Foreword

European landscape is changing with an unpredictable and increasing speed. In the 21st century we live our everyday life so fast that we miss a tremendous number of valuables in our life that worth living for. We have to admit that besides nature conservation and densely populated areas, agricultural land is covering most of the Earth's surface so its importance is not questionable. Agriculture plays an important role in people's life and in the life of all terrestrial creatures from fungi to predators. In different languages agriculture is expressed with varying emphasis on its meaning (i.e. in Hungarian it is – with mirror translation – field-economy), mainly concentrating on its function of production. In this manner, agriculture looses its cultural aspect that could be misleading, concerning the functions of agriculture that is more than simply producing crops and meat, creating food. Misinterpretation of agriculture leads to super-intensive farming systems where the important cultural aspects are lost together with all agro-related services, such as ecosystem services, nature conservation services etc.

According to my understanding this explains the main scope of the Eucaland Project – that we are going to introduce here – and also of the Eucaland Network (partly). So, Eucaland Project is focuses mainly on the cultural aspects of agriculture.

The introduction is written by Gloria Pungetti who is, we can say, together with Alexandra Kruse was the mother, the engine and the heart of the project. The introduction is followed by short descriptions of the work packages of the Eucaland Project so each reader might have an idea of what we achieved during these two years of the project period. After the work package descriptions we find the contribution of those participants of the Eucaland Project's final conference whose presented material is not in the project book (edited by Gloria Pungetti and Alexandra Kruse). This is the reason why most of the participants are not authors in this special issue; however most of them are on board of the editorial board.

I would like to take the opportunity to say thank to all the authors for their efforts of writing the work package descriptions and for those writing original articles, to the reviewers who were working hard to finalize this special issue and also to our guest editor, Alexandra Kruse, who was initiator of the article about the glossary and made the biggest effort to keep the authors and the special issue on track so we do not miss the message of the Eucaland Project. I hope that this special issue will be informative from the point of view of introducing the Eucaland Project and will also be an exciting material for reading about researches and new ideas. We – I might say it in the name of the whole project team – see this work as a stage of a long term work that can be and should be continued. And may be, never finished . . .

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INTRODUCTION TO THE EUCALAND PROJECT

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Introduction and goals

The Eucaland Project 'European Culture expressed in Agricultural Landscapes' regarded agricultural landscapes as part of European cultural heritage and identity. The Project aimed to describe these landscapes from past to present, from the viewpoint of a common debate and heritage. As a result, it demonstrated how and why the Europeans are connected to their agricultural landscape as part of their cultural heritage, and how this endangered heritage, which is threatened by social, economic and political transformations, can be passed on to future generations.

By opening up a dialogue on the consideration of cultural heritage in European agricultural landscapes, the Project provided essential material in the relevant disciplines, creating the basis for future dialogue (Eucaland Project Website, 2010).

Implementation

The Project, funded by the EC Culture Programme, was carried out for two years between 2007 and 2009. A large group of European institutions drew together an interdisciplinary and intercultural cooperation on European agricultural landscapes and cultural heritage. Partners included scientists, practitioners, governments and NGOs from over twenty countries, for a total of forty organisations including the Observers.

Among these, fifteen active partners from thirteen countries in North, South, East and West Europe gathered together their knowledge on the topic, with a particular view on the European Landscape Convention and the World Heritage Convention. The partner organisations of the Eucaland Project, including the Coordinator from UK and four Co-organisers from Austria, Croatia, Italy and Spain, are listed in a volume which illustrates the results of the Project (Pungetti and Kruse, 2010).

Research

The Project partners formed six multidisciplinary and intercultural research teams on different topics as described below.

1. *Landscape Description* explored how European agricultural landscapes are to be understood not only in terms of farming and nature, but also as a common heritage with social and cultural values. Characteristic components of agricultural landscapes were identified, their psychological and social influences on human well-being explored, and developments for the future suggested.
2. *Landscape History* compared the evolution of agricultural landscapes in European countries, and considered the effect that societies had on them. The chronological development of the different European agricultural landscape types was illustrated from prehistory to present times. Moreover, the human impact on these landscapes and the forces behind them were outlined and discussed.

3. *Landscape Classification* produced a preliminary classification of European agricultural landscapes. Intended for debate across Europe, this approach moved beyond existing landscape classifications by considering landscape types viewed as products of history. From a discussion on the ideology of the classification, research moved to identify principles and working methods. It emerged a Eucaland Project classification of the influence of agriculture through time on present-day landscapes, based on classes and types.
4. *Landscape Assessment and Policy* investigated what account was taken of European agricultural landscapes by international conventions such as the European Landscape Convention (Council of Europe) and the World Heritage Convention (UNESCO). It analysed national policies in different countries, as well as the activities of IUCN (International Union for Conservation of Nature), ICOMOS (International Council on Monuments and Sites) and the European Union, including the Common Agricultural Policy, the Environmental Action Programme and relevant Environmental Directives.
5. *Landscape Planning* investigated how the cultural value of European agricultural landscapes was considered in legal, political and economic regulations and subsidies. Recommendations were drawn up for politicians, scientists and planners to be used to make the public more aware of their cultural heritage and thus better able to plan its future landscape.
6. *Dissemination and Findings* focussed on the wide dissemination of the results, as one key objective of the Project. Details are provided in the following section.

Findings

Dissemination was designed to communicate the Project findings to the public. This was carried our through several tools and outputs.

One of the first outputs of the Project was the logo, which aimed to show the cultural character of the agricultural landscapes of Europe, with the geomorphologic and traditional point of view represented by the terraces, the land use activity of irrigation and reclamation by the windmill, and the human presence by the tractor. It took into account the four colours of the Project: 1) ochre to indicate earth and water; 2) brown for soil and seeds; 3) green for grass and trees; 4) blue for air and sky; the stars filling the latter representing the Project's European dimension. These colours were used throughout the Project for its outputs, e.g. leaflets, posters, presentations, letterheads, reports and similar.

The Project website, hosted by the University of Cambridge, made what is known about European agricultural landscape, cultural heritage and their values accessible to the general public. The aim was to encourage the circulation of information not only among the partnership but also among European citizens and people interested in the subject, especially at trans-national level.

To facilitate data exchange and management, an Online Collaboration Site (OCS) was set up and maintained by the Project Coordinator and accessed by all partners. Apart from the storage of data and outputs, it promoted collaboration among partners and helped constant availability and debate of Project outputs. OCS housed in fact a Wiki, which allowed all partners to share their views in the discussion concerning definitions and meanings of agricultural landscapes.

The OCS, consequently, led to the compilation of a common glossary of agricultural landscape terms, which facilitated the understanding and use of same terms and definitions by all partners. Specifically, a List of Terms related to agricultural landscapes was developed through an interactive process during the two years of the Project. Partners were involved by compiling the List of Terms at the working meetings, by email and through the Project OCS. The final list contained the common English term, a definition, synonyms and national variations.

Another outcome was a travelling exhibition, aimed to inform the public about the key Project topics. It was expressly intended to facilitate exchange with the public, and to receive in turn feedback on the meaning of agricultural landscape for European citizens. The exhibition consisted of six large-format colour panels in English, which could be translated in any language.

Trans-national circulation of knowledge on European agricultural landscapes and cultural heritage was carried out, moreover, through the presentation of the Eucaland Project at several conferences, workshops and symposia at local, national and international level, mainly European.

The Project results were set out in detail in the book of the Eucaland Project entitled 'European culture expressed in agricultural landscapes: perspectives from the Eucaland Project' edited by the Project Coordinator and the Project Facilitator, Gloria Pungetti and Alexandra Kruse respectively. Authors from the thirteen European countries actively involved in the Project for two years debated and finalised the results of their discussion in the book, using a novel approach. Although interested in landscape matters in different ways, these experts from across Europe formed six multidisciplinary research teams described before, which produced the six core parts of the Eucaland Project book: Part I Landscape Description; Part II Landscape History; Part III Landscape Classification; Part IV Landscape Assessment and Policy; Part V Landscape Planning; Part VI Dissemination and Findings. These core parts were preceded by an introductory section in which the research carried out during the Project was explained and the agricultural landscape features were described. Furthermore, photographs and poems from different regions were used to represent the agricultural landscape and cultural heritage of the thirteen partner countries. A foreword by UNESCO and a preface from the Council of Europe completed the picture.

Lastly a conference, illustrated below, took place in Cambridge at the end of the Project.

Project Conference

Several meetings were held during the Project life by the Coordinator and the Co-organisers to implement the research. During the final meeting, the Cambridge Centre for Landscape and People organised the Eucaland Project Conference at Corpus Christi College, University of Cambridge, on 22 and 23 September 2009 (Eucaland Project Conference Website, 2010).

Accordingly the Project results, as well as the results of other similar research, were presented at the 'Eucaland Project Conference: European Culture expressed in Agricultural Landscapes'. This journal presents the outcomes of the Conference.

The opening address from UNESCO was followed by keynote speakers from the Council of Europe and the University of Cambridge. Other speakers included the Working Groups leaders, key Project partners and selected guests from all over Europe.

The Conference theme was European agricultural landscapes in connection with cultural heritage. The event was of interest to academics, professionals, and governmental and NGO officers engaged in the study, assessment and planning of European agricultural landscapes and involved in their use, policies and cultural heritage.

Conclusions

The Eucaland Project developed synergies at European level which allowed starting the investigation of cultural heritage in agricultural landscapes, and offered a new European perspective on the subject. This required intense coordination and cooperation among the many multicultural and multidisciplinary organisations in the Project. The author is thankful to the partners for their collaboration in this challenging Project, and to the other participants to the Conference for their additional contribution to the subject. With these outcomes, we hope to offer a background for studies on agricultural landscapes and cultural heritage, for future developments to follow.

The Eucaland Project, which is different and separate from the Eucaland Network, was endorsed by the World Heritage Centre of UNESCO and by the Spatial Planning and Landscape Division of the Council of Europe for the European Landscape Convention. It was funded with the support of the Culture Programme of the European Commission. This journal reflects the views of the authors only, and the Commission and the Project Coordinator, author of this paper, cannot be held responsible for any use that may be made of the information contained herein.

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Summaries of the work packages in the Eucaland Project

Az Eucaland Projekt egyes munkacsoportjainak összefoglaló ismertetése

Tájökológiai Lapok Special Issue: 11–12. (2010)

SUMMARY OF EUCALAND PROJECT WP 1.

DESCRIPTION METHODS FOR EUROPEAN AGRI-CULTURAL LANDSCAPES: DEFINITIONS, CULTURAL CHARACTER AND VALUES

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The European Landscape Convention states that 'landscape contributes to the formation of local cultures and is a basic component of the European natural and cultural heritage, contributing to human well-being and consolidation of the European identity' (Council of Europe 2000, Preamble pp.2).

This paper presents a synthesis of the results of one part of the Eucaland Project (European Culture Expresed in Agricultural Landscapes (Eucaland). Culture Programme. European Commission. 2007–2009) dealing with landscape description. Full Project outcomes have been published in Pungetti et al. (2010).

For the purpose of the Eucaland Project, the partners have agreed on a description of agricultural landscapes as those landscapes which are strongly related to past and present agricultural activity, which may contain some of these elements:

- farmland, cultivated land, grasslands, meadows
- horticulture, viticulture, olive trees, fruit trees
- small infrastructure elements, roads, agricultural buildings, farmhouses, agrarian settlements
- ditches, stone walls, terraces
- vegetation structures, green corridors, hedges
- patches of forest and single trees within an agricultural context
- remains and relicts of past agricultural activity

Little has been done so far to describe agricultural landscapes at a European level, despite the fact that contemporary policies have a more complete vision that includes landscape in rural development.

In order to describe the cultural dimension of agricultural landscapes, a combined approach seems most useful, integrating methods and techniques from different descriptive perspectives.

A first distinction has been considered on the two main functional levels of landscape: landscape as a framework for action (space) and landscape as a carrier of social meaning (place). Characteristic of landscapes is that they are normally understood to lie at the conceptual interface of space and place. This is the reason why, in order to address the analysis, a gradient running from the physical level to the meaning level has been useful (Figure 1).

Taking into account OECD (1999, 2001) classifications, the following three descriptive levels have been identified related to the cultural value of agricultural landscapes. It is necessary to consider that these levels are not clearly differentiated but very much interlinked. Therefore, they should be considered as a kind of gradient where the borders are rather diffuse (Figure 1).

First descriptive level: physical object description (structure). This corresponds to the physical level of analysis, where data sources would be topographic maps, land use data, statistics and aerial photos. Landscape elements present on the matrix (the space) are to be considered at this stage.

Second descriptive level: people – physical object interrelationship (function). This would be halfway between the physical level and the meaning level. Data sources would be thematic maps and literature.

Third descriptive level: intangible quality (value). The meaning level (place) is to be described at this level. Data sources may be interviews, questionnaires, literature or pictures.

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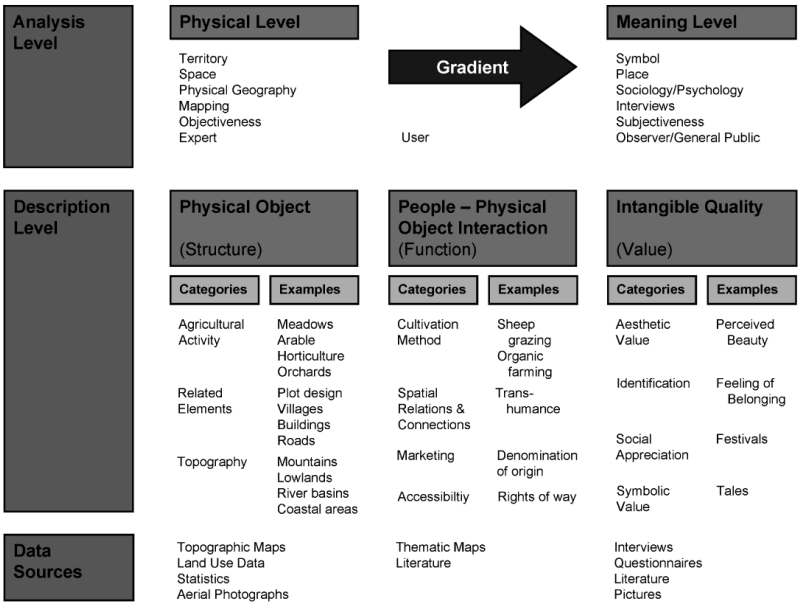

Figure 1. Descriptive process for agricultural landscapes focusing on their cultural dimension (Velarde et al, 2010)
1. ábra Leírófolyamat az agrártájak jellemzéséhez a kultúrális vetület tükrében (Velarde et al, 2010)

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SUMMARY OF EUCALAND PROJECT WP 2.

SEARCHING FOR SYSTEM IN THE HISTORY OF AGRICULTURAL LANDSCAPES IN EUROPE THE HISTORICAL PART OF THE EUCALAND PROJECT

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Working Group 2 within the Eucaland project tried to summarise the history of the agricultural landscapes of Europe. It is not difficult to fill a book with local and regional case studies, but many of such books already exist. During the work it became clear that the knowledge of the history of the landscape was very unevenly spread over Europe. In some countries, the agricultural landscape has been a popular object of historical research for many decades. In other countries, this type of research questions is still very new.

To bring system in the potentially enormous amount of data, it was decided at an early stage in the project to combine top-down and bottom-up approaches. The top-down approach was based on the main forces behind the developments of landscapes, that were divided into forces of change and forces of stability.

The interrelated factors of demographic and economic fluctuations and technological development, and the changing centre-periphery relations were identified as the main forces of change.

The periods of demographic and economic growth can be seen as the main formative periods in the history of the European landscape. Examples are the High Middle Ages (10th-early 14th century), the 'long sixteenth century' (ca 1450-ca 1650) and the period from ca 1750 to the 20th century. The growing degree of economic integration during these periods explains developing centre-periphery relations, when ever more regions become connected to the European core-regions.

There are two factors that in general tend to stabilise landscapes. One is physical geography that acts as a restraint to the possibilities for change. The same is true for existing landscape structures. The investment in an existing structure limits the possibilities for change. Regional and local political and legal institutions take an intermediate position. Particularly institutions and legal frameworks can act as forces of stability, but local leaders and groups can also stimulate new activities. Local and regional structures explain much of the unique answers with which different regions respond to forces of globalisation.

To validate this model, as well as to give it substance, variety and nuance, systematic information was collected (the bottom-up approach). For this aim, a schedule was developed early in the process. In the vertical direction, the schedule gave time periods, with an overlapping classification of centuries and time periods (i.e. Roman period, High Middle Ages etc). In the horizontal direction, the schedule offered the possibility to distinguish between different regions. Schedules were filled in by the members of

Working Group 2 for Croatia, England, France, Germany, the Netherlands, Slovakia and Spain. For some countries this information was partly based on new research.

The framework of geography and chronology formed the basis for the description of the histories of European agricultural landscapes. It was surprising to what degree developments in different parts of Europe fitted in the framework. This must have been partly due to the degree of economic integration in some of the main formative periods in the agricultural landscapes: the High Middle Ages, the 'long sixteenth century' and the period from 1750 onwards. These formative periods showed reclamations all over Europe. Also the periods of crisis, with the late medieval agrarian crisis, following the disastrous decline of population by the Black Death, was a European phenomenon.

A long-term characteristic in the European geography is the existence of economic core-regions. The high medieval core regions were northern Italy and north-western Europe. From the sixteenth century, the north-western core grew in importance, itself slowly moving from Antwerp to Amsterdam and then to south-east England. Nowadays, geographers often speak of the Blue Banana, the European core-region that covers the arc from southeast-England to northern Italy, showing an almost incredible degree of continuity since the Middle Ages.

Instead of most European landscape maps and descriptions that show a non-hierarchical jigsaw puzzle view of regions, the core-periphery model asks for a description of regions in their relations to other regions and in particular to the core. Many developments in the European landscapes can be described – and partly explained – within this perspective. An example is the shift of the grain-producing open fields from England and parts of the Mediterranean to the eastern Baltic during the early-modern period. Another example is the rise of regional specialisations in agriculture that is elaborated by the present author elsewhere in this volume.

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SUMMARY OF EUCALAND PROJECT WP 3.

CLASSIFYING EUROPE: AN OUTCOME OF THE EUCALAND PROJECT

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One of the EucaLand project's more ambitious undertakings was to classify Europe's agricultural landscapes in Working Group 3. This was a difficult task because of the continent's geographical size and landscape diversity, time depth and dynamism. We limited the task to being not a classification of agriculture *per se* but of areas of landscape where agricultural influences past and present are strong enough to be perceived as dominant. This focus on a single facet of landscape helped, although it introduced other tensions with landscape's integrative character, and even with a shared ELC definition the meaning of 'landscape' itself is not always straightforward in a multi-disciplinary and multi-national group such as Eucaland.

Keeping sight of landscape's quintessentially perceptual and cognitive nature and of its fluidity and dynamism (ie how to make sure we classified landscape rather than just land, environment, land use or land cover) was a key problem. It was essential somehow to make transparently explicit the subjectivity of landscape ('an area as perceived by people ...' as the ELC says) - in other words, to acknowledge the ever-present observer(s) without whom there is only environment. As a step towards this, we recognised that we were classifying interpretations and perceptions not objects (i.e. it is a classification of the subjective). We based our classification on generalisation, creating classes and types that could be applied to relatively large areas of mixed character not a single character in tiny blocks of land.

One of our early decisions was that this would be a classification of cultural aspects of landscape. Past cultural and social decisions are very important to landscape but can become invisible within environmentally-focussed classifications. The EucaLand classification therefore pushed environmental factors such as soils, climate, and altitude (already the basis of several classifications) into the background as a deliberate inversion of the more normal environmental infrastructure / social superstructure model. This was not to deny the importance of environmental and geographic factors as the context for socio-economic processes and causes, but rather to focus on the nuanced human responses to them. Social processes and agricultural methods in any given area change through time even when environment does not, so the relationship between the two is not simple; an individual farmer might strictly follow the dictates of the soil, so to speak, but communities and higher level social groups may not, because social pressures are at play as well as environmental ones. Privileging cultural response makes time depth more accessible to us; it also adds a dimension of perception to the classification.

We tried to capitalise on the diversity of disciplinary and national perspectives present in the project by producing a proforma to capture participants' knowledge under the following headings:

- Identity (the names, scientific or common, already applied to a type of landscape)
- Patterns (the 'aspect' of an area of landscape, its form, what it looks like)
- Process (the human (agri)cultural processes that shaped landscape – what farmers actually did, and why, socially and legally; function, practice and custom, methods)
- Change (the impact of the passage of time on landscape, timescales.)
- Spatial Relationships (territories larger than farming community, resource grouping, 'multiple estates', villa/big house type estates, territorial sharing)
- Social Organisation (social relationships and structures, organisations, settlement patterns)
- Topography (underlying non-cultural aspects: physical geography and the shape of the land).

A hierarchical classification was devised that reflected the results of this data collection. This contained high level classes, types and a few sub-types. Classes and types have been given brief descriptions structured around four questions: What does a 'Type' look like? Why does it look like that? What is/was it connected with? What happened to it before and since? More detailed and local or higher (eg socio-economic patterns) types could later be added to this structure.

The classification does not yet incorporate agricultural practices operating on inter-territorial or non-areal scales such as transhumance, droving or other long distance inter-relationships of even pre-industrial market economies; this is for a future project. Mapping of the classification is also a task for the future, although experiments suggest that the classification will be applicable through remote data such maps, air photos and satellite imagery.

As it stands the classification consists of 10 classes and about 50 Types, although but no doubt some omissions will be found. The classes are:

1. Open fieldscapes
2. Enclosed fieldscapes
3. Modernised fieldscapes
4. Grazing
5. Wood pasture
6. Terraced landscapes
7. Drained land
8. Irrigated land
9. Arboriculture and viticulture
10. Non-agricultural

These are divided further into Types, for example, Class 1. Open Fieldscapes contains Types for Open arable fields Open mixed fields, Strip fields, Wooded fieldscapes, Forest fields, and Class 9 Arboriculture and viticulture contains Orchard Olives, Olive terraces, Vineyards. To provide flexibility some Types can belong in two classes (eg enclosed grazing in both class 2 and 4). For each type (eg Open mixed Fields) a selection of descriptive 'key-words' were selected (eg Ploughed, rotation, fallow, grazing, orchard, woodland, medieval, recent, modern) and for most types a few local or regional names by which the type is commonly known (eg Open fields, coltura promiscua).

SUMMARY OF EUCALAND PROJECT WP 4.

ASSESSMENT OF INTERNATIONAL POLICIES CONSIDERING CULTURAL HERITAGE AND AGRICULTURAL LANDSCAPES

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The work done in WP4 "International Policies" had two objectives: (1). To review the main policies that, at international and European levels, had an influence on preserving the values of cultural heritage significant to agricultural landscapes and (2) To initiate thinking on an evaluation process, which is, like other policies, closely linked to operational goals. In particular, WP4 examined the activities carried out at the world level by UNESCO, ICOMOS and IUCN, and those conducted at the European level by the Council of Europe and the European Union. It also checked national policies. Before discussing about legal conditions and frameworks for the protection and maintenance of our cultural heritage in our agricultural landscapes, assessment methods for European agricultural landscapes within the framework of international heritage policies and conventions have to be developed. Some agricultural landscapes maintain visible traces of historical structures of the past more than others do. Others appear overall more transformed by modern living. The palimpsest of historical traces can be impoverished, degraded, abandoned and threatened, but it has hardly been destroyed if you are informed and want to read about it. This research therefore had two objectives. First, it aimed at assembling the main international and European policies relevant to preserving values of cultural heritage in agricultural landscapes. Second, it analysed issues of assessment that are important to reach operational goals. After knowing about legal instruments and backgrounds on the different levels: national, European and international, an evaluation of the critical aspects and potential of sites in order to manage economic, social and productive transformations could be conducted. But this was not part of the research objectives of this introduction project.

The Working Group searched for the legislative basis on national, especially European and international level on that landscape protection and maintenance is carried out or that might act as catalyst for the acting parties. Therefore it was necessary to conduct a survey, which kind of legal instruments does exist. Which content and even more important which force do they have. The research focus was laid on examining the following actors:

- United Nations Educational, Scientific and Cultural Organisation (UNESCO)
- International Council on Monuments and Sites (ICOMOS)
- International Union for Conservation of Nature (IUCN)

The latter two are so called advisory bodies that provide scientific and operational support to UNESCO.

At the European level, it examined the activities of the

- Council of Europe (CoE) and
- the European Union (EU).

Finally the implemented legal guidelines and laws in several partner countries of the Eucaland Project have been evaluated.

The method was mainly based on the analysis of laws, regulations and guidelines. The Working Group assessed documents' general aims, subjects, concepts, policies and strategic approaches, as well as the criteria used for assessing the cultural character of agricultural landscapes as far as they exist.

The concerned researchers worked in groups. Each group examined a specific institution, gathering and cataloguing relevant documents and reporting results to the coordinator according to a common scheme. The data gathered and classified will allow other researchers to investigate them further. Working meetings established a common method of analysis and cross-evaluated results.

The Working Group closely cooperated with Work Package 5 (landscape planning) which focussed especially on the national planning legislation.

The research shows that there is no single document, which aimed specifically at safeguarding of the cultural meaning of agricultural landscapes. But it also showed how this theme is currently addressed by various institutional sectors. No institution has yet undertaken a systematic survey on the effects of policies in these documents. Only in the case of the Common Agricultural Policy (GAP) has some official information been gathered that gives a first impression of its impact at an international level. Such a test might also be performed at the national and local levels. The analysis and comparison conducted; show also, that there is no common guideline and understanding in acting on the topic of cultural and agricultural landscapes. Although many countries have already ratified the European Landscape Convention, there is no common understanding and treating of how to address, classify, maintain, protect and develop the cultural heritage in our agricultural landscapes.

SUMMARY OF EUCALAND PROJECT WP 5.

LANDSCAPE PLANNING: RECOMMENDATIONS FOR THE CONSIDERATION OF EAL CULTURAL VALUES AND HERITAGE

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The main aim of WP 5 is the consideration of cultural values and heritage in the European agricultural landscapes. In particular, it draws recommendations for the broad public expressing the different European views of the cultural values of agricultural landscapes, set up as useful guidelines for the people, politicians, scientists and planners aimed at making the past culture legible at present to a wider audience in Europe, able to better planning its future landscape.

It was aimed at receiving an exemplary overview on the countries situations and to document it by best practise examples. To reach that goal, questionnaires were developed for this purpose answered by selected project partners for their countries.

The participants in the research group have completed 19 questionnaires, whose contents are represented in condensed form in this chapter and are reproduced in only partial extracts.

It must be established that, using this method, the principle of completeness does not take centre stage, but rather that all the participants have incorporated as many descriptive examples and experiences from their own countries as possible, in order to facilitate finding out not only which substantial differences exist, but also to point out existing parallels and features in common.

The Working Package "Landscape Planning" is engaged in planning the future of European agrarian landscapes whilst taking into consideration their manifold cultural and traditional values. So that the European societies can also rely upon this valuable heritage in future, the influences and changes affecting the European agrarian countryside are to be identified and to be pointed out and instilled into the awareness of policy-makers, stakeholders and of the population as a whole. Recommendations in this regard meant as guidelines are intended to render the (still) available values explicit and to build bridges towards the designing of the future European landscapes whilst taking the economic, social and ecological trends into account.

The project partners were thus methodically involved by means of questionnaires, in order to not only pay homage to the diversity of the national approaches, but also to discern and to exploit features held in common.

The significant planning instruments at a national level with regard to the cultural heritage value of agrarian countryside remain available within the fields of landscape planning, spatial planning and Nature conservancy. Further to be kept in mind are also thematic planning instruments. Even at the EU level there exist planning instruments such as ESDP, European Spatial Development Perspective.

The detection of changes in the cultural heritage value of cultural landscapes in general and of rural cultural landscapes in particular depends upon the availability of suitable monitoring instruments.

Changes in demography and method of cultivation influence not only the development of agrarian cultural landscapes, but also how they are perceived. Definitive parameters in this regard are the intensification and/or the extensification of their agriculture as well as their urbanisation and/or their marginalisation.

Delved into in the segment about upcoming planning processes is the question as to which planning processes significant in future influence the agrarian cultural landscapes, such that the emphasis is laid on future planning processes. A number of the planning instruments mentioned already exist.

Agrarian structure and land use are definitively influenced by globalisation. Over recent years and decades this has lead to strong changes, which are described with the aid of parameters such as value creation and occupational structure. Additionally to be taken into account are the substantial challenges as defined by the EU: climate change, energy consumption, water management and biodiversity.

Already now there exist various planning schemata and planning instruments that make reference to the cultural and traditional values of rural cultural landscapes. Experience garnered from these models ought to be exploited for the development of approaches that will be successful in the future.

It is becoming clear that, despite increasing efforts and activities towards the improvement of raising awareness, there still exists an enormous need for action. Associated with this is also a level of participation that is to be strengthened, and thus a broader incorporation of the entire population.

Even in the question of the transfer of planning instruments, which are proving themselves and/or have proved themselves at a national level, there still remains a great deal to do. The initial steps between regions and countries are discernible, but also programmes supported by the EU constitute significant measures towards the improvement of the international exchange of experience, especially in the new member countries.

In conclusion, recommendations for future planning processes are being suggested, which are classified into the fields of policy, awareness raising, information and participation, co-operation, monitoring, instruments and general recommendations.

Tájökológiai Lapok Special Issue: 21–22. (2010)

SUMMARY OF EUCALAND PROJECT WP 6.

DISSEMINATION OF THE EUCALAND PROJECT FINDINGS

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Introduction

The last thematic Work Package dealt with the dissemination of the project results, in particular, through the project website, the glossary, the travelling exhibition, the final conference, the project book and other manners of dissemination.

Some of the major outputs were presented at the final conference, at Corpus Christi College in Cambridge on 22 and 23 September 2009 (see webpage at: http://www.cclp.group.cam.ac.uk/eucaland_conference.html, [17/09/2010]). There are contributions by each work package within this volume including the "glossary on Agricultural Landscape terms. These will not be repeated at this point, only a short description of the single outcomes will be given here. Beside of the glossary and the traveling exhibition (see below and Figure 2), there is a project homepage (http://www.eucalandproject.eu) and a leaflet (see Figure 1) in order to raise awareness and to keep peoples attraction at various occasions. As mentioned before, a project book is supposed to be published in 2010.

Figure 1. Project logo, explanation of colours and symbolic, see Pungetti in this volume.
1. ábra A project logója, a színekhez és szimbólumokhoz tartozó magyarázót ld. Pungetti cikkében, ebben a számban

Travelling exhibition

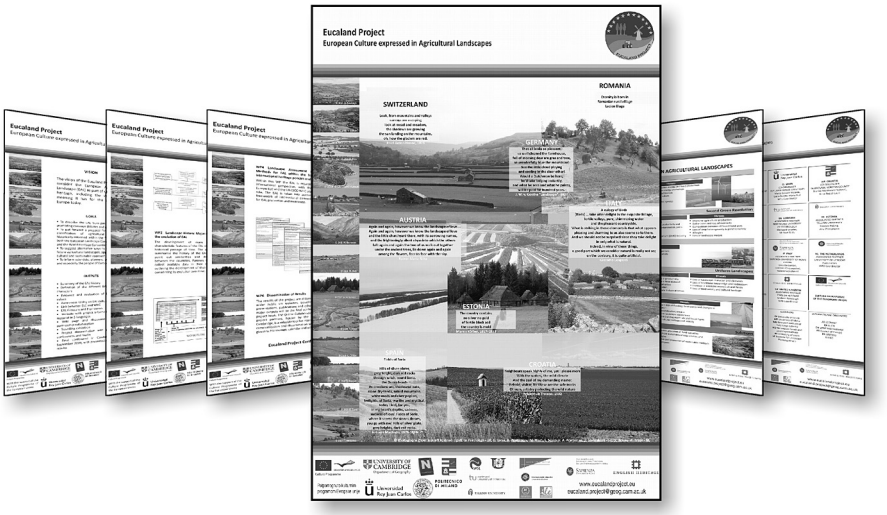

Figure 2. Panels of the travelling exhibition (Design: M. Roth, 2010)
2. ábra Az utazó kiállítás táblái (Design: M. Roth, 2010)

Result

The results of the Eucaland-Project are excellent, especially if the circumstances are put into account:

- The large group of contributors with 15 institutional partners from 13 countries.
- The very tight budget and time frame with only two years.

The results are a very good basis for further research and will be seen as the leitmotif for further projects. Leading principles will be deeper research and implementation. The more detailed research has to find out about the "whys" and the "hows" behind the Agricultural Landscape and behind the development of the landscape and their elements. How are the countries interwoven – by which mechanisms? What were the driving forces behind the development, the change and the forming of the European Agricultural Landscape? Only when these questions have been answered, detailed implementation strategies can be set up for different purposes and different user groups. Therefore it is also necessary to integrate more administrative bodies and professionals from the planning sector in the projects. The Eucaland-Project was set up as a very ambitious project "from the people for the people". Therefore a strong link to the European public must be included in the next projects. Discussion and interaction with local people on agricultural fairs, on local, regional, traditional festivities are not only possibilities for interaction: they also open sources on local landscape knowledge.

Selected papers from the presentations
of the Final Conference of the Eucaland Project

Az Eucaland Projekt zárókonferenciáján elhangzott előadásokból
válogatott eredeti cikkek

Tájökológiai Lapok Special Issue: 25–42. (2010)

LANDSCAPES OF AGRICULTURAL SPECIALISATION A FORGOTTEN THEME IN HISTORIC LANDSCAPE RESEARCH AND MANAGEMENT

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Keywords: cultural landscape, history, agriculture, Europe

Summary: Some of the most characteristic landscapes in Europe are the result of specialised types of agriculture. Although these landscapes are often cherished by the local population, they tend to be overlooked by most regional landscape classifications. This article, extending on the results of the EucaLand project, focuses on the historic landscapes of agricultural specialisation. It presents the history (main periods, life cycles) as well as the geography of these landscapes.

Introduction

The cover of the 1970 edition of the Shell guide to England and Wales shows a rather unexpected image. This time no Tower of London, Cornwall coast or Lake District, but an oast-house in the south-eastern county of Kent (Figure 1).

It is part of a landscape that was shaped between the 17th and 19th centuries, when parts of Central Kent developed into the largest centre of hop-growing in the United Kingdom. There are more examples of such characteristic landscapes. The bulb fields in the Netherlands, with hundreds of hectares of tulips, daisies and other flowers in bloom during a short period in spring, belong to the largest tourist attractions in the country. The same is true of landscapes of fruit trees, such as the Altes Land near Hamburg in Germany, that attract thousands of tourist in the blossom and harvest periods.

These and other specialised landscapes belong to the most characteristic views in Europe. They are, however, rarely represented in landscape classifications and in landscape politics. In recent years, the best-known maps of European agricultural landscape are those by the Dutch landscape architect Johan Meeus. In 1988 he published a map of landscapes in Western Europe

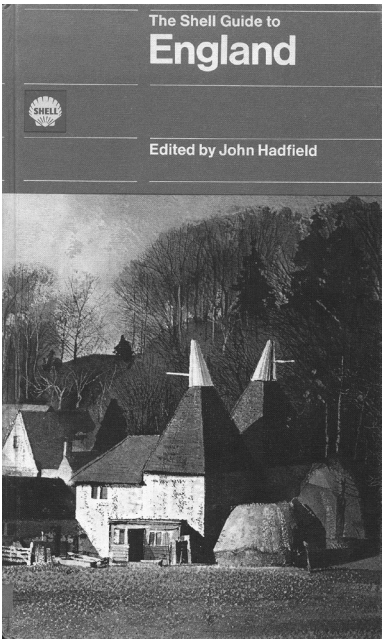

Figure 1. Cover of the Shell guide to England, ed. 1970.
1. ábra A Shell Anglia Utikalauzának borítója (1970)

(Meeus et al. 1988, 1990; Figure 2). One of the main inputs for this map has been the map of rural settlement types by Lebeau (1969). Meeus's map as well as the older Lebeau map show a number of landscape types that are mainly based on morphological differences as visible on topographical maps from the 19th and early 20th centuries. Open fields, *bocage* (small- or medium-scale enclosed landscapes), *montados* and *coltura promiscua* were seen as characteristic for such extensive regions that they were relevant on a European scale. Most specialised agriculture covers much smaller areas, sometimes even single villages, such as the Dutch village of Noordwijk that supplied most medicinal herbs for 17th and 18th century Holland. But even the landscapes of vineyards, that do cover large but fragmented areas, cannot be shown on such small-scale maps. That these landscapes are highly valued as heritage is illustrated by UNESCO's World Heritage List, that contains no less than four European vineyard landscapes: the Tokaj Wine region (Hungary), the Landscape of the Pico Island Vineyard Culture and the Alto Douro Wine Region (both Portugal) and the Lavaux vineyard terraces (Switzerland). More vineyard landscapes are on the Tentative List or are part of other World Heritage cultural landscapes. It illustrates the necessity of more detailed landscape maps of (substantial parts of) Europe.

The large number of nominations for vineyard landscapes and, more in general, the lack of background information to compare and evaluate cultural landscapes, was one of the reasons to start the EucaLand Project. Within this project, different groups of researchers worked on the terminology, history, classification, legislation and planning of agricultural landscapes. The present author was involved in the group that aimed at giving a systematic description of the history of the agricultural landscapes of Europe. During the process, it became clear that many characteristic landscapes resulted from specialised types of agriculture. This perception influenced the final report and is elaborated in the present article.[1]

In this contribution, we start with some geographical factors that influence the dispersal of agricultural specialisations. The next, longer part contains an historical overview of the development of agricultural specialisations. Then we combine history and geography in a chapter on the life cycles of agricultural specialisations and we conclude with the heritage of specialised agricultural landscapes.[2]

The geography of agrarian specialisation

The geography of specialised agriculture is complex, but among the main geographical factors are physical geography and the location with respect to markets, resources and transport routes. Another important factor is the role of individuals and institutions.

1 The Group of researchers working on the history of European Agricultural landscapes within the Eucaland project consisted of the present author (coordination), Renée Aoun, Lucia Benito Jordá, Branka Martinović-Vuković, Mirna Bojić, Matthias Buchecker, Josip Bulog, Csaba Centeri, Marta Dobrovodska, Graham Fairclough, Dick Grove, Alexandra Kruse, Zofia Mavar, Gábor Ónodi, Ákos Pető, Anu Printsman, Oliver Rackham, Erna Raguz Lucic, Cinzia Robbiati, Michael Roth, Maria Angeles Ruiz Sánchez, Elena Toma, Veronika Tóth & Sam Turner. Many of them contributed to schedules that gave a systematic overview of the history of the agricultural landscape in their countries. These schedules were a basic ingredient for the text of Part II of the Eucaland project book (Pungetti, G. & Kruse, A., in prep.) as well as for the present article.

2 The author thanks the editors of this journal as well as the anonymous referee for their comments on an earlier version of this paper.

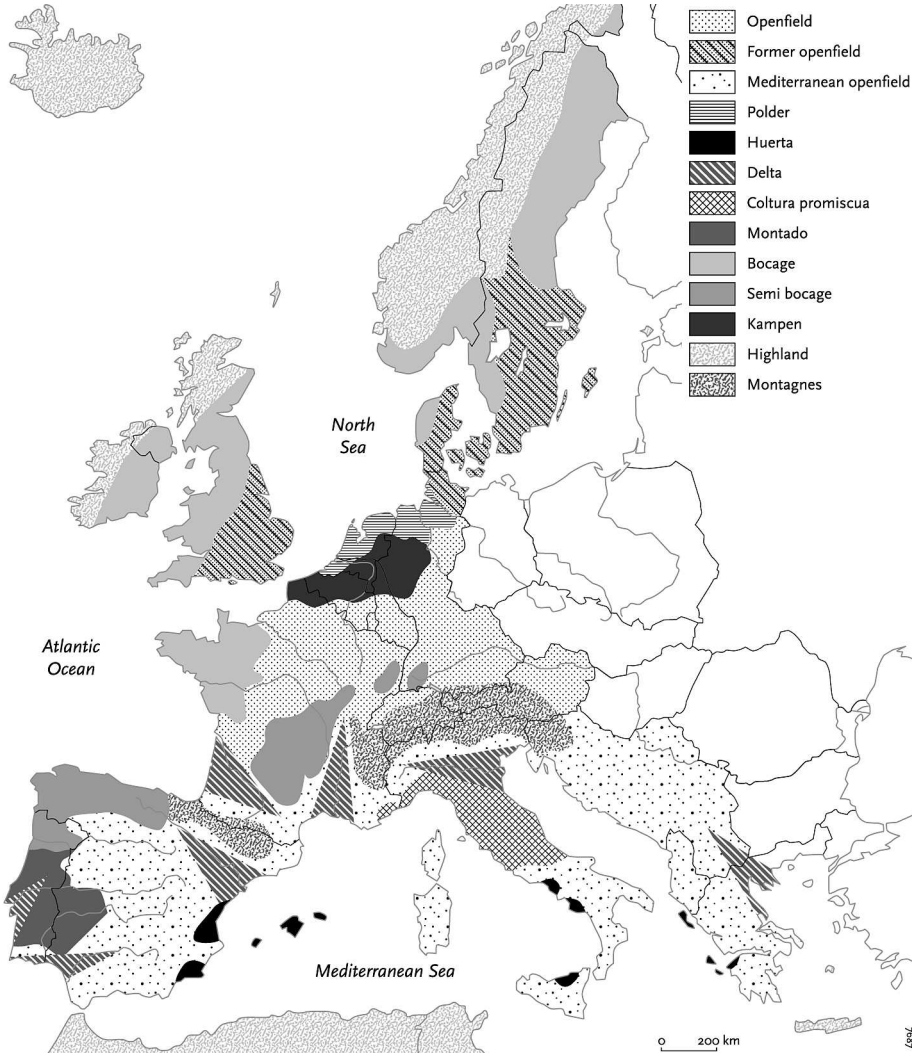

Figure 2. European cultural landscapes (after Meeus et al. 1990)
2. ábra Európai kultúrtájak (Meeus et al. (1990) után)

Physical geography

Many crops flourish best under very specific conditions of climate, soil conditions (not always the best soils: asparagus for example, thrives on extremely poor soils where it is less vulnerable to diseases and competing plants), insolation (grapes on south-looking slopes) or moisture. These factors are relevant on different scales.

However, physical geography is mainly important as a limiting factor. On a continental scale, for example, the traditional northern limit of wine-growing runs from east to west through France and Central Europe. But such limits are never absolute: north of this line, wine could be produced and in fact has been produced. The farther north of the line, the larger the percentage of failed harvests and the more problematic the quality of the wine. The line is not stable either, being dependent upon the farmers' perceptions and their willingness to take risk as well as on fluctuations in climate. Furthermore, new varieties of grapes can push the limit northwards, as has been shown in recent years when wine-growing returned successfully to the Netherlands and England.

On a local scale, micro-climate, geomorphology (for example steep slopes that cause erosion problems), soil quality and hydrology can limit the success of specific crops.

Often specialisations occurred based on the use of different resources within a region, that were themselves influenced by physical geography. High mountains are difficult regions for arable farming and many of these regions have specialised in animal husbandry, especially dairy farming (cheese) and the breeding of young animals. Sometimes the connections between agricultural landscapes take a very concrete form, when farmers with their animals move on a seasonal basis from one landscape to another, thereby making optimal use of different circumstances. Particularly between mountains and lowlands, such 'transhumance' systems have existed all over Europe. The history of these systems is often unclear. They can be thousands of years old, but have undergone many fluctuations. During the last century, most transhumance systems have disappeared.

The relation to markets

The second set of factors includes the relation to markets. All specialised agriculture worked for supra-local, often national or even European markets. A good starting point for illustrating this process is the model designed by the German landowner and economist Johann-Heinrich von Thünen (1783–1850) in his book Der isolierte Staat ('the isolated state'). The model is based on transport costs, in relation to the weight, value and perishability of goods. According to the model, perishable products such as fruit, milk and vegetables will be produced close to an urban centre. A second zone is reserved for wood, which is necessary but also heavy and with too little value to bear the costs of long-distance transport. Still further away, grain will be produced and the outer zone of the hinterland will produce meat (stock that can be herded to the town and therefore entailing relatively low transport costs). As water transport was much cheaper, towns that were situated on deep water had a much larger hinterland.

Relation to resources and transport routes

Natural resources such as soil and water were not the only group of resources. Other inputs, such as manure and fodder could also give locational advantages to certain regions. Before the spread of artificial fertilisers, regions near towns or harbours, and well

connected to those, had access to urban waste and, especially during the 19th and early 20th centuries, to imported manure such as Chile saltpetre.

A good example of resource-based development is industrialised animal husbandry, particularly the breeding of pigs, calves and poultry for meat, within the European Union during the final decades of the 20th century. This development has been based on a combination of a growing internal market and the use of imported foodstuffs. These sectors were not subsidised or protected, although much stimulated by the fact that grain substitutes for animal fodder (soy beans, tapioca) were exempt from import tariffs. Industrialised animal husbandry became a survival strategy for small farmers close to deep-sea harbours. The resulting landscapes in East Yorkshire, Brittany and parts of the Netherlands are seen as problematic in terms of environment, landscape aesthetics and animal welfare, but are nonetheless a good example of a new specialised landscape.

The role of individuals and institutions

Institutions and legal frameworks can act as forces of stability, but local leaders and groups can also stimulate new activities. Local and regional structures explain much of the unique answers with which different regions respond to forces of globalisation. Even political developments, may be responsible for some agricultural developments, for example in relation to forced migrations (Figure 3).

Figure 3. A landscape of individual terraces on Lesbos. This very labour-intensive landscape only developed after the population exchange of 1923 that followed after the war between Greece and Turkey. Many of those evicted from Turkey settled on the easternmost Greek islands, within sight of the Turkish coast. To employ all these people, intensive olive growing replaced an earlier, less intensive farming system. Photo: J. Renes (2004)
3. ábra Egyedülálló teraszok Leszbosz szigetén. Ez a nagyon munkaigényes táj az 1923-as népességváltozás után fejlődött ki, amely a Görögország és Törökország közötti háború után volt jellemző. A Törökországból kilakoltatottak a legkeletibb görög szigeteken telepedtek le, ahonnan látszanak a török partok. A lakosság foglalkoztatásának érdekében intenzív oliva-ültetvényekre cserélték a korábbi, kevésbé intenzív gazdálkodási rendszert. Fotó: J. Renes (2004)

The breeding of silk-worms in north-western Europe (Figure 4) is a good example of a luxury crop that was heavily promoted by authorities, although the activity was risky in the local climate. A number of experiments is known in the Netherlands and England

between the 17th and 20th centuries (Van den Eerenbeemt 1993; Thirsk 1997). From the beginning of the 18th century, the Prussian government tried to found a silk industry. In Brandenburg, more than 300.000 mulberry trees were planted, but many died during the strong winters of 1785–1787 (Schmidt 1999). During the second half of the 18th century, the Prussian king stimulated experiments in the far west of his lands, around the small town of Gennep in the present-day south-eastern Netherlands. Mulberry trees were planted and the experiment was continued for forty years. Although a profit was never made, the long continuation of the experiment suggests that it was not a complete failure.[3]

Figure 4. Mulberry trees in the Po-plain, near Turin (Northern Italy). In Mediterranean Europe, the breeding of silk-worms was successful since the Middle Ages. Photo: J. Renes (1994)
4. ábra Eperfák a Pó-síkságon Torino mellett (Észak-Olaszország). A mediterrán Európában a selyemhernyók tenyésztése a középkortól sikeres volt. Fotó: J. Renes (1994)

Economic cycles and specialised landscapes

The above-mentioned factors have shed some light on the geography of specialised agriculture. But the successes and failures were not only dependent on location, but also on the economic circumstances that changed through time.

During the 1930s the agrarian historian Wilhelm Abel (1935) developed his theory of a number of economic cycles in European agrarian history since the Middle Ages. These cycles also formed the basis for Slicher van Bath's book on the history of Western-European agriculture (1960). Figure 5 and Table 1 show the main phases in the development of population size in Europe (Livi-Bacci 1992).

For pre-industrial Europe, with its relatively basic relations between production and consumption of agrarian products, simple economic models are still valid. In periods of population pressure, farmers increasingly produced basic foodstuffs, particularly grain and, to a lesser degree, meat. The consumption per capita of grain is relatively stable: almost everyone uses a certain amount of bread on a daily basis. A relative shortage of grain, as can be expected in a period of population growth, will therefore lead to rising

3 This experiment has never been properly described, but the local archive contains a large dossier (Municipal Archive Gennep, inv. nr 425).

prices. In such a period, grain farmers could become rich. Many other crops and animals were relegated to marginal lands and poorer sections of society (Dyer 2004).

On the other hand, in periods of population decline the demand for grain will decline and prices will drop. As lower prices will not lead to a substantial higher consumption per capita, the price falls can be very steep. This is different for other products, such as meat, fish or wine. With falling prices, the consumption of these products will grow, resulting in a soft landing of the price-levels (see for wine: Unwin 1991). Therefore, during such periods, many farmers will move away from grain and turn to alternative products. The English agrarian historian Joan Thirsk (1997) concentrated on those periods and presented them as periods of agrarian innovations, in which farmers experimented with alternative crops.

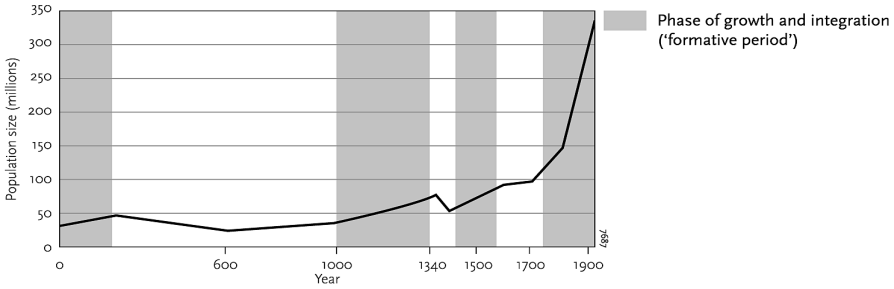

Figure 5. Phases in the development of population and agriculture in Europe.
European population according to Livi-Bacci, 1992.
5. ábra Az európai népesség és mezőgazdaság fejlődésének szakaszai.
Az európai lakosság Livi-Bacci (1992) alapján

High medieval specialised landscapes: emphasis on grain-producing open fields

The period from the 10th to the early 14th century was characterised by population growth and, increasingly, population pressure. One of the effects of a rising demand for food for the fast-growing population was the growing emphasis on grain-products, such as bread and porridge (Bartlett 1994). Grain became the staple crop and the most efficient system for producing grain consisted of *open fields*, large arable fields without hedges, on which the farmers from a village often cooperated in ploughing, harvesting, management of the common lands and in using the arable as common pasture after the harvest. These open fields, in most cases used in a three-field system, were the most characteristic landscape of this period, at least in lowland central Europe. Their development started somewhere around the 9th century and after a few centuries they formed an almost continuous east-west band through Europe, from central England via the Paris Basin through central Europe, with outlying regions in southern Scandinavia and the Mediterranean – a region wherein the best soils of the subcontinent were found.

Table 1. Periods in the history of European agriculture (periods of 'crisis', that were also the periods of a growing importance of specialised crops). Mainly after Slicher van Bath (1960) and Thirsk (1997)
1. táblázat Időszakok az európai agrártájak történetében (a krízisidőszakok egyben specializált termések növekvő jelentőségének az időszakai is voltak). Elsősorban Slicher van Bath (1960) és Thirsk (1997) nyomán

10th to early 14th century	Strong population growth causes a growing emphasis on grain production. Heyday of the grain-producing open-field landscapes.
Early 14th century to 1450/1500	Population decline, caused by food-shortages and epidemics. The First Age of specialised crops.
1450/1500 – ca. 1650	Population growth and economic recovery, renewed emphasis on grain-growing.
ca. 1650 – ca. 1750	Crisis in grain-growing. The Second Age of specialised crops.
ca. 1750 – ca. 1880	Stronger population growth and recovery of grain prices.
ca. 1880 – World War II	Grain crisis caused by cheap imports. The Third Age of specialised crops.
World War II – 1980s	Artificial agrarian economy behind tariff walls.
1980s to present	Growing competition from world market. The Fourth Age of specialised crops.

Part of the spreading of the open fields is related to the emerging urban landscape. During the 12th and 13th centuries, a network of towns developed. The urban landscape that developed during this period, showed two core regions, Northern Italy and Flanders, as well as a number of large individual cities (Paris, London, Byzantium). These towns and urbanised regions must have been within easy reach of grain-producing open fields, such as south-east England (feeding London, but also exporting grain to Norway and the Low Countries), the Paris Basin (around Paris) and present-day north-west France (the main supplier of the Flemish cities and Holland). The towns also needed access to regions that produced other agrarian products, such as the *bocage* landscapes that focused on mixed farming and mountainous regions that specialised in animal husbandry (meat, cheese, young animals). It shows that such regions were also part of larger economic systems.

The Late Medieval Crisis: the first Age of Specialised Crops

During the first half of the 14th century, the population had reached a maximum. Increasingly dependent on grain, it was hit hard by a succession of bad harvests. Then, in the years after 1346, followed the debilitating epidemic that is usually known as the Black Death. Within a short period, the European population dropped by almost a third.

The population crisis led to a reconstruction of European agriculture, when farmers moved away from grain. For farmers who had access to urban markets, a change from grain production to animal husbandry or special crops could be profitable. Farmers near Aix-en-Provence asked their landlord for permission to grow vines as the prices of grain were too low to earn a living (Thirsk 1997). Many of the traditional grain-growing regions, however, were not able to develop alternatives, as a result much arable land and thousands of settlements were abandoned. In parts of the Central European hills,

agriculture never recovered; in later centuries, forestry (often based on demand from mining) became the most prominent type of agriculture.

An example of a successful conversion can be found in the Dutch fenlands, where subsidence of the peat soil made arable farming increasingly difficult and where, on the other hand, the expanding towns created a demand for dairy products and meat. The farmers in this region became dairy farmers and developed cheese production that survived until the present day. In Central England, a long process of change from an open-field grain-producing region to a sheep-farming region started during this period. It was made possible by the growing industrial demand for wool. With the change from arable to pasture, some of the open fields with their fragmented landownership were transformed into an enclosed landscape of dispersed farms.

In Central Europe, particularly in the present-day Czech Republic, fish farming (particularly the breeding of carp) developed during this period and thousands of hectares of land, often former arable land, were inundated (Hoffmann 1996) (Figure 6). The same happened in a number of French regions, particularly regions with poor soils such as the Sologne (south of the Loire) and Les Dombes (near Lyon). In England, the number of rabbit warrens and deer parks grew, also partly on former arable land (Thirsk 1997). In Spain, the large flocks of sheep with their yearly travel routes (the *mesta*), reached their largest extent (Slicher van Bath 1960). Elsewhere special crops such as flax and, in the Mediterranean, silk and sugar grew (Thirsk 1997).

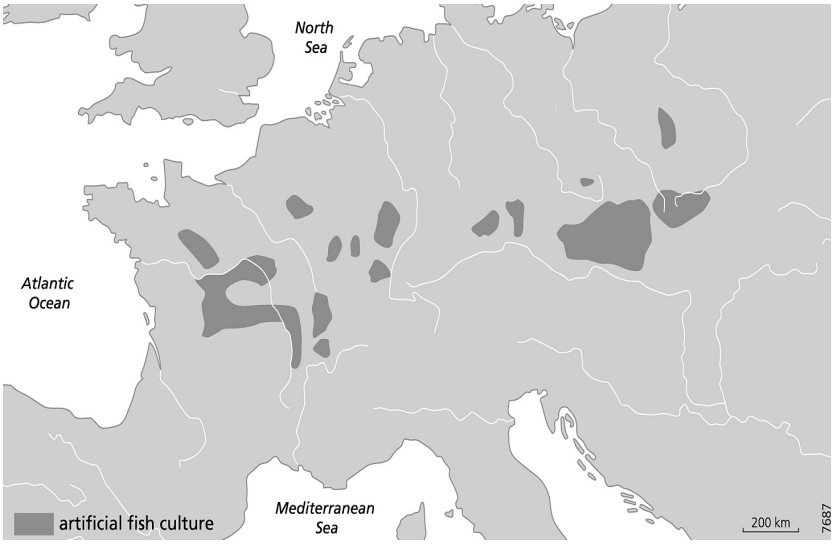

Figure 6. Major regions of fish farming in late medieval and 16th-century Europe (Hoffmann 2000). The development of fishponds followed the economic tides. Fish farming in the present-day Czech Republic and neighbouring regions grew enormously during the late medieval crisis. This was followed by a decline during the 17th century. Especially from the middle of the 18th century, in a period of rising grain-prices, many fishponds were again replaced by arable land (Knittler 2005).

6. ábra A halászfarmok nagyobb régiói a késő-középkori és a 16. századi Európában (Hoffmann 2000). A halastavak fejlődése a gazdasági hullámokat követte. A halászat a mai Csehország területén és a környező régiókban jelentős mértékben nőtt a középkori krízis végefelé. Ezt csökkenés követte a 17. században. A 18. században a gabonaárak növekedésével ez tovább csökkent, a halastavakat kiszárították és felszántották (Knittler 2005).

The 'long sixteenth century': landscapes of the European world system

Recovery started during the 15th century and continued during the 'long 16th century'. A new phase of economic integration began during this period, in which the European economies and landscapes regrouped around north-western Europe, that outgrew Northern Italy and became the only remaining core region (Nitz 1993). Within this core region, the main centre of trade moved from Antwerp (16th century) to Holland (particularly Amsterdam, 17th century) and England (18th century).

The German geographer Hans-Jürgen Nitz (1993) applied Von Thünen's model on Early Modern Europe and found the most intensive agriculture, including dairy farming and horticulture, in the core region. Further away, large-scale grain-growing extended along the Baltic and export-oriented breeding of cattle and horses was located in regions such as Jutland and Hungary. Scottish cattle were herded to the London market and Hungarian horses to the Rhineland; Danish oxen walked or were shipped to Holland.

From the end of the 16th century, the trade system connected the Baltic grain producers with the Mediterranean consumers, meaning that now a real European market existed for grain and some other agricultural products. Although this period saw a general movement towards grain-growing, also some agricultural specialisations thrived. In the Low Countries, around the staple market of Amsterdam, intensive and commercial agriculture developed, in which large inputs and modern methods brought high yields per hectare. Also an example of a successful specialization was the growing of hemp, the basic resource for the rope-industry and therefore connected to the flourishing shipping industry, grew strongly during the 16th century (Bieleman 2008). Hemp was grown in small enclosures in the fenlands of Central Holland. For farmers, it was an addition to their traditional main occupation of dairy farming, using the manure from the cows for the tiny hemp plots (Figure 7).

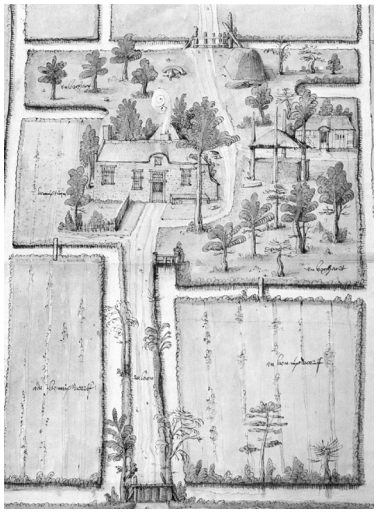

Figure 7. A farm with three small hemp fields, each surrounded by water-filled ditches, near the village of Alphen, the Netherlands (ca. 52°07'00" N / 4°21'20" E) on a map from ca 1540. Regional Archive Leiden, Image nr PV71829.2.

7. ábra Egy farm három kis kenderültevénnyel, mindegyiket vízzel telt árkok veszik körül. Alphen falu mellett, Hollandia (ca. 52°07'00" N / 4°21'20" E) kb. 1540-ből származó térképén. Regional Archive Leiden, Image nr PV71829.2.

Also small regions around other urban centres specialised in dairy farming or horticulture. Where grain gave way to cattle or sheep, the old open fields became dysfunctional and were often enclosed. Within a few decades open landscapes became characterised by hedges and dispersed farms. During the 16th and 17th centuries, this happened for example in parts of the Allgäu in southern Germany and in the Country of Herve near the industrial town of Liège (Belgium). The 16th century was also a period of experiments with new crops, many from the New World, that were often introduced in gardens or estates (Thirsk 1997).

From 1650 to 1750: the Second Age of Specialised Crops

In some ways, the developments during this period mirrored those during the Late Medieval crisis. Fishponds, rabbit warrens and deer parks that had partly given way for arable land during the long sixteenth century, now grew again in importance (Thirsk 1997). However, the Second Age of Specialised Crops showed more variation than the first. Some of the crops that were grown as experiments in the former phase, became important in the second half of the 17th century, when grain prices fell. American products such as potatoes and maize became popular because of their high yields per hectare and hence their ability to feed high population numbers. Maize took over small parts of the Mediterranean open fields. Potatoes, that started to become a staple food from the second half of the 17th century onwards (in Ireland already from the end of the 16th century (Thirsk 1997)), were usually grown in enclosures. Another new product was tobacco, an addictive product that was fashionable for some time and was grown in large parts of Europe. The consumption by Europeans of this American product started during the 16th century. In the early 17th century, experiments in growing tobacco started in the Low Countries and in England, from where it spread to other parts of Europe (see Schmidt (1999) for Brandenburg). In the northern Netherlands, the town of Amsterdam developed into the world's largest market for tobacco and Amsterdam merchants stimulated growing tobacco in the Netherlands. Success came after 1650 and particularly at the end of the 17th century, when the low grain prices made tobacco into an interesting crop, especially for small farmers (Roessingh 1976).

The period also showed a strong growth of industrial crops, such as hemp (for ropes), flax (for linen), hop (for brewing), rapeseed (for oil), madder and woad (both for dyeing of textiles). Many of these industrial crops tended to concentrate in certain regions. The consumption of vegetables and fruit grew, offering possibilities for the development of commercial horticulture and orchards (Thirsk 1997). Around London, the first glass-houses appeared in the middle of the 17th century (Thirsk 1997). In Holland, the cultivation of flower-bulbs, such as the tulip (originally from the Ottoman lands), grew enormously during the 17th and 18th centuries. It became a fashionable product and the breeding of new varieties even became a matter of speculation.

From 1750 to 1880: back to grain

Rising grain prices during the second half of the 18th century moved the pendulum back into the other direction. Many farmers returned to grain-growing. In the UK, a new wave of enclosures aimed at a more efficient use of arable land. The example was followed in south Scandinavia, where the landscape was reconstructed by enclosures.

A number of specialised crops declined. In the Netherlands, for example, in the middle of the 18th century the growth of tobacco started its long decline, although the crop survived there for another two centuries.

Some specialised crops, especially those that represented a high value per unit, survived. An example is the production of wine. On the Iberian Peninsula, the growth of the wine trade during the 18th century led to a strong growth in the exploitation of cork oaks, which were combined with pasture of sheep and pigs in the savanna-like landscapes that were called montado (Portugal) or dehesa (Spain). These landscapes can have very old roots, but must have reached their highest extension only during the 18th to the early 20th centuries (Plieninger 2004, Grove and Rackham 2001).

After the Agrarian Crisis of 1880: the Third Age of Specialised Crops

The agrarian crisis of the 1880s brought yet another transformation. Again, this was mainly a grain crisis. The transport revolution – intercontinental trains and transatlantic steamships – tipped the balance and within a few years American grain, cheaply produced on large farms, flooded the European market. Again many farmers moved from grain-growing towards other, often industrial, crops, to horticulture or to animal husbandry. A good number of small farmers with good access to urban markets turned to breeding poultry or pigs.

A good example of the effects can be seen in the sandy landscapes of the Netherlands, which had traditionally been characterised by mixed farming and therefore could easily shift between products. During most of the 19th century, the farmers earned their main income through the products from their open fields, particularly rye. During the last decades of the century, they moved towards an emphasis on animal husbandry, using the produce of the arable as animal fodder. In fact this system survives to the present day, although rye has been replaced by maize during the last decades (Bieleman 2008).

Again some crops showed a remarkable degree of concentration in certain regions, partly because of local circumstances, but also facilitated by the improved transport possibilities. A good example is the growing of hop that during the 19th century concentrated further in specific regions where it resulted in very characteristic landscapes. Examples are Kent (see below), the region around Poperinge in Flanders and the Holledau region in North Bavaria (at present still the largest hop-growing region in the world) (Küster 1995)). A number of regions profited from the growth in wine consumption. The plains of the Languedoc, for example, started to specialise in wine growing during the second half of the 18th century and developed further in this direction during the 19th century. In Scotland, during the late 18th and 19th centuries the relatively densely populated countryside of mixed farming gave way to an 'empty' landscape of sheep pastures and hunting ranges (Muir 1985).

The industrial development sometimes stimulated regional agricultural specialisations. The development of industrial processing of fruit, producing marmalade, syrup or cider, further strengthened the concentration of fruit-growing. On the other hand, the growth of the modern chemical industry brought the replacement of a growing number of agricultural products by industrial produced products. An example is the growth of madder (rubia), a plant that supplies a red dye and that was grown for centuries on a large scale in the province of Zealand (NL), but disappeared almost completely within a few years after chemical production of the specific pigment started in 1871 (Bieleman 2008).

The second half of the 20th century: influences of supra-national bodies

The next major crisis, during the 1930s, more or less repeated the earlier ones. More than in earlier crises, governments turned to market regulations and sometimes to import restrictions to protect their own farmers. The World Crisis was followed by the Second World War, with increasing state intervention in the occupied countries. This pattern more or less continued in the post-war years, when agriculture in the European (Economic) Community (the Common Agricultural Policy) as well as in its Eastern European counterpart Comecon was characterised by a strong influence of (supra) national governments on price levels within a protected market (Renes and Paul 2004). Many of the uncertainties that had always characterised agriculture, now diminished as production circumstances were increasingly controlled and problems caused by pests were brought under control. Agriculture moved from risk management towards profit maximisation, resulting in increasing specialisation. Some of the subsidies stimulated the development of new regional specialisations, such as the growing of rapeseed and sunflowers in different French regions following measures to stimulate oilseed production during the 1980s (see Aoun, this volume).

Present trends: towards a post-productivist agricultural landscape

European agriculture and its landscapes are now going through another transformation, again with large regional variations. In some regions, a further development of large-scale agriculture is taking place, with a new market developing for the production of biofuel. In regions that are marginal within the future European rural space, a large variety of survival strategies is being developed, particularly for small farms. These strategies include regional brands, tourist activities and organic farming, often sustained by subsidies for environmentally friendly practices. Agriculture in many rural regions is described as post-productivist: a situation in which agriculture becomes less a food producer than a producer of landscape. Some regions are now going through a phase of abandonment of agriculture, sometimes in a planned way to enable the development of ecological zones and networks, but in other cases as an unplanned retreat of agriculture.

The life cycle of an agrarian specialisation

Specialised crops always start on a small scale. They are introduced in a region, sometimes by traders, often by landowners or, from the 17th century onwards, by botanical gardens or other collectors. These early experiments with a crop can be very dispersed geographically. Some crops can function for centuries on a small scale, in gardens or orchards, producing for a local market. Fruit-growing is a very old activity on farmyards, that gradually developed into a small-scale enterprise around the main urban centres. Only during the 19th and 20th centuries the improved transport and the growing urban markets made the development of fruit-growing as a regional specialisation possible.

The development from experiments to a commercial success usually takes place only in a few regions. In many cases the proximity and connections to urban markets is an important success-factor. Within these limits, the actual location is often dependent on the persistence of individuals and, hence, to a certain degree of randomness. In some cases favourable physical conditions, such as soil, slope or hydrology, are important, particularly in the first phase of growth.

When a crop concentrates in a few regions, serving a wide area, the second phase commences. In the particular regions an infrastructure of knowledge and trade networks as well as capital supply and storage and processing facilities is built up, further improving the initial advantage of the region. A good example is the growing of hop in Central Kent, which was described in a classic article by the geographer David Harvey (1963). This region was an important centre of hop-growing already during the 17th century, partly because of excellent soil qualities as well as good transport facilities and the closeness to London. During the 19th century, the cultivation of hops grew, especially within the existing hop-region. In the extension phase also lands with less optimal soil conditions were used for hops. This shows that other factors grew in importance.

Harvey distinguishes three main factors in the spatial development of the crop: agglomeration, cumulative change, and diminishing returns. Agglomeration is connected to economies of scale. When a farmer had done a large investment by building an oast-house, it was profitable for him to extend his hop-gardens. Other factors were the supply of equipment (for example hop-poles, which made a large area of coppice wood necessary), of skilled labourers and of banks that had experience with the crop. The second factor, cumulative change, points to changes that support other changes that strengthen a development in the same direction. Hop-growing was a very profitable activity, but exactly that profitability had led to rising rents and wages that farmers could only afford to pay by increasing their hop-culture. From a certain point the third factor, diminishing returns limits further concentration. For this particular crop, the possibilities for concentration were limited by the large amounts of manure needed. This meant that no farmer could grow hops on more than 15 % of his farm, or 35 % when he was able to buy (expensive) manure elsewhere. Also rising overhead costs or rising production costs (for example scarcity of hop-poles) could move the crop out of the core region.

These processes are not described in the same depth for most other crops, but they may well be characteristic for the development of other specialised types of agriculture. During this phase of concentration and prosperity, the region can even become widely known for its specialisation. The local population may see it as part of their regional identity. Festivities, such as harvest feasts and wine feasts, sometimes become institutionalised markers of local identity as well as stimuli for marketing and tourism.

The last phase enters when changing circumstances diminish the advantage and the position of the region starts to erode. Causes can be varied. Many horticultural activities, being traditionally concentrated on the edges of the main cities, have been continuously pushed away by further urban extensions. In some cases, competition from other regions grew. Tobacco-growing, for example, disappeared from northern Europe through competition from better quality tobacco from subtropical regions. The competition of industrially produced products was already mentioned before.

The landscapes and heritage of specialised agriculture

During the last phase, the landscape features that remain from special types of agriculture that have declined or disappeared, can be seen as part of the regional heritage. The heritage of specialised agriculture can be divided into three categories: [1] the products themselves, [2] local traditions and [3] landscapes.

Products as heritage

Local specialisations often led to the breeding of regional or local varieties of crops or animals. These old breeds are now under threat as new, more productive breeds take over. Many people see this as an erosion of agricultural diversity and in different countries organisations have been founded to protect certain 'traditional' varieties. Examples are the Rare Breeds Survival Trust (GB, founded 1973), the *Société d'Ethnozoologie* (France), the *Gesellschaft zur Erhaltung alter und gefährdeter Haustierrassen* (Germany) and the *Stichting Zeldzame Huisdierrassen* (the Netherlands, 1976; Clason, 1980) as well as seed-banks (for example the Millennium Seed Bank Project that was initiated in 2000 by the Royal Botanic Gardens at Kew) in different countries. Some countries took initiatives to preserve local knowledge.[4]

Since 2006, the European Union protects 'traditional' products in relation to their regions of origin. Therefore, the EU developed a number of designations[5] that count as quality guarantees and at the same time act as regional brands.

- Protected Designation of Origin (PDO) covers agricultural products and foodstuffs, which are produced, processed and prepared in a given geographical area using recognised know-how.
- Protected Geographical Indication (PGI) covers agricultural products and foodstuffs closely linked to the geographical area. At least one of the stages of production, processing or preparation takes place in the area.
- Traditional Speciality Guaranteed (TSG) highlights traditional character, either in the composition or means of production.

Most of the listed items are processed products, and in many cases, for example with beers, the fabrication process is more characteristic than the ingredients. However, many other processed products, such as different local meat and sausage varieties and the ciders of Normandy and Brittany (classified as PGI), stay close to types of specialised agriculture. Furthermore, the lists also contain agricultural products that are linked to long-standing agricultural specialisation, such the grapes that are traditionally produced in glasshouses in the Brussels region (PDO), different types of honey, carp from the Trébon region (Czech Republic) and horticultural products (lettuce, tomatoes, gherkin) from the German island of Reichenau (PGI). In some cases, the protection of landscapes of specialised agriculture is facilitated by this protection of special crops. Particularly Protected Designation of Origin can be used to protect landscapes that are connected with specific crops.

Local traditions

Many regions with specialised types of agriculture developed local customs and traditions, that are now seen as building stones of regional identity and, sometimes, as part of a regional tourist product. Examples are harvest festivals that can attract thousands of visitors. Many regional specialisations leave traces in regional cuisines. An example is the habit of eating carp for Christmas in the Czech Republic and in Poland. Sometimes local museums are built around such specialisations. In some cases, specialisations leave traces in field-names or even in place-names (Saffron Walden in Essex, England, in a region

4 For example the Austrian Register on Traditional Knowledge in agricultural products and food (http://www.lebensmittelnet.at/article/articleview/51040/1/14406/) [11-2-2010].

5 http://ec.europa.eu/agriculture/quality/schemes/index_en.htm [24-1-2010]

where saffron was grown extensively during the 17th and 18th centuries (Thirsk 1997)). A recent development is the designation of local traditions as 'intangible heritage'. In 2009, the irrigators' tribunals of the Spanish Mediterranean coast, a basic institution for the Spanish huerta-landscapes of irrigated agriculture, were inscribed in UNESCO's List of Intangible Heritage. It is the first of such agriculturally-based inscriptions on the list.

Landscapes

Some 'traditional' specialised types of agriculture still make very distinct landscapes. Examples are the landscapes of vineyards, fruit trees and olive groves. Even some crops that are recognisable only during a short time of the year, such as lavender in the Provence or the bulb fields of Holland, can nevertheless be so distinguished that they attract many visitors during that short spell.

Most interesting from a landscape perspective are those specialised types of agriculture that leave persistent traces in the landscape and can become part of a preserved landscape. These traces can be extensive, for example the thousands of hedges that were planted when an arable landscape changed into a landscape of intensive animal husbandry. Other examples are the terraced landscapes of olive or grape-growing regions.

Less obvious are specialised buildings that remain from a former special crop. Often local historians are necessary to make the local population and politicians aware of buildings that remind of a vanished crop. In the bulb fields of Holland, a growing amount of energy has been invested in recent years in the preservation of the former drying sheds. Although the growing of bulbs is still thriving, the sheds are no longer in use. Another Dutch example are the large tobacco drying sheds in a few villages in the central Netherlands that survived the disappearance of the crop (Figure 8).

Figure 8. A landscape of tobacco growing around the village of Amerongen (the Netherlands; 51°59'58" N / 5°28'22" E). Tobacco-growing in this region started in the seventeenth century and only stopped around 1950. The huge drying sheds still dominate the landscape. Photo: J. Renes (1999)

8. ábra Dohánytermesztő táj képe Amerongen falu körül, Hollandia; 51°59'58" N / 5°28'22" E). A dohánytermesztés ezen a vidéken a 17. században kezdődött és csak 1950 körül szűnt meg. A nagy szárítóépületek még ma is meghatározzák a tájképet. Fotó: J. Renes (1999)

Conclusion

Historic agricultural specialisations have resulted in a number of landscapes that are very typical and characteristic as well as very localised. These landscapes play a role in the definition of regional identities, for example through harvest festivals and regional cuisine, and in landscape conservation. Some specialised crops belong to the most important examples of European agricultural heritage and some of the resulting landscapes are precious and interesting. On a local scale, many activities are undertaken to preserve terraces, old orchards and other relics of specialised agriculture. However, notwithstanding their importance, specialised crops and the landscapes they produced do not appear in most landscape classifications and landscape descriptions on national and European levels. Therefore, they are non-existent in many national and certainly in European landscape policies.

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A MEZŐGAZDASÁG SZAKOSODÁSÁNAK TÁJAI EGY ELFELEJTETT TÉMA A TÖRTÉNELMI TÁJAK KUTATÁSA ÉS KEZELÉSE TERÉN

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Kulcsszavak: kultúrtáj, történet, mezőgazdaság, Európa

Az európai tájak közül a legjellemzőbbek a mezőgazdaság szakosodott típusainak eredményei. Annak ellenére, hogy ezeket a tájakat a helyi lakosság nagy becsben tartja, a legtöbb regionális tájosztályozásnál elsiklanak fölöttük. A jelenlegi cikk – az Eucaland Projekt eredményeit folytatva – a mezőgazdaság szakosodásának köszönhetően kialakult tájakra koncentrál, bemutatja történetüket (főbb időszakok, életciklusok) és földrajzukat.

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THE PAST IN THE PRESENT – REMNANT OPEN FIELD PATTERNS IN ENGLAND

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Keywords: open fields, England, landscape evolution, countryside character

Summary: The agricultural landscape forms an important part of Britain's cultural heritage. Relict field systems cast light upon landscape evolution, often showing the special connections between landscape and people over time. Medieval open field systems represent a method of farming that endured for many hundreds of years, produced through, and dependent upon, community involvement. Most of these landscapes were lost in the period of enclosure in the 18th and 19th centuries as individually held farms replaced such systems; later, the large estates themselves were also frequently broken up. The few survivals of open fields in England are discussed here and the cultural changes associated with landscape change, culminating today in conservation measures to protect such features. Thus the rural landscape reveals the depth of its evolutionary history, contributing towards the rich diversity of England's regional landscapes and the maintenance of a sound ecological balance, thereby contributing towards the preservation of cultural identity and heritage.

Survivals of medieval open-field agriculture

As one example of 'The Past in the Present' one might look at survivals of medieval open-field agriculture. This was a method that dominated English farming for nearly 1,000 years from the early medieval period until the 18th and 19th centuries. It was clearly being actively extended as a way of organising agriculture in the 9th and 10th centuries and in the most intensively cultivated regions open fields had probably reached their maximum extent on the eve of the Black Death in the 14th century. Essentially, open field farming was characterised by the cultivation of crops in unenclosed strips within huge open fields – one holder would have his strips scattered through 3 or 4 such fields and by medieval times one of these would usually have been left fallow. The village stock was grazed upon this fallow and on any remaining areas of common waste, and, after the hay crop had been gathered in, on the common meadows.

Very few relict field systems of this type survive in England. At Forrabury, on a coastal headland above Boscastle in Cornwall (Figure 1), there are over 20 hectares of strips, here referred to as 'stitches', of which some 42 survive of the 50 recorded in the mid-19th century. They are not all ploughed in the same year – there is a 4-year cycle with crops such as barley and wheat being grown for three years, followed by a year of pasture, and they are grazed by sheep from November to March (they are cropped from Lady Day on March 25th until Michaelmas Day on Sept 29th) (Chapman 2007). Only the easternmost stitches have been invaded by scrub. The area under cultivation in medieval times in this way was once more extensive here and enclosed strips can still be seen on surrounding land.

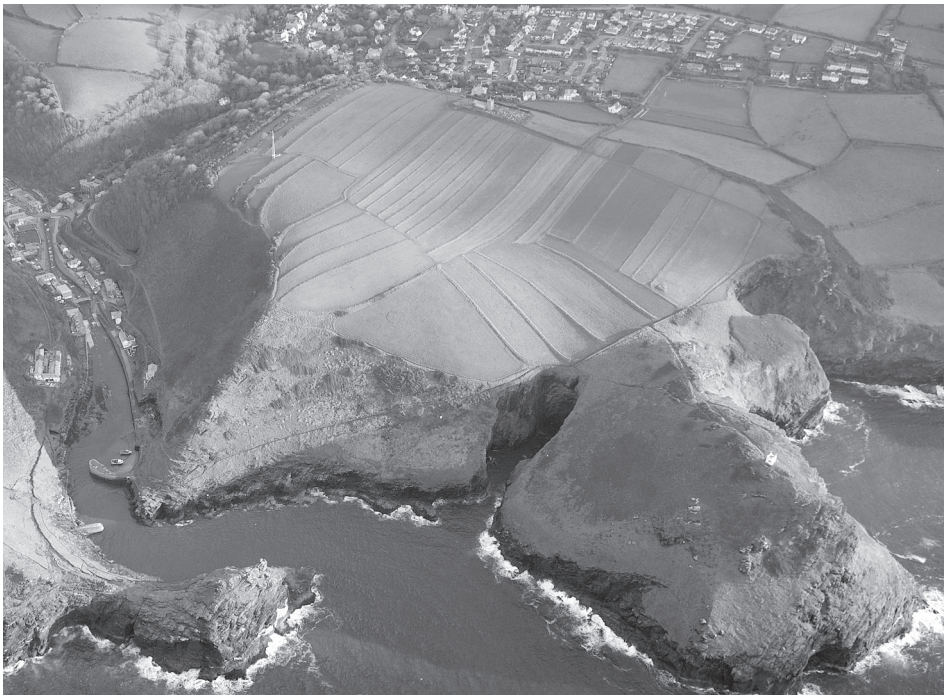

Figure 1. Forrabury Stitches, Boscastle, north Cornwall, the remnants of an open field system (Photograph: Steve Hartgroves, Historic Environment, Cornwall Council)
1. ábra Forrabury Stitches, Boscastle, Észak Cornwall, egy nyílt terület maradványai (Fotó: Steve Hartgroves, Historic Environment, Cornwall Council)

A second open field survives in the south-west of England. At Braunton in Devon, to the north of the Taw-Torridge estuary, 360 acres below the village are divided into 200 strips which vary in size from ¾ to 6 acres, but in 1840 there were some 600 strips then in the hands of some 60 cultivators so much consolidation has taken place. The strips were separated by grass baulks – not a feature of every region of open field. There is documentary evidence that in 1324 one particular holding of 26½ acres was divided into 25 separate parcels or strips, approximately one acre per parcel (Griffith 1988). Once again, the open field was once more extensive (Figure 2) and by 1994 there were only 20 owners, so that much agglomeration of holdings had taken place (Middleton 2002).

Third, perhaps the best known survival is Laxton in Nottinghamshire where 3 of the 4 original open fields survive, still managed by working farms. The village was, and remains, strongly nucleated and may have achieved a planned layout at some stage (the castle with its motte and two baileys, was probably built by the de Caux family in the 12th century) (Stocker 2006). Once again, there has been much consolidation of holdings and in 1909 a wholesale exchange of strips took place so that each farmer might work a more compact holding. Visually, this means the field inevitably makes less of an impact – farmers, who formerly had 40 or 50 scattered strips of an average size of half an acre, by the 1920s had only half a dozen each of about 4 or 5 acres in size (Beresford, St Joseph 1979, Chambers 1928).

Figure 2. Braunton Great Field, a further open field survival in south-west England. (Photograph: NMR 23598/06 SS 4635/7 taken 23 July 2004 ©English Heritage)
2. ábra Braunton Great Field, egy újabb megőrzött nyílt terület DNy Angliában. (Fotó: NMR 23598/06 SS 4635/7, készült 2004 július 23-án ©English Heritage)

These are precious survivals of what, in this country, is a lost practice and it is to be expected that modern changes in farming in other European countries will not totally eradicate these open-field landscapes. They help to show, firstly, how our man-made landscape has evolved, and, secondly, they contribute towards the preservation of regional countryside character.

In the 19th century relict fields of strip systems were common in Cornwall – around many villages and farmsteads the tithe maps captured patches of enclosed strips, the relics of these earlier field systems (Figure 3). They are slightly different here to those of midland and southern England (Herring 2006). They may have begun their lives in this region as patches of 'in-field', an area kept under constant cultivation by the application of manure; beyond, the 'out-field' could be taken in and cultivated intermittently when circumstances demanded. Field patterns such as these have survived most easily in less intensively farmed areas – as on the edge of Goss Moor in Cornwall (Hooke 1998). In the Welsh Borderland, too, occasional patches of former strip fields, long enclosed, have also survived (Figure 4) (Hooke 2006). In more intensively cultivated regions such patterns have been almost totally eradicated.

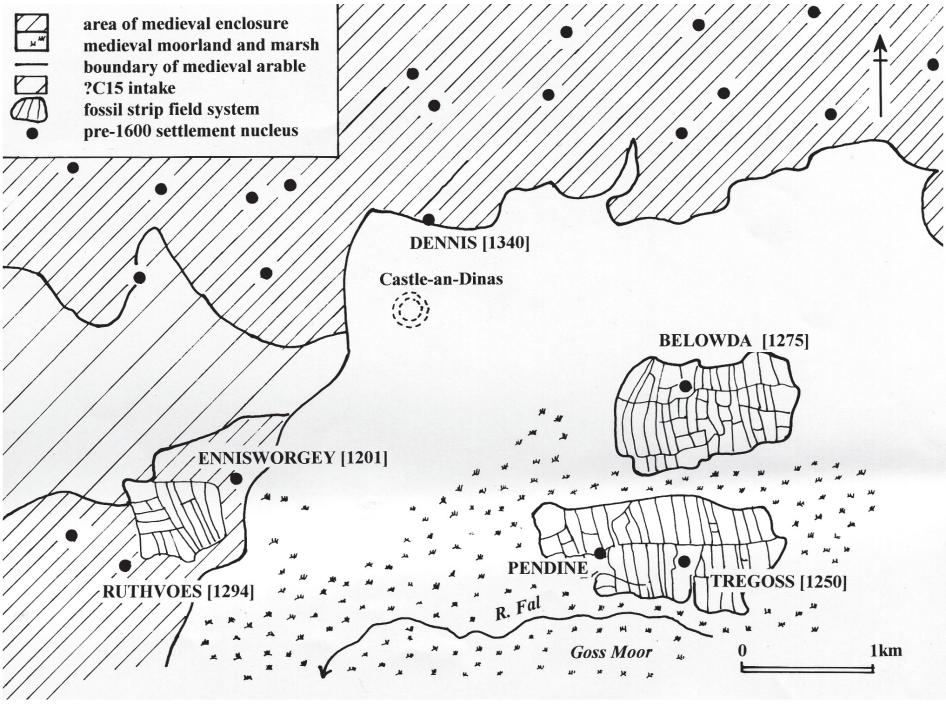

Figure 3. Field patterns on Goss Moor, Cornwall, probably reflecting an early 'in-field' (Map produced by D. Hooke)
3. ábra Goss Moor táblamintázata, Cornwall, valószínűleg egy korai 'in-field' példája (A térképet készítette: D. Hooke)

Associated with the common arable was the common meadow, usually divided annually by the drawing of lots for the purpose of cutting the hay. Once this had been gathered in, stock could be allowed to seek pasture there. Again, very few extensive areas of common meadow survive. Water meadows in river valleys have all too often been seen as suitable locations for modern roads etc. Common waste had been in very short supply in the intensively farmed areas by the time of the Black Death and patches of common, too, survived best in more marginal zones, as in the Welsh Borderland or the Warwickshire Arden.

The open-field system was generally one organised within the township community, its procedures organised and supervised by the manorial court which was the central institution, after the church, of medieval village life. Tenants of the community met every three weeks and the court records illuminate almost every aspect of life and work on the manor, the tenants' rights and duties etc. Perhaps surprisingly, the dates agreed for such major events as sowing, ploughing and harvesting are rarely recorded in such documents – even the arrangements for sharing the plough oxen – but in a village community these were well known to everyone and the courts usually list minor transgressions – such as the gleaning of spilt corn by those considered able-bodied enough to work for a living. Obviously the medieval village offered a very 'communal' way of life with limited scope for individual initiative.

Figure 4. Surviving strip fields at Madley, Herefordshire, in the Welsh Borderland
(NMR 23718/10 SO 4238/12 taken 24 September 2004 ©English Heritage)
4. ábra Megőrzött nadrágszíj parcellák Madley-ben, Herefordshire, a wales-i határ környékén
(NMR 23718/10 SO 4238/12, készült 2004 szeptember 24-én ©English Heritage)

Enclosure

Extensive areas of open field did not necessarily last much beyond the Middle Ages in marginal areas, where the land was better suited to stock rearing and manorial organisation was less rigidly upheld. But open field farming held sway in more productive regions into the 18th century and beyond. By then the Agricultural Revolution was well under way and landowners in the richer, more fertile regions wanted greater independence and greater control over their individual holdings. The old manorial system had been less adaptable to the newly emerging market forces or the promotion of scope for entrepreneurial initiative. New crops were being introduced (such as clover) and it was not easy to introduce these into the manorial system, neither could selective breeding of stock take place within a

common village herd. Throughout the 18th century, enclosure progressed rapidly and by the middle of the century open field had been drastically reduced in most counties. At first a cumbersome business, the General Enclosure Act of 1836 greatly facilitated the change and the landscape of the open field regions gave way almost everywhere to one of straight-sided large geometric fields, often bounded by quickset hedgerows. These still dominate the present-day field pattern of much of lowland England (Figure 5). New farms were established beyond the village centres to farm the new fields. A system of ploughing normally carried out in the open fields was the use of ridge and furrow, particularly because it facilitated drainage in the days before land drains became available. Even after former arable land had been enclosed, relict ridge and furrow often survived if the land was later left under grass.

Figure 5. Enclosure fields in the Vale of Evesham, Worcestershire (Photograph: D. Hooke)
5. ábra Körbezárt terület Vale of Evesham-ben, Worcestershire (Fotó: D. Hooke)

The pockets of waste were the last remnants of common land in many areas but these too were often subdivided in the last stages of 19th-century enclosure; the inhabitants of the cottages that had grown up around them were often driven to the newly developing towns of the Industrial Revolution. Even the great open sheepwalks of the Welsh Borderland were enclosed – thousands of acres at a time on uplands like the Long Mynd or the Clun Forest – over 20,000 acres of mostly sheepwalk taken in between 1845 and 1891 in the latter area (Figure 6) (Hooke 2006).

Figure 6. Clun sheepwalks, Shropshire, upland sheepwalks enclosed in the final stages of 19th-century enclosure (Photograph: D. Hooke)
6. ábra Clun birkajárás, Shropshire, lekerített felföldi birkajárások a 19. századi privatizáció végső stádiumában (Fotó: D. Hooke)

Culturally, the change was enormous: individually managed holdings replaced community organisation. The landowners of big estates, recognised as leaders in agricultural improvement, had often organised enclosure and reaped its benefits, but even their estates were often being broken up in the 20th century. Tenant farms were often amalgamated and the smaller ones forced out of business. In 1911 only 13% of holdings in England and Wales were in owner occupation and in Shropshire this proportion was only around 10%, covering some 8% of the land. By 1979 over half of the farms, covering nearly half of the county acreage, were wholly owned by their occupiers and a further 13% mainly thus owned. The smaller owner occupier became the crux of 20th-century farming.

Cultural implications

Paradoxically, as local control diminished in favour of independence there was a gradual move towards more central organisation and guidance. Farming had hit a new low at the end of the 19th century and government intervention was increasingly required. Although farming cooperatives became better organised it was government policy that revived farming – the 1947 Agriculture Act, for instance, guaranteed prices for produce. By 1973 further payments and subsidies were available through the European Community and now the Common Agricultural Policy (CAP) within the EC is influential in guaranteeing minimum prices etc.

The moves advocated were not always beneficial for landscape conservation – former downlands and traditional pastures were broken up for intensive grain production as England tried to become more self-sufficient, continuous cultivation maintained only by the addition of vast amounts of chemical fertilizer; hundreds of miles of ancient hedgerows were destroyed to make way for bigger farm machinery (Figure 7).

Figure 7. Ancient hedgerows in the Monnow Valley, Herefordshire (Photograph: D. Hooke)
7. ábra Ősi sövény a Monnow-völgyben, Herefordshire (Fotó: D. Hooke)

Conclusions: present-day conservation

Today it is government initiative that also encourages conservation. Such schemes as Countryside Stewardship and its successor, the Farm Environment Scheme, helps – and pays – farmers to care for their land in a way that not only ensures efficient farming but caters for the protection of wildlife habitats, archaeological features and, particularly, traditional landscapes. Recognition of just what constitutes the latter has been facilitated by a series of studies carried out by the government funded Countryside Agency and English Heritage, now being completed for every English county.

Forrabury Stitches are now owned by a private body, the National Trust, and the area is also protected by a Boscastle Conservation Area appraisal endorsed by North of Cornwall District County Council in 2007. A tenancy agreement of 1942 has made it difficult to bring in meaningful conservation but, nevertheless, the baulks between the strips provide a reservoir for biennial plants and the landscape offers one of the best examples of this old system of farming. The plants, now rare in areas of modern agriculture, include corn marigolds, lesser snapdragon, fumitory, sun spurge and bugloss (Chapman 2007).

Braunton Great Field lies in an area designated as an Area of Outstanding Natural

Beauty and has special protection within this under the North Devon Local Plan of 2006, designated an Area of Strategic Landscape and Development Control. Laxton is protected by a Parliamentary undertaking given by the Crown Estate Commissioners when they purchased the estate in 1981. Under the new Farm Environment Scheme it has been a target for what is termed Higher Level Stewardship in order to ensure the conservation of the historic landscape and its biodiversity.

Within CAP, too, there has been a move towards stewardship, encouraged by the European Landscape Convention: traditional landscapes, in particular, are much valued. Above all, they see the land as not just a resource to be exploited but as part of a wider environment that bears witness to each country's individual cultural heritage.

Acknowledgments

I am grateful to Stuart Hartgroves, Historic Environment, Cornwall Council, for Figure 1 and to English Heritage for permission to reproduce Figures 2 and 4.

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MÚLT A JELENBEN – MARADVÁNY NYÍLT TERÜLET MINTÁZATOK ANGLIÁBAN

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Kulcsszavak: nyílt terület, Anglia, tájfejlődés, vidéki karakter

A mezőgazdasági tájak Anglia kulturális örökségének fontos részét képezik. Az egykori mezőrendszerek maradványai rávilágítanak a táj fejlődésére, gyakran jól mutatják a táj és az ember kapcsolatát az időben. A középkori nyílt területrendszer egy gazdálkodási módszert képvisel, amely évszázadokon át fennmaradt, a lakóközösség részvételével készült és így tőle is függött. A 18–19. században ezek a területek a privatizáció során elvesztek, amint az egyedi farmok helyettesítették a korábbi rendszert. Később a nagyobb birtokok is felosztódtak. Jelenleg a néhány túlélő angliai nyílt terület vizsgálatáról, valamint a tájváltozással egybefüggő kulturális változásokról olvashatunk, amely változások védelmi beavatkozásokat sürgettek az ilyen típusú képződmények védelmére. A vidéki táj így feltárja a fejlődéstani történet mélységeit, segíti megőrizni Anglia vidéki tájainak sokféleségét és a megfelelő ökológiai egyensúly fenntartását, ezzel elősegítve kulturális identitás és örökség megőrzését.

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LANDSCAPE PREFERENCE STUDY OF AGRICULTURAL LANDSCAPES IN GERMANY

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Keywords: Landscape preferences, agricultural vegetation, inferential statistics, landscape and environmental planning

Summary: This paper reports the results of a landscape preference study using photographs of agricultural landscapes from Germany as stimuli. At present, agricultural landscapes are subject to innovations in agricultural management as well as climate change. Hence, large-scale changes of landscapes with regard to their structure, appearance or diversity are likely in the future. A survey was carried out among inhabitants of different parts of Germany, with questions regarding demographic factors (e.g. sex, age, school and professional qualification, importance of nature and environment, frequency of outdoor trips) as well as different scenic qualities such as variety, uniqueness and beauty of landscape. The study explores various factors to account for variability in preference judgements for particular agricultural landscape scenes, including mainly different types of meadows, pastures and arable land. Variance is examined and discussed in relation to the level of preference/scenic quality, in relation to possible group differences, and in relation to phytosociological typology. Finally, potential topics for further research are discussed.

Introduction

Scenic values, especially variety, beauty and uniqueness of landscapes, are a basis for both human recreation in nature or landscape and the leisure industry as an economic branch that has become more and more important in recent decades (Tips and Savasdisara 1986, Purcell et al. 1994, Nohl 2001). Many regions in Europe and even worldwide are competing for tourists by attracting them with a more or less distinctive landscape scenery.

There is a consensus that visual landscape assessment is an indispensable component of landscape and environmental planning, which aim at both ensuring and enhancing landscape beauty, variety and uniqueness and providing guidelines and recommendations for infrastructure and urban development projects within the framework of impact assessment instruments such as environmental impact assessment (EIA) or strategic environmental assessment (SEA), either according to European law or to impact regulations as part of national legal systems (Krause 2001, Nohl 2001, Turner 2004, Lewis 2008). The main idea of those impact assessment instruments is to avoid and to mitigate impairments to landscape scenery and even to compensate for inevitable impairments to landscape scenery by specific measures.

In order to achieve the above-mentioned aims, special assessment methods that also ensure common scientific standards are needed (Herzog 1985, Arriaza et al. 2004, Lafortezza et al. 2008, Bulut and Yilmaz 2009, Ode et al. 2009, Sevenant and Antrop 2009). In Germany, more than 150 visual landscape assessment methods have been developed and described (Kenneweg and Gruehn 2001), most of them based on single expert ratings. As pointed out in figure 1, according to a landscape survey carried out

by Gruehn et al. (2007) in the German federal state of Saxony, single expert ratings are extremely debatable, because the maximum difference of two single expert ratings may reach 10 ranks on a scale from 0 to 10. Figure 1 reveals similar results for single layman ratings as well as for single layman ratings compared to single expert ratings.

In contrast to this, mean differences between expert and layman landscape preferences based on a random sample (n = 600) are less than 1 rank and mostly even not significant ($p \leq 0.05$, Mann-Whitney U test).

Our conclusions from the above-mentioned survey are as follows:

- Single case studies or single (expert) judgements are scientifically inadequate
- More empirical surveys are needed to better understand, to assess and to model landscape scenery of specific landscape types reflecting perception by different social groups.

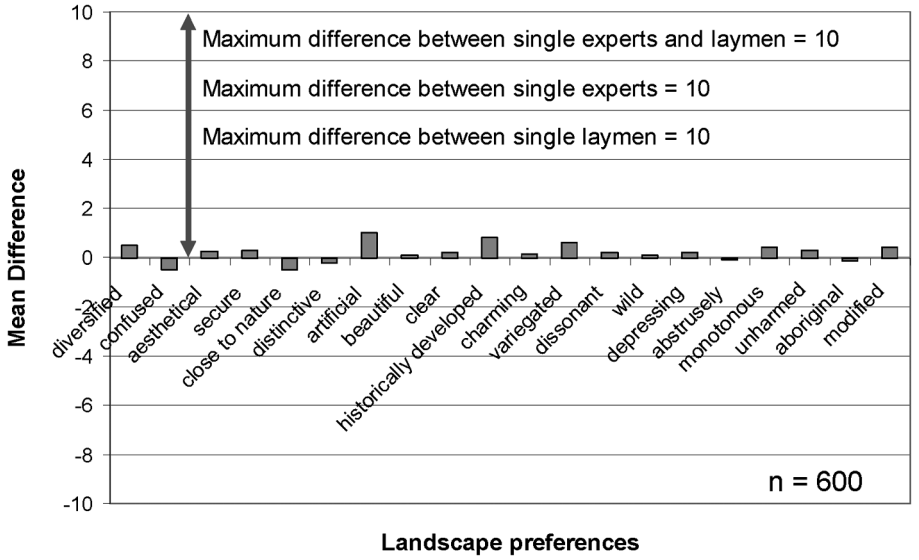

Figure 1. Mean differences between landscape preferences of experts and laymen
1. ábra A szakemberek és átlagemberek tájpreferenciáiban rejlő átlagos különbségek

Our current research aims at extending knowledge on landscape perception as a scientific basis for visual landscape assessment in landscape and environmental planning practice. On the one hand, it is intended to acquire accurate information concerning landscape perception in different landscape types with a main focus in Europe, but in future also including ratings from people with non-European background (cross-cultural-studies). A further attempt is dedicated to the connection between scale and data resolution, especially the resolution of land-use and habitat data as a basis for large-scale assessments. A severe scientific problem is connected to the transfer of correlations derived from highly aggregated data level to less aggregated levels (Bahrenberg et al. 1985). Robinson (1950) discovered and defined this problem as 'ecological fallacy'. To avoid false conclusions, especially in planning practice, more detailed and scale-related knowledge about landscape perception of different landscape types on different aggregation levels is needed.

Recent landscape preference studies reveal that scenic quality to a considerable extent depends on the proportion of agricultural landscapes (Roth and Gruehn 2005; Gruehn et al. 2007). In most Central European countries about 60% of total area is covered by agricultural landscapes, e.g. in Germany. At present, agricultural landscapes are subject to innovations in cultivation management as well as climate change. Hence, large-scale changes of agricultural landscapes with regard to their structure, appearance or diversity are likely in the future.

The core question in this context is whether landscape perception is only dependent on the proportion of agricultural land within a certain landscape, or whether landscape perception depends on the mixture of different vegetation types within a landscape as well.

A survey was carried out among inhabitants of different parts of Germany as well as from Asia, with questions concerning different scenic qualities such as variety, uniqueness and beauty of agricultural landscapes as well as demographic or sociological factors (e.g. sex, age, education, importance of nature and environment, frequency of outdoor trips).

The goal of the study was to test the following research hypotheses:

- Landscape perception of agricultural landscapes is affected by composition and appearance of vegetation (=types of meadows, pastures, arable land etc. determined by ecological as well as land use factors);
- Landscape perception of agricultural landscapes is affected by spatial resolution of vegetation data;
- Landscape perception of agricultural landscapes is more or less independent from demographic factors.

Materials and methods

The methods used in our research are theoretically based on the psychological-phenomenological approach (Nohl 2001). This approach comprises the real landscape (on an objective level), the viewer (on a subjective level) as well as the scenic landscape quality as an interface between real landscape and viewer (image level). According to Nohl (2001), scenic quality can be described as aesthetically-symbolically interpreted appearance of landscape. Since ratings of single viewers to a large extend reflect subjective experiences, expectations, visions etc. we use large random samples ($n \geq 100$) to avoid biases. For practical and economical reasons we replace ratings in real landscapes by ratings of photographs (of real landscapes). According to Roth and Gruehn (2005) and Roth (2006) this approach is justified by a strong correlation between people's ratings of real landscapes and their photograph- based ratings. Data acquisition was carried out by traditional questionnaires, but will be replaced more and more by validated Internet surveys (Roth 2006).

The questionnaires contain a broad range of different landscape preferences as listed in figure 1. The data base comprises the ratings of 171 interviewees from 2 different regions of Germany (Northern Germany and Southern Germany) as well as from Asia. Those regions differ from each other in terms of climate and soil conditions and with regard to their potential natural vegetation as well as their agricultural land use. The definition of vegetation types equates to the systematic approach of Mertz (2000), reflecting results from Oberdorfer (1994) as well as Pott (1995). 35 photos of different agricultural vegetation types were investigated as listed in Table 1.

Agricultural Vegetation Types	Phytosociological Nomenclature (Association-level)
Dog Rose - Juniper Coppice	Roso-Juniperetum
Hairy Greenweed Heath	Genisto-Pilosae-Callunetum
Senecio sylvaticus - Fireweed Association	Senecio sylvatici-Epilobietum angustifolii
Wood Small-reed Association	Calamagrostietum epigeji
Hemp Agrimony Association	Eupatorietum cannabini
Root Chervil - Common Butterbur Association	Chaerophyllo-Petasitetum hybridii
Parsley Piert - German Chamomile Association	Alchemillo arvensis-Matricarietum
Echium-Melilot Scrub	Echio-Melilloletum
Tall Oat Grass Meadow	Arrhenatheretum elatioris
Mountainous Tall Oat Grass Meadow	Alchemillo-Arrhenatheretum elatioris
Bulbuous Buttercup -Tall Oat Grass Meadow	Ranunculo bulbosi-Arrhenatheretum
Meadow Sage - Tall Oat Grass Meadow	Salvio-Arrhenatheretum
Meadow Foxtail Association	Alopecuretum pratensis
Yellow Oat Grass Meadow	Trisetetum flavescentis
North Alpine Yellow Oat Grass Meadow	Astrantio-Trisetetum
Baldmoney Meadow	Meo-Trisetetum flavescentis
Perennial Ryegrass Pasture	Lolio-Cynosuretum
Alpine Eutrophic Pasture	Crepido aureae-Festucetum rubrae
Red Fescue - Bentgrass Pasture	Festuco commutatae-Cynosuretum
Subalpine Crested Dog's Tail Pasture	Crepido-Cynosuretum
Perennial Ryegrass - Greater Plantain-Association	Lolio-Plantaginetum majoris
Erect Brome - Mesoxerophytic Grassland	Mesobrometum erecti
Oligotrophic Calcareous Pasture	Gentiano-Koelerietum pyramidatae
Oligotrophic Calcareous Mesoxerophytic Grassland	Onobrychido viciifoliae-Brometum
Erect Brome - Xerophytic Grassland	Xerobrometum erecti
Alsatia Xerophytic Grassland	Artemisio albae-Koelerietum vallesianae

Table 1. Agricultural vegetation types investigated according to Mertz (2000).
1. táblázat Mezőgazdasági vegetáció típusok Mertz (2000) szerint

In order to analyse effects of demographic factors on landscape perception the questionnaires also contain demographic variables, e.g. sex, age, education etc. We use inference statistics to test effects of certain factor variables on their significance. For statistical analyses parametric and non-parametric methods are used according to mathematical prerequisites with SPSS 17.0.

Results

Figure 2 points out visual landscape quality assessment of 35 photos of different agricultural vegetation types by four groups of different origin (Northern Germany, Southern Germany, Asia and unknown origin). The results reveal that there are no significant differences in landscape perception among the groups mentioned (Kruskal-Wallis one-way analysis of variance) or the effect is of no relevance (ANOVA), because of a very low eta-squared.

Figure 3 represents visual landscape quality assessment results of a Tall Oat Grass Meadow (*Arrhenatheretum elatioris*) by the above-mentioned groups from Northern and Southern Germany, Asia and unknown origin. The results clearly indicate that there are no significant differences in the ratings of the four groups (Kruskal-Wallis one-way analysis of variance). A similar approach was followed using photos from four different tall oat grass meadows. Again, statistical analysis reveals no significant differences in landscape perception for the different groups mentioned above.

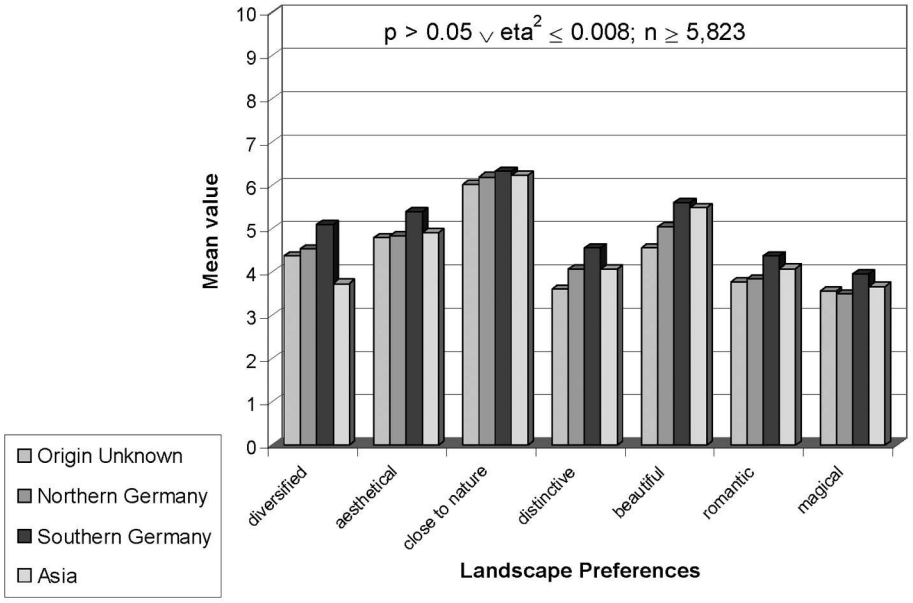

Figure 2. Visual landscape quality assessment of 35 photos of different agricultural vegetation types by 4 groups of different origin

2. ábra 35 mezőgazdasági vegetációtípus fotójának vizuális tájminőség értékelése 4 különböző eredetű csoporttól

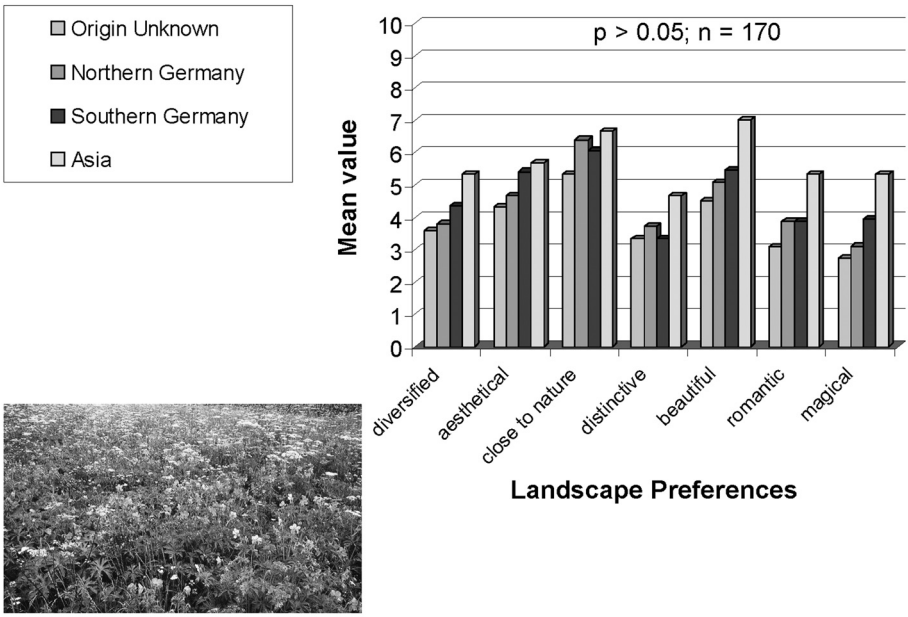

Figure 3. Visual landscape quality assessment of tall oat grass meadow *(Arrhenatheretum elatioris)* by 4 groups of different origin
3. ábra A franciaperjés kaszálórét *(Arrhenatheretum elatioris)* vizuális tájminőség értékelése 4 különböző eredetű csoporttól

Figure 4 illustrates a comparison of two different agricultural vegetation types, a Bulbous Buttercup – Tall Oat Grass-Meadow (Ranunculo bulbosi-Arrhenatheretum) compared to Perennial Ryegrass-Greater Plantain-Association (Lolio-Plantaginetum). These entities represent the most extreme differences concerning the landscape preferences of all agricultural vegetation types investigated. The assessment was done by an overall sample, comprising the above-mentioned groups from different origin, mainly Germany and Asia. The results indicate not only considerable, but also significant differences (Mann-Whitney U) between both agricultural vegetation types concerning all variables. The interviewees significantly prefer Bulbous Buttercup – Tall Oat Grass-Meadows compared to Perennial Ryegrass – Greater Plantain-Association. The Bulbous Buttercup – Tall Oat Grass-Meadow is perceived as more diversified, more aesthetical, closer to nature, more beautiful, romantic and magical. Eta-squared values – as indicator for the ratio of variance explained in the dependent variable by a predictor (factor variable) – range from 0.104 (“close to nature”) to 0.722 (“beautiful”).

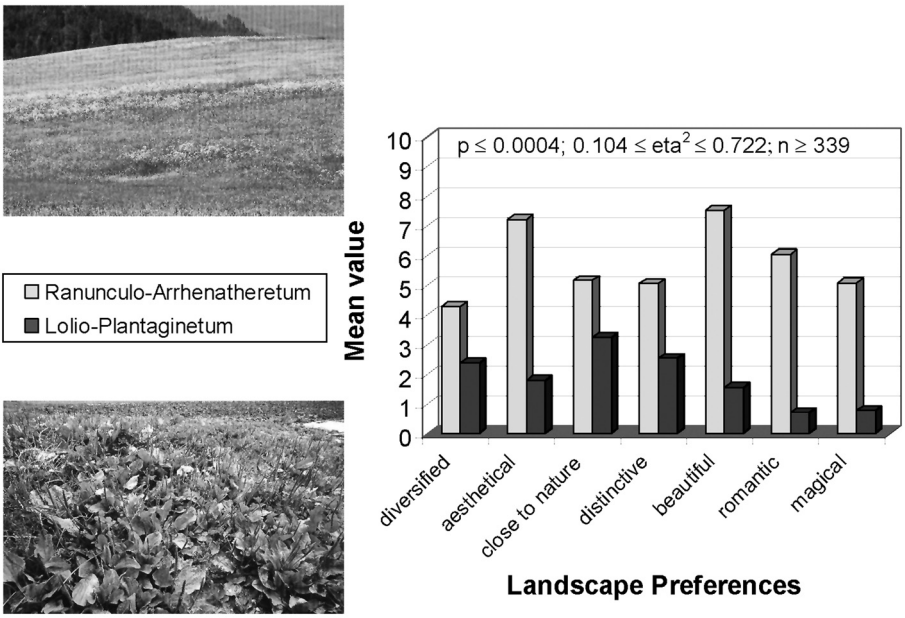

Figure 4. Visual landscape quality assessment of bulbous buttercup – tall oat grass-meadow *(Ranunculo bulbosi-Arrhenatheretum)* compared to perennial ryegrass – greater plantain-association *(Lolio-Plantaginetum)*

4. ábra A borjúpázsisos pusztai csenkeszrét társulás dombvidéki, vikariáns asszociációjának *(Ranunculo bulbosi-Arrhenatheretum)* és a nagy útifű társulásnak *(Lolio-Plantaginetum)* az összehasonlító vizuális tájminőség értékelése

Figure 5 summarises the landscape preferences of 171 interviewees concerning 35 photos of different agricultural vegetation associations in a two-dimensional diagram (beauty vs. variety). According to this there are some associations which have been regarded as of high beauty and high variety, e.g. Parsley Piert - German Chamomile Association (Alchemillo arvensis - Matricarietum). Additionally figure 5 indicates agricultural vegetation associations which have been regarded as of low beauty and variety, for instance Perennial Ryegrass – Greater Plantain-Association. Other agricultural vegetation associations are characterised by high beauty and low variety (e.g. Bulbous Buttercup – Tall Oat Grass-Meadow (Ranunculo bulbosi-Arrhenatheretum) or minor beauty but medium variety (e.g. Yellow Oat Grass Meadow (*Trisetetum flavescentis*)). The differentiation of agricultural vegetation types on association level explains 22.9 % of the total variation of preferences concerning "beauty" and 15.7 % of the variation of preferences with regard to "variety".

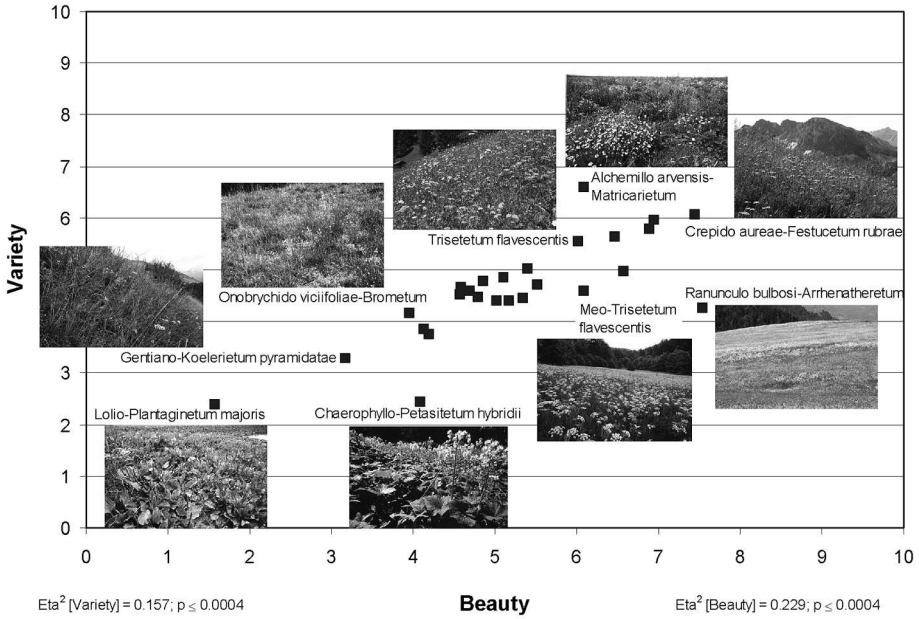

Figure 5. Landscape preferences (beauty vs. variety) in dependence to different agricultural vegetation associations (mean values, 171 interviewees, 35 photos of different)
5. ábra Tájpreferenciák (szépség a sokféleséggel szemben) a különböző mezőgazdasági növényasszociációk függvényében (átlagértékek, 171 megkérdezett, 35 fotó)

Compared to landscape preference assessments on association level, assessments on alliance, formation or class level are more generalised as figures 6 (perceived beauty and 7 (perceived variety) clearly indicate a reduction of variation. The differences between varied or beautiful agricultural vegetation alliances, formations or classes are smaller than those on an association level. Consequently, eta-squared values are lower than discussed with regard to figures 6 and 7. The less aggregated and therefore the higher the spatial resolution is, the higher are the eta-squared-values. This means that differentiated data with high spatial resolution are more appropriate for visual landscape assessment purposes than aggregated data with less spatial resolution.

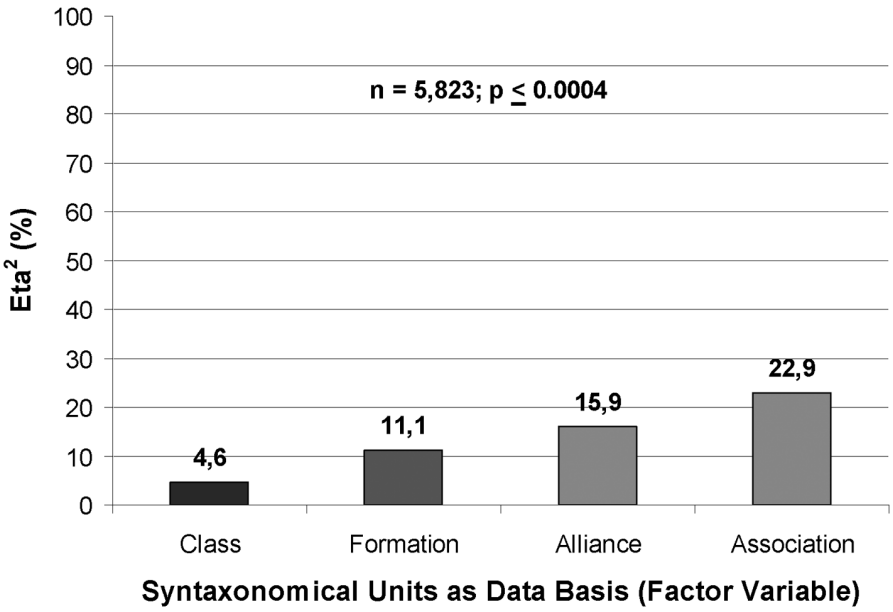

Figure 6. Effect of spatial resolution of vegetation data on landscape preferences: ANOVA (criterion: perceived beauty)
6. ábra A vegetációadatok térbeli felbontásának hatása a tájpreferenciára: ANOVA (kritérium: tapasztalt szépség)

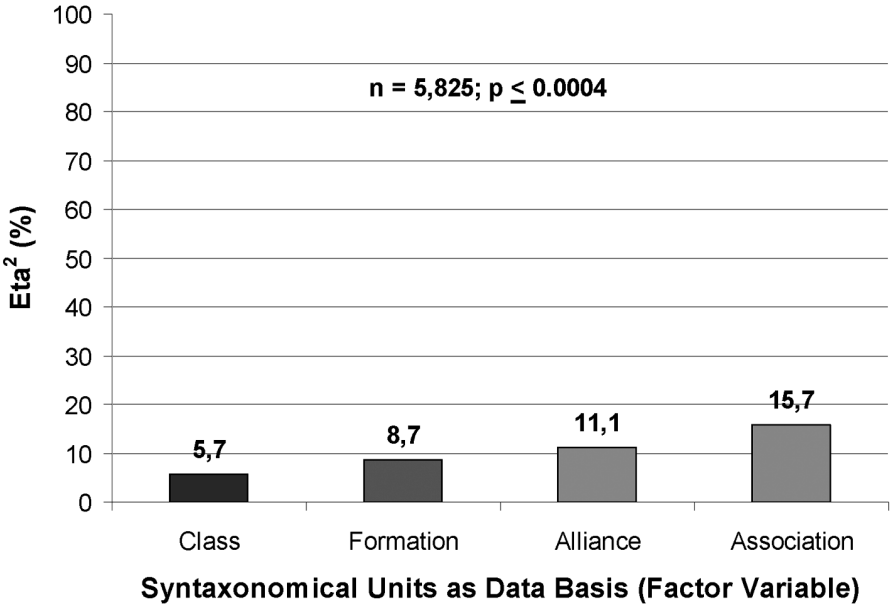

Figure 7. Effect of spatial resolution of vegetation data on landscape preferences: ANOVA (criterion: perceived variety)
7. ábra A vegetációadatok térbeli felbontásának hatása a tájpreferenciára: ANOVA (kritérium: tapasztalt változatosság)

Effects of demographic and other predictors on landscape preferences concerning the criterion "perceived beauty" are presented in figure 8. Thus sex and education do not have effects on the perceived landscape beauty. In addition, it is worth mentioning that the perceived beauty of agricultural vegetation landscape due to extremely low eta-squared values is in practical terms independent of the age, importance of nature in the interviewee's life as well as their frequency of outdoor trips (Figure 8).

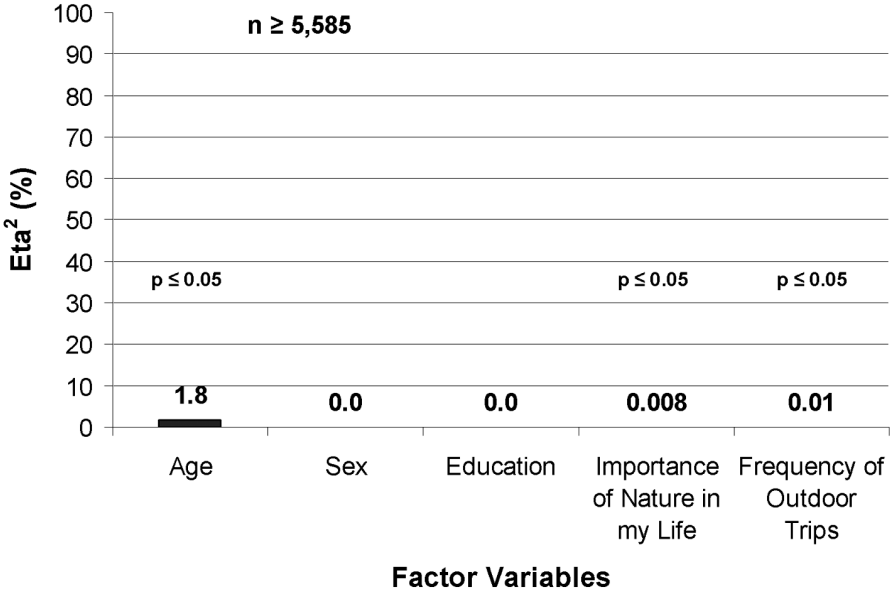

Figure 8. Effect of demographic and other factor variables on landscape preferences: ANOVA (criterion: perceived beauty)
8. ábra Demográfiai és egyéb tényezőváltozók hatása a tájpreferenciákra: ANOVA (kritérium: tapasztalt szépség)

Discussion

Whereas the data resolution of former research did not enable the distinction between different agricultural land use or habitat types, the results of the present study reveal that landscape perception is more affected by features of real (agricultural) landscapes on an object level according to Nohl (2001) than by demographic factors which more or less reflect subjective experiences on the subject level. As a consequence, future small-scale investigations of visual landscape assessment need a high resolution in terms of land use or habitat data. Further research should include types of meadows, pastures, heath land as well as bogs, which have been investigated in this study.

Owing to global warming, agricultural landscapes presumably will be affected and, therefore, agricultural landscape change scenarios considering scenic value of agricultural landscapes are needed.

The results supplement knowledge on landscape perception on different scale levels. In contrast to Bahrenberg et al. (1985) and Robinson (1950), a highly aggregated data level does not necessarily lead to overestimated coefficients in landscape preference studies.

In addition, the study confirms earlier results (Gruehn et al. 2007, Roth and Gruehn 2005, Roth 2006), that there are no significant differences in the way how people from different regions (e.g. Saxony vs. region of Berlin) perceive landscapes. Furthermore, it seems worthwhile to extend research on a European or even global level, including both interviewees as well as vegetation data from different countries.

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TÁJPREFERENCIA TANULMÁNY NÉMETORSZÁGI MEZŐGAZDASÁGI TÁJAKRÓL

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Kulcsszavak: tájpreferencia, mezőgazdasági vegetáció, következtetett statisztika, táj és környezeti tervezés

A cikk németországi mezőgazdasági tájakról készült fotók, mint ösztönzők által készített tájpreferencia vizsgálatok eredményeit közli. Jelenleg a mezőgazdasági tájak fejlesztés alatt állnak a mezőgazdasági vezetés irányítása alatt, csakúgy, mint a klímaváltozás szempontjából. Ennek megfelelően a jövőben nagyarányú változások várhatóak a tájban szerkezetükre, megjelenésükre vagy változatosságukra vonatkozóan. Németország különböző részein készültek felmérések a lakosság körében a demográfiai (pl. nem, kor, iskolai végzettség, szakma, a természet és környezet fontossága, a házon kívüli utak gyakorisága) viszonyokra, csakúgy, mint a különböző látvány minőségére (pl. a táj változatossága, egyedisége és szépsége) vonatkozóan. A tanulmány felfed különböző tényezőket, amelyek szerepet játszanak annak eldöntésében, hogy az egyes agrártájak (köztük elsősorban rétek, legelők és szántók) látványából melyiket preferálják, és azt hogyan döntik el. A változatosság vizsgálata és tárgyalása a preferenciához/látványminőség, a lehetséges csoportkülönbségek szintjéhez és a fitoszociológiai tipológiához kapcsolódik. Végezetül a további kutatásokra vonatkozó lehetséges témák tárgyalására kerül sor.

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FACTS TO THE LANDSCAPE HISTORY OF THE ÖREG-BAKONY MOUNTAINS

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Keywords: Bakony Mountains, landscape history, livestock keeping in forests, forest use

In the past, Hungarian land use and the landscape itself, was much more colourful and diverse than it is today. Processes and effects resulting in the current state of landscapes are explored during landscape history studies of certain areas. These changes are being examined in the once vast, dense forests covering the Carpathian Basin. These forests have been significantly reduced due to habitat alteration, and their view has changed due to shifting land use. One of the largest forested areas in Hungary is the Bakony Mountains, but its coverage has also decreased significantly during the past 500–1000 years in tandem with traditional agriculture and forestry, which are slowly disappearing as production becomes intensive. Traditions of the Öreg-Bakony (the central and highest part of the Bakony Mountains) accurately portray quondam and irreplaceable customs of the Bakony Mountains. These customs included hogs foraging for acorns, other livestock grazing in the forests, use of tree foliage as fodder or collecting dead fallen leaves, and were everyday practices even in the 19th century. Some geographical names of the area refer to wood-based industries, strengthening their importance in the area.

Introduction

Historical forest and land use in the Hungarian past was more diversified than one would imagine. Through the intensification of agriculture and forest management, many of these details have disappeared. The past can now only be reconstructed from written descriptions, historical references and through the stories of elder inhabitants.

A field, pasture or forest is not only a mass of soil, plants and animals, they are also part of a history. Even the landscape is a segment of happenings in time. This being so, research is unimaginable without the inclusion of the historical perspectives. Historically there were three basic vegetation types in the Carpathian basin. These types were treeless areas, wood steppes and closed forests (Bartha 2003). Human cultures settled on the treeless and wood steppe areas first. As the population of each ethnic group expanded, so did the need for more and more arable land, making the deforestation and transformation of closed forests an essential part of life. The settlements and memories of these transformation procedures have remained in traditional forest use, pasture management and agriculture. The examples of wood pastures and grazed forests are very poignant; they are the last models of a vanishing management system called clearing farming.

The habitat transformation is still taking place as humans change their environment all the time, but the knowledge of past and present could be helpful in making conclusions for the future. Historical research is necessary in the case of each landscape element, furthermore, we cannot afford to lose the culturally rich memories of traditional land and forest use of the so-called "Bakony woodland." In the past, this quondam woodland extended from the Rába to the Dráva Rivers (Rómer 1860). László Breuer was one of the greatest influences on researching the Öreg-Bakony Mountain's land and forest use

history. He organised a variety of studies on its landscape values (Kiszel and Malatinszky 2007). In following Breuer's aims, this study will examine the particulars of the Bakony Mountains and the larger specifics of the Öreg-Bakony Mountain's landscape history.

Material and methods

The studied area is the Northern or Öreg (Old) Bakony Mountains microregion, situated in Hungary, in the Transdanubian Mountain Range macroregion's Bakony mesoregion, and includes also the Small Basins of Bakony microregion. The mentioned 2 microregions contain altogether 36 villages or settlements, representing the Bakony Mountains and its management or farming traditions (Marosi and Somogyi 1990) (Figure 1).

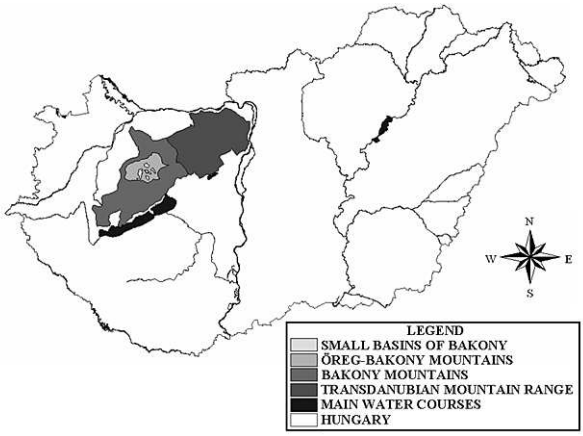

Figure 1. Location of the studied area
1. ábra A vizsgált terület elhelyezkedése

The traditional forest use (grazing in forests, secondary use of forests, development and declining of wood pastures and grazed forests) was examined in the Bakony Mountains from the 9th to the 19th century by using various data of different branches of natural and social sciences. Abiding to the aims, the Results and discussion chapter is basically a summary of diverse ethnographical, historically geographical, agricultural history and forestry history data from scientific publications with a complex viewpoint. In this chapter reference books and publications are briefly described.

Reconstruction of traditional forest and land use was possible only from literature review and the stories of elder inhabitants. The literature search began 4 years ago and is still in the process, resulting in unfinished research, however, the quantity of collected data allows for a first conclusion.

Much of the data obtained was from the publications of Fényes (1847) and Rómer (1860). Changes in the vegetation and the extent of destroyed woodlands in the transformation processes were observed in the publication of Wallner (1942). Through the publications of Hegyi (1978) and Takács (1976, 1980) the quondam traditional forest use became apparent, as well as deforestation and local specialities of Öreg-Bakony Mountains. The particulars of forest use have become clearer through the help of the

Magyar Erdészeti Oklevéltár (Tagányi 1986) (Record Collection of Hungarian Forestry), the *Erdészettörténeti Közlemények* (Reviews on Forestry-History) the publications of Oroszi (1995, 2005) and Petercsák (1992, 2003). The publications of Hegyi (1978), Vajkai (1959) and Mészáros (n.d.) also gave basic knowledge on quondam livestock keeping, forestry and agricultural methods and habits of Öreg-Bakony Mountains and its villages.

In the elaboration of historical data, a basic picture was developed and cemented by the documents of the Veszprém County Archives. The archives were systematically revised, and some photographs were made. Although the archives are incomplete, with the help of Archive's documents from 19th century, the reconstruction of quondam managing habits was successful.

A significant part of the research area had historically belonged to Szentgál (the village itself not being part of this microregion), and because of this the monographs of Szentgál and Pénzesgyőr villages (Vajkai 1959, Hudi 1998) were also reviewed. To achieve the complete view, many of the Archive's documents were used, but only the VCA XXI. 103. 306/1 is relevant in this particular study.

Some of the historical land use types were used just 30 years ago, which enabled recorded interviews (with 2 inhabitants) to be completed.

Results and discussion

After the Hungarian conquest of the Carpathian Basin in the late 9th century, the forests there were used by the settled communities at no cost. Royal wooded properties had been established from the commonly used forests and were called 'wood provinces.' The wood provinces were largely extended, private properties with their own local government in the Árpád-Ages (i.e. between the 11th and 14th centuries). During that time some of them were developed into royal counties, while others dissolved into the adjacent counties after being given to proprietors as was the case with the quondam wood province of Bakony (Hegyi 1978).

The primary use of forests in the Bakony's woodlands was for the acquiring of food, i.e. hunting in the 10th century. The cutting of wood was at that time unsystematic, however the need for wood began to grow as the volume of glass manufacturing, mining, metallurgy and other wood-based industries started to thrive. Hunting was important but only after grazing, acorn foraging and other uses (Petercsák 1992).

The trees of the forests have been protected since the times of King St. Stephen. Evidence for this is the word *ardó* in the geographic names since the 11th Century like the nearby Ardó settlement close to Döbrönte village. *Ardó* comes from the contraction of *erdő* (forest) and *óvó* meaning (protector). The protectors kept the forests safe and managed the woodlands; "they occupied high position among royal functionaries" (Pesty 1880). Their work was mainly necessary in the Bakony Mountains where every usable area was cultivated. When observing the environmental facts and farming traditions, the conclusion is that huge amounts of livestock needed an equally huge amount of forage, of which came from the forests. Therefore the connected secondary uses have come to be first. For example, the feeding of foliage was widely used. The predominant species used for forage feeding were the ash species (*Fraxinus* spp.); They were subsequently found in numerous geographical names of the research area, like Kőris (Ash) Mountain.

Closed forests were more or less used for grazing, acorn forage, cutting tree foliage for fodder, and collecting dead fallen leaves in the traditional system. However, after the dividing of the easily cultivated fields, the crucial need for more arable land drove the population to deforest the woodlands. The first phase in the transformation of the sometimes thick and impenetrable forests was the so-called occupation, before the real clearing work. There were several types of clearing work, depending on the geographical situation and habits of the settled population. The easiest way was the burning of forests; however, this was the most dangerous possibility, and was then forbidden since the early times in Hungary. Exceptions were made for the forest workers, who made smaller fires for everyday use (cooking and heating), and burning harmful shrubs and poisonous plants on pastures was also allowed (Hegyi 1978). During the process of clearing or forming of wood pastures and grazed forests, the vegetation was often grazed first to utilize the shoots and foliage. After grazing, the destroyed forest was transformed to useable fields. This clearing was tedious, and workers were often motivated by concessions, for example the clearers could keep the logs and the harvest of 1–3 years from the cleared field or later the half of the yield (Petercsák 1992).

De-stumping of trees was one of the most problematic portions of the work, as was the removal of prickly shrubs. Shrubs were cleared "with fire and iron" and grazing, so the settlers could use the fields (Mészáros n.d). There were three basic methods for de-stumping in Transdanubia. The first was completed when the trees were cut down; the roots were cut out or not, depending from the hardness of work. The second was the so-called stubbing overthrow, when roots were dug around (without cutting the tree) and were overthrown with the help of the tree's own weight. The third method was drying (so-called ringing in the forestry terminology) when the outer bark was cut around, and the trees dried out. Sometimes trees were just hit or pat around the trunk in order to damage tufts. In the ancient times people simply excised trees, and started cultivating the field among the stumps (Takács 1976, 1980). These data demonstrate the wide knowledge of ancient people about nature, forests, trees and other plants. The marks of drying, clearing and other activities can be found in geographical names, like *aszó*, *irtvány* or *csonkás* (Takács 1976, 1980).

Grazing livestock helped a lot during clearing, as fresh shoots and leaves could be perfectly utilized as forage. Tree species of the research area (except for beech) shoot well from logs, so their shoots could be grazed by animals. Although during the regeneration of forests – in young forests and in forests being in the regeneration phase – grazing (especially grazing goats and hogs) was forbidden (Tagányi 1896). Cattle, hog and sheep were the most important species in the Hungarian livestock keeping and grazing customs. Forests were important sources of forage, especially in those areas where the proportion of open grasslands was low (e.g. in the Bakony Mountains). The importance of grazing in forests could be demonstrated by the fact that sheep farming ceased in the Börzsöny Mountains due to the ban on grazing in forests (Petercsák 1992). Grazing needed to be regulated from the early times, because some of the species grazed without being fastidious, and sometimes shepherds made damages in the trees (Oroszi 1995, 2005). One of the most favourite foods of grazing animals were fresh shoots with leaves and buds, therefore sometimes animals were drove into the forbidden parts of the regenerating forests to graze young saplings. In addition, shoots situated in the foliage of trees were also regularly cut and given to animals. These abuses later generated severe disputes.

The importance of grazing in forests is clear, on the other hand we should not forget the importance of forest meadows in some parts of Hungary, based on Viga's (1986) researches (Petercsák 1992). Yield and quality of grasses in forests is lower than in meadows. Regularly, the annual yield of forest grasses is only 200-400 kilograms from 0.58 hectar of forest, and even its forage value is low as well (it is equal to 100 kilograms of meadow grass) (Bartha 2003). Thus, one could imagine the destruction of huge grazing livestocks in forests.

Cutting the foliage of trees for feeding used to be a common practice. The most suitable species for foraging were ashes (*Fraxinus* spp.), lime trees (*Tilia* spp.), willows (*Salix* spp.), maples (*Acer* spp.), poplars (*Populus* spp.), black locust (*Robinia pseudo-acacia*), mulberry (*Morus alba*), oaks (*Quercus* spp.) and hornbeam (*Carpinus betulus*). Sticks thinner than one inch were cut back to one third of the foliage (possibly in June), they were binded into sheaves and were dried. Withered sprouts were collected with carts, and were transported into stacks or haylofts for winter storage (Földes 1895). This way livestock could be fed with green forage during winter even in years with very cold weather. Cutting sticks from trees causes severe damage to them every time, therefore it became forbidden quite early. It was allowed only in necessity, for example in 1863 when Hungary suffered from a severe drought. 125 kilograms of foliage fodder is equal to 100 kilograms of medium quality hay from meadows according to historical experience (Bartha 2003).

As a base of forage for livestock, forests played their most important role in hogs foraging for acorns. Forests producing high amount of acorns were considered of high value, for example in 1514 their price was estimated in 50 Marks in Werbőczy's *Tripartitum* (book of laws) (Paládi-Kovács 2001) as the most valuable ones in parallel with the oldest forests giving wood for construction. These two types of forests were counted 16 times more expensive than any other types of forests. Beech nut and oak acorn had got big importance in sheep farming as well. Acorn yield of 0.58 hectar of forest was 200-400 kilograms in beech forests and 300-500 kilograms in oak forests, so fattening one hog needed 2.3–2.9 hectars forest (Bartha 2003). This fact is starling if we count with the data of Fényes (1847): 150,000 hogs during one year in the Bakony Mountains. Besides hunting, the oldest post for the nobles of Szentgál was the livestock keeping in forests. They leased the beech nut yield of their beech woods for several hundreds of Forints still in 1842 (Hudi 1998).

Further secondary forest use in connection with livestock keeping was the collection of fallen leaves for bedding. This type of use caused huge damage in the forests similar to the cutting of shoots in the foliage. During the collection for bedding, dry fallen leaves and parched grasses were raked together and carried away from the bottom of forests. This activity stopped the supplying nutritive and organic matters of soil, so this type of forest use was forbidden in most of the forests of the research area, referred to by the idea of "The constant farming plant of János Hudi and Co." (VCA). But not only these uses damaged the forests and their soils (Demény K., Centeri Cs. 2008; Podmaniczky et al. 2009), but the turning up and treading down of soil by the numerous animal have to be mentioned as well.

Besides grazing in the forests, other land use types played significant role in traditional livestock keeping, such as grazing forests and wood pastures. They were really characteristic and widespread. In the research area, the wood pasture between Pénzesgyőr

and Hárskút was observed by Malatinszky et al. (2004), Kenéz et al. (2006), Kenéz (2008) and Szabó (2008), and the one close to Olaszfalu by Varga (2008).

There were no pastures without trees until the mid-18th century in the Bakony Mountains (Hegyi 1978). Between the mid-19th and mid-20th century, grazed areas were kept in exempt condition from brushes and weeds by the owners of common pastures, who have made the so called pasture clearing every spring, together with the youth of villages Petercsák (2003), During our collection of data, this activity was strengthened for the Öreg-Bakony Mountains by Károly Pacher's report: "these peasant men were prepared for this work; they were had to do it every spring. The pasture was theirs; their livestock went out there, so they had cleared the pasture" (Pacher ex verb.). Mainly the mattock, the sickle and the thorncutters were pointed out by the interviewed persons as the tools of clearing (Liebisch ex verb.). Finally, pasture clearing is not less than the last practicing memory of Hungarian clearing farming, because the most archaic methods and tools were used during the cutting out of harmful plants. In some Hungarian regions, this work was done by the employed sheperds in the 19th century (Galgóczi 1884).

Besides livestock keeping, industries based on wood as raw material or fuel severely charged the woodlands as well. Although the domestic industry was also significant in the region, for example settlers of Pénzeskút or Bakonybél had a reputation of being good wood-carvers all the time, hereby only lime burning, charcoal burning, pearlash making and glass manufactory will be discussed.

The lime was really important booth for everyday life as well as for industries, to such an extent that the poorest people had bought even the lime powder remained after lime burning: Before starting of burning, the poorer ones went out to the lime-klins to agree with the burners to exchange the quick lime powder to a bottle of vine or spirit. Hegyi (1978) gives a detailed and accurate report on the lime burning in the Bakony Mountains. The contractor or the domain of lime burning transported the locally mined, exploited or collected limestone to the lime-klin usually on their own cost. The bigger part of the klin's combustion space were sunken into the ground and its wall was built from cinder or adobe. Usually 200-400 kilograms of limestone was used for one burning. Bigger rocks were heaped around to a dome or cupola, and the gaps were filled with smaller ones. A klin was stoked from the inside for 3 or 4 days with one meter long billets of wood. The most suitable species were Turkey oak, sessile oak and beech for this work. Produce of 100 kilograms quick lime needed 200 kilograms limestone and 1.3 cubic metres wood. The temperature of burning was at least 900 °C to the complete burning (Hegyi 1978), so one could imagine the huge claim for wood.

The charcoal burning was a typical activity in the whole area of the Bakony Mountains. It provided the other important basic material for the households and industry over the lime burning. This industry was run in the whole Bakony Mountains, as referred to by the balkname *Szénégető-dűlő* (Charcoal-burner), close to Szentgál village. The locally cutted beech trees were put into piles on flat ground possibly, especially on the places of previous burnings. The pile was a half orb with an average diameter of 10 meters. Making of a cone started with the sticking of a 'bull' (a 2.5 meters long wood branch with a fork on the top). 4–6 pieces of 60–120 centimeters long stakes were sticked around the bull, about 15 cm distances from each other. Dry twigs and thicker billets were put around this tent-shape and finally thinner branches were put onto the outer surface. 10–12 cartloads wood was used for the bigger cones. For heating charcoal, charred armthick branches were used,

while for fine charcoal (for example for gunpowder), thinner twigs only. After this, the cone was covered with mixture of soil and dead fallen leaves (best case mixed with the powder of previous burning). The bull was pulled out to form a firing hole. Glowing embers were put into the hole to make fire. When the smoke disappeared (meaned that the burning started), the firing hole was filled with wood and charcoal. Burning of a 20 cubic meters large cone lasted for 6 to 7 days. Burners constantly had to follow this process with attention. The sides of the cone were aligned and covered again if necessary. In favour of the carbonization process, vent-holes were opened from the top to the bottom step by step. After tumbling down and cooling, the cone was disintegrated and the charcoal was separated into heaps and sold for charcoal traders (Vajkai 1959).

The most considerable local profession in the Öreg-Bakony Mountains was the pearlash-making. Most important component of pearlash is the potassium carbonate that was prepared traditionally by washing wood ash in lye. The alkalin gained this way was primarily used for glass production, whitening, tanning and saltpetre production. Hungarian pearlash was got into the international trade as early as in the 14th century (Mészáros n.d.).

Pearlash was produced in the traditional way (as described above) at industrial amounts between the mid-18th Century and the early 19th Century. The need for such a huge amount of woodash resulted in the decay of 2.3 million hectar of forests in the Hungarian Kingdom during a few decades. In 1756, 600 tons of pearlash was produced in 41 kilns in Veszprém County, that means in the Bakony Mountains (Eckhart 1922). The export of pearlash exceeded a massive 3686 tons at the level of Hungary in 1864, due to the growing demand in Western Europe, where the forests were already cutted out and besides, the price of wood was significantly low in Hungary. Hungarian pearlash was considered as carrying a high value, therefore the English glassworks and the Czech glass and textile industry exported it in limitless amounts (Mészáros n.d.). By the spread of Russian and American pearlash, and the artificially producted sodium carbonate, this industry sunk into the level of secondary industries.

The production of peralash can be divided into 4 phases according to the traditions of Bakony Mountains: making ash of wood, washing ash of wood, evaporazing of alkali and the calcinating (i.e. burning) of raw pearlash (Mészáros n.d.). The easiest way of making ash of wood was to put a glowing tinder into a hollow of a tree and wait until the tree burns out from the inside. That was not a safe method, as a whole forest could have burned in case of drought or the ash could have soaked from the rains, and only a sackful ash could have been made even from a large tree by this way. Burning above a stone-lined pit (foundry) and collecting the ash from the pit was a safer method. Workers were the poorer settlers in the Öreg-Bakony Mountains (Vajkai 1959). The largest amount of pearlash could be produced from raw foliage, bark, young proughts and branches of leafy trees. Burning had to be a slow process in favour of the high potassium content of the ash, therefore the wood was sprinkled with water. After the collection of ash, the second phase was that: "…ash was washed, the alkalin was evaporized and the remained brown alkalic mass was calcinated in keils, or previously in kettles, meanwhile this procedure the contaminating organic components were buried out" (Eckhart 1922).

There was a claim for large quantities of wood by pearlash workshops: "Based on beech wood, 1.45 units of pearlash could be produced from 1000 units of wood, and only 0.45 units of ash from 1000 units of pine-wood" (Eckhart 1922). A remained historical

evidence for pearlash making is the geographical name *Hamuházi-dűlő* (Ash-house balk) on the right side of the road between Akli and Pénzesgyőr villages, referring to an ash-house working as early as in 1782 according to the documents (Hudi 1998). If we look at the locally produced quick-lime, charcoal and pearlash, a picture of a new craft is taking shape: the glass production, having high importance in the Öreg-Bakony Mountains.

Glass, which had already been known by the early Hungarians at the time of their Conquestion, was produced in glass-houses. Glass production has grown from the Middle Ages and the number of glass-houses has grown in the 17th Century, when the glass has become part of an everyday peasant household. Glass was made from locally found sand or pebbles with high silicium dioxide contain, limestone and pearlash by fuseing and coloured with metal oxids (at first by chance and later consciously). Glass production was possible only in the vicinity of sand mines or high silicium dioxide containing rock formations, such as the Csatka pebble formation. The locally well-known glass-house was on the Som Mount. Its products were kept as family heirloom from generation to generation. The *huta* and *hütte* (glass-house) words in old geographical names prove evidence for the importance of this old craft in the area. One of the geographical names, *Óbánya* (Oldmine or Old glass-house in this meaning) marks an establishment on the map of the 1st Military Survey of Hungary (1763–1768). It was shut down in 1791 as the local forests were ruined, and a new glass-house named *Újbánya* (Newmine or New glass-house in this meaning) (*Nova Huta* in some of the documents and maps) was established near Pénzeskút-puszta (now part of Pénzesgyőr village). Ten thousands of glassware (glasses, bottles, window glasses and medicine bottles) were produced here. It is in connection with the fact that workers of the glass-house were the majority of the local population (over the farmstead cotters and domanial servants) in the 19th century (Hudi 1998). The glass-blowers of *Újbánya* were moved to Somhegy settlement in the first quarter of the 19th century where the well-known glass-house of Som Mount has already producing and its production was constant until 1859 (Wallner 1942).

Looking at the past it can be stated that the historical management forms cannot be mentioned as being simple and not considered to oblivion. This diversity has disappeared from the modern management; moreover, it is a necessity of the technical and technological development, but with the decreasing of diversity (agro- or agrobiodiversity) these management-historical memories will probably disappear as well.

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Reports of local inhabitants:
Liebisch ex verb.: Katalin Liebisch, 80 years old inhabitant in Pénzesgyőr
Pacher ex verb.: Károly Pacher, 70 years old inhabitant in Pénzesgyőr

TÉNYEK AZ ÖREG-BAKONY TÁJTÖRTÉNETÉHEZ

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Kulcsszavak: Bakony hegység, tájtörténet, állattartás az erdőben, erdőhasználat

Hajdani határhasználatunk és az egykori táj a mainál jóval színesebb és diverzebb volt. Egy adott terület tájtörténetének kutatása során tárulnak fel előttünk azok a folyamatok és hatások, amelyek eredményeként a mai állapot létrejött. Nincs ez másképpen a Kárpát-medencét egykor borító kiterjedt, zárt erdőségekkel sem. Az élőhely-átalakítás során jelentős mértékben visszaszorultak az erdők, megváltozott használatuk, így habitusuk is. Hazánk egyik legnagyobb zárt erdőtömbje a Bakony, amelynek kiterjedése jelentős mértékben csökkent az elmúlt 500–1000 évben, és amelynek mező- és erdőgazdálkodási hagyományai lassan eltűnnek a termelés intenzívvé, illetve belterjessé válásával. Az Öreg- vagy Magas-Bakony hagyományai hűen reprezentálják az egykori Bakony szokásait. A makkoltatás, az erdők legeltetése, a fák lombjának felhasználása takarmányozásra, vagy akár az erdei avar gyűjtése mindennapos volt még a XIX. századi állattartásban is. Az egyes, a fára, mint nyers- és fűtőanyagra épülő iparágakról pedig a vizsgált terület földrajzi helynévi anyaga tanúskodik.

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AN OVERVIEW OF THE FRENCH LANDSCAPE CHARACTERISTICS AND DYNAMICS ON A NATIONAL LEVEL

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Keywords: France, agriculture, landscape history, landscape character, evolution, Common Agricultural Policy

Summary: The development of many of the present characteristic features of the agricultural landscapes in France shows the historical passage of time. The aim of this paper is to identify and summarise this history and to highlight the critical points that marked this evolution. The first part is an overview of the literature demonstrating that in the French case, the variety of agricultural landscapes is not just the result of historical events but is also due to the geographic and demographic contexts, as well as to many other factors. For this paper, historical studies and other data on the development of the agricultural landscapes have been collected. This overview, from prehistory until the present, shows when, what and why these changes took place. The second part aims to demonstrate the major types of agricultural landscapes on a national level. The third part introduces two case studies. One is in the Massif Central region and the second one in the Pyrenees. In these examples, we focus on more details about these regional landscapes throughout time and in their present situation to help understanding how mountainous agricultural regions can have different utilities according to the interactions with their environment. And finally, a forecast will be made for the way current policies are likely to affect the future of the agricultural landscapes of France. The purpose of this type of work is to help understanding the current reality and to elaborate scenarios for the future of these landscapes in the coming years by considering and understanding what could affect the landscape and what form those factors could take, such as social crisis, lifestyles, ecological changes and the economic situation. By analyzing the past, understanding the present, and attempting to imagine the future, we aim to improve and sustain the land and the people.

Introduction

The word landscape was born in the 16th century in the minds of painters who designate the decorative elements in the backgrounds as landscapes. Now, the landscape features any portion of space that offered a vision. But long before the birth of the term, the concept was already there. Some interpreted images prove that the ancients thought the area already in terms of landscape, even if they did not name it (Michelin 1995).

Agricultural landscapes are taken more into consideration in these days. The agricultural areas are affected by many changes which sometimes cause the loss of agricultural landscapes. Nowadays we notice a growing interest of people, and agricultural landscapes are now considered as one of the defining themes for regional identities. In addition to this, it is known that the landscapes of agricultural areas have developed over a long time and what is seen now is the fruit of different practices throughout the years. So the purpose of this work is to understand how the French agricultural landscape became what it is now through an overview, from prehistory until the present, showing when, what and why these changes occurred. It is important to specify that the landscape units that existed before the French Revolution are not necessarily related to the present French territory. Thus, this historical chronology is more complex than for smaller and more homogeneous countries.

Material and methods

The purpose of this work is to help understanding the French agricultural landscapes. By analyzing the past, understanding the present, and attempting to imagine the future, we aim to improve and sustain the land and the people.

The development of many of the present characteristics of agricultural landscapes in France shows the historical passage of time. To understand these landscapes we needed to investigate the evolution of the agricultural lands in France. Most data come from the ENITA Library at Clermont-Ferrand and basically from the personal libraries of Mr. Yves Michelin and Mr. Laurent Rieutort who helped me a lot by providing me with books and references on agriculture, history, geography and demography as well as maps and personal knowledge of the region.

Data and historical studies outlining the development of the agricultural landscape have been collected. The critical points that marked the evolution of the agricultural areas in France over time have been gained from the following books: «Les paysages français: synthèse» by Beringuier 1999, the two volumes of « Histoire du Paysage Français» by Pitte 1983 and from «Archéologie de la France rurale: De la préhistoire aux temps modernes» by Coudart 1996. The information about the Pyrenees region was mainly form «La forêt, l'homme et le troupeau dans les Pyrénées, 6000 ans d'histoire de l'environnement entre Garonne et Méditerranée, Géode, Laboratoire d'écologie terrestre» Galop 1998, and the information about the Puys Chains was from the books :«L'Identité de l'Auvergne, Mythe ou Réalité Historique, essai sur une histoire de l'Auvergne des origines a nos jours» by Martin 2003 and «Les Jardins de Vulcain: paysages d'hier, d'aujourd'hui et de demain dans la chaine des Puys du Massif central français» by Michelin 1995. The actual situation of the French agricultural landscape was partly from the book «Historiens et Géographes N° 370: Vivre en France dans la Diversité» written by Miossec 2000. The policies that affect the agricultural landscapes in France were taken from internet sites and from interviews with local people.

This research started few months ago and the information collected led us to these results and conclusions.

Results and discussion

An overview of the French landscape

Prehistory

Before 6000 BC, the only actions are hunting, fishing, and collecting fruits and vegetables (Coudart 1996). The Neolithic people continue the practices of hunting and of gathering of fruits and vegetables. It is possible that the first areas where agriculture was introduced were those where the vegetation was already burned as a result of hunting (Pitte 1983).

In the south of Gaul, the first signs of rural society appear (domestication of plants and animals, food storage) in 6000 BC. In the north of Gaul, the beginning of the domestication of plants and animals appears in 4500 BC (Coudart 1996). The development of agriculture and the raising of animals spread throughout Gaul over 3 millennia. The exploitation of the forests by hunters exists contemporaneously with the cultivation of pasture lands for a long time during this period (Pitte 1983).

3000 BC, The first signs of permanent pathways appear, deforestation due to extraction of metals, such as bronze and iron and an intense deforestation on the limestone plains of the Parisian basin (Beringuier 1999).

Celtic invasions started 1500 BC. The Celts are an agricultural population by tradition, and many of the plowing techniques are improved along with the creation of the green fertilizer. The Celts are the first to create cities with agriculture taking place around them (Beringuier 1999).

Roman period

The first entry of Romans in the south of Gaul was in 125 BC. The conquest of Gaul by Caesar took place between 56 and 50 BC (Encyclopedia Universalis). During the Roman period, orchards, mainly vineyards, olive trees and chestnut trees, are planted in the campaign lands in the south (Encyclopedia Universalis). Geometric forms are adapted for rural pathways and agricultural lands. In 92 AD, the emperor orders the removal of half of the vines planted in Gaul and forbids any new vine culture (to maintain the level of cereal production) (Pitte 1983).

192 was the date of the beginning of the civil war in Gaul. A tragic period followed the civil war; there was a destruction of many lands between the years 235 and 275 (Encyclopedia Universalis).

The Roman Empire ended in the 5th century, which was followed by many changes like the relocation of settlements and the construction of new villages by the new occupants, and a decline of the cultivated lands for the benefit of the fallow land, heather and forest (Beringuier 1999).

The Middle Ages

Even after the end of the Roman period, the southern part of France is still influenced and manipulated by the Romans (especially the villages in high altitudes). The rural landscapes deteriorate during the medieval period. We notice that in this period the villages are formed around the castles, churches and monasteries.

From the beginning of the 11th century, the deforestation increases to the benefit of the agricultural lands. In the north and north-east of France, open fields are taking shape. In the western part of France, there is mostly bocage and the mosaic landscape. The kings and lords take conservative measures to stop the decline of the forest (Beringuier 1999).

In the 12th century, the agricultural areas reach their maximum levels. The first open fields in the center of the Parisian Basin were formed. The commercial exchange favours the development of animal husbandry and the speculative cultures.

During the 14th century the Hundred Years War and the Black Plague that appeared in France in that period, caused a demographic crisis (Pitte 1983).

The making of the French landscape

During the 16th century, the population increases to the level reached before the demographic crisis of the 14th and 15th centuries. This growth requires the extension of agriculture into new areas. We observed the beginning of land concentration and consolidation of open fields' plots in the center of the Parisian Basin, the transformation of the land slopes into cultivated lands by use of terracing techniques, the drainage of wet lands and the irrigation of areas affected by drought (Beringuier 1999).

From 1562 to 1598, the War of Religion between French Catholics and Protestants causes an unstable situation in France. In 1565, a horrible winter kills people, livestock and fruit trees.

In the 15th century, new plants were introduced to France; tomatoes were brought from the New World, potatoes from Peru, and corn from Colombia. Arriving to the 16th century the only grasslands left are the wet lands, the high mountains and the lands of poor soil (used for livestock grazing).

A period of prosperity took place in the 16th century after the effort of Minister Sully leading to the edict that marked the end of the war (Beringuier 1999).

The 17th century saw the beginning of vineyard specialization in the Mediterranean plains (Languedoc), and the drainage of coastal swamps in the north.

In 1669, a law is introduced allowing the intensive and rational exploitation of forests (Pitte 1983). In 1709, another horrible winter kills a great number of people, livestock and fruit trees.

At the beginning of the 18th century, legume crops were introduced on fallow (Beringuier 1999). In this period, the transport of agricultural products and ores was made by canoes via rivers. The development of the road network improves the transport of agricultural products.

An increase of the Feudal taxes which are proportional to the harvested production was followed by their abolition in the 4th of august 1789.

The French identity under construction

The 18th century saw the introduction of new forms of taxes by Napoleon based on the wealth of lands. 600,000 ha of fallow lands are transformed into agricultural lands. In this period agricultural production intensified through the introduction of mechanization and chemical fertilizers (Pitte 1983).

Also during the 19th century, the industrial revolution changed the landscape significantly. The development of the railroad network leads to the rural exodus which provided human resources for the industrial sector. Simultaneously, railroads were used to transport fertilizer, making its use more widespread (Beringuier 1999). 1876 was the beginning of the reforestation movement.

In the second half of the 18th century, the maximum population is reached in most rural areas; as a consequence there was an extension of agricultural area into the most difficult lands in the Mediterranean region through the use of terraces. Railway and urban markets are responsible for the fast appearance of new rural landscapes. For example, in the plain of Combat Venaissin there was an intensive agricultural production of legumes (horticulture) and fruit production with dense irrigation systems. The plains of Languedoc concentrated on viticulture. In the Normandy, there was grass; livestock and dairy production were largely exported to the capital. After that, France faced a serious economic crisis, due to importation of less costly wheat from Africa and beef from America. As a reaction, the French government closes the borders, blocking the modernization of agriculture.

Overgrazing the mountains of France caused a serious erosion which lead to the creation of a new law for the reforestation of lands.

From 1880, more than 6 million ha of the agricultural area in use is lost in one century (because of the crisis of *Phylloxera*, the world war one...). After 1945 the agricultural population continues its migration (Beringuier 1999). Remaining farmers expanded,

restructured and modernized their agricultural plots. Some regions maintained their agricultural areas, like the eastern plain of Corsica. In other regions, agricultural lands were deserted. This happened especially in mountains and in other disadvantaged zones, such as the Alps of the Haute Provence.

The influence of the CAP (Common Agricultural Policy)

During the second half of the century there was a real revolution in agriculture and husbandry. The increased mechanization of this period fosters the consolidation of smaller farms into large plots of agricultural land, with the more successful farms overtaking failing or abandoned ones. Farms are joined to form large blocks of agriculture especially in the plains of the Parisian Basin and the western areas. These mutations have consequences on the environment (Beringuier 1999). After the Second World War, the departments of the Massif Central see impressive progress in reforestation to the detriment of the remaining agro-pastoral lands. The forest in the last century gains twice its surface (Beringuier 1999).

Many important developments in agriculture were influenced by the Common Agricultural Policy (CAP) of the European (Economic) Community. The CAP of 1962-1966 helps the intensification of production which was favoring significant landscape changes like the union of lands, the elimination of hedges between plots, and the introduction of new irrigation systems. This period also watched the reforestation of mountainous areas and the cessation of cultivation in disadvantaged zones.

Between 1992 and 1997, about 160,000 ha are lost in to fallow land, but there remain gains of land surfaces by livestock and viticulture in the southeast (Côtes du Rhône, Corbières, Saint-Chinian) (Beringuier 1999).

During the 1980s, the support of oilseed culture by the European Community helps their expansion; like in the eastern part of the Paris Basin where the culture of colza was spreading, and the cultivation of sunflower in Charente or in the counties of the Loire and the Garonne.

The premium for the uprooting of vineyards gradually reduces the share of vines in the landscape of the Languedoc plain; in return, wheat gains in some areas.

The Second CAP in 1992, which takes into consideration agro-environmental measures, lead to the conservation of ecological places and landscapes. Also, the development of agriculture over grasslands took place due to greater financial support for agriculture than for husbandry.

The latest CAP in 2009 removed the stability of milk price; changes are anticipated in the landscapes where livestock are raised. This CAP also increases the orientation toward the development of fuel crops. Currently farmers represent 2% of the active population, meaning that the exploitations are few in number but large in size, with reduced manpower in this sector.

As we can see the European projects have a big effect on the agricultural landscape. After all, the crises that touched the agricultural sector, the French and the European policies were concentrating on helping farmers through different programs to encourage them not to abandon their lands, and to avoid having them relocate to cities with no work as well as encouraging them to plant what the country needs.

We can assume that the French landscapes are in the first place a political construction, where farmers benefit from financial aid through these different programs.

The Present Agricultural Landscapes

Certain profound changes have affected the French countryside. It is during the period of "The Glorious Thirty" (which begins after the 2nd World War) that the French countryside has experienced its most profound changes since the modernization. The enlargement of scale in farming has changed the face of the countryside that was in the late 1970s, more open than it was 20 years earlier. But the movement is not general; it has not progressed in the same way everywhere, even though sometimes the movement was in the opposite direction with the closure of agrarian spaces in disadvantaged areas. As a result, rural areas have retained a significant degree of diversity (Miossec 2000).

The countryside of France in the north and the east is mainly composed of open fields: the Paris basin (especially Beauce, Brie, and Champagne), the region of Alsace, the superior basin of Saône and Limagne. These places were best suited to the modernization of agriculture, they increased their land surface to be more adapted to machinery. At the end of spring, one can observe clearly the mosaic pieces formed by wheat, oat, corn, legume crops, and sugar beet sometimes (Miossec 2000).

The bocage in France form a long band, which cut France diagonally from the Bretagne to the Jura passing by the Central Massif and the Saone (Miossec 2000).

The South West of France disposes some rural landscapes that one cannot consider as open fields or bocage with its mosaic of agricultural lands and heather. This landscape is called "type Aquitain" which is the best term to describe it. And it is well seen in the Quercy, the Molasse, the Bordelais and the Foret Landaise (Miossec 2000).

The Mediterranean part was characterized by the abandonment of lands. Here, the diminishing of agriculture gave way for heather that now covers all the old terraces of the region. However, the south of the Mediterranean region has legumes and fruit trees like in the Roussillon and irrigated legumes in the Comtat Venaissin. The landscapes vary between the different regions like, the Cevennes, the Corbieres, and the Preaples. The agriculture of olive trees and vines find some new entries nowadays (Miossec 2000).

Two case studies

The Puys chain was used for agriculture since ancient times. Cycles of deforestation and reforestation occurred. In the centuries before the Romans, the agricultural pressure accelerated. At the end of the Roman period, the forest barely existed.

In the early middle Ages, new villages developed around the castles, churches and monasteries. A new organisation of the territory appeared, the cultivated lands were concentrated around the houses, and the pasture lands further away.

Between the 12th and 13th century, agriculture expanded and forests regressed.

In the 14th century, the Hundred Years War and the Black Death led to a decrease of population. A movement of reforestation of lands far from the villages took place.

At the beginning of the 15th century, reforestation took place on mountain slopes. Therefore the lords encouraged the resettlement of people in this area by the authorization of collective land rights.

From the 17th century, another regression of the forest caused by wood-cutting and grazing, which decrease the natural regeneration of forests. Before the French revolution the forest had disappeared and its place was taken by grains. (The grains were used to pay the land lords).

During the 1st half of the 19th century, agriculture became more demanding in man-power, but more productive than before, too (with no more pressure from the land lords). In 1830, the first agricultural revolution took place; the farmers cultivated cereals near their houses, and used the communal lands for grazing animals.

From 1860 to 1870 the pasture lands were in a very bad condition, because there were no restrictions, and the methods used in grazing harmed these lands. The first signs of reforestation by humans according to the new laws were in 1880. There were also a retreat of cultivation in disadvantaged zones; therefore there was a development of heather.

The villages, whose populations had doubled, now became subject to a rural exodus. From 1920, the collective pastures were abandoned.

In less than 30 years the stability of the landscape of this region disappeared, where spontaneous forests or planted ones started to grow because of the modification of agricultural practices. Husbandry took top priority, cultivated lands became mechanized and abandon lands were planted with forest trees (Martin 2003).

In *the Pyrenees*, from the first centuries after AD, livestock raising activity was in the second place after the cereal culture in this region. The reforestation took place after the Roman period until the 8th century.

The medieval expansion started at the beginning of the 10th century and was amplified at the 12th century. It reached its peak by the end of the 13th century, where we can see the importance of the pastoral activity plus the agriculture of cereals and vines.

Between the 12th and the 13th century, the deforestation was so important. In the middle of the 12th century, the first measures concerning the deforestation and the exploitation of forests were taken. This reveals the concern of local authorities facing the size of the deforestation.

Between 1298 and 1329, the decrease of the pastoral activities matches with the selling of the monastery pastures to another village.

Posterior to the apogee of the middle age, there was a depression of the human activities from the 14th till the end of the 15th century caused by the Hundred Years War and the Black Plague which led to a demographic reduction. The increase of pine trees indicates the reforestation which was consecutive to the decrease of the pastoral and agricultural activities.

During the 15th century the installation of 2 wide pastoral units indicates that there is a persistent vivacity in that sector. The installation of these units could be a social reaction facing the fall down that took place at the beginning of this century or a reconstruction after crisis. The 15th century was the beginning of raising livestock for milk production on the mountains.

From the 16th century, an expansion of the agro pastoral activities highlights the increase of cereal culture. From the end of the 16th century, the reforestation took place and the level of pine increased in the region. Such paradox can be explained either by the good management of the forest, or by the modification of the livestock raising systems from livestock for meat and wool to milk production, that have fewer needs in pastoral lands. Therefore the massive deforestation is no longer necessary.

The decrease of raising livestock from the 18th century was also in favor of the reforestation.

By comparing these two cases, some elements can be identified:

In both cases, there was a movement of deforestation in the Roman period, and after the end of the Roman Empire, reforestation took place.

Between the 12th and the 13th century, there was a regression of forests and an agriculture expansion over the deforested area in both areas.

But in the Pyrenees, between 1298 and 1329, there was a decrease of the pastoral activities that matches with the selling of the monastery pastures to another village.

In the 14th century, the Hundred Years War and the Black Death led to the decrease of population and a depression of the human activities in both regions.

At the beginning of the 15th century, reforestation took place. Therefore, in the Puys chain, the lords encourage the reinstallation of people in this area by the authorization of collective land right. As for the Pyrenees, there was an installation of two wide pastoral units indicating a social reaction facing the fall down that was in the beginning of this century or a reconstitution after crisis.

From the 17th century, a regression of the forest caused by the cuts of woods and the effect of grazing took place in the Puys chain. As for the Pyrenees' case, there was a change in the type of livestock raising system from livestock for meat and wool to milk production, that have fewer needs in pastoral lands, which had less deforestation movement and in some places the level of pin increased in the region.

The decrease of the livestock rising from the 18th century was also in favor of the reforestation in the Pyrenees. As for the Puys chain, the first signs of reforestation by humans started after the new law, in 1880.

In less than 30 years the stability of the landscape of these regions disappeared, where spontaneous forests or planted ones started to grow because of the modification of agricultural practices (Galop 1998).

The way current policies are affecting the future agricultural landscapes in France

As we can see in the latest CAP (2009), the price of milk is no longer to be kept stable; changes are anticipated in the landscapes where livestock are raised. Also there is an increase in orientation towards the development of fuel crops. All these trends will affect the landscape.

Also, a plan was proposed by the ministry of agriculture in France called "Objectif Terre 2020" that has the idea of agriculture economically performing with an efficient ecology based on a better water consumption, and contribution in the restoration of its ecological conditions, a contribution to the enrichment of the biodiversity, and a protection of agricultural soils (Http1).

All this will have a direct and strong impact on the agricultural landscape in France.

Conclusion

As a conclusion we can say that there are three main factors that affect the changing of the landscapes. The first one is the type and level of production (cattle, sheep or cereals), the second is the type of practices and level of knowledge and the third one is the density of population and farmers.

These factors are related to 3 dimensions. One, the climate conditions (little ice age or warming), two, the economic situation and trades rules and three, the social situation (individual or collective farming systems).

And finally we should not forget the influence of the national and European policies.

To recapitulate and to synthesize the ideas that just passed, in the following table a strategic analysis for the future is carried out:

Table 1. Strategic analysis for the future
1. táblázat A jövő stratégiai elemzése

STRENGTHS	*WEAKNESSES*
➢ The presence of good potential for production ➢ The presence of diversity of situations ➢ The good knowledge base of the farmers ➢ The agriculture: a profitable activity with a good economical and technical environment in france ➢ The presence of a national identity based on agricultural landscapes	➢ The environmental impacts ➢ The decrease of farmers population ➢ The presence of too much work for shrinking farmers ➢ A strong dependency on big companies ➢ The presence of contrasts between productive and poor regions ➢ The dependency of farmers on CAP subsidies
OPPORTUNITIES	*THREATS*
➢ The opportunity of having a link between landscapes and tourism ➢ The large demand of the urban population to preserve these agricultural landscapes	➢ Competition and conflicts over the land use in suburban areas ➢ The evolution of CAP ➢ The declining of interest from today's politicians

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A FRANCIA TÁJ JELLEMZŐINEK ÉS DINAMIKÁJÁNAK ÁTTEKINTÉSE NEMZETI SZINTEN

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Kulcsszavak: Franciaország, mezőgazdaság, tájtörténet, tájjellemző, fejlődés, Közös Agrár-politika

A francia mezőgazdasági tájak számos jelenlegi jellemzőjének fejlődése mutatja a történelmi idők jellegzetességeit. A cikk célja, hogy meghatározza és összefoglalja ezt a történelmet és felhívja a figyelmet a kritikus történésekre, amelyek a fejlődés során bekövetkeztek. Az első rész az irodalom áttekintése, amely a francia esetben azt mutatja, hogy az agrártájak sokfélesége nem csak a történelmi események eredménye, hanem a földrajzi és a népességi jellegzetességek is hatással voltak rájuk, és még egyéb tényezők. Történelmi tanulmányok és egyéb adatok kerültek felhasználásra a mezőgazdasági tájak fejlődésének jellemzéséhez. A jelenlegi áttekintés a korai történelmi eseményektől a jelenkorig bemutatja, hogy mik voltak a változások, mikor és miért következtek be? A második rész célja a fő agrártáj típusok bemutatása nemzeti szinten A harmadik részben két esettanulmányt olvashatunk. Az egyik a Massif Central régiót, a másik a Pireneusok területét jellemzi. Ezekben a példákban a regionális tájakat részletesebben jellemezzük történelmi szempontból és a jelenlegi helyzetet is vizsgálva, hogy érthetőbbé tegyük, hogy a hegyvidéki agrár régiók milyen haszonnal járnak a környezettel való kölcsönhatásuk során. Végül előrejelzést mutatunk be arra vonatkozóan, hogy a jelenlegi politikai döntések hogyan befolyásolják a francia agrártájak jövőjét. Az ilyen típusú munka célja, hogy segítse a jelenlegi realitások megértését és hogy kidolgozzon szcenáriókat ezen tájak jövőjére nézve, figyelembe véve és megértve azokat a hatásokat (pl. szociális krízis, életmód, ökológiai változások és gazdasági helyzet). A múlt elemzésével, a jelen megértésével és a jövőkép elképzelésével szeretnénk segíteni a tájak és emberek fennmaradásában és fejlődésében.

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GLOSSARY ON AGRICULTURAL LANDSCAPES

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The following glossary of terms related to the European agricultural landscape shall serve as a common basis for all parties, working in or on agricultural landscapes. Some of the terms are quite common and sometimes used in our every day language, but they often have different meanings in particular countries. These differences may be a result of varying linguistic developments, history and traditions. The glossary contains 40 terms in seven languages; English, Dutch, Estonian, French, German, Hungarian, and Spanish. Each term begins with an English definition, illustrated by a photograph. If there are differences in meanings and connotations of single countries, they are mentioned in the designated country's column. This work is to be continued.

Introduction

The term glossary evolved from the Latin word "glossarium" (Greek γλωσσάριο from γλωσσα, glóssa – "tongue, language") and describes a listing of terms with explanations.

In ancient times and during the Middle Ages, the development of glossaries arose from the need to collect terms requiring specific explanations (archaisms, foreign words, etc…), as well as for the study of grammar, and as tools for the translation of the Bible and other historical texts (e.g. Homer and others).

Bilingual glossaries were also produced in the Late Classical Period (Greek-Latin, Latin-Greek) to facilitate the learning and understanding of both languages. In this manner, complete books with wordings were developed at a later stage.

Today, glossaries provide editors and scientists with specific explanations for technical terms. These lists mostly provide definitions of terms in the technical, scientific or philosophical fields and ensure the correct use of these terms for communication between specialists. Glossaries allow people working on a topic to assume that they are using universal terms and terminologies commonly understood and used by others.

Palang et al. (2006), and Roth et al. (2005, online at http1), amongst others, have highlighted that although some terms are quite common and sometimes used in our every day language, they may also have different meanings in the other countries (and/

or regions?). *Inter alia*, these differences are a result of varying linguistic developments, history and traditions.

The following glossary shall serve as a starting point to European agricultural landscape and shall serve as a starting point. It is the result of a common effort between partners from 13 countries, who have worked together within the Eucaland Project (HTTP2), funded by the Culture Program of the European Commission and initiated by the EucaLand-Network (HTTP3).

This glossary is the beginning and the basis for further discussions and further projects and will ideally be of help for individuals from different countries and different disciplines. In the glossary, each term is given in the different languages, and begins always with the definition of the term in English, and is subsequently illustrated by a photograph. If there are specific meanings and connotations in single countries, they are mentioned in the respective country column. More information on the historical background and their development throughout time can be found e.g. in the Eucaland Project book (PUNGETTI et al, 2010).

The authors would like to draw attention especially to part II "European agricultural landscape history" by Hans Renes which begins with a reflection on the word agriculture and shows the need for an European glossary, and part III "Complexity and contingency: classifying the influence of agriculture on European landscape" by Graham Fairclough.

When attempting a glossary for trans and interdisciplinary work on agricultural landscapes, there are, of course, many related words that need to be defined. For example, agricultural landscape, agrarian landscape, agri-landscape, and agro-landscape. All are terms that are used in a certain context and more in some countries, and less in others. After long discussions among the project members, it was decided that "agricultural landscape" defines best, what this glossary is all about: the landscape that was shaped during the centuries (and in some cases, even thousands of years), by the work of humans in order to produce food. Because of this it was also important to include the word "cultural" (this is not obvious, why cultural needs to be included because of the definition of agricultural landscape). Other terms used may have an emphasis more in one direction or in another. For example, "Agrolandscape" is more orientated towards economics, so is the Estonian term "põllumajandus" when translated word-by-word, it means: "economy of fields", however other terms, such as "Agrilandscape" refer specifically to agriculture as a very technical business (with huge machines, chemical fertiliser etc. – closer to industrial production than to the overall land use). The term "Agricultural" includes both large-scale, industrial farming as well as the low-input farms with marginal earnings. And landscape itself as a word and concept has various backgrounds, which makes it rather complicated on several levels to deal with as a term.

The understanding of the term landscape in everyday speech or scientific jargon might differ, despite the fact that participatory democracy or 'bottom-up' approaches are prevailing currently in academia. This is also underpinned in the recent most commonly used definition in European Landscape Convention (ELC, Council of Europe 2000: 3): "an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors". It is worthwhile to keep in mind that alongside this interpretation, allegedly 300 others exist depending on disciplinary, approach, language and timely circumstances proven useful for diverse ends. Thus, landscape can only be understood in its socio-historic context (JONES 1991). Disciplines pertaining to

landscape could include: earth sciences, life sciences, agricultural sciences, geography, eco-technology, landscape architecture, landscape ecology, planning, anthropology, archaeology, history, ethnography, arts, sociology etc. Disparities in approaches can be exemplified with the case of geography, as physical and human geography (Cosgrove 2000, Duncan 2000, Mitchell 2005, Wylie 2009) deal with landscapes on fairly different ontological, epistemological and methodological premises, meaning that the sub-fields of human geography (social, anthropological, cultural, historical geography etc.) may be closer to social studies and humanities than to physical geography. There are two main predominant strands influenced by language: English 'scenery' (Merriam-Webster) that was developed through Dutch landscape paintings in 16th century and earlier the German and Scandinavian concept which refers to the territory, the conditions of that territory, and the customs and rules with which the land was governed (Olwig 1996). Thus, landscape is "a polysemic term referring to the appearance of an area, the assemblage of objects used to produce that appearance, and the area itself" (Duncan 2000: 429, Mitchell 2005). Still, holistic approaches towards landscape (antrop 2000) are possible as also seen from the ELC definition that ties nature and culture.

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http6: http://dict.leo.org (16/06/2008)
http7: http://home.comcast.net/~gyde/index.html (16/06/2008)

From Table 1:
http8: http://dict.leo.org (10/02/2010)
http9: http://dict.leo.org http://www.zalf.de/home_zalf/sites/visualdiversity/ (10/02/2010)
http10: http://www.zalf.de/home_zalf/sites/visualdiversity/ (10/02/2010)
http11: http://www.zalf.de/home_zalf/sites/visualdiversity/

Table 1. Glossary of Agricultural Terms with translation in different languages
1. táblázat Mezőgazdasági fogalmak gyűjteménye különböző nyelveken

1. Agricultural landscape

Definition: Landscapes which are strongly related to past and/or present agricultural activity. They may contain some of these elements or more:
- Farmland, cultivated land, grasslands, meadows
- Horticulture, viticulture, olive trees, fruit trees
- Small infrastructure elements, e.g. roads, agricultural buildings, farmhouses, agrarian settlements.
- Vegetation structures, green corridors, hedges, ditches, stone fences, terraces…
- Forest mosaic and forest elements within an agricultural context (both spatial and functional)
- Remains and relics of past agricultural activity which can still be perceived (directly or indirectly) today.

Source
Definition elaborated by the Eucaland-Project for project purposes (Velarde et al., 2010)

Photography

Figure 1. East-Devon, UK (Photo: Fairclough 03/2008)
1. ábra Kelet-Devon, UK (Fotó: Fairclough 2008/03)

Dutch	French	German	Hungarian	Estonian	Spanish
Agrarisch landschap	Paysage agricole	Agrarland-schaft	agrártáj	Põllumajandusmaastik*	Paisaje agrícola

*also: põllumajanduslik maastik

2. Boundary; land boundaries

Definition: A clearly de-fined and bounded-of unified topographical area. Plot boundary (UK)/ lot line (US): line of record bounding a lot, which divides one lot from another lot, or from a public or private street or any other public space.

Source:
http8
Evert (2004), p. 282.

Photograph

Figure 2. Wensleydale, Yorkshire, UK
(Photo: Fairclough 04/2005)
2. ábra Wensleydale, Yorkshire, UK (Fotó: Fairclough 2005/04)

Dutch	French	German	Hungarian	Estonian	Spanish
grens, perceels-grens	bornes; d'une propriété/ champ/parcelle, limite parcellaire	Grenzen; Grundstücks-grenze; Flurgrenze	határ, táblahatár, tájhatár	piir; piiritletud ala	limites (de una propiedad/de un territorio), frontera

3. Coltura Promiscua (= Alterna; Italian)

Definition: Mixed intensive farming in the middle of Italy, "[…) "classical" vertical layers in vegetation consisting of trees, bushes and ground cover are very much in evidence."

Source
MEEUS et al. (1990), p. 304.
ZIMMERMANN (2006), p. 362.

Photograph

Figure 3. Old overgrown Coltura Promiscua fields close to new very intensive orchards, Vinci, Italy (Photo: Kruse 1999)
3. ábra Idős, túlnőtt Coltura Promiscua mezők közel egy új, intenzív gyümölcsöshöz. Vinci, Olaszország (Fotó: Kruse 1999)

French: Coltura Promiscua
Not used in English, Dutch, German, Hungarian, Estonian and Spanish.

4. Common Agricultural Policy (CAP)

Definition

Common Agricultural Policy of the European Community (CAP).
"The Common Agricultural Policy (CAP) for the European Union was established in 1963 and has provided the basis for Europe's food and agricultural programs. [...] with four basic principles**:**

- A unified market for the free movement of agricultural products in the European Union covered by community preference.
- Financial solidarity: All costs of the CAP are financed out of a communal treasury, FEOGA (European Fund for Orientation and Agriculture Guarantee), supported by import tariffs and contributions from European countries.
- Community preference: European products were to be given preference over imported products.
- Parity and productivity: Farmers' incomes were to be equal to incomes in the other sectors, with reasonable prices in order to permit food access to the consumer.

Common Market Organizations (CMOs) were also introduced in the original CAP and still exist today. Within CMOs, each group of food and agricultural products is organized by corresponding rules. CMOs set minimum prices for products at the EU-wide level. Currently, there are 21 Common Market Organizations.

Source	**Photograph**
Delayen (2007), p 1.	 *Figure 4.* Intensive (recent) agriculture with silo balls, Mecklenburg-Western Pomerania, Germany (Photo: Roth 2008) *4. ábra* Jelenleg is intenzív mezőgazdasági terület silóbálákkal, Mecklenburg, Nyugat-Pomeránia, Németország (Fotó: Roth 2008)

Dutch	**French**	**German**	**Hungarian**	**Estonian**	**Spanish**
gemeenschappelijk landbouwbeleid	Politique Agricole Commune (PAC)	Gemeinsame Agrarpolitik (GAP)	Közös Agrár Politika (KAP)	ühine põllumajanduspoliitika (ÜPP)	Política Agrícola Común (PAC)

5. Common land	
Definition	**Photograph**
(1) Land, that is used by several / all people/farmers of an area. Common land exist still today, e.g. in mountain regions (e.g. the Alps) or on transhumance pathways. Pasture or woodland owned and managed by a local community for joint use(2) Pasture or woodland owned an managed by a local community for joint use ." **Sources:** (1) Definition elaborated by the Eucaland-Project for project purposes (2) Evert 2004: p. 24	 *Figure 5.* Sheep herds grazing in the Pyrenees on common land, Artouste, France (Photo: Kruse 2008) *5. ábra* Legelő juhnyáj a Pireneusokban közösségi legelőn, Artouste, Franciaország (Fotó: Kruse 2008)

Dutch	French	German	Hungarian	Estonian	Spanish
gemene grond	bien communal, communaux	Allmende, Allmendweide, Gemeinschaftsland	közösségi földek	Kogukon-namaa (kogu-kondlik maa)	tierras comunales

6. Cultural landscape

Definition

(1) "Cultural landscapes (…) represent the 'combined works of nature and of man' (…). They are illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal.".

(2) "Landscape which has been largely or completely transformed from its natural state by actions of man (antonym: natural landscape).
(3) Landscape which represents both the results of natural and human works and illustrates the evolution of human society and settle-ment in time and space and which has acquired socially and culturally recognised values."

Source
(1) UNESCO (2008), p. 14.
(2) EVERT (2004) p. 358.
(3) HTTP10

Photograph

Figure 6. Dutch windmills used for drainage, to make them useable for mankind (became synonym for human creative will), Kinderdijk, The Netherlands (Photo: Kruse 2009)
6. ábra Holland szélmalmok lecsapoláshoz (a kreatív emberi akarat szinonimája lett), Kinderjilk, Hollandia (Fotó: Kruse 2009)

Dutch	French	German	Hungarian	Estonian	Spanish
cultuur-landschap	paysage culturel, paysage humanisé	Kultur-landschaft	kultúrtáj	Kultuur-maastik	paisaje cultural

7. Dehesas (Spanish), see also **Montados (Portugese)**

Definition

The Dehesa systems are genuine forms of exploitation of the Mediterranean forests in which the native trees, holm oak, oak and cork oak, are spaced out or inserted in a continuum of grasslands. The resulting landscape, which combines mature ecological elements (oak trees) with other rejuvenated ones (grasslands) maintains a high biological diversity. A balance is thus obtained between exploitation and conservation making up a diverse landscape produced by the combination of small units with different agricultural uses. This dehesa-type mosaic of crops, grasslands, shrublands and scattered trees provides the necessary ecological conditions for a large number of plant and animal species.

Source
Gómez-Limón (1999), p. 166.
Zimmermann (2006), p. 364.

Photograph

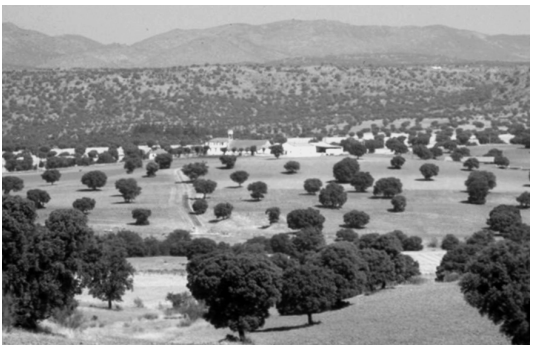


Figure 7. Dehesa in Guadarrama, Madrid, Spain (Photo: Olmo 2004)
7. ábra Dehesa Guadarramaban, Madrid, Spanyolország (Fotó: Olmo 2004)

Estonian: in principle something similar is "wooden meadow" (puisniit) – can be both grazing grounds/hay making underneath the sparse native trees left from forest.
No explanation for other languages was formed.

8. Delta

Definition

(1) "The Deltas of southern Europe are intensively cultivated areas, comparable in this respect with the Polders of NW Europe. (…) They are open landscapes with concentrations of rural and urban development. It is a young landscape. "The layout of the land is therefore quite regular. Patterns of rectangular fields alternate in form and orientation." Ex.: Les Landes and Languedoc-Rous-sillon (FR), Po valley (IT Emilia Romagna, Lombardia), Ebro valley (ES), PT (Tejo, Douro)
(2) Fan-shaped alluvial deposit of sediment at the mouth of a river.

Photograph

Figure 8. Agricultural activity on an alluvial fan built by a river near Thessaloniki, Greece (Photo: Centeri 2010)
8. ábra Mezőgazdasági tevékenység egy folyódelta által épített síkságon Thessaloniki mellett (Görögország) (Fotó: Centeri 2010)

Sources
(1) Meeus et al. (1990), p. 313.
(2) Evert (2004), p. 148.

Dutch	French	German	Hungarian	Estonian	Spanish
Delta	delta	Delta, Flußdelta	delta	delta, jõesuue*	Delta

*but does not constitute as cultivated or built-up phenomena in Estonia

9. Despoliation of the landscape by development

Definition

(1) ... often combined with the loss of their regional identity/character by development = growth of settlements and infrastructure.
(2) Unplanned scattering of housing developments in rural areas, and, in some places, of vacation homes in the countryside

Source

(1) LANGENSCHEIDT (1973)
(2) EVERT (2004), p. 755.

Photograph

Figure 9. Despoliation of the landscape near Tallinn, Estonia (Photo: Printsmann 2007)
9. ábra Fejlesztés hatására átalakult táj Tallin mellett, Észtország (Fotó: Printsmann 2007)

Dutch	French	German	Hungarian	Estonian	Spanish
verrommeling	mitage du paysage	Zersiedelung der Landschaft	fejlesztés hatására tönkretett táj	-	deterioro paisajístico

10. Enclosed land (= Bocage)

Definition

"Enclosed landscape, small, rectangular strips of land, lumped piecemeal, some smaller than half a hectare, each enclosed by hedgerows or low stone walls in a gently sloping landscape." Ex.: Bretagne (F), Normandie (F), N-W Denmark, Wales, S-W Scotland, E-Ireland

Source

MEEUS et al. (1990), p. 307.

Photograph

Figure 10. Isle of Man, enclosed fields (Photo: Fairclough 07/2003)
10. ábra Man szigete, körbezárt földek (Fotó: Fairclough 2003/07)

Dutch	French	German	Spanish
kampenlandschap; bocage	bocage, paysage d'enclos	Heckenlandschaft	boscaje*

*Se llama **bocage** a un paisaje compuesto de pequeñas parcelas irregulares (tierras de cultivo y prados), separadas entre sí por setos vivos, muretes y taludes, y por árboles que a menudo bordean los caminos (Source: Online encyclopaedia "Wikipedia").
No definition in Hungarian and Estonian.

11. Fallow land = idle land = waste land (see social fallow and transitional meadow)

Definition	**Photograph**
(1) Agricultural land, where no agricul-tural production takes place; or temporarily between two crops. (2) Previously worked land, left uncultivated for longer than one year **Source** (1) Developed by the Eucaland Project group (2) Evert (2004), p. 137.	 *Figure 11.* Fields not in use for different reasons: short time fallow between two crops, South-Estonia (Photo: Printsmann 2006) *11. ábra* Különböző okokból használaton kívüli területek: rövid idejű parlag két termény között. Dél-Észtország (Fotó: Printsmann 2006)

Dutch	**French**	**German**	**Hungarian**	**Estonian**	**Spanish**
braak, braakliggend land	jachère, terre en friche, terre en jachère	die Brache, das Brachland	ugar	sööt (söötis maa) (for one year), kesa (kesamaa); tühermaa, kõnnumaa (for an undefined longer period)	barbecho; tierra baldía; erial

12. Farmland = arable (farm) land, cropland, infield

Definition: Land which can be used/ is used for growing crops with no or nearly no trees. Different kind of borders are characteristic of farmland, such as: hedges, ditches, boundary ridge, boulder walls etc. and aid in dividing farmland into uses. **Source:** Definition elaborated by the Eucaland-Project for project purposes	**Photograph**  *Figure 12.* Farmland with buildings, pasture and arable land, Karcag, Hungary (Photo: Centeri 2004) *12. ábra* Jellegzetes tanya, épületekkel, legelővel és szántóval, Karcag, Magyarország (Fotó: Centeri 2004)

Dutch	French	German	Hungarian	Estonian	Spanish
land-bouw-grond	surface agri-cole utile (pays agri-cole, champs)	Landwirt-schaftliche Nutzfläche (Ackerland)	mezőgaz-dasági terület	haritav maa (põlluma-janduslik maa if out-fields are included, i.e. grazing and hay making)	Tierras de cultivo, suelo agrícola

13. Field

Definition
Field is an area of land that is enclosed or otherwise defined for example by use, wheat field, corn field, grass field, used for agricultural purposes such as: cultivating crops, usage as a paddock or a general livestock enclosure. A field could be land left fallow or arable.

Source
Definition elaborated by the Eucaland-Project for project purposes

Photograph

Figure 13. Different large scale fields in springtime, Champagne, France (Photo: Kruse 2007)
13. ábra Különböző nagy táblák tavasszal, Champagne, France (Fotó: Kruse 2007)

Dutch	French	German	Hungarian	Estonian	Spanish
veld, perceel	champs	Feld	mező	põld	campos de cultivo

14. Forest

Definition

(1) A forest is an area with a high density of trees. There are many definitions of a forest, based on various criteria. Historically, "forest" meant an uncultivated area legally set aside for hunting by feudal nobility, and these hunting forests were not necessarily wooded if at all (see Royal Forest). However, as hunting forests did often include considerable areas of woodland, the word forest eventually came to more generally mean wooded land. Woodland is ecologically distinct from a forest.

The "Forest Information System-Project" found over 890 definitions for forest.
(2) An area within an administrative boundary of a forest agency, private, royal, church or public property, whether having trees or not.
(3) Plant community, composed principally of trees, and covering a large area

Source
(1) Langenscheidt (1973)
(2) Definition used by the Eucaland Project
(3) Evert (2004), p. 709.

Photograph

Figure 14. Forestry in the Romanian Carpathian mountains (Photo: Kruse 2009)
14. ábra Erdő a román Kárpátokban (Fotó: Kruse 2009)

Dutch	French	German	Hungarian	Estonian	Spanish
bos	forêt	Wald, Forst	erdő	mets	monte, bosque

15. Heathland

Definition

(1) Heaths are shrub land habitats characterised by open, low growing woody vegetation, found on mainly infertile acidic soils, or on respectively poor soils. They are similar to moorland, but they differ in terms of climate and vegetation. Heathland is generally warmer and drier than moorland. Heathlands can be found at the coast line (e.g. Mediterranean coasts) as well as in the plain land itself (e.g. Germany).
(2) Extensive pastureland of uncultivated, podsol soils with a vegetation dominated by dwarf *ericceous* shrubs, dwarf oak, and juniper.

Photograph

Figure 15. Lüneburger Heide, one of the best known examples of heathland, created by sheep grazing (dominant species: *Calendula vulgaris*), N-Germany (Photo: Kruse 2005)
15. ábra Lüneburger Heide, az egyik legjellegzetesebb "heathland", juhlegelés hatására alakult ki (domináns a *Calendula vulgaris*), É-Németország (Fotó: Kruse 2005)

Source
(1) Definition elaborated by the Eucaland Project for project purposes
(2) Evert (2004), p. 301

Dutch	French	German	Hungarian	Estonian	Spanish
heide	bruyère, lande	Heide	fenyér	nõmm	Brezal, matorral, Landa

16. Highlands

Definition: (1) "(…) rough, empty and abandoned. (…) mountains and hills influenced by extremely wet conditions (up to 2000 mm of rain per year). Land use is limited to forestry below the tree line on maintain slopes and extensive sheep grazing with a scattered farm here and there. (…) Heathland, moors, scattered lakes and the presence of sheep determine the pastoral character of the landscape. Apart from forested areas trees are quite scarce, with occasional willows and beeches. Farming opportunities are limited." Ex.: Highlands of Ireland, Scotland, Norway. (2) Low mountainous region of a country.

Source
(1) MEEUS et al. (1990), p. 311
(2) EVERT (2004), p. 415

Photograph

Figure 16. Dorset, UK (Photo: Fairclough 08/2002)
16. ábra Dorset, UK (Fotó: Fairclough 2002/08)

Dutch	French	German	Hungarian	Estonian	Spanish
-	région Montagnarde, moyen-ne montagne, haute terre (FEL, 1962)	Mittelgebirge (500–1000 m) is applied to the wooded mountain system of Middle Germany or portions of it.	felföldek	(mägismaa) – but does not occur in Estonia	cumbres, sierras, tierras de montaña,

17. Huertas (Spanish)

Definition	**Photograph**
"On the seaside boundaries of the vast, dry Mediterra-nean open land, regions of intensive cultivation are found. They are intersected by irrigation ditches and are often terraced. Vegetables and fruits of all kinds are grown. These are the oases of the Mediterranean." Ex.: Small regions in SW-Italy and S-, SE-Spain **Source** Meeus et al. (1990), p. 304	 *Figure 17.* Huertas in Spain, intensive fruit tree cultivation and irrigation ditches* *17. ábra* Huertas (intenzív gyümölcsös és öntözőárkok) Spanyolországban*

*ESTEPA research group on Heritage, Landscape and Territory. Department de Geografia University de València. Spain, 2008

English: Mediterranean Orchard (no other translations)

18. Kampen (Dutch)

Definition	**Photograph**
"The fields are somewhat larger and more uniform than those of the Bocages but still have a patchwork quality to them." Kampens have generally cool, marine climate conditions, Ex. Vlaanderen (BE), S-NL, NRW (DE) **Source** Meeus et al. (1990), p. 309.	 *Figure 18.* Kamp: Enclosure, particularly in the sandy regions of Flanders, the Netherlands and NW Germany. Near Ede (The Netherlands) (Photo: Renes 1983) *18. ábra* Kamp: körbezárt terület, különösen Flandria homokos részén, Hollandia és ÉNy Németország területén. Ede közelében (Hollandia) (Fotó: Renes 1983)

19. Land consolidation

Definition	**Photograph**
(1) Re-allocation and consolidation of agricultural land holdings. Among others: Land consolidation takes the form of fields/meadows and the general location of agricultural property. (2) Grouped ownership of scattered agricultural or forest plots in order to create more compact holdings, thereby promoting a greater productive efficiency. **Source** (1) LANGENSCHEIDT (1973) (2) EVERT (2004), p. 220.	 *Figure 19.* In Hungary land consolidation has led to nearly the biggest fields in the EU (Photo: Centeri 2009) *19. ábra* Magyarországon a földrendezés az EU legnagyobb mezőgazdasági tábláit eredményezte (Fotó: Centeri 2009)

Dutch	**French**	**German**	**Hungarian**	**Estonian**	**Spanish**
ruilverkaveling, landinrichting	remembrement, rural, méthode de remembrement parcellaire	Flur-bereinigung Flur-neuordnung	föld-rendezés	krunti-mine	concen-tración parcelaria

20. Landscape

Definition

(1) "...an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors".
(2) "An area (spatial component) as perceived by people (subjective component), whose sensually perceivable features (link to aesthetics in the original meaning of the Greek 'aisthesis') and character (Alexander von Humboldt's definition of landscape) are the result (evolutionary/temporal aspect of landscape) of the action of natural and/or cultural factors (holistic view of landscape)."
(3) "The Swedish primary definition of the word landscape (landskap) denotes the conditions in a country, a country's character, and/or a country's traditions. Originally, landskap was strongly related to customs, ideas of homeland, justice, nature, and nation (Olwig, 1996b). Landskap was a social space that denoted a territory and its people, and connoted aspects of custom, value, and everyday life."
(4) "Landscape – a polysemic term referring to the appearance of an area, the assemblage of objects used to produce that appearance, and the area itself."
(5) "In one of its everyday usages, the term 'landscape' signifies the specific arrangement or pattern of 'things on the land': trees, meadows, buildings, streets, factories, open spaces, and so forth. A bit more technically, 'landscape' refers to the *look* or the *style* of the land: that is, it refers not just to house types, tree and meadow arrangements, or the order or make-up of a place (some of the traditional objects of cultural geographic research), but the social or cultural *significance* of this order or make-up (Meinig 1979). Even more technically, geographers have long understood the landscape to be a built *morphology*, the shape and structure of a place. Finally, 'landscape' refers to a form of *representation*, both as an art and as a complex system of meanings (Mitchell 1994).

Source
(1) Council of Europe 2000: p. 3
(2) http11
(3) Mels (2002), 137–138.
(4) Duncan (2000), p. 429.
(5) Mitchell (2005)

Photograph

Figure 20. Landscape – composed by villages, single houses, forest, bushes, single trees and meadows, Ukrainian Carpathians, Rakhiv (Photo: Kruse 2009)
20. ábra Táj, amelyet falvak, épületek, erdő, bokrok, fák és rétek építenek fel. Ukrajnai Kárpátok, Rakhiv (Fotó: Kruse 2009)

Dutch	French	German	Hungarian	Estonian	Spanish
landschap	paysage	Landschaft	táj	maastik	Paisaje

21. Meadow, also grassland

Definition	**Photograph**
A meadow is a field vegetated primarily by grass and other non-woody plants. It may be cut for hay. Normally it is not used for livestock grazing. See also: transitional meadow. **Source** Definition elaborated by the Eucaland-Project for project purposes.	 *Figure 21.* Meadow where grass is cut for hay, Galgahévíz, Hungary (Photo: Centeri 2008) *21. ábra* Kaszálórét, Galgahévíz, Magyarország (Fotó: Centeri 2008)

Dutch	**French**	**German**	**Hungarian**	**Estonian**	**Spanish**
hooiland, grasland	pré, prairie	Wiese	gyep	niit, aas, rohumaa (grassland), heina (hay), maa, karja (grazing), maa	pradera, pastizal

22. Mediterranean open land

Definition: "(…) the Mediterranean open fields varies quite distinctly from region to region although it still remains open land (…) Nowadays the open Mediterranean land is almost completely treeless; the flattened relief, the enlarged fields and the concentrated urban development are becoming more conspicuous. In Spain cereals are cultivated on the plains, and olive trees are grown on the hillsides. Extensive livestock farming is also practised; traces of "transhumance" are still to be found in the field (…)."

Ex.: large parts of ES, S-Italy, Sardinia (IT), GR **Source** Meeus et al. (1990), p. 303. Zimmermann (2006), 364.	**Photograph**  *Figure 22.* Mediterranean open land with some single trees and bushes, Spain (Photo: Centeri 2002) *22. ábra* Nyitott mediterrán táj néhány egyedülálló fával és bokorral, Spanyolország (Fotó: Centeri 2002)

Dutch	French	German	Hungarian	Estonian	Spanish
-	-	-	nyílt mediterrán táj	-	Campiña

23. Montados (Portugese) – see also Dehesas (Spanish)	
Definition	**Photograph**
Orchard pastures, "sought in the felling and overgrazing of old forests on hilly terrain. (…) A shortage of water prevents permanent agricultural use." Originally: animal grazing in open forests. In Spain: "dehesas". Huge erosion problems. Ex.: Alentejo **Source** Meeus (1990), p. 289–352.	 *Figure 23.* Montados, the most typical agricultural land use form in Portugal, composed by light oak forests, combined with grazing (cattle/sheep) and/or crop production, often used for hunting, Montemor o novo, province d'Alentejo (Photo: Michelin 2008) *23. ábra* Montados, a legjellemzőbb agrártájhasználati forma Portugáliában, tölgyerdő alkotja, melyet legeltetéssel (marha/juh) és/vagy növénytermesztéssel is hasznosítanak, gyakran vadászterület is, Montemor o novo (Fotó: Michelin 2008)
German: Waldweise, Streuobstwiese (depending on the density of trees) **Spanish**: dehesa, No Dutch, French, Hungarian, English or Estonian definition exists.	

24. Montagne (French)

Definition
"Agricultural activities are concentrated in the valleys of the Alps and the Pyrenees and forestry is found on the mountain slopes. The lower alpine landscape is mainly a cultivated one."

Source	**Photograph**
Meeus et al. (1990), p. 311.	 *Figure 24.* Fields concentrate along rivers/small plateaus, rare vegetation on the mountains, Haute Provence, France (Photo: Kruse 2008) *24. ábra* Folyók és kisebb platók körül koncentrálódó táblák, kevés növényzet a hegyen, Haute Provence, Franciaország (Fotó: Kruse 2008)

Dutch	**English**	**German**	**Hungarian**	**Spanish**
Bergen	(high) mountains	Berge, Bergland (Hochgebirge)	hegyvidék	montañas; valles y macizos mon-tañosos; sistemas agrosilvopastorales en zonas de montaña

25. Moorland

Definition (1) Moorland or moor is a type of habitat characterised by low growing vegetation on acidic soils. Moorland nowadays generally means uncultivated hill land. There exist two main types of moorlands: a) the "wet" one, called "atlantic type", characteristic plant: *Calluna vulgaris* (UK, IR, DE), b) "dry" one, called "continental type", characteristic plant: *Erica tetralix* (e.g. Scandinavia).

(2) Extensive area of ground overlaid with peat or acid peaty soil usually more or less wet. In popular usage the word 'moor' is restricted to European moors, in which heather is often the prevailing plant; but similar phytogeographical areas occur elsewhere.

Source
(1) Definition elaborated by the Eucaland-Project for project purposes
(2) Evert 2004: p. 417
For German: Evert (2004)

Photograph

Figure 26. North Yorkshire Moors UK (Photo: Fairclough 2006)
26. ábra Észak Yorkshire Moors, UK. (Fotó: Fairclough 2006)

Dutch	French	German	Hungarian	Estonian	Spanish
heide	marécage, zones humides (wetland)	Moorland, Moore*	-	(kanarbiku) nõmm	páramos

*The English word moor cannot be used as an ecological term in the German sense of an area covered with deep peat.

26. Natural Landscape

Definition

(1) Landscape completely or virtually unaffected by human activity.
(2) Landscape of virtually undisturbed natural vegetation, which is the same as potential natural vegetation.

Source
(1) Langenscheidt (1973)
(2) Evert 2004: p. 435

Photograph

Figure 27. A natural landscape formed mainly by snow, ice and water, Hohe Tauern National Park, Austria (Photo: Centeri 2006)
27. ábra Egy természetes, elsősorban hó, jég és víz által formált táj, Hohe Tauern Nemzeti Park, Ausztria (Fotó: Centeri 2006)

Dutch	French	German	Hungarian	Estonian	Spanish
natuur (landschap)	paysage vierge, paysage naturel	Natur land schaft	természeti táj	loodusmaastik (looduslik maastik, also just maastik as it is often perceived as natural)	paisaje natural

27. Open Field

Definition
"… wide undulating plains with a regular pattern of large rectangular parcels of land. Farms are concentrated in villages. (…) The remainder of the landscape is empty (…)." Ex.: large parts of France, Hungary and Germany

Source
Meeus et al. (1990), p. 297.

Photograph

Figure 28. Large, open fields on the Great Hungarian Plain, Hungary (Photo: Centeri 2003)
28. ábra Nagy, nyílt táblák a magyar Alföldön (Fotó: Centeri 2003)

Dutch	French	German	Hungarian	Estonian	Spanish
es, eng, geest, akker, veld, kouter (regional names)	champs ouverts	Offenland, Börde, Bördeland-schaften	nyílt terület	põld	campiña

28. Orchard					
Definition					
Plantation fields with planted fruit cultivation/fruit trees (apples, apricots etc.); special version: extensive fruit cultivation on meadows with a higher number of fruit trees.					
Source	**Photograph**				
Definition elaborated by the Eucaland-Project for project purposes	 *Figure 29.* Planted fruit tree plantation, Kiskunlacháza, Hungary (Photo: Centeri 2005) *29. ábra* Telepített gyümölcsös Kiskunlacházán (Fotó: Centeri 2005)				
Dutch	**French**	**German**	**Hungarian**	**Estonian**	**Spanish**
boomgaard	verger	Obstplantage	gyümölcsös	puuviljaaed	huerta

29. Pasture

Definition

(1) Pasture (also grassland or paddock) is used in contrast to meadow for primarily grazing, which may include grassland ("grass pasture"), but also includes non-grassland habitats such as heathland, moorland and wood pasture. Pasture growth can consist of grasses, legumes, other forbs, shrubs or a mixture.

(2) Usually fenced, man-made grassland used for grazing. The opposite is a natural pasture without seeding, mowing or fertilizing.

Source
(1) Online encyclopaedia "Wikipedia"
(2) Evert 2004: p. 726.

Photograph

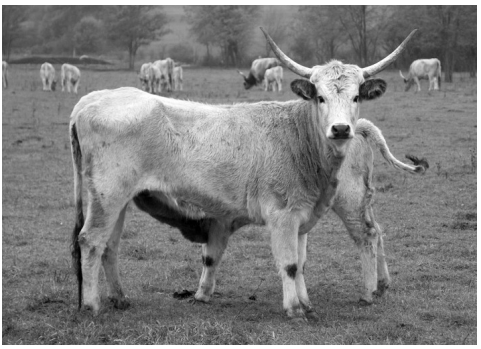


Figure 30. Extensive pasture with ancient Hungarian Grey Cattle, Balaton Upland National Park, Hungary (Photo: Centeri 2007)
30. ábra Extenzív legelő az ősi magyar szürkemarhával, Balaton-felvidéki Nemzeti Park (Fotó: Centeri 2007)

Dutch	French	German	Hungarian	Estonian	Spanish
weiland, weide	paturage	Weide	legelő	karjamaa	pastos; pastizal

30. Polder

Definition

(1) Land that needs artificial drainage systems to remove excess water. Ex. NL
(2) Tract of land near, at or below sea-level re-claimed from the sea by dyking and draining.

Source
(1) Definition elaborated by the Eucaland-Project group.
(2) Evert 2004: p. 493
For Spanish: Contreras (2009)

Photograph

Figure 30. Drained meadows (polder) used for different animals as grazing ground in Zuid-Holland, The Netherlands (Photo: Kruse 2009)
30. ábra Különböző állatok legeltetésére használt lecsapolt rétek, Hollandia (Fotó: Kruse 2009)

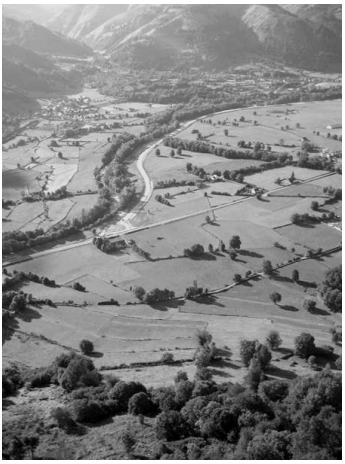
Dutch	French	German	Hungarian	Spanish
polder	polder	Polder, Marsch	polder	Pólder; palabra de origen holandés que hace re-ferencia a un terreno rodeado de un dique con un sistema de drenaje propio que logra mante-ner secas las parcelas ubicadas en su interior

31. Realteilung (German)	
Definition	**Photograph**
Realteilung" translates to a family's possessions, especially land and real estate, which are divided equally among the beneficiaries in real term: the number of smaller and smallest lots increases over generations. The opposite is the "Anerbenrecht" where a possession (e.g. farm) goes cohesively to one beneficiary to keep its productive efficiency. **Source** Definition elaborated by the Eucaland project group	 *Figure 31.* Fields created by "Realteilung" are often very small and long like here in Roztocze, Poland (Photo: Printsmann 2006) *31. ábra* A területek feldarabolódása gyakran keskeny és hosszú táblák kialakulásával járt, Roztozce, Lengyelország (Fotó: Printsmann 2006)

Dutch	**French**	**Hungarian**
realteilung	partage égalitaire, paysages en lames de parquet	területek feldarabolódása
There is no English, Estonian and Spanish explanation.		

32. Rural area	
Definition	**Photograph**
(1) = Countryside: "Rural areas are sparsely settled areas without significant large cities or towns. The countryside refers to certain forms of landscapes and land uses where agriculture and natural areas play an important part." (2) Countryside outside of cities, including villages. **Source** (1) Council of Europe 2007: p. 23 (2) Evert 2004: p. 511	 *Figure 32.* Rural area characterised by mixed agricultural land use with small village near Glowe in Mecklenburg-Western Pomerania, Germany (Photo: Roth 2008) *32. ábra* Vidéki terület változatos agrár-tájhasználattal és kis faluval Glowe mellett, Mecklenburg-Nyugat Pomerániában, Németország (Fotó: Roth 2008)

Dutch	French	German	Hungarian	Estonian	Spanish
landelijk gebied	zone rurale, espace rural, (la campagne)	ländlicher Raum	vidéki terület	maa, maapiirkond	área rural; zona rural

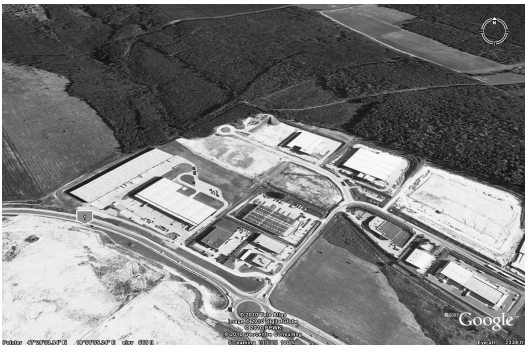
33. Semi Bocage (French)		
Definition	**Photograph**	
A variation of the *bocage* can be found in FR (Massif Central) and ES (Galicia). More or less enclosed, not all of the fields are demarcated, but sometimes there are hedgerows, or trees. There is no uniformity in the size of fields. The topography is more pronounced, it is hillier than the true Bocage." Large forests (e.g. chestnut) **Source** Meeus et al. 1990: p. 308	 *Figure 33.* Close to the rivers we still find irregular more or less enclosed fields, passing over in forests, Accous, Pyrenees, France (Photo: Kruse 2008) *33. ábra* A folyókhoz közel még mindig találunk szabálytalan, többé-kevésbé zárt, az erdők között elterülő táblákat. Accous, Pireneusok, Franciaország (Fotó: Kruse 2008)	
Dutch	**Spanish**	There is no English, German, Hungarian and Estonian use.
coulissenlandschap	boscaje	

34. Social Fallow

Definition	Photograph
(1) Agricultural land lying idle because the farmer has better employment opportunities elsewhere. (2) Agricultural land which has been allowed to go out of cultivation for social or economic reasons. **Source** (1) Langenscheidt (1973) (2) Evert 2004: p. 583	 *Figure 34.* Between Galgahévíz and Hévízgyörk meadows are often left unused for a few years because the number of people working in agriculture is decreasing, Hungary (Photo: Centeri 2006) *34. ábra* Galgahévíz és Hévízgyörk határában a réteket gyakran hagyják kihasználatlanul néhány évig, mert az agráriumban dolgozók száma csökken (Fotó: Centeri 2006)

Dutch	French	German	Hungarian	Estonian	Spanish
sozialbrache	paysage de déprise agricole	Sozial-brache	szociális ugar	-	tierra baldía or erial; tierra de cultivo abandonada

35. Structural Change

Definition	Photograph
(1) Change in economy and lifestyle (…), a kind of modernisation or adoption to other conditions, e.g. GAP, e.g. EU-enlargement. (2) Long-term and fundamental change, e.g. in the economy of a country and the associated economic process. **Source** (1) Langenscheidt (1973) (2) Evert 2004: p. 619	 *Figure 35.* Fast development causes a decrease in natural vegetation, Budaörs, north of Budapest, Hungary (Source: Google Earth) *35. ábra* A gyors növekedés csökkenti a természetes vegetáció kiterjedését, Budaörs (Forrás: Google Earth)

Dutch	French	German	Hungarian	Estonian	Spanish
structurele verandering	changement des structures; changement structurel	Struktur-wandel	szerkezeti változás	struktuurne muutus	cambio estructural

36. Terraced landscape	
Definition	
(1) This form of land use is plasticized on terraces in order to maximize insolation. Terraces are typical for the whole Mediterranean. Typical plants: wine grapes, olive- and fruit trees (2) Cultivation terraces are notoriously difficult to date. A very few are known from the Bronze Age, and there is rather more archaeological evidence for them in	
Classical Greece. How widespread they became is still very uncertain.	**Photograph**
Source (1) Definition elaborated by the Eucaland-Project group (2) Grove and Rackham 2001	 *Figure 36.* Steep terraced coast of Cinque Terre National Park, Italy (Photo: Centeri 1997) *36. ábra* Az olasz Cinque Terre Nemzeti Park teraszolt meredek tengerparti része (Fotó: Centeri 1997)

Dutch	French	German	Hungarian	Estonian	Spanish
terrassen-landschap	paysage en terrasse	Terrassenland-schaft, terrassier-te Landschaft	teraszolt táj	terrassid	Paisaje aterra-zado/cultivo en terrazas

37. Transhumance

Definition

Vertical seasonal livestock (cattle, sheep, goats/caprine, horses, donkeys) movement, typically to higher pastures in summer and to lower valleys in winter. Herders have a permanent home, typically in valleys. Only herds and a subset of people necessary to tend them travel. This form of land use is often combined with local production of milk products. In some regions, transhumance, although not a nomadic form, means also horizontal movements within the different zones of altitude.

Source
Definition elaborated by the Euca-land Project for project purposes based on wikipedia and other online sources

Photograph

Figure 37. Transhumance with cows in the French Pyrenees (Photo: Kruse 2008)
37. ábra Legelőváltás szarvasmarhával a francia Pireneusokban (Fotó: Kruse 2008)

Dutch	French	German	Hungarian	Estonian	Spanish
trans-humance	pastoralism (transhu-mance)	Transhumanz, Pastoralis-mus Weidewechselwirt-schaft, Almwirtschaft	legelőváltás	-	transhu-mancia

38. Transitional Meadow

Definition

A transitional meadow occurs when a field, pasture, farm-land, or other cleared land is no longer farmed or heavily grazed and starts to become overgrown. Once meadow conditions are achieved, however, the condition is only temporary because the early plant colonizers will be shaded out through succession when woody plants become well established.

Source
Online encyclopaedia "Wikipedia"

Photograph

Figure 38. An abandoned pasture becoming overgrown in Bér, Northern Hungary (Photo: Centeri 2008)
38. ábra Egy felhagyott legelőt elkezdték benőni cserjék és kisebb fák Béren (Fotó: Centeri 2008)

Dutch	French	German	Hungarian	Estonian	Spanish
-	formations herbacées de transition (vers les stades ligneux)	Aufgelassene Flächen	átmeneti gyep	võsastumine – it is a process of open land to get overgrown, not necessarily a meadow	pradera en transición; pastos a-bandonados en transición hacia praderas y matorral

39. Vineyard

Definition	Photograph
A vineyard is a plantation of grape bearing vines, grown mainly for wine-making, but also raisins, table grapes and non-alcoholic grape juice. The science, practice and study of vineyard production is known as viticulture **Source** Online encyclopaedia "Wikipedia"	 *Figure 39.* Vine cultivation is an intensive monoculture in agricultural land use – in flat and hilly regions, Beaujolais, France (Photo: Kruse 2003) *39. ábra* Szőlőültetvény, mint intenzív monokultúrás agrár-tájhasználat sík és dombos területen, Beaujolais, Franciaország (Fotó: Kruse 2003)

Dutch	French	German	Hungarian	Estonian	Spanish
wijnbouw	vigne, vignoble	Weinberg	szőlő	viinamarjaistandus	viña, viñedo

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GLOSSARY OF LANDSCAPE TERMINOLOGY

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Introduction

Geschützt werden kann nur das,
dessen Entstehung man kennt
– Küster, 1995 –

With the drastic transformation and disappearance of traditional rural landscapes in Europe (Meeus et al. 1990, Zimmermann, 2006), one of the cultural aspects of these landscapes at risk of disappearance, or at least of oblivion, is their terminology. This is particularly true of local and dialectical terminology, which is most vulnerable to oblivion as both traditional farming and rural populations and their dialects decline or disappear; as much of this terminology has never been recorded in academic and other publications, there is thus an urgent need to record vernacular terminology through oral history before folk memories fade. With the decline, or perhaps recent neglect, of historical landscape studies, there is also a need to assemble in one multi-lingual glossary that part of the landscape terminology that has appeared in the literature, so as to facilitate communication and easy cross-reference at the many fora, conferences, and working sessions involved with landscape conservation today, especially under the aegis of the European Landscape Convention. The following is a part of a large glossary, this particular section is only listing terms related to the endangered agricultural landscape type "Coltura Promiscua" and offered as an example of the form that such a multi-lingual glossary might take, in the hope that it might stimulate improvements or counter-proposals. The terminology catalogued in this draft is arranged by major regional landscape types of Europe; it is possible that future versions of a glossary may find it more convenient to group terminology according to functions, such as irrigation, drainage, configuration of fields, land tenure etc., with sub-divisions arranged by language. Terms are identified as "vernacular" or as predominantly "academic" in usage; it is clear that some of the latter originated as the former. The immediate (i.e., not necessarily the original) sources of the terms listed are included wherever possible. Some overlap between regional landscape types seems inevitable.

The following list is an example for the variety of glossaries that have to be done in order to safe the knowledge on existing, vanishing, endangered agricultural landscape types. In order to open the debate on it and to encourage people to do the same: to do research, to collect terms and descriptions in order to get a sound basis on agricultural landscapes - especially of regional types.

Coltura promiscua and Alberata padana (Italian mixed cropping and Po Valley tree-planted openfield)

Note: these two major Italian regional landscapes have essentially disappeared in the last 60 years; only relics of them are visible today. They were among the traditional European landscapes with the richest historical, literary, artistic and other cultural associations; a record of the vernacular, especially dialectical, terminology of these two landscape types should be compiled as a matter of priority before folk memories are lost.

Abbragliare — (I) (Vern.) to plant trees and grapevines in arable land already marked by drainage ditches and cart trails; in other words, to turn Po Valley reclaimed land into an Alberata (Finotto, 2007).

Alteno — (I) (Vern.) Piedmontese term (first cited in 13th century) to designate a local form of Coltura promiscua with vines tutored by live trees and mixed with cultivated crops; Gricia was an alternative with grapes growing on dead tutors (Finotto, 2007).

Arbustum gallicum — (Latin) The term used by the Romans (and by some of the recent landscape literature; cf. Sereni, 1961) to denote the practice of using live trees to tutor grapevines; attributed by the Romans to the Gauls, but may be of older, Etruscan origin. Grapevines growing on live trees, especially field maples, were one of the hallmarks of both the Coltura promiscua and the Alberata padana.

(A) Cavalcapoggio — (I) (Acad.) any type of cultivation or lay-out of crop patterns that straddle both sides of a hill (Sereni, 1961); a Poggio is Tuscan for hill (Collina in standard Italian).

Cavalletti — (I) (Vern./Acad.) the 4-m wide strips that separated, east and west, the crop fields of the Alberata padana; they supported the rows of trees (Filari) that tutored the typical, festooned grapevines of this landscape (Rinaldi, 1995).

Cavedagne — (I) (Vern.) passages or paths 3-4 m wide that separated, north and south, the typical north-south orientated, crowned crop fields of many parts of the Alberata padana; also known as Carraie ("cart tracks") or Cappezzagne (Rinaldi, 1995).

Ciglione(i) — (I) (Vern./Acad.) hillside terrace built of dug and banked earth; typical of the Coltura promiscua in the sandy-clayey Pliocene hills of Tuscany (Sereni, 1961; Stopani, 1989).

Colmata di monte — (I) (Vern./Acad.) the practice of reducing the relief of hilly terrain and expanding level land by inducing erosion and sedimentation in the Coltura promiscua region of Tuscany (Sereni, 1961).

Doppio spiovente — (I) (Acad.) used to describe rectangular crowned fields of the Alberata padana that were sloped (and thus drained) not only towards their long sides but also towards their (usually east-west orientated) short sides (Rinaldi, 1995); literally "two-sided drainage".

Filare (i) — (I) (Vern./Acad.) row of trees, in the Alberata padana particularly of field maples, elms and other species used to tutor vines or produce fodder, poles, etc., and of mulberries planted in connection with the silk industry; sometimes km long.

Gabba(e) — (I) (Vern.) pollarded trees in traditional Alberata padana, sources of fodder, firewood, poles, willow twigs for vine tying and other products needed by peasant farming (Finotto, 2007).

(A) Girapoggio — (I) (Acad.) any cultivation or crop pattern that "surrounds" the hill, i.e. follows the contours (Sereni, 1961).

Gradone(i) — (I) (Vern./Acad.) terrace with dry-stone retaining walls, typical of the Coltura promiscua in the sandstone-limestone hills of Tuscany (Sereni, 1961; Stopani, 1989); also known as Scalone

Larga — (I) (Vern.) vast expense of fields, recently reclaimed, not yet planted to trees, marked by a wide-mesh drainage system, and not (yet) sub-divided into estates (Poderi) in the Alberata padana of the Emilia; known as Bassa in the Ferrara area; precursors of modern industrial farming (Sereni, 1961)

Loppo (i) — (I) (Vern.) the field maple *(Acer campestre)* in Tuscan dialect; an important tree species in the Coltura promiscua as it provided support for grapevines and as it supplied supplemental fodder (without encroaching on cash cropping) to the typical sharecropper (see Podere system) (Sereni, 1961; Stopani, 1989).

Lunetta — (I) (Vern.) crescent-shaped terrace, designed to retain and accumulate soil and moisture for one or more olive trees; the term Lunette is used in English for similar structure used in soil and water conservation, especially in arid-zone forestry and range management

Maruga — (I) (Vern.) recent (19th century?) dialect name for the black locust (*Robinia pseudoacacia*), a species much appreciated by traditional peasantry for its rapid production of firewood and for its flowers (honey production) (Rinaldi, 1995). This North American species was widely introduced to Europe during the main era of railway construction in order to consolidate rail embankments.

Opo (opi)	(I) (Vern.) the field maple (*Acer campestre)* in the dialect of the Emilia region (also Lombardy and elsewhere?); an important fodder and vine-tutoring species in traditional agriculture; the equivalent of the Tuscan Loppo (Rinaldi, 1995); standard Italian for this species is *acero campestre.*
(A) Pigola	(I) (Vern./Acad.) Denotes fields with irregular shapes and acute angles (wedge-like), instead of property lines following straight lines and meeting at right angles; usually the result of individualistic initiatives and the lack of an overall cadastral or land-use plan (Sereni, 1961).
Podere	(I) (Vern./Acad.) Rural estate usually owned by urban absentee landlords, and farmed by sharecroppers in the traditional Coltura promiscua; the system persisted from the Middle Ages to the 1960s.
Porca(che)	(I) (Vern.) crowned field, usually flanked by drainage ditches in the Alberata padana; also known as Pracione, Presone, Prace, Prese, Quaderno, Vaneggia, etc., depending on the region (Sereni, 1961)
(A) Prode	(I) (Vern.) Rows of trees planted only along either side of a drainage ditch (Stopani, 1989).
(A) Rittochino	(I) (Vern./Acad.) any cultivation or crop pattern straight up and down (perpendicular to) the main slope of a hill (Sereni, 1961); the opposite of contour ploughing and sowing.
Rora, Ruer	(I) (Vern.) the English or pedunculate oak (*Quercus robur; Q. pedunculata)* in various Po Valley dialects; an important firewood and utility wood species in traditional agriculture; standard Italian for this oak is *farnia*.
Scoline	(I) (Vern.) the drainage ditches that flanked both the crop fields and the Cavalletti (Rinaldi, 1995), as much of the Alberata padana occurred on reclaimed alluvial plain; in particularly clayey soils, each Cavalletto was flanked on either side by a Scolina, on better-drained soils only was side had such a drainage ditch (the latter called A rivale arrangement).
Striscione(i)	(I) (Vern./Acad.) The strips of land between rows of olive trees and/or grapevines, formerly devoted to annual crops, notably winter wheat, in Coltura promiscua; usually about 5 m wide
Tirella(e)	(I) (Vern.) grapevine festooned from live tree to live tree in traditional Alberata padana (Finotto, 2007).

Vite(i) loppata(e) (I) (Vern./Acad.) Grapevine tutored by field maple; it allowed the sharecropper to produce some fodder for his few animals without encroaching on the three traditional crops of the Coltura promiscua, wine, wheat and olives (Stopani, 1989).

Zanella(e) di piede (I) (Vern.) the drainage ditch running along the bottom of a dry-stone retaining wall of terraced Coltura promiscua (Caselli, 1998).

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