

The Endangered Ancient Cultural Landscape Heritage in Moravian Plains

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Abstract: *The inventory of remnants from the pre-industrial cultural landscape in Moravia was conducted between 2016 and 2020 across 3075 cadastral areas. This comprehensive project, supported by the Ministry of Culture of the Czech Republic, aimed to document the historical heritage systematically. By comparing the present land use structure through recent orthophotomaps with cadastral mapping from the 1820s-1830s, over 1100 areas resembling their appearance from almost two centuries ago were identified. The primary objective of the current research was to discern connections between inventory results and regional as well as local terrain conditions. Historically, the prevalent land use featured narrow strips of fields, often supplemented by aristocratic estates. Unfortunately, only 96 segments of the ancient pre-industrial landscape have endured in the plains region. Among these, a mere 73 are situated on flat terrain (with slopes up to 3°), indicating the pronounced impact of homogenized land use, transforming the plains of Moravia into large, monotonous blocks of arable land. Assessing the preservation of the ancient land use structure, 16 remnants of the historical landscape with a dominance of large-scale use on former estates stand out as being in the best condition on the plains. Only 12 areas exhibit exceptional preservation of the land division into small plots, and of these, a mere seven are located on flat terrain. It is plausible that these areas, characterized by a detailed land tenure possibly dating back to the Middle Ages, represent a historical natural and cultural landscape heritage comparable in value to protected constructions and legally safeguarded natural areas. These specific regions should garner interest and prove suitable for voluntary forms of nature and landscape protection.*

Keywords: *ancient cultural pre-industrial landscape, preservation levels, territorial distribution, Moravia*

Introduction

The pace and character of transformations occurring in the cultural landscape have captivated the attention of landscape researchers for several decades. The primary emphasis lies in scrutinizing the dynamics of land use. Over time, the research has evolved from the mere identification of changes and their spatial delineation within administrative units, along with quantitative and qualitative assessments, and matured into a more nuanced exploration and interpretation of the underlying causes that instigated these changes, and the identification of the driving forces propelling them (Bičík, Jeleček and Štěpánek 2001). The opposite phenomena of the contemporary cultural landscape, which, on the other hand, completely or at least partially recall all changes in the long run, have thus somewhat found themselves in the background. There is no doubt that sites that have essentially avoided land use changes exist. However, they are probably inconspicuous, because when moving in the field, there is usually no possibility to compare them with patterns from the past. However, laboratory conditions

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and available spatial data covering a certain period of time allow for such a study. Only then does the verification of the findings in the field follow, along with collection of data relevant to assessing the future of landscapes that can be described as "ancient". Many of the present cultural landscapes, regardless of their size, show an important degree of similarity to the appearance that the same area has had in the past. Postmodern landscapes predominantly correspond to current processes and have little to do with the past. In the historically and culturally rich environment of European countries, which have gradually passed an agrarian, industrial and technological revolution, ancient landscapes, or rather the remains of them, are a rich source of inspiration to study. In addition, they are often documented in historical and recent materials. Some countries thus consider ancient landscapes to be part of their national historical heritage. Developments in many countries have meant a constant rewriting of the appearance and structure of land use, which meant the demise of the old landscape and the continuous emergence of a new landscape (Stewart and Strathern 2010). All remnants of the ancient landscape represent a case of the landscape's natural and cultural heritage, which deserves the attention of the professional and lay public. However, knowledge of old landscapes is important for understanding changes and their current state (Antrop 2005).

Research background

The ancient pre-industrial landscape (PIL) and its remains (in this study, areas larger than 10 ha) can currently be defined as cultural landscape areas with preserved secondary structure only, i.e. with the (land use) pattern of buildings, arable land, permanent crops, forests, roads and paths, or mining, water, etc. originated and developed in the period preceding the main wave of the formation of industrial society after 1850 in Czech lands. It can be assumed that such a landscape, or its segments, bear the marks of relatively uninterrupted technical, socio-economic and cultural development at least since the end of the Thirty Years' War (1618-1648) perhaps even since the Middle Ages with regard to local natural conditions and the impacts of pre-industrial revolutions.

The professional interest in this type of natural cultural heritage is growing strongly in the world since 19th century (e.g. White 2012, Rippon 2018, Stamper, Flatman and Herring 2018) mostly on the local level from a number of points of view. The EU states that it has an interest in the European Landscape Convention (Council of Europe 2000) and UNESCO considers the remnants of the ancient landscape to be a valuable natural and cultural heritage. Mitchell, Rössler and Tricaud (2009) and Luengo and Rössler (2012) define the (ancient) cultural landscapes as "combined works of nature and people that express a long and close relationship between people and their natural environment". The term "cultural landscape" thus encompasses the diversity of manifestations of the interaction between humanity and its natural environment (UNESCO 2007). Cultural landscapes have been categorized in UNESCO World Heritage according to their origin, development and connection with various events (according to IFLA 2017, adapted).

1. Designed cultural landscape is the landscape designed and intentionally created by man as a garden or park.
2. Organically developed landscape evolved as a relict or continuing landscape in connection with human activities and the natural environment
3. An associated or associative cultural landscape is the physical place where the intangible aspects of cultural heritage are embodied.

Since 1992, when the classification was adopted, 114 cultural landscapes of outstanding universal value to all mankind have been registered as World Heritage Sites (Brumann and

Gfeller 2022). All the above categories of cultural landscapes are represented in the World Heritage List.

Few states or regions have so far entered into systematic registration of this type of cultural heritage. An example of a successful inventory of PIL segments of all sizes is the Flemish Community region in Belgium, where not only did a sample inventory and classification of identified areas take place, but also the incorporation of knowledge into regional legislation and spatial planning practice. A similar inventory has been carried out in part of its territory by the Walloon Community of Belgium (van Eetvelde and Antrop 2005). The remnants of the old landscape were mapped in Saxony (Thiem and Bastian 2014). Attention to the records of old landscape residues has been paid to the regions of Brittany in France (bocage), Alentejo in Portugal (forestry complex), United Kingdom (Bunce et al. 1996, Hull 2001), Ireland (Simms 2004) and the Netherlands (Mücher et al. 2003) within the European landscape typology.

The inventory of "historical landscape structures" (Slámová and Jančura 2012) and "historical structures of the traditional agricultural landscape" (Špulerová et al. 2016) was completed in Slovakia, although so far only at the regional level. In the monograph by Bezák et al. 2010 a clear national map was published representing at a scale of 1:500 000 four main types of landscape structure: vineyard landscape, type of landscape with forms of scattered settlement, meadows-pasture landscape type and type of mining landscape. The "Atlas of Representative Geocoecosystems of Slovakia" (Miklós and Izakovičová et al. 2006) also includes a map "landscape type with historical landscape structures". The remains of the old cultural landscape in Slovakia also mentioned Hofierka (2008). The Slovak community has already started a nationwide inventory at the local level (Hreško and Petluš 2015).

In the past, "historical landscape zones" were defined and administered in the Czech Republic (Kuča et al. 2015). They were usually represented by designed or associated landscapes. From the same source comes the definition and documentation of "historical cultural landscapes" (Kuča et al. 2020), which takes into account the genetic concept of UNESCO typology. However, only some of them, usually only locally, meet the conditions for inclusion among the segments of the relict PIL. Nonetheless, there are a number of cases where such areas have attracted the attention of researchers, nature conservation and decision-makers (e.g. Lipský et al. 2013). Isolated but valuable studies include examples in the Ore Mountains border region (Karel and Kratochvílová 2013). The "historical structure of the landscape" was studied by experts at Jan Evangelista Purkyně University in Ústí nad Labem (Brůna, Buchta and Uhlířová 2002) and the "material memory structure of the landscape" was studied at the Czech University of Life Sciences in Prague (Skaloš and Kašparová 2012).

Kolejka et al. (2020) carried out a regional inventory of the remains of the old pre-industrial cultural landscape in the historical territory of Moravia in the east of the Czech Republic, occupying approximately 1/3 of the country's area (22,467 km² out of 78,865 km²). The search for segments of the PIL was carried out according to a certified methodology (Kolejka et al. 2018). The actual procedure of carrying out an inventory of the remnants (segments) of the ancient pre-industrial cultural landscape (*fig. 1*) was done cadastre by cadastre on the Internet over a recent colour orthophotomap (publicly available at Mapy.cz) with subsequent comparison of locations of interest in publicly available stable cadastre maps managed by the Moravian Land Archives (Moravský zemský archiv 2022). In total, it was necessary to electronically "visit" 3075 cadastral areas of the historical land of Moravia.

During the inventory of the remains of the ancient landscape, a total of 1139 segments of the old landscape were found in the historical territory of Moravia, ranging in size from 10.32 ha to 900.42 ha. Their territorial distribution is very irregular.

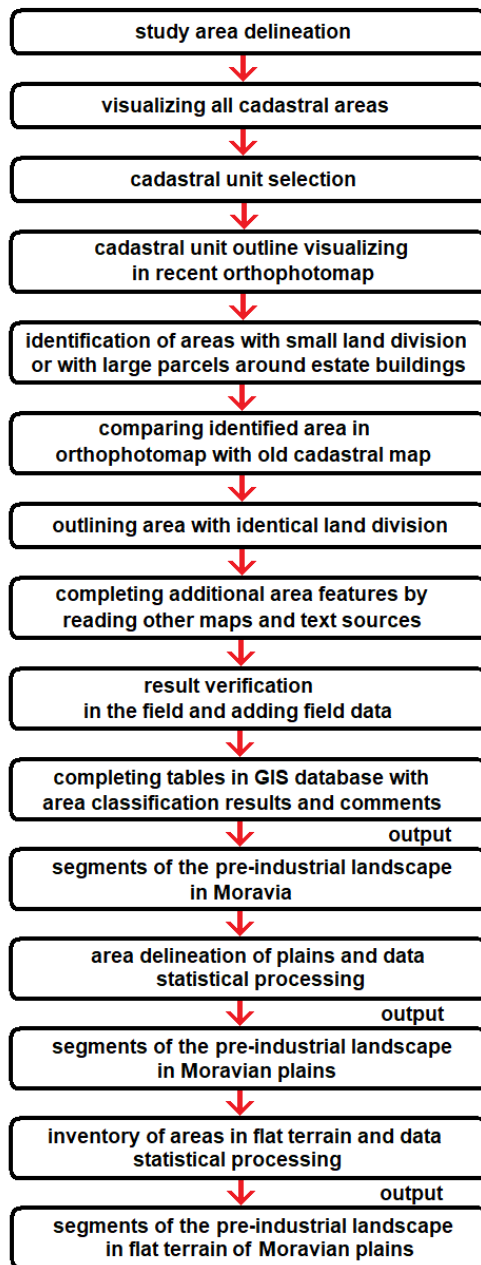


Fig. 1. Flow chart demonstrates the step-by-step PIL inventory methodology and individual assessment procedures applied in the study area of Moravia and additionally in regions of plains

In particular, the relief plays a major distributional role in the conditions of the Czech Republic, both in the territorial differentiation of other natural factors of the landscape, and in the selection and distribution of human activities. Thus, human activities undoubtedly

have an influence on where, what and how often old landscapes disappeared and were preserved elsewhere. The territory of Moravia shows a considerable height range of the relief. The lowest point in the extreme south of Moravia at the confluence of the Dyje and Morava rivers in Dolnomoravský úval Lowland is located at an altitude of 149 m a.s.l. The highest point is the top of Mt. Praděd in the north in the Hrubý Jeseník Mts. at 1491 m a.s.l. The territory of Moravia was divided into 12 ethnographic and geographical regions for work reasons.

The aim of this paper is to formulate “a hypothesis of terrain – remains of the old cultural landscape relationships” and explain the differences in the degree of preservation (quality, number and character) of the in flat terrain compared to other types of landscape relief and to draw attention to the high vulnerability of the old cultural landscape in flat terrain.

The current state of the cultural landscape of Moravia

The Moravian land use underwent numerous land reforms in the industrial period. All the areas that still retain the appearance and structure of land use from before 1850 are very valuable entities worthy of several forms of landscape protection. The situation began to change radically after the revolutionary year of 1848. The subsequent development of industrial society also affected the countryside, where new market relations soon penetrated. Regions with poorer natural conditions and often marginalized in comparison to development centres changed slowly. Radical changes were brought about after World War II and the nationalization of a large part of agricultural and forest land and subsequent collectivization. This was followed by a rapid sequence of technological and socio-political impacts on land ownership and use.

The result of these processes is the current state of the appearance and land use, as large monotonous blocks of arable land and often also continuous forest units predominate (although small forests cover areas unsuitable for efficient agriculture). Areas with a fragmented division of arable and forest land (*fig. 2*), as well as former aristocratic and ecclesiastical estates, where large blocks of land have originated probably since the Middle Ages, can be considered remnants of the ancient cultural landscape.



Fig. 2. Cultural landscape of Moravia today and in the past. Monotonous blocks of agricultural and forest land characterize the current rural landscape of Moravia (in low hills of Central Moravian Carpathians near Klobouky u Brna – left), Photo (Kolejka 2020), while about 85 years ago a fragmented land division was typical – painted by Otakar Kubín: “Rolled landscape with strips of fields”, 1935 (right)

Data and methods

The types of flat lowland relief were determined at two differentiating levels. In order to understand the location of the segments on the historical territory of Moravia, the vertical dissection of relief was applied (in low resolution study on regional level for general location of segments, in squares of 4x4 km, according to Kudrnovská, 1965). In this way, the types of landscape relief of: plains, inclined plains and high plateaus (0-30 m), hilly lands (30.1-150 m), highlands (150.1-300 m) and mountains (above 300 m of vertical difference) were distinguished in squares. A detailed terrain analysis was done with the high resolution study on local level for each segment area using by a detailed Lidar terrain model (pixel size 10x10 m). The following slope categories were distinguished: flat 0-3°, gentle slope 3.1-15°, steep slope – over 15°. The current study focused on the role of flat terrain.

Already the initial geostatistical results (*tab. 1*) showed that the plains of the lowlands (up to 300 m above sea level) are significantly poorer in PILs compared to other types of landscapes. This fact became the reason for further and more detailed study, the result of which was the formulation of hypotheses regarding the causes which led to this state.

Results of data analysis

The region of the plains is defined as an area with elevation differences (vertical terrain dissection) in squares with sides of 4 x 4 km that must not exceed 30 m (Kudrnovská, 1965). Locally, at the high resolution level of the digital terrain model with 10 x 10 m pixels, the slope of the terrain is 0-3°.

The numerical data contained in *table 1* demonstrate the situation on a regional level and clearly point to the special position of the regional landscape relief of plains (1-lowland plains, 2-sub-montane inclined plains) and 3-high plateaus among other types of landscape relief in terms of the representation of the remains of the PIL segments. In total, there are 259 segments of the old cultural landscape in the territories of these three types of landscape relief (*fig. 3*). In all these types, there is the lowest (with an exception of hilly lands) distribution density in the landscape per 100 km², plains – 1.98%, inclined plains – 2.36% and high plateaus – 0.69%. This phenomenon can be explained by the fact that in general the terrain of plains does not pose physical obstacles to the joining of plots into larger blocks, which led to the intensive disappearance of the original small land division. In addition, countless remnants of large estates have been preserved there, even though numerically in the past they represented only a small part of the individual agricultural enterprises (as opposed to the total area of land, which was much more significant). In the more dissected relief of the other types, these values are significantly higher. The exception is the mountain ranges, which reach considerable heights above sea level and are largely above the elevation of historical and current agricultural use. Despite the significant area of this type of region, there are relatively few segments of the pre-industrial landscape. It can also be explained by the fact that intensive afforestation and removal of signs of the old cultural landscape took place here in a typical LFA.

The most significant area (*tab. 1*) with a flat relief is the region of plains (4182.26 km², 218 segments with a total area of 82.72 km²). Due to the minimum area of 227.28 km² with 3 segments with a total area of 5.36 km², the values of the sub-montane inclined plain regions are negligible in the overall context. Also, similar data for the region of elevated plateaus (960.90 km², 38 segments with a total area of 6.66 km²) point to the relatively marginal importance of this landscape type for the preservation of the remains of the old cultural landscape.

Tab. 1. Detected segments of the ancient cultural pre-industrial landscape (PIL) in types of regional landscape relief in Moravia

PIL segments		Preservation level of PILs	PILs level area (ha) in relief type	All PILs area (ha) in relief type	Share of PIL level area in relief type (%)	Density of PIL level per 100 km ² in relief type	Ratio level1/level2
Regional landscape relief type	PIL number						
Plains	61	1	3083.178	8271.759	37.274	1.46	0.78
	78	2	3047.621		36.844	1.86	
	79	3	2140.960		25.883	1.89	
418 225.659	total 218	Total in this type		1.978	5.21		
Inclined plains	0	1	0	535.800	100.00	1.32	
	0	2	0				
	3	3	535.800				
22 728.1799	total 3	Total in this type		2.357	1.32		
Hilly lands	111	1	4313.954	15825.370	27.260	1.47	0.49
	226	2	7011.732		44.307	2.99	
	147	3	4499.684		28.433	1.94	
756 315.97	total 484	Total in this type		2.092	6.40		
High plateaus	9	1	331.121	665.701	49.740	0.94	0.45
	20	2	168.402		25.297	2.08	
	9	3	166.178		24.963	0.94	
96 089.5406	total 38	Total in this type		0.693	3.96		
Marginal mountain slopes	1	1	113.738	180.278	63.090	1.89	1.00
	1	2	5.439		3.017	1.89	
	2	3	61.101		33.893	3.77	
5 301.3828	total 4	Total in this type		3.401	7.55		
Valleys	60	1	2269.758	8766.595	25.891	2.88	0.43
	141	2	4598.365		52.453	6.77	
	75	3	1898.472		21.656	3.60	
208 231.695	total 276	Total in this type		4.210	13.25		
Highlands	110	1	5181.709	19824.140	26.138	1.79	0.48
	231	2	10781.942		54.388	3.75	
	112	3	3860.489		19.474	1.82	
615 554.94	total 453	Total in this type		3.221	7.36		
Mountains	7	1	94.227	3462.245	2.722	0.56	0.23
	30	2	2899.918		83.758	2.41	
	18	3	468.100		13.520	1.45	
124 263.845	total 55	Total in this type		2.786	4.43		
Total of relief types 2245711	1531		57531.890		2.56%		
	1139					5.07	

The qualitative breakdown of the preserved segments of the ancient cultural pre-industrial landscape of Moravia (*tab. 2*) in terms of the degree of their preservation clearly shows that with regard to the ancient and current use of the area, the least preserved segments are always in the exceptionally preserved category (preservation level 1) and the most in the well-preserved group of cases (preservation level 2). Also, there are always more segments that are only satisfactorily preserved (preservation level 3) than those that are exceptionally preserved. An exception to this rule is the data for those types of landscape relief where there is a very sporadic occurrence of segments (inclined plains, marginal mountain slopes). However, in the region of the plains, the most balanced ratio of individual levels of preservation of the remains of the old pre-industrial cultural landscape was created. An interesting view of the qualitative aspect of the matter is provided by the extreme right column in *table 1*. The closer the level1/level2 preservation ratio is to 1, the more the best preserved PIL segments predominate. In the case of the plains, however, these are mainly the remains of former large estates.

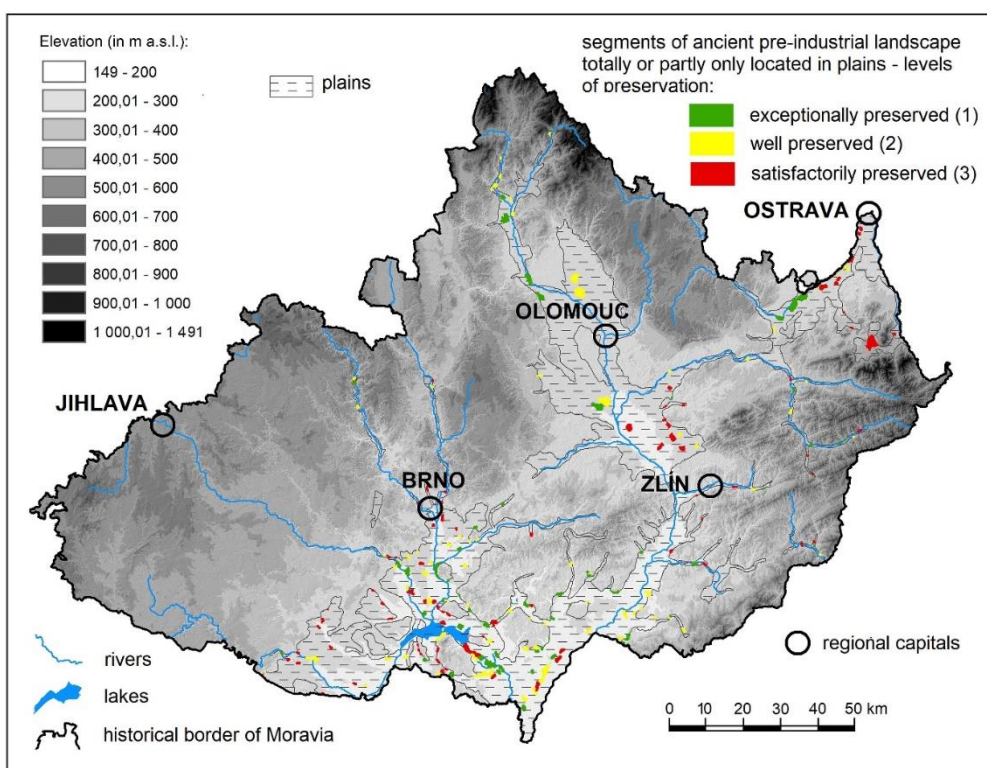


Fig. 3. Distribution of segments of the ancient PIL with different levels of preservation in region of plains in Moravia; Source: own processing, data of shaded terrain and rivers: ArcČR 500 (ARCDATA 2022)

Tab 2. Evaluation of the preservation of the remains of the old cultural landscape

preservation level	name of the preservation level	description (comparison with the situation on old maps)
1	exceptionally preserved	maximally preserved subdivision and the same general representation of the original forms of use
2	well preserved	preserved original division of land, shares of original forms of use have not been preserved, changes in cultures, overgrowth of borders, character of the landscape has been preserved.
3	satisfactorily preserved	partially but dominantly preserved subdivision, partial representation of original forms of use, non-original forms of use introduced

This phenomenon can be explained as follows: on the one hand, the cultural landscapes of the plains are most subject to the pressures of intensification of agricultural production, so it is easy to combine plots into large blocks. In addition, turbulent periods of economic and political changes are well overcome even by former aristocratic estates that have been converted into joint-stock companies or companies with limited liability. The large estates transformed in this way contribute significantly to the high number of preserved remains of the old cultural landscape (preservation level 1). The vast majority of former areas with small land divisions went through periods of land consolidation, most recently during the period of socialist collectivization of agriculture in Moravia in the 1950s and 1960s. After restitution and privatization of the land, the original owners and their descendants got access to the land, but they no longer work on it and the land is often leased to large users (arable land, orchards, vineyards, hop farms, etc.). Therefore, only a few areas with a preserved small division of the land have been preserved. However, since it is an area favourable for intensive use even by small owners, a similar representation of different but original forms of use, as recorded by cadastral maps from the 19th century, is maintained in the preserved segments of the PIL (preservation level 1). On the other hand, in the dissected terrain of the other types of landscape relief, the pressure to join the plots was less, as the conditions for agriculture are already more difficult, so the preserved segments belong to preservation level 2 or 3. The higher degree of extensive use preserved the division of the land, but intensive forms of use, especially arable land, were no longer applied. However, the overall appearance of the landscape has been preserved, and in preservation level 3 there has even been a partial redistribution of the land and modifications most often for recreational purposes (suburban gardening, secondary housing). In an even more dissected relief, afforestation began, which eliminated the remains of the old cultural landscape.

In the local study of the distribution of the preserved remains of the old cultural landscape, the effects of detailed terrain unevenness with a slope of more than 3° are also taken into account. These could not be affected at the regional level. In the region of the plains of Moravia, 218 segments of the old PIL were identified (*tab. 3*). Almost half of them (96) are located entirely in the regions of plains. Only 73 of these lie mostly in flat terrain with a slope of up to 3°, i.e. in the region of plains but also from a local point of view.

Tab. 3. Comparison of the area representation of the remnants of the ancient cultural pre-industrial landscape of Moravia in the plains from a regional and local point of view (share in % of the total number of 1139 PIL segments in Moravia)

segment position in terrain	area (in ha)	share (%)
segments partly or totally in Moravian plains region (number)	218	19.14
segments totally only in Moravian plains region (number)	96	8.43
segments totally only in Moravian plains region on surface up 3° inclination (number)	73	6.41

From the interpretation of these numbers, it follows that in the region of the plains there are localities with a relief slope higher than 3° and these represent to a large extent the environment in which the remains of the old cultural landscape are maintained. The principle of preserving segments is the same as for dissected types of landscape relief - higher dissection of the relief effectively prevents the merging of plots into larger blocks. Currently, however, we are also witnessing the joining of plots of land on the slopes in the lowlands of South Moravia. As a rule, it involves the creation of large blocks of vineyards and orchards at the expense of their traditional fragmentation.

The qualitative division of preserved segments of the ancient cultural pre-industrial landscape of Moravia in terms of their degree of preservation clearly shows (*tab. 4*) that with regard to ancient and current land use, the least numerous segments are always in the category of exceptionally preserved areas with the exception of the areas with predominant large-scale plots).

Tab. 4. *The nature of the current land use in the categories of segments of the ancient landscape of Moravia according to the degree of their preservation*

Preservation level of segment	number of preserved segments in land use classes												total
	large plots			predominantly large plots			mostly small plots			small plots only			
	exceptionally preserved	well preserved	satisfactorily preserved	exceptionally preserved	well preserved	satisfactorily preserved	exceptionally preserved	well preserved	satisfactorily preserved	exceptionally preserved	well preserved	satisfactorily preserved	
total in region of plains on local terrain	6P	8P	10P	8P 1G	9P 1G	2P 2G	4P 2G	6P 1G	5P 3G 1S	3P 3G	6P 4G	8P 3G	75P 20G 1S
total in land use class	24P			19P + 4G = 23			15P + 6G + 1S = 22			17P + 10G = 27			96

Explanations: P-plain, G-gentle slope, S-steep slope

It is logical that in the past, large-scale agricultural land use also tended to be mainly in the plains. The high number of such preserved segments of the old landscape is confirmed by this. If in some parts of the plains in Moravia there are some segments with a small-scale division of the territory, this is the case in the more locally dissected terrain of the region, namely on slopes with more than 3° slope gradient. The small land tenure in flat terrain fully prevailed in the past what show the old maps of the stable cadastre, only three of the best preserved segments (*tab.4*) are located in completely flat terrain with slope less than 3° (the other three are already in more sloping terrain). The other qualitative categories (well and satisfactorily preserved remnants of the ancient cultural pre-industrial landscape) are generally numerous (27 samples), but seven of them are outside the real local flat land (slope up to 3°). On the contrary, innumerable in the past aristocratic estates with large-scale land use remained in very good condition in six cases in the whole region of Moravia, and in the case of well and satisfactorily preserved segments there were another 18 samples.

Discussion

The number and representativeness of the remnants of the ancient cultural pre-industrial landscape of the Moravian plains clearly deviate from the original dominance of small land tenure in favour of current large-scale use. This is because the original large estates naturally became part of the socialist large-scale land use, while the small land tenure in the plains succumbed to large-scale land use (and merging) and almost completely disappeared.

It is obvious that the period of industrial society, and especially the period of real socialism (1948-1989), meant a practically complete reconstruction of the land division in the plains of Moravia. The collectivization of agriculture was visually manifested by the merging of land into large monotonous blocks. This undoubtedly contributed to the efficiency of agricultural production, but on the other hand it practically completely erased the original diversity of the agricultural cultural landscape, which had usually maintained the character of division of land since the Middle Ages or at least since the end of the Thirty Years' War. The continuity of large-scale or small-scale land use has thus been maintained from the Middle Ages to the present only in various segments of the PIL, as the division of land into narrow parcels was introduced during the 13th and 14th centuries in the Czech lands, while noble estates expanded significantly after the land confiscations during and after the Thirty Years' War. Of the 96 segments of the PIL preserved in the region of plains, only 73 are also located in predominantly flat terrain. Of the once typical dominant set of small plots, only 3 segments have been preserved in the category of exceptional quality (in the cadastre of Prace near Brno in the Dyje-Svratka Lowland, *fig. 4*; and Hrušky and Mikulčice-Tetčice cadastres in the south of Lower Moravian Lowland) and they are worth being protected as heritage.



Fig. 4. An example of relatively well-preserved ancient cultural pre-industrial landscape in the Moravian plain region near the Prace municipality; Own drawing based on Mapy.cz (2022) and Moravský zemský archiv (2022)

However, in none of these samples can we speak of a completely preserved character of the ancient cultural pre-industrial landscape, as it is not only arable land, but areas that show a diverse composition of several different forms of land use, which of course changed and alternated from place to place. It can therefore be stated that the cultural landscape of the plains with a small tenure of arable land in the Moravian plains has completely disappeared. If we take into account the segments of the ancient landscape, which combine the majority small land tenure with the minority large-scale use at the local level, only three samples near Brno (Pravlov, Malešovice-Medlov and Rousínov-Slavíkovice) and Chromeč (north of Olomouc) have been preserved in the category of exceptional quality. Contrary to this, the situation is

relatively good in terms of conservation of segments with long-term large-scale use (6 exceptionally well-preserved segments), or at least with predominant large-scale land use (8 exceptionally well-preserved segments) in flat terrain.

While in the segments in the south of Moravia it is mainly the preservation of moist areas of floodplain meadows and forests with water bodies (it is arable land in 1 sample only), near Olomouc (2 segments) the division of land was exceptionally preserved, but its use was reflected in a significant strengthening of arable land at the expense of meadows (*fig. 5*). Along the river Oder, there is only one type of landscape (3 exceptionally preserved segments), which includes extensive floodplain meadows with a mosaic of small forests.



Fig. 5. Štěpánov u Olomouce - quite well-preserved part of the ancient landscape with large-scale agricultural and forestry use; Own drawing based on Mapy.cz (2022) and Moravský zemský archiv (2022)

Conclusion and practical recommendations

The presented results and their interpretation document the differences between the quantity and quality of the preserved remains of the ancient cultural pre-industrial landscape between the region of plains and regions with a vertically dissected relief. The research on the influence of the relief on the appearance of the remains of the old landscape was carried out on two differentiating levels: regional and local. At a regional level, based on the affiliation of the segments to the regions of the landscape relief, it was demonstrated that in the plains (vertical terrain differences of up to 30 m) significantly fewer remnants of the old landscape have been preserved than in the more dissected area, but with a much higher representation of well-preserved segments. The occurrence of an overall lower number of segments can be explained by the effect of the flat relief, which presents practically no physical obstacles to merge small plots of land into large blocks. This happened especially during the period of socialist collectivization of agriculture. However, noble estates with large-scale land use have operated in the plains since the Middle Ages. These smoothly transitioned into modern mass production. Large blocks of their contents have not changed: the original buildings have only exceptionally been preserved in good condition. Only a small number of segments of the old cultural landscape with small land tenure have been preserved. Overall, the high number of well-preserved high-quality remnants of the old landscape is thus due to two factors: the ancient and current large-scale use of the land of former large estates and several areas with small land tenure, where,

however, in a favourable natural environment (climate, soil), small owners still farm intensively. They preserve not only the tiny division of land, but also a mosaic of diverse forms of land use. In the more dissected terrain of the Moravian Mountains, a much larger number of segments of the old landscape have been preserved, but among them segments of up to the second level of preservation predominate. In the sloping and rugged terrain, the pressure to merge the plots was already lower, but at the same time, due to the more difficult natural conditions for agricultural activities, the intensity of the use of small plots decreased significantly. Arable land has almost completely disappeared in favour of permanent crops: mainly meadows and pastures, and partly orchards. The appearance of the old landscape has been preserved, but the function has changed from the once dominantly productive to the current recreational one.

At the local level, the influence of the inclination of the slopes on the character of the use of specific segments of the old cultural landscape was assessed. The fact that part of the segment extends into the planes was assessed. For segments completely lying in the region of plains, it was investigated whether the local steepness of the terrain also affects the preservation of the old cultural landscape in generally flat terrain. It turned out that approximately a quarter of the detected segments of plains were preserved on local moderate to steep slopes (with a slope of more than 3°). The remaining segments were preserved in really flat terrain. However, more than half of them are the areas of former large estates. Very high-quality segments with only small land tenure in the plane were preserved in only three cases. They thus represent a unique historical, natural and cultural landscape heritage that deserves the attention of the public and professional conservation circles. Given that similar processes of combining small plots of land into large blocks are taking place to varying degrees in all European countries, the unification of Europe's agricultural landscapes thus leads to a threat to the diversity of the continent's cultural landscapes. This fact is especially necessary to draw attention to, and this paper demonstrates this threat with facts. In the available literature, professional or popular, practically no one comments on the problem of plane regions with evidence. The results of the extensive study carried out on the historical territory of Moravia are unique, and in order to support the protection of the traditional cultural landscape of Europe, it is necessary to carry out similar research in other countries. There is no doubt that the value of the very well-preserved remnants of the old cultural landscape is equal to the historical and artistic value of the architectural monuments and their complexes, as well as the nature conservation areas.

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