunities, partners provided paid and non-paid options that varied in format and duration. Some options take the form of courses, whereas others are in seminar formats. Indeed, universities were taking a leading role in some of the partner countries, suggesting universities' awareness of the need to integrate environmental awareness education into adult education. Interestingly, some partners mentioned the availability of online options (e.g., e-learning platforms) that can ease access for low-skilled adults who experience geographical difficulties.

Last but not least, partners engaged in desk research in the area of demand skills. The results revealed the demand for green skills, which can be categorized as green hard skills and green soft skills. The green hard skills involve demands for technical and job-related hard skills, including smart sensors, automations, construction of nearly zero energy buildings (i.e., green construction), remediation of landfills, use of anti-pollution devices, corporate waste management systems, smart grids, green finance, digital skills, reporting and documentation skills, innovation, the green economy, energy efficiency, renewable energy, energy conservation, physics, and biology. On the other hand, green soft skills are linked with the green mindset of individuals and are irrelevant to job experience. Based on partners' desktop results, the following skills can be grouped under the category of demands in green soft skills: a green mindset, a cross-disciplinary approach, critical and system thinking, problem solving, teamwork and collaboration, and motivation.

2nd Part – Field Research

Section 5. Field Survey Results

In parallel with the desk research, the partnership collected and analyzed quantitative data, which was derived from the responses to specifically designed questionnaires. The questionnaires translated in partners' languages so that they can be completed by all participants. Each partner administered them to at least 20 AEs and 20 trainees in order to allow for a comparative analysis of the results obtained. The questionnaires contained four sections:

A. Profile of participants, B. Learning opportunities, C. Learning needs, D. Desired green skills.

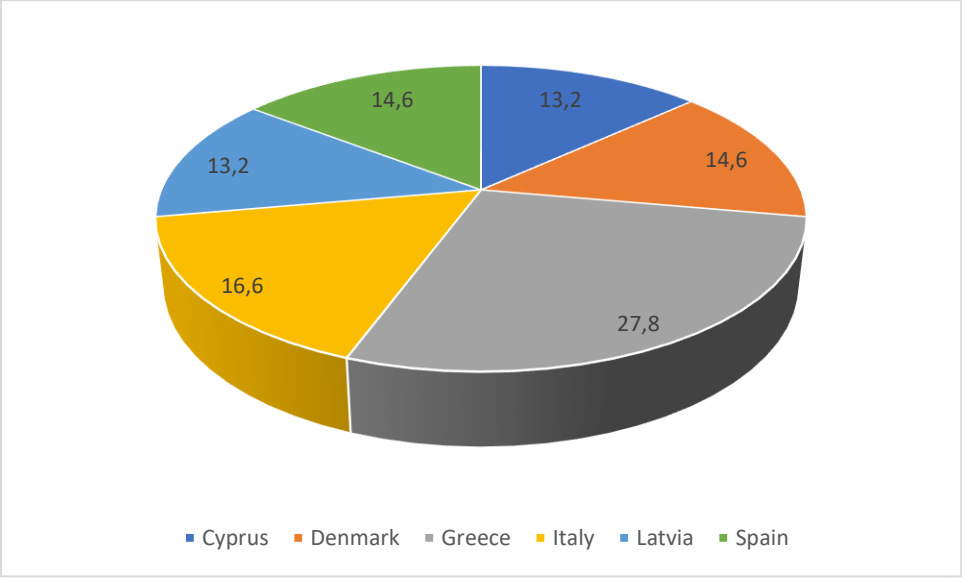
Sections B, C and D contained questions common to both questionnaires.

A. Profile of participants

A1. Trainees' profile

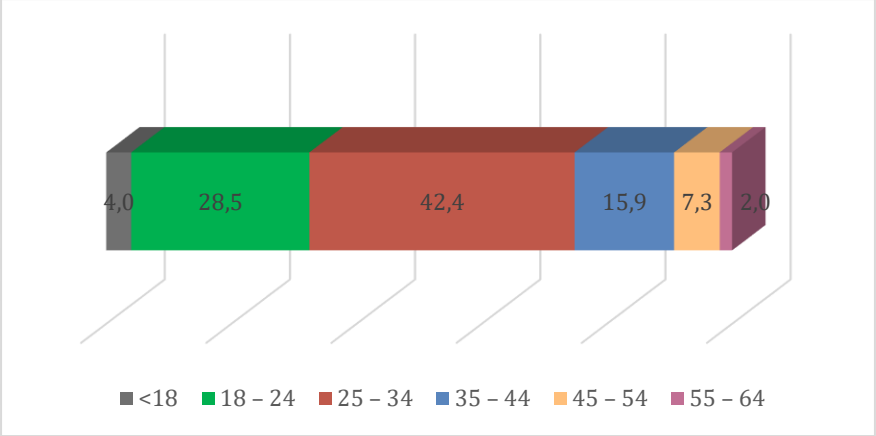
A total of 151 trainees from the 6 countries of the WE program responded to the questionnaire aimed at trainees. The geographic distribution of the participants is depicted in Figure 1.

Figure 1: Geographic origin of the trainees (%)



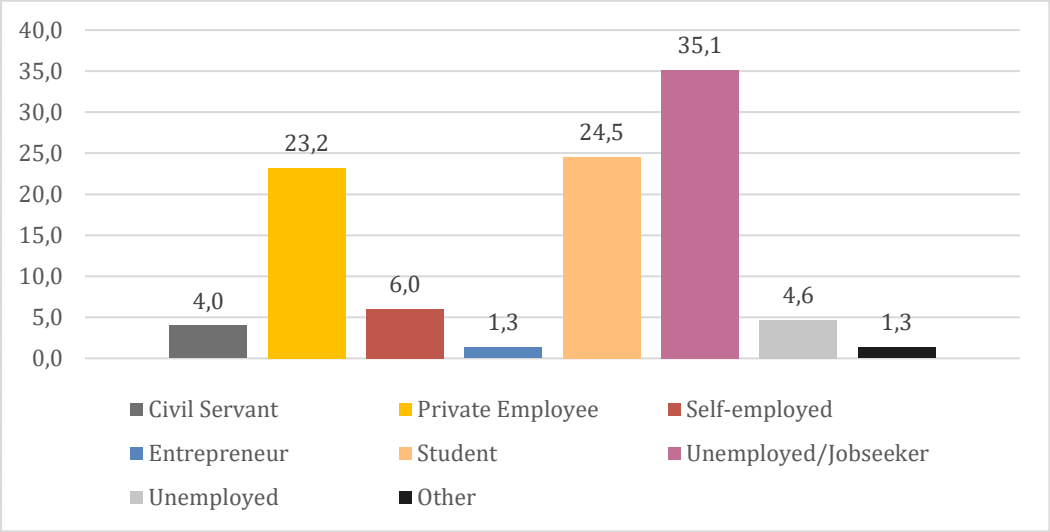
The 74.8% of trainees are up to 34 years old, 15.9% are between 35 and 44 years old, and 9.3% are between 45 and 64 years old (Figure 2).

Figure 2: Age distribution of trainees (%)



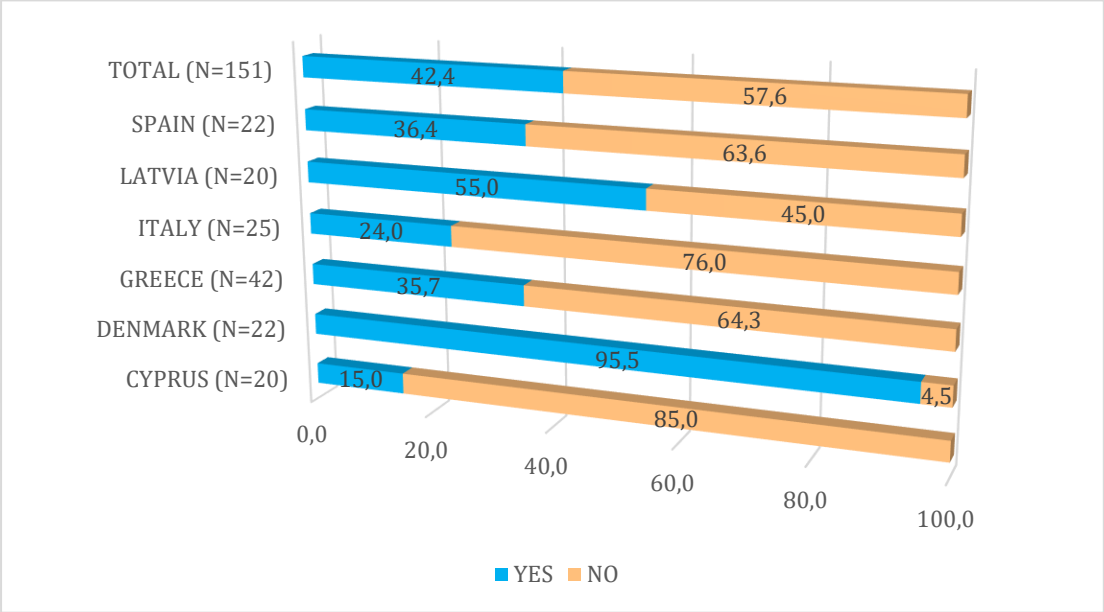
39.7% stated that they are unemployed, while 34.5% are employed. Additionally, 24.5% are students (Figure 3).

Figure 3: Employment status of trainees (N=151) (%)



Overall, almost six out of ten respondents stated that they are currently not participating in any education or training program. The highest percentage of participants who are not engaged in education or training is found in Cyprus (85%), while the lowest is in Denmark (just 4.5%) (Figure 4).

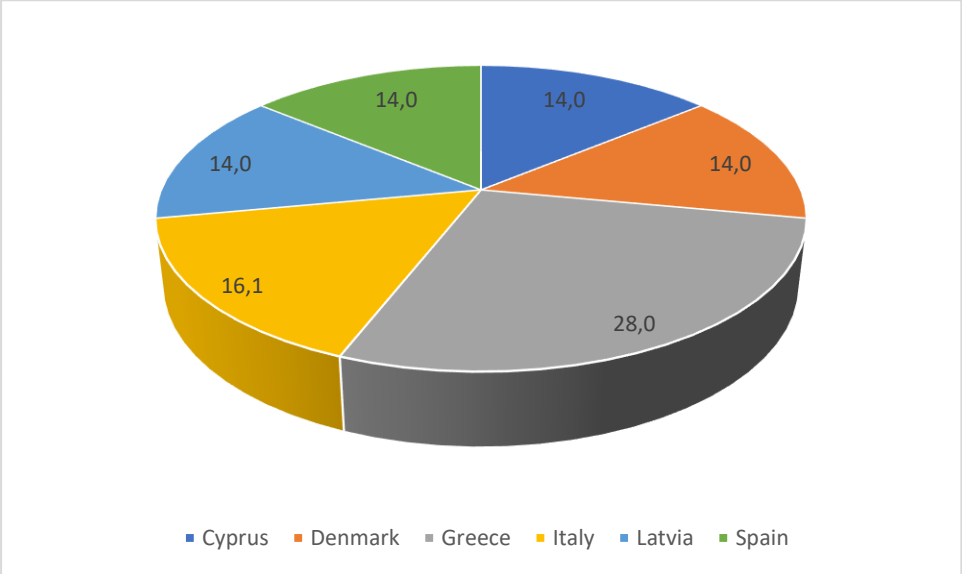
Figure 4: Percentage of trainees who participated in the survey and are currently enrolled in an education or training program



A2. Trainers' profile

The research also involved 143 adult educators. The geographic distribution of the participants is depicted in Figure 5.

Figure 5: Geographic origin of the adult educators (%)



As observed in Table 1, regarding the adult educators (AE), they come from various educational and training structures. Additionally, they have relevant experience ranging from 1 to 44 years, with an average of 10.6 years.

Table 1:Adult educators' type of organization (%)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL
National authority	10.0	0.0	2.5	0.0	0.0	0.0	2.1
Private company	5.0	0.0	30.0	47.8	0.0	5.0	17.5
NGO	25.0	0.0	12.5	13.0	20.0	45.0	18.2
School	10.0	90.0	12.5	13.0	0.0	20.0	22.4
Social partners' association	0.0	0.0	0.0	8.7	15.0	0.0	3.5
University	35.0	0.0	7.5	17.4	15.0	5.0	12.6
Training agency	5.0	5.0	22.5	0.0	0.0	20.0	10.5
Public Employment Service - CareerCentre	0.0	0.0	2.5	0.0	0.0	0.0	0.7
Social Service	0.0	0.0	0.0	0.0	0.0	5.0	0.7
VET organisation	10.0	5.0	7.5	0.0	50.0	0.0	11.2
Other	0.0	0.0	2.5	0.0	0.0	0.0	0.7

B. Learning opportunities

The only question in this section that was asked to both trainees and adult learners aimed to determine whether there are any trainings - workshops for adults in their country aiming at the enhancement of environmental awareness and the 17 Sustainable Development Goals. As shown in Figure 6, nearly seven out of ten trainees are unaware of the existence of relevant training and workshops, while similarly, five out of ten adult learners are also unaware (Figure 7).

Figure 6: Awareness of Trainings and Workshops for Adults on Environmental Awareness and the 17 Sustainable Development Goals (Trainees)

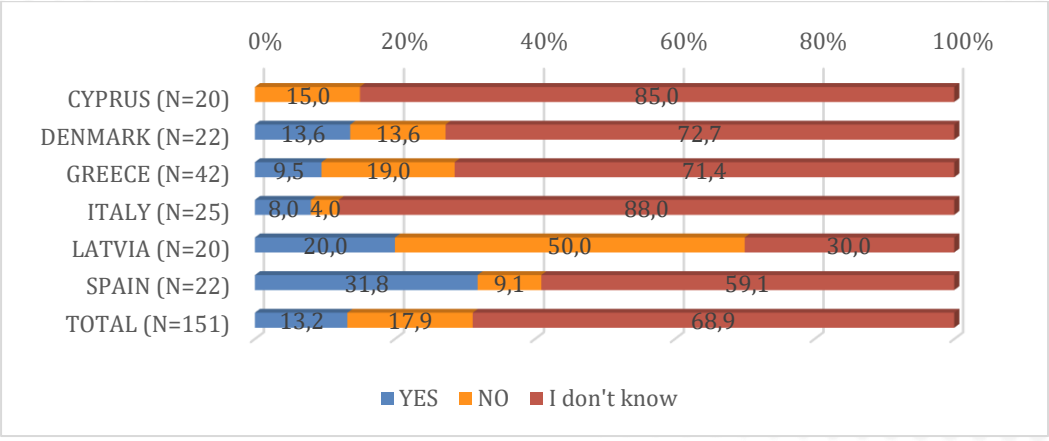
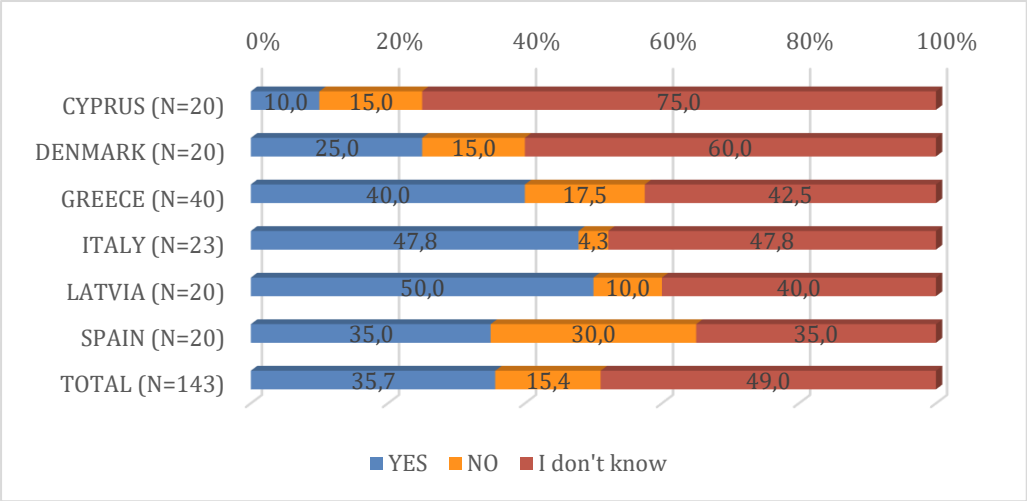


Figure 7: Awareness of Trainings and Workshops for Adults on Environmental Awareness and the 17 Sustainable Development Goals (Adult Educators)



C. Learning needs

This particular section concerns the recording of training needs in order to increase the environmental awareness of the trainees. The first question was asked in the context of sustainable development. Within this framework, 7 SDGs were selected that are directly related to environmental preservation and awareness. The Likert scale was used for the responses, ranging from 1 to 5, where 1 represents "Not needed at all" and 5 represents "Highly needed". Additionally, participants had the option to select "Don't know" as a response.

As indicated by the data in Tables 2 and 3, both the trainees and the adult educators (AE) believe that further education is needed regarding all the stated goals. Almost all goals received an average rating above 4, except for goals 6 and 14, where the average rating from trainees' responses is slightly below 4.

In order to explore whether there are differences among the partner countries, we conducted Anova analysis. According to the results, there were non-significant differences among trainees, while in the case of trainers there were differences in “goal 6”, “goal 7” and “goal 15”. Tukey depicted that the differences in goal 6 and 15 are between Denmark and Latvia, where the latter scores higher and in goal 7 between Cyprus and Italy with Italy evaluating higher the goal.

Table 2: Training Needs for Increasing Environmental Awareness in Relation to selected Sustainable Development Goals (Trainees)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
GOAL 6	**4.15**	3.52	3.83	**4.00**	**4.20**	**4.24**	3.97	1.492	ns
GOAL 7	**4.37**	**4.05**	**4.15**	**4.44**	**4.25**	**4.38**	4.26	0.832	ns
GOAL 11	**4.15**	3.86	**4.03**	**4.40**	3.82	**4.48**	4.13	2.015	ns
GOAL 12	**4.55**	**4.00**	3.98	**4.28**	**4.58**	**4.33**	4.24	2.140	ns
GOAL 13	**4.15**	**4.00**	**4.26**	**4.32**	3.89	**4.19**	4.16	0.860	ns
GOAL 14	3.37	**4.00**	**4.00**	**4.04**	3.84	**4.19**	3.93	1.420	ns
GOAL 15	3.56	**4.20**	3.93	**4.13**	**4.32**	**4.24**	4.05	1.527	ns

ns=non significant

Table 3: Training Needs for Increasing Environmental Awareness in Relation to selected Sustainable Development Goals (Adult educators)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
GOAL 6	**4.40**	3.94	3.95	**4.48**	**4.75**	**4.35**	4.27	2.601	**<.05**
GOAL 7	**4.00**	**4.33**	**4.48**	**4.78**	**4.60**	**4.30**	**4.43**	3.027	**<.05**
GOAL 11	**4.58**	**4.28**	**4.62**	**4.68**	**4.35**	**4.70**	**4.55**	1.634	ns
GOAL 12	**4.65**	**4.26**	**4.36**	**4.59**	**4.55**	**4.63**	**4.49**	1.213	ns
GOAL 13	**4.80**	**4.24**	**4.64**	**4.82**	**4.00**	**4.55**	**4.53**	5.718	ns
GOAL 14	3.95	**4.18**	**4.16**	**4.30**	**4.30**	**4.35**	**4.20**	0.426	ns
GOAL 15	**4.20**	3.88	**4.08**	**4.52**	**4.75**	**4.37**	**4.29**	2.605	**<.05**

ns=non-significant

In the second question, both the trainees and the adult educators were asked to indicate in which thematic areas they believe the trainees need further education in order to increase their environmental awareness. Eleven thematic areas were selected in total after reviewing the relevant literature. The responses were measured on a Likert scale ranging from 1 to 5, where 1 represents the response "Not needed at all" and 5 represents "Highly needed." Additionally, participants had the option to select "Don't know" as a response. Following this question, an additional open-ended question was provided to allow participants to mention any other thematic areas that were not addressed in their

opinion. However, the responses given are covered by the thematic areas mentioned in the question.

According to the data from Tables 4 and 5, both the trainees and the AE believe that trainees need further education in all selected thematic areas, as all of them received an average score above 4.

The Anova analysis showed that there were significant differences between the answers of trainees from different countries in the areas of "environmental law", "environmental management", where participants from Spain evaluated higher the areas in comparison to the participants from Cyprus. Additionally, statistical significant differences were found in the answers of participants from Denmark and Spain in the areas of "pollution" and "producer responsibility", where the latter considered the area of higher importance. Finally, there was a significant difference in the area of "reducing waste" between Greece and Cyprus, with the second evaluating higher the area.

In the case of trainers, the anova analysis also depicted differences in the areas of "business and the environment", "environmental management", "climate change", "producer responsibility", "participation in environmental actions" and "water conservation". Regarding "business and environment" and "water conservation" the differences were found between Denmark and Spain, where the latter evaluated the importance of the area higher. In the case of "environmental management" the Greeks gave a higher rate in comparison to participants from Denmark, while in the "climate change" the Latvians scored lower in comparison to the Italians. In the areas of "producer responsibility" and "participation in environmental actions" the participants from Denmark gave lower rates in comparison to the participants from Italy and Cyprus accordingly.

Table 4: Training Needs in selected Thematic Areas for Increasing Environmental Awareness among trainees (Trainees)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Business and the environment	**4.16**	3.60	**4.07**	**4.17**	**4.10**	**4.38**	4.08	1.929	ns
Environmental law	3.35	3.72	**4.10**	**4.20**	**4.05**	**4.32**	4.01	2.936	**<.05**
Environmental management	3.47	3.59	**4.23**	**4.12**	**4.40**	**4.45**	4.10	4.904	**<.001**
Climate change	**4.25**	3.95	**4.13**	**4.44**	3.95	**4.50**	4.20	1.510	ns

Pollution (air, water etc.)	**4.53**	3.79	**4.00**	**4.40**	**4.35**	**4.55**	4.24	2.763	**<.05**
Producer Responsibility	**4.26**	3.61	3.78	**4.44**	3.80	**4.50**	4.05	3.837	**<.005**
Reducing Waste	**4.84**	**4.06**	**4.05**	**4.52**	**4.40**	**4.41**	4.34	2.364	**<.05**
Participation in environmental actions	**4.35**	3.78	3.98	**4.08**	**4.00**	**4.36**	**4.08**	1.275	ns
Purchase of care products, clothes, etc. labeled "plastic-free" or biodegradable-consumption of green products	**4.47**	3.90	3.81	3.96	**4.17**	**4.32**	**4.05**	1.603	ns
Water conservation	**4.61**	3.95	**4.05**	**4.32**	**4.25**	**4.50**	**4.24**	1.918	ns
Use of transport with low environmental impact	**4.26**	**4.19**	3.93	**4.00**	**4.20**	**4.32**	**4.11**	0.648	ns

ns=non-significant

Table 5: Training Needs in selected Thematic Areas for Increasing Environmental Awareness among trainees (Adult educators)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Business and the environment	**4.70**	3.81	**4.49**	**4.39**	**4.10**	**4.65**	4.39	5.605	**<.001**
Environmental law	**4.44**	3.82	**4.08**	**4.26**	**4.10**	n/a	4.13	1.241	ns
Environmental management	**4.39**	3.94	**4.71**	**4.48**	**4.60**	n/a	4.48	5.766	**<.001**
Climate change	**4.90**	**4.12**	**4.65**	**4.91**	**4.10**	n/a	4.57	10.834	**<.001**
Pollution (air, water etc.)	**4.60**	**4.22**	**4.43**	**4.83**	**4.50**	**4.75**	4.55	2.069	ns
Producer Responsibility	**4.59**	**4.00**	3.95	**4.68**	**4.10**	**4.50**	4.26	3.036	**<.05**
Reducing Waste	**4.70**	**4.26**	**4.41**	**4.57**	**4.65**	**4.75**	4.54	1.505	ns
Participation in environmental actions	**4.75**	3.67	**4.42**	**4.23**	**4.05**	**4.47**	4.29	4.588	**=.001**
Purchase of care products, clothes, etc. labeled "plastic-free"	**4.50**	4.17	**4.49**	**4.14**	**4.30**	**4.68**	4.39	1.731	ns
Water conservation	**4.75**	3.83	**4.53**	**4.48**	**4.40**	**4.84**	4.49	4.124	**<.005**
Use of transport with low environmental impact	**4.60**	**4.11**	**4.36**	**4.50**	**4.55**	**4.63**	4.45	1.479	ns

ns=non-significant

D. Desired green skills

The fourth and final section of the questionnaire aimed to identify the attitudes and perceptions of trainees and adult educators regarding which green skills they would like the trainees to develop.

The first question posed to the trainees is “which hard skills they are interested in developing”. They were given a total of fifteen hard skills, which were selected after reviewing the relevant literature. The responses were measured on a Likert scale ranging from 1 to 5, where 1 represents the response "Not important" and 5 represents "Very important." Additionally, participants had the option to select "Don't know" as a response. As shown in the data of Table 6, eleven out of the fifteen selected hard skills received an average score above 4. The four hard skills that received an average score below 4 were: a) Remediation (3.86), b) Corporate Social Responsibility (3.93), c)Environmental Social Governance (3.94), and d) Occupational Safety and Health Advisor (3.96). Furthermore, the Anova analysis showed that there were significant differences between the answers of trainees from different countries in the areas of “Climate change adaptation and mitigation”, “Corporate Social Responsibility”, “Environmental Awareness”, “Remediation”, “Renewable Energy”, “Sustainability”, “Circular Economy” and “Energy efficiency”. Trainees from Spain assign a higher level of importance compared to those from Denmark to the skills of "Climate change adaptation and mitigation," and "Corporate Social Responsibility”. In the case of “environmental awareness” participants from Denmark demonstrated lower interest in comparison to those from Cyprus and Spain. Additionally, the trainees from Denmark evaluated lower the skills of “Renewable energy”, “sustainability” and “circular economy” compared to all the other countries. Participants from Cyprus seem to be more interested in the skill of “energy efficiency” in comparison to those from Denmark, while the Italians trainees showed lower interest in the skill of “remediation” compared to those from Greece and Spain.

Table 6: Interest in Developing Green Hard Skills: Trainees Preferences

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Climate change adaptation and mitigation	**4.05**	3.67	3.95	**4.20**	**4.11**	**4.68**	4.10	2.950	**<.05**
Corporate Social Responsibility	3.67	3.61	3.90	3.82	**4.00**	**4.50**	3.93	2.498	**<.05**
Environmental Social Governance (ESG)	3.86	3.72	3.90	3.91	**4.11**	**4.14**	3.94	0.557	ns
Environment, Health and Safety (EHS)	**4.63**	**4.00**	**4.12**	**4.17**	**4.53**	**4.32**	4.26	1.811	ns

Environmental Awareness	**4.75**	3.94	**4.19**	**4.21**	**4.12**	**4.68**	4.31	3.713	**<.005**
Occupational Safety and Health Advisor (OSHA)	3.89	3.78	3.98	3.68	**4.32**	**4.14**	3.96	1.202	ns
Waste management	**4.72**	3.75	3.90	**4.22**	**4.61**	**4.48**	4.22	5.047	ns
Remediation	3.46	3.44	**4.27**	3.43	3.58	**4.33**	3.86	4.453	**=.001**
Renewable Energy	**4.67**	3.53	**4.12**	**4.43**	**4.40**	**4.52**	4.27	4.324	**=.001**
Sustainability	**4.55**	3.59	**4.14**	**4.33**	**4.26**	**4.82**	4.28	5.131	**<.001**
Circular Economy	**4.19**	3.63	**4.12**	**4.22**	3.72	**4.86**	4.15	5.267	**<.001**
Environmental policies and regulations	3.88	3.76	**4.05**	**4.12**	**4.00**	**4.18**	4.02	0.564	ns
Water resources management	**4.61**	**4.06**	**4.10**	**4.26**	**4.22**	**4.32**	4.24	1.250	ns
Energy efficiency	**4.72**	3.88	**4.07**	**4.26**	**4.56**	**4.38**	4.28	2.804	**<.05**
Life cycle assessment	**4.33**	3.94	**4.02**	3.96	**4.12**	**4.14**	4.07	0.463	ns

The same question was posed to the AEs with the aim of capturing their perspectives on which green hard skills the trainees should develop in order to address the challenges arising from climate change. According to the data in Table 7, the AEs consider all the selected hard skills to be important, as all 15 skills have an average rating above 4.

Nevertheless, as the anova analysis depicted there were significant differences among the answers of the participants from different countries. The trainers from Cyprus demonstrated as more important the skills of “climate change adaptation”, “sustainability” and “circular economy” compared to those from Latvia, and the skills of “social governance” and “waste management” in comparison to those from Italy. The participants from Greece seemed to give lower importance to the skills of “environment, health and safety”, “environmental policies” and “energy efficiency” in comparison to the trainers from Cyprus and Latvia. Finally, the trainers from Latvia evaluated higher the importance of the skill “occupational safety” compared to the trainers from Italy and Denmark.

Table 7: Green Hard Skills for Trainees to Address Climate Change Challenges and their Importance Level (Adult Educators)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Climate change adaptation and mitigation	**4.85**	**4.19**	**4.23**	**4.52**	**4.10**	**4.65**	4.40	3.565	**=.005**
Corporate Social Responsibility	**4.06**	**4.18**	3.98	**4.43**	**4.00**	**4.35**	4.15	1.256	ns

Environmental Social Governance (ESG)	**4.67**	3.93	3.95	3.91	**4.40**	**4.16**	4.13	2.561	**<.05**
Environment, Health and Safety (EHS)	**4.50**	**4.00**	3.87	**4.13**	**4.50**	**4.26**	4.16	2.499	**<.05**
Environmental Awareness	**4.60**	**4.25**	**4.50**	**4.50**	**4.42**	**4.50**	4.47	0.467	ns
Occupational Safety and Health Advisor (OSHA)	**4.40**	3.79	3.90	3.74	**4.70**	**4.11**	4.07	3.971	**<.005**
Waste management	**4.70**	**4.31**	**4.25**	**4.22**	**4.70**	**4.50**	4.42	2.371	**<.05**
Remediation	**4.00**	3.92	**4.18**	**4.04**	3.68	**4.33**	4.05	1.192	ns
Renewable Energy	**4.30**	**4.50**	**4.20**	**4.57**	**4.50**	**4.53**	4.40	1.236	ns
Sustainability	**4.85**	**4.47**	**4.53**	**4.57**	**4.20**	**4.74**	4.55	3.252	**<.05**
Circular Economy	**4.60**	**4.29**	**4.45**	**4.48**	3.80	**4.75**	4.41	5.723	**<.001**
Environmental policies and regulations	**4.55**	**4.06**	3.93	**4.35**	**4.10**	**4.42**	4.20	2.319	**<.05**
Water resources management	**4.53**	**4.38**	3.88	**4.17**	**4.20**	**4.42**	4.20	1.863	ns
Energy efficiency	**4.18**	**4.31**	3.98	**4.43**	**4.85**	**4.45**	4.32	4.104	**<.005**
Life cycle assessment	**4.33**	**4.33**	**4.10**	**4.27**	**4.42**	**4.35**	4.27	0.591	ns

ns=non-significant

The second question of this section aimed to determine on which green soft skills they are interested in developing. Similarly to the previous question, a total of twelve skills were selected based on a study of relevant literature. The responses were measured on a Likert scale ranging from 1 to 5, where 1 represents the response " Not interested at all" and 5 represents " Extremely interested." In Table 8, we observe that only the option "Promoting Nature" received an average rating of 4. However, all the other green soft skills received average ratings ranging from 3.60 to 3.89. Therefore, we can claim that trainees expressed a high level of interest in developing these skills.

The anova analysis depicted significant differences in the answers of trainees from different countries in almost all the soft skills under evaluation. More specifically, the skills “systems thinking”, “political agency”, “collective action” and “individual initiative” seem to be more interesting for the participants from Spain compared to those from Denmark. Additionally, the skills “Problem framing”, “future literacy” are valued as more interesting by Italians in comparison to trainees from Denmark. The participants from Cyprus are more interested in the skills of “Promoting Nature”, Critical thinking” and

"adaptability" in comparison to those from Denmark, while in the case of "valuing sustainability" and "supporting fairness" the Greek trainees seem to show lower interest compared to those from Cyprus and Spain accordingly.

Table 8: Interest in Developing Green Soft Skills: Trainees Preferences

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Valuing Sustainability	**4.20**	3.45	3.48	**4.00**	**4.05**	**4.05**	3.81	3.372	**<.005**
Supporting Fairness	**4.35**	3.36	3.07	**4.20**	**4.20**	**4.50**	3.83	14.172	**<.001**
Promoting Nature	**4.50**	3.14	3.69	**4.40**	**4.30**	**4.27**	4.00	8.735	**<.001**
Systems Thinking	3.85	3.14	3.48	**4.08**	3.85	**4.14**	3.72	3.818	**<.005**
Critical Thinking	**4.40**	3.18	3.48	**4.36**	**4.05**	**4.09**	3.87	7.764	**<.001**
Problem Framing	**4.05**	3.23	3.50	**4.08**	3.60	3.86	3.70	3.403	**<.05**
Futures literacy	**4.00**	3.14	3.57	**4.16**	**4.05**	3.86	3.77	4.213	**=.001**
Adaptability	**4.30**	3.36	3.55	**4.24**	**4.10**	**4.14**	3.89	6.431	**<.001**
Exploratory Thinking	3.80	3.36	3.48	3.96	3.85	**4.00**	3.71	1.765	ns
Political Agency	3.55	3.14	3.38	3.88	3.80	**4.00**	3.60	2.473	**<.05**
Collective Action	**4.55**	3.05	3.50	**4.00**	**4.05**	**4.23**	3.83	7.669	**<.001**
Individual Initiative	**4.25**	3.41	3.52	**4.08**	**4.10**	**4.27**	3.88	4.036	**<.005**

ns=non-significant

The same question was given to the AE with the aim of capturing their perspectives on which green hard skills the trainees should develop in order to address the challenges arising from climate change. In comparison to the trainees, the adult educators (AE) assessed that all the selected green soft skills are important. As depicted in Table 9, all options received an average rating above 4, indicating their significance in enhancing the trainees' skills.

Even though participants from all countries demonstrated that all the mentioned soft skills are important for the training of adults, the anova analysis depicted differences among the answers between the different countries in the skills of "valuing sustainability", "supporting fairness", "political agency" and "individual initiative". The skills of "valuing sustainability" and "supporting fairness" are evaluated higher by trainers from Cyprus in comparison to those from Denmark and Italy, and Greece accordingly. Additionally, the trainers from Spain demonstrated that the skills of "political agency" and "individual

initiative" are more important in comparison to the trainers from Greece and Denmark accordingly.

Table 9: Green Soft Skills for Trainees to Address Climate Change Challenges and their Importance Level (Adult Educators)

	CYPRUS	DENMARK	GREECE	ITALY	LATVIA	SPAIN	TOTAL	F	P
Valuing Sustainability	**4.85**	**4.13**	**4.40**	**4.13**	**4.55**	**4.65**	4.45	3.359	**<.05**
Supporting Fairness	**4.80**	**4.25**	3.95	**4.39**	**4.50**	**4.68**	4.36	5.295	**<.001**
Promoting Nature	**4.67**	**4.56**	**4.53**	**4.30**	**4.60**	**4.50**	4.52	0.620	ns
Systems Thinking	**4.76**	**4.25**	**4.15**	**4.17**	**4.15**	**4.32**	4.27	1.439	ns
Critical Thinking	**4.84**	**4.69**	**4.33**	**4.57**	**4.50**	**4.45**	4.53	2.049	ns
Problem Framing	**4.61**	**4.25**	**4.21**	**4.30**	**4.05**	**4.42**	4.29	1.246	ns
Futures literacy	**4.50**	**4.38**	**4.43**	**4.09**	**4.05**	**4.50**	4.33	1.527	ns
Adaptability	**4.63**	**4.38**	**4.18**	**4.48**	**4.35**	**4.45**	4.38	1.178	ns
Exploratory Thinking	**4.72**	**4.38**	**4.35**	**4.17**	**4.30**	**4.16**	4.34	1.308	ns
Political Agency	**4.18**	**4.13**	3.87	**4.43**	**4.10**	**4.70**	4.19	2.716	**<.05**
Collective Action	**4.84**	**4.31**	**4.40**	**4.48**	**4.74**	**4.65**	4.55	2.239	ns
Individual Initiative	**4.70**	**4.13**	**4.33**	**4.35**	**4.63**	**4.79**	4.47	2.930	**<.05**

ns=non significant

Summary - Field Research

The majority of the trainee participants (i.e., low-skilled adults or NEETs) were up to 34 years old and unemployed. More than half of the trainees indicated that they were not taking part in any education or training program. Within the scope of learning opportunities, the results showed that most of them are unaware of the training and workshops for adults on environmental awareness and 17 sustainable development goals.

In terms of learning needs, further training on clean water and sanitation (i.e., goal 6) and life below water (i.e., goal 14) were not regarded as needed training topics in comparison to other goals. Except for goals 6 and 14, trainees found all topics equally needed for further training to increase their environmental awareness. Interestingly, there were no country-specific differences among the learning needs of trainees, suggesting a common agreement among trainees residing in each country. In terms of thematic areas, further training was indicated as a need in all areas despite the country-specific differences in some thematic areas (e.g., environmental law). Under the scope of green hard skills, priority was given to climate change and mitigation, environment, health, and safety, environmental awareness, waste management, renewable energy, sustainability, the circular economy, environmental policies and regulations, water resources management, energy efficiency, and life cycle assessment (there were country-level differences though). In terms of soft skills, almost all skills were regarded as interesting by trainees. The most country-specific differences were observed in the soft skill category since the degree of importance for almost all soft skills varied from one country to another.

On the other hand, trainers had approximately 10 years of experience as adult educators in various sectors. Half of the trainers were unaware of the training and workshops for adults on environmental awareness and 17 sustainable goals.

As for learning needs, trainers also agreed that further training is needed for all goals. Country-specific differences have been detected among the goals of clean water and sanitation (i.e., goal 6), affordable and clean energy (i.e., goal 7), and life on land (i.e., goal 15). In terms of thematic areas, all of them were rated as having a need for further education. However, country-specific differences were found in diverse areas, including business and environment, environmental management, climate change, producer responsibility, participation in environmental actions, and water conservation. In terms of hard skills, all of them were considered important by trainers, although there were still country-specific differences in some green hard skills. Similarly, although there were

country-specific differences, all green soft skills were still regarded as important when encountering climate change challenges. The most prominent country-specific differences were observed in soft skills, including valuing sustainability, supporting fairness, and individual initiative.

3rd Part – Focus Groups

Section 6. Focus Group Results

After the conduction of the survey research, a focus group was organised by each partner in order to validate the Mapping report and to further explain the results obtained in the first phase. A total of 7 focus groups were conducted with the participation of both Adult Educators and trainees (a total of 42 people participated).

Participants were presented with the main results and conclusions of the mapping report and invited to discuss them further, using as a basis a set of predefined questions provided by Progressus after the analysis of the survey results. Participants rated the content of the report using a 5-point Likert-scale but were also given the opportunity to suggest improvements or suggestions for change. The result of the focus group will stand as one of the 3 quality checkpoints for the Mapping Report.

After the presentation of the mapping report, the participants were asked to answer ten questions. The first three questions (i.e., first section) were open-ended.

Specifically, the first question aimed to record the suggestions of the participants for the ***design of an adult education program in green skills and environmental awareness that would be appealing and effective for adult trainees***. The main suggestions of the participants can be summarized as follows:

- **Environmental awareness in education and workplaces:** The program should bridge the knowledge gap between trained and less trained/untrained adults by introducing environmental sustainability content in schools and workplaces.
- **Development of modern and interactive modes of education:** Development of an interactive learning model through webinars, workshops, and in-person classes.
- **Adapting content for Accessibility:** The program should use plain language, avoid complex terminology, and present concise thematic units to accommodate participants with different educational backgrounds.
- **Localization:** Localization of programs to maximize practical outcomes and participation, particularly for NEETs and adults.
- **Individual basis and peer learning:** The approach promotes an individualized and peer-driven learning experience, avoiding top-down

approaches. Safe zones for knowledge exchange among workers are proposed to facilitate a supportive and open learning environment.

- **Real-Life examples and case studies:** The use of real-life examples and case studies is recommended to illustrate the relevance and application of environmental knowledge in everyday situations.
- **Mentorship and expert guidance:** Including mentorship tips and guidance from experts in the environmental awareness sector can inspire and motivate adult learners.
- **Non-formal education and best practices:** It is proposed to incorporate non-formal education methods to maintain the interest and engagement of participants. The importance of collecting best practices from various sources, including civil society organizations both within and outside Europe, is also stressed.
- **Interactive learning and practical application:** Emphasis is placed on interactive methods, engaging content and practical activities to enhance learning experiences. It is also suggested to incorporate quizzes and games to reinforce knowledge.

Regarding the ***motivations for adults to participate in education and training programs related to the development of green skills and environmental awareness***, the most significant answers from the participants are as follows:

- **Career advancement and job opportunities:** As the demand for environmentally focused jobs increases, adults see participation in these programs to enhance their career prospects and stay competitive in industries that prioritize sustainability. Therefore, our training program would provide them the opportunity to use the certification as a qualification to show to employers.
- **Personal interest and passion:** The desire to contribute to environmental sustainability, driven by personal interest and passion, is a significant motivation for adults to participate in green skills and environmental awareness programs.
- **Personal growth and self-improvement:** The opportunity for personal growth and self-improvement through acquiring new knowledge and skills attracts adults to these programs.

- **Awareness of global environmental challenges:** Increasing awareness of global environmental challenges, including climate change, pollution, and resource depletion, plays a crucial role in motivating adults to engage in education and training programs.
- **Social responsibility and contribution to society:** Some people are motivated by a sense of duty towards the environment and society, seeking to make a positive impact and contribute to a more sustainable future.
- **Relevance to daily life and local community:** The relevance of the educational content to the participants' daily life and local community is essential for keeping them engaged and interested.
- **Influence of current world events:** Recent global events and the visible impact of climate change have heightened the motivation for people to engage in environmental training and education. In order to attract adults in a training program, there should be a connection between the current world events and the impact of the training.
- **Importance of environmental education:** The growing importance of environmental knowledge in a world impacted by climate change and environmental degradation triggers people interest to seek education on relevant subjects.

When it comes to ***the barriers for adults to participate in education and training programs related to the development of green skills and environmental awareness***, the most significant ones are as follows:

- **Financial limitations**: The economic aspect can be a significant barrier, as some adults can not afford the costs of participating in training programs that require travel or have associated fees.
- **Lack of awareness and information:** Limited awareness about the existence of relevant programs and how to access them can deter potential participants from engaging in green skills education.
- **Time constraints:** Many adults face challenges in dedicating time to education and training programs due to excessive working hours or other commitments, such as family and personal life.

- **Lack of tangible outcomes:** Some adults may seek immediate and visible results from the training, and a long-term learning process without tangible individual outcomes can be a deterrent.
- **Language and technological barriers:** Language barriers and a lack of familiarity with technology can impede access to online courses and educational resources.
- **Disinterest and/or negative past experiences:** Negative past experiences with traditional education methods and a lack of interest in academic approaches can make adults reluctant to enroll in training programs. Incorporating informal and dynamic learning methods can address this barrier.
- **Cultural and social factors:** Cultural backgrounds and prevailing work cultures in certain regions may affect the interest and awareness of environmental sustainability programs.
- **Recognition and incentives:** Lack of recognition and incentives for participating in training programs can discourage potential learners. Offering rewards, both tangible and non-monetary, may increase motivation.
- **Lack of relevance to daily life:** For training to be effective, it should be tailored to the daily lives of the participants and demonstrate the direct impact on their work and personal lifestyle.

The remaining questions of the focus groups (i.e., second section) were closed-ended and were asked to further assess the participants' level of satisfaction with the content of the mapping report.

83.3% of the participants believe that the content of the mapping report is ***sufficient to increase knowledge on good practices in the field of Environmental Awareness and SDGs*** (Figure 8). Additionally, most participants declared that they have ***increased their knowledge on the learning opportunities*** in the field of Environmental Awareness and SDGs via the content of the Mapping report, as only 2,4% responded that they have increased their knowledge a little (Figure 9). Furthermore, almost 81% consider the content of the mapping report to be quite or ***very interesting*** (Figure 10) and the ***overall satisfaction rate is also high***, as only 2.4% expressed dissatisfaction (Figure 11).

Figure 8: Adequacy of mapping report in enhancing knowledge on good practices in the field of environmental awareness and SDGs

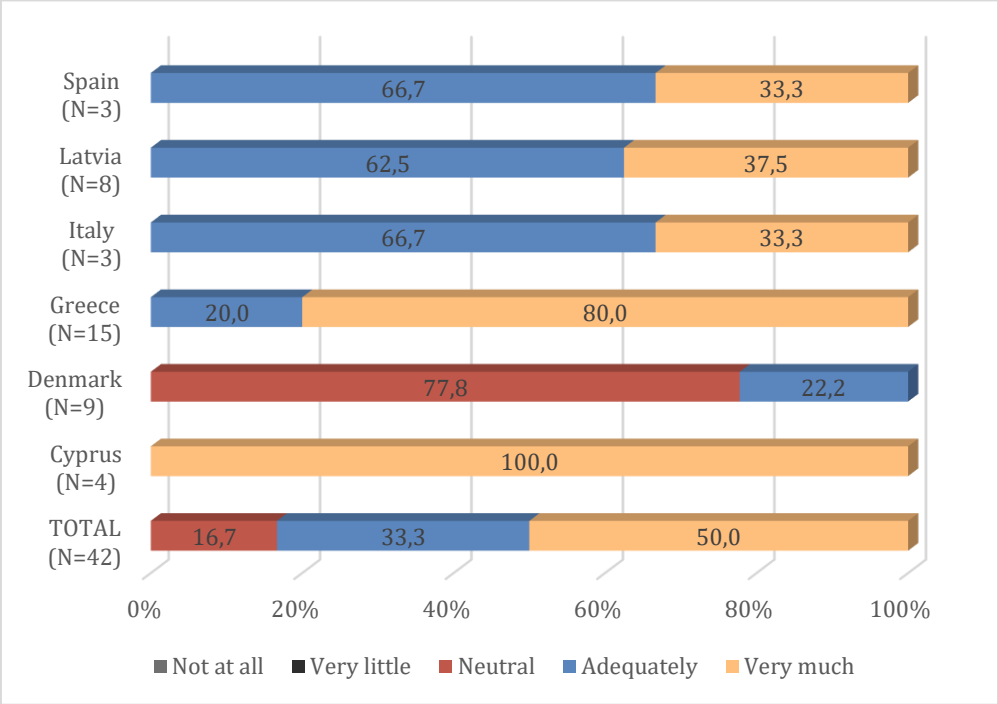


Figure 9: % of increased knowledge on the learning opportunities in the field of Environmental Awareness and SDGs

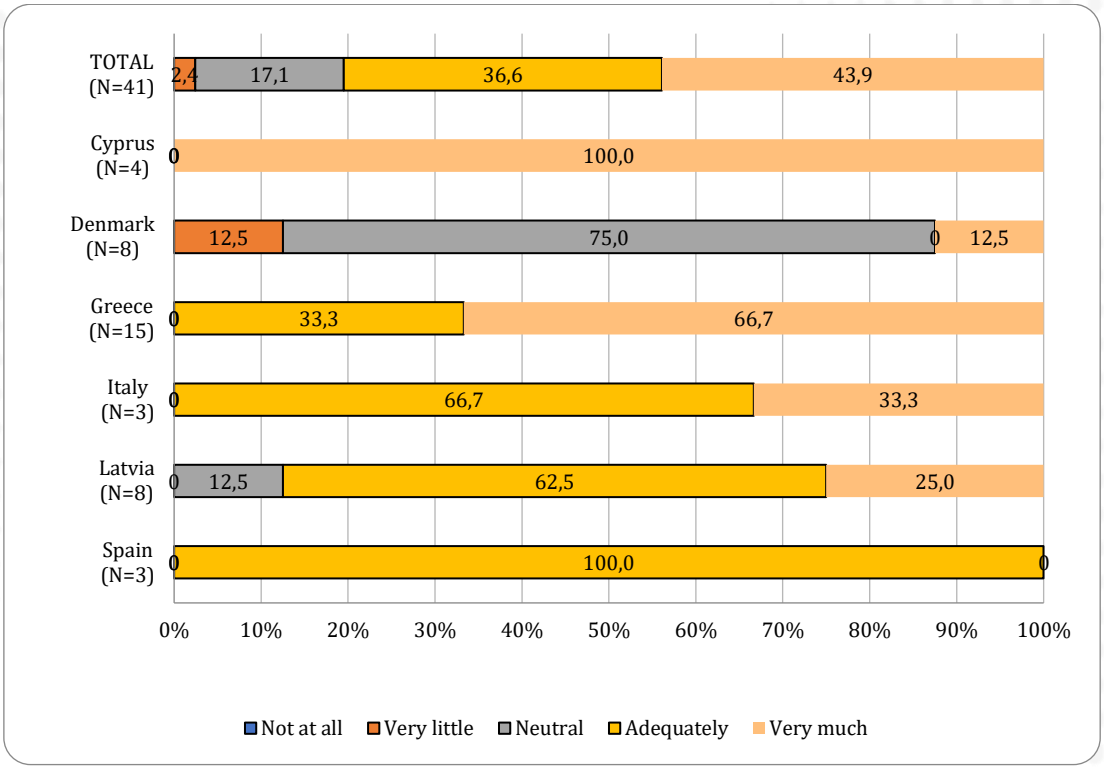


Figure 10: Interest level in the content of the mapping report

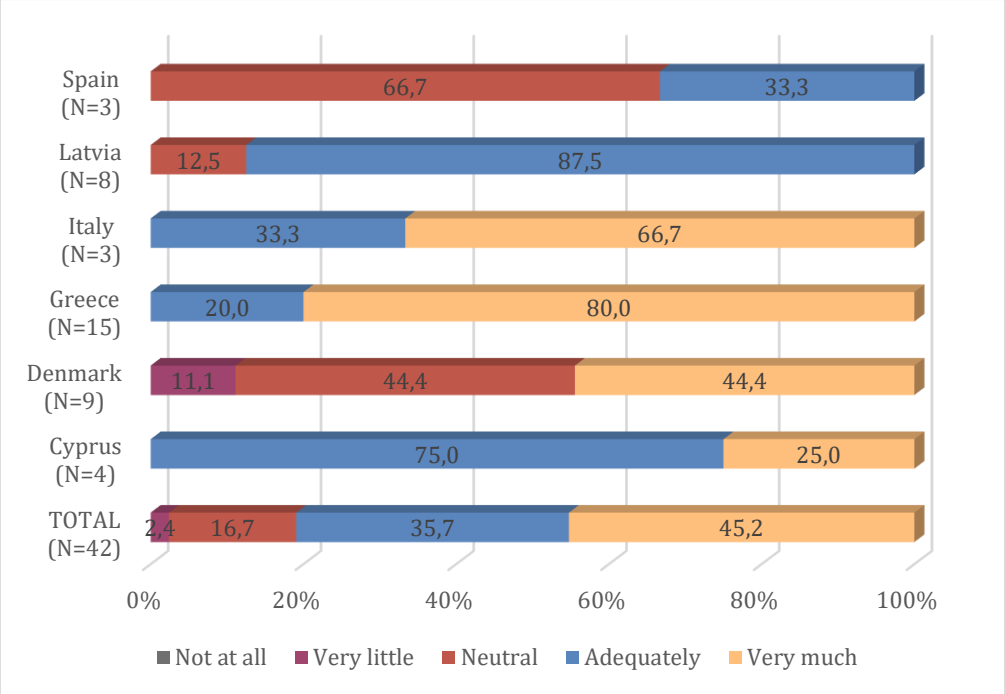
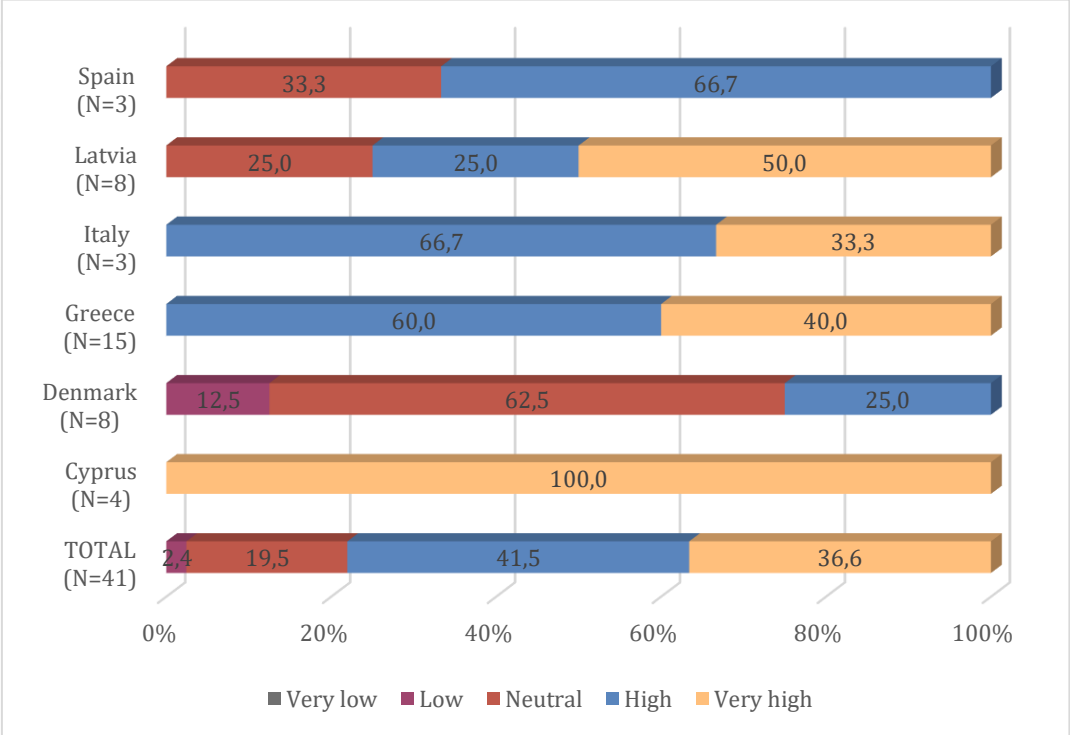


Figure 11: Overall satisfaction with the content of the mapping report



Summary – Focus group

In conclusion, the participants propose an interactive and localized adult education program that focuses on practical application, flexibility, and engaging content to effectively enhance green skills and environmental awareness among the target audience. By incorporating real-life examples and peer learning, the program should aim to create a meaningful and impactful learning experience for low-skilled adults/NEETs.

Adults are driven to participate in education and training programs related to green skills and environmental awareness due to various factors, including personal interest, career opportunities, social responsibility, and the recognition of global environmental challenges. The appeal of personal growth, relevance to daily life, and the chance to make a positive impact also contribute to the motivation of adult learners in these programs.

The barriers for adults to participate in green skills and environmental awareness education and training programs encompass time constraints, financial limitations, lack of awareness, disinterest, language and technological challenges and perceived irrelevance. Addressing these barriers through tailored and dynamic educational approaches, along with recognition and incentives, can foster greater interest and engagement in green skills development among adult learners.

In terms of the validation of the mapping report, the Likert-type of questions revealed that the content of the mapping report is sufficient to increase knowledge on good practices in the field of environmental awareness and SDGs as the majority of the participants highlighted the mapping report's contribution to increasing their knowledge in the intended fields. Besides these, the highest percentage of the participants perceived the content as interesting and very satisfactory. It seems plausible that the content of the mapping report, together with the inclusion of suggestions for the design of adult education programs, the use of proposed motivators, and consideration of barriers, can lead to the development of a curriculum that will address the needs of adult educators and low-skilled adults.

Conclusions and Recommendations

As stated, the main aim of this mapping report was to analyze desktop research and field research results that were collected through the efforts of seven partners from 6 European countries. The underlying reason for conducting desktop research was to analyze environmental frameworks, good practices, learning opportunities, and demand skills in respective countries, whereas field research enabled partnerships to discover learning opportunities and learning needs from first-hand experience through the active involvement of adult educators and low-skilled adults (NEETs). To conclude, it is clear that some countries have already established a framework that encompasses environmental awareness education and training at governmental levels, whereas other countries provide those education and training via other private and non-governmental organizations. The existence of good practices in each country stands as a promising approach, irrespective of who runs those practices. Indeed, topics of good practices are diverse, suggesting a comprehensive understanding regarding "what environmental education can include". The existence of learning opportunities for environmental education is also a valuable approach, highlighting the presence of ongoing efforts by partner countries. The evidence regarding the demands for green skills suggests an adoption of a two-way approach in the area of green skills as partners presented green skills that had hard and soft skills origins.

Despite the existence of learning opportunities in partner countries, the field research suggested that the majority of low-skilled adults (NEETs) are unaware of those opportunities. Moreover, not only low-skilled adults (NEETs) but also half of the adult educators had no clue about the existence of learning opportunities in environmental education. Despite all these, the partnership received the impression that adult educators were ready to integrate environmental aspects into their education. In other words, adult educators were observed to be eager to teach environmental material as a part of their teaching practices. It is important to note that teaching is a long-term process that requires patience and ongoing motivation. Now, the question arises in that sense since how to keep adult educators motivated through their efforts to integrate environmental education into their teaching might be a challenge. To solve this matter, suggestions were collected from the partnership (based on observations during survey data collection) on how to motivate adult educators to further participate in the WE project's focus group. Doing this is crucial since it has the potential to provide insights about how to keep adult

educators motivated to implement environmental education into their practices as well. The results showed that emphasizing the need for environmental education in adult education, highlighting adult educators' role in the fight against climate change, ensuring adult educators about the scientific content and applicable structure of the WE project, assuring potential future use of the project results, providing them a ground for collaboration where they can demonstrate their knowledge and exchange knowledge with others (i.e., knowledge sharing), and providing certificates were important motivators for adult educators. It is strongly recommended to take all those aspects into account and approach adult educators by highlighting the points mentioned above.

The real challenge begins when it comes to the learners' participation and learning phase. In that sense, the attention moves to how to address the needs of low-skilled adults (NEETs) and keep them motivated during the participation and learning phase. The focus group results revealed valuable approaches to highlighting strong motivators for low-skilled adults' (NEETs) participation. The presence of career and job opportunities, personal interest, personal growth, intentions to increase environmental awareness, contribution to the environment and society, content's relevance to daily life, and raising the importance of environmental knowledge stand as promising participation motivators for low-skilled adults (NEETs). Furthermore, it is crucial to consider potential barriers while encouraging low-skilled adults' participation. That is because financial limitations, time constraints, negative past experiences, a lack of tangible outcomes, and incentives can be common challenges that prevent participation in such programs.

In addition to these, together with focus group results, the partnership provided some insights that they observed throughout their survey implementation in order to provide some recommendations on how to keep low-skilled adults (NEETs) motivated during the learning phase. Based on this, it can be a promising start to raising awareness regarding the existence of environmental education, given that low-skilled adults (NEETs) are unaware of the existence of such opportunities. For example, this can be done through the implementation of advertising campaigns. Following this, the integration of global goals as a part of normal teaching, explanation of future impacts, linking green skills with employability, the use of simple terminologies, ensuring benefits associated with their participation, presenting real-life examples and case studies, using modern and interactive materials, providing concrete deliverables and prizes (e.g., certificates, free attendance at an activity they are interested in), using individualized and peer-driven

learning methods, localization of programs, and using tips from mentors and experts to ensure inspiration can be valuable initiatives that can address the needs of low-skilled adults and NEETs and act as strong motivators to foster full engagement during the learning process.

Given the validation of the mapping report by focus groups, some recommendations can also be given for the content of the inclusive training curriculum that is intended to be developed in WP3. As stated in detail in the above sections, low-skilled adults (NEETs) have needs for further training in the sustainable development goals, mainly for the goals of affordable and clean energy (i.e., goal 7), sustainable cities and communities (i.e., goal 11), responsible consumption and production (i.e., goal 12), climate action (i.e., goal 13), and life on land (i.e., goal 15). Although there was disagreement between adult educators and low-skilled adults (NEETs) on some goals, low-skilled adults (NEETs) stated their willingness to learn about the mentioned goals of the SDGs and that their needs should be given priority to promote their social inclusion and motivation. The goal of 6 (e.g., clean water and sanitation) can be disregarded since both adult educators and low-skilled adults (NEETs) did not rate this goal as a needed one. In terms of thematic areas, 11 areas were rated as a need by both target groups, suggesting an emerging need to integrate those 11 areas within the inclusive curriculum.

In terms of green hard skills development, emphasis should be given to climate change and mitigation, environment, health, and safety, environmental awareness, waste management, renewable energy, sustainability, the circular economy, environmental policies and regulations, water resources management, energy efficiency, and life cycle assessment. Apart from this, all green soft skills need to be integrated into the curriculum in order to yield comprehensive green skill development that involves applications both at the hard skills and soft skills levels.

Last but not least, there are also some recommendations for future actions. Future research can focus specifically on the development of an ideal adult educator profile who can deliver environmental education to low-skilled adults (NEETs) in the most efficient manner. As an example, the educational background and work experience of an adult educator should matter in that sense. Moreover, adult educators should also possess specific kinds of soft skills (e.g., communication skills, didactic skills) in order to ensure optimal information transmission. In addition to this, criteria for the certification of low-skilled adults or NEETs who received an environmental education can be clarified by

determining certain procedures, standards, and assessment techniques in future initiatives.

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