



GreenHeritage

The impact of Climate Change on the Intangible Cultural Heritage

Deliverable D3.1 GreenHeritage Interactive Map

Version: V 1.0

Project details:

No:	101087596
Name:	GreenHeritage
Title:	The impact of Climate Change on the Intangible Cultural Heritage
Start date:	December 1st, 2022
Duration:	36 months



**Co-funded by
the European Union**

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Dissemination Level		
PU	Public	●

Document details:	
Project	GreenHeritage
Title	Deliverable D 3.1: GreenHeritage Interactive Map
Version	1.0
Work package	WP 3
Author(s)	Athens Lifelong Learning Institute
Keywords	Digital, interactive, case studies, impact, education, dissemination
Document ID	GreenHeritage Interactive Map D3.1 v-1.0
Synopsis	Development of the Digital Interactive Map for the GreenHeritage project
Release Date	January 29 th , 2024

Revision history			
Version	Date	Changes	Prepared by
0.1	January 16, 2024	Draft version	Ourania Xylouri, Giannos Barbarousses
0.2	January 19, 2024	Revised version upon coordinator comments	M. Defingou, G. Barbarousses
1.0	January, 29, 2024	Final version	G. Padeletti, P. Grifoni



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Executive Summary

This deliverable, D3.1 - Digital Interactive Map, reports the activities carried on to realize the digital interactive map as output of the GreenHeritage project; it details how the map was conceived and implemented as part of the project “The Impact of Climate Change on the Intangible Cultural Heritage” (GreenHeritage, ERASMUS-EDU-2022-PI-FORWARD-LOT1, GA No. 101087596).

The GreenHeritage project aims at developing a holistic, innovative, and inclusive approach toward direct and indirect CC impacts on ICH. Until now, this problem has received quite scant attention.

This activity is part of the WP3 of the project and refers to the design of an interactive map with rich graphic elements that will allow, among other things, zooming in and out, panning around, identifying specific features, and querying underlying data, such as by topic or by a specific indicator. The map is functional to locate and provide details on Intangible Cultural Heritage cases distributed all over Europe. The cases described were the object of what developed in GreenHeritage WP2.

More in details, this work has been carried out by ALLI, based on the work already done in the context of the Tasks 2.1- “Needs Analysis” and Task 2.2-“Mapping of Existing Practices” of WP2-“Needs Analysis and the development of the Green Heritage methodology”. This report analytically describes the development and specific technical details in the design of the Digital Interactive Map.

The map has been based on the Case Studies objects of WP2 and presented in D2.2.



Section 1 Introduction

1.1. Document Organization

The present document is organized in the following sections:

Section 1: Introduction (Document Organization, Reference Documents, Acronyms and Abbreviations)

Section 2: Introduction to the Digital Interactive Map

Section 3: Scope and Aims of the Interactive Map

Section 4: Process of Developing the Interactive Map

Section 5: Structure of the Digital Interactive Map

Section 6: Conclusion and Next Steps

1.2. Reference Documents

Document name	Reference number
GreenHeritage – Annex 1: Description of Work	Grant Agreement nr. 101087596
GreenHeritage – Project Management Plan	Deliverable D3.1
GreenHeritage - Quality Assurance Plan	Deliverable D1.4
GreenHeritage – Privacy and Open Data policy and procedures	Deliverable D1.7
GreenHeritage - Primary and secondary data research findings	Deliverable D2.2
GreenHeritage – Policy round table 1	Deliverable D5.6

1.3. Acronyms and Abbreviations

Acronym	Description
AA (level)	Mid-range level
CC	Climate Change
CGI	Computer-Generated Imagery
CH	Cultural Heritage
CodeIgniter	CodeIgniter is a free and open-source software rapid development web framework
CTA	Call To Actions



CS	Case Study
CSS	Cascading Style Sheets
DB	Data Base
EU	European Union
FASTCGI	Fast Common Gateway Interface
HTML	Hypertext Markup Language
ICH	Intangible Cultural Heritage
ICT	Information and Communication Technology
IDA	Independently Deployed Applications
IPv6	Internet Protocol version 6
IT	Information Technology
JS	JavaScript
LMS	Learning Management System
M	Month
MySQL	My" Structured Query Language
MOOC	Massive Open Online Courses
OER	Open Educational Resources
PHP	Hypertext Preprocessor (Personal Home Page)
PLESK	Plesk is a commercial web hosting and server data center automation software
SNI	Server Name Indication
SQL	Structured Query Language
SSL	Secure Socket Layer
TLS	Transport Layer Security
UML	unified modeling language
UX	User eXperience
VLE	Virtual Learning Environment
WCAG	Web Content Accessibility Guidelines
WP	Work Package

Section 2 - Introduction to the Digital Interactive Map

The digital interactive map is the GreenHeritage outcome described in the present deliverable D3.1. It is the result of the collaborative efforts of the project partners. It draws information and perspective from many aspects of the project, some currently in progress, especially from Deliverable D2.2 "Primary and secondary data research findings" of WP2 "Needs analysis & development of GreenHeritage methodology".

The GreenHeritage project marks the beginning of a transformation journey aiming at addressing persistent challenges in the fields of ICH and CC. This activity will not only kick off a series of initiatives but will also allow to test innovative solutions in the field that can evolve into useful practices. It aspires to educate both professionals and the general public about a lofty yet urgent goal. The map is an operational tool towards this effort.



In designing this digital interactive map, examples of the most endangered areas and regions in Europe, where climate change has started to negatively impact different types of immaterial cultural heritage, were considered and shown. The digital map is based on the findings of WP2, and its content will be made available, eventually, in English, Greek, Italian, Latvian and Spanish.

In the development of the map, initiatives valorizing or digitizing ICH using high-caliber ICT tools, were considered. Collaboration with, and feedback from, the GreenHeritage consortium partnership, and particularly the coordinator of the project, was always a priority.

Section 3 - Scope and Aims of the Interactive Map

The goal of the digital interactive map was conceived in line with the general philosophy and guidelines of the project, and in agreement with the partnership and the coordinator. It will be directed to increase awareness on the issues concerning CC and ICH and will assist in creating synergies among cross-sectoral researchers, practitioners, policymakers, and citizens to exchange knowledge and facilitate discussion on measures for the management, conservation, and protection of intangible heritage in the face of climate change.

The digital interactive map will assist in fostering the culture of sustainability and innovation among researchers and practitioners, empowering them by providing a set of cutting-edge data and resources, building on skills available in digital media.

Awareness of CC dangerous effects to ICH can then help in their preservation and protection through public debates and policymakers actions at national and European level.

Interactive maps are a cost-effective solution for information sharing, offering a variety of benefits that can help businesses and organizations to save time and resources.

With interactive maps, information can be shared in ways that are easy to understand and analyze, without the need for extensive training or technical knowledge. This can help to reduce the time and resources required to educate users and ensure that information is shared more efficiently.

Moreover, interactive maps can be used to create engaging and dynamic content that can be shared across a variety of platforms, including social media, websites, and presentations. This can help to expand the project's reach and increase its visibility.

In addition, interactive maps can be customized to suit the project's specific needs and requirements for promoting the protection of ICH, allowing the partnership to choose the features and functionality that are most relevant to the project's aims and priorities. This can help to ensure that the project is getting the most value from the time and effort dedicated by the partnership, and that the information is shared in a way that is tailored to the widest possible audience.



In conclusion, by using interactive maps as a cost-effective solution for information sharing, time and resources can be saved, visibility is expanded, and engaging and dynamic content helping to inform and educate the audience is created.

The GreenHeritage specific objectives that the designed map addresses are the following:

- Analysing the state of play at national and European levels regarding intangible cultural heritage and current climate change threats.
- Exploring the key role that immaterial cultural heritage could have in sustainable and climate-resilient development and mapping existing adaptation practices across the EU.
- Developing a methodology, policy recommendations, and a handbook for the management, preservation, and protection of immaterial cultural heritage in the face of climate change implications.
- Adding the preservation and protection of intangible cultural heritage to the heart of the public debate as well as national and EU policymaking.
- Empowering awareness and active citizenship regarding environmental issues, sustainability, and the importance of preserving tangible cultural heritage along with intangible cultural heritage.
- Developing a culture of sustainability and innovation among researchers and practitioners and empowering them by providing a set of cutting-edge training resources building on skills intelligence, available in digital and open media.
- Supporting the development and approach of micro-learning and digital based education by promoting effective use of digital learning practices and capabilities.

Section 4 - Process of Developing the Interactive Map

4.1. The Map's Centrality to the Project

In the development of the map, stock of initiatives valorizing or digitizing ICH using high-caliber ICT tools were always taken. Collaboration with, and feedback from, the partnership and in particular the project coordinator and the WP3 leader, was always of paramount importance.

In moving forward, some central issues of the interactive map's general use as an asset for the GreenHeritage project, were considered. Some of the key questions faced, were:

- Why provide cartographic interaction?
- When should cartographic interaction be provided?
- Who should the users of cartographic interaction?



- Where should cartographic interaction be provided?
- How should cartographic interaction be provided?

Digital maps offer more than their static, predesigned, non-updateable and non-changeable predecessors. Computer maps are no longer designed once for a particular type of a user by a cartographer, but generated dynamically from the previously prepared underlying data, using pre-programmed algorithms. This enables the map to be easily updateable and allows for provision of the customization of the display and selection of the information for display by a user. This replaces part of the role traditionally played by a cartographer, who still should be involved in, and whose knowledge is important for the design of automated underlying mechanisms.

Therefore, it is necessary to highlight that an interactive map constitutes an invaluable way to handle information and provide a real-time, contextual, and situational data visualization. It makes data exploration easy.

In addition, the digital interactive map had to be harmonized and synchronized with the GreenHeritage project's Virtual Learning Environment (VLE). The GreenHeritage VLE is available to the project's learners through the following web address: <https://elearning.greenheritage-project.eu>

Since the VLE is based on the open source Open edX software, the GreenHeritage consortium has already provided online documentation targeting different user profiles (DevOps, Developers, Learner's Guide). These are all publicly available at the following web address: <https://openedx.org/community/documentation/>.

Interactive maps can present data in a form which makes it easy to identify, locate, manipulate, format, and effectively communicate information. Visual navigation is easy, even novice users can find correlations, patterns, and outliers, simplifying the decision-making process.

4.2. Technical Analysis-Steps Taken

4.2.1 Defining Our Objective

The main difference between information provided in an online course or a campus class and an interactive map aiming to educate users and keep them informed on the protection of ICH from CC, is that instead of hour-long lectures or online classes, the material is built up of many bite-sized components, such as links to short videos or articles and a summary of the most important points. These components are modular or standalone since modularity has many benefits. Users of an interactive map can quickly find compactly organized reference information about a specific topic without the need of scrolling through many texts or scrub through an hour-long video to find the piece of information they were looking for.



The view of information is clear and concise. This map also consolidates information to create a story. It is easy for the user to understand a complex data set if the information is available as a story. With this map, users can plot data points, map pins, create text hovers, select, and filter data elements and modify options to change perspectives. Data is consolidated on the map and based on user preferences; the necessary information is presented. Based on the context of data, a story is created, opens a new window, which may give a bird's eye view or the most granular detail.

In addition, the designed interactive map is cloud-based, making it easier for multiple users to update or view these maps at the same time. Since information can be updated in real-time, there are no inconsistencies while viewing the map.

A central aim in the process of the design was to engage a very broad and set of different stakeholders, including governance actors, enterprises in both public and private sectors, scientific specialists in different disciplines, from biologists and marine scientists to agronomists and engineers, representatives of civil society organizations, and of course, local people and general public that, as all evidence has shown (GreenHeritage policy round table), display a considerable and very encouraging concern for the preservation of ICH.

4.2.2. Data Gathering

Developed by ALLI as part of WP3, the map was a central part of the project and demanded an active and multifaceted collaboration among the entire consortium members. The goal of the map is to show examples of the most endangered areas and regions in Europe where CC has started to impact negatively different types of ICH. The map is based on the findings of WP2, described in GreenHeritage deliverable D2.2.

In particular, ALLI was interacting with the project coordinator (CNR), the WP3 leader (Readlab), as well as the other members of the consortium, namely, the University of the Aegean, Candide, the Institute of Literature, Folklore and Art of the University of Latvia (ILFA UL), the Research, Education, Innovation and Development Company of the North Aegean Region (ELORIS), the Santa Maria la Real Foundation (FSMLR), the European University Center for Cultural Heritage (CUEBC), and the Euro-Mediterranean Center on Climate Change Foundation (CMCC). The cooperation and synergy among partners allow to obtain excellent achievements. These include the sharing of data, the examination of interactive maps employed in similar projects developed by partners, and a dynamic exchange of proposals and ideas on the technical and substantive parts of the map.

It was decided to include rich graphic elements in designing the interactive map that allow among other things, zooming in and out, panning around, identifying specific



features and querying underlying data such as by topic or a specific indicator (facilitating the searching activities); this is in line with the Grant Agreement and the partnership consultation results.

The sustainability of project results is a key element for GreenHeritage to create change that will echo at national and EU levels over a long time forward. The principal aim is to ensure knowledge transferability. Moreover, a carefully designed layout will guarantee the scalability and mainstreaming of project results by amplifying the project results to other EU countries and organizations as well as the sustainability by keeping and updating the ICT tools and suggesting future actions.

4.2.3. Choosing the Mapping Platform

After an exchange of ideas among the GreenHeritage partners, the various platforms available for mapping, and relevant tools such as pop-ups to be incorporated were examined. Following inputs from IT ALLI experts, it was decided to make the interactive map mobile-friendly, create a web address for hosting it, and make sure that links to videos could be hosted in a satisfying manner. Various browsers and devices were tested.

A mobile-friendly approach is crucial. In general, the percentage of learners who access online courses through smartphones is constantly rising. It is expected that an important percentage of the GreenHeritage interactive map's active users will perform part of their activities through their personal mobile devices. Having this in mind the following best practices were then employed:

- Implementing an interactive map for the project on a web address set up especially for this purpose gives users the information they need quickly and clearly. From a user experience (UX) point of view, every part of a web address should be scrutinised to ensure all elements provide a meaningful interaction. For this reason, the GreenHeritage interactive map was designed to display relevant information in an intuitive way to keep users on the intended user flow. For example, when showcasing events happening in a particular case study in Italy or Greece, this digital interactive map can easily display this information through pop-ups without the need for lists, unnecessary text, or multiple pages. The quicker the users get what they need in the user journey, the quicker they'll move onto the next step, meaning more and greater impact for the completeness of the project.
- The technologies and tools used for its implementation were HTML, PHP, and SQL for formatting, configuring the functions and configuring the database respectively. In addition, the tools used include Apache server (world wide web server), MySQL relational database management system (server), phpMyAdmin tool written in PHP to manage MySQL and finally Visual



Paradigm and Pacestar Uml Diagrammer tools to create the following: relation schema, relation entity and use case diagram.

4.2.4. Development of the Interactive Map and Tools used

Web pages and tools for the World Wide Web were developed, that is, a web page is created with the map to mark the points (markers) to use their coordinates and to present the results i.e., the points of interest located within one kilometer from the clicked points. For the formatting similarly HTML language was used, for configuring PHP functions and configuring SQL database.

- HTML, CSS, JS tools were used (for the frontend - including OpenStreetMap + leaflet for the maps + Json file for the map)
- PHP for backend (connection to Basic etc.)
- MySQL for database (phpMyAdmin admin)
- Linux Server (Apache, Nginx) + Plesk (admin)

Nginx was greatly helpful in the design of the interactive map, as it is specifically built to offer low memory usage and high concurrency. Rather than creating new processes for each web request, Nginx uses an asynchronous, event-driven approach where requests are handled in a single thread.

With Nginx, one master process can control multiple worker processes. The master maintains the worker processes, while the workers do the actual processing. Because Nginx is asynchronous, each request can be executed by the worker concurrently without blocking other requests.

Some common features seen in Nginx include:

- Reverse proxy with caching
- IPv6
- Load balancing
- FastCGI support with caching
- WebSocket
- Handling of static files, index files, and auto-indexing
- TLS/SSL with SNI

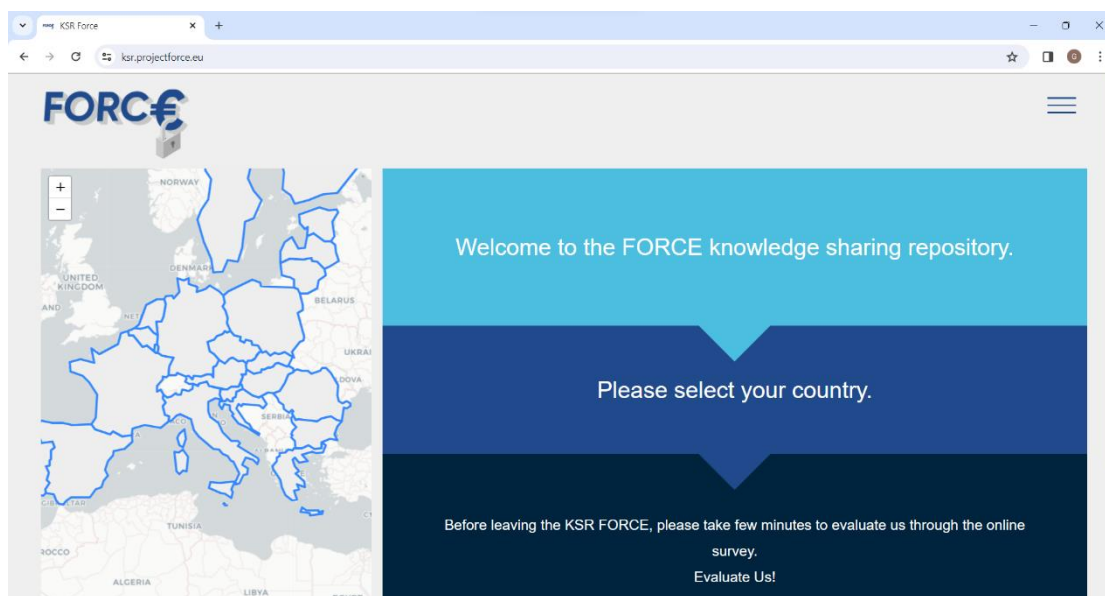
Plesk was very important for the overall design of the map.

After purchasing the license, it was necessary to install the corresponding license key in Plesk. This was true for both the Plesk license and any additional licenses. A Plesk activation code is an alphanumeric sequence consisting of five groups of six characters each, like, for example, this one:

AB1C23-4DEF56-7GHI89-JK1L23-MNP456

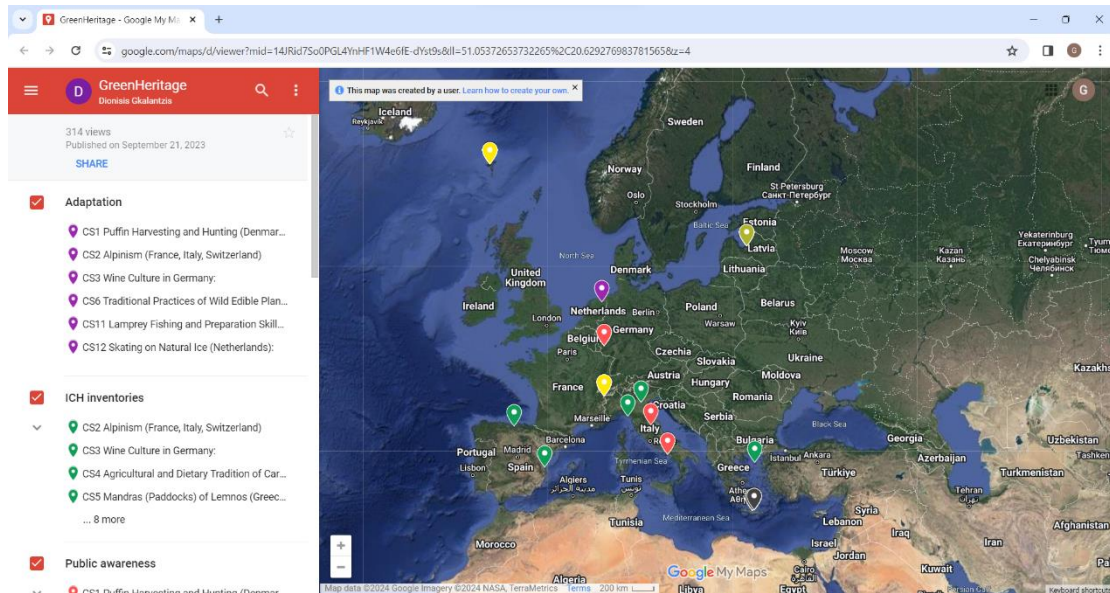
This technical approach was chosen because it presents the advantages of using PHP framework with Plesk (Model-Provider-Controller) template, which is very helpful. This fact contributed to the use of framework, which is based on the suitable template, namely Codeigniter.

This was a dynamic process, with input from the entire consortium of the project, with the aim of making the map user-friendly and, at the same time, responsive to the challenges of the project and containing a breadth of useful information. After consultations with the partnership, which culminated with the annual project meeting at M12 in Mytilene. In this occasion, it was decided to use the digital interactive map of the “KSR Force” project as a main inspiration but adapted to the specific needs of GreenHeritage.

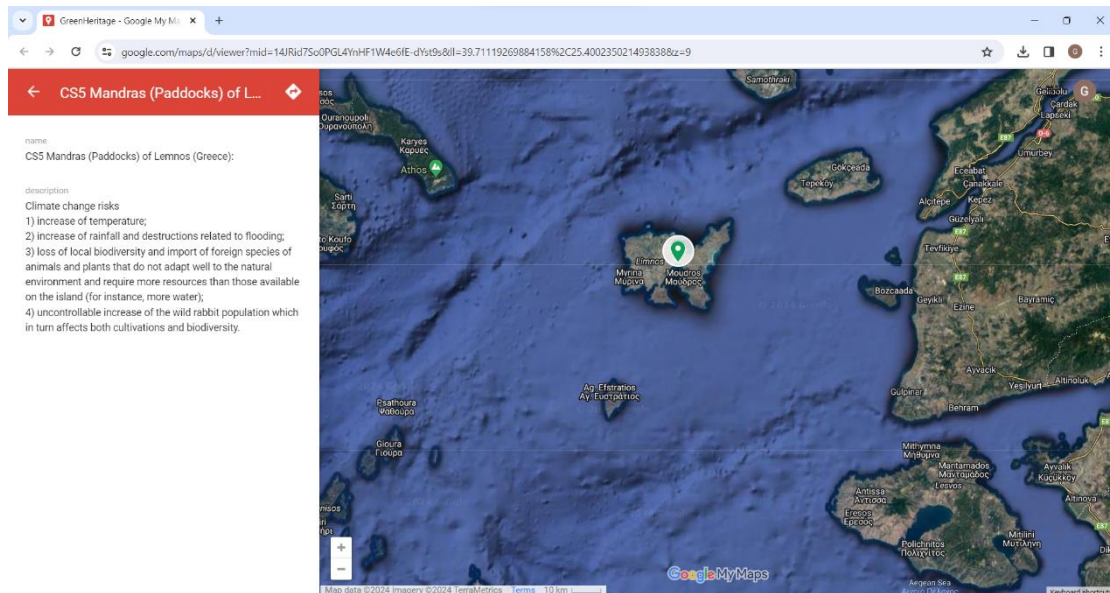


Indeed, as a result of this creative collaboration, the design of the map was developed and experimented.

The first attempt, using the software and tools outlined above, resulted in the creation of a map in a versatile form, with the aim to collect the necessary feedback from the coordinator and the collective opinion of the consortium.



We moved forward with the necessary technical adjustments, to improve the use of the current technological tools available, and at the same time achieve a better and more complete design of an interactive map that can truly fulfill its role of enhancing the ICH and concretely assist the objectives of the project. Accordingly, for displaying information on the project case studies the available tools were used.



The results were improved, but we still tried to improve and make full use of all available technical means for the interactive map to fully realize its scope and potential.



Section 5 - Structure of the Digital Interactive Map

5.1. Technical Features

The work continued along the axes determined by the needs of the project, with the aim of integrating all the research and progress for each of the case studies identified in the context of the activities of Deliverable D3.1 "Digital Interactive Map".

The map can now be accessed at the following web address: https://map.greenheritage-project.eu/index_hidden.php.

In general, the visual data are processed much faster than the written word. Instead of forcing users to scroll through a page of text, users can easily view relevant location data with an interactive map. With different layers allowing for various datasets, users can interact with the map to find information relevant to their intentions.

This web address which now hosts the map has the role of the main online communication axis of this particular GreenHeritage outcome/deliverable. It aims at spreading information about the digital interactive map, its multi-faceted services, and its main achievement. The website design included the interface design, the web graphic design, the page layout creation, the navigation design, and the content creation. The website is designed according to the Web Content Accessibility Guidelines WCAG 2.0 (Level AA). Initial website content has been created uploaded to the GreenHeritage website.

The map contains the learning management and the course authoring applications (LMS and Studio, respectively). This service is supported by a collection of other autonomous web services called Independently Deployed Applications (IDAs). The Django server-side code in the LMS and elsewhere uses Mako for front-end template generation. The browser-side code is written primarily in JavaScript with some CoffeeScript as well (edX is working to replace that code with JavaScript). Parts of the client-side code use the Backbone.js framework, and edX is moving more of the code base to use that framework.

The structure of the map took shape and was defined in a process parallel to the Virtual Learning Environment (VLE) of this project. Its function was designed to work in synergy with it. The Open edX used in this interactive map is a large and complex system, driven by the edX community. It was important to select the appropriate version and installation method.

Whatever service and information the map offers, personalized user experiences are a must for all interactive maps with digital presence. A good example of this was highlighted in a Hubspot study where “personalized Calls To Action (CTAs) performed 202% better than basic CTAs.”

Events described in the map are captured by the GreenHeritage analytics pipeline into an SQL database. In addition, the system uses data related to course structure from a schemeless database (MongoDB) and storage tables from the Django Python Web Framework. The data for users was gathered during the registration on the platform



and course enrolment and from interaction with the platform (video streams, problems submission, discussion posts, etc).

It has been designed and streamlined to provide easy access to all the most relevant information of Deliverable D2.2 “Mapping of existing practices”. It has an attractive format supported by a considerable number of hyperlinks.

It is, by all relevant criteria, an easily navigable and user-friendly map, combining high-end digital design with compact (but not exhaustive) information, aiming to educate and motivate the users on CC issues affecting ICH, correlated risks and action to be taken.

In its final form, the map can be consulted starting from the geographical coordinates of each case study, and then proceeding with the name of the country and place and the particular ICH case study. The consequences of climate change will then be analyzed in terms of the concomitant effects and risks resulting from it.

The map starts with a main menu, and then the 14 case studies of the project are carefully and concisely analyzed, organized in five different sections.

The case studies analyzed in the digital interactive map, as reported in project Deliverable D2.2 “Primary and secondary data research findings”, are the following:

- CS1 Puffin Harvesting and Hunting (Denmark)
- CS2 Alpinism (France, Italy, Switzerland)
- CS3 Wine Culture in Germany
- CS4 Agricultural and Dietary Tradition of Carob in Crete (Greece)
- CS5 Mandras (Paddocks) of Lemnos (Greece)
- CS6 Traditional Practices of Wild Edible Plants in Crete (Greece)
- CS7 Art of Dry-stone Walling, Knowledge and Techniques in Cinque Terre and Amalfi Coast (Italy)
- CS8 Festival of the Ceri / Race of the Ceri- Gubbio (Italy)
- CS9 Madonna Avvocata Festival (Amalfi Coast, Italy)
- CS10 Network of Big Shoulder-borne Processional Structures (Italy)
- CS11 Lamprey Fishing and Preparation Skills in Carnikava (Latvia)
- CS12 Skating on Natural Ice (Netherlands)
- CS13 Transhumance in the Cantabrian or Northern Third of Spain (Spain)
- CS14 Valencian Paella, “the Art of Uniting and Sharing” (Spain)

For every case study, a list of relevant measures for mitigation and adaptation in the face of climate change has been provided. for each case there is a description of the state of awareness of civil society and policy makers on the effects of climate change on ICH. Finally, links to videos and photos describing each case study is and will continuously made available to the users, for additional information.

A concise description of each of the project's ICH case studies was provided. In this way the reader will be informed in depth but without the use of an avalanche of information which could also discourage consultation.

5.2. Content Analysis

GreenHeritage project wants to offer a high-performing digital and multilingual education ecosystem based on Open Education Resources (OER) and Open Educational Practices that which aim to deliver novel, high-quality online learning experiences and make them easily and freely accessible to persons and institutions across the EU and beyond. The project's interactive map paves the way for innovative digital information tools provided to the users, able to contribute to addressing and providing solutions to current challenges in a topic that has received less attention (CC effects on ICH).

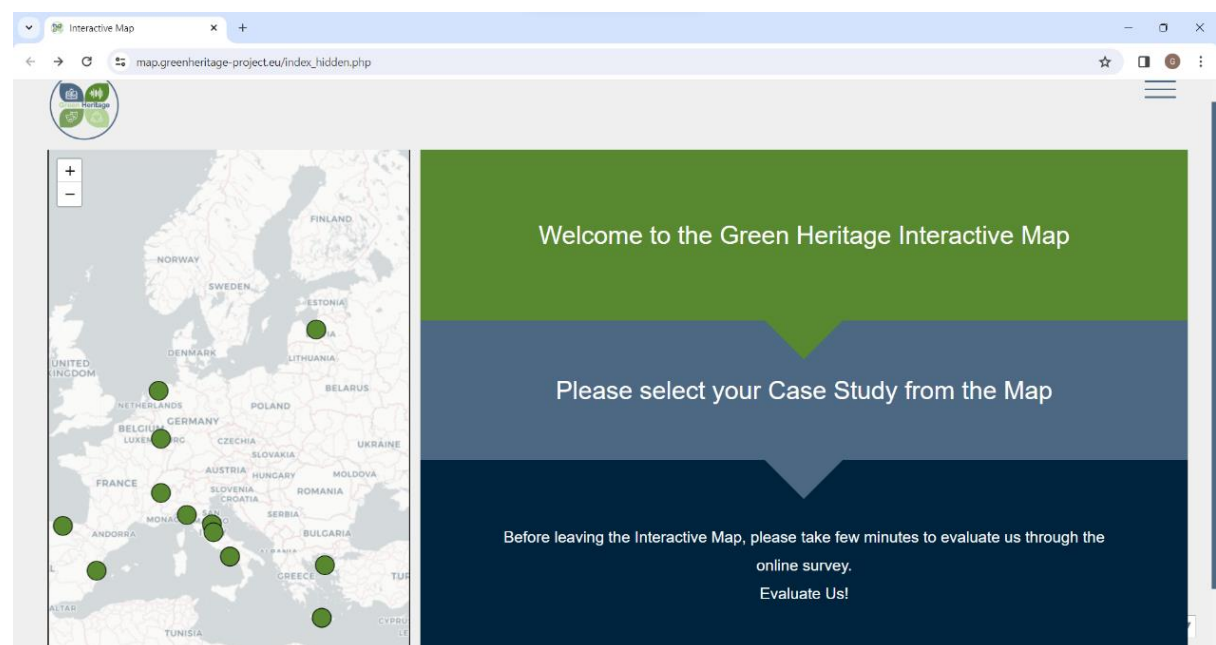
Based on the project Grant Agreement, on the transnational partner meetings and constant collaboration with the project consortium and the coordinator, the practical implementation phase of the map was definitively carried on.

More specifically, in describing and analyzing each case study, the interactive map organizes and distributes the information provided in the following sections:

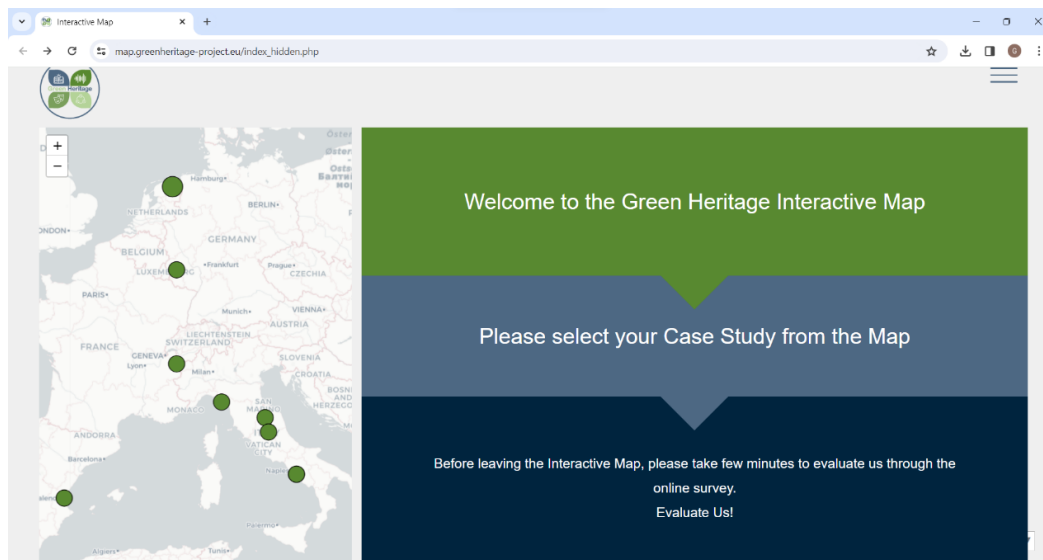
- A brief description
- Climate change impact on the case study
- Attitudes and recognition of problems
- Existing practices: solutions implemented, planned, or proposed
- Further reading and media links

The choice of this layout was reached after careful discussions and choices with the project coordinator and the entire consortium, to provide users with all the information necessary to motivate them and understand the importance of protecting the ICH, but avoiding complex ones that could be interpreted as difficult technical details.

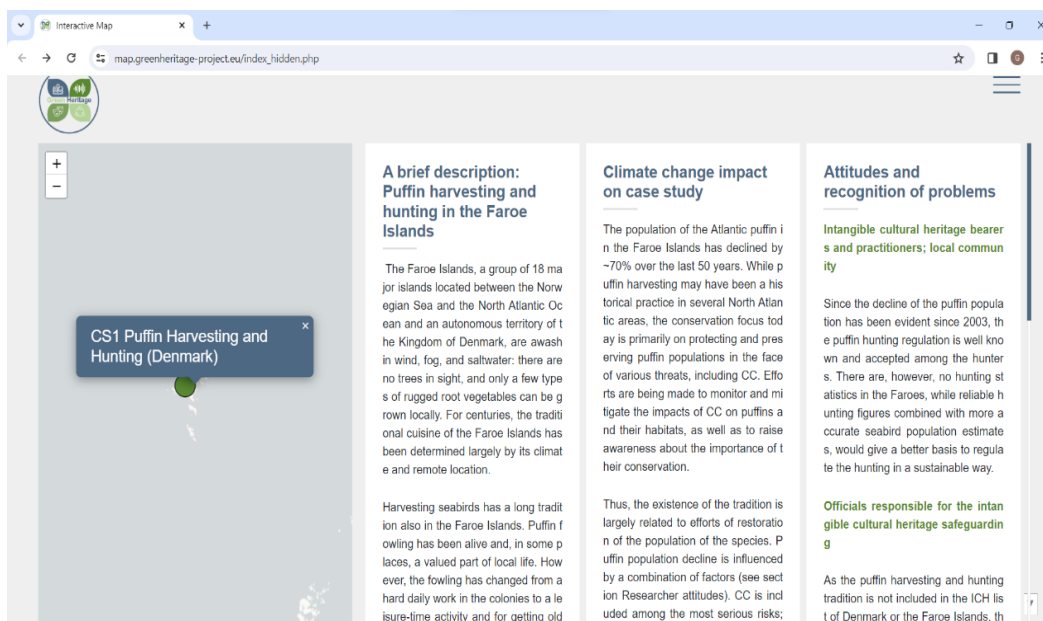
In the following it is shown the real display of the map, with its useful multiple functions, flexibility, and value.



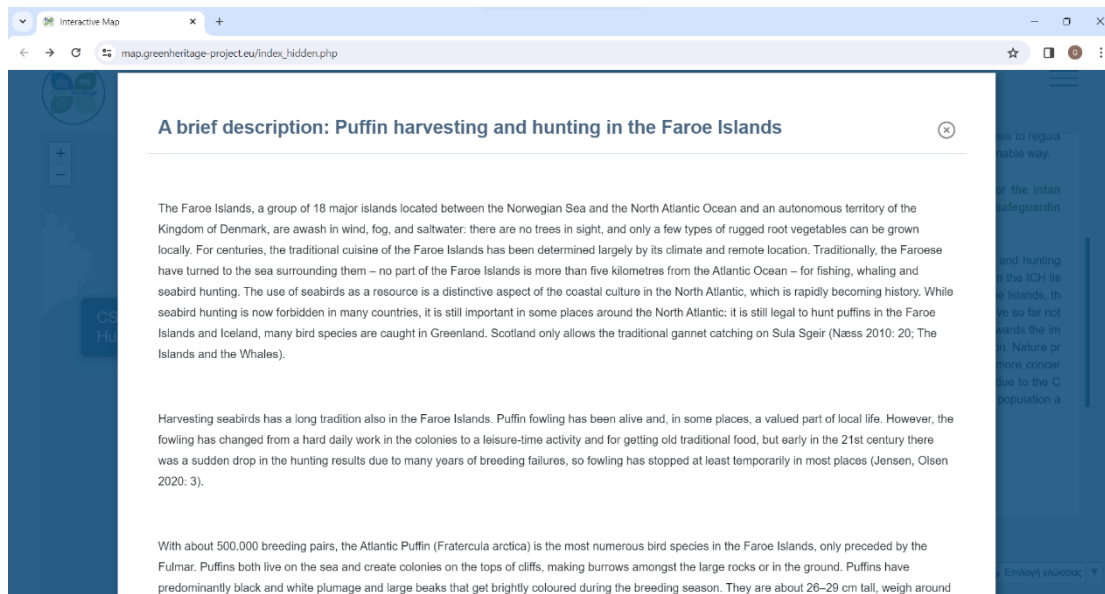
As can be seen from the above image, the main menu of the map displays the digital map of Europe, providing the user with a comfortable and easy interface to navigate the provided information. All the 14 GreenHeritage Case Studies described above, can then be chosen in the map, as displayed in the image below. They constitute an important aspect of what GreenHeritage is aiming to achieve in valorizing ICH and highlighting the impact of CC across Europe.



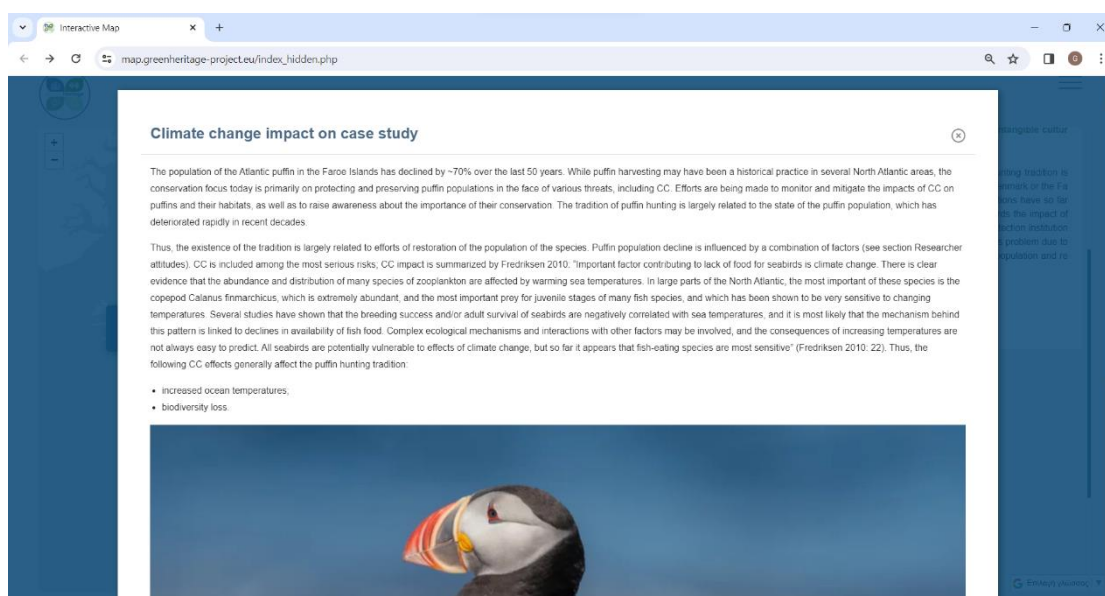
Moving forward, it can be easily highlighted how, through the choice of a Case Study, the map's dynamic interactive tools allow the display of all relevant information, based on what the partnership gathered in WP2, D2.2. The schema is the same for all the 14 Green Heritage Case Studies.



As can be seen from the screenshot above, by clicking on the map Case Study 1 (Collecting and hunting puffins in the Faroe Islands in Denmark) users can get a complete overview such as: brief description of the case of study; analysis of the impact of climate change; existing practices, while also examining attitudes and awareness in local communities and wider society through the lens of journalists, researchers, etc.

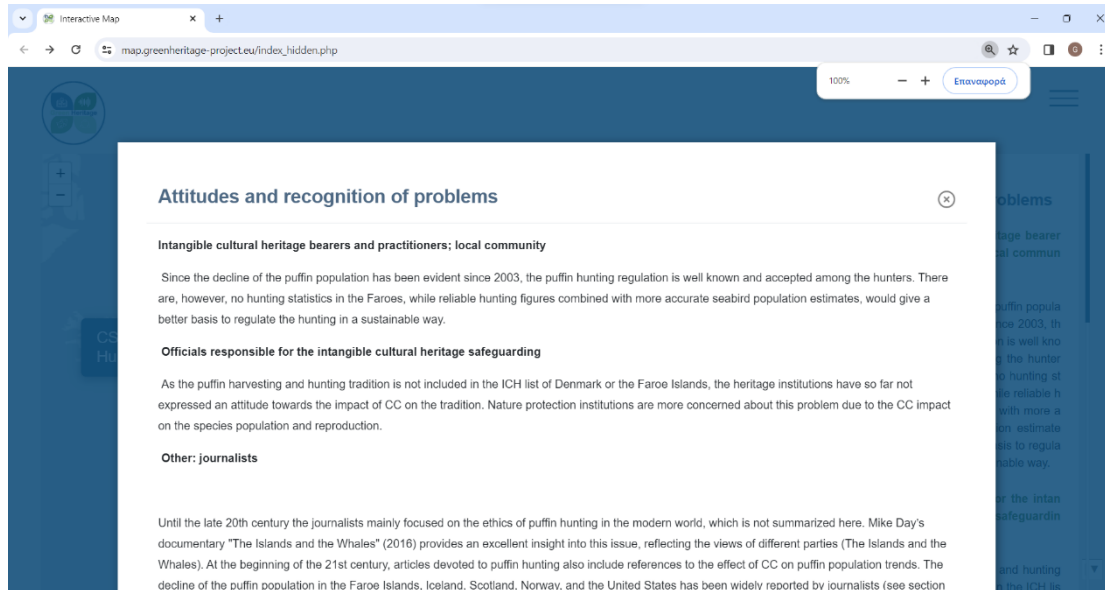


The first section, "A Brief Description", convincingly and concisely provides the overview of the case study in question, in this case the first case study, "Collecting and Hunting Puffins in the Faroe Islands".

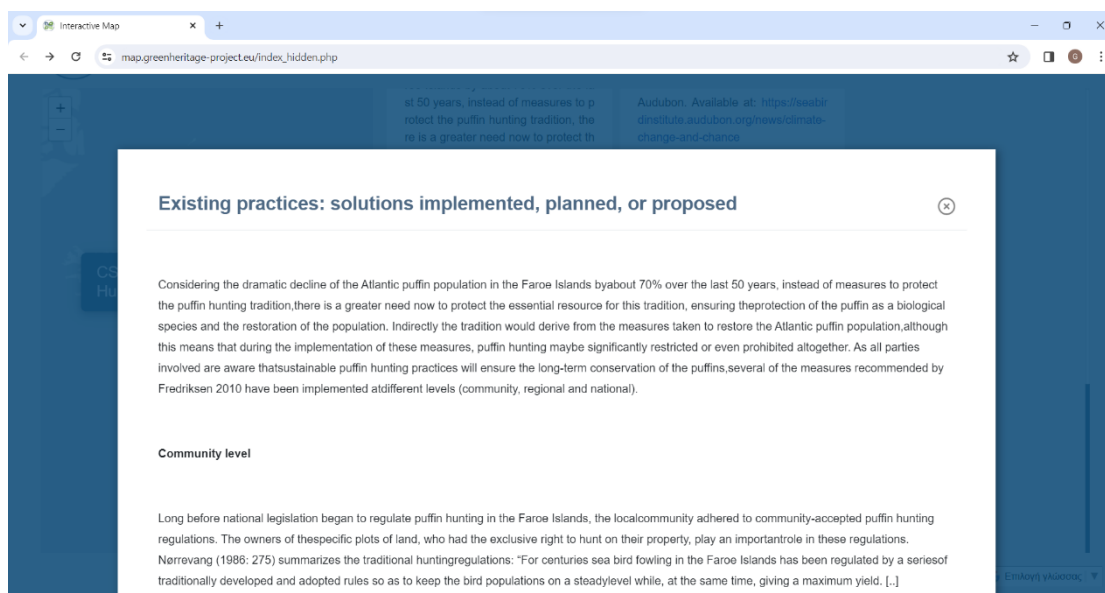




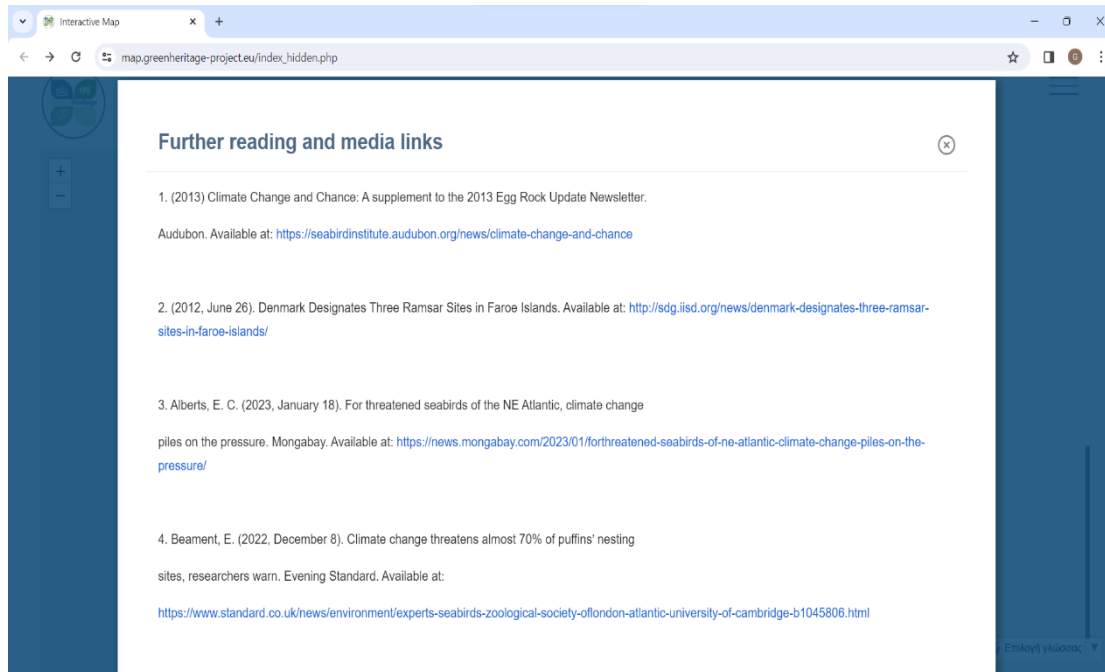
The second section “Climate change impact on case study” analyzes this aspect, providing all relevant information.



In the third section, “Attitudes and recognition of problems”, a very thorough examination of each case study’s status is given.



The section “Existing practices: implemented, planned or proposed solutions” indicates a series of useful and updated information describing the concrete measures adopted on each case study by the community, authorities, activists etc.



In the final section “Further reading and media links”, a broad, relevant, and useful collection of books, articles and media links is provided, guiding the users easily to more troves of relevant information. This information provided includes both academic and popular literature, aiming that all kinds of material can motivate and inspire people and make them aware the importance of the project.

The common thread that connects all the contents available on the interactive map is that of being functional in bringing together strategic actors in different sectors, such as archaeologists, historians, ethnographers, scientists, anthropologists, researchers, educators, community leaders, environmental activists and carriers of local knowledge and traditions. the aim is to be able to activate a discussion and exchange ideas on the situation of intangible cultural heritage and environmental degradation, affected by CC, discussing the results of the project's research. They concern the management, conservation, and protection of intangible heritage in the face of climate change and the possible recommendations to be provided to feed both national and European political debates.

The GreenHeritage case studies were specially created to raise awareness. Therefore, the project's educational resources are offered freely and openly for educators, learners and self-learners for use, reuse, adaptation and, eventually, sharing through the GreenHeritage e-learning platform. However, the constraints imposed for the commercial reuse of the material and the granting of adequate credits and licenses when reusing the material remain.

Therefore, the resources will be released under the Creative Commons license. The GreenHeritage consortium, in coordination with the relevant EU institutions, has decided that the Creative Commons license and the respective logo should be displayed on all individual web pages. All resources are then made available in user-friendly and free formats so that the user can study them and access all the information, including external links to articles, press and scientific reports and videos.



The quality of these open educational resources is ensured based on the common recommendations on OER, as well as the EU Open Education 2030 vision on lifelong learning. All static material (images, pdfs, podcasts) is hosted in the VLE database through the authoring tool and will be publicly available in the Front End (LMS). Image pre-processing was necessary to ensure a consistent learning experience (resolution, rendering, small size for fast page loading).

Additional, pre-existing resources can be included, such as published textbooks or articles. These educational materials found on the interactive map can then be incorporated into the GreenHeritage MOOC, provided that copyright laws and regulations are respected.

Section 6 - Conclusion and Next Steps

GreenHeritage is an important European project, connected to many important 21st century events and policies for the European Union. In its final and complete version, the interactive digital map will be available in English, Greek, Latvian, Spanish and Italian and in this way the collective efforts of the entire partnership can be made available in all the national languages of the consortium, aiming to achieve a very large audience, in accordance with the purposes defined in the project.

The intrinsic strength of the GreenHeritage project lies in its commitment to inclusion, collaboration and the exploration of innovative paths aimed at raising awareness of the effects that CC produces on ICH. The interactive map was created and implemented consistently with the project's innovative approaches, wanting to ensure its effectiveness and impact, as well as adaptability to different contexts.

The aim of the GreenHeritage project is to educate and motivate users on the effects of CC on ICH, on the real risks and on the actions to be taken. In this context, the map is a very efficient tool, providing concise but complete information, informing and at the same time encouraging both experts and lay people to acquire information, and take action to protect the ICH and cultural heritage in a broader sense.

To this aim, and in agreement with GreenHeritage GA, an interactive map showing examples of the most endangered areas and regions in Europe where CC has started to impact negatively different types of ICH, has been developed.

It enables accessing information from GreenHeritage ICH Case Studies, proving a tool facilitating exchange of knowledge, mapping existing practices across EU based on documentary studies and citizen science approaches focusing on intangible cultural heritage, finally with the aim to arise collective awareness, too.

In this context the interactive map was conceived and developed. It will not be a static tool but will evolve and be enriched throughout the duration of the project.

There are many intrinsic and sometimes complex challenges in a project as ambitious and complex as GreenHeritage. However, it is possible to state with certainty that the excellent level of collaboration achieved within the consortium (of which D3.1 represents one of the outcomes) is allowing it to proceed as planned, in a constant climate of collaboration and esteem between the partners.