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The vocational education and training in archaeological and natural heritage

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1. INTRODUCTION

In a context of rapid changes across Europe, the ANHER project is a first attempt to produce a series of innovative education materials that systemically address wide concerns of professionals of both archaeological and natural heritage.

This transnational report aimed at identifying the specific characters of archaeological and natural heritage and defining competences and needs of professionals of both sectors across the six partner countries (Italy, The Netherlands, Poland, Portugal, Spain and The United Kingdom). In particular, the report aims to address the needs of two groups of professionalists (1) archaeologists, researchers, cultural heritage managers, conservation and restoration professionals, which design, plan and implement different actions in archaeological and cultural heritage (including landscape) located on natural areas and (2) biologists, geologists and experts from institutions which work in natural conservation projects or manage natural sites with cultural and archaeological heritage (including landscape).

This was possible by gathering and analysing publications, good practices and needs of the project target groups in both domains.

2. OBJECTIVES OF THE TRANSNATIONAL REPORT

The objective of this transnational report is to analyse good practices and needs of the project beneficiaries, modes of training in both sectors of heritage as well as study of verification of competence and the character of VET systems in different countries. In this report, we aim also to analyze needs of the project target groups in the domain of archaeological and natural heritage as regards expanding their competence and skills. The transnational report has been elaborated joining the information available in the six national reports from each partner country. On it we try to summarize all information available of good practices, relevant publications, questionnaires and interviews in natural and cultural heritage domains.

3. ANALYTICAL FRAMEWORK

For this survey, we have designed a common and systematic methodology developed in the six partner countries. Common templates have been used in order to gather these data and obtain some representative results in different countries.

The analytical framework is focused on key indicators that explore the state-of-the-art in the vocational and training in archaeological and natural heritage in six European countries, needs and expectations of ANHER target groups, and major forms of vocational training in each country.

In summary, the key indicators considered are:

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1. Review of publications; altogether 48 relevant publications have been reviewed.
2. Analysis of the good practices; five representative examples of best practices in each country have been reviewed.
3. Survey of VET systems in the domain of archaeological and natural heritage in each country.
4. Analysis of needs and expectations; it was achieved in the form of interviews with professionals in both domains.
5. Analysis of needs and expectations; it was achieved in the form of online questionnaires designed specifically for each domain.

All these key indicators allow us to record qualitative information about the general state of the art and the possibilities to develop some interesting tools to enhance the competencies of professionals in both sectors.

4. THE STATE-OF-THE-ART IN THE VOCATIONAL EDUCATION AND TRAINING IN ARCHAEOLOGICAL AND NATURAL HERITAGE AND PROSPECTS FOR THE FUTURE

4.1. Analysis of good practices and relevant publications

4.1.1. Good practices

The 6 project partners collected a range of good practices with the objective of having an overview on what has been done in each participating country related to innovative VET systems, and initiatives that somehow approach archaeological and natural heritage in a holistic way.

Although the survey was undertaken separately in the archaeological and natural heritage sector, some partners managed to identify joint approaches in their national reports. The Italian and Dutch teams analysed interesting vocational trainings provided by different national universities and private institutions such as the RAAP or PARMA; Summer volunteer programs for youngsters in the Basque Country were highlighted in the Spanish report as they promote projects of restoration and preservation of cultural and natural heritage in the region; and the British partner focused on projects that enhance environmental sustainability in heritage settings and building restoration.

Some e-learning courses were listed as good practices too, mainly those related to GIS, zooarchaeology, and heritage as a didactic resource.

As far as natural heritage is concerned, a large range of VET courses are available in the UK, all of which are tailored to provide skills to work in natural heritage areas such as horticulture, forestry, land management and agriculture. This situation is similar to The Netherlands, were natural heritage best practices predominately involve landscape and nature conservation in the country.

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The Polish report also gathers practices were natural heritage is relatively often discussed in relation to cultural heritage, which are integrally understood as one value.

Here is the selection of good practices and their importance for ANHER project, based on the 6 national reports provided by ANHER partners:

Archaeological and natural heritage domains

Country	Good practices	Added value
UK	*Skills for the Future*	In 2014 the *Skills for the Future* funded, amongst others placements, three people a year to be trained on-site in environmental sustainability in heritage settings, as well as education and management in Chiltern Open Air Museum (COAM) in Buckinghamshire.
UK	*Re-making Leeds: Heritage Construction Skills for the Future*	Practical heritage skills needed to maintain, repair and refurbish pre-1919 residential, commercial and institutional properties in Leeds.
UK	Historic and Botanic Gardens Training Programme	Addresses green spaces containing both gardens and built heritage.
PL	Natural history of forest – how to recognize, study and protect historical heritage in forests	The topic of this day long lectures involved a cooperation of archaeologists and foresters as such, and possibilities to distinguish historical sites in forests.
PL	Culture and life of past people – traces written in flora and landscape of Bieszczady National Park	The course facilitated empathic relations and better understanding of local natural and cultural heritage.
NL	Module 3: Soil Science and Geology for Archaeologists	Course for senior archaeologists and field technicians to interpret soil, geomorphology and stratigraphy.
NL	BAP Day Outing: Modern Nature and Management VS. Archeology and Landscape	A practical course (including an excursion) involving various bioarchaeologists.

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NL	Heritage and Sustainability	The course provides students with insight into the relationship between heritage and sustainability
NL	Knowledge Transfer: Course on the Cultural Landscapes of the Northern Netherlands	The course provides scientific knowledge in a wider context for residents, governments and civil society organizations which deal with, understand and decide upon landscapes by extending knowledge of the structure and history of the cultural landscapes of Groningen, Friesland and Drenthe.
IT	Archaeology and interdisciplinary approach: protection, preservation and promotion of archaeological and environmental heritage	MA that aims to consolidate expertise in order to train professionals able to adopt an interdisciplinary approach to archaeological heritage management and promotion, taking into consideration environmental aspects.
IT	Conservation, restoration and promotion of Geo-archaeological and geo-architectural heritage	A strong training activity to the theme of geo-archaeology and geo-architecture is provided in this MA, as well as to the topic of materials and their relations with environment.
IT	Rescue Archaeology	The aim of this MA is to train professionals capable to assess the risks of environmental and archaeological impact in urbanization projects.
ES	Summer volunteer training. Middle Age frontiers of Navarre	This program gave students the opportunity to get to know the natural and cultural resources of Galipentzu, acquire basic competences in archaeology and history based on a scientific methodology and obtain practical knowledge on building restoration.
ES	Tertanga, Molino Ubiros	The program promotes team work and gives students skills to carry out projects of restoration and preservation of cultural and natural heritage.
ES	*Specialisation in heritage as a didactic resource*	The course teaches the necessary tools and techniques to disseminate heritage to a general public, design and carry out cultural projects, build up didactic guidelines and bring schools closer to heritage.

Natural heritage

Country	Good practices	Added value
PT	Eco product management	Good example of how nature can be integrated in other disciplines. all materials are freely accessible.
PT	Formative course LPN – The Natura 2000 network in Portugal	The course uses geography and climatology to explain the occurrence of vegetation types.
PT	Management of quality and natural systems	After the course, the participant can work as a technical assistant in companies, monitoring the environmental impact of products or services.
PL	Sustainable development of the Carpathians based on environmentally friendly tourism	The course presented good practices of sustainable development of tourism in the Carpathians with special focus on natural heritage of the region.
PL	Environment and natural heritage protection in areas depended on fishing – practical matters on projects realization	Seminars focused upon natural heritage and biodiversity of the region and its meaning as an added value to the otherwise important region.
NL	Agricultural Nature and Landscape	A course on how to monitor the state of agricultural nature and landscape.
NL	Heritage and Space I	The course provides students with insight into the relationship between heritage and spatial planning
NL	Quality Courses & Training on Gardening and Landscaping	Training in the area of historical gardens and landscape architecture.
NL	Learn to Read the Landscape: Ecology and Management of the Dutch	Course on the ecology and management of the Dutch landscape.

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	Landscape and Landscape Elements 2015	
NL	Course Natura 2000 and Regional Policy	The course covers *Natura 2000* and the regional policy.
NL	Instruction Course: Green Spatial Heritage	The course gives students the tools to develop a vision on green heritage.
ES	Vocational education in Natural landscape and forest Management	Tools to organise educational and dissemination activities to preserve and improve natural heritage.

Archaeological heritage

Country	Good practices	Added value
PT	Applied GIS in Archaeology	Course for archaeologists to learn GIS.
PT	Introduction to Zooarchaeology: mammal fauna	Course about recognizing and handling mammal fauna in archaeological excavations.
PL	Strong management as a tool in archaeological heritage protection	Geophysical methods used in archeological research and protection of cultural landscape.
NL	Module 8: Basic Archaeology for Municipal Officials	A general picture of what archaeology is and what the new laws require of local communities.
NL	Course and Training	Retraining for employees who work with field devices or specific software for archaeological practice.
IT	Archaeology, sea history and methodologies for research on underwater archaeological heritage	MA addressed to a range of users from underwater archaeologists and tourist guides specialized in the sector.
IT	Geo-technology for	This MA allows students to provide GIS datasets

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	archaeology	functional to archaeological interventions, as well as to represent archaeological data through the support of laser scanning and 3D modelling.
ES	*GIS in Archaeology*	Course for archaeologists to learn GIS.
PL	Vocational training system in archaeological heritage based upon e-learning resources	Issues in contemporary archaeological heritage management for early career historic environment professional practitioners advantage, this vocational training program was carried out online.

4.1.2 Publications

Similar to the analysis of good practices, ANHER partners gathered publications that address joint approaches to both domains and vocational training regarding archaeological and natural heritage. The survey was undertaken separately, although some publications take both domains into account. Each partner took different approaches while gathering the publications.

Archaeological heritage

The relevant publications in The Netherlands have a core focus on maritime cultural heritage, contrasting the different elements of cultural heritage within the country. While the Wadden Sea is an example of UNESCO listed natural heritage, some of the selected publications observe it to be a region with cultural heritage that extends beyond the Netherlands.

The publications touch upon the regional authorities that are considering strategies for dealing with the decline of cultural heritage on an economic basis and provide case studies to highlight other European countries where certain regions have been experiencing decline for longer periods, so that they can be compared with the practices in the Netherlands and perhaps serve as examples for future changes.

Italian, Portugal and Spanish reports provide successful examples of real experiences, which permit to identify some interesting suggestions according to the necessity of developing an integrated approach to natural and cultural environment. These publications are mainly management plans and manuals.

The UK report gives an overview of academic articles that address issues such as the role of archaeology in the climate change debate and its change by the Anthropocene; it also tackles the problem that young people value their VET programmes but also acknowledge that there is a lack of societal esteem for them. Regarding VET, there isn't any application of VET outside the built heritage sector, where green skills are seen as supplementary to conservation work, and therefore risk neglect within this system. The university sphere allows for research and training to be given into green

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archaeologies; however this makes areas of the profession inaccessible to those without degrees.

The Polish partner states that changes are needed in legal regulations and different financing system in the country, as a comprehensive protection of heritage appears to be a burning issue awaiting a satisfactory solution.

Natural heritage

The publications selected for natural heritage in The Netherlands provide recommendations for valuing green Heritage. They reflect a mix of recurring principles in natural heritage, including identity and sustainability, which are the characteristic components of landscape quality. The scientific discussion and methodology within the

publications focus strongly on maintenance, conservation, restoration and reconstruction for valuing natural green heritage.

The analysed publications on trainings in natural heritage in Poland are mainly focused upon practical needs of its protection. None seems to be suitable to become a manual for people unfamiliar with natural heritage protection, as targeting integral natural and archaeological heritage is relatively uncommon.

Similar to the publications of the other domain, the British report states that VET is more readily available than in archaeology, and touches on green issues, however the current image of natural heritage jobs such as horticulture as 'unskilled' have created a crisis in lack of applicants.

In Italy, particularly interesting is the case of Eco museums as an example of how cultural background and social needs can be matched with environmental existing conditions. As for the joint approach of archaeology and nature, there are significant examples in Spain, mainly manuals and managements plans of preserved natural sites that keep an eye on their cultural elements and their preservation.

In Portugal, there are many courses in Portugal that address natural heritage or that integrate the natural heritage in other disciplines, but there are hardly any courses where other disciplines get integrated in the natural heritage.

Here is the selection of publications and their importance for ANHER project, based on the 6 national reports provided by ANHER partners:

Archaeological and natural heritage domains

Country	Publication	Added Value
UK	*Skills Needs Analysis: Repair, Maintenance and Energy Efficiency Retrofit of Traditional*	The publication concerned itself with both green skill approaches and methods of upskilling, using interviews to demonstrate the preference

	(pre-1919) Buildings in England and Scotland (2013)	for 'on the job' training.
PL	Analysis of infrastructure needs in the area of cultural heritage, artistic education and cultural infrastructure in Poland in the context of financing in future EU perspective and compliance with the objectives of the Strategy Europe 2020 and flagship initiatives	This report shows that in the future perspective of European Union financing perspective such undertakings as courses and workshops concerning heritage and culture should be highly taken into account in order to help in financing them via EU.
PL	The new direction of conservation training, a successful combination of monuments and nature protection	The author provides the background of teaching protection of cultural and natural protection as an intrinsic part of the university curricula.
PL	Forests and forestry in the culture and national heritage	The publication formulates recommendations for sustainable development of forest areas in order to present them as a touristic attraction.
IT	Archaeological and Natural Environment: Cooperation Perspectives among Local Government Authorities in the South of Europe	The book presents case histories, context analysis and pilot projects in different geographical areas of the project partnership.
IT	The Eco museum between the value of the territory and natural environment	The book suggests important methodologies used during didactic activities and shares tools for educational training.
IT	Historical landscape: a territory-oriented approach for the promotion of disseminated archaeological heritage	The document proposes the development of an integrated model for an eco-cultural landscape.
ES	Immaterial heritage: cultural and spiritual value. Manual for integration on protected areas	A complete tool for natural heritage specialists to learn about cultural heritage management and its techniques.

ES	Cultural heritage management of the natural site of Doñana	The publication gives tools to identify and carry out initiatives to integrate both domains
ES	Cultural Heritage in Wetlands	It stands for the traditional way of exploiting the natural and cultural resources of wetlands, giving priority to ancient practices that otherwise will be extinct.
ES	Living Lakes. Sustainable management of wetlands and shallow lakes. Manual for the elaboration of management plan	A management plan for experts to organize and promote a natural heritage site, specifically wetlands and shallow lakes.
ES	Public use of the archaeological heritage in protected natural sites of Andalusia.	The article gives a really good state-of-the-art of the difficulties of addressing cultural and natural heritage management jointly.

VET

Country	Publication	Added Value
UK	*Review of vocational education: the Wolf report* (2010)	The report specifies individual jobs of interest to the vocational debate, of particular interest being that conservationists in environmental protection is the growing occupation in the UK.
PT	Vocational education and training in Portugal, Short Description	An overview of the current status of VET in Portugal.
PT	Subjective assessment on vocational training activities: a generalized ordered probit approach	The article shows the effectiveness of the training along three dimensions: employment, job-related skills and productivity.
PT	The natural sector in Portugal – Chapter IV. Assessment of the needs of training and clues for reorientation of professional training	The article shows the needs of training in the natural sector in Portugal and gives suggestions for improvement.

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NL	The Vocational Education and Training System in Netherlands	The briefing paper is useful to understand the current Dutch framework of VET education in the Netherlands.
ES	Vocational training in Spain. Toward the knowledge society	An explanation of the situation of VET in Spain.

Natural heritage

Country	Publication	Added Value
UK	*Horticulture Matters* (2014)	The publication seeks to continue the work of the previous edition to promote horticulture across government and embed natural heritage in education.
UK	*Facing the Future: Foresight and the Historic Environment* (2015)	Seeing climate change as a 'risk multiplier', the report points to how there is currently no consensus on how to adapt climate change, and references how such adaptation will vary on the strength of the economy.
PT	ISO 14001 standard – implementation of a natural management system (SGA)	Nature legislation and nature management systems are taught in this e-learning course.
PT	Waste management	A course which integrates nature into company management.
PT	Technical course spatial and environmental planning	This course puts environmental education into the framework of nature conservation.
PL	Manual of good practices of protection of Żuławy monuments	The main aim of the project was to introduce good practices in monuments protection.
PL	The study of environmental awareness and behavior of Polish inhabitants	The article discusses social consciousness in the domain of ecology in general.
PL	Manual of good practices for sustainable development.	Practical examples and theoretical background to protect natural heritage of a region.

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PL	Forests and forest management as a tool for shaping the environment and nature protection in the forests – recommendations	The publication presents 31 recommendations as regards forests protection and management in Poland.
NL	A Future for Green	This booklet offers recommendations for shaping a monument policy.
NL	Vision on Landscape Quality Identity and Sustainability as Underlying Concepts of the Landscape	This booklet provides insight into the vision of various landscapes in the Netherlands and describes a starting point for various landscape activities.
NL	Course Landscape Management Section: Origins of the Dutch Landscape	An appropriate book for interested parties who want to learn more about the history of the Dutch landscape in general and their own environment in particular.
NL	Course Landscape Management Section: Upright Plantings in Practice	By knowing that landscape elements are typical of different regions, students better determine the possible roles of the elements and the associated management measures in this course.
NL	Guidelines on Historical Garden Research: Value Propositions of Green Heritage	This guide is for owners/managers of culturally and historically valuable gardens, garden and landscape architects, researchers and testers to assess changes in construction before granting a license.
IT	Principles and guidelines for the landscape protection	Enables professionals and operators to adopt a multidisciplinary approach to natural heritage.
IT	ECOSCAPE. Promotion of natural heritage and landscapes	A useful approach to e learning which could be an inspiring example for further projects.
IT	Geological heritage: a resource to be protected and promoted	Manual for the promotion of the potential value of geological knowledge and geological heritage

ES	Basque Coast Geopark: General Interpretation Plan	An example of a well-integrated management of cultural and natural heritage in a Geopark.
ES	Manual of Good Environmental Practices in tourism and Natural Areas of Catilla and Leon.	Manual for trainers and experts who want to introduce sustainability and heritage management in the sector of tourism.

Archaeological heritage

Country	Publication	Added Value
PT	*Professional school of Archaeology (1990-2000), Experience to reconcile training, research and preventive conservation in a public school*	This article shows good practice of archaeological training as it tries to fulfil the gaps in the work field.
PT	Binford and Portuguese Archaeology, the Prehistoric Anthropology Course of MAEDS	This article tells about the movement of 'new archaeology' shows how this course filled in this multi-disciplinary gap in the beginning of the 80's by giving a more integrative view on archaeology.
PT	XXIX Update course for teachers in geosciences – minutes book	The course looks at the implications of geological knowledge in other disciplines as ecology and economy.
PT	The Disciplines of History and Geography in Professional Courses in the Area of Tourism	The article shows the relevance of geology and history in the field of tourism.
PL	Archaeological guide for investors, engineers and building contractors	The report aims to educate professionals in the domain of archaeological heritage and construction engineering.
PL	Crossroads of protection of cultural heritage in 2011	The article proposes different activities and steps to be taken in order to more effectively protect cultural heritage.
PL	Good course of interpretation of heritage. Our experience in the project InHerit	The report focused on the specificity of Poland and needs of local stakeholders in producing high quality courses in the domain of heritage

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		protection.
NL	Guide: Concurrence Archeology and Explosives Detection	This guide intends to create good teamwork through knowledge of handling of explosives, which can lead to personal injury and serious damage, while Improper handling of archeological deposits can cause irreparable loss of heritage value.
NL	Building, space and archeology An explanation of the legal framework of the archeology	The publication gathers laws and regulations that have taken place regarding modernized heritage conservation, planning costs, and ownership of archaeological finds.
NL	Nice Bonus, Well Informed! Preserving Vulnerable Archaeological Finds	This guide offers practical examples from 6 case studies about how to treat, store and Conserve archaeological materials.
NL	Landscape and Cultural Heritage in the Wadden Sea Region	An overview of the landscape and cultural heritage in the Wadden Sea.
NL	Guidance Outside Heritage	This guide provides information about the history of the northern Dutch coast and the type of heritage along the coast.
NL	Recruit and Connect Shrinkage and Heritage in Europe	"If economic and demographic problems become too great and too persistent, the heritage loses its economic basis."
NL	Handbook Cultural History Management 1	A handbook about cultural and historical landscapes. Part I
NL	Handbook Cultural History Management 2	A handbook about cultural and historical landscapes. Part II
NL	Handbook Cultural History Management 3	A handbook about cultural and historical landscapes. Part III
IT	Promotion and integrated management of archaeological	This publication can be used as a practical guide to archaeological management, through

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	heritage	the comparison and the analysis of different visions and approaches.
IT	Showing archaeology. Handbook for promotion strategies	A subtle perspective of the importance of a useful and friendly action of communication in an effective strategy of conservation of archaeological heritage.
IT	Which future for archaeology?	A publication for a better comprehension of the role of archaeology in the European cultural system.
IT	Archaeo Diver Manual	Represents a very useful example of how to use the right communication strategy to promote archaeological heritage between young people, unprofessional visitors and tourists.
ES	Integral Management Plan for the archaeological site of Felanitx (Majorca). A work in progress.	The document presents a plan for training and education based on the heritage of Felanitx.

4.2. Analysis of the needs of target groups

4.2.1. Archaeological heritage professionals
4.2.1.1.   Online questionnaires

The questionnaires consisted of the collection of initial statistical data (profession, education and years of experience) followed by six questions requesting ranked answers, in order to gauge to what extent the participants valued the options given to them. Italian, British, Polish and Portuguese reports used the system in which 1 was the highest value and 5 the lowest, while the Dutch and Spanish partners used the opposite system. Therefore, the first system was chosen for the transnational report.

Overall, **117 people** completed the questionnaire across the 6 partner countries.

The questions and their options were largely unchanged from the original template to allow for international width of comparison. The results of the preliminary statistical information are as follows:
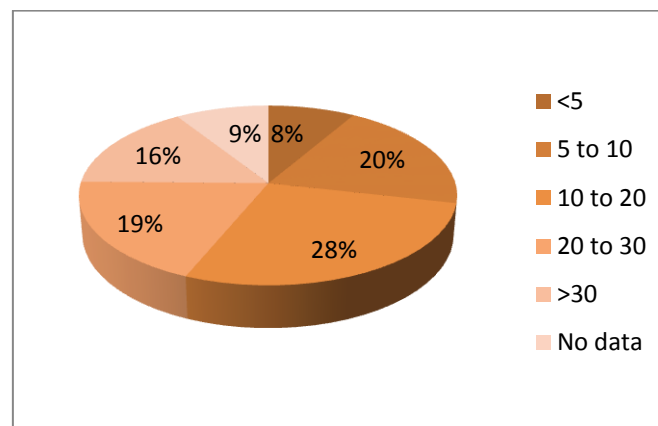
Level of studies

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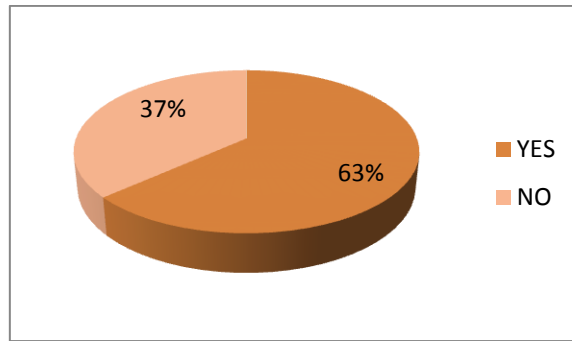of the European Union
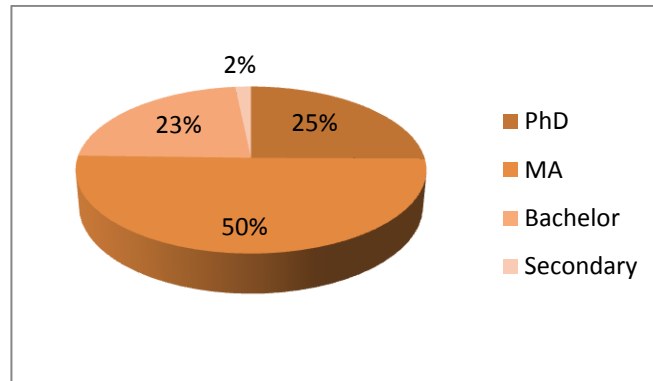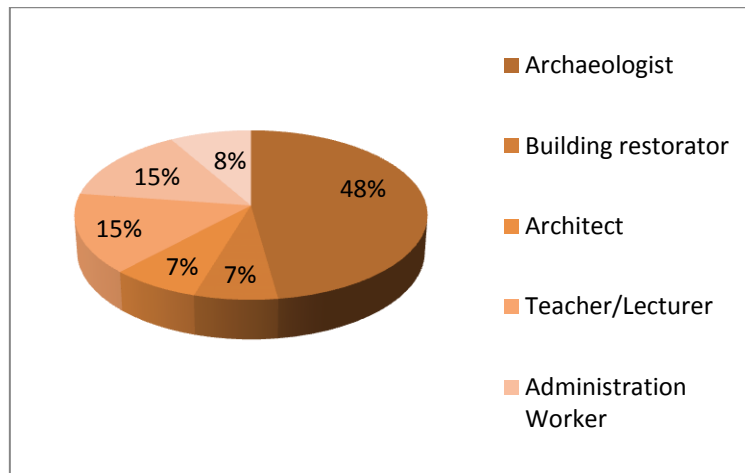
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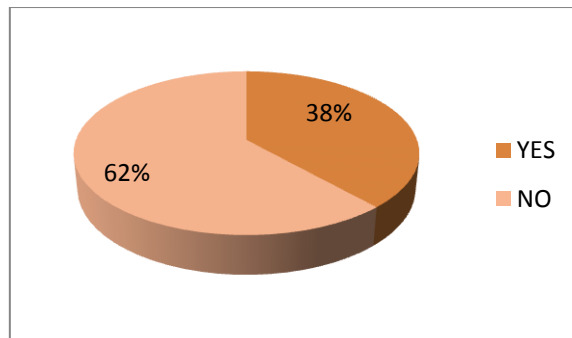

Years of professional experience

I. Are you familiar with the following aspects of natural heritage management?
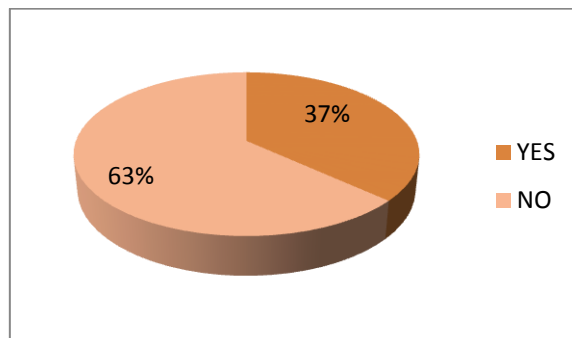
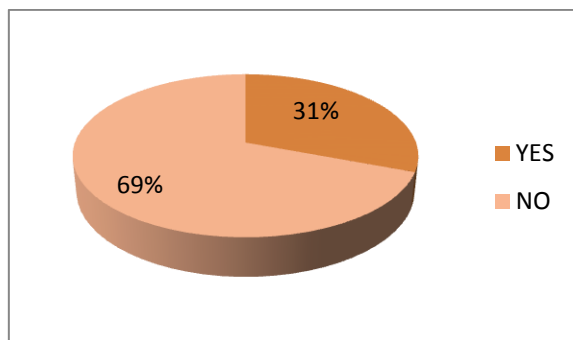National legal frameworks for natural protection and conservation:

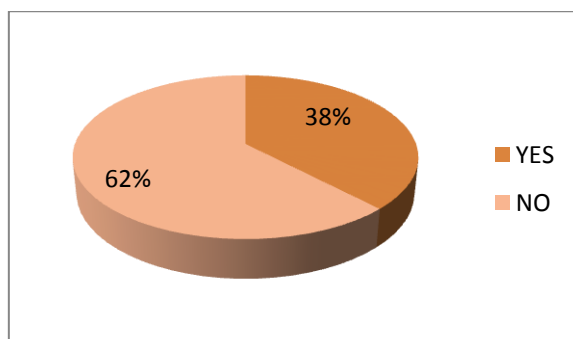International legal frameworks for natural protection and conservation:
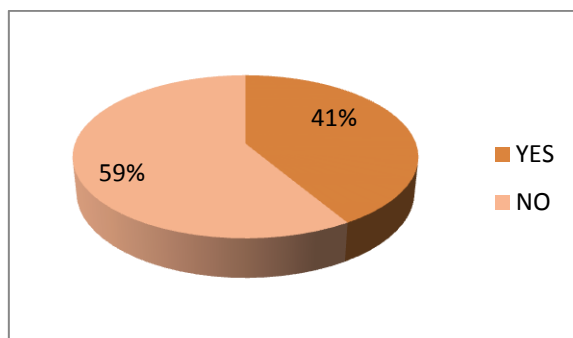

The public use of natural space

Ecosystems and biodiversity conservation:

Management of natural reserves/parks/spaces

Promotion strategies for natural heritage management:

Summary: Graphs show that at least a third part of the archaeological heritage

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professionals are familiar to natural heritage in general, being the best recognised aspect the National legal frameworks for its protection and conservation (63%). The other aspects get a similar percentage of positive answers: Promotion strategies for natural heritage management (41%); International legal frameworks for natural protection and conservation and Management of natural reserves/parks/spaces (38%); the public use of natural space (37%); and Ecosystems and biodiversity conservation (31%).

Note: As the analysis is made on a base of a quantitative survey, there is no verification of declarations given above. Even if the positive answer ("YES") is marked, it cannot be found what exactly respondents understand by mentioned aspects of the natural heritage management. The qualitative analysis (for example by interviews) could help with resolving this problem in the next stage of the project.

<u>*II. Benefits from integral approach to natural and archeological heritage*</u>

Domain	Average mark
Planning strategies	**2,08**
Sustainable development	**2,33**
Landscape management	**2,36**
Tourism	**2,85**
Wellbeing and quality of life of local groups	**3,09**

Summary: According to the surveys, 'Planning strategies' (2,08) will benefit from integral approach to natural and archeological heritage, followed by 'Sustainable development' (2,33) and 'Lanscape management' (2,36). The less important element is 'Wellbeing and quality of life of local groups' (3,09).

<u>*III. Improving competence and performance by enhancing knowledge of natural heritage management*</u>

Competences and performance	Average mark
More integrated and efficient landscape protection	**2,06**
Better understanding of the complex nature of landscape, in particular natural and environmental context of human actions	**2,55**
More adequate management strategies	**2,60**
Application of more efficient mitigation strategies to deal with emerging challenges	**3,21**

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Better communication and social awareness	**3,23**

Summary: 'More integrated and efficient landscape protection' received the lowest average (2,06), therefore was considered on average to be the most likely competency to be improved by enhancing a knowledge in natural heritage. 'Better understanding of the complex nature of landscape, in particular natural and environmental context of human actions' (2,55) and 'More adequate management strategies' (2,60) were also considered by the experts. 'Application of more efficient mitigation strategies to deal with emerging challenges' and 'Better communication and social awareness' were deemed the least likely competencies to improve, with an average of 3.21 - 3,23.

IV. Improving landscape protection by the adaptation of an integral approach to natural and archeological heritage

Improving landscape protection by	Average mark
More efficient integration of landscape with cultural, environmental, agricultural, social and economic policies	**2,19**
More efficient integration of landscape into regional and town planning	**2,41**
Increasing awareness of value and importance of landscape to the public	**2,61**
Establishing and implementing legal measures aimed at efficient landscape protection	**2,73**
Triggering training and educational initiatives in landscape for general public	**3,46**

Summary: An integral approach of natural and archeological heritage in landscape protection will led to a more efficient integration of landscape with cultural, environmental, agricultural, social and economic policies (2,19). This option was by far the most important for the respondents, which, on the contrary, weren't that convinced that enhancing this protection will Trigger training and educational initiatives in landscape for general public (3,46).

V. Improving landscape management by the adaptation of an integral approach to natural and archeological heritage

Improving landscape management by	Average mark
More effective and efficient use of available resources	**2,36**
Facilitate better protection of landscape	**2,46**
More efficient strategies of planning at the regional level	**2,57**

More effective and accurate reaction to the needs of sustainable development	**2,86**
Better serving the needs of local groups	**3,18**

Summary: An integral approach of natural and archeological heritage in landscape management will led to a 'more effective and efficient use of available resources' (2,36), closely followed by a 'better protection of landscape' (2,46) and 'more efficient strategies of planning at the regional level' (2,57). The least valued answer was a 'better serving the needs of local groups' (3,18).

VI. Improving landscape planning by the adaptation of an integral approach to natural and archeological heritage

Improving landscape planning by:	Average mark
More efficient integration of natural and archaeological/cultural heritage into planning strategies	**1,94**
Better definition of the peculiar character of a region	**2,38**
Better definition of different components of landscape and their hierarchy	**2,72**
Better serving the needs of local groups	**3,04**
More explicitly address concerns of different facets of landscape management in implementing planning strategies at different administrative levels	**3,05**

Summary: An integral approach of natural and archeological heritage in landscape planning will led to a more efficient integration of natural and archaeological/cultural heritage into planning strategies (1,94). This was, by far, the highest ranked value amongst cultural heritage professionals. Once again, needs of local groups (3,04) wouldn't be affected in their opinion, neither the 'concerns of different facets of

landscape management in implementing planning strategies at different administrative levels' (3,05).

VII. Value of different elements of the training process

Element	Average mark
Flexibility of the course	**1,94**
Cost	**2,4**

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| Assignments	**2,94**
Contact with the tutor	**2,92**
Obtaining a certificate	**3,2**

Summary: While pursuing a training process, participants of the survey value the Flexibility (1,94) and Cost (2,4) of the course, while giving less importance to obtaining a certificate (3,2). Assignments (2,94) and Contact with the tutor (2,92) were ranked in the middle.

4.2.1.2.   Interviews

38 interviews with cultural heritage professionals were conducted in the 6 participant countries. In this analysis, ANHER partners identified the relevant comments and expectations they have regarding natural heritage, their overall degree of knowledge in this domain, and collaborations within both fields.

A wide range of professionals working as archaeologists, archaeological consultants, policy advisers, advisors in cultural and archaeological heritage institutions, project leaders of urban planning activities, researchers, public administration workers, conservators, chemical engineers, geologists and experts in underwater archaeology were consulted.

The average years of professional experience of the experts was also recorded:
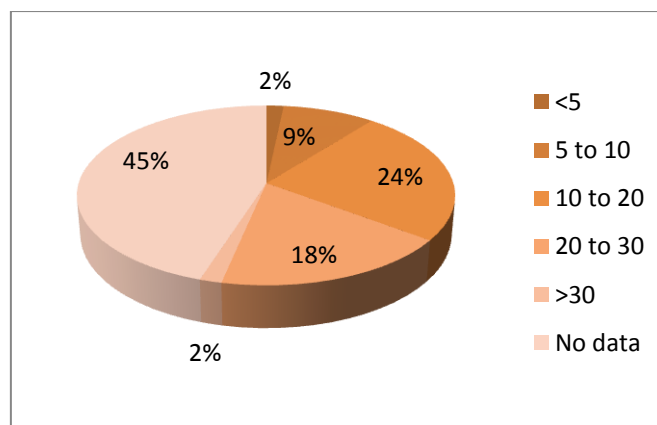
The experts were consulted on the following issues:

II. Integration of natural and cultural heritage management in their work and specific actions.

First of all, archaeological heritage professionals were asked about the integration of natural and cultural heritage management in their daily work and the existence of actions and projects in their area aimed at integrating both domains.

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In the UK, a broad range of combined domain experience was evidenced by the experts, including approaches to re-use of paleo-channels, the management of former farmstead buildings under ancient woodland, and conservation grazing – where cattle were being used to keep down scrub on a Neolithic stone circle. In The Netherlands, a combined domain approach is also experienced as a working standard, for instance in projects that include the strengthening of dykes in heritage landscapes according to modern standards, raising water levels to recreate old meadow landscapes and protecting the archaeology at the same time.

Two halves of the interviewed archaeologists in Portugal state that they work in a team in which they have colleagues specialised in nature to ask for help when needed, a similar situation experienced in Spain, were half of the experts proceed the same way.

III. Knowledge of the ecosystems and biodiversity in their area and the strategies to protect, manage, value and promote them.

The interviewees were asked whether they are aware of the ecosystems and biodiversity in their areas as well as of the strategies to protect, manage, value and promote them.

A major conclusion can be drawn from the national reports: archaeological professionals know the ecosystems and biodiversity of their area in a general, basic way. Some national reports give exceptions of experts who are aware of issues such as biosphere reservoirs, protected areas and environmental policies, or study local laws and regulations dealing with landscape, etc. But, overall, this knowledge tends to be unspecific and superficial.

IV. Skills to ensure natural protection and conservation and methods used for it.

Archaeological heritage professionals have been asked whether they have the necessary skills to ensure natural protection and conservation in the course of their activities related to cultural heritage management and which procedures they apply.

In general, experts are concerned by their lack of skills regarding natural conservation and protection. Collaboration between professionals from different domains has been pointed out in every survey as a way to improve this situation. Dutch experts highlight the understanding of spatial planning, and long term development of natural and cultural areas as the most valuable specific knowledge for this purpose. In addition, Spanish and Italian interviewees mentioned studying regional, national and international legislation as a way to ensure this protection, for instance the Italian Cultural and Landscape Heritage Code. Conducting walkover surveys with experts from both domains before performing an intrusive intervention is also mentioned as a successful method.

An interesting approach is proposed by one of the Italian interviewees, who values using new technologies and virtual visits in order to avoid physical contact guaranteeing the maintenance of the an archaeological site.

V. Collaboration and support from natural heritage professionals

Interviewees were asked about the external support from natural heritage professionals in their daily jobs.

In the UK, a far more active and coherent systems of environmental management embedded within organisations has allowed for efficient implementation of natural heritage experts within projects, such as an example given of the guidance available for water quality in excavations, and the subsequent working with subcontractors for fuel storage and mop-up kits. The difference between multi-disciplinarity and inter-disciplinarity was also discussed in the report: a situation where one or two people are juggling several disciplines simultaneously is not wanted; providing enough knowledge for both sides to identify opportunities for collaboration is.

Dutch, Portuguese and Spanish professionals admit to seek for support from a natural heritage expert in their activities, usually botanists, geologists, rangers, etc. In Italy, this situation is similar, especially if the subject is not performed by a public administration but a private body or a freelance professional.

VI. Involvement in landscape management and planning and suggestions for a jointly approach of both domains.

In this question, Archaeological heritage professionals answered on their involvement in actions and projects related to landscape management and planning and whether an integrated approach is pursued.

Planning strategies and developing long-term visions on integral landscape management are mentioned by Dutch interviewees as being most important to provide sustainability in archaeological and natural heritage management. British experts also show a strong interest in landscape approaches, as it is a matter of perception which sees that landscape exists 'only where there's people to perceive it, otherwise it's just environment, and it's that human perspective which brings nature and culture together'.

Eco museums, geoparks, and World Heritage Sites are mentioned as good examples of a joint approach of both domains.

VII. Competences and performance enhanced by developing knowledge of natural heritage management and necessary skills to do that.

The seventh question made to archaeological heritage professionals is about competences and areas they consider important to enhance in order to perform an integral approach of both domains, and the necessary skills to achieve that.

Here is a range of areas interviewees would like to improve:

- Habitat restoration
- Environmental legislation
- Environmental education
- Environmental psychology Botany
- Zoology

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- Geology / geomorphology
- Hydrodynamics
- Territorial marketing strategies

As for the necessary skills to enhance them, a general understanding of the other domain and willingness to broaden perspectives are essential in the eyes of some interviewees. A strong leadership in project management is also valued. The Polish expert points out that this could lead to a development of tourism and a growth of local awareness of residents.

VIII. Interest in training regarding cultural and natural heritage management.

Cultural professionals have been asked whether they would be interested in a training focused on how to integrate the management of natural and cultural heritage.

Most interviewees do have an interest in training with regards to cultural and natural heritage management in the 6 partner countries, although few of them have pursued courses related to natural heritage management. Online training is highly considered, but British and Portuguese experts stress that practical classes and day sessions which allow learning with others and the applied approach of real-world workshops and fieldtrips could be useful.

It is relevant to point out that integrated training is already available in some areas, such as online training videos created off the back of the Forestry Commission of Scotland's Historic Environment training day.

### 4.2.2. Natural heritage professionals
4.2.2.1 Online questionnaires

The questionnaires consisted of the collection of initial statistical data (profession, education and years of experience) followed by six questions requesting ranked answers, in order to gauge to what extent the participants valued the options given to them. Italian, British, Polish and Portuguese reports used the system in which 1 is the highest value and 5 the lowest, while the Dutch and Spanish partners used the opposite system. Therefore, the first system was chosen for the transnational report.
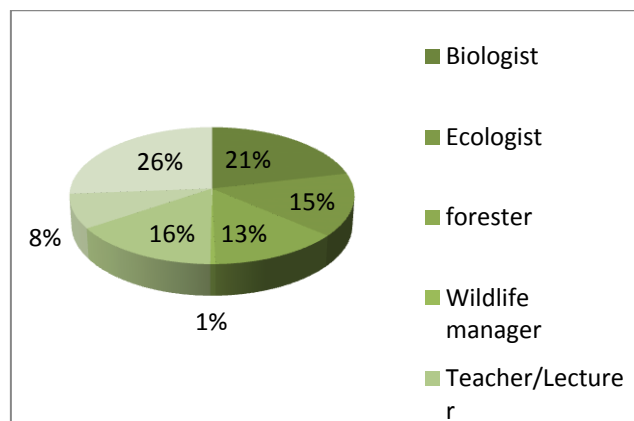
Overall, **124 people** completed the questionnaire across the 6 partner countries.

The questions and their options were largely unchanged from the original template to allow for international width of comparison. The results of the preliminary statistical information are as follows:
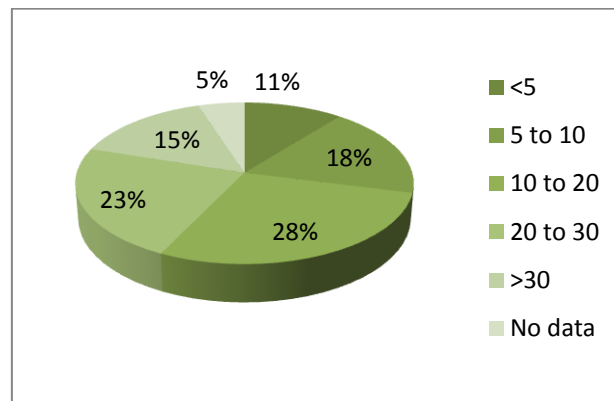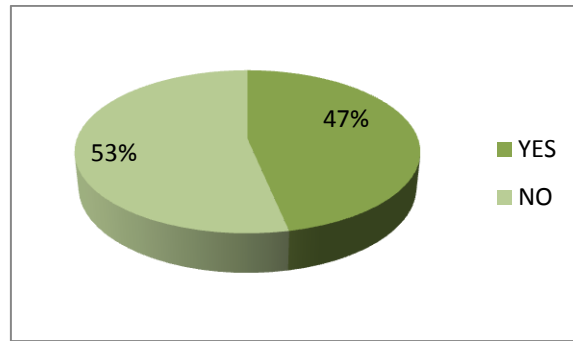
Level of studies
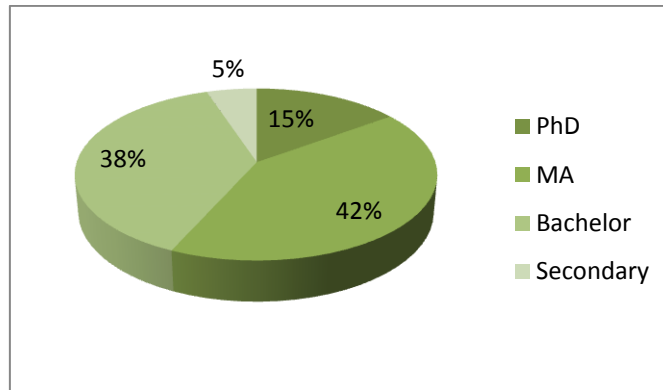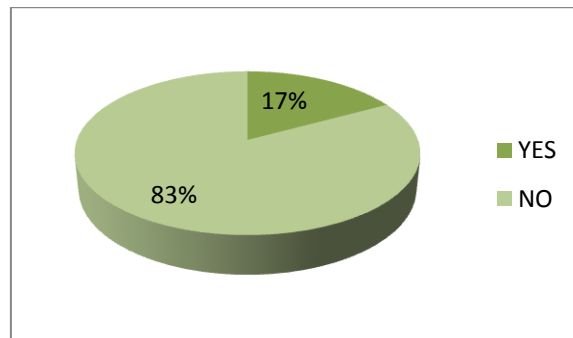
Profession

Years of professional experience

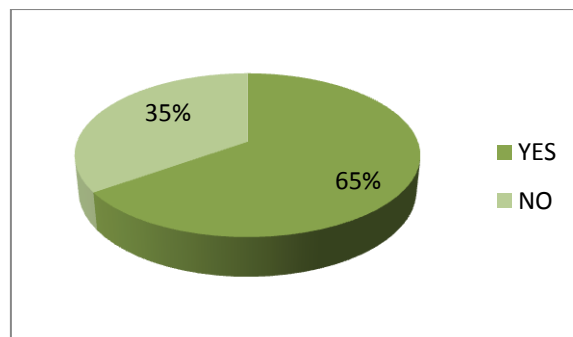I. _Are you familiar with the following aspects of archaeological heritage management?_

National legal frameworks for archaeological protection and conservation
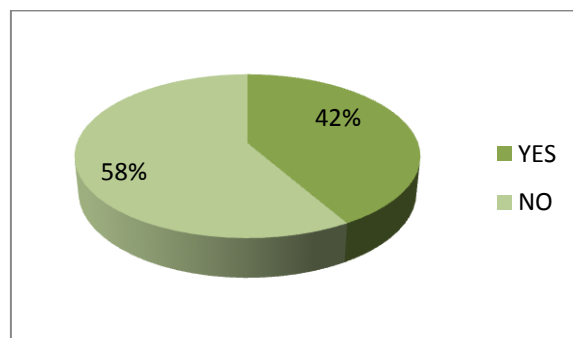
International legal frameworks for archaeological protection and conservation
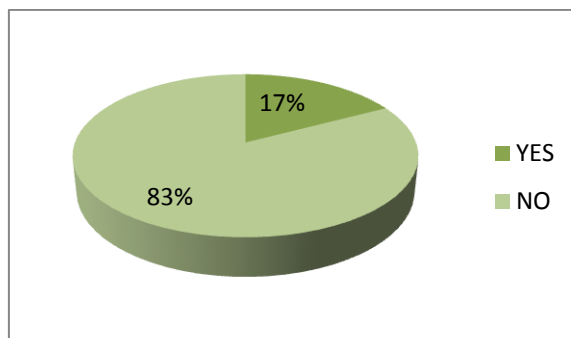

The concept of cultural landscape

Significance and role of archaeological heritage management

Promotion strategies for archaeological heritage management

 Graphs show that the best recognized aspect of archaeological heritage protection is the concept of cultural landscape (65%). Nearly half of the natural heritage professionals are familiar with National legal frameworks for archaeological protection and conservation (47%) and the significance and role of archaeological heritage management (42%). On the other hand, few are aware of the promotion of strategies for archaeological heritage management or the international legal frameworks for archaeological protection and conservation (17%).

Note: As the analysis is made on a base of a quantitative survey, there is no verification of declarations given above. Even if the positive answer ("YES") is marked, it cannot be found what exactly respondents understand by mentioned aspects of the natural heritage management. The qualitative analysis (for example by interviews) could help with resolving this problem in the next stage of the project.

II. Benefits from integral approach to natural and archeological heritage

Domain	Average mark
Sustainable development	**2,23**
Planning strategies	**2,34**
Landscape management	**2,52**
Tourism	**2,85**
Wellbeing and quality of life of local groups	**3,21**

Summary: According to the surveys, Sustainable development (2,23), followed by planning strategies (2,34) are the two areas that will benefit from integral approach to natural and archeological heritage. The less important element is Wellbeing and quality of life of local groups (3,21).

III. Improving competence and performance by enhancing knowledge of archaeological heritage management

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Competences and performance	Average mark
Better understanding of the complex nature of landscape, in particular natural and environmental context of human actions	**2,22**
More integrated and efficient landscape protection	**2,52**
More adequate management strategies	**2,71**
Application of more efficient mitigation strategies to deal with emerging challenges	**3,16**
Better communication and social awareness	**3,17**

Summary: natural heritage experts think that a 'Better understanding of the complex nature of landscape, in particular natural and environmental context of human actions' could be achieved by improving this aspect, followed by a more integrated and efficient landscape protection (2,52). Social awareness seems to be difficult to achieve (3,17).

IV. Improving landscape protection by the adaptation of an integral approach to natural and archeological heritage

Improving landscape protection by	Average mark
More efficient integration of landscape into regional and town planning	**2,2**
More efficient integration of landscape with cultural, environmental, agricultural, social and economic policies	**2,26**
Establishing and implementing legal measures aimed at efficient landscape protection	**2,51**
Increasing awareness of value and importance of landscape to the public	**2,8**
Triggering training and educational initiatives in landscape for general public	**3,31**

Summary: the participants estimated that the two areas of landscape protection which seek to gain the most from an integrated approach to natural heritage are a 'more efficient integration of landscape into regional and town planning' (2,2) and a 'more

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efficient integration of landscape with cultural, environmental, agricultural, social and economic policies' (2,26). Experts consider that the 'training and educational initiatives in in landscape for general public' wouldn't be enhanced by Improving landscape protection by the adaptation of an integral approach to natural and archeological heritage (3,31).

V. Improving landscape management by the adaptation of an integral approach to natural and archeological heritage

Improving landscape management by	Average mark
Facilitate better protection of landscape	**2,21**
More effective and efficient use of available resources	**2,44**
More efficient strategies of planning at the regional level	**2,5**
More effective and accurate reaction to the needs of sustainable development	**2,8**
Better serving the needs of local groups	**3,18**

Summary: An integral approach of natural and archeological heritage in landscape management will 'Facilitate better protection of landscape' (2,21). This option was followed in importance by a 'More effective and efficient use of available resources' (2,44) and more efficient strategies of planning at the regional level (2,6). The least valued answer was a better serving the needs of local groups (3,18).

VI. Improving landscape planning by the adaptation of an integral approach to natural and archeological heritage

Improving landscape planning by:	Average mark
More efficient integration of natural and archaeological/cultural heritage into planning strategies	**2,21**
Better definition of the peculiar character of a region	**2,62**
Better definition of different components of landscape and their hierarchy	**2,71**

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More explicitly address concerns of different facets of landscape management in implementing planning strategies at different administrative levels	**2,75**
Better serving the needs of local groups	**3,42**

Summary: An integral approach of natural and archeological heritage in landscape planning will led to a more efficient integration of natural and archaeological/cultural heritage into planning strategies (2,21). Natural heritage professionals stated one more time that this joint approach wouldn't make it better serving the needs of local groups (3,42).

VII. Value of different elements of the training process

Element	Average mark
Flexibility of the course	**2,38**
Cost	**2,62**
Contact with the tutor	**2,93**
Assignments	**3,1**
Obtaining a certificate	**3,49**

Summary: While pursuing a training process, participants of the survey value the type Flexibility (2,38) and Cost (2,62) of the course, while giving less importance to the type of Assignments proposed (3,1) or validation by obtaining a certificate (3,49).
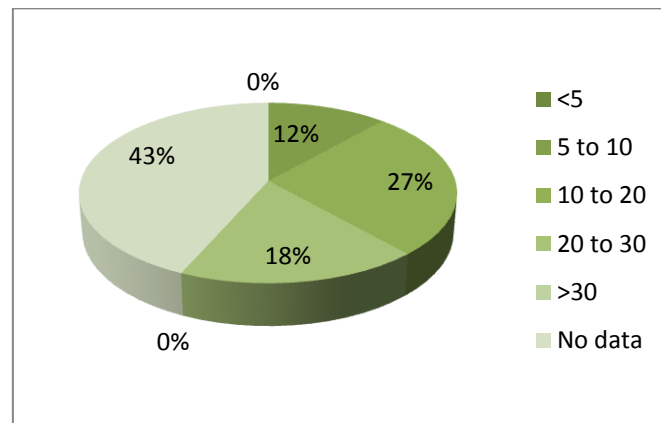
4.2.2.2.Interviews

39 interviews with natural heritage professionals were conducted in the 6 participant countries. In this analysis, ANHER partners identified the relevant comments and expectations they have regarding cultural heritage, their overall degree of knowledge in this domain, and collaborations within both fields.

A wide range of professionals working as foresters, environmental technicians, researchers, botanists, wildlife managers, environmental engineers, environment educators, tourist guides, agronomists and public administration workers were consulted.

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The average years of professional experience of the experts was also recorded:

The experts were consulted on the following issues:

II. Integration of natural and cultural heritage management in their work and specific actions.

In order to have an overview of the situation, professionals in the environmental area were asked if they had occasion to manage the integration with cultural heritage in their daily work.

Polish and British reports collected the comments from rangers. On the negative side, natural heritage is formally a responsibility of the National and Landscape Parks and Directorates for Environmental Protection in Poland but in many cases protected territories are administrated by "State Forests". The interviewees are workers of "State

Forests" and sometimes competences between institutions overlap. They are also concerned about the fact that timber exploitation activities may devastate archaeological heritage unintentionally.

On the positive side, the consulted British forester states that he uses PastMap and walk-over surveys as archaeological tools, as well as natural heritage approaches to safeguarding archaeological features such as providing buffer zones to bring back the landscape-setting of stone hut circles. The use of buffer zones is also mentioned by a Spanish ranger.

The integration of both domains happens in other mentioned projects in the Spanish report, such as a project for preserving reptiles in the fortification walls and castle of San Sebastian or an educational project involving elementary schools and local authorities to create micro-wetlands and preserve drinking troughs. Dutch experts are developing recreation areas in some wetlands which are also areas of high archaeological value.

III. Knowledge of the archaeological heritage in their area and the strategies to protect, manage, value and promote it.

Interviewees specified how much they know of archaeological heritage in their area and if there are any strategies to protect, manage, value and promote it.

The vast majority of interviewees seem to be unfamiliar with archaeological heritage within their area. This reality is well summarized by the Dutch: The non-archaeologist, although aware of the existence of archaeological heritage, has little understanding of the strategies to protect and manage it. They often recognize the value of archaeological heritage and the ways in which to promote it because natural heritage organizations nowadays have to deal with a changing vision of landscape management, whereby landscapes are 'given back to nature'.

IV. Skills to ensure archaeological protection and conservation and methods used for it.

The interviewees said if they had the necessary skills to ensure archaeological protection and conservation in their activities related to natural heritage management projects.

As above mentioned, British and Polish foresters refer to national strategic plans (The Forest Planning Process and Forest Management Plan) as a possible way to introduce protection of archaeological elements. However, these plans seem to be strict and hard to modify once approved, which leaves little space for archaeological experts to introduce their demands.

Similar to the answers of the archaeology survey, most of interviewees declare that cooperation with colleagues specialized in cultural sector is fundamental.

V. Collaboration and support from cultural heritage professionals

All the interviewees admitted that, according to their complexity, environmental and territorial activities need specific support by specialized professionals.

It is quite common to rely on external consultants specialized in archaeological sectors despite it is always difficult to work with experts of other sectors as the default approach is never integrated, and each expert think of his/her own part.

VI. Involvement in landscape management and planning and suggestions for a jointly approach of both domains.

In the sixth question, interlocutors answered whether they have been involved in actions or projects related to landscape management and planning and if the archaeological heritage has been integrated in them.

Some interesting initiatives have been gathered across the 6 partner countries. Scottish National Heritage (SNH) has recently designated 40 National Scenic Areas (NSA), which are 40 areas defined and managed in terms of their landscape. In general, landscape planning contributes a framework within which smaller specifics such as special habitats or unique archaeological features would then fit.

A LIFE project coordinated by a Spanish biologist addressed the cultural immaterial value of pollarding trees, how they affected in landscape management and planning and its effect on saproxylic insects. An Italian seismologist is also carrying out interesting projects in landscape management and planning after the Emilia earthquake in 2012.

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Nevertheless, a jointly approach has some risks in the eyes of some experts. Landscape approaches are seen as a large-scale undertaking and archaeological features as small scale, which translates into a lack of long-term vision of the natural heritage domain. One of the interviewees states that a neglecting management of cultural heritage (i.e. archaeological interventions) affects aggressively in natural heritage than the other way round, especially in anthropic areas.

VII. Competences and performance enhanced by developing knowledge of cultural heritage management and necessary skills to do that.

The seventh question made to natural heritage professionals was about which skills they considered important in order to enhance their knowledge of archaeological heritage management according to their current work. Secondly, they have been asked in which way they thought their competences and performances would have been improved by that.

Here is a range of areas interviewees would like to improve:

- Ancient civilizations' attitude towards the environment
- Basic information about protection and safeguarding of archaeological heritage
- Basic elements regarding procedures and means of digging
- Basic elements on techniques for the excavation
- History of architecture and ancient city planning
- Historical knowledge of the territory
- History of settlements
- Landscape genesis
- Small cultural features in the landscape: hedges, fences, decoys and bushes

As for the necessary skills to enhance them, a general understanding of the other domain and willingness to broaden perspectives are essential in the eyes of some interviewees. A strong leadership in project management is also valued.

A reluctant opinion is recorded on the Polish report, as foresters feel like it would be not possible to effectively introduce a joint approach in a big scale. They argue that implementation of an integral project in forests can be very difficult due to its high costs and the extra duties they would perform in their daily jobs.

Another interesting opinion is given by a Spanish botanist: technological literacy is an important tool for a better performance in both domains, GIS for instance.

VIII. Interest in training regarding cultural and natural heritage management

Finally, environmental professionals answered whether they would be interested in a training focused on how to integrate the management of natural and cultural heritage.

Most interviewees do have an interest in training with regards to cultural and natural heritage management. In the Netherlands for instance, this interest concerns general themes such as how to deal with planning and management of heritage on different

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scales (local, regional), what are important policy objectives in the other domain, or how to deal with conflicting interests.

Once again, the usefulness of these training is conditioned by the inclusion of practical contents, a fact highly valued by most of the participants.

5. THE VOCATIONAL EDUCATION AND TRAINING IN ARCHAEOLOGICAL AND NATURAL HERITAGE. DISCUSSION OF RESULTS

In order to have a clear picture of the degree of integration of the domain of archaeological and natural heritage across Europe, partner countries have analysed the needs and expectations of professionals from both sectors. The questionnaires and interviews show that, in overall, an integration of both domains during field work, project management, apprenticeships, and vocational training is rare. Even if a joint approach has already begun, it is obstructed by knowledge gaps and friction.

5.1. Comparative analysis of the questionnaire results

Knowledge of mutual working fields is limited amongst professionals. Half of the professionals from both fields are aware of the national legal frameworks for the protection and conservation of the each other domain, and are familiar with the significance of cultural and natural heritage management in their countries. Nevertheless, only one third of archaeologists admits to know such as issues as ecosystems and biodiversity conservation, management of natural reserves/parks/spaces or international legal frameworks for natural protection and conservation. This situation is even worse in case of natural heritage professionals. Two thirds recognize the concept of cultural landscape, but only very few (2 out of 10) are aware of the promotion of strategies for archaeological heritage management or the international legal frameworks for archaeological protection and conservation.

A summary of competences in each other domains is presented below.

Archaeological domain	Natural domain
National legal frameworks for natural protection and conservation (63%)	Concept of cultural landscape (65%)
Promotion strategies for natural heritage management (41%)	National legal frameworks for archaeological protection and conservation (47%)
International legal frameworks for natural protection and conservation (38%)	Significance and role of archaeological heritage management (42%)
Management of natural reserves/parks/spaces (38%)	Promotion strategies for archaeological heritage management (17%)

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Use of public space (37%) Ecosystems and biodiversity (31%)	International legal frameworks for archaeological protection and conservation (17%)

The interviewers have been asked about the potential of mutual cooperation. Professionalists from both domains have argued that sustainable development and planning strategies are the two areas that will mostly benefit from an integral approach to natural and archeological heritage.

Domain	Natural domain	Arch. domain
Sustainable development	**2,23**	2,33
Planning strategies	2,34	**2,08**
Landscape management	2,52	2,36
Tourism	2,85	2,85
Wellbeing and quality of life of local groups	3,21	3,09

More integrated and efficient landscape protection and a better understanding of the complex nature of landscape, in particular natural and environmental context of human actions were considered to be the competencies that are most likely be improved by enhancing a knowledge in natural and archaeological heritage.

Competences and performance	Natural domain	Arch. domain
More integrated and efficient landscape protection	2,52	**2,06**
Better understanding of the complex nature of landscape, in particular natural and environmental context of human actions	**2,22**	2,55
More adequate management strategies	2,71	2,60
Application of more efficient mitigation strategies to deal with emerging challenges	3,16	3,21
Better communication and social awareness	3,17	3,23

It was argued that an integral approach of natural and archeological heritage in landscape protection will led to a more efficient integration of landscape with cultural, environmental, agricultural, social and economic policies and a more efficient integration of landscape into regional and town planning.

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Improving landscape protection by	Natural domain	Arch domain
More efficient integration of landscape with cultural, environmental, agricultural, social and economic policies	2,26	**2,19**
More efficient integration of landscape into regional and town planning	**2,2**	2,41
Establishing and implementing legal measures aimed at efficient landscape protection	2,51	2,73
Increasing awareness of value and importance of landscape to the public	2,8	2,61
Triggering training and educational initiatives in landscape for general public	3,31	3,46

The interviewers from both sectors were in a position that an integral approach of natural and archeological heritage in landscape management will facilitate a better protection of landscape and a more effective and efficient use of available resources.

Improving landscape management by	Natural domain	Arch. domain
Facilitate better protection of landscape	**2,21**	2,46
More effective and efficient use of available resources	2,44	**2,36**
More efficient strategies of planning at the regional level	2,5	2,57
More effective and accurate reaction to the needs of sustainable development	2,8	2,86
Better serving the needs of local groups	3,18	3,18

They further argued that an integral approach of natural and archeological heritage in landscape planning will led to a more efficient integration of natural and archaeological/cultural heritage into planning strategies.

Improving landscape planning by:	Natural domain	Arch. domain
More efficient integration of natural and archaeological/cultural heritage into planning strategies	**2,21**	**1,94**
Better definition of the peculiar character of a region	2,62	2,38
Better definition of different components of landscape and their hierarchy	2,71	2,72
More explicitly address concerns of different facets of landscape management in implementing planning strategies at different administrative levels	2,75	3,05
Better serving the needs of local groups	3,42	3,04

Furthermore, both groups stressed that flexibility and cost of a course are the key factors in order to pursue a training process.

Element	Natural domain	Arch. domain

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Flexibility of the course	**2,38**	**1,94**
Cost	2,62	2,4
Contact with the tutor	2,93	2,92
Assignments	3,1	2,94
Obtaining a certificate	3,49	3,2

Both groups have been pretty sceptic as regards potential aspects of their mutual cooperation aspects in such domains as better communication and social awareness, triggering training and educational initiatives in landscape for public as well as better serving the needs of local groups.

5.2. Comparative analysis of interviews

Interviewees from both sectors reached similar conclusions as regards a joint management of heritage. Integration of both domains exists to limited degree, though the tools and skills to ensure an effective performance are limited. In some countries, such as the UK and the Netherlands this integration is more standardized.

As far as knowledge of the other domain is concerned, archaeology professionals are familiar with the ecosystems and biodiversity of their area, basic way while the majority of natural heritage experts seem to be unfamiliar with archaeological heritage within their own area. To improve this lack of knowledge, enhancing the perception of landscape as a whole (nature and culture together) is essential. Eco museums, geoparks, etc. are mentioned as good examples of this kind of cooperation. Nevertheless, landscape approaches are seen as a large-scale undertaking and archaeological features as small scale, which sometimes translates into a lack of long-term vision of the natural heritage domain.

Another relevant issue comprises the collaboration between professionals from different domains. This is commonly viewed as a way to improve the lack of skills regarding natural and cultural heritage conservation and protection.

When referring to a training process to cover the needs of professionalists from both domains, this can only be achieved by providing practical contents and relying exclusively on specialised experts. Web-based training is considered useful for the dissemination of information to different target groups, but a strong emphasis was placed on the value of on-site training and hands-on workshops and fieldtrips. Flexibility was recognized as another key factor to engage potential beneficiaries.

6. SUMMARY AND OUTLOOK

The analysis of collected data allows us to propose some recommendations as regards major objectives of the ANHER project. Firstly, questionnaires and interviews have been designed to analyse the most suitable modes of training for professionals of both

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domains. Secondly, the results they brought made it possible to identify a number of issues that may lead to the integration of natural and cultural heritage.

Main themes of interests for professionals from the archaeological and natural heritage sectors

Both, questionnaires and interview, aimed to explore the most interesting topics for professionals in both domains. These are to be taken into consideration while designing the content of vocational training designed for both groups. Professionals from both domains highlight in particular the importance of integrating planning for cultural and natural heritage and in-depth knowledge of each other. Thus, all professionals point out the importance of integrating natural and cultural heritage while designing VET program.

A comparative analysis of the survey results allows us to propose and recommend some potential training to address themes such as :

- o Heritage protection
- o Heritage management
- o Promotion strategies
- o Planning strategies
- o Character of the landscape
- o Landscape management
- o Integration of strategies of planning into regional and town planning
- o Sustainability development: tourism

The following training themes are to be proposed:

- o Strategies of planning
- o Sustainable development
- o Regionalism as defined from natural and archaeological standpoint
- o Legal context of landscape protection
- o Tourism

However, a more specific analysis of the data collected from archaeologists allows us to identify some interesting topics for this group:

- o Habitat restoration
- o Environmental legislation
- o Environmental education
- o Environmental psychology

- o Zoology

- o Geology / geomorphology

- o Hydrodynamics

- o Territorial marketing strategies

On the other hand, an analysis of data displayed obtained from natural heritage professionals allows us to propose the following issues:

- o Ancient civilizations' attitude towards the environment

- o Basic information about protection and safeguarding of archaeological heritage

- o Basic elements regarding procedures and means of digging

- o Basic elements on techniques for the excavation

- o History of architecture and ancient city planning

- o Historical knowledge of the territory

- o History of settlements

- o Landscape genesis

- o Small cultural features in the landscape: hedges, fences, decoys and bushes

The results of conducted analysis brought about interesting results highlighting the needs of the professionals dedicated to cultural and natural heritage. In summary, professionals of both domains consider e-learning as a useful tool to improve their competencies, stressing in particular the flexibility of this kind of method. However, they point out some aspects that could be taken into account such as cost, practical contents, etc. The consulted professionals point out the importance of collaborative training. These results make it possible us to propose a method of distance learning developed through a community or chat communication between the trainees and the tutor as the most efficient training methods.

Forms of vocational training of professionals from the archaeological and natural heritage sectors

Professionals from both domains highlight online courses as an attractive learning method compared to traditional teaching (e.g. university, professional schools, etc.). This kind of vocational training provides a flexible timetable, as flexibility is regarded as one of major means of measuring the usefulness of this training method. It also guarantees the quality of training content. Hence, it expected that the training materials be prepared by specialized experts in different domains. The analysis highlights also the importance of some other aspects such as practical content of the e-learning course, personalized training, and collaborative training, in particular maintaining

contacts with the student group and creating a learning community. For that reason, the e-learning course must allow trainees to keep in touch, which is to be provided by forums or communities or social media groups. Indeed, it might be supplemented by some practical lessons, fieldtrips or workshops.

A majority of professionals in this survey points out as relevant the following aspects of this kind of training: the course cost and importance of obtaining a certificate to prove the professional attitude and experience. Hence, it is recommended these issues are taking into consideration while designing a new content for VET for both sectors. In some cases, it is argued that the preparation of specialized manuals and handbooks are advisable for the learning process.