



**Activation of Green ROofs Synergies as a
tool for civic participation & environmental
consciousness**

AGROS Project

IO2

Training and Adaptation Handbook



Co-funded by the
Erasmus+ Programme
of the European Union



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0.1. AGROS Partners

Organisation	Acronym	Country
Municipality of La Palma del Condado	ALPDC	Spain
VIESOJI ISTAIGA KAUNO MOKSLO IR TECHNOLOGIJU PARKAS	KAUNAS STP	Lithuania
Xenios Polis. Culture, Science and Action	XENIOS POLIS	Greece
LATVIJAS PASVALDIBU SAVIENIBA BIEDRIBA LPS	LPS/LALRG	Latvia
CENTER FOR SOCIAL INNOVATION	CSI	Cyprus
EURELATIONS GEIE	EURELATIONS	Italy
D'ANTILLES ET D'AILLEURS	DA&DA	France- Martinique



0.2. Executive Summary

The project ***“AGROS - Activation of Green ROofs Synergies as a tool for civic participation & environmental consciousness”***, as a practice for supporting individuals in developing key competencies, in their efforts as citizens, to obtain and rise awareness about the environmental challenges is co-funded by Erasmus+, KA2 Cooperation for Innovation and the Exchange of Good Practices, KA204 Strategic Partnerships for Adult Education (2020-1-ES01-KA204-082196).

AGROS supports citizens and local communities members in general, as it transmits them through training the right knowledge and inspiration to adopt this urban practice to the level it is desirable to them (as green roofs can be simple and small scales ventures till larger and more complex constructions; the scaled materials are for all parties, from beginners-individuals, to professionals, or more aware persons). In this approach, participants are empowered with their environmental awareness and responses, and they prove to be active members of the effort for more civic participation to the EU society problems: green roofs synergies and their adoption as a valuable environmental practice with positive remarkable results, is a practice of active participation since it provides citizens with tools and ways of reaction towards environment protection, areas sustainable development and life improvement.

The project AGROS includes 7 partners (Municipality of La Palma del Condado-ALPDC, KAUNAS STP, XENIOS POLIS, LPS/LALRG, CENTER FOR SOCIAL INNOVATION, EURELATIONS, DA&DA) from 7 countries (Spain, Lithuania, Greece, Latvia, Cyprus, Italy, France- Martinique).

Based on these premises, AGROS objectives are:

- to make research on the training & methodological models regarding the green roofs synergies topics to allow all target groups (from beginners individuals, to professionals or more aware persons) to understand better what green roofs synergies is all about and how it can be exploited focusing on civic response to major environmental problems and solutions. This task led to the curriculum generated by all AGROS partners under the guidance of the curriculum design experts within the consortium with the title **“IO1 - The AGROS Courses”**,
- to support to the adult educators for the best exploitation of the AGROS products, tools and materials. The **“IO2 - The Training and Adaptation Handbook”** accompanies the **“IO1 - The AGROS Courses”**,
- to present the results achieved during the project and make all interested parties aware of local communities impacts, combine practice and theory, academic knowledge and policy drafting, towards their mutual interaction with the title **“IO3 - The Best Practices and Policy Book”**.

The aim of this **Handbook** is:



- offer the essential context and support to the adult educators for the best exploitation of the AGROS products, tools and materials,
- to reinforce the potential and the capacity of the trainers how to use the tools and materials with the highest value; to integrate the training package in their teaching activities and how to utilize it as an adult educational component,
- to create an adequate and appropriate learning environment for individuals being educated and trained on green roofs activation and their environmental awareness.



PART A. AGROS Milestone Activities: introduction to the project subject area and platform navigation guidelines

1. AGROS Theoretical Framework

The world faces a critical time regarding environmentally friendly technologies or green trends whose main objective is to adjust the social development to the requirements of environmental protection, conservation of natural resources and adaptation to sustainable development models. In this framework, green roofs meet these needs and provide significant opportunities in environmental, economic and social terms. The construction of green roofs has been developing mainly in North America and Western Europe from the 1960's, but today is a global trend (for a presentation of current trends in research on green roofs globally, see, Carvajal-Muñoz, Carmona García, 2015). There are still many challenges for municipalities, institutions and building-owners to compare costs and benefits of green roof types (both on building-and city scale) and proceed to the right choice (see, van der Meulen S. H., 2019).

According to EU call, environmental sustainability should be at the core of education and training systems. The Commission's proposal calls on Member States to:

- Provide learners of all ages access to high-quality and inclusive education and training on climate change, biodiversity and sustainability;
- Establish learning for environmental sustainability as a priority area in education and training policies and programmes;
- Encourage and support whole-institution approaches to sustainability which encompass teaching and learning; developing visions, planning and governance; active involvement of students and staff; management of buildings and resources and partnerships with local and wider communities;
- Mobilise national and EU funds for investment in sustainable and green infrastructure, training, tools and resources to increase resilience and preparedness of education (European Commission, 2022).

Europe has been confronted with demanding needs in favor of environment efforts start targeted actions and adaptation to the specific circumstances in different regions and cities of Europe are an effective answer and response. The **AGROS** meets these needs and comes as a training solution with a purely practical dimension.



AGROS concerns:

1) The supporting of individuals in acquiring and developing basic skills and key

competences, as citizens will acquire the substantial skills and competences towards the design, implementation, use & sustainable management of green roofs for the climate protection, the environmental action and as drivers in a significant change. The design & creation of outputs for the cultivation and transmission of the green roofs for all moves to this direction, while it enhances the individual's civic response to major problems and solutions- a sample of responsible participation as well.

2) Environmental and climate goals, as it supports within the training the awareness rising about the environmental challenges and effective responses. The participants-trainees will be empowered on acquiring relevant knowledge and skills as factors of change for their areas; they will be given the chance to develop specific know-how and the relevant context, opting for a sustainable way of life, enabling for themselves behavioral changes and green skills.

AGROS supports citizens and local communities members in general, as it transmits them through training the right knowledge and inspiration to adopt this urban practice to the level it is desirable to them (as green roofs can be simple and small scales ventures till larger and more complex constructions; the scaled materials are for all parties, from beginners-individuals, to professionals, or more aware persons). In this approach, participants are empowered with their environmental awareness and responses, and they prove to be active members of the effort for more civic participation to the EU society problems: green roofs synergies and their adoption as a valuable environmental practice with positive remarkable results, is a practice of active participation since it provides citizens with tools and ways of reaction towards environment protection, areas sustainable development and life improvement, creating at the same time more entrepreneurship and labor market opportunities.



2. Curriculum Presentation and Modules

AGROS Courses Curriculum and Introduction to Learning Modules

An innovative AGROS Courses Curriculum generated by all AGROS partners covers a spectrum of green roofs synergies topics to allow all target groups (from beginners to professionals or more aware persons) to understand better what the green roofs synergies is about and how can be exploited focusing on civic response to major environmental problems and solutions.

The curriculum addresses the following objectives:

- to promote green roofs as the citizens' response to environmental protection, active participation & citizens involvement, and to municipalities and areas sustainable development strategy;
- to provide the target groups with all the necessary skills and knowledge oriented to green roofs practices;
- to contextualize the environmental prosperity, and individual well – being, through the training on green roofs benefits and awareness;
- to create and deliver innovative products and training digital tools based on differentiation methodologies and adult education approaches.

The curriculum covers the following topics (modules):

1. Urban Environment & Sustainable Development
2. Biodiversity Exploitation for Society Prosperity
3. Green Roofs Construction and Environmental, Social, Health, and Personal Benefits
4. Taxonomy of Green Roofs Due to Climate and Environmental Conditions
5. Green Roofs implementation Taxonomy (Herbs, Plants, Trees) and Species Optimality
6. Green Roofs in European Cities: Best Practices of “Nature-Based Solutions” for Urban Regeneration
7. History and Cultural Aspects of Creole Gardens
8. Green Roofs Integration in the Local Community Sustainability
9. Building Elements and Limitations of Green Roofs

The curriculum explicitly targets adult beginners and more aware trainees as well as professionals and trainers. All the topics contains introductory and generic information, but also more specific details about horticultural applications as well as best practices of “nature-based solutions” for urban regeneration and green roof



synergies. The curriculum includes the overview of each module, its objectives, key outcomes and the intended level of knowledge.

The curriculum contains a mixed educational curriculum delivery approach that supports face to face tuition (lectures) and online learning methods, is oriented for all participants to choose the most appreciated method of learning and gaining necessary competences and skills. Such online training resources should help trainees and professionals to keep up dated knowledge of green roofs synergies and new technologies in a timely and efficient manner. Whilst the effectiveness of traditional face-to-face learning cannot be disputed, nonetheless, online learning comes provide a leaping advantage in terms of schedule freedom.

The overview of the AGROS courses (9 modules) is set out in the tables below.

Module 1. Urban Environment & Sustainable Development	
Unit 1	Integrated Urban Planning – the Key Factor to Ensure the Sustainability of Cities <i>Key information about urban environment and urban diversity</i>
Topic 1	Urban Environment <i>Summary of key statistics of urban environment around the world</i>
Topic 2	Necessity of Integrated Urban Planning <i>What is urban planning and what role sectoral cooperation plays in it</i>
Topic 3	Dimensions of Integrated Urban Planning <i>The multidisciplinary nature of urban design. Definitions of horizontal, territorial and vertical integration</i>
Unit 2	Implementing Sustainable Development Goal 11 by Connecting Sustainability Policies and Urban-Planning Practices <i>Theoretical and practical of SDG Goal 11</i>
Topic 1	The 2030 Agenda for Sustainable Development <i>Introduction of 2030 Agenda of SDG, mobilization on 3 actional levels: global, local, people</i>
Topic 2	Integrated 2030 Agenda for Sustainable Development <i>Benefits of using the SDGs in promoting sustainable urban</i>



	<i>development</i>
Topic 3	<p>Sustainable Development Goal 11: Make Cities Inclusive, Safe, Resilient and Sustainable</p> <p><i>Aims of Goal 11, related most pressing challenges facing cities today, correlation with COVID-19</i></p>
Unit 2	<p>The Role of the communities and Local Authorities in Green Roof Management for Sustainable Development</p> <p><i>Knowledge about the importance of the community and local authorities in green roof management for sustainable development</i></p>
Topic 1	<p>The Role of Local Communities in Environmental Sustainability</p> <p><i>The role of local community and its management, contribution to installing green roofs, other green areas</i></p>
Topic 2	<p>The Role of Local Authorities in Sustainable Development</p> <p><i>Key roles of local authorities, link to local communities</i></p>
Topic 3	<p>Good Practices</p> <p><i>The topic presents 2 good practices to show examples of how authority and community can contribute to sustainable development</i></p>
Activities/ Assessment	The Module includes five multiple choice questions which learners can find at the end of Module 1. The questions help to revise the most important parts of the Module.
Useful tips/ Dos and don'ts	Educators should advise learners to explore more about sustainable development, find out and learn more about the Global Goals for Sustainable Development; encourage to think of what sustainable actions their local community/authority implements.



Module 2. Biodiversity Exploitation for Society Prosperity	
Unit 1	<p>Green Roofs as Ecosystem. Understanding Biodiversity Parameters to Take into Account</p> <p><i>Green roofs can provide environmental benefits in urban cities and create ecosystems for living organisms thus help to enhance biodiversity. The unit presents the positive and negative impact of ecosystem services; the principle of biodiversity</i></p>
Unit 2	<p>Method to Identify and Value Species (Plants, Insects, Birds...), Relationships and Cycle</p> <p><i>Green roofs as a continuum of ecosystem around the city, the method to identify and value species to be considered. Green roofs in restoring the imbalance of the urban ecosystem by providing habitat within the urban environment</i></p>
Unit 3	<p>Planning Biodiversity and Tools for Controlling its Development in Green Roofs</p> <p><i>Introduction to ecosystem approach, key actions of its application. Presentation of 6 concepts for controlling biodiversity features. Birds as biodiversity indicators</i></p>
Unit 4	<p>Risks and Deviations Over Biodiversity Plans in Green Roofs (Control of Plagues, Weather Extreme Conditions...)</p> <p><i>Importance of establishing design strategies for biodiversity enhancement and natural colonization on green roofs (attraction various animal species)</i></p>
Unit 5	<p>Cases of Birds Attraction and Green Roofs</p> <p><i>The unit presents several good practices of attraction to green roofs. Cases are illustrated by pictures</i></p>
Activities/ Assessment	<p>The Module includes five multiple choice questions which learners can find at the end of Module 2. The questions help to revise the most important parts of the Module.</p>
Useful tips/ Dos and don'ts	<p>Educators can advise learners to explore further what are the most common species in their living territory (country), what species can be attracted to green roofs, what conditions should be applied for them.</p>



Module 3. Green Roofs Construction and Environmental, Social, Health, and Personal Benefits	
Unit 1	Green Roof Construction and Design <i>This unit presents the classification of green roofs, specifications of each type of the roof</i>
Topic 1	Classification of Green Roofs <i>Classification of green roofs depending on use, construction factors and the method used to carry out the work. Following topics presents the types of green roofs extracted in this topic</i>
Topic 2	Extensive Green Roofs <i>Key features of extensive green roofs (height, weight, vegetation maintenance)</i>
Topic 3	Semi-Intensive Green Roofs <i>Key features of semi-intensive green roofs (height, weight, vegetation maintenance)</i>
Topic 4	Intensive Green Roofs <i>Key features of intensive green roofs (height, weight, vegetation maintenance)</i>
Topic 5	Choice of Celestial Side <i>The topic presents how the existence of green is influenced by the selection of celestial side (pros and cons of southern, northern, eastern, wester sides)</i>
Topic 6	Plant Protection Measures against Wind <i>Green roofs, especially on multi-store roofs, must be protected from the wind. This topic presents a solution for this issue</i>
Topic 7	Landscaping of Pitched Roofs <i>Specifics of pitched roofs</i>
Unit 2	Environmental, Social, Health and Personal Benefits of Using Green Roofs <i>Green roofs as a popular trend, having added value to social, health, personal domains</i>
Topic 1	Environmental Benefits <i>Insights to environmental benefits of green roofs such as increasing</i>



	<i>biodiversity; reduction of the Urban Heat Island (UHI) effect; rainwater management; CO2 reduction and decrease the atmospheric pollution and Green House Gas (GHG) emissions; creation of new fauna habitats: enrichment of urban agriculture, Improvement of air and water quality</i>
Topic 2	Social Benefits <i>Insights to social benefits of green roofs such as improvement of building aesthetic; public urban environment aesthetic; noise reduction</i>
Topic 3	Health Benefits <i>Presentation of physical and mental health benefits provided by green roofs</i>
Topic 4	Economic Benefits <i>Insights to social benefits of green roofs such as energy efficiency of the building; increasing the roof's lifespan; urban agriculture upgrading; property value increase and real estate benefits; job generation and economic development</i>
Topic 5	Green Roof Sustainability & Local Communities impact <i>Green roof sustainability and a role of different actors (building owners, government, industry) in it</i>
Topic 6	Next steps: Green Roofs and Solar Energy – Roof Photovoltaics <i>Presentation of the most contemporary approaches concerning the green roof technology: combination with photovoltaic energy production</i>
Topic 7	Further Green Ideas and Technologies: Vertical Gardens – Thessaloniki (Case Study) <i>Presentation of a case study of a vertical green roof in Greece (illustrated by picture)</i>
Activities/ Assessment	The Module includes five multiple choice questions which learners can find at the end of Module 3. The questions help to revise the most important parts of the Module.
Useful tips/ Dos and don'ts	It is recommended to encourage learners to study which buildings in their local areas may be suitable for green roof, what would be the best type of green roof to apply, what technical features. If they have green roofs close already, what are the benefits they bring to a person, community.



Module 4. Taxonomy of Green Roofs Due to Climate and Environmental Conditions	
Unit 1	General Taxonomies of Green Roofs <i>General taxonomies and usefulness of green roofs (interconnection with module 3)</i>
Unit 2	Taxonomies of Green Roofs Based on Climate Conditions <i>Taxonomies of green roofs according to the climate conditions and the environmental conditions.</i>
Unit 3	Taxonomies of Green Roofs Based on General Environmental conditions <i>The impact of climate and environmental conditions on the installation and development of green roofs. Presentation of findings from a range of scientific studies evaluating the effect of green roofs</i>
Unit 4	Installation and development of green roofs <i>Impact of climate and environmental conditions on the retention performance of green roofs. Practical tips on green roofs installation</i>
Unit 5	Retention performance and thermal behavior and effectiveness of green roofs <i>The impact of climate and environmental conditions on the thermal behavior and effectiveness of green roofs and the benefits during different seasons</i>
Unit 6	Benefits of green roofs on the decrease of building energy consumption <i>Presentation of the importance of greater insulation offered by green roofs and how it can reduce the amount of energy needed to moderate the temperature of a building as roofs are the site of the greatest heat loss in the winter and the hottest temperatures in the summer</i>
Activities/ Assessment	The Module includes five multiple choice questions which the learners can find at the end of Topic 4. The questions summaries the main points of the Module.
Useful tips/	The educator can provide the learners with some interesting



Dos and don'ts	scientific facts about the taxonomy of green roofs according to the climate conditions and the environmental conditions, as well as give them some useful tips and recommendations regarding the installation, retention performance and thermal behavior and effectiveness of green roofs.
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Module 5. Green Roofs Implementation Taxonomy (Herbs, Plants, Trees) and Species Optimality	
Unit 1	Educational Benefits of Green Roofs <i>Presentation of the potentials of green roofs implementation; the benefits of green roofs such as biodiversity, water, thermal performance, sound insulation, urban agriculture, air quality, amenity space.</i>
Unit 2	Philosophy of Food Sovereignty and Green Roofs Synergy <i>The principles of food sovereignty and what role green roofs can play in it</i>
Unit 3	Green Roofs in Fighting Against Climate Change: Contribution to Emission Reducing, Pollution and Other Environmental Issues <i>Presentation of the current EU Strategy on Green Infrastructure. The importance of green spaces for ecosystem services illustrated by several case studies</i>
Unit 4	Hints and Tips for Self-designed Green Roofs <i>The unit presents the key tips, lessons to learn of how to design a green roof individually. Presentation of another type of roofs: brown roofs</i>
Unit 5	Selection of Plants and Establishment of a Plan for the Whole Year <i>The unit introduces to one of the most critical determinants of a green roof's performance: the type of vegetation planted on its surface. For a diversity in color, shape, and texture a mix of annuals, perennials, small trees, and shrubs should be considered to select for the installation of a green roof.</i>
Unit 6	Key Challenges of Green Roofs Installation and Important Points for Taking Care of Plants <i>Presentation of key challenges for green roofs installation</i>



	<i>regarding the plants and what type of care is essential</i>
Activities/ Assessment	The Module includes five multiple choice questions which learners can find at the end of Module 5. The questions help to revise the most important parts of the Module.
Useful tips/ Dos and don'ts	The educator is recommended to encourage learners to study more about brown roofs by following this link: https://singleply.co.uk/wp-content/uploads/2013/04/fact-sheet-brown-biodiverse-roofs.pdf ; to deepen their knowledge in botany for better knowledge in plants compatibility, care.

Module 6. Green Roofs in European Cities: Best Practices of “Nature-based Solutions” for Urban Regeneration	
<p>The module presents best practices of green roofs and nature-based solutions for urban regeneration across Europe (partners' countries) based on the following information:</p> <ul style="list-style-type: none"> • How the green roof(s) fits in the urban context and its role in urban planning; • How the green roof(s) projects have been created and implemented; • How the green roof(s) projects have contributed to community engagement (i.e., through a co-design), economic opportunities, wellbeing of citizens. 	
Activities/ Assessment	In this field we can provide information about the type (multiple choice, true/false, etc.) or the number of activities (e.g., three at the end of each unit) provided in the Module.
Useful tips/ Dos and don'ts	At the end of the module, educators are advised to ask learners whether there are any examples of successful green roofs in their area. If there are not so many or any, encourage the discussion of what are the reasons that green roofs are not popular in their area, what could be done to make them popular.

Module 7. History and Cultural Aspects of Creole Gardens	
Unit 1	<p>Historical Context: from the Amerindians to our Days in the Caribbean</p> <p>Brief description of the Unit</p>



	<i>In Martinique, the practice of the "Creole garden" is rooted in tradition. The Martinican people, even if they live in the city, want to keep this ancestral tradition alive. Unit 1 presents a historical context related Martinique</i>
Topic 1	Martinique - general information <i>Presentation of key fact about Martinique</i>
Topic 2	Arrival of the First Human Populations in the Lesser Antilles: the Amerindians <i>Description of first inhabitants in the territory of Martinique and the agricultural techniques that they have developed and adopted</i>
Topic 3	European Colonization: The Triangular Trade <i>Overview of European settlement in Martinique, its impact and the birth of Creole gardens</i>
Topic 4	The Gardens of the Mornes <i>The context of "neg mawon" communities and its agricultural traditions</i>
Topic 5	Evolution of Agricultural Production During the 20th Century <i>Presentation of Martinique's transformation to industrial country and the fate of Creole gardens</i>
Unit 2	The Creole Garden: A Source of Autonomy for West Indian Families <i>Comprehensive presentation of Creole gardens: plants that compose it and the cultivation techniques used</i>
Topic 1	Food Plants <i>Introduction to the first category of plants that provide the family with slow sugars (starches)</i>
Topic 2	Medicinal Plants <i>Presentation of medical plants and its importance in West Indian tradition</i>
Topic 3	Protective and Ornamental Plants <i>Introduction to most common protective and ornamental plants</i>
Topic 4	Accessory Plants <i>Introduction to accessory plants that are useful for everyday life</i>



Unit 3	The Cultural and Cultivation Techniques of the Creole Gardens Presentation of the agricultural specifics of the Creole gardens
Topic 1	Agricultural Techniques of the Creole Garden <i>For the preparation of the soil, two techniques are traditionally used according to the nature of the land and family habits: the abatis/brulis and the tillage with the hoe. Learners will learn key features of this technique</i>
Topic 2	Agricultural Cultural Techniques <i>Presentation of cultural aspects deriving from agriculture</i>
Unit 4	The Creole Garden and Shared Gardens Today <i>The evolution of Creole gardens and its relevance nowadays</i>
Topic 1	The Problem of Chlordecone <i>Summary of the problems caused by pesticides usage and the fight against this</i>
Topic 2	Allotments versus Creole Gardens <i>Presentation of differences between Creole gardens and allotments</i>
Topic 3	Shared Garden versus Creole Garden <i>Presentation of differences between Creole and shared gardens; importance of the shared gardens to the community</i>
Activities/ Assessment	The Module includes five multiple choice questions which learners can find at the end of Module 7. The questions help to revise the most important parts of the Module.
Useful tips/ Dos and don'ts	Educators are advised to illustrate the learning material by videos: https://www.youtube.com/watch?v=q-eL1zY4zsg https://www.youtube.com/watch?v=p86zosW-6e8 https://www.youtube.com/watch?v=ohlKuv70R9g Educators may also encourage learners to discuss if there how the agriculture have been influenced by social, demographical, climate aspects in their countries.



Module 8. Green Roofs integration in the Local Community Sustainability	
Unit 1	Familiarizing with Green Roofs: Importance Analysis and Benefits <i>Introduction of the rationale of green roofs (climatic situation globally, key statistics)</i>
Topic 1	Main Importance of Green Roofs Synergies <i>Presentation of green roofs as a possible solution to certain climate change related problems</i>
Topic 2	Summarized Benefits <i>Overview of the benefits of green roofs synergies; overlap of personal and community benefits</i>
Topic 3	Challenges for Roof Integration <i>Introduction to seven fundamental factors currently considered as the most important constraints to green roof adoption</i>
Unit 2	Policy Efforts Samples <i>Overview of good practices of green roofs influenced by policy efforts</i>
Topic 1	Good Practices <i>Presentation of several good practices</i>
Unit 3	Local Community Sustainability Samples in Environmental & Social Sustainability
Topic 1	Theoretical Information & Background on Social and Environmental Sustainability <i>Introduction of 3 fundamental pillars of sustainable development: social sustainability; environmental sustainability; economic sustainability</i>
Topic 2	Role of Local Communities in Environmental and Social Sustainability <i>The topic present what environmental strategies local communities can adopt</i>
Topic 3	Local Community Sustainability Samples (part A and part B) <i>Presentation of interesting and valuable cases of sustainable</i>



	<i>development initiatives</i>
Topic 4	Integration of Green Roofs Technology in Social Sustainability: A Call-to-action <i>Green roof technology as a response to a need matured within the urban centers and society</i>
Activities/ Assessment	The Module includes five multiple choice questions which learners can find at the end of Module 8. The questions help to revise the most important parts of the Module.
Useful tips/ Dos and don'ts	Educators may advice learners to study further about the environmental sustainability and discuss how they can contribute to solving environmental problems.

Module 9. Building Elements and Limitations of Green Roofs	
Unit 1	Building Elements of Green Roofs <i>Introduction to general building elements of green roofs</i>
Unit 2	Effective Planning and Implementation of Green Roofs <i>Detailed presentation of the process of the effective planning and implementation of green roofs</i>
Unit 3	Factors Which are Likely to Affect the Construction and Effectiveness of Green Roofs <i>The unit presents the impact of different factors on the construction and effectiveness of green roofs</i>
Unit 4	Limitations of Green Roofs <i>Most common limitations of implementing a green roof project</i>
Activities/ Assessment	The Module includes five multiple choice questions which the learners can find at the end of Module 9. The questions are a good way of revising the most important parts of the Module.
Useful tips/ Dos and don'ts	The educators can guide the learners to find out how to plan and implement a successful green roof building project, and how to manage the different circumstances that are likely to affect the installation and effectiveness of a green roof.



The completion of the AGROS courses enhances the possibilities for adults to access high-quality learning opportunities at any time in their lives, to promote personal and professional development, empowerment, adaptability, employability and active participation in society, develops a new approach to adult education and training, focusing on learning outcomes for civic responsibility, autonomy and environmental awareness. Educators and learners are going to be empowered with their environmental awareness and responses, and they prove to be active members of the effort for more civic participation to the EU society problems.



3. E-navigation

The present Guidelines have been developed in order for users to be able to access the AGROS website (<https://agrosproject.com/>) and learning platform – MOOC (<https://agrosproject.com/lp-courses/>) and benefit from the free learning material, which aims at raising environmental awareness among EU citizens.

Guidelines for using the AGROS Website and Platform (MOOC)

Section_1. Navigating the Project's website

To begin with...

The first step that a user should take in order to use the AGROS Online Learning Platform is to visit the project's website <https://agrosproject.com/>. On the *top right corner*, the user can choose their *preferred language*.

By clicking on the different tabs (*Home, About Us etc.*), the user can be informed about the project's purpose, partners, deliverables etc. For example, by clicking on 'About Us':

Home **About Us** Partnership Mooc Source Forum News Contact English ▾

The user can see the following:



and so on.



Finding the Platform

By clicking on the *tab MOOC*, the user can unfold the following:

1.

To take a course you must first log-in.

If you do not have a username or password yet, [Click Here](#) to create a free account.

Username or email address *

Password *

☐ Remember me

[Lost your password?](#)

Login

Before starting the *self-learning process* through the available Modules, the user *should create a free account* in order to be able to access the platform.



Section_2. Enrollment

Creating an account

The user will be asked to *create a free account using their e-mail*, a *Username* and a *Password* which they should remember and/ or save on their computer. For example:

2.

Username *	User Email *
<input type="text" value="Maria"/>	<input type="text" value="maria@gmail.com"/>
User Password *	Confirm Password *
<input type="password" value="*****"/>	<input type="password" value="*****"/>
<input type="submit" value="Submit"/>	

After creating an account, the user will be able to *log in with their Username and Password* and access the Online Learning Platform both from their *computer* and from their *mobile phone*.

What is more, by clicking on '*Remember me*', the system will save their Username and Password and they will be able to log in automatically every time they visit the website and platform.

However, they can *always Log out* of the MOOC, by clicking on the corresponding top right button. It should be noted that, when clicking on '*Log out*', the user is logged out of the platform, but they can keep navigating in the AGROS website.



In case they *forget their password*, the user can click on '*Lost your password?*' to receive a new password as follows:

The screenshot shows the WordPress password reset interface. At the top is the WordPress logo. Below it is a message box that says: "Please enter your username or email address. You will receive an email message with instructions on how to reset your password." Underneath this is a text input field labeled "Username or Email Address". To the right of the input field is a blue button labeled "Get New Password". Below the input field and button are links for "Log in | Register" and "← Go to AGROS Project". At the bottom, there is a language selector showing "English (United States)" with a dropdown arrow and a "Change" button next to it.

After receiving a *new password*, generated *automatically by the system*, the user can log in again.



[AGROS Project] Password Reset External Inbox x



WordPress <wordpress@agrosproject.com>
to me ▾

10:34 AM (0 minutes ago) ☆ ↶ ⋮

Someone has requested a password reset for the following account:

Site Name: AGROS Project

Username: ad-angelos-agrosproject

If this was a mistake, ignore this email and nothing will happen.

To reset your password, visit the following address:

https://agrosproject.com/wp-login.php?action=rp&key=YElIj7gCZKOeg7jqegQ2&login=ad-angelos-agrosproject&wp_lang=en_US

This password reset request originated from the IP address 62.228.152.18.

Then, they will be able to set their own password again.

Section_3. Online Learning

Using the Online Learning Platform (MOOC)

By logging in, the user *has access* to the *9 Modules* created for the purposes of the project. They can click on ‘*See more*’ on whichever Module they are interested in and start the activities, for example:



Each Module has a *welcoming text* and gives an *overview* of the Units it includes, for example:

Learning Objectives


Welcome to the Module 1: **Urban Environment & Sustainable Development!**

This module offers the necessary knowledge and basic information on **urban environment** and **integrated urban planning**, as well as useful information on United Nations **Sustainable Development Goals (SDG)**, in particular **SDG 11 «Sustainable cities and communities»**, stressing the importance of creating green public spaces and improving urban planning and management in participatory and inclusive ways.

The user can *click on all the Units* included in the Module and complete the corresponding activities.

The user *can move back and forth using the options:*

[All Modules](#)[Next Module](#)

The user can see the *topics of each Unit*, as well as their learning progress, by clicking on the  **EXPAND** button:

Course Content

[EXPAND ALL](#)




Unit 1 Integrated Urban Planning – the Key Factor to Ensure the Sustainability of Cities

3 Topics

[COLLAPSE](#)

Lesson Content

0% COMPLETE | 0/3 Steps

-  Topic 1 Urban Environment
-  Topic 2 Necessity of Integrated Urban Planning
-  Topic 3 Dimensions of Integrated Urban Planning

By clicking on *each Topic*, the user can go through the content of each Module and read the corresponding material on their own pace:

Module 1 Urban Environment & Sustainable Development

Unit 1 Integrated Urban Planning – the Key Factor to Ensure the Sustainability of Cities

3 TOPICS

Topic 1 Urban Environment

Topic 2 Necessity of Integrated Urban Planning

Topic 3 Dimensions of Integrated Urban Planning

Unit 2 Implementing Sustainable Development Goal 11 by Connecting Sustainability Policies and Urban-Planning Practices

3 TOPICS

Unit 3 The Role of the communities and Local Authorities in Green Roof Management for Sustainable Development

3 TOPICS

Activities

1 QUIZ

Topic 1 Urban Environment

Module 1 Urban Environment & Sustainable Development > Unit 1 Integrated Urban Planning – the Key Factor to Ensure the Sustainability of Cities > Topic 1 Urban Environment

According to Hannah Ritchie and Max Roser (2018) «Urbanization»,

- More than half of the world's population now live in urban areas – increasingly in highly-dense cities. However, urban settings are a relatively new phenomenon in human history. This transition has transformed the way we live, work, travel and build networks.
- More than 4 billion people live in urban areas globally.
- The UN estimates 2007 was the year when, for the first time, more people in the world lived in urban than in rural areas.
- Estimates on urban populations vary – mainly as a result of disagreements on the exact definition of an 'urban area' and what this includes.

- By 2050 it's projected that more than two-thirds of the world population will live in urban areas.
- It's projected that close to 7 billion people will live in urban areas in 2050. By 2100, according to the latest UN projections, humanity is expected to have developed into an almost exclusively urban species with 80-90% of people living in cities.
- Cities face a growing challenge to effectively govern, plan, develop infrastructure and support the rapidly growing population and urbanization of their communities.

CENTURY 21.
Urban



Each Module contains a Quiz, which the user can take to see their progress and revise the main points of the Module by clicking on

Start Quiz

After giving one answer, the user should move to the next by clicking on

Next

After completing each quiz, the user *gets the results*:

You have reached 4 of 5 point(s), (80%)

View Questions

Restart Quiz

The user can also take a look at the correct answers by clicking on ‘View Questions’.

The user can also *restart the quiz if they like*.

Section_5. Overall comments

The AGROS website and Online Learning Platform – MOOC is a valuable tool for *citizens and for professionals* who work in the *field of adult education and/ or environmental awareness*. It can be used for *professional development and personal growth*, in line with the current EU accreditation systems.



4. Media and Text Exploitation/ Additional sources

In adult education, it is essential to choose with good criteria not only the many tasks and experiences to which adult learners are exposed, but also the best ways to communicate them. That is why, the strategy by which the curriculum and learning tools have been developed focus on encouraging an active and meaningful involvement of the learners with all the media available. This strategy considers that social learning is active learning, which means that students can participate directly in their own learning process rather than passively absorbing the contents. To do this an appropriate selection of media materials with regards to curriculum needs and characteristics if the target audience is indispensable. Thus, the content developed is presented in a way that excites students more than traditional tools do, leaving them the opportunity to interact with the subject of study in multiple ways and, therefore, making it more accessible. In the effort to foment and strengthen the active participation, interaction and positive contribution of the users, these means cannot be left out.

In terms of the website, there are different media materials that are available for information dissemination and exploitation. Most opportunities of interaction with users are contemplated through the AGROS website in different settings. The modules section is developed based on the nature of the work and learning environment. Thus, it gives appropriate consideration to the user's timing and communication conditions. The “forum” is a tool that opens a window to make direct contact with users. Furthermore, it creates a network of learners, where they can not only discuss the contents, but also share their learning experiences. It allows them to interact with the content from a pedagogical perspective, as well as pose questions related to the subject. The fact of sharing entries and information with other students, rather than only going through the contents and submitting the tests, promotes deeper engagement and a better academic performance. Enabling a forum where students will directly interact not only with the course's materials but also with each other, encourages users to put in more interest to both their work and online presence.

Text and media exploitation strategies also include the project's social media. These resources open a very dynamic channel of communication; which reaches not only users of the platform, but also more people within the target group who could be potentially interested in the project's content. Social media allows direct and fast feedback with the users.



Opportunities to take into account through this medium are articles and news regarding the project's topic which is shared through the Facebook page. This type of communication not only engages people in the subject, but also encourages open forum and debate, enriching the contents.

In the same way, sharing the project's milestones as well as contents developed through the project's social media opens a very important channel of dissemination. The exploitation of the content developed for the modules through Facebook posts that summarize the topics is a method for purposive education.

Another interesting way of exploiting the contents through social media is creating surveys and open questions related to the text. In this way, users can assess whether the contents are being acquired optimally. Furthermore, this practice brings users closer to the project through more dynamic teaching, creating a learning network.



Part B. Civic participation & environmental consciousness. Exploring policies, educational scenarios and available data

5. Policy suggestions

Nowadays, policymakers are placing green infrastructure/green roofs as a solution for urban planning and design. Green roofs technology -among others: 1) Improves Air Quality, 2) Increases Energy Efficiency, 3) Retains Stormwater, 4) Extends Roof Longevity, 5) Provides Social & Relaxing Spaces, 6) Provides Needed Habitat and Increases Urban Biodiversity (Green roofs NYC 2022). Despite the mismatch between the economic/social/environmental value of green infrastructure and their financial costs -often discouraging private investors or/and building owners to invest in them- many municipalities -mainly concentrated in Europe and North America- promote the installation of green roofs and/or green walls (Liberalesso et al. 2020).

Green Roofs used in education provide numerous benefits, from early childhood and primary schools to university context and adult education. A sustainable future starts with giving to students the tools they will need to solve complex environmental challenges. Learning about green roof ecology also gives students a better understanding of how ecosystems function in the cities in which they live (Green roofs NYC 2022).

As a starting point, adult education providers must design their courses with a full understanding of the eight key competences reflected in the EU Recommendation (2018):

- **Literacy competence** – ability to identify, understand, express, create, and interpret concepts, feelings, facts and opinions in both oral and written forms, using visual, sound/audio and digital materials across disciplines and contexts.
- **Multilingual competence** – ability to understand, express and interpret concepts, thoughts, feelings, facts and opinions in both oral and written form (listening, speaking, reading and writing) in an appropriate range of societal and cultural contexts according to one's wants or needs.
- **Mathematical competence and competence in science, technology and engineering** – ability to develop and apply mathematical thinking and insight in order to solve a range of problems in everyday situations.



- **Digital competence** – ability to make responsible use of digital technologies for learning, at work, and for participation in society. Individuals should understand how digital technologies can support communication, creativity and innovation, and be aware of their opportunities, limitations, effects and risks.
- **Personal, social and learning to learn competence** – ability to reflect upon oneself, effectively manage time and information, work with others in a constructive way, remain resilient and manage one's own learning and career.
- **Citizenship competence** – ability to act as responsible citizens and to fully participate in civic and social life, based on understanding of social, economic, legal and political concepts and structures, as well as global developments and sustainability.
- **Entrepreneurship competence** – ability and capacity to act upon opportunities and ideas, and to transform them into values for others, also ability to effectively communicate and negotiate with others, and to cope with uncertainty, ambiguity and risk as part of making informed decisions.
- **Cultural awareness and expression competence** – ability to understand and respect for how ideas and meaning are creatively expressed and communicated in different cultures and through a range of arts and other cultural forms.

Furthermore, adult educators should obtain further knowledge on how to adapt the content of AGROS into their context of teaching. The AGROS Curriculum covers a wide range of topics (modules): Urban Environment & Sustainable Development, Biodiversity Exploitation for Society Prosperity, Green Roofs Construction and Environmental, Social, Health, and Personal Benefits, Taxonomy of Green Roofs Due to Climate and Environmental Conditions, Green Roofs implementation Taxonomy (Herbs, Plants, Trees) and Species Optimality, Green Roofs in European Cities: Best Practices of “Nature-Based Solutions” for Urban Regeneration, History and Cultural Aspects of Creole Gardens, Green Roofs Integration in the Local Community Sustainability, Building Elements and Limitations of Green Roofs (for a detailed presentation, see *PART A, 2. Curriculum Presentation and Modules*).

Education providers represent a key stakeholder in the process of adult education. First, it is essential that they base and adapt their educational offers to the needs of learners. They have also to convince adult learners to participate in their programmes to achieve a return on their investments. The overarching goals of



education providers' strategies should include the following (European Commission 2012):

→ ***Amplify offer to meet demand and target groups' needs.*** This includes the adjustment of course content and its delivery to integrate learners' needs based on feedback and best practice examples provided by e.g. local focus groups, education providers and course participants.

→ ***Communicate individual, social benefits of adult learning.*** This is necessary to convince learners of the impact adult education can have on their lives. This includes the promotion of new thinking skills which can make individuals more efficient and more competitive in a global economy as well as more socially cohesive.

→ ***Form strategic partnerships with other stakeholders to provide education.*** Financial support and funding opportunities available to adult learning differ from community to community. Strategic partnerships with other education facilities as well as key players in the field will therefore enable education providers to facilitate the exchange of adult learning teaching staff, course content and best practice.

→ ***Cooperate with businesses and NGOs.*** Adult education course content should address the needs of the labour market and focus on the skills development currently required. Partnerships with NGOs and businesses would provide course developers with feedback regarding current skills demand and possible work experience placements.

→ ***Market educational offer through intermediaries.*** Intermediaries such as national institutes for adult learning, NGOs, as well as community learning champions, learner representatives, outreach workers, support workers, and tutors will support the dissemination of information on courses offered through their individual networks.

→ ***Use online tools to raise awareness of and deliver education courses.*** This includes the use of existing online tools, and development of new ones such as social media, online platforms, forums, games, animations, videos, etc. as well as the delivery of distance learning courses via the education provider's website.



6. Exemplary Education Scenarios

The aim of this chapter is to empower professionals, trainers and stakeholders at the very practical level and provide them with a high capacity when dealing with environmental issues. Exemplary education scenarios provides a structured framework where an educator can follow guidance steps and learn how to deal with concrete teaching conditions/ learners.)

1. Urban environment & sustainable development

A. SCENARIO IDENTITY	
Content – Activities	
Title of the educational scenario	Urban environment & sustainable development
Module	Urban environment & sustainable development
Target groups	Local and regional authorities, policy makers in charge of sustainable development and environmental protection; professionals and experts; active citizens and social networks' influencers
Prior Knowledge	Learning is constructed on pre-existing knowledge on the 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, and the Sustainable Development Goals (SDGs) that are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere.
Key-note papers	https://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html https://urbact.eu/making-integrated-urban-development-manageable https://www.urbanet.info/sdgs-integrated-urban-development/
Duration	4 hours
Learning environment	Either face-to-face or Online
IT Requirements	Requirements for Online Learning <ul style="list-style-type: none"> • A processor of 2.4GHz or faster



& Possibilities	<ul style="list-style-type: none"> • 4 GB of RAM (8 GB of RAM recommended) • A high-speed Internet connection (1.5 Mbps upload and download required; 5 Mbps or better preferred) • Monitor and video card with 1024 x 768 or greater resolution. • Webcam and microphone.
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B. SCENARIO APPLICATION FRAMEWORK	
Content – Activities	
Brief summary of the educational scenario	<p>Educational scenario is based on student-centred approaches and active educational techniques, promoting creative thinking. It includes all the necessary components a teacher needs, such as learning objectives, learning activities, learning material, evaluation activities. However, the educational scenario is flexible, and teachers may adapt them according to the needs and requirements and background of their students.</p>
Theoretical framework	<p>The 2030 Agenda for Sustainable Development, adopted by all United Nations Member States in 2015, provides a shared blueprint for peace and prosperity for people and the planet, now and into the future.</p> <p>17 Sustainable Development Goals (SDGs) are an urgent call for action by all countries - developed and developing - in a global partnership. SDGs recognize that ending poverty and other deprivations must go together with strategies that improve health and education, reduce inequality, and spur economic growth – all while tackling climate change and working to preserve our oceans and forests.</p> <p>Integrated urban planning is a modern planning approach close connected with the complex nature of the cities and necessity of creating sustainable and resilient settlements. The implementation of integrated urban planning is directly connected to the socio-economic conditions, legal frameworks, technology, and professional and educational potentials of societies, which differ for each country. It is necessary to constantly work on improving the methodology of integrated planning, education, and the training of planners and stakeholders, as well as strengthening the institutional and socio-economic preconditions for its implementation.</p>



Goals/ Objectives	<p>Main educational goals and learning objectives are:</p> <ul style="list-style-type: none"> • Cognitive: creating new knowledge on integrated urban planning and understanding of the importance of the role of community and local authorities in sustainable development; understanding the importance of the integration of SDGs in urban planning • Affective - developing feelings and emotions: development of teamwork collaboration so teams can develop greater emotional intelligence and, in so doing, boost their overall performance. • Psychomotor - enhancing physical skills: active listening skills. A student's ability to actively listen has a major impact on building the communication skills needed both inside and outside of the classroom. • Literacies that the learners will acquire after the scenario completion: familiarisation with the educational platform produced by AGROS project.
Methodology/ Educational Practices	<p>The educational scenario requires high-quality teaching and active and cooperative learning that involves actively engaging students with the course material through discussions, problem solving, case studies, role plays and other methods. Hands-on materials will supplement the theoretical background. The Module includes Self-assessment test – questionnaire with five multiple choice questions. The questions are a good way of revising the most important parts of the Module.</p>
Detailed description of the educational scenario	<p>The teaching steps of the course.</p> <ol style="list-style-type: none"> 1. Reflection: images. 2. Information about the educational goals. 3. Prior knowledge activation. 4. Teaching steps (1st session). Learning is collaborative and social, not competitive, and isolated. Working with others increases involvement in learning. Sharing one's own ideas and responding to others' reactions sharpens thinking and deepens understanding. 5. On-going assessment. The discussions and questions are a good way of revising the most important parts of the 1st



	<p>session.</p> <p>6. Teaching steps (2nd session). Innovative teaching and learning practices that incorporates responsive teaching practice, student ownership of learning, high levels of engagement, the development of competencies and the strategic use of digital technologies to connect, collaborate, create and share learning.</p> <p>7. Final Assessment. Self-assessment test – questionnaire with multiple choice questions.</p> <p>8. Conclusions. Connection to other AGROS project Modules. Familiarisation with the educational platform produced by AGROS project.</p>
<p>Further bibliography Alternative e-sources</p>	<ul style="list-style-type: none"> • https://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html • https://urbact.eu/making-integrated-urban-development-manageable • https://www.urbanet.info/sdgs-integrated-urban-development/ • https://interestingengineering.com/15-interesting-green-roofs-from-around-the-world • https://www.millennium-institute.org/isdg • http://unsdsn.org/wpcontent/uploads/2016/07/9.1.8.-Cities-SDG-Guide.pdf • https://www.google.com/search?q=uclg+localizing+roadmap&oq=uclg+localizing+roadmap&aqs=chrome..69i57.5455j0j7&sourceid=chrome&ie=UTF-8 • https://www.un.org/sustainabledevelopment/cities/

2. Best practices across Europe/World

A. SCENARIO IDENTITY	
	Content – Activities
Title of the educational scenario	6.0. Green Roofs in European cities: Best practice of “nature-based solutions” for urban generation



Module	Green Roofs in European cities
Target groups	Adult learners, members and volunteers of environmental associations, local administrators
Prior Knowledge	Basic knowledge about what green roofs are and basic knowledge of the concept of urban sustainability
Key-note papers	All the websites which have been suggested to have a look at
Duration	3h
Learning environment	Both online and in face to face
IT Requirements & Possibilities	Two (2) computers per class. It may help to visualise the best practices

B. SCENARIO APPLICATION FRAMEWORK	
	Content – Activities
Brief summary of the educational scenario	Illustration of best practices of green roofs and nature based solutions for urban regeneration across Europe (partners' countries), also with reference to economic opportunities and wellbeing of citizens.
Theoretical framework	<ul style="list-style-type: none"> - How the green roof(s) fits in the urban context and its role in urban planning - How the green roof(s) project has been created and implemented - How the green roof(s) project has contribute in community engagement (i.e. though a co-design), economic opportunities, wellbeing of citizens



Goals/ Objectives	<p>The educational goals and learning objectives are as follows:</p> <ul style="list-style-type: none"> - Theoretical/descriptive: Foster knowledge on the green roofs across Europe - Stimulate to look for funding and or/imagine how learners' living environment may be improved by a green roof
Methodology/ Educational Practices	<p>Teaching strategies implemented:</p> <ul style="list-style-type: none"> - Cooperative learning and knowledge sharing - peer education
Detailed description of the educational scenario	<ol style="list-style-type: none"> 1. presentation of the course in the most general framework of the project 2. discussion about how good practices may help to improve learner's everyday life 3. discussion about prior knowledge about green roofs and about urban strategies to fight climate change 4. the educators illustrates the best practices listed in the course 5. Learners in group make a brief research about other best practices 6. class discussion and finding presentations 7. final assessment: delivery of the questionnaire 8. open session

3. Horticultural applications

A. SCENARIO IDENTITY	
	Content – Activities
Title of the educational scenario	Horticultural applications: "The case of the Creole Garden: history and cultural aspects"
Module	Horticultural applications
Target groups	Youth workers, young people



Prior Knowledge	Urban environment, agronomy basis
Key-note papers	Creole garden, colonisation, market gardening, mutual aid
Duration	3h (20 diapositives)
Learning environment	The training is done online but it can also be done face to face by the educators with the support of PowerPoint.
IT Requirements & Possibilities	No computer requirements, unless the training is online then participants need a computer and internet access.

B. SCENARIO APPLICATION FRAMEWORK	
	Content – Activities
Brief summary of the educational scenario	The Creole garden is a Martinican cultural practice. It stems from the historical context (slavery, immigration...). With the increase of urbanization, this practice tends to evolve, but the Martinicans are keen to keep this tradition alive.
Theoretical framework	<p>Slave: A person who is not free, who is under the absolute power of a master. Designed to provide a legal framework for the exercise of slavery in the West Indies, the Code Noir made the slave a "movable" being who could be acquired by a master in the same way as property.</p> <p>Colonisation: Exploitation of countries that became colonies</p> <p>Agronomy: All the exact, natural, economic and social sciences and techniques used in the practice and understanding of agriculture</p> <p>Medicinal plants: a plant or part of a plant with substances called active ingredients that can be used therapeutically without harmful effects at recommended doses.</p>



	<p>Cultural practices: agronomic techniques used to develop a crop area (e.g. ploughing, slash-and-burn, crop rotation and association)</p> <p>Cultural practices: Sociology defines cultural practices from real practices to better understand them. It is based on historical and social aspects. Culture is "a complex whole which includes knowledge, beliefs, art, morals, laws, customs and all other dispositions and habits acquired by man as a member of a society".</p>
Goals/ Objectives	<p>The educational goals and learning objectives are as follows:</p> <ul style="list-style-type: none"> - Cognitive: to link historical and sociological knowledge to understand the current issues of urban agriculture in the Caribbean. To enable collective reflection on the export of plants and globalisation. - Affective: to encourage reflection and the expression of emotions induced by the development of knowledge of the historical and social context of the West Indies. To encourage exchanges on the cultural and cultivation practices linked to the different territories of the participants. Highlighting the agricultural traditions of each country. - Psychomotor: if the training takes place face-to-face, encourage observation, attention and motor experimentation of traditional agricultural practices (e.g. ploughing to the sound of a drum)
Methodology/ Educational Practices	<p>Teaching strategies implemented :</p> <ul style="list-style-type: none"> - Collective brainstorming in order to make participants active, to encourage interaction and common reflections (e.g. ask the group for 10 words that inspire them about colonisation, the agricultural tradition) - Interactive quiz to encourage active participation (e.g.: in your opinion, what is the continent of origin of the coconut tree, the turmeric, the tomato...) - Set up a debate on the agricultural traditions of each participant's country



<p>Detailed description of the educational scenario</p>	<ol style="list-style-type: none"> 1. Information on the pedagogical objectives: presentation of the themes addressed and the topics for collective reflection. 2. Reflection activity: brainstorming on colonisation and agricultural traditions. 3. Teaching steps: presentation of the first 8 slides of the PowerPoint to the participants (historical and geographical context) 4. Quiz on the origin of plants and presentation of slides 9 to 23 on the origins of plants, the objectives of the Creole garden and the plants that make up the Creole garden. If the training takes place face-to-face, observation of the plants present in the garden (identifications, crop associations) 5. Activation of previous knowledge: exchanges on the agricultural traditions of each participant's country of origin. Exchanges on the use of medicinal, protective and accessory plants in each country. 4. Teaching stages: presentation of slides 24 to 29 of the PowerPoint to the participants on cultural and cultivation practices in Martinique <p>Viewing of videos on the practice of "Lasotè". If the training takes place face-to-face, motor experimentation of this practice by the participants (group cohesion, motor skills).</p> <ol style="list-style-type: none"> 5. Teaching steps: presentation of slides 30 to 35 of the PowerPoint to the participants on current agricultural practices in Martinique and in urban areas 6. Continuous evaluation using the module evaluation (5 questions) 7. Conclusions: collective reflection on the impacts of globalisation and urbanisation on current agricultural practices. Emphasis on the importance of drawing inspiration from the cultural and cultivation practices of each country to integrate them into each project.
<p>Further bibliography Alternative e-sources</p>	<ul style="list-style-type: none"> - Gourmet Botany in the West Indies: https://sites.google.com/site/lesamerindiensdesantilles/home/l-origine-des-fruits-legumes-et-epices-des-antilles - The witch and the doctor: https://la-sorciere-et-le-



	<p>medecin.com/</p> <ul style="list-style-type: none"> - Colonial history: https://www.pedagogie.ac-nantes.fr/histoire-geographie-citoyennete/analyse-critique-d-un-document-iconique-le-commerce-triangulaire-1202510.kjsp and https://www.lelivrescolaire.fr/page/16858666 "Slaves dancing on a boat, engraving, 1830 (Musée d'Aquitaine, Bordeaux) - Discovering magical plants: https://www.martinique2030.com/actualites/a-la-decouverte-des-plantes-magiques-de-martinique - Creole garden: https://www.humuspaysdoc.fr/2019/01/29/le-jardin-creole-une-tradition-permacole/ and https://tibobazar.wordpress.com/2013/08/26/le-jardin-creole/ - Lasotè Association: https://lasotemartinique.com/ - LE JARDIN CRÉOLE Repères culturels, scientifiques et techniques" Lucien DEGRAS ed JASOR - Archipel des Sciences - LE CAHIER DU PATRIMOINE Collectivité Territoriale de Martinique" N°32 Museum of History and Ethnography of Martinique - Fabulous History of Creole Plants " Jean-Louis LONGUEFOSSE Ed ORPHIE - Plantes Magiques de Martinique de Guadeloupe et des Petites Antilles" Book II LES ESPECES PROPRIETAIRES Emmanuel Nossin, André EXBRAYAT Ed EXBRAYAT
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7. Making lifelong learning and mobility a reality

1. *Making lifelong learning and mobility a reality*

Lifelong guidance policy and practice in the EU

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8284&furtherPubs=yes>

A study on lifelong guidance (LLG) policy and practice in the EU focusing on trends, challenges and opportunities. Lifelong guidance aims to provide career development support for individuals of all ages, at all career stages. It includes careers information, advice, counselling, assessment of skills and mentoring.

The European Qualifications Framework: supporting learning, work and cross-border mobility

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8071&furtherPubs=yes>

The European Qualifications Framework for lifelong learning (EQF) aims to improve the transparency, comparability and portability of people's qualifications.

The EQF was set up in 2008 as a common reference framework of qualifications, expressed as learning outcomes at increasing levels of proficiency.

The framework serves as a translation device between different qualification systems and their levels. It is intended to benefit learners, workers, job-seekers, employers, trade unions, education and training providers, qualification recognition bodies and government authorities (including international organisations).

Discover the new Europass

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8391&furtherPubs=yes>

Europass is the European tool to manage your skills and plan your learning and your career. As a framework of online tools and information it helps people to communicate their skills, qualifications and experiences to take the next step in their career.

The Europass platform was relaunched on 1 July 2020 as one of the flagship actions of the Skills Agenda.

This document explores tools and features of the new Europass, as well as how it



supports lifelong learning and what it can do for adult learners.

Skills for jobs: Understanding skills

<https://ec.europa.eu/social/main.jsp?catId=1215&langId=en&>

Reliable information on skills for workers, policy makers, employers, education/training institutions and career guidance professionals, as well as EU measures on this field.



2. Improving the quality and efficiency of education and training

All citizens in the EU have the right to high-quality and inclusive education, training and lifelong learning. High-quality education and training will provide citizens with the knowledge, skills and attitudes they need to thrive and to ensure Europe's economic resilience and social prosperity. This includes the need to master key competences, including basic skills and digital competences. The importance of ensuring effective equal access to high-quality education has become ever-more apparent with the outbreak of the COVID-19 pandemic.

The OECD Learning Framework 2030 illustrates the role of learning for the individual, the community and society. Despite the learning framework having been developed for younger learners, it can equally be applied to adult learners. The ET2020 strategic framework for education and training defines four, very wide and broad objectives: Making lifelong learning and mobility a reality; Improving the quality and efficiency of education and training; Promoting equity, social cohesion, and active citizenship; Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training. Looking at the Global Agenda 2030, adult learning contributes to the achievement of all 17 Sustainable Development Goals (SDGs) by building the foundations of change in the social, political, economic, ecological and cultural spheres. In each of the 17 goals at least one target involves learning, training, education or at the very least, awareness-raising for education. At the same time, adult education and lifelong learning are not only a transversal goal and method to achieving the SDGs, but also a specific goal. According to SDG4 inclusive and equitable quality education and lifelong learning opportunities need to be ensured for all. The European Agenda for Adult Learning highlights the need to increase participation in adult learning of all kinds (formal, nonformal and informal learning). National coordinators in each Member State of the European Union follow up on the implementation process of the agenda. The European Education Area proposes to raise the participation of adults in lifelong learning to 25% by in the 2025. It is absolutely necessary to increase participation in general, but particularly of those adults with low basic skills. Yet, strategies, frameworks and measures proposed at the European level are not embedded in a holistic lifelong learning approach, as they often focus strongly on young people, workplace learning and basic skills. While these areas are, without any doubt, very important, adults cannot be left behind.

Quality investment in education and training:

<https://education.ec.europa.eu/focus-topics/improving-quality/about/quality-investment>

The European Union (EU) will channel more funds than ever into education and training over the next seven years through the Recovery and Resilience Facility, amongst other policy instruments.



Major support will be made available for necessary reforms and investments in education and training from infrastructure and building construction to the training of teaching staff, digital devices and funding for open educational resources.

The Commission is providing specific support to local, regional and national authorities to make the best use of available funds through mutual learning and the exchange of best practices regarding investment in education infrastructure. This will contribute to making the European Education Area a reality by 2025 and support a lasting recovery from the COVID-19 pandemic, notably by accelerating the digital transition.

On 19 January 2022, the Commission published an interim report, which presents preliminary findings and recommendations to support EU Member States to invest more effectively in education: <https://education.ec.europa.eu/news/quality-investment-in-education-and-training-commission-publishes-first-findings-of-expert-group>. The expert group is expected to produce a final report, due in September 2022.

Lifelong guidance policy and practice in the EU:

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8284&furtherPublications=yes>

A study on lifelong guidance (LLG) policy and practice in the EU focusing on trends, challenges and opportunities. Lifelong guidance aims to provide career development support for individuals of all ages, at all career stages. It includes careers information, advice, counselling, assessment of skills and mentoring.

Towards more effective adult learning policies: [chrome-extension://efaidnbmnnnibpcajpcqlclefindmkaj/https://ec.europa.eu/info/sites/default/files/towards more effective adult learning policies.pdf](chrome-extension://efaidnbmnnnibpcajpcqlclefindmkaj/https://ec.europa.eu/info/sites/default/files/towards_more_effective_adult_learning_policies.pdf)

The policy identifies a number of shared European priorities to significantly raise the quality and increase the number of adult learning opportunities. To thrive in a fast-changing world, everyone needs a wide range of knowledge and skills – and to keep developing them throughout life. This is a key message of the New Skills Agenda for Europe [see box]. Without the right skills, many find themselves working in poor quality jobs, unemployed or under-qualified for a new generation of employment opportunities. Without basic literacy, numeracy and digital skills, everyday life can be a challenge. The challenge – set out in the European Agenda for Adult Learning [see box] – is to encourage more adults to return to learning. To accomplish this, the EU and Member States have adopted a diverse array of strategies and policy initiatives aimed at improving the availability and overall quality, quantity and accessibility of adult learning opportunities. In addition, steps are being taken to increase the up-take of these opportunities through effective outreach, guidance and motivation strategies targeting the groups most in need.



Vocational education and training:

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8450&furtherPublications=yes>

As Europe goes through its green and digital transformations, high-quality vocational education and training (VET) is key to ensuring people have the right skills for the jobs of today and tomorrow. The Council Recommendation on VET for sustainable competitiveness, social fairness and resilience, adopted in November 2020, sets out the EU's comprehensive vision and strategic objectives for the future of VET. This brochure outlines this vision and the importance of VET reforms at national level, including key principles and actions to support these reforms. It also looks at the EU initiatives leading the way and the assistance available to Member States in this area.

Innovation and digitalisation in Vocational Education and Training - infographics

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8367&furtherPublications=yes>

Eight insights for pioneering new approaches. Summary report on digitalisation and innovation

from the ET2020 Working Group on Vocational Education and Training.

Innovation and Digitalisation: A report from the ET2020 Working Group on Vocational Education and Training

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8365&furtherPublications=yes>

Eight insights for pioneering new approaches

Innovation and digitalisation in Vocational Education and Training (VET) play a key role in wider green and digital transitions, as well as in the recovery and resilience of a post COVID-19 Europe.

Through workshops, webinars and Peer Learning Activities, the ET 2020 VET Working Group (2018-2020) addressed the question: *How can innovation and digitalisation boost high-quality VET and Higher VET?*

The final report provides: 1 vision, 2 viewpoints and 8 insights, as well as numerous good practices from across Europe, including 12 Lighthouse projects.

Up- and re- skilling - Good examples of policies

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8332&furtherPublications=yes>

Up- and re-skilling are necessary to face changes in the labour market, led by important transformations such as digitalisation, ageing population and climate change. Given the importance of micro and small enterprises for the EU economy and employment, the study provides insights into the main challenges faced by these enterprises and presents good examples of policies that support up- and re-skilling in micro and small companies.



Up- and re- skilling - Good practices

<https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8333&preview=cHJldkVtcGxQb3J0YWwhMjAxMjAyMTVwcmV2aWV3>

Up- and re-skilling are necessary to face changes in the labour market, led by important transformations such as digitalisation, ageing populations and climate change. It presents good practices for micro and small companies to support up- and re-skilling for their employees, leveraging on their characteristics as a strength point.

3. Enhancing the creativity and innovation of adults and their learning environments

The development of an EU Adult Learning Policy

According to the EU Strategic Framework for Education and Training (2010), there is an evident need to place education and training clearly in the context of how they contribute to economic growth. When it comes to Adult learning in particular, four strategic objectives have been identified (Council, 2010):

1. Making lifelong learning and mobility a reality;
2. Improving the quality and efficiency of education and training;
3. Promoting equity, social cohesion, and active citizenship; and
4. **Enhancing creativity and innovation, including entrepreneurship, at all levels of education and training.**

In the EU Renewed Agenda for Adult Learning, Objective number 4 was updated to 'Enhancing the creativity and innovation of adults and their learning environments', including (Council, 2011):

- Transversal skills and competences
- Involving cultural organisations
- Using ICT
- Collection by MS of comparable evidence at national, regional and local levels.

Adult learning needs to be fully transportable across borders in ways that are transparent and understandable to employers and organisations. European transparency and recognition tools for VET include ECVET (European Credit system for Vocational Education and Training), EQARF and EQUAVET (European Quality Assurance Reference Framework). For this reason, the above components have been



further analysed in order to match the corresponding objectives of international actors, like OECD and UNESCO, as follows (Council, 2011):

- **Promoting the acquisition of transversal key competences by applying the European Key Competence Framework within the adult-learning sector.** This objective matches OECD's suggestion to "Ensure that the workforce in professional training institutions benefit from a strong blend of pedagogical skills, industry experience and academic knowledge. Adapt qualification requirements to that end" (OECD 2014a).
- **Enhancing the role of cultural organisations (such as museums, libraries, etc.), civil society, sporting organisations and other bodies as creative and innovative settings for non-formal and informal adult learning.** This objective matches UNESCO's definition of lifelong learning, according to which "Lifelong learning is founded in the integration of learning and living ... in all lifewide contexts (family, school, community, workplace and so on)" (UNESCO 2014a).
- **Making better use of ICT in the context of adult learning, as a means of widening access and improving the quality of provision, e.g. by exploiting new opportunities for distance learning and the creation of eLearning tools and platforms in order to reach new target groups, in particular those with special needs or who live in remote areas.** This objective matches both UNESCO and OECD's recommendations, according to which 'Adult learning should allow adults to adapt their learning to their lives and ICT should facilitate self-directed and collaborative learning' (OECD 2014b; UNESCO 2014b).

Among other suggestions, different forms of self or group learning are considered suitable for the purposes of adult learning, such as online learning platforms, Massive Open Online Courses (MOOCs), Open Educational Resources (OERs) etc., which make use of current ICT developments and promote creativity and innovation among educators and learners.

When it comes to environmental awareness and sustainable development, several educational resources and methods have been developed in the framework of EU funded projects, especially under the program Erasmus+.

For instance, in the framework of the project 'Take it' (<https://takeit-project.eu/>), the following resources and tools have been developed:

- **The TAKE IT step framework:** step-by-step guidance designed to give a first insight into the key topics related to climate change adaptation, effective adult education approaches, social and behavioural change, and pathways for climate action.



- **CPD (Continuous Professional Development):** an e-learning programme designed to upskill adult educators on climate change adaptation and effective educational approaches.
- **MOOC (Massive Open Online Course):** for boosting climate literacy of individuals through a package of interactive contents.
- **Digital Learning Hub:** a multilingual learning portal offering open and instant access to learning contents including a public forum, in a format of a newsgroup.

On the other hand, in the framework of the project 'Students in Climate Action' (<https://studentsinclimateaction.com/>), the following learning material has been developed:

- The **Climate change education learning kit** aims at providing all the necessary and appropriate teaching and learning materials to teachers and school staff for introducing and engaging their students and their families to the phenomenon of climate change and the urgent need for action.
- The **Educational Board Game** aims to increase students' interest in the issue of climate change in a way that impacts their behaviour and empowers them to become climate change activists within their communities.
- The **Environmental Activism Handbook** is intended to complement the Climate change education Learning Kit and aims to assist teachers and educators in empowering young people to become more conscious of their rights and to put themselves at the forefront of the fight against the climate disaster.

On another note, the FOOD RESCUE project (<https://foodrescue-project.eu/>) introduces an "applied learning" educational package that builds on food waste as a conceptual context for learning, in order to enable students to learn not just the facts, but develop problem-solving and critical-thinking skills. The project includes the FOOD RESCUE curriculum by employing state-of-the-art student-centered pedagogical approaches, moving beyond the traditional methods of teaching that utilize primarily lecture-based methods. It combines different pedagogical tools such as the maker's education and the youth participation and activism pedagogies. The objective of the FOOD RESCUE curriculum is to enable students to experience, reflect upon and engage in food waste reduction practices through which they use their experiences and reflections as a means to a deeper learning process leading to the development of 21st century skills. Overall, the curriculum will foster experiential and emotional learning on the topic of food waste and climate change and support the development of competences such as critical thinking, problem solving, emotional intelligence, social responsibility etc.

Furthermore, the project 'Empowering educators and community leaders to act on climate change (ACTION)' (<https://action.erasmus.site/>) aims to provide educators and community leaders and professional with learning opportunities and up-to-date



facts, new and innovative training processes, cutting-edge resources and digital era tools, to better empower their learners and citizens as ‘agents of change’ and promote closer links between education and local communities. The ACTION e-learning and apps portal includes the following:

- ACTION framework, using infographics to offer practical guidance and tips for its implementation
- set of trivia quiz apps created to i) boost popular education on climate change (based on core modules); and ii) boost educational reengineering (based on integrative modules)
- ultra-simple app generator to enable educators and community to create own storyboard app better empower learners and citizens to act on climate change. A comprehensive instructional video and e-tutorial will be provided to promote its usability
- case study videos to raise awareness on climate change practices and challenges

What is more, the objective of the FARCE project is to propose a new, ‘infotainment’ based approach by re-calibrating today's negative news flow. Not making light of serious issues, but dealing with them in new thoughtful, humorous and educational contexts, might well be the key to making people wake up, take notice and act upon the crucial issues of the day such as the climate crisis, and engage with them in a more meaningful way; such is the power of satire. FARCE consortium has created educational material to support adult and community educators to raise awareness on climate change using satire and comedy. The material consists of comedy pieces and lesson plans available on an open-access platform: <https://www.climatefarce.eu/>.

Overall, it can be supported that adult learning is an ongoing process which involves educators and learners alike and can benefit from current trends, digital and conventional tools and methods that have been developed in the field of environmental awareness and in general.

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<https://takeit-project.eu/>

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7. Indicators: Current patterns in adult learning

Current participation patterns in adult learning

To frame the current participation patterns in adult learning it is useful to refer to a recent OECD survey, which frames the issues at European level using some aggregated data referred to the end of 2021.

Looking at the macro data, the most important highlights of the survey confirm the increase of engagement, a trend which is considered as stable with reference to years 2007-2016. A significant drop has been registered in the years 2019-2020, in coincidence with the Covid 19 pandemic. Another important highlight refers to the employment status of adult learners. The majority of the people which are currently engaged in formal or non-formal education and training activities are employed, and in particular employed woman.

A close look at the data provided reveals the following scenario:

- On average across countries with data from the Adult Education Survey (AES), about half of the surveyed adults (aged 25-64) had participated in adult learning (formal and/or non-formal education and training) in 2016. Participation rates varied widely, from 30% or less in Greece, Lithuania, Poland and Turkey to more than 60% in the Netherlands, Sweden and Switzerland;
- Between 2007 and 2016, participation rates in adult learning (formal and/or non-formal education and training) increased in almost all countries with available data. On average across OECD countries taking part in the AES, participation rates in adult learning increased from 38% in 2007 to 48% in 2016,
- A recent OECD brief shows that, under a certain number of assumption, COVID-19 induced shutdowns of economic activities decreased workers' participation in non-formal learning by an average of 18%, and in informal learning by 25%;
- In 2019, the number of adults reporting they participated in formal and/or non-formal education and training in the month prior to the survey decreased significantly in the second quarter of 2020. This is particularly evident in Austria, the Czech Republic Denmark, Estonia, France, Latvia, Poland, the Slovak Republic, Slovenia and Switzerland, where the number of adults participating in formal and/or non-formal education and training



decreased by 30% or more between the second quarter of 2019 and the second quarter of 2020, for both women and men;

- Although participation rates in non-formal education do not differ much by gender (45% for women and 44% for men), men and women tend to pursue different fields of training. Data show that, compared to women, men are more likely to follow training initiatives in the field of information and communication technologies (7% for women and 10% men); engineering, manufacturing and construction (3% and 13%, respectively); and services (15% and 23%, respectively);

Skills levels in the adult learning population

Adult education is part of the agenda of the European Union and national prerogatives, guaranteeing access to education, training, and lifelong learning for all in the UE. European education policy strategies reveal a shift towards the coordination of education and training policies. The aim is to include education at all levels taking into account the economic and social situation of adult learners. There are different indicators to evaluate the adult participation in lifelong training, the percentage of adults who graduate from higher education, the percentage of adults who have insufficient proficiency in basic skills (literacy and numeracy). Those indicators allow a follow-up on the European strategies and insure education and training for adults. The learning process has different patterns and allows one to develop a wide range of skills.

The notion of literacy is often summarized as the knowledge and the skill of reading and writing. But literacy actually embraced a way wider skill. Indeed, literacy takes its essence in the notion of language, and therefore the communication between an individual and the world he lives in. Reading and writing are therefore essential to literacy, but literacy takes in account also the capacity to communicate through language, the capacity to adapt, to elaborate its language to be understood, and the ability to build a sense in a phrase, to another individual. Literacy is therefore a cultural and a social skill more than a scholar skill reduced as the ability to read and write. The numeracy is also often summarized as the ability to count and measure. As for the notion of literacy, it has been summarized as a really basic scholar skill, while it is in reality, a wider social and cultural skill. Indeed, it is also the ability to understand, the ability to interact with quantitative data that are more and more used and essential in our Modern World. Therefore, those 2 notions of literacy and numeracy are clearly linked to the ability to interact with our modern World, the ability to interact in a social context, and in our cultural context. Those two more abstract skills are linked to the vision of Modern education but also, to the notion of



Human Capital that the European Union wants to develop quantitatively and qualitatively. The notion of human capital is clearly linked to the Economy. Indeed, if a society has more and more skills through its experiences and its education, this same society will be more productive (socially, culturally and economically) and specialized in its area of productivity. This is in this context that the European Union wants to develop the education and the basic skills of the whole population, to insure a large cultural, social and economic productivity in its territory.

Europe is providing a huge and a wide offer of educational training for adults. They are not all announced as a skill gain, but even if it is not in their title, most of them aimed to raise the skill of the European human capital, notably the basic ones. Half of European countries have developed different programs that aim to raise the basic competencies. Most of those training are non-formal ones, but some of them are also formal and therefore recognized as a certification. Most of these programs are integrated as their policy on employment; it therefore shows that the main objective of adult education is therefore productivity and social progress.

The actual European human capital (in terms of skills) has been the object of huge research, quantitatively and qualitatively. But those European statistics are not enough to understand the problematic linked to skills, if they are not also more specific on the geographical differences, on generational differences, and on countries specificities. Indeed, the European human capital is not homogeneous. One in four adults in Europe have at least a secondary school diploma, and 6,5% of the European adult population have left the education system having completed only primary education. We also know that Southern European countries are more affected by low levels of educational achievement of the adult population. Moreover, young adults show, on average, a level of academic achievement well above that of the older population. When we speak about literacy and numeracy

competencies, we also know that about one in five adults has only weak reading and numeracy skills, and nearly one in three have little, or no skills on Technologies. In the study made in 17 European countries named "Programme for the International Assessment of Adult Competencies", 19.9% and 23.6% of adults respectively have low reading achievement and low calculation.

There are various obstacles today in the development of adult education; indeed, we know that European people who have less basic skills, are also the ones who have fewer access to adult education. Research also indicates that a minimum of 100 hours of instruction is required to make significant progress in basic skills; there is therefore a huge amount of abandonment in training. In order to face these issues, the European Union therefore needs to work on the access of those trainings, but also on the retention of those ones (through the format, the timing, the schedule,



their evaluation...). Another issue is the lack of common methodology, objectives and evaluation between the different countries and their programs of adult education.

In this complex context, taking into account that Europe gets engaged in ensuring that adults acquire basic skills, new political actions arise. The European Union also benefits from the endorsement of national governments policies, notably through their employment politics, and the implementation of the multiple projects linked to adult education at national level. In order to create a common language, ground and methodology, the European Union created a platform to allow training, to help people to develop their professional profile, and to receive European certification of adult learning on the acquired skills and competencies. Europass platform is a free platform used at European level where users can create, for example, a profile with their curriculum highlighting the acquired skills and experiences. To be noted that Europass is the most used format in Europe. Not only is it a platform to create curriculums and cover letters, but also to receive personalized suggestions for training, job and internship opportunities all over Europe. Indeed, the platform relies on other websites to collect data from national operators to make an optimized inventory of the available training offer in Europe and on the global skills requirements.

Europe is therefore providing a huge and a wide proposition of educational formation for adults. They are not all announced as a Skill gain, but even if it is not in their title, most of them aimed to raise the skill of the European human capital, notably the basic ones. Half of European countries have developed different programs that aim to raise the basic competencies. Most of those formations are non-formal ones, but some of them are also formal and therefore recognized as a certification. Most of these programs are integrated as their policy on employment; it therefore shows that the main objective of adult education is therefore productivity and social progress. One of the issues today is the lack of common methodology, objectives and evaluation between the different countries and their programs of adult education.

Types of ICT used in adult learning

Competencies and skills need to advance alongside innovations and continuous improvement, given that according to statistic evaluations, almost 90% of future jobs will require digital skills. Answering this demand, e- learning (and ICT based learning) is the key.

According to historical context, e-learning policy formulation at the EU level serves to the goals of European integration, with the aim of promoting equal distribution of



resources, opportunities and initiatives of Member states. The development of e-learning policies at European level started a few decades ago, in 1996. The four key e-learning policy documents delivered by European Commission are as it follows:

- Learning in the Information Society: Action Plan for a European Education Initiative (1996);
- The eLearning Action Plan (2001);
- The eLearning Programme (2003);
- The Lifelong Learning Programme (2006).

During those two decades, it can be observed a gradually increasing consolidation of e-learning policy at EU level. The approach to supporting e-learning initiatives become formal what enabled Member states to receive plenty of related benefits. European initiatives enables teachers, schools, students and other citizens to share efficient teaching methods and effective alternative teaching practices involving information and communication technologies (ICT).

The European Commission has been very active in promoting the effective and efficient use of ICT for education and training and has gained considerable experience in fostering co-operation, networking and exchange of good practice at European level.

The appropriate use of ICT and the Internet in education and training helps to face the new challenges by providing an opportunity for increased quality, convenience, diversity and effectiveness. This is now generally accepted and has been repeatedly demonstrated in practice.

EU institutions continue to devote attention and place particular focus on e-learning as a policy priority by emerging this type of learning with inclusion policies at such criteria as age, gender, education status, residence, etc. The Digital Education Action Plan is the key point of e-learning and e-education importance nowadays in the European Union. Adopted by the European Commission at the beginning of 2018, it supports technology-use and digital competence in education through actions such

as artificial intelligence, cybersecurity and digital entrepreneurial skills. The Digital Education Action Plan has been renewed to cover the period of 2021-2027. The summary of the plan is available at: <https://education.ec.europa.eu/focus-topics/digital-education/about/digital-education-action-plan>.

One of the elements of digital education is devices/technology in ICT which include:

- Access of course materials through remote devices;
- Online digital repositories for lectures, course materials, and digital library;
- Online/cloud based academic management systems;
- Employing the flipped classroom concept;



- Making use of handheld computers, tablet computers, audio players, projector devices etc.

Following the training concept of AGROS training course (delivered using open-source Learning Management System MOOC), the topic “Online/cloud based academic management systems” will be presented in more detail by description of open online tools used in the e-learning activities {based on the research of *ICT for Adult Educators (2019)*}.

Project Libre	
<p><i>ProjectLibre</i> is a free and open-source project management software system intended as a standalone replacement for Microsoft Project. Features include:</p> <ul style="list-style-type: none"> – Compatibility with Microsoft Project – Gantt Chart – Network Diagram – WBS/RBS charts – Earned Value Costing – Resource Histograms 	
Topic	Planning and coordinating a training.
Andragogical value	<p>The value of ProjectLibre is not as much andragogical as it is managerial as it allows trainers to plan all aspects of their training, including the use of other more specific software with andragogical value. Andragogical value for the trainers using the programme is that they can also use it in other not only professional but also personal domains to plan and coordinate (life) projects.</p>
Accessibility	<p>ProjectLibre is a free and open-source project management software system available under Common Public Attribution License. It can be installed on Linux, Windows and OS systems.</p>
<p><i>ProjectLibre is available at http://www.projectlibre.com</i></p>	



Question mark	
<p><i>QuestionMark</i> is a software tool which allows measuring knowledge, skills and attitudes. It enables to author, deliver, and report on tests, quizzes and surveys for pre-course test and needs evaluation (among other applications).</p>	
Topic	Assessing training needs.
Andragogical value	By using this tool you can create, deliver, and report on assessments: learning outcomes, certify knowledge, skills and abilities, demonstration of regulatory compliance. Its full range of possibilities are: Pre/post course tests; Practice tests; Placement tests; Course evaluations; Needs evaluations and so on.
Accessibility	Access subject to subscription (payment software). Necessary to register for a free trial (maximum 30 days). Can be used in different devices: PCs, Smart phones, tablets, and other multi-touch devices.
<p><i>Question Mark is available at https://www.questionmark.com/</i></p>	
Mindmeister	
<p><i>MindMeister</i> is an online mind mapping tool. It allows users to capture, develop and share ideas visually. The tool can be used for brainstorming, note taking, project planning and event managing. External elements (such as images, links, videos, etc.) can be added to enrich the mind map and the idea to be presented. It can be used alone or in a team and is completely web-based.</p>	
Topic	Designing training content.
Andragogical value	MindMeister is a tool which can be used by adult educators to plan the learning process in lessons, courses and activities. It allows to visually represent the steps to the learners or other adult educators and to include all materials planned to be used within the process.



Accessibility

The use of Mindmeister is free. Users need to sign up and can use the basic features of the tool. There are additional fees for the use of advanced features. It should be noted that it is possible to pay “Educational fees”.

Mindmeister is available at <https://www.mindmeister.com>

MOOC

A great way to organize and provide learning content online is MOOC – Massine Open Online Courses (www.mooc.org). MOOC is free online courses available for anyone to enroll. MOOC provide an affordable and flexible way to learn new skills, advance the career and deliver quality educational experiences at scale. It is largely used in blended learning, distance education and the flipped classroom approach. It allows for extending and tailoring of learning environments and is used by numerous universities, other educational institutions.

Topic

Developing training content.

Andragogical value

MOOC empowers educators with flexible and powerful tools. Such tools can enhance collaborative learning and improve educational outcomes. It promotes innovative teaching to help adults learn via technology.

Accessibility

Courses providers and students should have their accounts. For enrolling in a course, the students should know the login details and the name or address of the learning course. In addition to the web-based version, mobile apps for Android, Chrome-based OS, iOS are also available.

MOOC is available at <https://moodle.org>

WordPress

WordPress is an online tool that lets us create and manage a weblog. Similar to a website, this tool allows us to create and share information online. With this technology, it is possible to present ideas/content in various ways (text, image, sound, video) and make external connections with hyperlinks. Weblogs can be created and maintained by a single individual (personal weblogs) or by a group of people who share



common interests (collective weblogs). There is a huge variety of weblogs, depending on purpose, content and target public. The vast majority of weblogs have two complementary tools: the comments tool that allows readers to add comments to the content (posts) published by the author; and the trackback, that allows posts to be referenced on other weblogs, making it easier to share and exchange information.

Topic

Delivering training.

Andragogical value

Blogs have been widely used as digital information sharing vehicles, enabling the disclosure of a variety of subjects. Becoming an online content producer is something that is available to anyone with ideas to share. In an educational and training context, it is a useful tool for the construction of activities characterized by dialogue and reciprocity (collaborative learning). In this manner, it can be an adequate andragogical strategy to promote and foster the feeling of virtual community among the group of trainees. It is also a good way to show and share the learning activities and the work done by the participants during a training course.

Accessibility

The use of WordPress is free. However, depending on the type of contract, payment may be required for the activation of certain features. A mobile application is freely available in case we want to create and manage content with more flexibility.

The WordPress service is available at <http://wordpress.org>

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